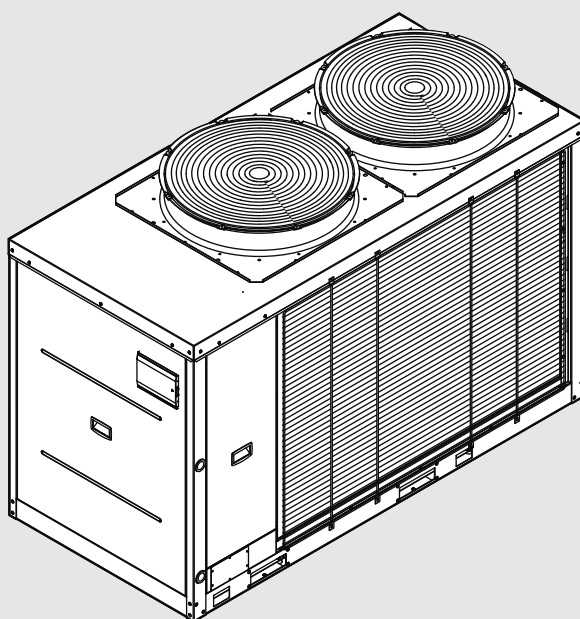




# Planning Guide **CS 3000 AWP (16 - 89)**



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## 1 Features and benefits

### Introduction

The CS 3000 AWP series is the new air cooled heat pump, equipped with Full DC Inverter technology and R-32 refrigerant, for outdoor installation. It is available from 16 kW up to 89 kW.

CS 3000 AWP has great efficiency levels both in cooling and heating. The new air cooled heat pump is able to provide high leaving water temperature and it is suitable for colder climates, due to the wide operating range with a quiet operation.

The air-cooled chiller/heat pump is intended for use with domestic systems and not with process systems.

### Energy efficiency

CS 3000 AWP

SCOP up to 4.65 (W35)

SCOP up to 3.42 (W55)

SEER up to 4.95 (W7)

SCOP and SEER according to EN 14825

Capacity modulation from 30% to 100%.

### Wide operating range

| Outdoor air temperature        | Max. | Min.  |
|--------------------------------|------|-------|
| <b>Heating mode</b>            | 44°C | -20°C |
| <b>Domestic hot water mode</b> | 44°C | -20°C |
| <b>Cooling mode</b>            | 48°C | -10°C |

| Water temperature production   | Max. | Min. |
|--------------------------------|------|------|
| <b>Heating mode</b>            | 60°C | 25°C |
| <b>Domestic hot water mode</b> | 60°C | 25°C |
| <b>Cooling mode</b>            | 20°C | 0°C  |

### Functionality

- Management and production of domestic hot water up to 60°C.
- Climate compensation with outdoor temperature.
- Double set-point adjustable.
- Smart Grid management.
- EVU and SG lock ready (energy supply company and Smart Grid).
- Demand limit.
- Auxiliary generator management.

Acoustic configuration:

- Speed reduction of compressors and fans.
- Four levels of silence: Standard mode, Night Silent, Silent and Super Silent.

### Application versatility

The unit has all the main system components integrated, which assures the best reliability and easy installation:

- Hydronic assembly with 1 inverter pump.
- 3-way valve for the domestic hot water production.
- System storage tank: 145 litres (AWP16 – AWP24), 160 litres (AWP31 – AWP41), 275 litres (AWP53AWP59) or 500 litres (AWP65 – AWP89).
- Drain-tray with electric heater.

### Modular design

The technical solutions adopted place CS 3000 AWP on top of its category:

- DC inverter technology on compressors and fans
- Electronic expansion valve
- Flow switch
- Hydrophilic coil

### Cascade management

CS 3000 AWP has been designed for modularity. It is possible to connect up to 16 units in a local network, reaching a maximum capacity of 1424 kW. The combinations can also take place with different capacity units. The modular system, obtained by combining several modules, preserves the strengths of the single module, but multiplies the advantages:

- Increased system efficiency
- Higher reliability
- Simplified handling and installation
- Quick and easy maintenance
- Scalability

## 2 Technical specifications

### 2.1 Compressor

#### Size from AWP16 to AWP41

Inverter controlled rotary-type hermetic compressor equipped with a motor protection device for overheating, over-currents and excessive temperatures of the supply gas. It is installed on anti-vibration couplings and it is equipped with oil charge. The compressor is wrapped in a sound-absorbing hood, that reduces its sound emissions.

A crankcase heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.

#### Size from AWP53 to AWP89

Inverter controlled scroll-type hermetic compressor equipped with a motor protection device for overheating, over-currents and excessive temperatures of the supply gas. It is installed on anti-vibration couplings and it is equipped with oil charge. The compressor is wrapped in a sound-absorbing hood, that reduces its sound emissions.

A crankcase heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.

### Structure

Structure and base made entirely of sturdy sheet steel, thickness from 1,2 mm hot dip galvanized and painted, for the parts in view, with polyester powder RAL9006 that guarantees excellent mechanical characteristics and high corrosion strength over time.

### Panelling

External panelling is made of sheet steel, thickness 1,2 mm hot dip galvanized and painted with polyester powder RAL9006 that guarantees excellent mechanical characteristics and high corrosion strength over time. The panels can be easily removed to fully access internal components.

### Internal exchanger

Direct expansion heat exchanger, braze-welded AISI 316 stainless steel plates, in pack without seals using copper as the brazing material, with low refrigerant charge and large exchange surface, complete with:

- External thermal insulation no-condensation, thickness 17 mm, in expanded polypropylene (EPP);
- Anti-freeze heater to protect the water side exchanger, preventing the formation of frost if the water temperature falls below a set value.

The water connections of the exchanger are quick-release with splined joint (victaulic).

### External exchanger

Direct expansion finned coil exchanger made with copper pipes placed on staggered rows mechanically expanded to better adhere to the fin collar. The fins are made from aluminium with a hydrophilic treatment. They are appropriately distanced to ensure the maximum heat exchange efficiency.

A particular refrigerant circuit prevents the formation of frost on the base of the exchanger during winter operation.

### Fan

Axial fans with sickle profile blades terminating ABS ASG-20 resin reinforced with 20% glass fiber, directly coupled to the electronic controlled motor (IP23), driven by the magnetic switching of the stator.

The brushless technology and the special supply increase both the life expectancy and the efficiency. As a result the electric consumption is reduced up to 50%. Fans are housed in aerodynamically shaped structures to increase efficiency and reduce noise level. The assembly is protected by accident prevention guards. Both fans prevention guards are designed with CFD technology. Supplied with variable speed control.

### Refrigeration circuit

Refrigeration circuit with:

- Electronic expansion valve
- 4-way reverse cycle valve
- High pressure safety switch
- Low pressure safety switch
- Liquid receiver
- Liquid separator
- Oil separator
- High pressure transducer
- Safety thermostat against compressor drain overheating
- Temperature sensors
- Low pressure safety valve
- Economizer exchanger (only for sizes AWP53 – AWP59)

### Electrical panel

The power section includes:

- Main disconnecting switch
- General protection fuses
- Terminals main power
- Auxiliary components protection fuse
- AC filter on power supply
- Power supply phase sequence protection
- Protection for compressor overload
- Sensor malfunction protection

- EMC residential and industrial compliance (AWP16 – AWP59)
- EMC industrial compliance (AWP65 – AWP89)
- Phase monitoring (AWP31 – AWP59)

The control section includes:

- Compressor timing and protection
- Relay for remote cumulative fault signal
- Defrosting cycle optimization
- Condenser control
- Potential free contact for remote ON/OFF
- Dry contact for remote HEAT/COOL mode control
- Dry contact for auxiliary generator management

The control keypad includes:

- Wired controller with dot-matrix display
- Multifunction keys for ON/OFF control
- Cold, hot and auto operation mode
- Display and alarm reset
- Daily or weekly schedule
- Separated power adaptor for remote use
- Serial port with Modbus port (RS485) for remote communication up to 300m

### Water circuit

- Safety valve 6 bar
- Flow switch
- Antifreeze water flow heater
- Drain valve
- Temperature sensors

### Test

Unit submitted to factory testes in specific phases and test pressure of the refrigerant circuit piping (with nitrogen and hydrogen), before shipping.

### 3 Standard unit technical specifications

#### 3.1 Unit equipment with low outdoor temperatures

| Minimum outdoor air temperature |                       | Operating unit |              | Unit in stand-by (fed unit) <sup>3)</sup>                                                                                                                                     | Unit in storage (unit not fed) |
|---------------------------------|-----------------------|----------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Cooling <sup>1)</sup>           | Heating <sup>2)</sup> |                |              |                                                                                                                                                                               |                                |
| +11°C                           | [1]                   | Possible       | Possible     | Possible                                                                                                                                                                      | Possible <sup>4)</sup>         |
| +2°C                            | [2]                   |                |              |                                                                                                                                                                               |                                |
| -5°C                            | [4]                   |                |              |                                                                                                                                                                               |                                |
| -7°C                            | [3]                   |                |              |                                                                                                                                                                               |                                |
| -10°C                           | [4]                   |                |              |                                                                                                                                                                               |                                |
| From -10°C to -15°C             |                       | Not possible   | Not possible | <ul style="list-style-type: none"> <li>• Water empty unit or with an appropriate glycol percentage</li> </ul>                                                                 | Not possible                   |
| From -15°C to -20°C             |                       |                |              | <ul style="list-style-type: none"> <li>• Water empty unit or with an appropriate glycol percentage</li> </ul>                                                                 |                                |
| From -20°C to -30°C             |                       |                |              | <ul style="list-style-type: none"> <li>• Water empty unit or with an appropriate glycol percentage</li> <li>• Suitable for pumps with inverter regulation on board</li> </ul> |                                |

1) production of chilled water: internal exchanger water = 12/7°C.

2) production of hot water: internal exchanger water = 30/35°C.

3) the water pumping unit must be fed and connected to the unit according to the manual.

4) Unit without water or containing water with an appropriate quantity of glycol.

At the unit start-up the water temperature or water with glycol must be inside the operating range indicated in the graphics on →Chapter 6.12 "Correction factors". To know the water freezing temperature on varying the glycol percentage refer to the specific tables on →Chapter [ExternalLink: Chapter\\_Correction factors](#).

[1] Part load unit and air speed equal to 1m/s

[2] Part load unit and air speed equal to 0.5 m/s

[3] Part load unit and outdoor air temperature at rest

[4] Full load unit and outdoor air temperature at rest



Air conditions which are at rest are defined as the absence of air flowing towards the unit.

Weak winds can induce air to flow through the exchanger and strong winds can cause a reduction in the operating range.

In the presence of predominant winds it is necessary to use suitable windbreak barriers.



With an outdoor air temperature on average lower than -10°C, the unit can remain stored for a maximum of one month.

#### 3.1.1 Electromagnetic compatibility (EMC)

**AWP16 – AWP59:** Residential, commercial and light-industrial environments and industrial environments.

**AWP65 – AWP89:** fulfils the emission and immunity requirements of the harmonised generic standards EN 61000-6-4:2007/A11:2007 and EN 61000-6-2:2005/AC:2005 for industrial environments. An industrial environment is defined as a site powered by a dedicated MV/LV transformer in compliance with the scope of the regulations applied.

This may also include other applications that are not explicitly mentioned in the standard, if the site or building has an independent power supply decoupled from the public LV grid by a dedicated MV/LV transformer.

## 3.2 Unit configuration

| Name          | Value class | Technology            | Capacity A-7/W35 | Variant |                      | Coil |                          |
|---------------|-------------|-----------------------|------------------|---------|----------------------|------|--------------------------|
| Compress (CS) | 3000        | Air Water Power (AWP) | 16-89 kW         |         | no pump              |      | normal coil              |
|               |             |                       |                  | P       | integrated pump      | C    | coil with acrylic lining |
|               |             |                       |                  | MB      | integrated buffer    |      |                          |
|               |             |                       |                  | S       | integrated DHW valve |      |                          |

Table 1 Overview and technical details

## 4 Overview variants and accessories

### 4.1 Built-in options

#### Inverter pump

Hydronic unit made of a centrifugal electric pump, adjusted by way of inverter, body and propeller made in AISI 304 steel. The electric pump is equipped with three-phase electric motor with IP55-protection and complete with thermoformed insulated casing. The water connection are 1" 1/2 Victaulic for the sizes AWP16 – AWP24, 2" Victaulic for the sizes AWP31 – AWP59 and 2 1/2" Victaulic for the sizes AWP65 – AWP89.

#### DHW 3-ways valve

The 3-way diverter valve, which deviates the water flow towards a heating storage tank for domestic water, is installed on the side of the unit.

If the temperature of the DHW is under the set-point, the unit controller will change to DHW production mode (priority compared to other operational modes can be set).

The unit controller closes a digital output driving the flow deviation valve from the storage system until it reaches the ACS setpoint set on the user interface. The water connections are 2" Victaulic.

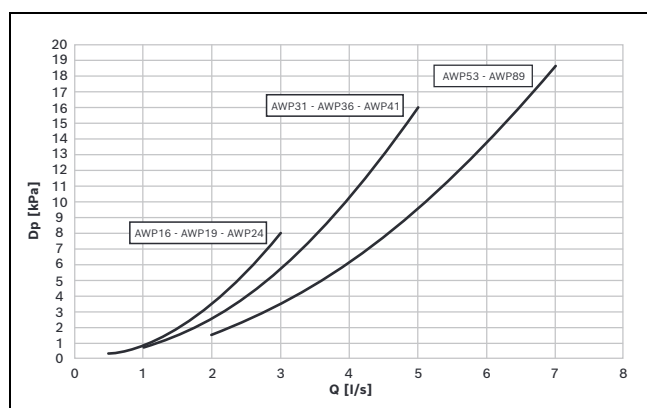


Fig. 1

#### Integrated buffer tank

Steel storage tank complete with double layer covering with closed-cell insulation, stainless steel anti-freeze immersion resistance, bleed valve, draw off cock, cast-iron shut-off butterfly valve with quick connections and activation lever with a mechanical calibration lock at the evaporator output, quick connections with insulated casing. The storage tank capacity is 145 liters for size

AWP16, AWP19 and AWP24. The storage tank capacity is 160 liters for size AWP31, AWP36 and AWP41. The storage tank capacity is 275 liters for sizes AWP53 and AWP59 and 500 liters for sizes AWP65 and AWP89.

#### Copper/aluminium condenser coil with acrylic lining

Condensing coils with copper pipes and aluminium fins with acrylic coating. Can be used in settings with moderately aggressive low saline concentrations and other chemical agents. The acrylic coating is used as the most economical and effective method, to protect the aluminium surfaces exposed to the corrosive influence of the humid and salty air, in regions with oceanic climates.

Pay attention to:

- Capacity variation: -2.7%
- Variation in compressor power input: +4.2%
- Operating range reduction: -2.1%

The coil is recommended if one of the following conditions applies:

- Industrial area with heavy pollution and high humidity;
- Coastal area with high salinity: distance from the sea <1km;
- Close proximity to roadways treated with de-icing salts: distance from roadways <10m / distance from swimming pools: <10m.

#### Condenser coil with energy guard DCC aluminium

This treatment provides excellent and guaranteed thermal exchange over time and protects finned coil exchangers from corrosion.

### 4.2 External accessory

#### Dirt trap

The dirt trap stops the exchanger from being clogged by any impurities that are in the hydraulic circuit. The mechanical steel mesh strainer must be placed on the water input line. It can be easily dismantled for periodical maintenance and cleaning. Filter fittings are Victaulic type by 1"1/2 for sizes AWP16 – AWP24, 2" for sizes AWP31 – AWP59 and 2 1/2" for AWP65 – AWP89.

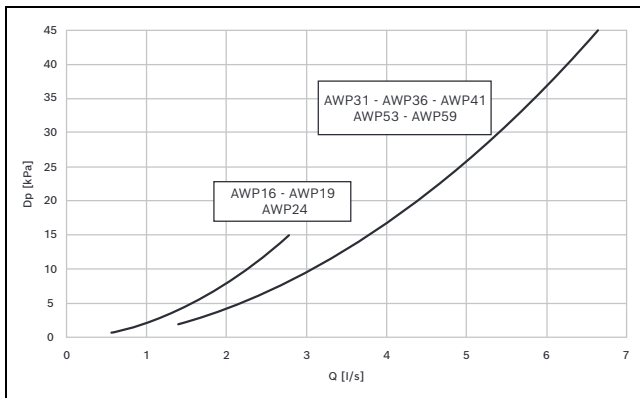


Fig. 2

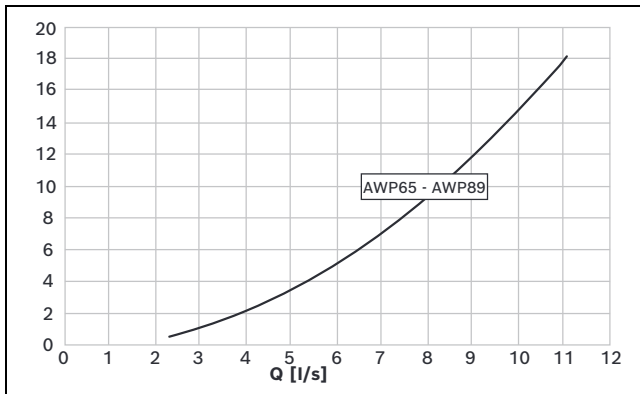


Fig. 3

Q Water flow rate [l/s]

DP Water side pressure drops [kPa]

#### Anti-vibration coupling

The rubber anti-vibration mounts are attached in special housing on the support frame and serve to smooth the vibrations produced by the unit thus reducing the noise transmitted to the support structure.

#### Anti-seismic spring coupling

The anti-seismic spring couplings must be fastened in special housings on the supporting metal struts. The containment structure is designed to ensure high resistance multi-directional forces acting on the surface of the unit in the presence of wind and / or telluric movements. The anti-vibration couplings have been tested according to ANSI/ASHRAE 171-2008 standard (Method of Testing Seismic Restraint devices for HVAC&R Equipment).

The performance levels and the test methodology have been validated and certified by Lloyd's Register.

#### Protection grills

The grilles protect the external coil from accidental contact with objects or persons.

Ideal for installation in places where persons can pass from, such as car parks, terraces, etc.

#### Heating cable for condensate drain pan

The drain tray made of steel AISI 316 allows the collection and discharge of the condensate. The two trays, located under the coils, are equipped with antifreeze electric heaters applied to the bottom, and a drain located on the rear part, on the water connection side. The electric heaters are thermostatically controlled and are activated according to the external air temperature ( $T_a < +5^\circ\text{C}$ ).

#### Additional board (APR board)

The available digital inputs allow the following functions from remote:

- Remote ON/OFF
- Heat/Cool (summer/winter commutation)
- DHW activation
- Heat/Cool/DHW set-point setting
- Double set-point management
- Silent mode, night silent mode or super silent mode activation
- EVU and SG function
- Demand limit
- Auxiliary heater management

## 5 General technical data

### 5.1 Internal exchanger pressure drop

For the sizes AWP16AWP19, and AWP24 the water connections are Victaulic type by 11/2".

For the sizes AWP31AWP36, AWP41AWP53AWP59 the water connections are 2" Victaulic.

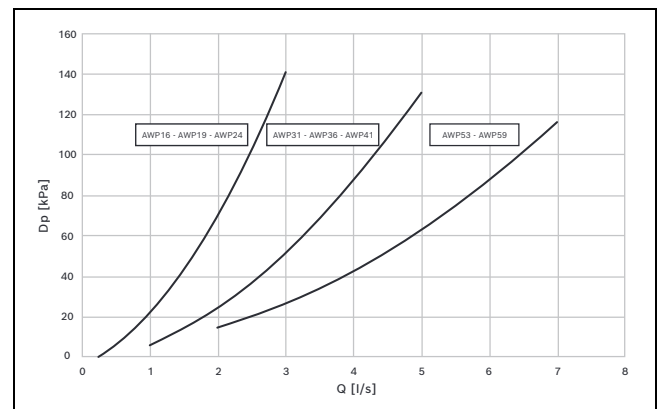


Fig. 4

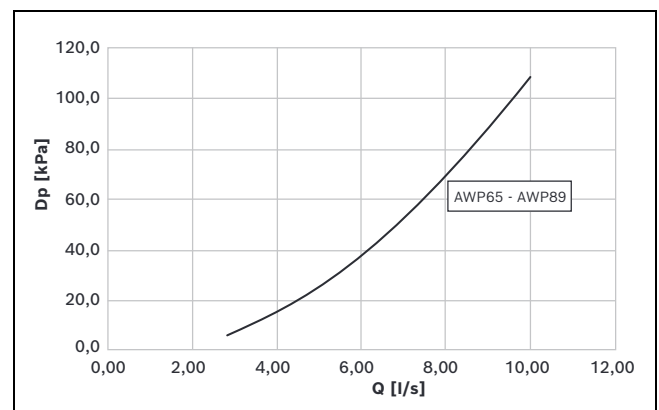


Fig. 5 Internal exchanger pressure drop curves

The pressure drops on the water side are calculated by considering an average water temperature at  $7^\circ\text{C}$ .

- Q - Water flow rate [l/s]
- DP - Pressure drops [kPa]

The water flow rate must be calculated with the following formula:

$$Q \text{ [l/s]} = \text{kWf} / (4,186 \times \text{DT})$$

- kWf - Cooling capacity in kW
- DT - Temperature difference between entering / leaving water



To the internal exchanger pressure drops must be added the pressure drops of the steel mesh mechanical filter that must be placed on the water input line. It is a device compulsory for the correct unit operation.

| Unit | Refrigerant side max. operating pressure | Water side max. operating pressure |
|------|------------------------------------------|------------------------------------|
| kPa  | 4500                                     | 1000 <sup>1)</sup>                 |

1) Limited to 600 kPa because of the safety valve.

Table 2 Internal plate heat exchanger

## 5.2 Unit with one inverter pump

Configuration with one centrifugal electric pump, with housing and impeller made with AISI 304. The electric pump is equipped with three- phase electric motor with IP55-protection and complete with thermoformed insulated casing.

During the installation phase it is possible to choose the most suitable head curve for system requirements by setting the inverter frequency.

For the sizes AWP16, AWP19, and AWP24 the water connections are Victaulic type by 1 1/2".

For the sizes AWP31AWP36and AWP41, AWP53water connections are Victaulic type by 2".

For the sizes AWP75, AWP89, the water connections are Victaulic type by 2 1/2".

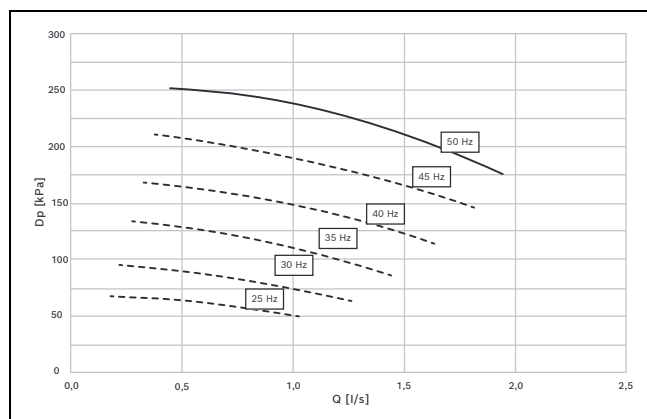


Fig. 6 Pump available pressure curves for sizes AWP16AWP19AWP24

- Q - Water flow rate [l/s]
- DP - Pressure drops [kPa]

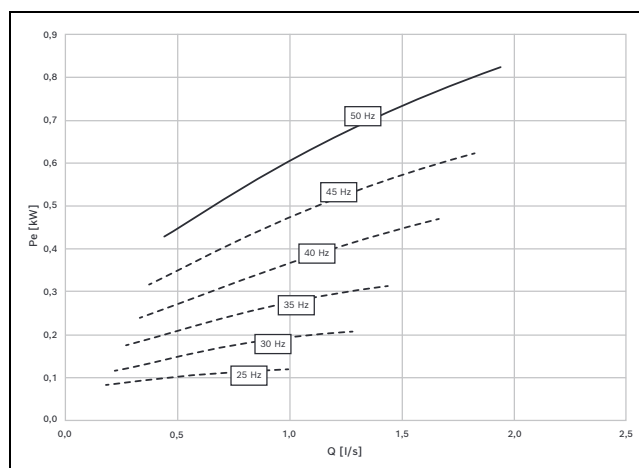


Fig. 7 Pump absorption curves for sizes AWP16 – AWP19AWP24

- Q - Water flow rate [l/s]
- Pe - Electric power consumption [kW]

| Size   |    | AWP16 | AWP19 | AWP24 |
|--------|----|-------|-------|-------|
| F.L.A. | A  | 2.2   | 2.2   | 2.2   |
| F.L.I. | kW | 1.1   | 1.1   | 1.1   |

Table 3

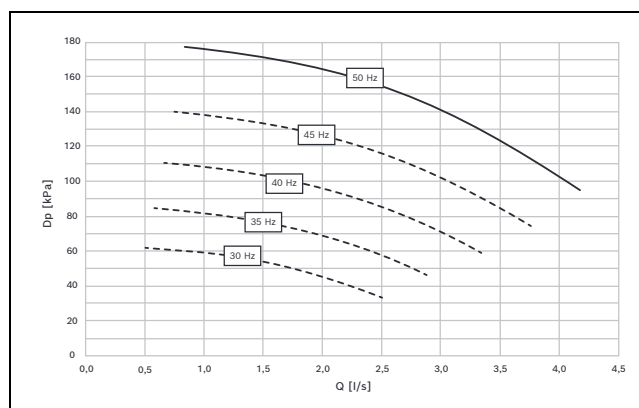


Fig. 8 Pump available pressure curves for sizes AWP31 – AWP36AWP41

- Q - Water flow rate [l/s]
- DP - Pressure drops [kPa]

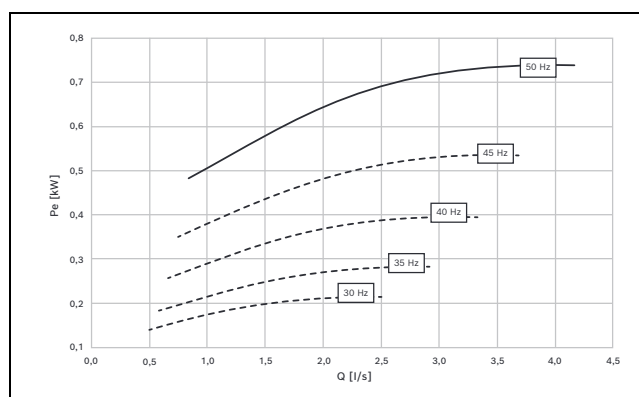


Fig. 9 Pump available pressure for sizes AWP31 – AWP36AWP41

- Q - Water flow rate [l/s]
- Pe - Electric power consumption [kW]

| Size   |    | AWP31 | AWP36 | AWP41 |
|--------|----|-------|-------|-------|
| F.L.A. | A  | 4.6   | 4.6   | 4.6   |
| F.L.I. | kW | 2.2   | 2.2   | 2.2   |

Table 4

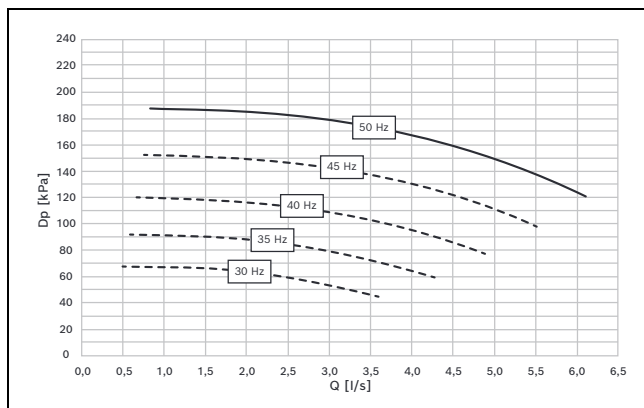


Fig. 10 Pump available pressure curves for sizes AWP53 – AWP59

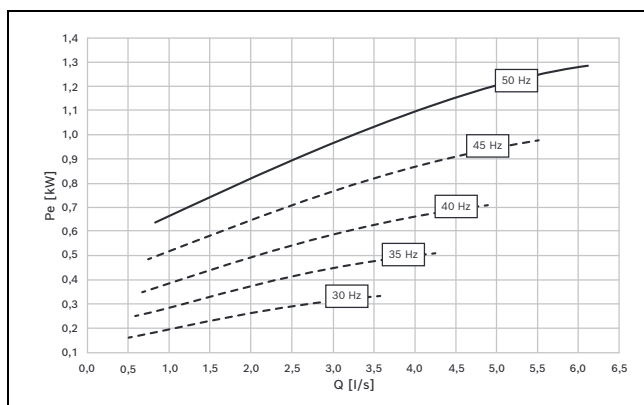


Fig. 11 Pump absorption curves for sizes AWP53 – AWP59

| Size   |    | AWP53 | AWP59 |
|--------|----|-------|-------|
| F.L.A. | A  | 4.6   | 4.6   |
| F.L.I. | kW | 2.2   | 1.1   |

Table 5



### CAUTION

To obtain the available pressure values, subtract the following from the head values represented in the diagrams:

- User side exchanger pressure drops
- Steel mesh filter on the water side (where applicable)

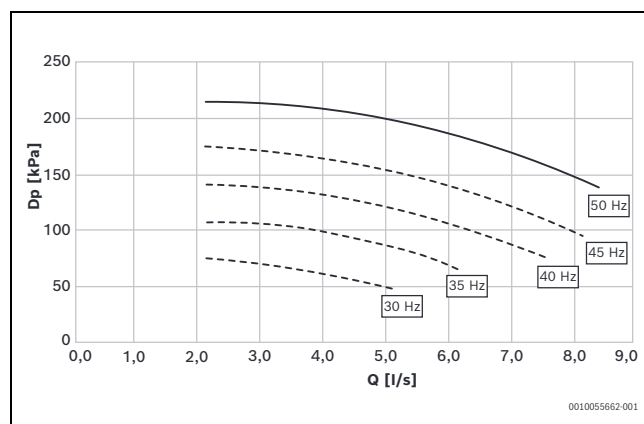


Fig. 12 Pressure curve for sizes AWP65 – AWP75 – AWP89

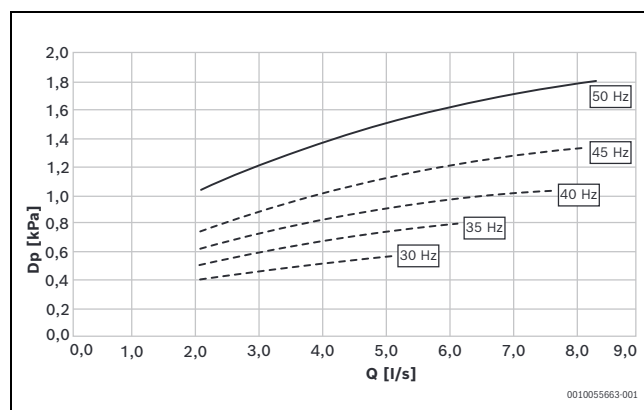


Fig. 13 Absorption curve for sizes AWP65 – AWP75 – AWP89

| Size   |    | AWP65 | AWP75 | AWP89 |
|--------|----|-------|-------|-------|
| F.L.A. | A  | 4.3   | 4.3   | 4.3   |
| F.L.I. | kW | 1.9   | 1.9   | 1.9   |

Table 6

## 6 Overview of technical data

### 6.1 Performance - standard mode

| SIZE                                                   |    |     | AWP16 | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59  | AWP65  | AWP75  | AWP89  |
|--------------------------------------------------------|----|-----|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| <b>Panel Heating</b>                                   |    |     |       |       |       |       |       |       |       |        |        |        |        |
| <b>Heating</b>                                         |    |     |       |       |       |       |       |       |       |        |        |        |        |
| Max. Heating capacity (EN 14511:2018)                  | 1  | kW  | 27.32 | 31.00 | 35.78 | 54.50 | 58.20 | 62.21 | 78.37 | 87.40  | 101.00 | 110.70 | 130.00 |
| COP (EN 14511:2018)                                    | 2  |     | 4.23  | 4.14  | 4.09  | 4.20  | 4.10  | 4.03  | 4.22  | 3.91   | 4.15   | 4.10   | 4.00   |
| Max. Heating capacity (EN 14511:2018)                  | 13 | kW  | 17.29 | 20.11 | 23.07 | 33.09 | 35.98 | 39.83 | 53.50 | 58.20  | 65.30  | 72.30  | 85.80  |
| COP A (EN 14511:2018)                                  | 2  |     | 2.85  | 2.79  | 2.71  | 2.87  | 2.86  | 2.73  | 2.65  | 2.55   | 2.73   | 2.70   | 2.65   |
| ErP Space Heating Energy Class - AVERAGE climate - W35 | 7  |     | A++   | A++   | A++   | A++   | A++   | A++   | A++   | A+     | –      | –      | –      |
| SCOP - AVERAGE climate - W35                           | 9  |     | 4.41  | 4.36  | 4.31  | 4.33  | 4.33  | 4.28  | 4.22  | 4.19   | 4.65   | 4.60   | 4.55   |
| ns,h - AVERAGE climate - W35                           | 10 | %   | 173   | 172   | 169   | 170   | 170   | 168   | 166   | 164    | 183    | 181    | 179    |
| SCOP - COLD climate - W35                              | 9  |     | 3.6   | 3.6   | 3.5   | 3.7   | 3.6   | 3.6   | 3.8   | 3.7    | 4.7    | 4.6    | 4.6    |
| <b>Cooling</b>                                         |    |     |       |       |       |       |       |       |       |        |        |        |        |
| Max. Cooling capacity (EN 14511:2018)                  | 4  | kW  | 33.20 | 37.10 | 41.90 | 63.70 | 69.90 | 79.60 | 95.00 | 103.10 | 126.00 | 138.00 | 160.00 |
| EER (EN 14511:2018)                                    | 5  |     | 3.88  | 3.65  | 3.32  | 3.91  | 3.64  | 3.19  | 4.02  | 3.61   | 3.80   | 3.65   | 3.40   |
| Water flow-rate                                        | 4  | l/s | 1.43  | 1.65  | 1.86  | 2.82  | 3.14  | 3.71  | 4.83  | 4.93   | 6.03   | 6.58   | 7.65   |
| User side exchanger pressure drops                     | 4  |     | 41.1  | 53.4  | 65.8  | 42.4  | 50.6  | 66.9  | 58.7  | 60.7   | 42.4   | 45.4   | 61.7   |
| <b>Fan Coils</b>                                       |    |     |       |       |       |       |       |       |       |        |        |        |        |
| <b>Heating</b>                                         |    |     |       |       |       |       |       |       |       |        |        |        |        |
| Max. Heating capacity (EN 14511:2018)                  | 3  | kW  | 25.32 | 28.98 | 33.00 | 52.55 | 56.42 | 60.42 | 73.95 | 86.64  | 98.20  | 106.70 | 127.90 |
| COP (EN 14511:2018)                                    | 2  |     | 3.28  | 3.20  | 3.14  | 3.47  | 3.37  | 3.26  | 3.52  | 3.18   | 3.37   | 3.34   | 3.32   |
| Max. Heating capacity (EN 14511:2018)                  | 14 | kW  | 16.84 | 17.60 | 22.31 | 32.09 | 34.71 | 37.52 | 50.57 | 54.63  | 60.10  | 65.40  | 77.70  |
| COP (EN 14511:2018)                                    | 2  |     | 2.36  | 2.10  | 2.06  | 2.34  | 2.31  | 2.32  | 2.09  | 1.94   | 2.06   | 2.05   | 2.00   |
| <b>Cooling</b>                                         |    |     |       |       |       |       |       |       |       |        |        |        |        |
| Max. Cooling capacity (EN 14511:2018)                  | 6  | kW  | 23.29 | 25.80 | 29.30 | 42.50 | 48.20 | 55.03 | 68.60 | 78.80  | 94.60  | 106.40 | 116.00 |
| EER (EN 14511:2018)                                    | 5  |     | 3.11  | 2.84  | 2.78  | 3.02  | 2.95  | 2.75  | 2.99  | 2.80   | 3.12   | 3.06   | 2.85   |
| SEE                                                    | 9  |     | 4.67  | 4.51  | 4.40  | 4.19  | 4.19  | 4.12  | 4.12  | 4.11   | 4.95   | 4.93   | 4.88   |
| ns,c                                                   | 11 | %   | 184   | 177   | 173   | 164   | 164   | 162   | 162   | 162    | 195    | 194    | 192    |
| Water flow-rate                                        | 6  | l/s | 1.11  | 1.23  | 1.40  | 2.03  | 2.30  | 2.63  | 3.49  | 3.76   | 4.52   | 5.08   | 5.54   |
| User side exchanger pressure drops                     | 6  | kPa | 26.3  | 31.6  | 39.7  | 24.5  | 30.2  | 37.6  | 33.8  | 38.5   | 21.0   | 26.8   | 29.2   |
| <b>Radiators</b>                                       |    |     |       |       |       |       |       |       |       |        |        |        |        |
| <b>Heating</b>                                         |    |     |       |       |       |       |       |       |       |        |        |        |        |

| SIZE                                                          |    |    | AWP16 | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59 | AWP65 | AWP75  | AWP89  |
|---------------------------------------------------------------|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| <b>Max. Heating capacity (EN 14511:2018)</b>                  | 12 | kW | 23.06 | 27.70 | 32.64 | 46.50 | 51.91 | 56.69 | 75.56 | 85.90 | 96.20 | 105.00 | 127.00 |
| <b>COP (EN 14511:2018)</b>                                    | 2  |    | 2.55  | 2.41  | 2.33  | 2.70  | 2.68  | 2.70  | 2.53  | 2.45  | 2.78  | 2.70   | 2.60   |
| <b>Max. Heating capacity (EN 14511:2018)</b>                  | 15 | kW | 16.6  | 17.3  | 15.1  | 28.8  | 31.0  | 33.4  | 48.5  | 51.0  | 59.0  | 64.0   | 76.0   |
| <b>COP (EN 14511:2018)</b>                                    | 2  |    | 1.97  | 1.75  | 1.87  | 1.77  | 1.78  | 1.73  | 1.59  | 1.45  | 1.72  | 1.70   | 1.65   |
| <b>ErP Space Heating Energy Class - AVERAGE climate - W55</b> |    |    | A++   | A++   | A+    | A++   | A++   | A+    | A++   | A+    | –     | –      | –      |
| <b>SCOP - MEDIUM climate - W55</b>                            | 9  |    | 3.24  | 3.22  | 3.18  | 3.24  | 3.19  | 3.16  | 3.20  | 3.16  | 3.42  | 3.38   | 3.36   |
| <b>ns,h - MEDIUM climate - W55</b>                            | 10 | %  | 127   | 126   | 124   | 126   | 125   | 124   | 125   | 123   | 134   | 132    | 131    |
| <b>SCOP - COLD climate - W55</b>                              | 9  |    | 2.7   | 2.7   | 2.7   | 2.8   | 2.8   | 2.7   | 2.8   | 2.8   | NA    | NA     | NA     |

*Table 7 The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions). Contains fluorinated greenhouse gases (GWP 675)*

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2018) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2018. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit.
3. Entering/leaving water temperature user side 40/45 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
4. Entering/leaving water temperature user side 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2018) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2018. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit
6. User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data referred to unit operation with inverter frequency optimized for this application
9. Data calculated according to the EN 14825:2016 Regulation
10. Seasonal energy efficiency in heating EN 14825:2018
11. Seasonal energy efficiency in cooling EN 14825:2018
12. Entering/leaving water temperature user side 50/55° C, Entering external exchanger air temperature 7°C (R.H. = 85%)
13. Entering/leaving water temperature user side 30/35° C, Entering external exchanger air temperature -7°C
14. Entering/leaving water temperature user side 40/45° C, Entering external exchanger air temperature -7°C
15. Entering/leaving water temperature user side 50/55° C, Entering external exchanger air temperature -7°C

## 6.2 Performance - super silent mode

| Size                                                   |     |     | AWP16 | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59 | AWP65 | AWP75 | AWP89 |
|--------------------------------------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Radiant panels</b>                                  |     |     |       |       |       |       |       |       |       |       |       |       |       |
| <b>Heating</b>                                         |     |     |       |       |       |       |       |       |       |       |       |       |       |
| Heating capacity (EN 14511:2018)                       | 1.8 | kW  | 21.5  | 24.4  | 26.9  | 44.8  | 48.8  | 53.4  | 65.5  | 72.7  | 92.2  | 98.4  | 105.2 |
| COP (EN 14511:2018)                                    | 2   |     | 4.4   | 4.3   | 4.4   | 4.5   | 4.3   | 4.3   | 4.2   | 4.1   | 4.2   | 4.2   | 4.0   |
| Heating capacity (EN 14511:2018)                       | 13  | kW  | 13.4  | 15.7  | 17.1  | 26.7  | 29.4  | 33.8  | 45.3  | 49.4  | 59.8  | 62.6  | 66.6  |
| COP (EN 14511:2018)                                    |     |     | 2.9   | 2.9   | 2.9   | 2.9   | 2.9   | 2.9   | 2.7   | 2.7   | 2.8   | 2.7   | 2.6   |
| ErP Space Heating Energy Class - AVERAGE climate - W35 | 7   | –   | A++   | A++   | A++   | A++   | A++   | A++   | A++   | A++   | –     | –     | –     |
| SCOP - AVERAGE climate - W35                           | 9   | –   | 4.4   | 4.4   | 4.4   | 4.3   | 4.3   | 4.3   | 4.2   | 4.2   | 4.7   | 4.6   | 4.6   |
| ns,h - AVERAGE climate - W35                           | 10  | %   | 173.4 | 172.2 | 171.0 | 170.6 | 170.2 | 169.0 | 166.6 | 165.0 | 183.0 | 181.0 | 179.0 |
| <b>Cooling</b>                                         |     |     |       |       |       |       |       |       |       |       |       |       |       |
| Cooling capacity (EN 14511:2018)                       | 4.8 | kW  | 24.7  | 25.8  | 31.3  | 51.4  | 56.6  | 64.7  | 78.6  | 82.2  | 121.0 | 126.0 | 138.8 |
| EER (EN 14511:2018)                                    | 5   | –   | 4.2   | 4.3   | 4.0   | 4.1   | 3.6   | 3.5   | 4.1   | 3.7   | 3.8   | 3.7   | 3.5   |
| Water flow-rate                                        | 4   | –   | 1.2   | 1.4   | 1.5   | 2.5   | 2.7   | 3.1   | 4.0   | 3.9   | 5.8   | 6.0   | 6.6   |
| User side exchanger pressure drops                     | 4   | –   | 29.2  | 37.8  | 44.6  | 33.6  | 39.5  | 49.3  | 42.6  | 41.4  | 39.0  | 42.0  | 46.3  |
| <b>Terminal units</b>                                  |     |     |       |       |       |       |       |       |       |       |       |       |       |
| <b>Heating</b>                                         |     |     |       |       |       |       |       |       |       |       |       |       |       |
| Heating capacity (EN 14511:2018)                       | 3   | kW  | 19.2  | 21.7  | 24.9  | 41.9  | 46.2  | 50.3  | 60.8  | 69.2  | 90.2  | 95.2  | 104.0 |
| COP (EN 14511:2018)                                    | 2   | –   | 3.2   | 3.2   | 3.3   | 3.5   | 3.5   | 3.6   | 3.6   | 3.5   | 3.4   | 3.4   | 3.3   |
| Heating capacity (EN 14511:2018)                       | 14  | kW  | 12.6  | 13.0  | 16.6  | 24.8  | 27.7  | 30.4  | 41.1  | 44.5  | 55.3  | 59.1  | 62.6  |
| COP (EN 14511:2018)                                    |     |     | 2.4   | 2.1   | 2.1   | 2.4   | 2.4   | 2.5   | 2.3   | 2.2   | 2.1   | 2.1   | 2.0   |
| <b>Cooling</b>                                         |     |     |       |       |       |       |       |       |       |       |       |       |       |
| Cooling capacity (EN 14511:2018)                       | 6   | kW  | 19.8  | 21.9  | 24.3  | 38.1  | 42.8  | 47.2  | 57.9  | 65.1  | 90.0  | 96.5  | 104.0 |
| EER (EN 14511:2018)                                    | 5   | –   | 3.18  | 3.22  | 3.14  | 3.10  | 2.98  | 2.99  | 3.10  | 2.96  | 3.1   | 3.1   | 2.8   |
| SEER                                                   | 9   | –   | 4.7   | 4.55  | 4.5   | 4.21  | 4.21  | 4.15  | 4.18  | 4.13  | 4.8   | 4.8   | 4.8   |
| ns,c                                                   | 11  | %   | 185.0 | 179.0 | 177.0 | 165.4 | 165.4 | 163.0 | 164.2 | 162.2 | 191.0 | 190.0 | 187.4 |
| Water flow-rate                                        | 6   | l/s | 0.9   | 1.0   | 1.2   | 1.8   | 2.0   | 2.3   | 2.9   | 3.1   | 4.3   | 4.6   | 5.0   |
| User side exchanger pressure drops                     | 6   | kPa | 19.7  | 23.6  | 28.4  | 20.4  | 24.7  | 29.1  | 25.4  | 27.8  | 22.5  | 25.6  | 27.6  |
| <b>Radiators</b>                                       |     |     |       |       |       |       |       |       |       |       |       |       |       |
| <b>Heating</b>                                         |     |     |       |       |       |       |       |       |       |       |       |       |       |
| Heating capacity (EN 14511:2018)                       | 12  | kW  | 17.7  | 19.7  | 21.9  | 37.1  | 41.5  | 45.9  | 60.0  | 68.6  | 88.9  | 94.0  | 103.0 |
| COP (EN 14511:2018)                                    | 2   | –   | 2.6   | 2.5   | 2.6   | 2.8   | 2.7   | 2.7   | 2.7   | 2.7   | 2.8   | 2.7   | 2.7   |
| Heating capacity (EN 14511:2018)                       | 15  | kW  | 12.1  | 11.8  | 10.3  | 21.2  | 23.2  | 27.3  | 38.5  | 40.7  | 51.9  | 57.3  | 61.0  |
| COP (EN 14511:2018)                                    |     |     | 2.1   | 1.9   | 2.1   | 1.9   | 1.8   | 1.8   | 1.7   | 1.6   | 1.6   | 1.5   | 1.5   |
| ErP Space Heating Energy Class - AVERAGE climate - W55 |     | –   | A++   | A++   | A++   | A++   | A++   | A++   | A++   | A++   | –     | –     | –     |

| Size                               |    |   | AWP16 | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59 | AWP65 | AWP75 | AWP89 |
|------------------------------------|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>SCOP - MEDIUM climate - W55</b> | 9  | – | 3.2   | 3.2   | 3.2   | 3.2   | 3.2   | 3.3   | 3.2   | 3.2   | 3.4   | 3.4   | 3.4   |
| <b>ns,h - MEDIUM climate - W55</b> | 10 | % | 126.0 | 126.0 | 126.0 | 127.0 | 127.0 | 127.0 | 125.0 | 125.0 | 133.0 | 132.0 | 131.0 |

**Table 8** The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤ 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions). Contains fluorinated greenhouse gases (GWP 675)

1. Entering/leaving water temperature user side 30/35 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
2. COP (EN 14511:2018) Heating performance coefficient. Ratio between delivered heating capacity and power input in compliance with EN 14511:2018. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit.
3. Entering/leaving water temperature user side 40/45 °C, Entering external exchanger air temperature 7 °C (R.H. = 85%)
4. Entering/leaving water temperature user side 23/18 °C, Entering external exchanger air temperature 35 °C
5. EER (EN 14511:2018) cooling performance coefficient. Ratio between delivered cooling capacity and power input in compliance with EN 14511:2018. The overall power absorbed is calculated by adding the power absorbed by the compressor + the power absorbed by the fan - the percentage value of the fan to overcome external pressure drop + the power absorbed by the pump - the percentage value of the pump to overcome pressure drop outside + the power absorbed by the auxiliary electrical circuit
6. User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C
7. Seasonal Space Heating Energy Efficiency Class according to Commission delegated Regulation (EU) No 811/2013. W = Water outlet temperature (°C)
8. Data referred to unit operation with inverter frequency optimized for this application
9. Data calculated according to the EN 14825:2018 Regulation
10. Seasonal energy efficiency in heating EN 14825:2018
11. Seasonal energy efficiency in cooling EN 14825:2018
12. Entering/leaving water temperature user side 50/55° C, Entering external exchanger air temperature 7°C (R.H. = 85%)
13. Entering/leaving water temperature user side 30/35° C, Entering external exchanger air temperature -7°C
14. Entering/leaving water temperature user side 40/45° C, Entering external exchanger air temperature -7°C
15. Entering/leaving water temperature user side 50/55° C, Entering external exchanger air temperature -7°C

### 6.3 Construction

| SIZE                        |    |    | AWP16                                                               | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59           | AWP65 | AWP75 | AWP89 |
|-----------------------------|----|----|---------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|
| Compressor                  |    |    |                                                                     |       |       |       |       |       |       |                 |       |       |       |
| Type of compressors         |    |    | Rotary inverter                                                     |       |       |       |       |       |       | Scroll Inverter |       |       |       |
| Refrigerant                 |    |    | R32                                                                 |       |       |       |       |       |       |                 |       |       |       |
| No. of compressors          |    | Nr | 1                                                                   |       |       | 2     |       |       |       |                 |       |       |       |
| Oil charge                  |    | l  | 2.3                                                                 |       |       | 4.6   |       |       | 6     |                 | 6.6   |       |       |
| Refrigerant charge          |    | kg | 7.9                                                                 |       |       | 14    |       |       | 17.5  |                 | 26.5  |       |       |
| No. of refrigerant circuits |    | Nr | 1                                                                   |       |       |       |       |       |       |                 |       |       |       |
| User side exchanger         |    |    |                                                                     |       |       |       |       |       |       |                 |       |       |       |
| Type of internal exchanger  | 1) |    | Plate Heat Exchanger (PHE)                                          |       |       |       |       |       |       |                 |       |       |       |
| No. of internal exchanger   |    | Nr | 1                                                                   |       |       |       |       |       |       |                 |       |       |       |
| Water content               |    | l  | 2.4                                                                 |       |       | 5.2   |       |       | 7.8   |                 | 11.1  |       |       |
| External exchanger          |    |    |                                                                     |       |       |       |       |       |       |                 |       |       |       |
| Type of external exchanger  | 2) |    | Copper / aluminium condenser coil with hydrophilic treatment (CCHY) |       |       |       |       |       |       |                 |       |       |       |
| No. of coils                |    | Nr | 2                                                                   |       |       |       |       |       |       |                 |       |       |       |

| SIZE                                                                                                |  |                   | AWP16          | AWP19          | AWP24          | AWP31        | AWP36        | AWP41        | AWP53        | AWP59        | AWP65          | AWP75          | AWP89          |  |
|-----------------------------------------------------------------------------------------------------|--|-------------------|----------------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|--|
| External Section Fans                                                                               |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Type of fans                                                                                        |  |                   | Axial          |                |                |              |              |              |              |              |                |                |                |  |
| No. of fans                                                                                         |  | Nr                | 1              |                |                | 2            |              |              | 3            |              |                |                |                |  |
| Type of motor                                                                                       |  |                   | Brushless DC   |                |                |              |              |              |              |              |                |                |                |  |
| Standard airflow - Standard mode                                                                    |  | m <sup>3</sup> /h | 11520          | 13500          | 13500          | 23040        | 27000        | 27000        | 34560        | 40500        | 65700          | 65700          | 65700          |  |
| Standard airflow - Super silent mode                                                                |  | m <sup>3</sup> /h | 5400           | 8280           | 8280           | 10800        | 16560        | 16560        | 24840        | 24840        | 44000          | 44000          | 44000          |  |
| Installed unit power                                                                                |  | kW                | 0.9            |                |                |              |              |              |              |              | 1.5            |                |                |  |
| Heating system                                                                                      |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Connection type                                                                                     |  |                   | Victaulic 1" ½ | Victaulic 1" ½ | Victaulic 1" ½ | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2" ½ | Victaulic 2" ½ | Victaulic 2" ½ |  |
| Maximum water side pressure                                                                         |  | kPa               | 600            |                |                |              |              |              |              |              |                |                |                |  |
| Minimum system volume for defrost                                                                   |  | l                 | 200            |                |                | 400          |              |              | 650          |              | 850            |                |                |  |
| Minimum circuit water volume in cooling                                                             |  | l                 | 80             |                |                | 150          |              |              | 200          |              | 300            |                |                |  |
| Total internal water volume                                                                         |  | l                 | 5.4            |                |                | 10.3         |              |              | 15.6         |              | 28.8           |                |                |  |
| Power supply                                                                                        |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Standard power supply                                                                               |  |                   | 400 V /50 Hz   |                |                |              |              |              |              |              |                |                |                |  |
| Electrical data                                                                                     |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Performance factor cos φ with maximum output                                                        |  | –                 | 0.94           |                |                |              |              |              | 0.93         |              |                |                |                |  |
| Current absorbed at the maximum permitted conditions                                                |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Total                                                                                               |  | A                 | 18.5           | 19             | 20             | 37.5         | 38.5         | 40.5         | 57           | 59           | 62             | 71             | 87.5           |  |
| Absorbed power at full load (at maximum permitted conditions)                                       |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Total                                                                                               |  | kW                | 12.8           | 13.2           | 13.9           | 26.0         | 26.7         | 28.1         | 39.5         | 40.9         | 39.0           | 46.0           | 56.0           |  |
| Current absorbed at the maximum permitted conditions with integrated inverter heating pump          |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Total                                                                                               |  | A                 | 20.7           | 21.2           | 22.2           | 39.7         | 40.7         | 42.7         | 60.0         | 62.0         | 66.3           | 75.3           | 91.8           |  |
| Absorbed power at full load (at maximum permitted conditions) with integrated inverter heating pump |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Total                                                                                               |  | kW                | 14.3           | 14.7           | 15.4           | 27.5         | 28.2         | 29.6         | 41.6         | 43.0         | 40.9           | 47.9           | 57.9           |  |
| Recommended automatic circuit breaker/fuse 3                                                        |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Total                                                                                               |  | A                 | 25             |                |                | 50           |              |              | 63           |              | 80             |                | 100            |  |
| Maximum starting current of the unit                                                                |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Value                                                                                               |  | A                 | 10             |                |                | 20.25        |              |              | 28.5         | 29.5         | 43.8           |                |                |  |
| Maximum starting current of the unit with integrated inverter heating pump                          |  |                   |                |                |                |              |              |              |              |              |                |                |                |  |
| Value                                                                                               |  | A                 | 10.4           | 10.6           | 11.1           | 19.9         | 20.4         | 21.4         | 30.0         | 31.0         | 48.1           |                |                |  |

Table 9

#### 6.4 General technical data (water flow rate)

| Descripti on Heating system | Unit | AWP16          | AWP19          | AWP24          | AWP31        | AWP36        | AWP41        | AWP53        | AWP59        | AWP65         | AWP75         | AWP89         |
|-----------------------------|------|----------------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|
| Connecti on type            | –    | Victaulic 1" ½ | Victaulic 1" ½ | Victaulic 1" ½ | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2" | Victaulic 2"½ | Victaulic 2"½ | Victaulic 2"½ |
| Minimum flow                | l/s  | 0.9            | 0.9            | 0.9            | 1.8          | 1.8          | 1.8          | 2.9          | 2.9          | 2.4           | 2.4           | 2.4           |

| Descripti<br>on<br>Heating<br>system          | Unit | AWP16 | AWP19 | AWP24 | AWP31 | AWP36 | AWP41 | AWP53 | AWP59 | AWP65 | AWP75 | AWP89 |
|-----------------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum<br>flow                               | l/s  | 2.6   | 2.6   | 2.6   | 5.0   | 5.0   | 5.0   | 6.4   | 6.4   | 10    | 10    | 10    |
| Minimum<br>system<br>volume<br>for<br>defrost | l    | 200   | 200   | 200   | 400   | 400   | 400   | 650   | 650   | 850   | 850   | 850   |

Table 10

## 6.5 Minimum system water volume reduction due to second heat source (or cascade system)

|                                                        | Unit | Chassis 1     | Chassis 2     | Chassis 3     | Chassis 4     |
|--------------------------------------------------------|------|---------------|---------------|---------------|---------------|
| <b>Size</b>                                            | kW   | AWP16 – AWP24 | AWP31 – AWP41 | AWP53 – AWP59 | AWP65 – AWP89 |
| <b>Min. water volume for defrost</b>                   | l    | 200           | 400           | 650           | 850           |
| <b>Capacity of the second heat source</b>              | kW   | <b>10</b>     | <b>10</b>     | <b>10</b>     | <b>10</b>     |
| Reduced minimum water volume due to second heat source | l    | 180           | 360           | 590           | 740           |
| <b>Capacity of the second heat source</b>              | kW   | <b>20</b>     | <b>20</b>     | <b>20</b>     | <b>20</b>     |
| Reduced minimum water volume due to second heat source | l    | 130           | 300           | 550           | 680           |
| <b>Capacity of the second heat source</b>              | kW   | <b>30</b>     | <b>30</b>     | <b>30</b>     | <b>30</b>     |
| Reduced minimum water volume due to second heat source | l    | 120           | 250           | 490           | 610           |
| <b>Capacity of the second heat source</b>              | kW   | <b>50</b>     | <b>50</b>     | <b>50</b>     | <b>50</b>     |
| Reduced minimum water volume due to second heat source | l    | 120           | 230           | 360           | 470           |
| <b>Capacity of the second heat source</b>              | kW   | <b>100</b>    | <b>100</b>    | <b>100</b>    | <b>100</b>    |
| Reduced minimum water volume due to second heat source | l    | 120           | 230           | 300           | 300           |
| <b>Capacity of the second heat source</b>              | kW   | <b>150</b>    | <b>150</b>    | <b>150</b>    | <b>150</b>    |
| Reduced minimum water volume due to second heat source | l    | 120           | 230           | 300           | 300           |
| <b>Capacity of the second heat source</b>              | kW   | <b>200</b>    | <b>200</b>    | <b>200</b>    | <b>200</b>    |
| Reduced minimum water volume due to second heat source | l    | 120           | 230           | 300           | 300           |
| <b>Capacity of the second heat source</b>              | kW   | <b>300</b>    | <b>300</b>    | <b>300</b>    | <b>300</b>    |
| Reduced minimum water volume due to second heat source | l    | 120           | 230           | 300           | 300           |

Table 11

**For cascade installation:** minimum water amount for the bigger unit + 0.5\* (minimum water amount for the other units)

Example: Chassis 4, N = 3, no additional heat source. Minimum volume = 850 + 2 x 0.5 x 850 = 1700l

**For cascade installation in combination with a second heat source:** minimum water amount for the

biggest unit reduced due to the capacity of the second heat source + 0.5 \* (minimum water amount of the other units)

Example: Chassis 4, N = 3, additional heat source = 100 kW. Minimum volume = 300 + 2 x 0.5 x 850 = 1150l

N Number of HPs in the system

## 6.6 Heat losses for internal buffer

|                 | ODU 1   |         |         | ODU 2   |       |        | ODU 3   |         | ODU 4   |         |         |
|-----------------|---------|---------|---------|---------|-------|--------|---------|---------|---------|---------|---------|
|                 | AWP16 P | AWP19 P | AWP24 P | AWP31 P | AWP36 | AWP41P | AWP53 P | AWP59 P | AWP65 P | AWP75 P | AWP89 P |
| Heat losses (W) | ≈200    |         |         | ≈220    |       |        | ≈330    |         | ≈ 200   |         |         |

## 6.7 Sound power levels

| Size | Sound power level |     |     |     |      |      |      |      | Pressure level | Sound power |
|------|-------------------|-----|-----|-----|------|------|------|------|----------------|-------------|
|      | Octave band [Hz]  |     |     |     |      |      |      |      |                |             |
|      | 63                | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | dB [A]         | dB [A]      |

### Normal mode

|       |      |      |      |      |      |      |      |      |    |    |
|-------|------|------|------|------|------|------|------|------|----|----|
| AWP16 | 63.5 | 63.9 | 64.2 | 70.9 | 72.5 | 66.9 | 61.6 | 51.9 | 57 | 75 |
| AWP19 | 61.5 | 67.4 | 69.3 | 71.7 | 75.8 | 70.2 | 62.9 | 54.1 | 60 | 78 |
| AWP24 | 57.1 | 63.9 | 68.6 | 72.4 | 75.9 | 69.7 | 62.5 | 52.0 | 60 | 78 |
| AWP31 | 51.8 | 62.9 | 65.0 | 71.6 | 72.7 | 65.8 | 58.6 | 49.6 | 57 | 75 |
| AWP36 | 51.8 | 62.9 | 65.0 | 71.6 | 72.7 | 65.8 | 58.6 | 49.6 | 57 | 75 |
| AWP41 | 77.7 | 76.6 | 70.0 | 73.8 | 78.3 | 71.0 | 63.8 | 53.8 | 61 | 80 |
| AWP53 | 59.2 | 71.0 | 70.9 | 74.4 | 73.8 | 69.7 | 69.0 | 60.7 | 59 | 78 |
| AWP59 | 61.4 | 69.1 | 72.5 | 77.4 | 80.5 | 75.2 | 69.8 | 62.4 | 64 | 83 |
| AWP65 | 81.0 | 86.0 | 83.0 | 77.0 | 76.0 | 74.0 | 74.0 | 69.0 | 64 | 82 |
| AWP75 | 80.9 | 86.2 | 83.0 | 77.5 | 76.1 | 73.9 | 74.4 | 69.2 | 64 | 83 |
| AWP89 | 81.9 | 87.2 | 84.0 | 78.5 | 77.1 | 74.9 | 75.4 | 70.2 | 65 | 84 |

### Silent mode

|       |      |      |      |      |      |      |      |      |    |    |
|-------|------|------|------|------|------|------|------|------|----|----|
| AWP16 | 60.5 | 60.9 | 61.2 | 67.9 | 69.5 | 63.9 | 58.6 | 48.9 | 56 | 72 |
| AWP19 | 60.5 | 63.7 | 68.3 | 70.7 | 74.8 | 69.2 | 61.9 | 53.1 | 61 | 77 |
| AWP24 | 56.1 | 62.9 | 67.6 | 71.4 | 74.9 | 68.7 | 61.5 | 51.0 | 61 | 77 |
| AWP31 | 50.8 | 61.9 | 64.0 | 70.6 | 71.7 | 64.8 | 57.6 | 48.6 | 57 | 74 |
| AWP36 | 50.8 | 61.9 | 64.0 | 70.6 | 71.7 | 64.8 | 57.6 | 48.6 | 57 | 74 |
| AWP41 | 76.7 | 75.6 | 69.0 | 72.8 | 77.3 | 70.0 | 62.8 | 52.8 | 62 | 79 |
| AWP53 | 58.2 | 70.0 | 69.9 | 73.4 | 72.8 | 68.7 | 68.0 | 59.7 | 59 | 77 |
| AWP59 | 58.4 | 66.1 | 69.5 | 74.4 | 77.5 | 72.2 | 66.8 | 59.4 | 62 | 80 |
| AWP65 | 74.0 | 74.0 | 70.0 | 71.0 | 77.0 | 71.0 | 68.0 | 61.0 | 61 | 80 |
| AWP75 | 72.0 | 71.0 | 72.0 | 76.0 | 74.0 | 73.0 | 68.0 | 62.0 | 62 | 80 |
| AWP89 | 74.0 | 72.0 | 74.0 | 74.0 | 76.0 | 74.0 | 70.0 | 65.0 | 63 | 81 |

### Super silent mode

|       |      |      |      |      |      |      |      |      |    |    |
|-------|------|------|------|------|------|------|------|------|----|----|
| AWP16 | 46.9 | 60.9 | 60.4 | 65.9 | 66.5 | 62.0 | 57.0 | 48.3 | 53 | 70 |
| AWP19 | 63.5 | 63.9 | 64.2 | 70.9 | 72.5 | 66.9 | 61.6 | 51.9 | 59 | 75 |
| AWP24 | 63.5 | 63.9 | 64.2 | 70.9 | 72.5 | 66.9 | 61.6 | 51.9 | 59 | 75 |
| AWP31 | 49.7 | 61.7 | 67.5 | 66.8 | 68.8 | 61.9 | 57.6 | 48.1 | 54 | 71 |
| AWP36 | 49.7 | 61.7 | 67.5 | 66.8 | 68.8 | 61.9 | 57.6 | 48.1 | 54 | 71 |
| AWP41 | 51.8 | 62.9 | 65.0 | 71.6 | 72.7 | 65.8 | 58.6 | 49.6 | 58 | 75 |
| AWP53 | 56.6 | 69.1 | 69.0 | 71.9 | 69.3 | 67.5 | 67.6 | 58.9 | 58 | 75 |
| AWP59 | 59.2 | 71.0 | 70.9 | 74.4 | 73.8 | 69.7 | 69.0 | 60.7 | 60 | 78 |
| AWP65 | 65.0 | 70.0 | 69.0 | 75.0 | 72.0 | 71.0 | 67.0 | 67.0 | 59 | 77 |
| AWP75 | 66.0 | 71.0 | 69.0 | 76.0 | 73.0 | 67.0 | 72.0 | 62.0 | 60 | 78 |
| AWP89 | 58.0 | 67.0 | 70.0 | 76.0 | 74.0 | 73.0 | 67.0 | 61   | 61 | 79 |

## Night mode

|       |      |      |      |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|------|------|------|
| AWP16 | 48.7 | 56.6 | 57.1 | 65.5 | 64.8 | 59.4 | 54.9 | 48.5 | 51.9 | 66.1 |
| AWP31 | 46.3 | 53.7 | 61.6 | 64.1 | 65.4 | 57.5 | 50.5 | 41.7 | 50.7 | 67.4 |
| AWP53 | 54.9 | 68.4 | 66.6 | 68.9 | 67.5 | 62.0 | 58.5 | 50.7 | 53.6 | 71.2 |
| AWP65 | 55.0 | 60.0 | 72.0 | 71.0 | 68.0 | 65.0 | 61.0 | 60.0 | 56   | 74   |
| AWP75 | 56.0 | 63.0 | 71.0 | 73.0 | 68.0 | 66.0 | 61.0 | 58.0 | 56   | 75   |
| AWP89 | 59.0 | 73.0 | 67.0 | 73.0 | 68.0 | 67.0 | 64.0 | 60.0 | 57   | 75   |

Table 12

**i** Sound levels refer to units at nominal operating conditions.

**i** The sound pressure level refers to a distance of 1m from the external surface of the unit operating in open field.

**i** Sound power levels determined using the intensimetric method (UNI EN ISO 9614-2)

**i** Data referred to the following heating conditions:  
- Internal exchanger water = 30/35 °C  
- External air temperatures = 7/6 °C

**i** Data referred to the following cooling conditions:  
- Internal exchanger water = 12/7 °C  
- External air temperatures = 35 °C

## 6.8 Capacity reduction from standard mode in heating and cooling

|                                                     | AWP16       |              |                    |            |     | AWP19       |              |                    |            |     | AWP24       |              |                    |            |     |
|-----------------------------------------------------|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|
|                                                     | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP |
| Noise power dB [A]                                  | 75          | 72           | 70                 | 68         | 68  | 78          | 77           | 75                 | 68         | 68  | 78          | 77           | 75                 | 68         | 68  |
| Capacity reduction from standard mode <sup>1)</sup> |             | ≈8%          | ≈16.8%             | ≈52%       |     |             | ≈6%          | ≈16.2%             | ≈60%       |     |             | ≈10%         | ≈20.9%             | ≈66%       |     |

|                                                     | AWP31       |              |                    |            |     | AWP36       |              |                    |            |     | AWP41       |              |                    |            |     |
|-----------------------------------------------------|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|
|                                                     | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP |
| Noise power dB [A]                                  | 75          | 74           | 71                 | 68         | 68  | 75          | 74           | 71                 | 68         | 68  | 80          | 79           | 75                 | 68         | 68  |
| Capacity reduction from standard mode <sup>1)</sup> |             | ≈10%         | ≈18%               | ≈50%       |     |             | ≈10%         | ≈17.3%             | ≈55%       |     |             | ≈6%          | ≈17.9%             | ≈59%       |     |

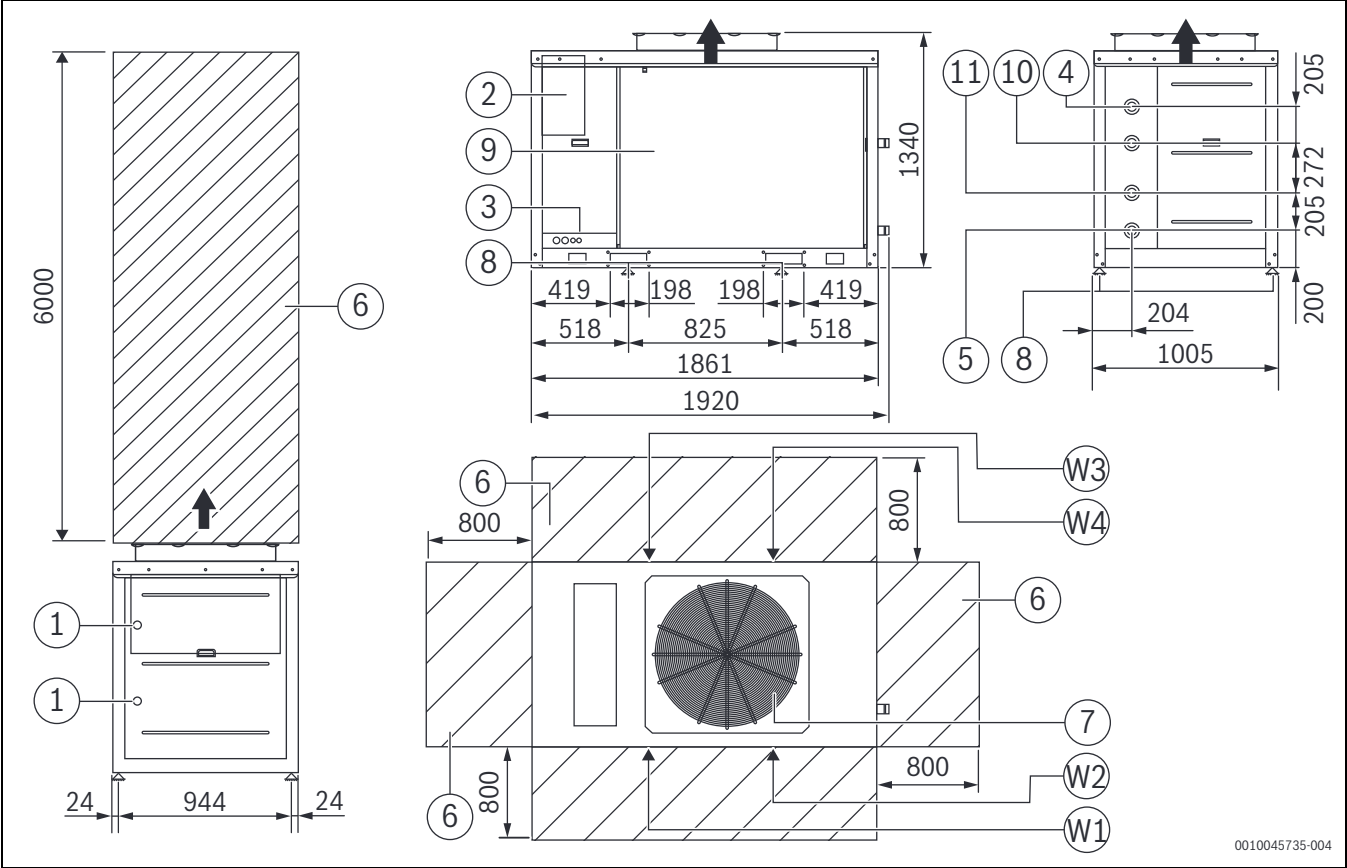
|                                                     | AWP53       |              |                    |            |     | AWP59       |              |                    |            |     | AWP65       |              |                    |            |     |
|-----------------------------------------------------|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|
|                                                     | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP |
| Noise power dB [A]                                  | 78          | 77           | 75                 | 71         | 71  | 83          | 80           | 78                 | 71         | 71  | 82          | 80           | 77                 | 74         | –   |
| Capacity reduction from standard mode <sup>1)</sup> |             | ≈6%          | ≈15%               | ≈51%       |     |             | ≈6%          | ≈22.5%             | ≈58%       |     |             | ≈3%          | ≈7%                | ≈16%       |     |

|                                                     | AWP75       |              |                    |            |     | AWP89       |              |                    |            |     |
|-----------------------------------------------------|-------------|--------------|--------------------|------------|-----|-------------|--------------|--------------------|------------|-----|
|                                                     | Normal mode | Silence mode | Super silence mode | Night mode | ErP | Normal mode | Silence mode | Super silence mode | Night mode | ErP |
| Noise power dB [A]                                  | 82          | 80           | 78                 | 75         | –   | 83          | 81           | 79                 | 75         | –   |
| Capacity reduction from standard mode <sup>1)</sup> |             | ≈5%          | ≈10%               | ≈22%       |     | ≈9%         | ≈20%         | ≈33%               |            |     |

1) A7/W55 °C

6.9 Dimensional drawings

AWP16, AWP19, AWP24



- [1] Compressor enclosure
- [2] Electrical panel
- [3] Power input
- [4] Inlet water connection 1" 1/2 Victaulic
- [5] Outlet water connection 1" 1/2 Victaulic
- [6] Functional spaces
- [7] Electrical fan
- [8] Unit fixing holes
- [9] External exchanger
- [10] DHW inlet (optional) 1 1/2" Victaulic
- [11] DHW outlet (optional) 1 1/2" Victaulic

| SIZE                           |    | AWP16 | AWP19 | AWP24 |
|--------------------------------|----|-------|-------|-------|
| Length                         | mm | 1920  | 1920  | 1920  |
| Depth                          | mm | 1005  | 1005  | 1005  |
| Height                         | mm | 1340  | 1340  | 1340  |
| Operating weight <sup>1)</sup> | kg | 315   | 315   | 315   |
| Shipping weight <sup>2)</sup>  | kg | 333   | 333   | 333   |

Table 13

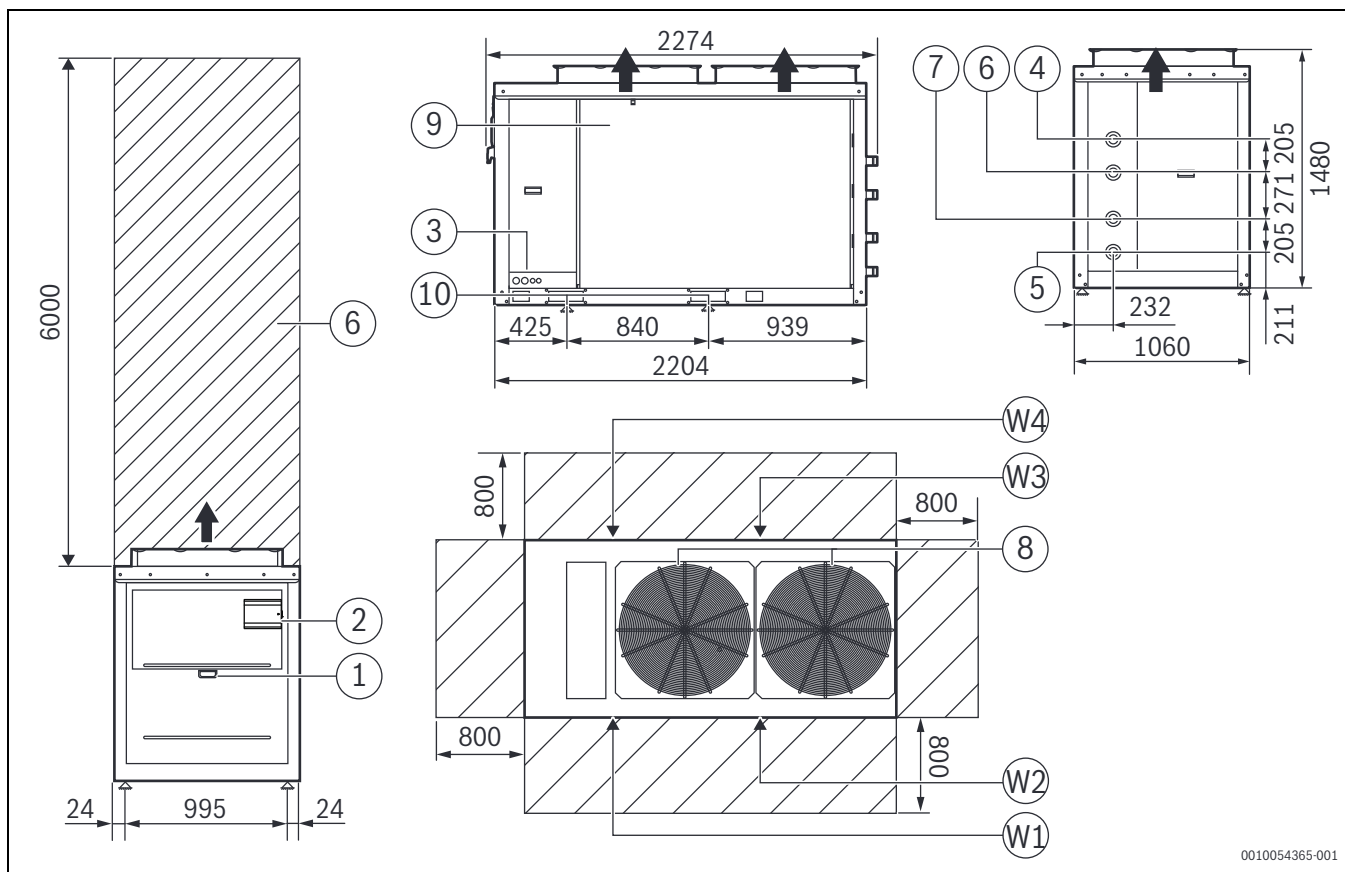
| Size                           |    | AWP16 – AWP24 | AWP16 – AWP24          |
|--------------------------------|----|---------------|------------------------|
| Optional                       |    | STD           | Int. buffer tank +PUMP |
| W1 Support point               | kg | 88            | 133                    |
| W2 Support point               | kg | 69            | 116                    |
| W3 Support point               | kg | 88            | 147                    |
| W4 Support point               | kg | 69            | 130                    |
| Operation weight <sup>1)</sup> | kg | 315           | 527                    |
| Shipping weight <sup>2)</sup>  | kg | 333           | 400                    |

Table 14 Weight distribution

- 1)Includes the water capacity of a standard heat pump without heating pump.
- 2)Includes packaging materials and wooden pallet /

optional accessories may result in a substantial variation of the weight in the table.

AWP31, AWP36, AWP41



0010054365-001

- [1] Compressor enclosure
- [2] Electrical panel
- [3] Power input
- [4] Inlet water connection 2" Victaulic
- [5] Outlet water connection 2" Victaulic
- [6] Inlet water connection 2" Victaulic
- [7] Outlet water connection 2" Victaulic
- [8] Electric fan
- [9] External exchanger
- [10] Unit fixing holes
- [11] Functional spaces

| SIZE                           |    | AWP31 | AWP36 | AWP41 |
|--------------------------------|----|-------|-------|-------|
| Length                         | mm | 2274  | 2274  | 2274  |
| Depth                          | mm | 1060  | 1060  | 1060  |
| Height                         | mm | 1480  | 1480  | 1480  |
| Operating weight <sup>1)</sup> | kg | 496   | 496   | 496   |
| Shipping weight <sup>2)</sup>  | kg | 513   | 513   | 513   |

Table 15

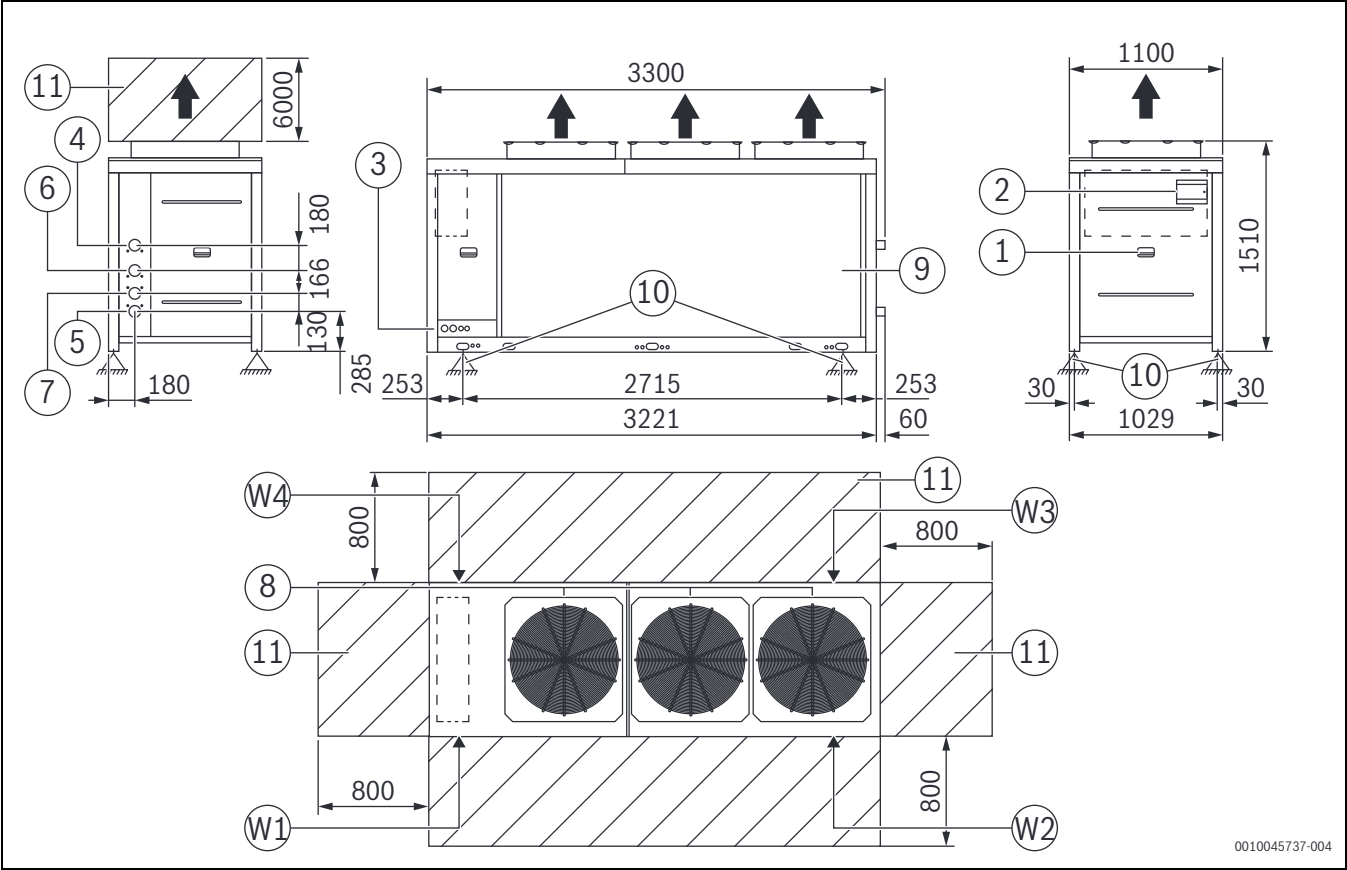
| Size                           |    | AWP31 – AWP41 | AWP31 – AWP41          |
|--------------------------------|----|---------------|------------------------|
| Optional                       |    | STD           | Int. buffer tank +PUMP |
| W1 Support point               | kg | 164           | 199                    |
| W2 Support point               | kg | 91            | 160                    |
| W3 Support point               | kg | 157           | 209                    |
| W4 Support point               | kg | 84            | 170                    |
| Operation weight <sup>1)</sup> | kg | 496           | 738                    |
| Shipping weight <sup>2)</sup>  | kg | 513           | 595                    |

Table 16 Weight distribution

1)Includes the water capacity of a standard heat pump without heating pump.

2)Includes packaging materials and wooden pallet / optional accessories may result in a substantial variation of the weight in the table.

AWP53, AWP59



- [1] Compressor enclosure
- [2] Electrical panel
- [3] Power input
- [4] Inlet water connection 2" Victaulic
- [5] Outlet water connection 2" Victaulic
- [6] Inlet DHW connection 2" Victaulic
- [7] Outlet DHW connection 2" Victaulic
- [8] Electric fan
- [9] External exchanger
- [10] Unit fixing holes
- [11] Functional spaces

| SIZE                           |    | AWP53 | AWP59 |
|--------------------------------|----|-------|-------|
| Length                         | mm | 3300  | 3300  |
| Depth                          | mm | 1100  | 1100  |
| Height                         | mm | 1510  | 1510  |
| Operating weight <sup>1)</sup> | kg | 754   | 754   |
| Shipping weight <sup>2)</sup>  | kg | 808   | 808   |

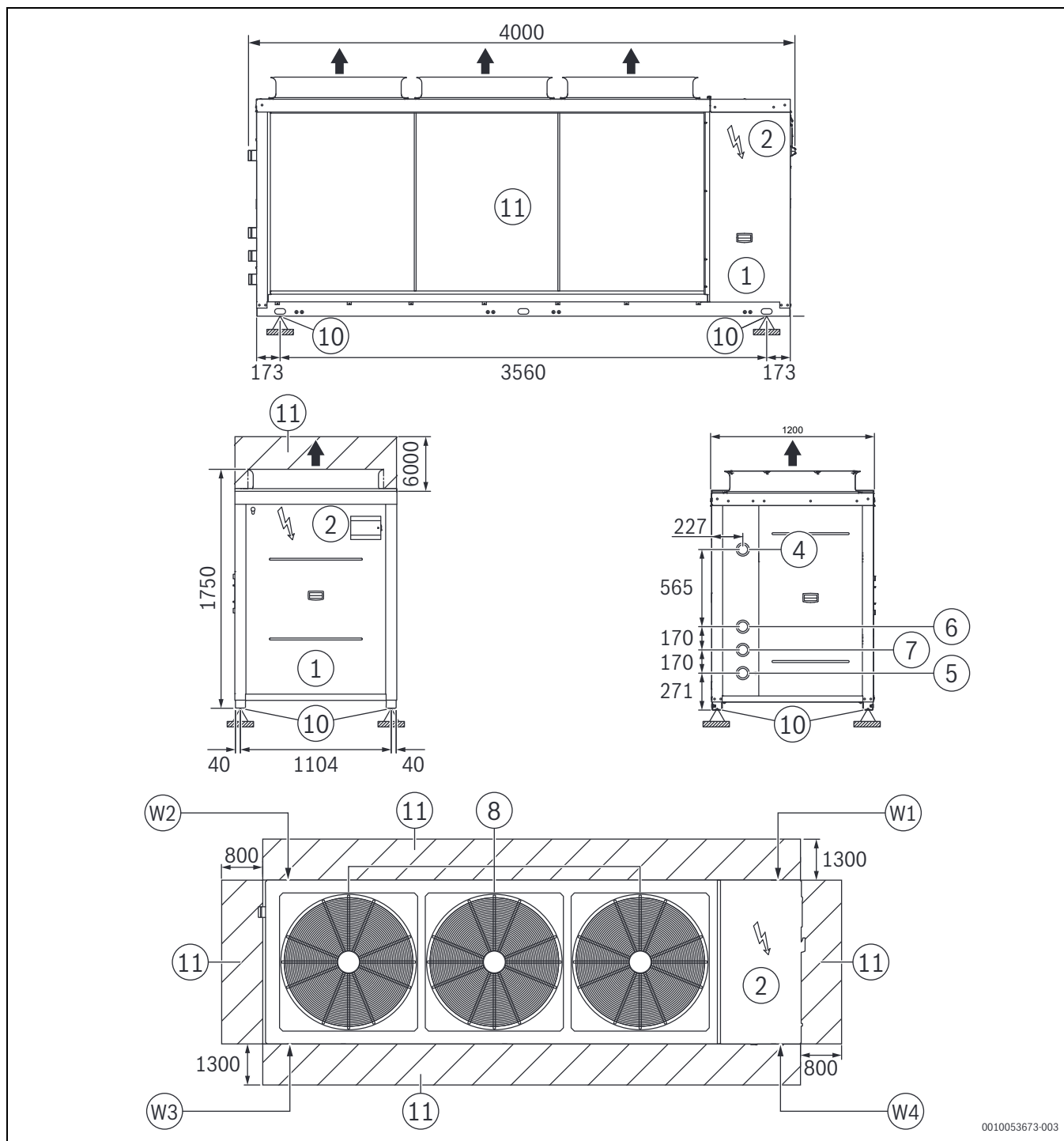
Table 17

| Size                           |    | AWP53 – AWP59 | AWP53 – AWP59          |
|--------------------------------|----|---------------|------------------------|
| Optional                       |    | STD           | Int. buffer tank +PUMP |
| W1 Support point               | kg | 264           | 273                    |
| W2 Support point               | kg | 128           | 282                    |
| W3 Support point               | kg | 128           | 306                    |
| W4 Support point               | kg | 264           | 315                    |
| Operation weight <sup>1)</sup> | kg | 784           | 1176                   |
| Shipping weight                | kg | 808           | 925                    |

Table 18 Weight distribution

1)Includes the water capacity of a standard heat pump without heating pump.  
2)Includes packaging materials and wooden pallet / optional accessories may result in a substantial variation of the weight in the table.

AWP65, AWP89



0010053673-003

- [1] Compressor enclosure
- [2] Electrical panel
- [3] Power input
- [4] Inlet water connection Victaulic 2" ½
- [5] Outlet water connection Victaulic 2" ½ (with 3-way valve)
- [6] Inlet DHW connection Victaulic 2" ½
- [7] Outlet DHW connection Victaulic 2" ½
- [8] Fan Inlet water connection external exchanger 1" ½
- [9] Outlet water connection external exchanger 1" ½
- [10] Unit fixing holes
- [11] Functional spaces

| SIZE                           |    | AWP65 | AWP75 – AWP89 |
|--------------------------------|----|-------|---------------|
| Length                         | mm | 4000  | 4000          |
| Depth                          | mm | 1200  | 1200          |
| Height                         | mm | 1750  | 1750          |
| Operating weight <sup>1)</sup> | kg | 1143  | 1143          |
| Shipping weight <sup>2)</sup>  | kg | 1114  | 1114          |

Table 19

| Size                           | AWP89 | AWP65 – AWP89 | AWP65 – AWP89          |
|--------------------------------|-------|---------------|------------------------|
| Optional                       |       | STD           | Int. buffer tank +PUMP |
| W1 Support point               | kg    | 389           | 481                    |
| W2 Support point               | kg    | 225           | 452                    |
| W3 Support point               | kg    | 194           | 487                    |
| W4 Support point               | kg    | 348           | 498                    |
| Operation weight <sup>1)</sup> | kg    | 1156          | 1919                   |
| Shipping weight                | kg    | 1178          | 1443                   |

Table 20 Weight distribution

1)Includes the water capacity of a standard heat pump without heating pump.

2)Includes packaging materials and wooden pallet / optional accessories may result in a substantial variation of the weight in the table.

## 6.10 Positioning of HP in cascades and distances

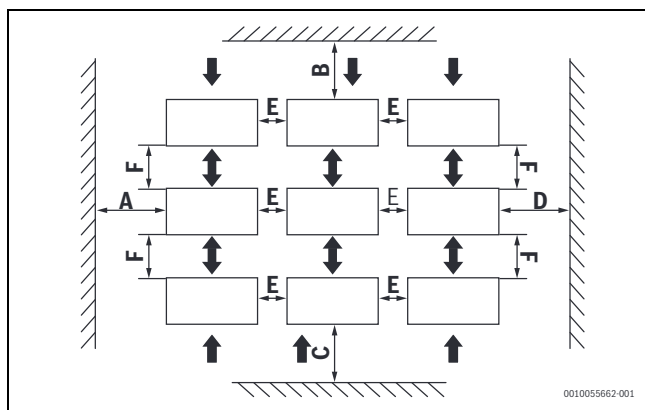


Fig. 14

A, D, E  $\geq 800$  mm

B, C **Chassis 1-3:**

$\geq 2$  m with walls also for single units

$\geq 800$  mm without walls

**Chassis 4:**

$\geq 2$  m with walls also for single units

$\geq 1.3$  m without walls

F **Chassis 1-3:**  $\geq 1.1$  m

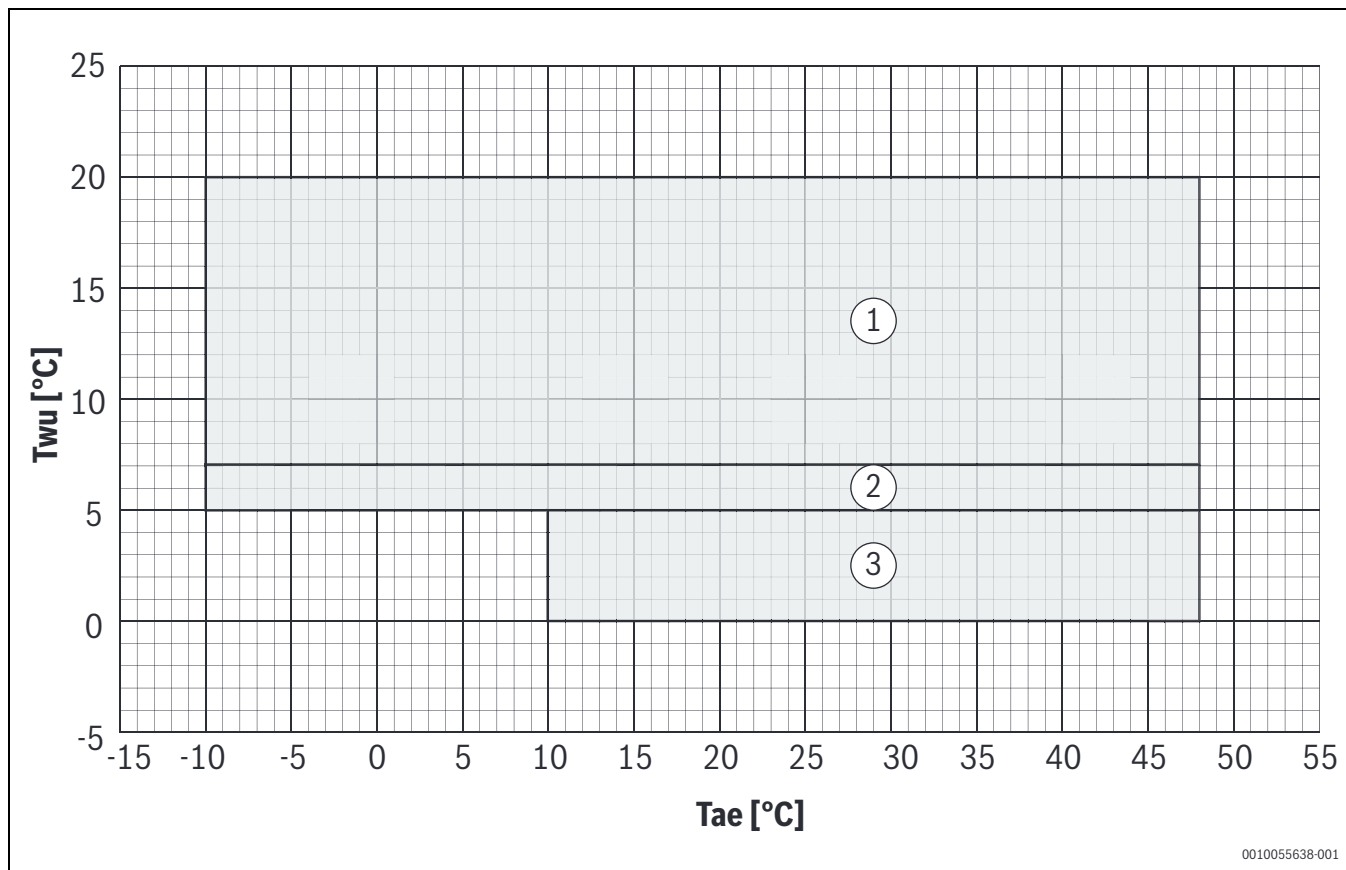
**Chassis 4:**  $\geq 1.8$  m



Maximum four units in a row. In total, 16 units are possible (4x4) in a cascade.

## 6.11 Operating range

### Cooling - AWP16 - AWP89

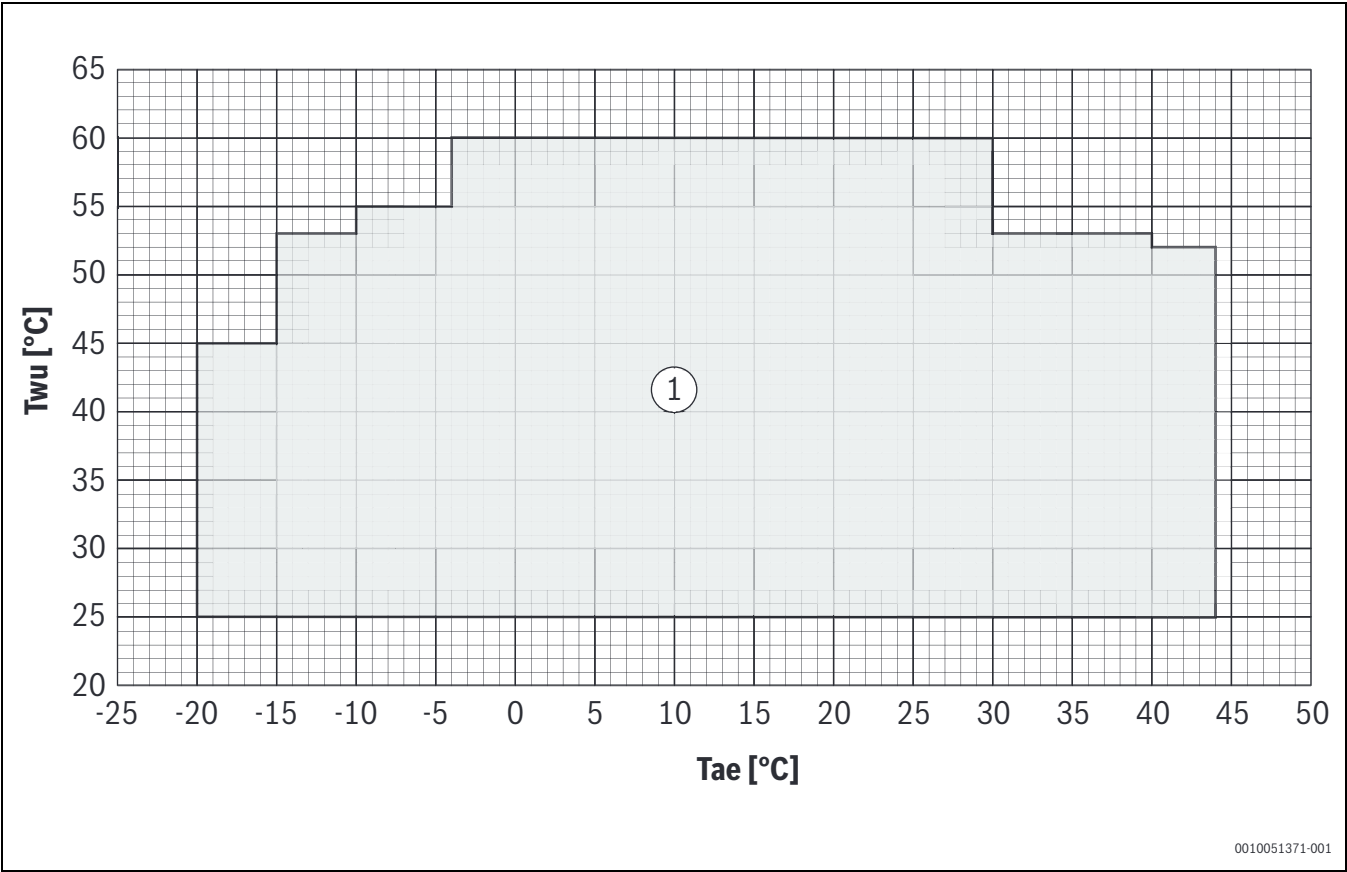


- [1] Normal operating range (Dip Switch S12\_3 = OFF)
- [2] Low water temperature operating range in which the use of only water as the operating fluid is allowed (Dip Switch S12\_3 = ON)
- [3] Low water temperature operating range where the use of ethylene or propylene glycol is mandatory, depending on the temperature of the leaving fluid from the user side exchanger to prevent ice formation (Dip Switch S12\_3 = ON)

Twu [ °C ] = Outlet water temperature from the exchanger

Tae [ °C ] = External exchanger inlet air temperature

Heating - AWP16 – AWP59

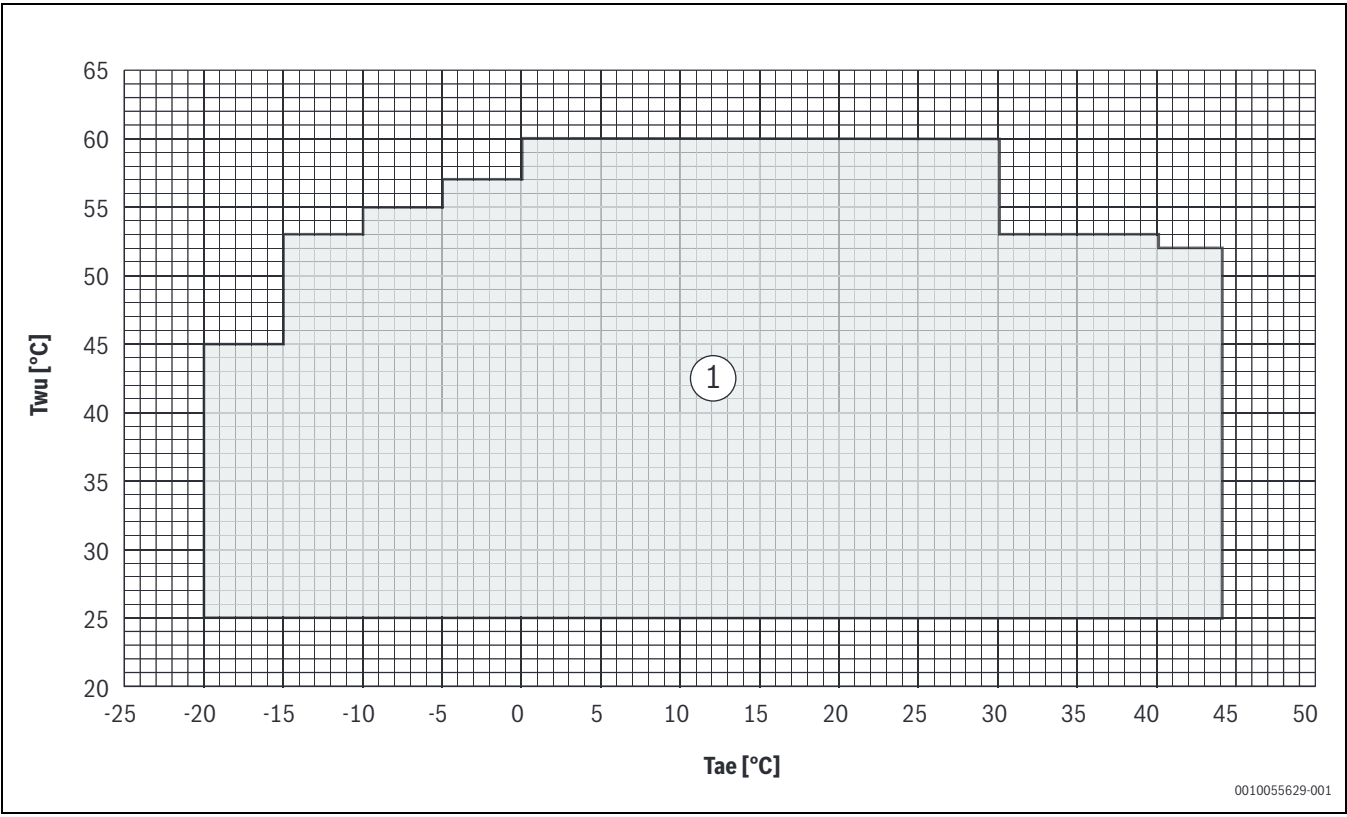


[1] Normal operating range

$T_{wu}$  [ $^{\circ}\text{C}$ ] = Leaving exchanger water temperature

$T_{ae}$  [ $^{\circ}\text{C}$ ] = External exchanger inlet air temperature

Heating - AWP65AWP89



[1] Normal operating range

$T_{ae}$  [ $^{\circ}\text{C}$ ] = External exchanger inlet air temperature

$T_{wu}$  [ $^{\circ}\text{C}$ ] = Leaving exchanger water temperature

## 6.12 Correction factors

### Ethylene heating

| % ethylene glycol by weight         | 0% | 20%   | 30%   | 40%   | 50%   |
|-------------------------------------|----|-------|-------|-------|-------|
| Freezing temperature °C             | 0  | -9    | -16   | -23   | -37   |
| Correction factor for heat capacity | 1  | 0.993 | 0.990 | 0.986 | 0.983 |
| Flow rate correction factor         | 1  | 1.068 | 1.107 | 1.151 | 1.199 |
| Pressure drop correction factor     | 1  | 1.072 | 1.122 | 1.180 | 1.248 |

### Ethylene cooling

| % ethylene glycol by weight            | 0% | 20%   | 30%   | 40%   | 50%   |
|----------------------------------------|----|-------|-------|-------|-------|
| Freezing temperature °C                | 0  | -9    | -16   | -23   | -37   |
| Correction factor for cooling capacity | 1  | 0.986 | 0.976 | 0.964 | 0.950 |
| Flow rate correction factor            | 1  | 1.076 | 1.120 | 1.170 | 1.225 |
| Pressure drop correction factor        | 1  | 1.080 | 1.135 | 1.200 | 1.275 |



The correction factors shown refer to mixtures of water and propylene, used to prevent the formation of ice in the exchangers connected to the hydraulic circuit during the winter stop.

### Propylene heating

| % propylene glycol by weight        | 0% | 20%   | 30%   | 40%   | 50%   |
|-------------------------------------|----|-------|-------|-------|-------|
| Freezing temperature °C             | 0  | -7    | -12   | -20   | -33   |
| Correction factor for heat capacity | 1  | 0.982 | 0.971 | 0.959 | 0.945 |
| Flow rate correction factor         | 1  | 1.068 | 1.107 | 1.151 | 1.207 |
| Pressure drop correction factor     | 1  | 1.213 | 1.347 | 1.499 | 1.669 |

### Propylene cooling

| % propylene glycol by weight        | 0% | 20%   | 30%   | 40%   | 50%   |
|-------------------------------------|----|-------|-------|-------|-------|
| Freezing temperature °C             | 0  | -7    | -12   | -20   | -33   |
| Correction factor for heat capacity | 1  | 0.976 | 0.960 | 0.939 | 0.916 |
| Flow rate correction factor         | 1  | 1.076 | 1.120 | 1.170 | 1.231 |
| Pressure drop correction factor     | 1  | 1.133 | 1.224 | 1.332 | 1.457 |



The correction factors shown refer to mixtures of water and propylene, used to prevent the formation of ice in the exchangers connected to the hydraulic circuit during the winter stop.

## 6.13 Fouling correction factors

| M <sup>2</sup> C/W | Internal exchanger |      |
|--------------------|--------------------|------|
|                    | F1                 | FK1  |
| 0,44x10 (-4)       | 1                  | 1    |
| 0,88x10 (-4)       | 0,96               | 0,99 |
| 1,76x10 (-4)       | 0,93               | 0,98 |



The cooling performances given in the tables are based on the condition of the external exchanger with clean plates (fouling factor 1). For different values of the factor of fouling, it will be necessary to multiply the performance by the coefficients shown in the table.  
F1 = cooling capacity correction factor  
FK1 = correction factor for the power absorbed by the compressors

## 6.14 Overload and control device calibrations

|                                                            |     | Open | Closed | Value (AWP16 – AWP41) | Value (AWP53 – AWP59) | Value (AWP65 – AWP89) |
|------------------------------------------------------------|-----|------|--------|-----------------------|-----------------------|-----------------------|
| <b>Refrigerant side</b>                                    |     |      |        |                       |                       |                       |
| High pressure safety pressure switch                       | bar | 42   | 32     | –                     | –                     | –                     |
| Low pressure safety pressure switch                        | kPa | 140  | 300    | –                     | –                     | –                     |
| Gas-liquid separator safety valve                          | bar | –    | –      | 34                    | 30                    | 34                    |
| Safety thermostat against compressor discharge overheating | °C  | 75   | 115    | –                     | –                     | –                     |
| <b>Water side</b>                                          |     |      |        |                       |                       |                       |
| Frost protection                                           | °C  | 8    | 4      | –                     | –                     | –                     |
| High pressure safety valve                                 | bar | –    | –      | 6                     | 6                     | 6                     |

## 6.15 User interface (HMI)

The unit has a user interface (HMI) installed on the board, used to manage the functions and it is equipped with an integrated temperature sensor.

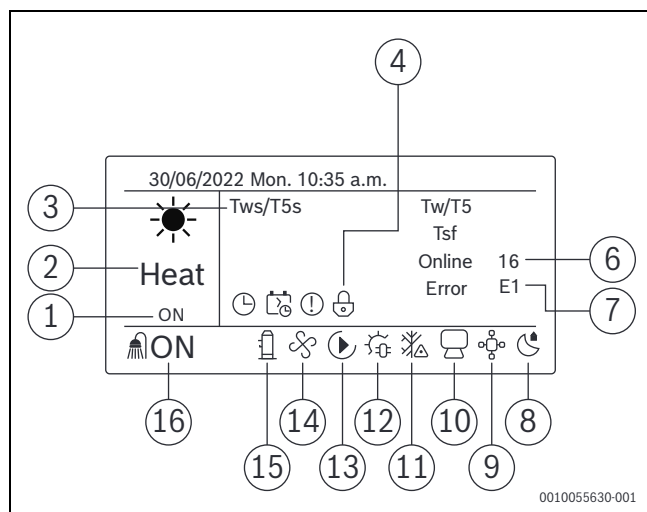


Fig. 15 User interface

- [1] Timer/weekly schedule/error
- [2] Heating/cooling mode
- [3] Tws = system set-point  
T5s = DHW set-point
- [4] Keypad lock
- [5] Tw = T system supply  
T5 = T DHW supply
- [6] Online unit number
- [7] Error code
- [8] Silent mode ON
- [9] Monitor controller
- [10] Network centralized control
- [11] Anti-freeze/defrost mode ON
- [12] Electric heating status ON
- [13] Pump status ON
- [14] Fan status ON
- [15] Compressor status ON
- [16] DHW production ON

|                            |                    |                |
|----------------------------|--------------------|----------------|
| <b>Resolution</b>          |                    | 1 °C           |
| <b>Temperature sensor</b>  |                    | NTC 5k 1%      |
| <b>Power input</b>         |                    | < 1W           |
| <b>Storage temperature</b> |                    | -20 ÷ 50 °C    |
| <b>Communication</b>       |                    | RS485          |
| <b>Wiring</b>              | <b>Type</b>        | Shielded cable |
|                            | <b>Max. length</b> | 40 m           |

Table 21 Specifications of user interface

## 6.16 DHW management

The following components are required for DHW management:

- SV1: 3-way valve
- Taf1: temperature sensor for the DHW anti-freeze protection
- T5: temperature sensor for the temperature control and switch between system and DHW

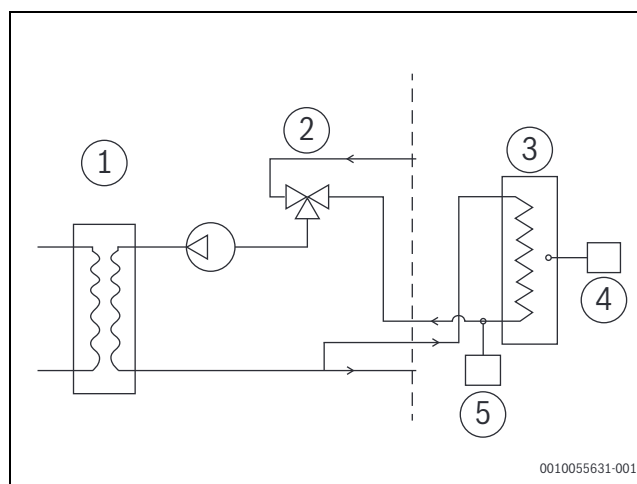


Fig. 16

- [1] Unit
- [2] SV1
- [3] DWH storage tank
- [4] T5 temperature sensor
- [5] Taf1

### 6.16.1 DHW tank connection

Optionally, the unit can be connected to a DHW storage tank of suitable volume by fitting the system with a 3-way diverter valve controlled by the unit. The DHW tank shall be installed within a max. 10 m of the unit.

- ▶ Connect the DHW tank as close as possible to the unit.
- ▶ Use a suitable size for the connecting pipes.
- ▶ Make sure the thermal insulation of the connecting pipes is appropriate, especially in the case of long distances between the unit and the storage tank.

The standard boiler must have the following characteristics:

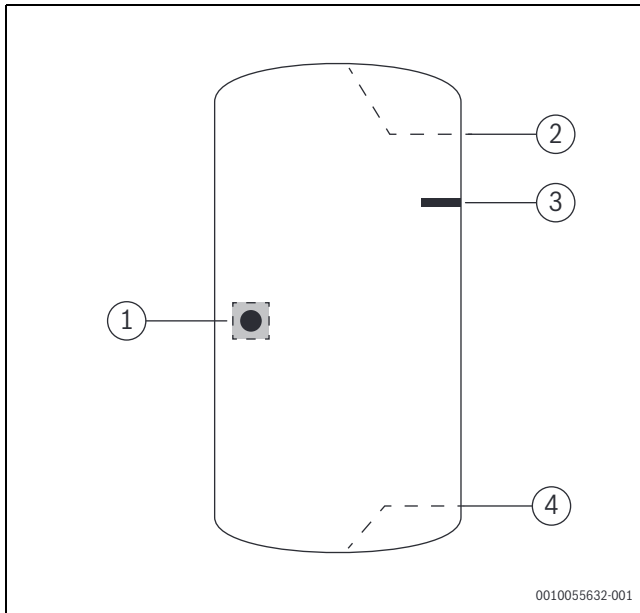


Fig. 17

- [1] T5 temperature sensor
- [2] Output
- [3] TBH auxiliary electric heater
- [4] Input

The integration of the storage tank and the electric immersion heater are specified in the standard hydraulics.

### 6.17 Double set-point function

The double set-point function can be enabled with the HMI. Once it is enabled, it is needed to configure the first target water temperature (set-point 1) and the second target water temperature (set-point 2). The unit then detects the closed status of the double\_SP door (normally open).

If the contact is opened, the unit will operate at the first target water temperature. If the contact is closed, the unit will operate at the second target water temperature.

#### Set-point compensation function based on the outside air temperature

This function enables the temperature compensation function through the HMI. Once the function is enabled, it is necessary to set:

- The two offset points for the external air temperature (offset T4\_1 and offset T4\_2), which will define the external air temperature field on which the set-point variation will happen

- The offset point for the water production temperature (offset Tws), which represents the maximum variation of the set-point allowed (→Graphic 18)
- When the external air temperature (T4) is lower than the offset one ( $T4 < \text{offset } T4_{\text{heat1}}$ ), the set-point remains unchanged
- When the external air temperature (T4) is between the two offset temperatures ( $\text{offset } T4_{\text{heat1}} \leq T4 < \text{offset } T4_{\text{heat2}}$ ), the set-point is reduced in direct proportion to the increase in the external air temperature
- When the external air temperature (T4) is higher than the highest offset temperature ( $T4 \geq \text{offset } T4_{\text{heat2}}$ ), the maximum reduction in the set-point temperature will be achieved.

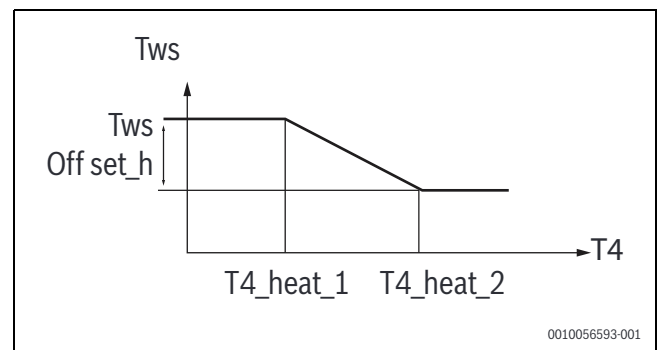


Fig. 18

### 6.18 Energy monitoring (ENEMON) function

Using the HMI it is possible to access, in detail, to the display of the main energy parameters of the unit.

- Power output: instantaneous power produced in kW
- Power input: instantaneous power absorbed in kW
- Current efficiency: instantaneous efficiency represents the EER of the COP
- The total energy production is the cumulative energy produced in MWh

All energy meter display items are available via Modbus, on addresses form 232 + (circuit address) × 100 a 236 + (circuit address) × 100.

To select the required mode, follow these steps on the HMI screen.

- ▶ Select "State query" on the menu.
- ▶ Choose the preferred configurations.

| STATE QUERY         |        |
|---------------------|--------|
| POWER OUTPUT        | 100 KW |
| POWER INPUT         | 50 KW  |
| CURRENT EFFICIENCY  | 2      |
| TOTAL ENERGY OUTPUT | 10 MWh |
| TOTAL ENERGY INPUT  | 3 MWh  |
| BACK                | 2/2    |

Fig. 19

### 6.19 Silence function

This function allows the selection of up to four acoustic modes for maximum sound configurability of the units.

For two of these modes (standard, silent and super silent), the heating/cooling capacity, efficiencies and sound levels of all sized of the units are shown in the general technical data section of the manual, as well as on the navigator.

The night mode configuration allows a further reduction on the sound levels up to 3 dB [A] compared to the super silent mode.

To select the required mode, follow these steps on the HMI screen as shown in the figure below:

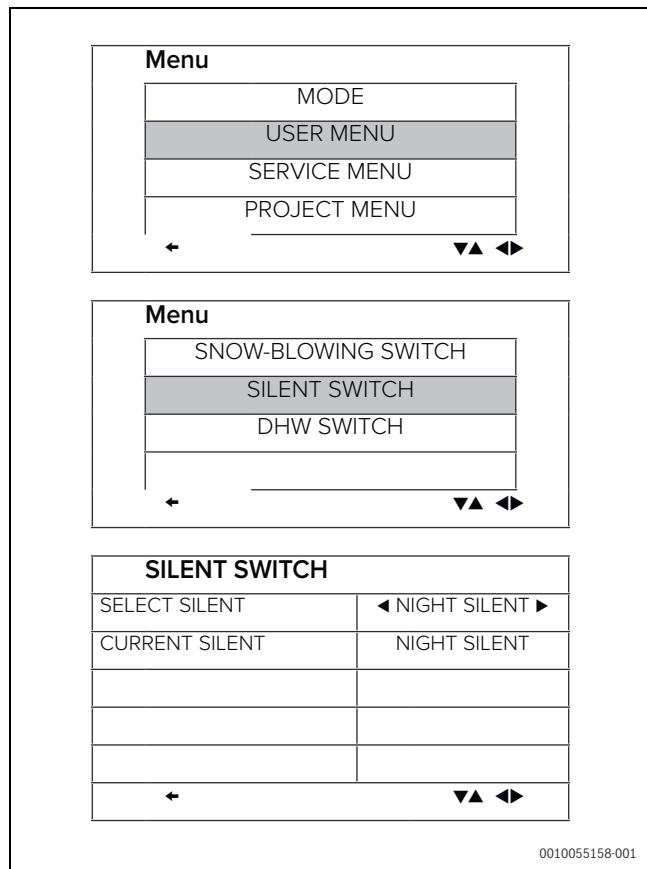


Fig. 20

### 6.20 Smart grid and EVU functions (APR)

The unit is certified Smart Grid Ready and it is equipped with logic to connect to devices that balance the loads connected to the electric grid and optimize general electricity consumption. The function can be enabled on the APR board and it is linked to the ON/OFF SG input, which received a status signal from the electrical grid provider.

The unit is also set up to store free thermal energy in the DHW tank. This function is activated when the input on the APR board enables the Smart Grid function and it is linked to the ON/OFF EVU input. It then receives a signal from the energy meter, which indicates the unit when free energy overproduction is available. The regulation logic of the two contacts is:

| Contact |     |            | Operation                                                                                                                         |
|---------|-----|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| SG      | EVU | System     | DHW                                                                                                                               |
| ON      | ON  | DHW forced | Forced DHW operation with set-point T5S = 60 °C<br>Once the DHW set-point is reached, the heat pump returns to work on the system |
| OFF     | ON  | OFF forced | OFF forced                                                                                                                        |
| OFF     | OFF | Standard   | Standard                                                                                                                          |
| ON      | OFF | Standard   | Standard                                                                                                                          |

Table 22

### 6.21 Modularity

#### Modularity

Many installations require a large modularity in the heating capacity as well as a back-up to the main system, or to have loads that can change significantly during annual operation.

Through this function, without the aid of further accessories, it is possible to operate with up to 16 units hydraulically connected in parallel. From the user interface of the unit defined as master, the other units are electrically connected in a series, through the designated terminals P, Q and E. Each connected module is identified by an address, from 0 to 15.

The address of the master unit is identified as 0 and it is this unit that handles the complete control of the system (including ancillary elements such as the external pumping system and the auxiliary heater).

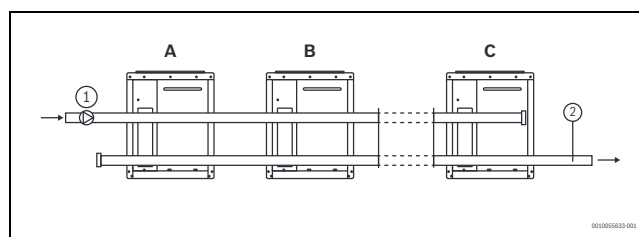


Fig. 21

- [1] Pump
- [2] Tw sensor of the master unit (in this position for the temperature control of the system outlet)

- A No.n module / No. (n-1) address
- B No. (n-1) module / No. (n-2) module
- C No. 1 module / No. 0 module

#### Operation

The master unit calculates the required heating/cooling capacity of the system based on the water delivery and set-point temperatures. Each individual unit calculates its required heating/cooling capacity based on the delivery and return temperatures.

The units are activated according to the last-in/first-out logic (the last unit to be activated will also be the first to be deactivated), as indicated in the following tables.

Tw

|         |                      |
|---------|----------------------|
| Tws+2   | Stop all units       |
| Tws+1.5 | Stop two more units  |
| Tws+0.5 | Stop one more unit   |
| Tws-0.5 | No change            |
| Tws-1.5 | Start one more unit  |
|         | Start two more units |

Table 23 Heating mode

|         |                      |
|---------|----------------------|
| Tws+1.5 | Start two more units |
| Tws+0.5 | Start one more unit  |
| Tws+0.5 | No change            |
| Tws-0.5 | Stop one more unit   |
| Tws-1.5 | Stop two more units  |
| Tws-2   | Stop all units       |

Table 24 Cooling mode

In cooling mode, if  $T_w \geq T_{ws} - 10\text{ °C}$ , 50% of the units in the system are activated.

In heating mode, if  $T_w \leq T_{ws} - 10\text{ °C}$ , 50% of the units in the system are activated.

To guarantee the correct balancing of the operating hours, in the following start-up and after having satisfied the system load and having deactivated the units, the first unit to have been deactivated will be the first to be started.

### DHW settings and management

The unit is designed to be coupled to boilers for DHW storage (enabled by the HMI), connected with a special T5 sensor. Ti switch from the system operation to the DHW production, the system will first be stopped and then it will switch to the DHW.

Before starting the DHW production, the following conditions must be validated:

- **Condition 1:** the temperature T5 detected by the DHW storage is higher than the minimum value for starting the DHW production and lower than the minimum value between the DHW storage set-point temperature, and the maximum temperature that the unit is able to guarantee at a given external temperature. The net of the temperature delta for the DHW production input must be equal to 8 °C (default)
- **Condition 2:** the outlet temperature of the unit is lower than the minimum value between the DHW storage set-point temperature and the maximum supply temperature that the unit is able to guarantee at a given outside temperature. The net of the temperature is 2 °C (default).

The DHW production stops if:

- The domestic hot water mode is stopped by the HMI
- the detected temperature T5 is higher than the minimum value between the DHW storage set-point temperature and the maximum temperature that the unit is able to guarantee at a given external temperature

- the detected temperature T5 is lower than the minimum value for starting the DHW production
- The temperature output from the unit is greater than the minimum value between the maximum supply temperature that the unit is able to guarantee at a given outside temperature and the unit target set-point is increased by 2 °C.

### Installation with multiple pumps on the system (each HP has its own pump)

In a system with multiple pumps, both the master and the slave units must be configured separately for the DHW operation. Consequently, it will be necessary to set the DHW production as a priority and should be configured on the "DHW Switch" screen on the HMI.

#### • Priority DHW production

Once the DHW priority has been set, if the unit is in stand-by, the Condition 1 is evaluated as in the case of a system with a single pump. If verified, the production of domestic hot water starts. If not, the unit is started to satisfy the system load.

If the Condition 1 is verified when the unit has exceeded the minimum system side operating period, the DHW production starts. If not, the activation of the auxiliary heater TBH is evaluated and the DHW production is started by the booster heat pump, but only after the minimum period of operation on the system side and Condition 1 is satisfied.

#### • Non-priority DHW production

If the DHW priority has not been set, the unit is started directly to satisfy the system load and the Condition 1 is evaluated only after the minimum system side operating time has elapsed. If this is satisfied, the DHW production starts.

If not, the activation of the auxiliary heater TBH is evaluated and the DHW production is started by the heat pump, but only after Condition 1 is satisfied.



In DHW production mode, the compressors only start if the DHW tank temperature is above a minimum threshold (see table below). To avoid the temperature falling below the threshold, install an electric back-up heater on the DHW storage tank.

| Outdoor temperature | T5      | Compressor | Back-up heater |
|---------------------|---------|------------|----------------|
| 24 °C – ≤ 30 °C     | < 15 °C | OFF        | ON             |
| 24 °C – ≤ 30 °C     | ≥ 15 °C | ON         | OFF            |
| > 30 °C             | < 20 °C | OFF        | ON             |
| > 30 °C             | ≥ 20 °C | ON         | OFF            |

Table 25 Minimum threshold of the DHW tank temperature

The maximum system supply temperature threshold varies according to the outside temperature. The maximum value that can be set for T5S (DHW set-point) is lower than the maximum set-point that can be reached by the unit to consider heat exchange.

## 7 Performance

### 7.1 Performance Heating - AWP16

The heating capacities are values that take into account the impact of the defrost cycles. Energy for defrost cycle is the energy required to avoid ice building at heat exchangers at outside temperatures below 0 °C.

| To | T <sub>ae</sub><br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |      |     |     |
|----|--------------------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|------|-----|-----|
|    |                          | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |      |     |     |
| °C | °C                       | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50%  | 40% | 30% |
| 25 | A-20                     | 8.6                           | 7.6  | 6.9  | 6.1  | 5.3  | 4.4  | 3.7  | –    | –    | 1.6                           | 1.6 | 1.5 | 1.5 | 1.4 | 1.4 | 1.3  | –   | –   |
|    | A-15                     | 10.0                          | 9.0  | 8.3  | 7.5  | 6.7  | 5.9  | 5.2  | –    | –    | 1.8                           | 1.7 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5  | –   | –   |
|    | A-10                     | 15.8                          | 15.3 | 14.2 | 13.0 | 11.8 | 10.2 | 9.0  | 7.5  | –    | 3.2                           | 3.2 | 3.2 | 3.1 | 3.1 | 3.0 | 3.0  | 3.0 | –   |
|    | A-7                      | 18.0                          | 16.6 | 15.6 | 14.3 | 13.1 | 11.3 | 10.0 | 9.0  | 7.8  | 3.4                           | 3.5 | 3.5 | 3.5 | 3.6 | 3.6 | 3.7  | 3.7 | 3.8 |
|    | A-2                      | 20.3                          | 19.0 | 17.8 | 16.4 | 15.0 | 13.1 | 11.6 | 10.3 | 8.7  | 3.9                           | 4.0 | 4.0 | 4.0 | 4.1 | 4.2 | 74.3 | 4.3 | 4.4 |
|    | A2                       | 23.3                          | 21.9 | 20.6 | 19.1 | 17.5 | 15.3 | 13.7 | 12.0 | 9.8  | 4.5                           | 4.5 | 4.6 | 4.7 | 4.7 | 5.1 | 5.1  | 5.2 | 5.3 |
|    | A7                       | 28.0                          | 26.1 | 24.7 | 22.9 | 21.1 | 18.4 | 16.4 | 14.7 | 13.0 | 5.4                           | 5.5 | 5.6 | 5.7 | 5.8 | 6.2 | 6.5  | 6.8 | 7.2 |
|    | A10                      | 30.5                          | 28.6 | 27.0 | 25.0 | 23.1 | 20.2 | 18.0 | 16.1 | 14.2 | 6.0                           | 6.1 | 6.2 | 6.3 | 6.4 | 6.9 | 7.2  | 7.5 | 7.9 |
|    | A18                      | 36.7                          | 34.2 | 32.3 | 30.0 | 27.6 | 24.1 | 21.3 | 19.0 | 16.7 | 7.4                           | 7.6 | 7.7 | 7.9 | 8.0 | 8.6 | 8.9  | 9.3 | 9.8 |
| 30 | A-20                     | 8.2                           | 7.3  | 6.6  | 5.8  | 5.1  | 4.3  | 3.6  | –    | –    | 1.6                           | 1.5 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3  | –   | –   |
|    | A-15                     | 9.6                           | 8.7  | 8.0  | 7.3  | 6.5  | 5.8  | 5.0  | –    | –    | 1.6                           | 1.6 | 1.6 | 1.5 | 1.5 | 1.4 | 1.4  | –   | –   |
|    | A-10                     | 15.4                          | 14.9 | 13.9 | 12.7 | 11.6 | 10.0 | 8.8  | 6.9  | –    | 2.9                           | 2.9 | 2.9 | 2.8 | 2.8 | 2.7 | 2.7  | 2.6 | –   |
|    | A-7                      | 17.6                          | 16.3 | 15.2 | 14.0 | 12.8 | 11.1 | 9.8  | 8.8  | 7.6  | 3.1                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.4 | 3.6  | 3.7 | 3.7 |
|    | A-2                      | 20.0                          | 18.6 | 17.5 | 16.1 | 14.8 | 12.9 | 11.4 | 10.1 | 8.5  | 3.5                           | 3.6 | 3.6 | 3.6 | 3.7 | 3.9 | 4.1  | 4.2 | 4.2 |
|    | A2                       | 23.0                          | 21.5 | 20.3 | 18.7 | 17.2 | 15.1 | 13.4 | 11.8 | 9.6  | 4.0                           | 4.1 | 4.1 | 4.2 | 4.2 | 4.5 | 4.7  | 4.8 | 4.9 |
|    | A7                       | 27.6                          | 25.7 | 24.3 | 22.5 | 20.7 | 18.1 | 16.1 | 14.4 | 12.7 | 4.9                           | 4.9 | 5.0 | 5.1 | 5.2 | 5.5 | 5.7  | 5.9 | 6.1 |
|    | A10                      | 29.9                          | 27.9 | 26.6 | 24.6 | 22.7 | 19.8 | 17.6 | 15.7 | 13.9 | 5.3                           | 5.4 | 5.5 | 5.6 | 5.7 | 6.0 | 6.3  | 6.5 | 6.8 |
|    | A18                      | 36.2                          | 33.7 | 31.8 | 29.4 | 27.0 | 23.6 | 20.9 | 18.5 | 16.2 | 6.4                           | 6.6 | 6.7 | 6.8 | 7.0 | 7.4 | 7.7  | 7.9 | 8.2 |
| 35 | A-20                     | 7.8                           | 7.0  | 6.4  | 5.7  | 4.9  | 4.3  | 3.5  | –    | –    | 1.4                           | 1.4 | 1.4 | 1.3 | 1.3 | 1.2 | 1.2  | –   | –   |
|    | A-15                     | 9.3                           | 8.5  | 7.8  | 7.1  | 6.4  | 5.7  | 5.0  | –    | –    | 1.5                           | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3  | –   | –   |
|    | A-10                     | 14.9                          | 14.6 | 13.6 | 12.5 | 11.4 | 9.8  | 8.7  | 6.7  | –    | 2.7                           | 2.7 | 2.6 | 2.6 | 2.5 | 2.5 | 2.4  | 2.3 | –   |
|    | A-7                      | 17.2                          | 16.0 | 15.0 | 13.8 | 12.6 | 10.9 | 9.7  | 8.6  | 7.5  | 2.9                           | 2.9 | 3.0 | 3.0 | 3.0 | 3.1 | 3.2  | 3.4 | 3.5 |
|    | A-2                      | 19.5                          | 18.3 | 17.2 | 15.9 | 14.5 | 12.7 | 11.2 | 10.0 | 8.3  | 3.2                           | 3.3 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6  | 3.8 | 3.9 |
|    | A2                       | 22.4                          | 21.2 | 20.0 | 18.5 | 17.0 | 14.8 | 13.1 | 11.6 | 9.3  | 3.7                           | 3.7 | 3.7 | 3.8 | 3.8 | 4.0 | 4.2  | 4.3 | 4.4 |
|    | A7                       | 27.2                          | 25.3 | 23.9 | 22.2 | 20.4 | 17.8 | 15.8 | 14.1 | 12.0 | 4.3                           | 4.4 | 4.5 | 4.5 | 4.6 | 4.9 | 5.1  | 5.2 | 5.3 |
|    | A10                      | 29.0                          | 27.3 | 26.2 | 24.2 | 22.3 | 19.5 | 17.2 | 15.3 | 13.1 | 4.6                           | 4.7 | 4.8 | 4.9 | 5.0 | 5.3 | 5.5  | 5.6 | 5.8 |
|    | A18                      | 35.5                          | 33.2 | 31.3 | 28.9 | 26.5 | 23.1 | 20.4 | 18.0 | 15.6 | 5.6                           | 5.8 | 5.9 | 6.0 | 6.1 | 6.4 | 6.6  | 6.8 | 7.0 |
| 40 | A-20                     | 7.6                           | 6.8  | 6.2  | 5.5  | 4.9  | 4.2  | 3.4  | –    | –    | 1.3                           | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1  | –   | –   |
|    | A-15                     | 9.1                           | 8.3  | 7.7  | 7.0  | 6.3  | 5.6  | 4.8  | –    | –    | 1.4                           | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.1  | –   | –   |
|    | A-10                     | 14.8                          | 14.4 | 13.4 | 12.3 | 11.2 | 9.7  | 8.6  | 6.6  | –    | 2.4                           | 2.4 | 2.3 | 2.3 | 2.2 | 2.2 | 2.2  | 2.0 | –   |
|    | A-7                      | 17.0                          | 15.8 | 14.8 | 13.6 | 12.5 | 10.8 | 9.6  | 8.4  | 7.3  | 2.6                           | 2.6 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9  | 3.3 | 3.3 |
|    | A-2                      | 19.3                          | 18.1 | 17.0 | 15.7 | 14.4 | 12.5 | 11.1 | 9.8  | 8.1  | 2.9                           | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | 3.5  | 3.6 |     |
|    | A2                       | 22.2                          | 20.9 | 19.7 | 18.2 | 16.7 | 14.6 | 12.9 | 11.5 | 9.1  | 3.2                           | 3.3 | 3.3 | 3.4 | 3.4 | 3.6 | 3.7  | 3.8 | 3.9 |
|    | A7                       | 25.7                          | 23.9 | 22.6 | 20.9 | 19.2 | 16.7 | 14.8 | 13.2 | 11.5 | 3.8                           | 3.8 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1  | 4.2 | 4.3 |
|    | A10                      | 27.8                          | 26.2 | 24.7 | 22.8 | 20.9 | 18.3 | 16.1 | 14.3 | 12.5 | 4.0                           | 4.1 | 4.2 | 4.2 | 4.3 | 4.3 | 4.4  | 4.5 | 4.6 |
|    | A18                      | 34.9                          | 32.6 | 30.7 | 28.3 | 26.0 | 22.6 | 19.8 | 17.5 | 15.1 | 4.9                           | 5.1 | 5.1 | 5.3 | 5.3 | 5.6 | 5.7  | 5.8 | 5.9 |
| 45 | A-20                     | 7.4                           | 6.6  | 6.1  | 5.5  | 4.7  | 4.1  | 3.3  | –    | –    | 1.2                           | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1  | –   | –   |
|    | A-15                     | 8.9                           | 8.2  | 7.6  | 6.9  | 6.3  | 5.5  | 4.7  | –    | –    | 1.3                           | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1  | –   | –   |
|    | A-10                     | 14.6                          | 14.2 | 13.3 | 12.2 | 11.1 | 9.7  | 8.5  | 6.5  | –    | 2.3                           | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.0  | 2.0 | –   |
|    | A-7                      | 16.8                          | 15.6 | 14.7 | 13.5 | 12.3 | 10.7 | 9.5  | 8.2  | 7.1  | 2.4                           | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6  | 2.6 | 2.7 |
|    | A-2                      | 19.1                          | 17.9 | 16.7 | 15.4 | 14.1 | 12.3 | 10.9 | 9.5  | 7.9  | 2.6                           | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.9  | 2.9 | 3.0 |
|    | A2                       | 22.0                          | 20.7 | 19.3 | 17.8 | 16.4 | 14.3 | 12.6 | 11.2 | 9.0  | 2.9                           | 3.0 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2  | 3.3 | 3.4 |
|    | A7                       | 25.3                          | 23.3 | 22.3 | 20.6 | 18.9 | 16.5 | 14.5 | 12.9 | 11.2 | 3.3                           | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 | 3.6  | 3.7 | 3.7 |
|    | A10                      | 26.6                          | 25.5 | 24.3 | 22.4 | 20.6 | 17.9 | 15.8 | 14.0 | 12.1 | 3.4                           | 3.6 | 3.7 | 3.7 | 3.8 | 3.8 | 3.9  | 3.9 | 4.0 |
|    | A18                      | 34.3                          | 32.0 | 30.1 | 27.7 | 25.4 | 22.1 | 19.3 | 16.9 | 14.6 | 4.3                           | 4.5 | 4.5 | 4.6 | 4.7 | 4.9 | 4.9  | 5.0 | 5.1 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| 50 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | 8.8                           | 8.1  | 7.5  | 6.8  | 6.2  | 5.5  | 4.5  | —    | —    | 1.3                           | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | —   | —   |
|    | A-10         | 14.5                          | 14.1 | 13.2 | 12.1 | 11.1 | 9.6  | 8.4  | 6.3  | —    | 2.0                           | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | —   |
|    | A-7          | 16.7                          | 15.5 | 14.6 | 13.4 | 12.2 | 10.6 | 9.4  | 8.0  | 6.8  | 2.1                           | 2.2 | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 |
|    | A-2          | 18.7                          | 17.6 | 16.6 | 15.3 | 13.9 | 12.1 | 10.7 | 9.3  | 7.7  | 2.4                           | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 |
|    | A2           | 21.7                          | 20.2 | 19.1 | 17.6 | 16.1 | 14.1 | 12.4 | 10.9 | 8.8  | 2.6                           | 2.7 | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 |
|    | A7           | 23.7                          | 22.1 | 20.7 | 19.2 | 17.6 | 15.4 | 13.5 | 12.0 | 10.5 | 2.9                           | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 |
|    | A10          | 25.8                          | 24.9 | 23.6 | 21.8 | 20.0 | 17.4 | 15.3 | 13.4 | 11.6 | 3.0                           | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6 | 3.6 | 3.7 |
|    | A18          | 33.6                          | 31.3 | 29.5 | 27.1 | 24.7 | 21.5 | 18.7 | 16.4 | 14.0 | 3.8                           | 3.9 | 4.0 | 4.1 | 4.1 | 4.3 | 4.3 | 4.3 | 4.5 |
| 55 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | 12.1 | 11.0 | 9.6  | 8.3  | 6.2  | —    | —                             | —   | —   | 1.9 | 1.8 | 1.8 | 1.7 | 1.7 | —   |
|    | A-7          | 16.6                          | 15.4 | 14.4 | 13.3 | 12.1 | 10.5 | 9.3  | 7.9  | 6.6  | 2.0                           | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 |
|    | A-2          | 18.7                          | 17.4 | 16.4 | 15.1 | 13.8 | 12.0 | 10.6 | 9.1  | 7.4  | 2.2                           | 2.5 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 |
|    | A2           | 21.3                          | 20.0 | 18.8 | 17.3 | 15.9 | 13.8 | 12.1 | 10.7 | 8.6  | 2.4                           | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 | 2.6 |
|    | A7           | 22.9                          | 21.8 | 20.5 | 19.0 | 17.4 | 15.2 | 13.4 | 11.8 | 10.3 | 2.6                           | 2.6 | 2.7 | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 |
|    | A10          | 25.2                          | 24.5 | 23.2 | 21.4 | 19.6 | 17.1 | 14.9 | 13.1 | 11.2 | 2.7                           | 2.8 | 3.0 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 |
|    | A18          | 33.0                          | 30.6 | 28.7 | 26.4 | 24.1 | 20.9 | 18.1 | 15.7 | 13.3 | 3.3                           | 3.4 | 3.5 | 3.6 | 3.6 | 3.7 | 3.8 | 3.8 | 3.9 |
| 60 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-7          | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-2          | —                             | —    | —    | —    | —    | —    | 10.2 | 8.6  | 5.8  | —                             | —   | —   | —   | —   | —   | 1.6 | 1.8 | 1.8 |
|    | A2           | —                             | —    | —    | —    | —    | —    | 11.9 | 10.2 | 6.2  | —                             | —   | —   | —   | —   | —   | 1.7 | 1.9 | 2.0 |
|    | A7           | —                             | —    | —    | —    | —    | —    | 12.9 | 11.4 | 8.0  | —                             | —   | —   | —   | —   | —   | 2.0 | 2.2 | 2.2 |
|    | A10          | —                             | —    | —    | —    | —    | —    | 14.3 | 12.4 | 8.7  | —                             | —   | —   | —   | —   | —   | 2.2 | 2.5 | 2.5 |
|    | A18          | —                             | —    | —    | —    | —    | —    | 17.3 | 14.8 | 10.6 | —                             | —   | —   | —   | —   | —   | 2.6 | 3.0 | 3.1 |

Table 26

## 7.2 Performance Cooling - AWP16

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 0  | A15          | 23.4                          | 21.8 | 20.1 | 18.6 | 17.1 | 15.5 | 13.9 | 13.0 | 11.6 | 4.8                           | 4.9 | 5.1 | 5.2 | 5.3 | 5.6 | 5.9 | 6.5 | 7.2 |
|    | A20          | 22.3                          | 20.8 | 19.1 | 17.7 | 16.3 | 14.8 | 13.2 | 11.9 | 10.9 | 4.1                           | 4.2 | 4.3 | 4.4 | 4.6 | 4.8 | 5.1 | 5.5 | 6.3 |
|    | A25          | 21.2                          | 19.8 | 18.2 | 16.8 | 15.5 | 14.0 | 12.6 | 11.2 | 10.4 | 3.5                           | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.3 | 4.6 | 5.3 |
|    | A30          | 20.1                          | 18.8 | 17.3 | 16.0 | 14.7 | 13.3 | 11.9 | 10.3 | 9.4  | 3.0                           | 3.1 | 3.2 | 3.3 | 3.3 | 3.5 | 3.7 | 3.7 | 4.1 |
|    | A35          | 18.9                          | 17.7 | 16.2 | 15.0 | 13.8 | 12.4 | 11.2 | 9.8  | 8.9  | 2.5                           | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 3.1 | 3.2 | 3.6 |
|    | A40          | 17.6                          | 16.4 | 15.1 | 13.9 | 12.8 | 11.5 | 10.3 | 9.1  | 8.1  | 2.2                           | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.6 | 2.8 | 3.0 |
|    | A44          | 16.1                          | 15.1 | 13.8 | 12.7 | 11.6 | 10.5 | 9.3  | 8.3  | 7.1  | 1.9                           | 1.9 | 2.0 | 2.0 | 2.1 | 2.2 | 2.3 | 2.0 | 2.0 |
|    | A15          | 27.0                          | 25.2 | 23.2 | 21.5 | 19.8 | 17.9 | 16.1 | 15.0 | 13.4 | 5.6                           | 5.7 | 5.9 | 6.0 | 6.2 | 6.5 | 6.8 | 7.5 | 8.3 |
| 5  | A20          | 25.7                          | 24.0 | 22.1 | 20.4 | 18.8 | 17.0 | 15.3 | 13.7 | 12.6 | 4.8                           | 4.9 | 5.0 | 5.1 | 5.3 | 5.5 | 5.9 | 6.4 | 7.3 |
|    | A25          | 24.4                          | 22.8 | 21.0 | 19.4 | 17.9 | 16.1 | 14.5 | 12.9 | 12.0 | 4.1                           | 4.2 | 4.3 | 4.4 | 4.5 | 4.7 | 5.0 | 5.4 | 6.2 |
|    | A30          | 23.1                          | 21.6 | 19.9 | 18.4 | 16.9 | 15.3 | 13.7 | 11.9 | 10.8 | 3.5                           | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.3 | 4.3 | 4.8 |
|    | A35          | 21.8                          | 20.4 | 18.7 | 17.3 | 15.9 | 14.4 | 12.9 | 11.3 | 10.3 | 3.0                           | 3.1 | 3.2 | 3.2 | 3.3 | 3.5 | 3.6 | 3.8 | 4.3 |
|    | A40          | 20.5                          | 19.2 | 17.6 | 16.2 | 14.9 | 13.4 | 12.0 | 10.6 | 9.4  | 2.6                           | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | 3.1 | 3.3 | 3.6 |
|    | A44          | 19.4                          | 18.1 | 16.6 | 15.4 | 14.0 | 12.6 | 11.2 | 10.0 | 8.6  | 2.3                           | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.8 | 2.5 | 2.5 |
|    | A15          | 28.8                          | 26.9 | 24.9 | 22.9 | 20.7 | 18.9 | 17.3 | 15.7 | 14.0 | 5.9                           | 6.0 | 6.1 | 6.2 | 6.6 | 6.9 | 7.3 | 7.9 | 8.7 |
|    | A20          | 27.5                          | 25.6 | 23.8 | 21.9 | 19.7 | 18.0 | 16.3 | 14.7 | 13.1 | 5.0                           | 5.1 | 5.2 | 5.3 | 5.7 | 5.9 | 6.2 | 6.7 | 7.4 |
| 7  | A25          | 26.1                          | 24.4 | 22.6 | 20.8 | 18.7 | 17.1 | 15.5 | 13.9 | 12.5 | 4.3                           | 4.4 | 4.5 | 4.6 | 4.8 | 5.0 | 5.3 | 5.7 | 6.3 |
|    | A30          | 24.8                          | 23.1 | 21.4 | 19.7 | 17.7 | 16.1 | 14.5 | 13.0 | 11.5 | 3.7                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.7 | 5.1 |
|    | A35          | 23.4                          | 21.8 | 20.2 | 18.6 | 16.7 | 15.1 | 13.6 | 12.2 | 10.8 | 3.2                           | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 | 3.8 | 4.0 | 4.4 |
|    | A40          | 22.0                          | 20.5 | 19.0 | 17.4 | 15.6 | 14.2 | 12.7 | 11.3 | 9.8  | 2.7                           | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.4 | 3.6 |
|    | A44          | —                             | —    | —    | —    | 14.6 | 13.2 | 11.8 | 10.3 | 9.0  | —                             | —   | —   | —   | 2.6 | 2.6 | 2.7 | 2.7 | 2.8 |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |      |      |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|------|------|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |      |      |      |
| 10 | A15          | 31.7                          | 29.5 | 27.4 | 25.2 | 22.8 | 20.7 | 18.6 | 16.5 | 14.6 | 6.5                           | 6.6 | 6.7 | 6.9 | 7.3 | 7.6 | 7.9  | 8.4  | 9.2  |
|    | A20          | 30.2                          | 28.2 | 26.2 | 24.1 | 21.7 | 19.7 | 17.7 | 15.7 | 13.7 | 5.8                           | 5.6 | 5.7 | 5.9 | 6.2 | 6.4 | 6.7  | 7.0  | 7.5  |
|    | A25          | 28.8                          | 26.8 | 24.9 | 22.9 | 20.6 | 18.7 | 16.8 | 14.9 | 13.0 | 4.7                           | 4.8 | 4.9 | 5.0 | 5.3 | 5.4 | 5.7  | 6.0  | 6.5  |
|    | A30          | 27.3                          | 25.5 | 23.6 | 21.7 | 19.5 | 17.7 | 15.9 | 14.1 | 12.2 | 4.0                           | 4.1 | 4.2 | 4.3 | 4.5 | 4.6 | 4.8  | 5.1  | 5.4  |
|    | A35          | 25.8                          | 24.1 | 22.3 | 20.5 | 18.4 | 16.6 | 14.8 | 13.1 | 11.3 | 3.5                           | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.0  | 4.2  | 4.4  |
|    | A40          | 24.2                          | 22.6 | 21.0 | 19.2 | 17.2 | 15.5 | 13.7 | 12.0 | 10.2 | 3.0                           | 3.0 | 3.1 | 3.2 | 3.3 | 3.3 | 3.3  | 3.4  | 3.7  |
|    | A44          | –                             | –    | –    | –    | 16.1 | 14.3 | 12.5 | 10.6 | 9.3  | –                             | –   | –   | –   | 2.8 | 2.9 | 2.9  | 3.0  | 3.1  |
| 12 | A15          | 33.7                          | 31.4 | 29.1 | 26.8 | 24.1 | 21.9 | 19.7 | 17.5 | 15.3 | 6.9                           | 7.0 | 7.2 | 7.3 | 7.8 | 8.1 | 8.4  | 8.9  | 9.7  |
|    | A20          | 32.2                          | 30.0 | 27.8 | 25.6 | 23.0 | 20.9 | 18.8 | 16.6 | 14.5 | 5.8                           | 6.0 | 6.1 | 6.3 | 6.6 | 6.8 | 7.1  | 7.5  | 8.1  |
|    | A25          | 30.6                          | 28.6 | 26.5 | 24.3 | 21.9 | 19.8 | 17.8 | 15.8 | 13.7 | 5.0                           | 5.1 | 5.2 | 5.3 | 5.6 | 5.7 | 6.0  | 6.3  | 6.7  |
|    | A30          | 29.1                          | 27.1 | 25.1 | 23.1 | 20.7 | 18.8 | 16.8 | 14.8 | 12.9 | 4.3                           | 4.4 | 4.5 | 4.6 | 4.8 | 4.9 | 5.1  | 5.3  | 5.6  |
|    | A35          | 27.5                          | 25.6 | 23.7 | 21.8 | 19.5 | 17.6 | 15.7 | 13.8 | 12.0 | 3.7                           | 3.7 | 3.8 | 3.9 | 4.0 | 4.1 | 4.3  | 4.4  | 4.7  |
|    | A40          | 25.8                          | 24.1 | 22.3 | 20.5 | 18.3 | 16.4 | 14.6 | 12.7 | 10.9 | 3.1                           | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.5  | 3.6  | 3.8  |
|    | A44          | –                             | –    | –    | –    | 17.0 | 15.2 | 13.4 | 11.6 | 10.1 | –                             | –   | –   | –   | 3.0 | 3.0 | 3.1  | 3.2  | 3.3  |
| 15 | A15          | 37.5                          | 34.9 | 32.4 | 29.8 | 26.8 | 24.4 | 21.9 | 19.4 | 16.9 | 7.1                           | 7.3 | 7.4 | 7.6 | 8.0 | 8.3 | 8.8  | 9.4  | 10.4 |
|    | A20          | 35.8                          | 33.4 | 31.0 | 28.5 | 25.6 | 23.2 | 20.8 | 18.4 | 16.1 | 5.9                           | 6.1 | 6.3 | 6.4 | 6.7 | 7.0 | 7.3  | 7.8  | 8.5  |
|    | A25          | 34.2                          | 31.8 | 29.5 | 27.1 | 24.3 | 22.0 | 19.8 | 17.5 | 15.2 | 5.1                           | 5.2 | 5.3 | 5.5 | 5.7 | 5.9 | 6.2  | 6.5  | 7.1  |
|    | A30          | 32.4                          | 30.2 | 28.0 | 25.8 | 23.1 | 20.9 | 18.6 | 16.4 | 14.2 | 4.3                           | 4.4 | 4.6 | 4.7 | 4.8 | 5.0 | 5.2  | 5.4  | 5.9  |
|    | A35          | 30.6                          | 28.5 | 26.4 | 24.3 | 21.7 | 19.6 | 17.5 | 15.4 | 13.3 | 3.7                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3  | 4.5  | 4.8  |
|    | A40          | 28.8                          | 26.8 | 24.8 | 22.8 | 20.3 | 18.3 | 16.2 | 14.1 | 12.1 | 3.2                           | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6  | 3.7  | 3.9  |
|    | A44          | –                             | –    | –    | –    | 18.9 | 16.9 | 14.8 | 12.7 | 10.6 | –                             | –   | –   | –   | 3.1 | 3.1 | 3.2  | 3.2  | 3.3  |
| 18 | A15          | 40.8                          | 38.0 | 35.2 | 32.4 | 29.1 | 26.4 | 23.7 | 21.0 | 18.3 | 7.7                           | 7.9 | 8.2 | 8.4 | 8.8 | 9.2 | 9.8  | 10.6 | 10.8 |
|    | A20          | 39.9                          | 36.3 | 33.6 | 31.0 | 27.8 | 25.2 | 22.6 | 20.0 | 17.4 | 6.6                           | 6.7 | 6.9 | 7.1 | 7.3 | 7.7 | 8.1  | 8.8  | 9.5  |
|    | A25          | 37.1                          | 34.6 | 32.0 | 29.5 | 26.4 | 23.9 | 21.4 | 18.9 | 16.3 | 5.5                           | 5.7 | 5.8 | 6.0 | 6.2 | 6.4 | 6.8  | 7.3  | 8.0  |
|    | A30          | 35.2                          | 32.8 | 30.4 | 28.0 | 25.0 | 22.6 | 20.2 | 17.8 | 15.4 | 4.7                           | 4.9 | 4.9 | 5.1 | 5.2 | 5.4 | 5.6  | 5.9  | 6.4  |
|    | A35          | 33.3                          | 30.0 | 28.7 | 26.4 | 23.5 | 21.2 | 18.9 | 16.6 | 14.3 | 4.0                           | 4.4 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7  | 4.9  | 5.2  |
|    | A40          | 31.3                          | 28.2 | 27.0 | 24.8 | 22.0 | 19.8 | 17.5 | 15.3 | 13.0 | 3.4                           | 3.7 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9  | 4.0  | 4.2  |
|    | A44          | –                             | –    | –    | –    | 20.8 | 18.3 | 15.8 | 13.3 | 11.0 | –                             | –   | –   | –   | 3.3 | 3.3 | 3.4  | 3.5  | 3.8  |
| 20 | A15          | 43.0                          | 40.0 | 37.1 | 34.1 | 30.6 | 27.7 | 24.9 | 22.0 | 19.1 | 8.2                           | 8.4 | 8.7 | 9.0 | 9.4 | 9.8 | 10.4 | 10.8 | 11.1 |
|    | A20          | 41.1                          | 38.3 | 35.5 | 32.6 | 29.2 | 26.5 | 23.7 | 20.9 | 18.2 | 6.8                           | 7.1 | 7.3 | 7.5 | 7.8 | 8.1 | 8.6  | 9.3  | 9.8  |
|    | A25          | 39.2                          | 36.5 | 33.8 | 31.1 | 27.8 | 25.1 | 22.5 | 19.8 | 17.2 | 5.8                           | 6.0 | 6.1 | 6.3 | 6.5 | 6.8 | 7.2  | 7.7  | 8.5  |
|    | A30          | 37.1                          | 34.6 | 32.1 | 29.5 | 26.3 | 23.8 | 21.2 | 18.7 | 16.1 | 4.9                           | 5.1 | 5.2 | 5.4 | 5.5 | 5.7 | 6.0  | 6.3  | 6.9  |
|    | A35          | 35.1                          | 32.7 | 30.3 | 27.8 | 24.8 | 22.3 | 19.9 | 17.4 | 15.0 | 4.2                           | 4.3 | 4.4 | 4.6 | 4.6 | 4.8 | 4.9  | 5.2  | 5.6  |
|    | A40          | 33.0                          | 30.7 | 28.5 | 26.1 | 23.2 | 20.8 | 18.5 | 16.2 | 13.8 | 3.6                           | 3.7 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1  | 4.3  | 4.5  |
|    | A44          | –                             | –    | –    | –    | 21.9 | 19.3 | 16.8 | 14.3 | 11.9 | –                             | –   | –   | –   | 3.4 | 3.5 | 3.6  | 3.7  | 3.9  |

Table 27

### 7.3 Performance Heating - AWP19

| To | Tae<br>DB/WB | Heating capacity EN14511        |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|---------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load.3 |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                           | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 25 | A-20         | 10.9                            | 10.1 | 8.8  | 7.3  | 5.7  | 4.6  | 3.7  | –    | –    | 1.6                           | 1.5 | 1.5 | 1.4 | 1.4 | 1.3 | 1.3 | –   | –   |
|    | A-15         | 12.1                            | 11.4 | 10.1 | 8.6  | 7.3  | 6.1  | 5.2  | –    | –    | 1.7                           | 1.7 | 1.7 | 1.6 | 1.6 | 1.6 | 1.5 | –   | –   |
|    | A-10         | 19.6                            | 18.7 | 16.9 | 14.7 | 12.7 | 10.9 | 9.0  | 7.5  | –    | 3.2                           | 3.2 | 3.1 | 3.1 | 3.1 | 3.0 | 3.0 | 3.0 | –   |
|    | A-7          | 21.0                            | 20.0 | 18.3 | 16.1 | 14.0 | 12.1 | 10.1 | 9.0  | 7.8  | 3.4                           | 3.4 | 3.5 | 3.5 | 3.5 | 3.6 | 3.6 | 3.7 | 3.8 |
|    | A-2          | 23.5                            | 22.4 | 20.6 | 18.3 | 16.1 | 14.0 | 11.9 | 10.3 | 8.7  | 3.7                           | 3.8 | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.4 |
|    | A2           | 26.6                            | 25.3 | 23.5 | 21.1 | 18.7 | 16.3 | 14.3 | 12.0 | 9.8  | 4.2                           | 4.2 | 4.3 | 4.5 | 4.6 | 4.7 | 4.9 | 5.2 | 5.3 |
|    | A7           | 31.6                            | 30.6 | 28.3 | 25.4 | 22.5 | 19.7 | 16.5 | 14.7 | 13.0 | 5.3                           | 5.4 | 5.5 | 5.6 | 5.8 | 5.9 | 6.5 | 6.8 | 7.2 |
|    | A10          | 34.6                            | 33.4 | 31.0 | 27.8 | 24.7 | 21.6 | 18.0 | 16.1 | 14.2 | 5.8                           | 5.9 | 6.0 | 6.1 | 6.3 | 6.5 | 7.0 | 7.5 | 7.9 |
|    | A18          | 44.0                            | 42.3 | 39.4 | 35.4 | 31.3 | 27.3 | 22.7 | 19.0 | 16.7 | 7.3                           | 7.5 | 7.6 | 7.8 | 7.9 | 8.4 | 8.7 | 9.3 | 9.8 |

| To | Tae<br>DB/WB | Heating capacity EN14511<br>Percentage of compressor load.3 |      |      |      |      |      |      |      | COP EN14511<br>Percentage of compressor load |     |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------------------------------------|------|------|------|------|------|------|------|----------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 30 | A-20         | 10.2                                                        | 9.16 | 8.4  | 6.9  | 5.5  | 4.5  | 3.6  | –    | –                                            | 1.5 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | –   | –   |
|    | A-15         | 11.6                                                        | 11.0 | 9.8  | 8.4  | 7.1  | 6.0  | 5.1  | –    | –                                            | 1.6 | 1.5 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | –   | –   |
|    | A-10         | 19.0                                                        | 18.1 | 16.5 | 14.4 | 12.5 | 10.7 | 8.8  | 6.9  | –                                            | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.7 | 2.7 | 2.6 | –   |
|    | A-7          | 20.4                                                        | 19.6 | 17.9 | 15.7 | 13.8 | 11.9 | 9.9  | 8.8  | 7.6                                          | 3.1 | 3.1 | 3.1 | 3.2 | 3.2 | 3.4 | 3.5 | 3.7 | 3.7 |
|    | A-2          | 23.0                                                        | 21.9 | 20.2 | 18.0 | 15.8 | 13.8 | 11.7 | 10.1 | 8.5                                          | 3.4 | 3.4 | 3.4 | 3.5 | 3.6 | 3.8 | 4.0 | 4.2 | 4.2 |
|    | A2           | 26.2                                                        | 24.9 | 23.2 | 20.8 | 18.4 | 16.1 | 14.0 | 11.8 | 9.6                                          | 3.7 | 3.8 | 3.8 | 4.0 | 4.1 | 4.2 | 4.6 | 4.8 | 4.9 |
|    | A7           | 31.2                                                        | 30.1 | 27.9 | 25.0 | 22.1 | 19.3 | 16.1 | 14.4 | 12.7                                         | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.3 | 5.6 | 5.9 | 6.1 |
|    | A10          | 33.9                                                        | 32.6 | 30.6 | 27.4 | 24.3 | 21.2 | 17.6 | 15.7 | 13.9                                         | 5.1 | 5.2 | 5.3 | 5.4 | 5.6 | 5.8 | 6.1 | 6.5 | 6.8 |
|    | A18          | 43.0                                                        | 41.6 | 38.8 | 34.8 | 30.8 | 26.7 | 22.0 | 18.5 | 16.2                                         | 6.3 | 6.5 | 6.6 | 6.7 | 6.9 | 7.2 | 7.6 | 7.9 | 8.2 |
| 35 | A-20         | 9.7                                                         | 9.1  | 8.1  | 6.7  | 5.4  | 4.4  | 3.5  | –    | –                                            | 1.4 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | –   | –   |
|    | A-15         | 11.2                                                        | 10.6 | 9.5  | 8.1  | 7.0  | 5.9  | 5.0  | –    | –                                            | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | 1.2 | 1.2 | –   | –   |
|    | A-10         | 18.6                                                        | 17.7 | 16.1 | 14.1 | 12.2 | 10.5 | 8.7  | 6.7  | –                                            | 2.6 | 2.6 | 2.6 | 2.5 | 2.5 | 2.4 | 2.4 | 2.3 | –   |
|    | A-7          | 20.0                                                        | 19.2 | 17.5 | 15.5 | 13.6 | 11.7 | 9.7  | 8.6  | 7.5                                          | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.4 | 3.5 |
|    | A-2          | 22.3                                                        | 21.4 | 19.9 | 17.7 | 15.6 | 13.5 | 11.5 | 10.0 | 8.3                                          | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.5 | 3.8 | 3.9 |
|    | A2           | 25.1                                                        | 24.1 | 22.8 | 20.5 | 18.1 | 15.8 | 13.8 | 11.6 | 9.3                                          | 3.4 | 3.4 | 3.6 | 3.6 | 3.7 | 3.8 | 4.1 | 4.3 | 4.4 |
|    | A7           | 30.8                                                        | 29.4 | 27.5 | 24.7 | 21.8 | 19.0 | 15.8 | 14.1 | 12.0                                         | 4.2 | 4.3 | 4.3 | 4.5 | 4.6 | 4.7 | 5.0 | 5.2 | 5.3 |
|    | A10          | 32.8                                                        | 31.7 | 30.2 | 27.0 | 23.9 | 20.8 | 17.3 | 15.3 | 13.1                                         | 4.5 | 4.6 | 4.7 | 4.8 | 5.0 | 5.1 | 5.4 | 5.6 | 5.8 |
|    | A18          | 41.8                                                        | 40.6 | 38.2 | 34.2 | 30.2 | 26.1 | 21.6 | 18.0 | 15.6                                         | 5.4 | 5.6 | 5.8 | 5.9 | 6.0 | 6.2 | 6.5 | 6.8 | 7.0 |
| 40 | A-20         | 9.3                                                         | 8.8  | 7.7  | 6.5  | 5.3  | 4.3  | 3.4  | –    | –                                            | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | –   | –   |
|    | A-15         | 10.8                                                        | 10.3 | 9.3  | 8.0  | 6.8  | 5.8  | 4.9  | –    | –                                            | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 | –   | –   |
|    | A-10         | 17.0                                                        | 16.3 | 14.8 | 13.0 | 11.6 | 10.2 | 8.6  | 6.6  | –                                            | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 | 2.0 | –   |
|    | A-7          | 18.8                                                        | 18.0 | 16.5 | 14.6 | 12.8 | 11.0 | 9.7  | 8.4  | 7.3                                          | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 | 2.7 | 3.3 | 3.3 |
|    | A-2          | 21.5                                                        | 20.6 | 19.2 | 17.1 | 15.0 | 13.0 | 11.2 | 9.8  | 8.1                                          | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.5 | 3.6 |
|    | A2           | 24.8                                                        | 23.8 | 22.5 | 20.2 | 17.8 | 15.5 | 13.2 | 11.5 | 9.1                                          | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.7 | 3.8 | 3.9 |
|    | A7           | 29.3                                                        | 28.3 | 26.2 | 23.5 | 20.7 | 18.0 | 15.1 | 13.2 | 11.5                                         | 3.7 | 3.7 | 3.8 | 3.8 | 3.9 | 3.9 | 4.1 | 4.2 | 4.3 |
|    | A10          | 31.8                                                        | 30.6 | 28.7 | 25.7 | 22.7 | 19.7 | 16.6 | 14.3 | 12.5                                         | 3.8 | 4.0 | 4.0 | 4.1 | 4.1 | 4.3 | 4.4 | 4.5 | 4.6 |
|    | A18          | 40.6                                                        | 39.5 | 36.3 | 32.4 | 28.6 | 24.7 | 20.4 | 17.5 | 15.1                                         | 4.7 | 4.9 | 4.9 | 5.0 | 5.1 | 5.2 | 5.5 | 5.8 | 5.9 |
| 45 | A-20         | –                                                           | –    | 7.3  | 6.2  | 5.0  | 4.1  | 3.4  | –    | –                                            | –   | –   | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | –   | –   |
|    | A-15         | 10.6                                                        | 10.0 | 9.1  | 7.9  | 6.7  | 5.7  | 4.8  | –    | –                                            | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.0 | –   | –   |
|    | A-10         | 16.5                                                        | 15.8 | 14.4 | 12.7 | 11.3 | 10.0 | 8.5  | 6.5  | –                                            | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | –   |
|    | A-7          | 17.6                                                        | 16.9 | 15.5 | 13.7 | 12.5 | 10.9 | 9.6  | 8.2  | 7.1                                          | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.6 | 2.7 |
|    | A-2          | 20.7                                                        | 19.9 | 18.5 | 16.4 | 14.7 | 12.8 | 11.0 | 9.5  | 7.9                                          | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.9 | 3.0 |
|    | A2           | 24.5                                                        | 23.7 | 22.2 | 19.8 | 17.5 | 15.2 | 12.9 | 11.2 | 9.0                                          | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 | 3.0 | 3.2 | 3.3 | 3.4 |
|    | A7           | 29.0                                                        | 28.0 | 25.9 | 23.1 | 20.4 | 17.7 | 14.7 | 12.9 | 11.2                                         | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.7 |
|    | A10          | 30.5                                                        | 29.5 | 28.3 | 25.3 | 22.3 | 19.3 | 16.1 | 14.0 | 12.1                                         | 3.3 | 3.5 | 3.5 | 3.6 | 3.6 | 3.8 | 3.9 | 3.9 | 4.0 |
|    | A18          | 39.5                                                        | 38.6 | 35.6 | 31.8 | 27.9 | 24.1 | 19.8 | 16.9 | 14.6                                         | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.9 | 5.0 | 5.1 |
| 50 | A-20         | –                                                           | –    | –    | –    | –    | –    | –    | –    | –                                            | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | 10.3                                                        | 9.7  | 8.9  | 7.7  | 6.5  | 5.5  | 4.5  | –    | –                                            | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | –   | –   |
|    | A-10         | 16.3                                                        | 15.6 | 14.3 | 12.6 | 11.2 | 9.8  | 8.5  | 6.3  | –                                            | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | –   |
|    | A-7          | 17.4                                                        | 16.7 | 15.4 | 13.6 | 12.4 | 10.8 | 9.5  | 8.0  | 6.8                                          | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.3 | 2.4 | 2.4 |
|    | A-2          | 20.4                                                        | 19.7 | 18.3 | 16.3 | 14.6 | 12.7 | 10.9 | 9.3  | 7.7                                          | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.6 | 2.6 | 2.7 |
|    | A2           | 24.2                                                        | 23.4 | 21.9 | 19.6 | 17.3 | 15.0 | 12.6 | 10.9 | 8.8                                          | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.9 | 2.9 | 3.0 |
|    | A7           | 28.3                                                        | 26.5 | 24.6 | 22.0 | 19.4 | 16.7 | 13.9 | 12.0 | 10.5                                         | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 |
|    | A10          | 29.3                                                        | 28.2 | 25.7 | 23.0 | 20.2 | 17.5 | 15.3 | 13.4 | 11.6                                         | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.5 | 3.6 | 3.7 |
|    | A18          | 38.3                                                        | 37.4 | 32.3 | 28.8 | 25.2 | 21.6 | 18.8 | 16.4 | 14.0                                         | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 4.2 | 4.3 | 4.5 |
| 55 | A-20         | –                                                           | –    | –    | –    | –    | –    | –    | –    | –                                            | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | –                                                           | –    | –    | –    | –    | –    | –    | –    | –                                            | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-10         | –                                                           | –    | –    | –    | 11.2 | 9.7  | 8.3  | 6.2  | –                                            | –   | –   | –   | –   | 1.8 | 1.7 | 1.7 | 1.7 | –   |
|    | A-7          | 17.3                                                        | 16.5 | 15.3 | 13.6 | 12.2 | 10.7 | 9.4  | 7.9  | 6.7                                          | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 2.0 | 2.2 | 2.2 | 2.2 |
|    | A-2          | 20.2                                                        | 19.4 | 18.1 | 16.1 | 14.3 | 12.5 | 10.7 | 9.1  | 7.5                                          | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.3 | 2.4 | 2.4 |
|    | A2           | 24.0                                                        | 23.1 | 21.6 | 19.3 | 17.0 | 14.7 | 12.4 | 10.7 | 8.6                                          | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 |
|    | A7           | 27.6                                                        | 25.8 | 23.3 | 20.8 | 18.4 | 15.8 | 13.4 | 11.8 | 10.3                                         | 2.4 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 3.0 |
|    | A10          | 28.6                                                        | 27.4 | 25.4 | 22.6 | 19.9 | 17.2 | 15.0 | 13.1 | 11.2                                         | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | 3.1 | 3.2 | 3.3 |
|    | A18          | 37.3                                                        | 36.3 | 31.6 | 28.1 | 24.6 | 21.0 | 18.2 | 15.7 | 13.3                                         | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.7 | 3.8 | 3.9 |

| To | Tae<br>DB/WB | Heating capacity EN14511        |   |   |   |   |   |      |      |      | COP EN14511                   |   |   |   |   |   |     |     |     |
|----|--------------|---------------------------------|---|---|---|---|---|------|------|------|-------------------------------|---|---|---|---|---|-----|-----|-----|
|    |              | Percentage of compressor load.3 |   |   |   |   |   |      |      |      | Percentage of compressor load |   |   |   |   |   |     |     |     |
| 60 | A-20         | -                               | - | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | - | -   | -   | -   |
|    | A-15         | -                               | - | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | - | -   | -   | -   |
|    | A-10         | -                               | - | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | - | -   | -   | -   |
|    | A-7          | -                               | - | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | - | -   | -   | -   |
|    | A-2          | -                               | - | - | - | - | - | 10.5 | 8.9  | 6.1  | -                             | - | - | - | - | - | 1.6 | 1.7 | 1.7 |
|    | A2           | -                               | - | - | - | - | - | 12.2 | 10.5 | 6.5  | -                             | - | - | - | - | - | 1.7 | 1.8 | 1.8 |
|    | A7           | -                               | - | - | - | - | - | 13.2 | 11.7 | 8.3  | -                             | - | - | - | - | - | 2.0 | 2.1 | 2.1 |
|    | A10          | -                               | - | - | - | - | - | 14.6 | 12.7 | 9.0  | -                             | - | - | - | - | - | 2.1 | 2.4 | 2.3 |
|    | A18          | -                               | - | - | - | - | - | 17.6 | 15.1 | 10.9 | -                             | - | - | - | - | - | 2.5 | 2.8 | 2.8 |

Table 28

#### 7.4 Performance Cooling - AWP19

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |      |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30%  |
| 0  | A15          | 26.2                          | 24.3 | 22.4 | 19.9 | 18.4 | 17.0 | 15.5 | 13.1 | 11.6 | 4.5                           | 4.6 | 4.7 | 4.9 | 5.0 | 5.1 | 5.5 | 5.9 | 7.1  |
|    | A20          | 24.9                          | 23.2 | 21.4 | 19.0 | 17.6 | 16.2 | 14.5 | 12.5 | 11.0 | 3.8                           | 3.9 | 4.0 | 4.2 | 4.3 | 4.4 | 4.6 | 5.0 | 5.9  |
|    | A25          | 23.6                          | 22.0 | 20.3 | 18.0 | 16.6 | 15.3 | 13.8 | 11.8 | 10.4 | 3.2                           | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 4.0 | 4.2 | 4.9  |
|    | A30          | 22.3                          | 20.8 | 19.2 | 17.0 | 15.7 | 14.5 | 13.0 | 11.1 | 9.7  | 2.8                           | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.4 | 3.5 | 4.0  |
|    | A35          | 21.0                          | 19.5 | 18.0 | 16.0 | 14.8 | 13.6 | 12.2 | 10.4 | 9.0  | 2.3                           | 2.4 | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.9 | 3.3  |
|    | A40          | 19.6                          | 18.2 | 16.9 | 14.9 | 13.8 | 12.7 | 11.3 | 9.8  | 8.7  | 2.0                           | 2.1 | 2.1 | 2.2 | 2.3 | 2.3 | 2.6 | 2.6 | 3.0  |
|    | A44          | 18.1                          | 16.9 | 15.6 | 13.8 | 12.8 | 11.6 | 10.5 | 9.2  | 8.0  | 1.8                           | 1.8 | 1.9 | 1.9 | 2.0 | 2.1 | 2.2 | 1.9 | 2.0  |
|    | A44          | 18.1                          | 16.9 | 15.6 | 13.8 | 12.8 | 11.6 | 10.5 | 9.2  | 8.0  | 1.8                           | 1.8 | 1.9 | 1.9 | 2.0 | 2.1 | 2.2 | 1.9 | 2.0  |
| 5  | A15          | 30.2                          | 28.0 | 25.8 | 22.9 | 21.2 | 19.6 | 17.9 | 15.1 | 13.4 | 5.2                           | 5.3 | 5.4 | 5.7 | 5.8 | 5.9 | 6.4 | 6.8 | 8.3  |
|    | A20          | 28.7                          | 26.7 | 24.6 | 21.9 | 20.2 | 18.6 | 16.7 | 14.4 | 12.7 | 4.4                           | 4.5 | 4.6 | 4.8 | 4.9 | 5.1 | 5.4 | 5.8 | 6.9  |
|    | A25          | 27.3                          | 25.3 | 23.4 | 20.8 | 19.2 | 17.7 | 15.9 | 13.6 | 12.0 | 3.8                           | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.6 | 4.8 | 5.7  |
|    | A30          | 25.8                          | 24.0 | 22.2 | 19.7 | 18.2 | 16.7 | 15.1 | 12.8 | 11.2 | 3.2                           | 3.3 | 3.4 | 3.6 | 3.6 | 3.7 | 4.0 | 4.1 | 4.7  |
|    | A35          | 24.3                          | 22.6 | 20.9 | 18.5 | 17.1 | 15.7 | 14.2 | 12.0 | 10.5 | 2.8                           | 2.9 | 3.0 | 3.1 | 3.1 | 3.2 | 3.4 | 3.5 | 3.9  |
|    | A40          | 22.8                          | 21.2 | 19.6 | 17.4 | 16.1 | 14.7 | 13.1 | 11.5 | 10.1 | 2.4                           | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 3.1 | 3.1 | 3.6  |
|    | A44          | 21.6                          | 20.1 | 18.6 | 16.5 | 15.2 | 13.9 | 12.5 | 11.0 | 9.5  | 2.1                           | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | 2.6 | 2.3 | 2.4  |
|    | A44          | 21.6                          | 20.1 | 18.6 | 16.5 | 15.2 | 13.9 | 12.5 | 11.0 | 9.5  | 2.1                           | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | 2.6 | 2.3 | 2.4  |
| 7  | A15          | 32.0                          | 29.7 | 27.4 | 24.7 | 22.8 | 20.8 | 18.7 | 16.6 | 14.5 | 5.4                           | 5.5 | 5.7 | 5.8 | 5.9 | 6.0 | 6.5 | 7.4 | 8.8  |
|    | A20          | 30.5                          | 28.3 | 26.1 | 23.5 | 21.7 | 19.9 | 17.8 | 15.8 | 13.8 | 4.6                           | 4.7 | 4.8 | 5.0 | 5.1 | 5.2 | 5.6 | 6.2 | 7.3  |
|    | A25          | 29.0                          | 26.9 | 24.8 | 22.4 | 20.6 | 18.9 | 16.9 | 15.0 | 13.0 | 3.9                           | 4.0 | 4.1 | 4.3 | 4.3 | 4.4 | 4.7 | 5.2 | 5.9  |
|    | A30          | 27.4                          | 25.5 | 23.5 | 21.2 | 19.6 | 17.8 | 16.0 | 14.1 | 12.2 | 3.4                           | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | 4.0 | 4.4 | 4.9  |
|    | A35          | 25.9                          | 24.1 | 22.2 | 20.0 | 18.4 | 16.8 | 15.0 | 13.2 | 11.4 | 2.9                           | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.7 | 4.1  |
|    | A40          | 24.3                          | 22.6 | 20.9 | 18.8 | 17.3 | 15.8 | 14.0 | 12.3 | 10.6 | 2.5                           | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 3.1 | 3.4  |
|    | A44          | -                             | -    | -    | -    | 16.4 | 14.7 | 13.1 | 11.4 | 9.7  | -                             | -   | -   | -   | 2.4 | 2.5 | 2.5 | 2.6 | 2.7  |
|    | A44          | -                             | -    | -    | -    | 16.4 | 14.7 | 13.1 | 11.4 | 9.7  | -                             | -   | -   | -   | 2.4 | 2.5 | 2.5 | 2.6 | 2.7  |
| 10 | A15          | 35.2                          | 32.7 | 30.1 | 27.1 | 25.0 | 22.9 | 20.5 | 18.1 | 15.8 | 5.9                           | 6.1 | 6.2 | 6.4 | 6.5 | 6.7 | 7.2 | 8.0 | 9.3  |
|    | A20          | 33.6                          | 31.2 | 28.7 | 25.9 | 23.9 | 21.8 | 19.5 | 17.2 | 14.9 | 5.0                           | 5.1 | 5.3 | 5.5 | 5.6 | 5.7 | 6.1 | 6.7 | 7.7  |
|    | A25          | 31.9                          | 29.6 | 27.4 | 24.7 | 22.7 | 20.8 | 18.5 | 16.3 | 14.1 | 4.2                           | 4.4 | 4.5 | 4.7 | 4.8 | 4.9 | 5.1 | 5.6 | 6.2  |
|    | A30          | 30.2                          | 28.1 | 26.0 | 23.4 | 21.6 | 19.7 | 17.5 | 15.4 | 13.2 | 3.6                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.7 | 5.1  |
|    | A35          | 28.5                          | 26.5 | 24.5 | 22.1 | 20.3 | 18.5 | 16.5 | 14.4 | 12.3 | 3.1                           | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.9 | 4.2  |
|    | A40          | 26.8                          | 24.9 | 23.0 | 20.8 | 19.1 | 17.4 | 15.3 | 13.2 | 11.1 | 2.7                           | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 | 3.2  |
|    | A44          | -                             | -    | -    | -    | 17.1 | 16.1 | 14.0 | 11.9 | 9.9  | -                             | -   | -   | -   | 2.7 | 2.7 | 2.8 | 2.9 | 3.0  |
|    | A44          | -                             | -    | -    | -    | 17.1 | 16.1 | 14.0 | 11.9 | 9.9  | -                             | -   | -   | -   | 2.7 | 2.7 | 2.8 | 2.9 | 3.0  |
| 12 | A15          | 37.4                          | 34.7 | 32.0 | 28.8 | 26.6 | 24.3 | 21.8 | 19.2 | 16.6 | 6.2                           | 6.4 | 6.6 | 6.9 | 7.0 | 7.1 | 7.7 | 8.5 | 9.8  |
|    | A20          | 35.7                          | 33.1 | 30.6 | 27.5 | 25.4 | 23.2 | 20.7 | 18.2 | 15.8 | 5.3                           | 5.4 | 5.6 | 5.8 | 5.9 | 6.1 | 6.5 | 7.0 | 8.0  |
|    | A25          | 34.0                          | 31.5 | 29.1 | 26.2 | 24.1 | 22.1 | 19.7 | 17.3 | 14.9 | 4.5                           | 4.6 | 4.8 | 5.0 | 5.1 | 5.2 | 5.5 | 5.9 | 6.6  |
|    | A30          | 32.2                          | 29.9 | 27.6 | 24.9 | 22.9 | 20.9 | 18.6 | 16.3 | 14.0 | 3.8                           | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 4.6 | 4.9 | 5.4  |
|    | A35          | 30.4                          | 28.3 | 26.1 | 23.5 | 21.6 | 19.7 | 17.5 | 15.2 | 13.0 | 3.3                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.4  |
|    | A40          | 28.5                          | 26.6 | 24.5 | 22.1 | 20.3 | 18.5 | 16.3 | 14.1 | 11.9 | 2.8                           | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.6  |
|    | A44          | -                             | -    | -    | -    | 19.2 | 17.5 | 15.0 | 12.5 | 10.2 | -                             | -   | -   | -   | 2.8 | 2.8 | 2.9 | 3.0 | 3.2  |
|    | A44          | -                             | -    | -    | -    | 19.2 | 17.5 | 15.0 | 12.5 | 10.2 | -                             | -   | -   | -   | 2.8 | 2.8 | 2.9 | 3.0 | 3.2  |
| 15 | A15          | 42.0                          | 39.0 | 36.0 | 32.4 | 29.8 | 26.8 | 24.4 | 21.9 | 19.4 | 6.7                           | 7.0 | 7.2 | 7.4 | 7.6 | 8.0 | 8.3 | 8.8 | 10.0 |
|    | A20          | 40.1                          | 37.2 | 34.4 | 31.0 | 28.5 | 25.6 | 23.2 | 20.8 | 18.4 | 5.6                           | 5.8 | 6.1 | 6.3 | 6.4 | 6.7 | 7.0 | 7.3 | 8.4  |
|    | A25          | 38.2                          | 35.5 | 32.7 | 29.5 | 27.1 | 24.3 | 22.0 | 19.8 | 17.5 | 4.8                           | 5.0 | 5.1 | 5.3 | 5.5 | 5.7 | 5.9 | 6.2 | 7.0  |
|    | A30          | 36.2                          | 33.7 | 31.1 | 28.0 | 25.8 | 23.1 | 20.9 | 18.6 | 16.4 | 4.1                           | 4.2 | 4.4 | 4.6 | 4.7 | 4.8 | 5.0 | 5.2 | 5.6  |
|    | A35          | 34.2                          | 31.8 | 29.4 | 26.4 | 24.3 | 21.7 | 19.6 | 17.5 | 15.4 | 3.5                           | 3.6 | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.5  |
|    | A40          | 32.1                          | 29.9 | 27.6 | 24.8 | 22.8 | 20.3 | 18.3 | 16.2 | 14.1 | 3.0                           | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6 | 3.7  |
|    | A44          | -                             | -    | -    | -    | 21.6 | 18.9 | 16.9 | 14.8 | 12.7 | -                             | -   | -   | -   | 3.0 | 3.1 | 3.1 | 3.2 | 3.3  |
|    | A44          | -                             | -    | -    | -    | 21.6 | 18.9 | 16.9 | 14.8 | 12.7 | -                             | -   | -   | -   | 3.0 | 3.1 | 3.1 | 3.2 | 3.3  |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |      |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|------|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |      |      |
| 18 | A15          | 45.7                          | 42.4 | 39.1 | 35.2 | 32.4 | 29.1 | 26.4 | 23.7 | 21.0 | 7.3                           | 7.6 | 7.8 | 8.2 | 8.4 | 8.8 | 9.2 | 9.8  | 10.6 |
|    | A20          | 43.6                          | 40.5 | 37.4 | 33.6 | 31.0 | 27.8 | 25.2 | 22.6 | 20.0 | 6.1                           | 6.3 | 6.6 | 6.9 | 7.1 | 7.3 | 7.7 | 8.1  | 8.8  |
|    | A25          | 41.5                          | 38.6 | 35.7 | 32.0 | 29.5 | 26.4 | 23.9 | 21.4 | 18.9 | 5.2                           | 5.4 | 5.6 | 5.8 | 6.0 | 6.2 | 6.4 | 6.8  | 7.3  |
|    | A30          | 39.4                          | 36.6 | 33.8 | 30.4 | 28.0 | 25.0 | 22.6 | 20.2 | 17.8 | 4.4                           | 4.6 | 4.8 | 4.9 | 5.1 | 5.2 | 5.4 | 5.6  | 5.9  |
|    | A35          | 37.2                          | 34.7 | 31.9 | 28.7 | 26.4 | 23.5 | 21.2 | 18.9 | 16.6 | 3.7                           | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7  | 4.9  |
|    | A40          | 34.9                          | 32.5 | 30.0 | 27.0 | 24.8 | 22.0 | 19.8 | 17.5 | 15.3 | 3.2                           | 3.3 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9  | 4.0  |
|    | A44          | –                             | –    | –    | –    | 23.5 | 20.8 | 18.3 | 15.8 | 13.3 | –                             | –   | –   | –   | 3.2 | 3.3 | 3.3 | 3.4  | 3.5  |
| 20 | A15          | 48.2                          | 44.7 | 41.2 | 37.1 | 34.1 | 30.6 | 27.7 | 24.9 | 21.7 | 7.6                           | 8.0 | 8.3 | 8.7 | 9.0 | 9.4 | 9.8 | 10.4 | 11.2 |
|    | A20          | 46.0                          | 42.7 | 39.4 | 35.5 | 32.6 | 29.2 | 26.5 | 23.7 | 20.9 | 6.4                           | 6.7 | 7.0 | 7.3 | 7.5 | 7.8 | 8.1 | 8.6  | 9.3  |
|    | A25          | 43.8                          | 40.7 | 37.6 | 33.8 | 31.1 | 27.8 | 25.1 | 22.5 | 19.8 | 5.4                           | 5.7 | 5.9 | 6.1 | 6.3 | 6.5 | 6.8 | 7.2  | 7.7  |
|    | A30          | 41.5                          | 38.6 | 35.6 | 32.1 | 29.5 | 26.3 | 23.8 | 21.2 | 18.7 | 4.6                           | 4.8 | 5.0 | 5.2 | 5.4 | 5.5 | 5.7 | 6.0  | 6.3  |
|    | A35          | 39.2                          | 36.5 | 33.7 | 30.3 | 27.8 | 24.8 | 22.3 | 19.9 | 17.4 | 3.9                           | 4.1 | 4.3 | 4.4 | 4.6 | 4.6 | 4.8 | 4.9  | 5.2  |
|    | A40          | 36.8                          | 34.3 | 31.6 | 28.5 | 26.1 | 23.2 | 20.8 | 18.5 | 16.2 | 3.4                           | 3.5 | 3.6 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1  | 4.3  |
|    | A44          | –                             | –    | –    | –    | 24.7 | 21.9 | 19.3 | 16.8 | 14.2 | –                             | –   | –   | –   | 3.4 | 3.5 | 3.5 | 3.6  | 3.8  |

Table 29

## 7.5 Performance Heating - AWP24

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 25 | A-20         | 13.2                          | 12.2 | 11.4 | 9.6  | 8.0  | 6.6  | 4.8  | –    | –    | 1.5                           | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | –   | –   |
|    | A-15         | 14.3                          | 13.0 | 11.9 | 9.8  | 8.2  | 8.0  | 6.4  | –    | –    | 1.7                           | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 | –   | –   |
|    | A-10         | 22.8                          | 21.0 | 19.0 | 16.3 | 15.0 | 13.7 | 11.3 | 9.0  | –    | 3.2                           | 3.1 | 3.1 | 3.1 | 3.0 | 3.0 | 3.0 | 2.9 | –   |
|    | A-7          | 24.4                          | 22.8 | 20.7 | 17.8 | 16.4 | 15.1 | 12.6 | 10.1 | 8.0  | 3.4                           | 3.4 | 3.4 | 3.5 | 3.5 | 3.5 | 3.6 | 3.7 | 3.7 |
|    | A-2          | 27.7                          | 25.7 | 23.5 | 20.4 | 18.9 | 17.5 | 14.7 | 11.8 | 9.4  | 3.7                           | 3.7 | 3.7 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1 | 4.3 |
|    | A2           | 31.9                          | 29.3 | 27.1 | 23.7 | 22.1 | 20.5 | 17.3 | 14.0 | 11.1 | 4.0                           | 4.1 | 4.2 | 4.3 | 4.3 | 4.4 | 4.5 | 4.8 | 5.0 |
|    | A7           | 36.7                          | 34.6 | 32.0 | 28.2 | 25.8 | 23.4 | 20.4 | 16.8 | 13.3 | 5.2                           | 5.3 | 5.4 | 5.5 | 5.6 | 5.8 | 6.2 | 6.8 | 7.1 |
|    | A10          | 40.0                          | 37.7 | 35.1 | 31.1 | 28.5 | 25.8 | 21.9 | 18.4 | 14.6 | 5.7                           | 5.8 | 5.9 | 6.0 | 6.2 | 6.3 | 6.9 | 7.3 | 7.7 |
|    | A18          | 50.7                          | 47.9 | 44.9 | 39.9 | 36.0 | 32.1 | 27.9 | 23.2 | 18.1 | 7.2                           | 7.3 | 7.5 | 7.7 | 7.8 | 8.3 | 8.6 | 9.2 | 9.3 |
|    | A-20         | 12.5                          | 11.7 | 10.9 | 9.3  | 7.7  | 6.3  | 4.6  | –    | –    | 1.7                           | 1.6 | 1.6 | 1.6 | 1.5 | 1.4 | 1.4 | –   | –   |
| 30 | A-15         | 13.6                          | 12.5 | 11.4 | 9.4  | 8.0  | 7.7  | 6.2  | –    | –    | 1.7                           | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | –   | –   |
|    | A-10         | 22.2                          | 20.6 | 18.6 | 15.9 | 14.6 | 13.4 | 11.1 | 8.7  | –    | 3.0                           | 2.9 | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.7 | –   |
|    | A-7          | 23.8                          | 22.2 | 20.2 | 17.4 | 16.1 | 14.8 | 12.4 | 9.9  | 7.7  | 3.0                           | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.2 | 3.5 | 3.6 |
|    | A-2          | 27.1                          | 25.1 | 23.1 | 20.0 | 18.6 | 17.2 | 14.4 | 11.6 | 9.1  | 3.3                           | 3.3 | 3.4 | 3.4 | 3.5 | 3.5 | 3.7 | 3.8 | 4.0 |
|    | A2           | 31.3                          | 28.8 | 26.6 | 23.3 | 21.7 | 20.1 | 17.0 | 13.7 | 10.8 | 3.6                           | 3.6 | 3.7 | 3.8 | 3.9 | 3.9 | 4.0 | 4.4 | 4.8 |
|    | A7           | 36.2                          | 34.1 | 31.6 | 27.8 | 25.4 | 23.0 | 19.9 | 16.4 | 13.0 | 4.7                           | 4.8 | 5.0 | 5.1 | 5.2 | 5.3 | 5.5 | 6.0 | 6.5 |
|    | A10          | 39.0                          | 36.8 | 34.5 | 30.5 | 27.8 | 25.3 | 21.5 | 18.0 | 14.2 | 5.1                           | 5.2 | 5.4 | 5.6 | 5.7 | 5.8 | 6.0 | 6.6 | 7.0 |
|    | A18          | 50.0                          | 47.2 | 43.8 | 38.7 | 36.1 | 33.6 | 28.4 | 22.7 | 17.6 | 6.3                           | 6.4 | 6.7 | 7.0 | 7.1 | 7.3 | 7.5 | 8.4 | 9.0 |
|    | A-20         | 12.0                          | 11.2 | 10.4 | 9.0  | 7.5  | 6.1  | 4.4  | –    | –    | 1.3                           | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 | –   | –   |
|    | A-15         | 13.1                          | 12.0 | 11.0 | 9.1  | 7.8  | 7.5  | 6.1  | –    | –    | 1.4                           | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | –   | –   |
| 35 | A-10         | 21.6                          | 20.0 | 18.3 | 15.6 | 14.3 | 13.1 | 10.9 | 8.6  | –    | 2.6                           | 2.5 | 2.5 | 2.5 | 2.4 | 2.4 | 2.3 | 2.3 | –   |
|    | A-7          | 23.0                          | 21.7 | 19.8 | 17.1 | 15.8 | 14.5 | 12.2 | 9.7  | 7.3  | 2.8                           | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 |
|    | A-2          | 26.4                          | 24.6 | 22.6 | 19.7 | 18.3 | 16.9 | 14.2 | 11.4 | 8.9  | 3.0                           | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.5 | 3.6 |
|    | A2           | 30.7                          | 28.4 | 26.2 | 23.0 | 21.4 | 19.8 | 16.7 | 13.5 | 10.6 | 3.2                           | 3.3 | 3.3 | 3.4 | 3.5 | 3.5 | 3.6 | 3.9 | 4.2 |
|    | A7           | 35.6                          | 33.6 | 31.2 | 27.4 | 25.0 | 22.5 | 19.4 | 16.1 | 12.6 | 4.2                           | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.8 | 4.9 | 5.1 |
|    | A10          | 38.0                          | 35.9 | 34.0 | 30.0 | 27.2 | 24.6 | 20.9 | 17.6 | 13.8 | 4.4                           | 4.4 | 4.6 | 4.7 | 4.8 | 4.9 | 5.1 | 5.3 | 5.5 |
|    | A18          | 48.0                          | 45.6 | 43.1 | 38.4 | 34.5 | 30.9 | 26.7 | 22.0 | 17.0 | 5.3                           | 5.5 | 5.6 | 5.8 | 5.9 | 6.0 | 6.2 | 6.5 | 6.7 |
|    | A-20         | –                             | –    | –    | 8.7  | 7.0  | 5.6  | 4.1  | –    | –    | –                             | –   | –   | 1.1 | 1.1 | 1.1 | 1.0 | –   | –   |
|    | A-15         | –                             | –    | 10.7 | 8.9  | 7.6  | 7.4  | 6.0  | –    | –    | –                             | –   | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | –   | –   |
|    | A-10         | –                             | 19.6 | 17.8 | 15.3 | 14.1 | 13.0 | 10.7 | 8.5  | –    | –                             | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 | 2.1 | 2.0 | –   |
| 40 | A-7          | 22.7                          | 21.3 | 19.5 | 16.8 | 15.5 | 14.3 | 12.0 | 9.6  | 7.5  | 2.4                           | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.9 | 3.0 |
|    | A-2          | 26.1                          | 24.2 | 22.3 | 19.4 | 18.0 | 16.6 | 14.0 | 11.2 | 8.7  | 2.6                           | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | 2.9 | 3.2 | 3.3 |
|    | A2           | 30.4                          | 28.0 | 25.9 | 22.7 | 21.1 | 19.6 | 16.5 | 13.3 | 10.4 | 2.9                           | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.5 | 3.6 |
|    | A7           | 34.0                          | 31.9 | 29.4 | 26.4 | 23.6 | 21.1 | 18.2 | 15.0 | 11.7 | 3.6                           | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 4.1 | 4.1 | 4.2 |
|    | A10          | 37.0                          | 34.9 | 32.5 | 28.8 | 26.1 | 23.5 | 20.0 | 16.4 | 12.7 | 3.7                           | 3.8 | 3.9 | 3.9 | 4.0 | 4.1 | 4.3 | 4.4 | 4.5 |
|    | A18          | 46.4                          | 44.1 | 41.4 | 37.0 | 33.2 | 28.6 | 24.5 | 20.5 | 15.6 | 4.6                           | 4.7 | 4.8 | 4.8 | 5.0 | 5.1 | 5.2 | 5.6 | 5.7 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      |     | COP EN14511                   |     |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |     | Percentage of compressor load |     |     |     |     |     |     |     |     |     |
| 45 | A-20         | —                             | —    | —    | 8.5  | 6.7  | 5.3  | 4.0  | —    | —    | —   | —                             | —   | 1.1 | 1.1 | 1.0 | 1.0 | —   | —   | —   | —   |
|    | A-15         | —                             | —    | 10.4 | 8.8  | 7.5  | 7.3  | 5.9  | —    | —    | —   | —                             | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | —   | —   | —   | —   |
|    | A-10         | —                             | 19.2 | 17.2 | 15.1 | 14.0 | 12.8 | 10.6 | 8.4  | —    | —   | 2.2                           | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | —   | —   | —   |
|    | A-7          | 22.3                          | 20.9 | 19.2 | 16.6 | 15.4 | 14.2 | 11.9 | 9.5  | 7.0  | 2.1 | 2.1                           | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | 2.6 | 2.6 | 2.6 |
|    | A-2          | 25.7                          | 23.9 | 22.0 | 19.2 | 17.8 | 16.5 | 13.8 | 11.1 | 8.4  | 2.3 | 2.3                           | 2.4 | 2.5 | 2.5 | 2.5 | 2.6 | 2.8 | 2.9 | 2.9 | 2.9 |
|    | A2           | 29.9                          | 27.6 | 25.6 | 22.4 | 20.9 | 19.3 | 16.3 | 13.1 | 10.2 | 2.6 | 2.6                           | 2.7 | 2.8 | 2.8 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | 3.2 |
|    | A7           | 33.0                          | 31.2 | 28.8 | 25.9 | 23.1 | 20.7 | 17.9 | 14.7 | 11.4 | 3.1 | 3.2                           | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 | 3.6 | 3.6 | 3.6 |
|    | A10          | 35.9                          | 34.1 | 31.8 | 28.3 | 25.4 | 22.8 | 19.2 | 15.8 | 12.3 | 3.2 | 3.3                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | 3.8 | 3.8 | 3.9 |
|    | A18          | 45.0                          | 43.0 | 40.5 | 36.1 | 32.3 | 27.7 | 23.5 | 19.7 | 15.0 | 4.0 | 4.1                           | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.9 | 5.0 | 5.0 | 5.0 |
| 50 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | 8.5  | 7.3  | 7.2  | 5.8  | —    | —    | —   | —                             | —   | 1.1 | 1.1 | 1.0 | 1.0 | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | 14.9 | 13.9 | 12.7 | 10.5 | 8.3  | —    | —   | —                             | —   | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | —   | —   | —   |
|    | A-7          | —                             | —    | —    | 16.3 | 15.3 | 14.0 | 11.8 | 9.3  | 6.8  | —   | —                             | —   | 1.9 | 2.0 | 2.0 | 2.2 | 2.3 | 2.4 | 2.4 | 2.4 |
|    | A-2          | —                             | —    | —    | 18.9 | 17.6 | 16.3 | 13.7 | 10.9 | 8.2  | —   | —                             | —   | 2.2 | 2.2 | 2.3 | 2.4 | 2.5 | 2.5 | 2.5 | 2.5 |
|    | A2           | 29.6                          | 27.3 | 25.3 | 22.2 | 20.6 | 19.1 | 16.1 | 12.9 | 10.0 | 2.3 | 2.4                           | 2.5 | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 |
|    | A7           | 32.7                          | 31.0 | 28.7 | 25.7 | 22.5 | 19.7 | 16.4 | 13.1 | 10.7 | 2.7 | 2.8                           | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 |
|    | A10          | 35.1                          | 33.6 | 31.2 | 27.5 | 24.1 | 21.3 | 18.1 | 14.5 | 11.8 | 2.8 | 2.9                           | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.3 |
|    | A18          | 43.8                          | 41.9 | 39.7 | 35.2 | 30.7 | 26.4 | 22.1 | 17.6 | 14.2 | 3.4 | 3.5                           | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 | 3.8 | 3.8 | 3.8 | 3.9 |
| 55 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | —    | —    | 12.6 | 10.3 | 8.2  | —    | —   | —                             | —   | —   | —   | 1.7 | 1.7 | 1.6 | —   | —   | —   |
|    | A-7          | —                             | —    | —    | —    | 15.1 | 13.9 | 11.6 | 9.2  | 6.7  | —   | —                             | —   | —   | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.1 |
|    | A-2          | —                             | —    | —    | —    | 17.5 | 16.1 | 13.5 | 10.8 | 8.1  | —   | —                             | —   | —   | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 |
|    | A2           | 29.2                          | 27.0 | 25.0 | 22.0 | 20.4 | 18.9 | 15.9 | 12.7 | 9.8  | 2.1 | 2.2                           | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.6 | 2.6 | 2.6 |
|    | A7           | 32.5                          | 30.8 | 28.5 | 25.3 | 22.2 | 19.3 | 16.1 | 12.8 | 10.5 | 2.4 | 2.4                           | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 |
|    | A10          | 34.8                          | 33.0 | 30.6 | 26.8 | 23.6 | 20.8 | 17.5 | 13.8 | 11.3 | 2.5 | 2.5                           | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 |
|    | A18          | 42.7                          | 40.9 | 38.7 | 34.5 | 29.9 | 25.6 | 21.3 | 16.8 | 13.5 | 3.0 | 3.0                           | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.5 |
| 60 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-7          | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-2          | —                             | —    | —    | —    | —    | —    | 11.8 | 8.9  | 6.4  | —   | —                             | —   | —   | —   | —   | 1.6 | 1.5 | 1.5 | 1.5 | 1.5 |
|    | A2           | —                             | —    | —    | —    | —    | —    | 14.2 | 10.7 | 6.8  | —   | —                             | —   | —   | —   | —   | 1.8 | 1.7 | 1.6 | 1.6 | 1.6 |
|    | A7           | —                             | —    | —    | —    | —    | —    | 14.1 | 10.9 | 8.6  | —   | —                             | —   | —   | —   | —   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
|    | A10          | —                             | —    | —    | —    | —    | —    | 15.5 | 11.9 | 9.3  | —   | —                             | —   | —   | —   | —   | 2.1 | 2.0 | 2.1 | 2.1 | 2.1 |
|    | A18          | —                             | —    | —    | —    | —    | —    | 19.0 | 14.7 | 11.2 | —   | —                             | —   | —   | —   | —   | 2.5 | 2.4 | 2.5 | 2.5 | 2.5 |

Table 30

## 7.6 Performance Cooling - AWP24

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      |       | EER EN14511                   |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |       | Percentage of compressor load |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 % | 95%                           | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 0  | A15          | 29.9                          | 27.2 | 24.9 | 22.3 | 19.8 | 18.3 | 15.1 | 13.1 | 11.5 | 4.4   | 4.5                           | 4.6 | 4.8 | 5.0 | 5.1 | 5.7 | 5.8 | 7.3 |  |  |
|    | A20          | 28.4                          | 25.9 | 23.8 | 21.3 | 18.9 | 17.5 | 14.5 | 12.4 | 11.0 | 3.7   | 3.8                           | 4.0 | 4.1 | 4.3 | 4.4 | 4.9 | 4.9 | 6.0 |  |  |
|    | A25          | 26.9                          | 24.5 | 22.5 | 20.2 | 17.9 | 16.6 | 13.7 | 11.7 | 10.3 | 3.1   | 3.2                           | 3.4 | 3.5 | 3.6 | 3.7 | 4.2 | 4.1 | 4.9 |  |  |
|    | A30          | 25.5                          | 23.3 | 21.5 | 19.2 | 17.1 | 15.8 | 13.1 | 11.1 | 9.8  | 2.7   | 2.8                           | 2.9 | 3.0 | 3.1 | 3.2 | 3.7 | 3.5 | 4.1 |  |  |
|    | A35          | 23.9                          | 21.9 | 20.2 | 18.1 | 16.0 | 14.8 | 12.4 | 10.4 | 9.1  | 2.3   | 2.4                           | 2.5 | 2.6 | 2.7 | 2.8 | 3.2 | 3.0 | 3.4 |  |  |
|    | A40          | 22.1                          | 20.5 | 18.9 | 17.0 | 15.0 | 13.9 | 11.6 | 9.9  | 8.7  | 1.9   | 2.0                           | 2.1 | 2.2 | 2.3 | 2.3 | 2.7 | 2.6 | 2.7 |  |  |
|    | A44          | 20.2                          | 18.6 | 17.2 | 15.4 | 13.7 | 12.6 | 10.6 | 9.1  | 7.9  | 1.7   | 1.8                           | 1.8 | 1.9 | 2.0 | 2.0 | 2.3 | 2.0 | 2.2 |  |  |
|    | A15          | 34.6                          | 31.5 | 28.9 | 25.8 | 22.9 | 21.2 | 17.5 | 15.1 | 13.4 | 5.1   | 5.3                           | 5.4 | 5.6 | 5.8 | 6.0 | 6.7 | 6.8 | 8.5 |  |  |
| 5  | A20          | 32.8                          | 30.0 | 27.5 | 24.6 | 21.9 | 20.2 | 16.7 | 14.4 | 12.7 | 4.3   | 4.5                           | 4.6 | 4.8 | 5.0 | 5.1 | 5.8 | 5.8 | 7.0 |  |  |
|    | A25          | 31.2                          | 28.4 | 26.1 | 23.4 | 20.8 | 19.2 | 15.9 | 13.6 | 12.0 | 3.7   | 3.8                           | 4.0 | 4.1 | 4.3 | 4.4 | 5.0 | 4.8 | 5.8 |  |  |
|    | A30          | 29.4                          | 26.9 | 24.7 | 22.2 | 19.7 | 18.2 | 15.1 | 12.8 | 11.2 | 3.1   | 3.3                           | 3.4 | 3.5 | 3.7 | 3.8 | 4.3 | 4.1 | 4.8 |  |  |
|    | A35          | 27.6                          | 25.3 | 23.3 | 20.9 | 18.5 | 17.1 | 14.3 | 12.0 | 10.5 | 2.7   | 2.8                           | 2.9 | 3.0 | 3.2 | 3.2 | 3.7 | 3.5 | 3.9 |  |  |
|    | A40          | 25.8                          | 23.7 | 21.9 | 19.6 | 17.4 | 16.1 | 13.4 | 11.5 | 10.1 | 2.3   | 2.4                           | 2.5 | 2.6 | 2.7 | 2.8 | 3.2 | 3.1 | 3.2 |  |  |
|    | A44          | 24.4                          | 22.4 | 20.7 | 18.6 | 16.5 | 15.2 | 12.8 | 11.0 | 9.5  | 2.0   | 2.1                           | 2.2 | 2.3 | 2.4 | 2.4 | 2.8 | 2.5 | 2.7 |  |  |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      |     | EER EN14511                   |     |     |     |     |     |      |      |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-----|-------------------------------|-----|-----|-----|-----|-----|------|------|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |     | Percentage of compressor load |     |     |     |     |     |      |      |  |  |
| 7  | A15          | 36.6                          | 33.5 | 30.5 | 27.4 | 24.7 | 22.7 | 18.7 | 16.6 | 14.5 | 5.3 | 5.5                           | 5.7 | 5.9 | 6.1 | 6.2 | 6.8 | 7.4  | 8.8  |  |  |
|    | A20          | 34.8                          | 31.9 | 29.0 | 26.1 | 23.5 | 21.7 | 17.8 | 15.8 | 13.8 | 4.5 | 4.7                           | 4.9 | 5.0 | 5.2 | 5.3 | 5.8 | 6.2  | 7.2  |  |  |
|    | A25          | 33.0                          | 30.3 | 27.6 | 24.8 | 22.4 | 20.6 | 16.9 | 15.0 | 13.0 | 3.8 | 4.0                           | 4.2 | 4.3 | 4.5 | 4.5 | 5.0 | 5.2  | 5.9  |  |  |
|    | A30          | 31.2                          | 28.7 | 26.1 | 23.5 | 21.2 | 19.6 | 16.0 | 14.1 | 12.2 | 3.3 | 3.4                           | 3.6 | 3.7 | 3.8 | 3.9 | 4.2 | 4.4  | 4.9  |  |  |
|    | A35          | 29.4                          | 27.0 | 24.7 | 22.2 | 20.0 | 18.4 | 15.0 | 13.2 | 11.4 | 2.8 | 2.9                           | 3.1 | 3.2 | 3.3 | 3.4 | 3.6 | 3.7  | 4.1  |  |  |
|    | A40          | 27.4                          | 25.3 | 23.1 | 20.9 | 18.8 | 17.3 | 14.1 | 12.3 | 10.6 | 2.4 | 2.5                           | 2.6 | 2.8 | 2.8 | 2.9 | 3.1 | 3.1  | 3.3  |  |  |
|    | A44          | –                             | –    | –    | –    | 17.8 | 16.4 | 13.1 | 11.4 | 9.7  | –   | –                             | –   | –   | 2.5 | 2.5 | 2.6 | 2.7  | 2.8  |  |  |
| 10 | A15          | 40.2                          | 36.8 | 33.5 | 30.1 | 27.1 | 25.0 | 20.5 | 18.1 | 15.8 | 5.8 | 6.0                           | 6.3 | 6.5 | 6.7 | 6.8 | 7.5 | 8.0  | 9.0  |  |  |
|    | A20          | 38.2                          | 35.1 | 31.9 | 28.7 | 25.9 | 23.9 | 19.5 | 17.2 | 14.9 | 4.9 | 5.1                           | 5.3 | 5.5 | 5.7 | 5.8 | 6.3 | 6.7  | 7.4  |  |  |
|    | A25          | 36.3                          | 33.4 | 30.4 | 27.3 | 24.6 | 22.7 | 18.5 | 16.3 | 14.1 | 4.1 | 4.4                           | 4.5 | 4.7 | 4.9 | 5.0 | 5.4 | 5.6  | 6.1  |  |  |
|    | A30          | 34.3                          | 31.6 | 28.8 | 26.0 | 23.4 | 21.5 | 17.5 | 15.4 | 13.2 | 3.5 | 3.7                           | 7.4 | 4.1 | 4.2 | 4.3 | 4.6 | 4.7  | 5.1  |  |  |
|    | A35          | 32.3                          | 29.8 | 27.2 | 24.5 | 22.1 | 20.3 | 16.5 | 14.4 | 12.3 | 3.0 | 3.2                           | 3.3 | 3.5 | 3.6 | 3.7 | 3.9 | 3.9  | 4.2  |  |  |
|    | A40          | 30.3                          | 28.0 | 25.6 | 23.0 | 20.7 | 19.1 | 15.3 | 13.2 | 11.1 | 2.6 | 2.7                           | 2.9 | 3.0 | 3.1 | 3.1 | 3.2 | 3.1  | 3.4  |  |  |
|    | A44          | –                             | –    | –    | –    | 19.7 | 18.1 | 14.0 | 11.9 | 9.9  | –   | –                             | –   | –   | 2.7 | 2.8 | 2.8 | 2.9  | 2.9  |  |  |
| 12 | A15          | 42.6                          | 39.1 | 35.6 | 32.0 | 28.8 | 26.6 | 21.8 | 19.2 | 16.6 | 6.1 | 6.4                           | 6.7 | 6.9 | 7.1 | 7.3 | 8.0 | 8.5  | 9.2  |  |  |
|    | A20          | 40.6                          | 37.3 | 34.0 | 30.5 | 27.5 | 25.4 | 20.7 | 18.2 | 15.8 | 5.1 | 5.4                           | 5.6 | 5.9 | 6.1 | 6.2 | 6.7 | 7.0  | 7.6  |  |  |
|    | A25          | 38.6                          | 35.5 | 32.4 | 29.1 | 26.2 | 24.1 | 19.7 | 17.3 | 14.9 | 4.3 | 4.6                           | 4.8 | 5.0 | 5.2 | 5.3 | 5.7 | 5.9  | 6.3  |  |  |
|    | A30          | 36.5                          | 33.6 | 30.7 | 27.6 | 24.9 | 22.9 | 18.6 | 16.3 | 14.0 | 3.7 | 3.9                           | 4.1 | 4.3 | 4.4 | 4.5 | 4.8 | 4.9  | 5.3  |  |  |
|    | A35          | 34.4                          | 31.7 | 29.0 | 26.1 | 23.5 | 21.6 | 17.5 | 15.2 | 13.0 | 3.2 | 3.3                           | 3.5 | 3.7 | 3.8 | 3.9 | 4.1 | 4.1  | 4.4  |  |  |
|    | A40          | 32.2                          | 29.8 | 27.2 | 24.5 | 22.1 | 20.3 | 16.3 | 14.1 | 11.9 | 2.7 | 2.9                           | 3.0 | 3.2 | 3.3 | 3.3 | 3.4 | 3.6  | 3.6  |  |  |
|    | A44          | –                             | –    | –    | –    | 20.9 | 19.2 | 15.0 | 12.5 | 10.2 | –   | –                             | –   | –   | 2.9 | 3.0 | 3.0 | 3.1  | 3.2  |  |  |
| 15 | A15          | 47.9                          | 44.0 | 40.0 | 36.0 | 32.4 | 29.8 | 24.4 | 21.9 | 19.4 | 6.2 | 6.5                           | 6.9 | 7.2 | 7.4 | 7.6 | 8.3 | 8.8  | 9.4  |  |  |
|    | A20          | 45.6                          | 42.0 | 38.2 | 34.4 | 31.0 | 28.5 | 23.2 | 20.8 | 18.4 | 5.2 | 5.5                           | 5.8 | 6.1 | 6.3 | 6.4 | 7.0 | 7.3  | 7.8  |  |  |
|    | A25          | 43.4                          | 40.0 | 36.4 | 32.7 | 29.5 | 27.1 | 22.0 | 19.8 | 17.5 | 4.4 | 4.7                           | 4.9 | 5.1 | 5.3 | 5.5 | 5.9 | 6.2  | 6.7  |  |  |
|    | A30          | 41.1                          | 37.8 | 34.5 | 31.1 | 28.0 | 25.8 | 20.9 | 18.6 | 16.4 | 3.7 | 4.0                           | 4.2 | 4.4 | 4.6 | 4.7 | 5.0 | 5.2  | 5.5  |  |  |
|    | A35          | 38.7                          | 35.7 | 32.6 | 29.4 | 26.4 | 24.3 | 19.6 | 17.5 | 15.4 | 3.2 | 3.4                           | 3.6 | 3.8 | 3.9 | 4.0 | 4.2 | 4.3  | 4.6  |  |  |
|    | A40          | 36.3                          | 33.5 | 30.6 | 27.6 | 24.8 | 22.8 | 18.3 | 16.2 | 14.1 | 2.7 | 2.9                           | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.7  | 3.9  |  |  |
|    | A44          | –                             | –    | –    | –    | 23.5 | 21.6 | 16.9 | 14.8 | 12.7 | –   | –                             | –   | –   | 2.9 | 3.0 | 3.1 | 3.2  | 3.3  |  |  |
| 18 | A15          | 52.1                          | 47.8 | 43.5 | 39.1 | 35.2 | 32.4 | 26.4 | 23.7 | 21.0 | 6.6 | 7.1                           | 7.5 | 7.8 | 8.2 | 8.4 | 9.2 | 9.8  | 10.5 |  |  |
|    | A20          | 49.7                          | 45.6 | 41.5 | 37.4 | 33.6 | 31.0 | 25.2 | 22.6 | 20.0 | 5.6 | 5.9                           | 6.2 | 6.6 | 6.9 | 7.1 | 7.7 | 8.3  | 8.6  |  |  |
|    | A25          | 47.2                          | 43.4 | 39.6 | 35.7 | 32.0 | 29.5 | 23.9 | 21.4 | 18.9 | 4.7 | 5.0                           | 5.3 | 5.6 | 5.8 | 6.0 | 6.4 | 7.1  | 7.7  |  |  |
|    | A30          | 44.6                          | 41.2 | 37.5 | 33.8 | 30.4 | 28.0 | 22.6 | 20.2 | 17.8 | 4.0 | 4.3                           | 4.3 | 4.8 | 4.9 | 5.1 | 5.7 | 6.7  | 7.0  |  |  |
|    | A35          | 42.1                          | 39.0 | 35.5 | 31.9 | 28.7 | 26.4 | 21.2 | 18.9 | 16.6 | 3.5 | 3.7                           | 3.8 | 4.1 | 4.2 | 4.3 | 4.5 | 5.1  | 5.5  |  |  |
|    | A40          | 39.5                          | 36.5 | 33.3 | 30.0 | 27.0 | 24.8 | 19.8 | 17.5 | 15.3 | 2.9 | 3.1                           | 3.3 | 3.5 | 3.6 | 3.7 | 3.8 | 4.5  | 4.7  |  |  |
|    | A44          | –                             | –    | –    | –    | 25.6 | 23.5 | 18.3 | 15.8 | 13.3 | –   | –                             | –   | –   | 3.2 | 3.2 | 3.4 | 3.5  | 3.7  |  |  |
| 20 | A15          | 54.9                          | 50.4 | 45.9 | 41.2 | 37.1 | 34.1 | 27.7 | 24.9 | 22.0 | 6.9 | 7.4                           | 7.9 | 8.3 | 8.7 | 9.0 | 9.8 | 10.3 | 10.9 |  |  |
|    | A20          | 52.4                          | 48.1 | 43.8 | 39.4 | 35.5 | 32.6 | 26.5 | 23.7 | 20.9 | 5.8 | 6.2                           | 6.6 | 7.0 | 7.3 | 7.5 | 8.1 | 8.8  | 9.3  |  |  |
|    | A25          | 49.7                          | 45.8 | 41.8 | 37.6 | 33.8 | 31.1 | 25.1 | 22.5 | 19.8 | 4.9 | 5.2                           | 5.6 | 5.9 | 6.1 | 6.3 | 6.8 | 7.7  | 8.3  |  |  |
|    | A30          | 47.1                          | 43.4 | 39.6 | 35.6 | 32.1 | 29.5 | 23.8 | 21.2 | 18.7 | 4.2 | 4.5                           | 4.7 | 5.0 | 5.2 | 5.4 | 5.8 | 6.9  | 7.2  |  |  |
|    | A35          | 44.4                          | 41.0 | 37.4 | 33.7 | 30.3 | 27.8 | 22.3 | 19.9 | 17.4 | 3.6 | 3.8                           | 4.0 | 4.3 | 4.4 | 4.6 | 4.8 | 5.5  | 5.9  |  |  |
|    | A40          | 41.6                          | 38.5 | 35.2 | 31.6 | 28.5 | 26.1 | 20.8 | 18.5 | 16.2 | 3.1 | 3.3                           | 3.5 | 3.6 | 3.8 | 3.9 | 4.0 | 4.9  | 5.1  |  |  |
|    | A44          | –                             | –    | –    | –    | 27.0 | 24.7 | 19.3 | 16.8 | 14.2 | –   | –                             | –   | –   | 3.3 | 3.4 | 3.5 | 3.7  | 3.9  |  |  |

Table 31

## 7.7 Performance Heating - AWP31

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100<br>%                      | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>%                      | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 25 | A-20         | 23.2                          | 20.1 | 18.3 | 15.4 | 12.7 | 10.0 | 7.3  | –    | –    | 2.5                           | 2.4 | 2.4 | 2.3 | 2.2 | 2.1 | 1.9 | –   | –   |  |  |
|    | A-15         | 27.1                          | 24.0 | 22.3 | 20.1 | 18.1 | 15.5 | 13.2 | 10.9 | 8.5  | 2.9                           | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 | 2.7 | 2.6 | 2.5 |  |  |
|    | A-10         | 31.6                          | 28.5 | 26.7 | 24.4 | 22.2 | 19.6 | 17.2 | 14.7 | 12.3 | 3.3                           | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.4 |  |  |
|    | A-7          | 34.6                          | 31.4 | 29.5 | 27.1 | 24.8 | 21.8 | 19.3 | 16.7 | 14.1 | 3.5                           | 3.5 | 3.5 | 3.5 | 3.6 | 3.8 | 4.0 | 4.0 | 4.3 |  |  |
|    | A-2          | 39.1                          | 35.6 | 33.6 | 31.0 | 28.5 | 25.1 | 22.2 | 19.6 | 17.0 | 3.9                           | 3.9 | 3.9 | 4.0 | 4.0 | 4.3 | 4.4 | 4.6 | 4.9 |  |  |
|    | A2           | 44.7                          | 41.0 | 38.8 | 35.9 | 33.0 | 29.2 | 25.9 | 23.3 | 20.7 | 4.3                           | 4.4 | 4.4 | 4.5 | 4.5 | 4.8 | 5.0 | 5.2 | 5.5 |  |  |
|    | A7           | 56.1                          | 51.6 | 48.9 | 45.3 | 41.8 | 37.0 | 32.8 | 29.4 | 26.1 | 5.6                           | 5.7 | 5.7 | 5.8 | 5.9 | 6.2 | 6.5 | 6.7 | 7.0 |  |  |
|    | A10          | 59.8                          | 55.1 | 52.2 | 48.4 | 44.6 | 39.5 | 35.0 | 31.4 | 27.8 | 5.9                           | 6.0 | 6.1 | 6.2 | 6.3 | 6.7 | 6.9 | 7.2 | 7.5 |  |  |
|    | A18          | 70.3                          | 65.0 | 61.7 | 57.4 | 52.8 | 46.8 | 41.4 | 37.0 | 32.5 | 7.0                           | 7.2 | 7.3 | 7.4 | 7.6 | 8.0 | 8.4 | 8.7 | 9.1 |  |  |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| 30 | A-20         | 22.1                          | 19.1 | 17.5 | 14.5 | 12.0 | 9.1  | 6.5  | –    | –    | 2.3                           | 2.2 | 2.2 | 2.0 | 1.9 | 1.7 | 1.5 | –   | –   |
|    | A-15         | 26.2                          | 23.3 | 21.6 | 19.5 | 17.6 | 15.1 | 12.9 | 10.7 | 8.5  | 2.6                           | 2.6 | 2.5 | 2.5 | 2.5 | 2.5 | 2.4 | 2.3 | 2.2 |
|    | A-10         | 31.0                          | 27.8 | 26.0 | 23.8 | 21.7 | 19.1 | 16.6 | 14.2 | 11.8 | 3.0                           | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
|    | A-7          | 33.8                          | 30.6 | 28.9 | 26.5 | 24.3 | 21.3 | 18.8 | 16.4 | 13.9 | 3.1                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.4 | 3.5 | 3.6 | 3.8 |
|    | A-2          | 38.3                          | 34.9 | 33.0 | 30.4 | 27.9 | 24.6 | 21.7 | 19.2 | 16.6 | 3.5                           | 3.5 | 3.5 | 3.5 | 3.6 | 3.8 | 3.9 | 4.1 | 4.3 |
|    | A2           | 43.9                          | 40.3 | 38.1 | 35.2 | 32.3 | 28.6 | 25.3 | 22.7 | 20.1 | 3.8                           | 3.9 | 3.9 | 4.0 | 4.0 | 4.3 | 4.4 | 4.6 | 4.8 |
|    | A7           | 55.2                          | 50.7 | 48.0 | 44.5 | 40.9 | 36.2 | 32.0 | 28.7 | 25.3 | 4.9                           | 5.0 | 5.1 | 5.1 | 5.2 | 5.5 | 5.7 | 5.8 | 6.0 |
|    | A10          | 58.9                          | 54.1 | 51.3 | 47.5 | 43.7 | 38.7 | 34.2 | 30.6 | 26.9 | 5.2                           | 5.3 | 5.4 | 5.5 | 5.5 | 5.8 | 6.0 | 6.2 | 6.4 |
|    | A18          | 69.2                          | 63.8 | 60.6 | 56.2 | 51.7 | 45.8 | 40.3 | 36.0 | 31.5 | 6.1                           | 6.3 | 6.4 | 6.5 | 6.6 | 7.0 | 7.2 | 7.4 | 7.7 |
| 35 | A-20         | 21.1                          | 18.4 | 16.3 | 13.5 | 10.8 | 8.1  | 5.4  | –    | –    | 2.1                           | 2.0 | 1.9 | 1.8 | 1.6 | 1.5 | 1.1 | –   | –   |
|    | A-15         | 25.4                          | 22.6 | 21.0 | 19.1 | 17.2 | 14.9 | 12.8 | 10.6 | 8.5  | 2.4                           | 2.3 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 | 2.1 |
|    | A-10         | 30.6                          | 27.2 | 25.5 | 23.3 | 21.3 | 18.6 | 16.2 | 13.8 | 11.3 | 2.8                           | 2.7 | 2.7 | 2.7 | 2.7 | 2.6 | 2.6 | 2.6 | 2.6 |
|    | A-7          | 33.0                          | 30.1 | 28.3 | 26.0 | 23.8 | 21.0 | 18.5 | 16.2 | 13.7 | 2.9                           | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 |
|    | A-2          | 37.5                          | 34.3 | 32.4 | 29.8 | 27.3 | 24.1 | 21.3 | 18.8 | 16.3 | 3.2                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.4 | 3.5 | 3.6 | 3.7 |
|    | A2           | 43.2                          | 39.6 | 37.4 | 34.5 | 31.7 | 28.1 | 24.8 | 22.2 | 19.5 | 3.5                           | 3.5 | 3.5 | 3.6 | 3.6 | 3.8 | 3.9 | 4.0 | 4.1 |
|    | A7           | 54.4                          | 49.8 | 47.2 | 43.6 | 40.1 | 35.5 | 31.3 | 27.9 | 24.6 | 4.3                           | 4.5 | 4.5 | 4.5 | 4.6 | 4.8 | 5.0 | 5.1 | 5.2 |
|    | A10          | 57.9                          | 53.2 | 50.4 | 46.6 | 42.8 | 37.9 | 33.4 | 29.8 | 26.1 | 4.6                           | 4.7 | 4.8 | 4.8 | 4.9 | 5.1 | 5.3 | 5.4 | 5.5 |
|    | A18          | 68.0                          | 62.6 | 59.4 | 55.0 | 50.5 | 44.7 | 39.3 | 34.9 | 30.5 | 5.3                           | 5.5 | 5.6 | 5.7 | 5.8 | 6.0 | 6.2 | 6.3 | 6.5 |
| 40 | A-20         | 20.4                          | 17.7 | 15.5 | 12.8 | 10.1 | 7.4  | –    | –    | –    | 1.9                           | 1.8 | 1.8 | 1.6 | 1.5 | 1.3 | –   | –   | –   |
|    | A-15         | 24.7                          | 22.1 | 20.6 | 18.7 | 16.4 | 14.3 | 12.2 | 10.0 | 7.9  | 2.1                           | 2.1 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 1.9 | 1.8 |
|    | A-10         | 29.5                          | 26.7 | 25.1 | 22.7 | 20.8 | 18.0 | 15.8 | 13.3 | 10.9 | 2.4                           | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 | 2.3 |
|    | A-7          | 32.5                          | 29.6 | 27.9 | 25.7 | 23.5 | 20.7 | 18.3 | 16.0 | 13.6 | 2.6                           | 2.6 | 2.6 | 2.6 | 2.6 | 2.8 | 2.8 | 2.9 | 3.0 |
|    | A-2          | 37.0                          | 33.8 | 31.9 | 29.4 | 26.9 | 23.8 | 21.0 | 18.5 | 16.0 | 2.8                           | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 |
|    | A2           | 42.5                          | 38.9 | 36.8 | 34.0 | 31.2 | 27.6 | 24.3 | 21.7 | 19.1 | 3.1                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.4 | 3.4 | 3.5 | 3.6 |
|    | A7           | 53.4                          | 49.3 | 46.4 | 42.8 | 39.3 | 34.8 | 30.6 | 27.3 | 23.9 | 3.9                           | 4.0 | 4.0 | 4.0 | 4.1 | 4.3 | 4.4 | 4.4 | 4.5 |
|    | A10          | 57.0                          | 52.3 | 49.5 | 45.7 | 41.9 | 37.2 | 32.7 | 29.0 | 25.3 | 4.1                           | 4.2 | 4.2 | 4.3 | 4.3 | 4.5 | 4.6 | 4.7 | 4.7 |
|    | A18          | 66.8                          | 61.5 | 58.2 | 53.9 | 49.4 | 43.7 | 38.3 | 33.9 | 29.5 | 4.7                           | 4.8 | 4.9 | 5.0 | 5.1 | 5.3 | 5.4 | 5.4 | 5.5 |
| 45 | A-20         | 19.8                          | 17.0 | 14.8 | 12.0 | 9.2  | –    | –    | –    | –    | 1.7                           | 1.6 | 1.5 | 1.4 | 1.2 | –   | –   | –   | –   |
|    | A-15         | 24.2                          | 21.7 | 20.3 | 18.5 | 16.1 | 14.0 | 11.7 | –    | –    | 2.0                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.7 | –   | –   |
|    | A-10         | 29.0                          | 26.3 | 24.6 | 22.2 | 20.4 | 17.6 | 15.2 | 12.9 | 10.4 | 2.2                           | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 |
|    | A-7          | 32.1                          | 29.2 | 27.6 | 25.4 | 23.3 | 20.6 | 18.1 | 15.9 | 13.5 | 2.3                           | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.7 |
|    | A-2          | 36.4                          | 33.3 | 31.4 | 29.0 | 26.5 | 23.5 | 20.7 | 18.3 | 15.8 | 2.5                           | 2.6 | 2.6 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 |
|    | A2           | 41.9                          | 38.3 | 36.2 | 33.4 | 30.6 | 27.2 | 23.9 | 21.3 | 18.6 | 2.8                           | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 |
|    | A7           | 52.6                          | 48.9 | 45.6 | 42.1 | 38.5 | 34.2 | 30.0 | 26.6 | 23.2 | 3.5                           | 3.5 | 3.6 | 3.6 | 3.6 | 3.8 | 3.8 | 3.9 | 3.9 |
|    | A10          | 56.0                          | 51.4 | 48.6 | 44.8 | 41.1 | 36.4 | 31.9 | 28.2 | 24.5 | 3.6                           | 3.7 | 3.8 | 3.8 | 3.8 | 4.0 | 4.0 | 4.1 | 4.1 |
|    | A18          | 65.5                          | 60.2 | 57.0 | 52.6 | 48.1 | 42.6 | 37.2 | 32.8 | 28.6 | 4.2                           | 4.3 | 4.3 | 4.4 | 4.4 | 4.6 | 4.7 | 4.7 | 4.7 |
| 50 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | 21.8                          | 19.7 | 18.4 | 16.8 | 15.3 | 13.6 | 11.3 | –    | –    | 1.6                           | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | –   | –   |
|    | A-10         | 26.2                          | 23.8 | 22.4 | 20.6 | 18.9 | 16.7 | 14.6 | 12.3 | 9.9  | 1.8                           | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.7 |
|    | A-7          | 29.3                          | 26.7 | 25.2 | 23.3 | 21.2 | 19.3 | 17.2 | 15.1 | 13.1 | 2.0                           | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 | 2.2 | 2.2 | 2.3 |
|    | A-2          | 33.2                          | 30.3 | 28.7 | 26.4 | 24.2 | 21.7 | 19.2 | 16.9 | 14.7 | 2.1                           | 2.2 | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 |
|    | A2           | 38.1                          | 34.9 | 32.9 | 30.4 | 27.8 | 24.7 | 21.7 | 19.3 | 16.8 | 2.3                           | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.5 | 2.5 |
|    | A7           | 47.1                          | 43.2 | 40.8 | 37.6 | 34.4 | 30.5 | 26.7 | 23.6 | 20.4 | 3.0                           | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 |
|    | A10          | 50.1                          | 45.9 | 43.4 | 40.0 | 36.6 | 32.5 | 28.3 | 25.0 | 21.6 | 3.1                           | 3.2 | 3.2 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.3 |
|    | A18          | 58.4                          | 53.6 | 50.7 | 46.8 | 42.7 | 37.8 | 32.9 | 28.9 | 25.1 | 3.5                           | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 3.8 | 3.8 |
| 55 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-10         | –                             | –    | 22.0 | 20.2 | 18.4 | 16.2 | 14.0 | 11.6 | 9.4  | –                             | –   | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | 1.4 |
|    | A-7          | 28.8                          | 26.3 | 24.8 | 22.9 | 21.0 | 18.9 | 16.9 | 14.9 | 12.9 | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 |
|    | A-2          | 32.7                          | 29.9 | 28.2 | 26.0 | 23.9 | 21.3 | 18.9 | 16.7 | 14.4 | 1.9                           | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 |
|    | A2           | 37.6                          | 34.4 | 32.5 | 29.9 | 27.4 | 24.4 | 21.3 | 18.9 | 16.4 | 2.1                           | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.3 | 2.2 | 2.2 |
|    | A7           | 46.4                          | 42.4 | 40.0 | 36.9 | 33.7 | 29.9 | 26.1 | 23.0 | 19.8 | 2.7                           | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 |
|    | A10          | 49.2                          | 45.0 | 42.5 | 39.2 | 35.8 | 31.7 | 27.6 | 24.3 | 20.9 | 2.8                           | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.0 | 2.9 | 2.9 |
|    | A18          | 57.1                          | 52.3 | 49.4 | 45.5 | 41.6 | 36.7 | 31.8 | 28.0 | 24.1 | 3.1                           | 3.2 | 3.2 | 3.2 | 3.3 | 3.4 | 3.4 | 3.3 | 3.3 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |   |   |   |   |      |      |      | COP EN14511                   |   |   |   |   |     |     |     |     |   |
|----|--------------|-------------------------------|---|---|---|---|------|------|------|-------------------------------|---|---|---|---|-----|-----|-----|-----|---|
|    |              | Percentage of compressor load |   |   |   |   |      |      |      | Percentage of compressor load |   |   |   |   |     |     |     |     |   |
| 60 | A-20         | -                             | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | -   | -   | -   | -   | - |
|    | A-15         | -                             | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | -   | -   | -   | -   |   |
|    | A-10         | -                             | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | -   | -   | -   | -   |   |
|    | A-7          | -                             | - | - | - | - | -    | -    | -    | -                             | - | - | - | - | -   | -   | -   | -   |   |
|    | A-2          | -                             | - | - | - | - | 18.3 | 15.6 | 13.2 | 10.9                          | - | - | - | - | 1.6 | 1.6 | 1.5 | 1.4 |   |
|    | A2           | -                             | - | - | - | - | 22.0 | 18.9 | 16.4 | 13.5                          | - | - | - | - | 1.8 | 1.9 | 1.8 | 1.8 |   |
|    | A7           | -                             | - | - | - | - | 27.6 | 23.5 | 20.2 | 16.4                          | - | - | - | - | 2.4 | 2.4 | 2.3 | 2.3 |   |
|    | A10          | -                             | - | - | - | - | 29.1 | 24.6 | 21.3 | 17.2                          | - | - | - | - | 2.5 | 2.5 | 2.4 | 2.3 |   |
|    | A18          | -                             | - | - | - | - | 34.0 | 28.8 | 24.8 | 20.0                          | - | - | - | - | 2.8 | 2.8 | 2.7 | 2.7 |   |

Table 32

## 7.8 Performance Cooling - AWP31

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100<br>%                      | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>%                      | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 0  | A15          | 42.0                          | 39.1 | 36.3 | 33.5 | 29.4 | 26.7 | 24.1 | 22.7 | 20.8 | 4.5                           | 4.6 | 4.9 | 5.0 | 5.2 | 5.4 | 5.7 | 5.9 | 6.2 |  |  |
|    | A20          | 40.2                          | 37.4 | 34.7 | 32.0 | 28.0 | 25.4 | 22.9 | 21.6 | 19.7 | 3.9                           | 3.9 | 4.2 | 4.3 | 4.4 | 4.6 | 4.9 | 5.0 | 5.2 |  |  |
|    | A25          | 38.3                          | 35.6 | 33.0 | 30.5 | 26.6 | 24.1 | 21.6 | 20.4 | 18.5 | 3.4                           | 3.4 | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.2 | 4.4 |  |  |
|    | A30          | 36.4                          | 33.8 | 31.3 | 28.9 | 25.1 | 22.8 | 20.4 | 19.1 | 17.3 | 2.9                           | 2.9 | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 |  |  |
|    | A35          | 34.3                          | 31.9 | 29.5 | 27.2 | 23.6 | 21.3 | 19.0 | 17.8 | 16.1 | 2.5                           | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 2.9 |  |  |
|    | A40          | 32.5                          | 30.2 | 27.9 | 25.7 | 22.2 | 20.0 | 17.8 | 16.6 | 14.9 | 2.2                           | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.5 |  |  |
|    | A44          | 29.9                          | 27.8 | 25.6 | 23.5 | 20.3 | 18.3 | 16.2 | 15.1 | 13.5 | 1.8                           | 1.8 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 |  |  |
| 5  | A15          | 49.4                          | 45.9 | 42.6 | 39.3 | 34.5 | 31.4 | 28.3 | 26.7 | 24.4 | 5.2                           | 5.3 | 5.6 | 5.8 | 6.0 | 6.3 | 6.6 | 6.8 | 7.2 |  |  |
|    | A20          | 47.1                          | 43.8 | 40.7 | 37.5 | 32.8 | 29.8 | 26.8 | 25.3 | 23.1 | 4.5                           | 4.6 | 4.8 | 4.9 | 5.1 | 5.3 | 5.6 | 5.8 | 6.0 |  |  |
|    | A25          | 44.9                          | 41.7 | 38.7 | 35.7 | 31.1 | 28.2 | 25.3 | 23.9 | 21.7 | 3.9                           | 3.9 | 4.1 | 4.2 | 4.4 | 4.5 | 4.7 | 4.8 | 5.0 |  |  |
|    | A30          | 42.6                          | 39.6 | 36.7 | 33.8 | 29.4 | 26.6 | 23.8 | 22.4 | 20.3 | 3.4                           | 3.4 | 3.6 | 3.6 | 3.7 | 3.8 | 4.0 | 4.1 | 4.2 |  |  |
|    | A35          | 40.3                          | 37.4 | 34.6 | 31.9 | 27.7 | 25.0 | 22.3 | 20.9 | 18.9 | 2.9                           | 2.9 | 3.1 | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 |  |  |
|    | A40          | 37.9                          | 35.2 | 32.6 | 30.0 | 25.9 | 23.4 | 20.7 | 19.4 | 17.4 | 2.5                           | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 |  |  |
|    | A44          | 36.0                          | 33.5 | 30.9 | 28.4 | 24.5 | 22.0 | 19.5 | 18.2 | 16.2 | 2.2                           | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |  |  |
| 7  | A15          | 52.2                          | 48.8 | 45.3 | 40.5 | 37.0 | 33.4 | 29.9 | 27.8 | 26.1 | 5.6                           | 5.7 | 5.7 | 6.2 | 6.5 | 6.8 | 7.1 | 7.5 | 7.6 |  |  |
|    | A20          | 49.9                          | 46.6 | 43.3 | 38.6 | 35.3 | 31.8 | 28.3 | 26.4 | 24.7 | 4.8                           | 4.9 | 4.9 | 5.3 | 5.5 | 5.8 | 6.0 | 6.3 | 6.3 |  |  |
|    | A25          | 47.5                          | 44.4 | 41.2 | 36.7 | 33.5 | 30.2 | 26.8 | 24.9 | 23.2 | 4.2                           | 4.2 | 4.3 | 4.6 | 4.7 | 4.9 | 5.1 | 5.2 | 5.3 |  |  |
|    | A30          | 45.1                          | 42.1 | 39.1 | 34.8 | 31.7 | 28.5 | 25.2 | 23.3 | 21.7 | 3.6                           | 3.6 | 3.7 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.4 |  |  |
|    | A35          | 42.7                          | 39.9 | 37.0 | 32.8 | 29.9 | 26.7 | 23.6 | 21.8 | 20.2 | 3.1                           | 3.1 | 3.2 | 3.4 | 3.4 | 3.4 | 3.6 | 3.6 | 3.7 |  |  |
|    | A40          | 40.2                          | 37.6 | 34.8 | 30.8 | 28.0 | 25.0 | 21.9 | 20.2 | 18.6 | 2.7                           | 2.7 | 2.7 | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 |  |  |
|    | A44          | –                             | –    | –    | –    | 26.4 | 23.5 | 20.6 | 18.8 | 17.2 | –                             | –   | –   | –   | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |  |  |
| 10 | A15          | 57.5                          | 53.7 | 49.9 | 44.5 | 40.7 | 36.7 | 32.7 | 30.4 | 28.7 | 6.2                           | 6.3 | 6.4 | 6.9 | 7.2 | 7.5 | 7.8 | 8.2 | 8.4 |  |  |
|    | A20          | 55.0                          | 51.4 | 47.7 | 42.5 | 38.8 | 34.9 | 31.1 | 28.9 | 27.1 | 5.3                           | 5.4 | 5.5 | 7.2 | 6.1 | 6.3 | 6.6 | 6.9 | 7.0 |  |  |
|    | A25          | 52.5                          | 49.0 | 45.5 | 40.5 | 36.9 | 33.1 | 29.4 | 27.2 | 25.5 | 4.6                           | 4.6 | 4.7 | 5.0 | 5.2 | 5.4 | 5.5 | 5.7 | 5.8 |  |  |
|    | A30          | 49.9                          | 46.6 | 43.2 | 38.4 | 34.8 | 31.3 | 27.7 | 25.6 | 23.8 | 3.9                           | 4.0 | 4.0 | 4.3 | 4.4 | 4.5 | 4.6 | 4.8 | 4.8 |  |  |
|    | A35          | 47.3                          | 44.1 | 40.9 | 36.2 | 32.8 | 29.4 | 25.9 | 23.9 | 22.2 | 3.4                           | 3.4 | 3.5 | 3.7 | 3.7 | 3.8 | 3.9 | 3.9 | 4.0 |  |  |
|    | A40          | 44.6                          | 41.6 | 38.5 | 34.0 | 30.7 | 27.5 | 24.1 | 22.1 | 20.4 | 2.9                           | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.3 | 3.3 |  |  |
|    | A44          | –                             | –    | –    | –    | 29.0 | 25.9 | 22.6 | 20.6 | 18.9 | –                             | –   | –   | –   | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |  |  |
| 12 | A15          | 61.2                          | 57.2 | 53.1 | 47.3 | 43.2 | 38.9 | 34.7 | 32.2 | 30.4 | 6.7                           | 6.7 | 6.8 | 7.4 | 7.7 | 8.0 | 8.4 | 8.8 | 9.0 |  |  |
|    | A20          | 58.6                          | 54.7 | 50.8 | 45.2 | 41.2 | 37.1 | 32.9 | 30.6 | 28.7 | 5.7                           | 5.8 | 5.8 | 6.3 | 6.5 | 6.5 | 7.0 | 7.3 | 7.4 |  |  |
|    | A25          | 55.9                          | 52.2 | 48.5 | 43.0 | 39.2 | 35.2 | 31.2 | 28.8 | 27.0 | 4.9                           | 4.9 | 5.0 | 5.3 | 5.5 | 5.7 | 5.9 | 6.1 | 6.1 |  |  |
|    | A30          | 53.3                          | 49.6 | 46.0 | 40.9 | 37.1 | 33.2 | 29.3 | 27.1 | 25.3 | 4.2                           | 4.2 | 4.3 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 |  |  |
|    | A35          | 50.4                          | 47.0 | 43.6 | 38.5 | 35.0 | 31.2 | 27.5 | 25.3 | 23.5 | 3.6                           | 3.7 | 3.7 | 3.9 | 4.0 | 4.0 | 4.1 | 4.2 | 4.2 |  |  |
|    | A40          | 47.5                          | 44.3 | 41.1 | 36.2 | 32.7 | 29.2 | 25.5 | 23.4 | 21.6 | 3.1                           | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |  |  |
|    | A44          | –                             | –    | –    | –    | 30.9 | 27.5 | 23.9 | 21.8 | 20.1 | –                             | –   | –   | –   | 2.9 | 3.0 | 3.0 | 2.9 | 2.9 |  |  |
| 15 | A15          | 68.2                          | 62.9 | 58.7 | 52.4 | 47.0 | 42.0 | 36.5 | 35.1 | 32.7 | 6.8                           | 6.9 | 6.9 | 7.3 | 7.6 | 7.9 | 8.3 | 8.4 | 8.7 |  |  |
|    | A20          | 65.2                          | 60.2 | 56.1 | 49.9 | 44.8 | 39.9 | 34.6 | 33.2 | 30.8 | 5.7                           | 5.8 | 5.9 | 6.1 | 6.3 | 6.6 | 6.8 | 6.9 | 7.1 |  |  |
|    | A25          | 62.1                          | 57.3 | 53.4 | 47.4 | 42.4 | 37.7 | 32.5 | 31.2 | 28.9 | 4.9                           | 4.9 | 5.0 | 5.2 | 5.3 | 5.5 | 5.6 | 5.7 | 5.8 |  |  |
|    | A30          | 60.0                          | 55.4 | 51.6 | 45.9 | 41.1 | 36.5 | 31.3 | 30.1 | 27.9 | 4.2                           | 4.3 | 4.3 | 4.5 | 4.6 | 4.7 | 4.8 | 4.8 | 4.9 |  |  |
|    | A35          | 57.7                          | 53.3 | 49.8 | 44.2 | 39.5 | 35.2 | 30.3 | 29.0 | 26.8 | 3.7                           | 3.7 | 3.8 | 3.9 | 4.0 | 4.0 | 4.1 | 4.1 | 4.1 |  |  |
|    | A40          | 54.4                          | 50.2 | 46.8 | 41.4 | 37.0 | 32.8 | 28.0 | 26.8 | 24.6 | 3.1                           | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 |  |  |
|    | A44          | –                             | –    | –    | –    | 34.8 | 30.8 | 26.2 | 24.9 | 22.9 | –                             | –   | –   | –   | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 |  |  |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |      |      |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|------|------|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |      |      |      |
| 18 | A15          | 74.5                          | 68.8 | 64.2 | 57.1 | 51.2 | 45.7 | 39.7 | 38.1 | 35.4 | 7.5                           | 7.6 | 7.7 | 8.1 | 8.4 | 8.8 | 9.3  | 9.4  | 9.8  |
|    | A20          | 71.3                          | 65.8 | 61.3 | 54.5 | 48.8 | 43.5 | 37.6 | 36.1 | 33.5 | 6.3                           | 6.4 | 6.5 | 6.8 | 7.0 | 7.3 | 7.6  | 7.7  | 7.9  |
|    | A25          | 69.0                          | 63.7 | 59.4 | 52.8 | 47.3 | 42.1 | 36.4 | 34.9 | 32.4 | 5.4                           | 5.5 | 5.6 | 5.8 | 6.0 | 6.2 | 6.4  | 6.5  | 6.6  |
|    | A30          | 66.6                          | 61.5 | 57.5 | 51.0 | 45.7 | 40.7 | 35.2 | 33.7 | 31.2 | 4.7                           | 4.8 | 4.9 | 5.0 | 5.1 | 5.3 | 5.4  | 5.4  | 5.5  |
|    | A35          | 64.0                          | 59.3 | 55.3 | 49.1 | 44.0 | 39.2 | 33.8 | 32.4 | 30.0 | 4.0                           | 4.2 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6  | 4.6  | 4.7  |
|    | A40          | 59.4                          | 54.8 | 51.1 | 45.1 | 40.2 | 35.5 | 30.4 | 29.0 | 26.6 | 3.4                           | 3.5 | 3.5 | 3.6 | 3.6 | 3.7 | 3.7  | 3.7  | 3.7  |
|    | A44          | –                             | –    | –    | –    | 37.8 | 33.4 | 28.3 | 27.0 | 24.7 | –                             | –   | –   | –   | 3.1 | 3.2 | 3.1  | 3.1  | 3.1  |
| 20 | A15          | 79.8                          | 73.7 | 68.8 | 61.3 | 55.1 | 49.3 | 42.8 | 41.2 | 38.0 | 8.1                           | 8.2 | 8.4 | 8.8 | 9.2 |     | 10.3 | 10.4 | 10.9 |
|    | A20          | 76.4                          | 70.6 | 65.9 | 58.6 | 52.5 | 46.9 | 40.7 | 39.0 | 36.2 | 6.8                           | 6.9 | 7.0 | 7.3 | 7.6 | 9.2 | 8.4  | 8.5  | 8.8  |
|    | A25          | 73.9                          | 68.3 | 63.8 | 56.7 | 50.9 | 45.4 | 39.4 | 37.8 | 35.1 | 5.8                           | 5.9 | 6.0 | 6.3 | 6.5 | 6.7 | 7.0  | 7.1  | 7.3  |
|    | A30          | 71.3                          | 66.0 | 61.7 | 54.8 | 49.1 | 43.9 | 38.0 | 36.4 | 33.8 | 5.0                           | 5.1 | 5.2 | 5.4 | 5.5 | 5.7 | 5.9  | 5.9  | 6.1  |
|    | A35          | 67.6                          | 62.5 | 58.3 | 51.7 | 46.3 | 41.2 | 36.5 | 34.0 | 31.4 | 4.3                           | 4.4 | 4.4 | 4.5 | 4.6 | 4.8 | 5.0  | 4.9  | 4.9  |
|    | A40          | 63.7                          | 58.9 | 54.9 | 48.5 | 43.3 | 38.4 | 32.9 | 31.4 | 29.0 | 3.6                           | 3.7 | 3.8 | 3.8 | 3.9 | 4.0 | 4.0  | 4.0  | 4.0  |
|    | A44          | –                             | –    | –    | –    | 40.9 | 36.1 | 30.8 | 29.3 | 26.9 | –                             | –   | –   | –   | 3.4 | 3.4 | 3.4  | 3.4  | 3.4  |

Table 33

## 7.9 Performance Heating - AWP36

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 25 | A-20         | 26.5                          | 23.0 | 20.5 | 16.6 | 13.2 | 9.6  | 6.7  | –    | –    | 2.6                           | 2.5 | 2.4 | 2.3 | 2.2 | 1.9 | 1.6 | –   | –   |
|    | A-15         | 30.2                          | 26.9 | 24.4 | 21.0 | 18.4 | 15.2 | 12.7 | 10.3 | 8.1  | 2.9                           | 2.8 | 2.8 | 2.7 | 2.7 | 2.7 | 2.6 | 2.6 | 2.5 |
|    | A-10         | 35.3                          | 31.3 | 28.8 | 25.3 | 22.5 | 18.9 | 16.0 | 13.5 | 10.9 | 3.3                           | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
|    | A-7          | 37.7                          | 34.3 | 31.7 | 28.0 | 25.1 | 21.8 | 19.3 | 16.5 | 13.9 | 3.4                           | 3.4 | 3.4 | 3.5 | 3.5 | 3.8 | 4.0 | 4.0 | 4.3 |
|    | A-2          | 43.0                          | 39.3 | 36.6 | 32.5 | 29.3 | 25.1 | 22.2 | 19.5 | 16.9 | 3.8                           | 3.9 | 3.9 | 3.9 | 4.0 | 4.3 | 4.4 | 4.6 | 4.9 |
|    | A2           | 49.6                          | 45.7 | 42.7 | 38.2 | 34.5 | 29.2 | 25.9 | 23.3 | 20.7 | 4.3                           | 4.3 | 4.4 | 4.5 | 4.5 | 4.8 | 5.0 | 5.2 | 5.5 |
|    | A7           | 60.0                          | 56.6 | 52.0 | 46.7 | 42.2 | 37.0 | 32.8 | 29.4 | 26.1 | 5.3                           | 5.5 | 5.5 | 5.6 | 5.7 | 6.2 | 6.5 | 6.7 | 7.0 |
|    | A10          | 63.8                          | 59.3 | 55.5 | 49.8 | 45.1 | 39.5 | 35.0 | 31.4 | 27.8 | 5.7                           | 5.8 | 5.9 | 6.0 | 6.1 | 6.7 | 6.9 | 7.2 | 7.5 |
|    | A18          | 74.9                          | 69.6 | 65.4 | 59.0 | 53.4 | 46.8 | 41.4 | 37.0 | 32.5 | 6.7                           | 6.9 | 7.0 | 7.2 | 7.3 | 8.0 | 8.4 | 8.7 | 9.1 |
|    | A-20         | 25.1                          | 21.9 | 19.5 | 15.6 | 12.3 | 8.9  | 6.0  | –    | –    | 2.3                           | 2.2 | 2.2 | 2.1 | 1.9 | 1.6 | 1.3 | –   | –   |
| 30 | A-15         | 29.1                          | 25.9 | 23.6 | 20.4 | 17.9 | 14.6 | 12.2 | 9.9  | 7.6  | 2.6                           | 2.5 | 2.5 | 2.5 | 2.4 | 2.4 | 2.3 | 2.3 | 2.1 |
|    | A-10         | 34.0                          | 30.5 | 28.1 | 24.5 | 21.8 | 18.0 | 15.5 | 12.9 | 10.3 | 2.9                           | 2.9 | 2.9 | 2.8 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 |
|    | A-7          | 36.7                          | 33.4 | 31.0 | 27.4 | 24.6 | 21.3 | 18.8 | 16.2 | 13.7 | 3.1                           | 3.1 | 3.1 | 3.1 | 3.2 | 3.4 | 3.5 | 3.6 | 3.8 |
|    | A-2          | 42.0                          | 38.5 | 35.8 | 31.9 | 28.7 | 24.6 | 21.7 | 19.1 | 16.5 | 3.4                           | 3.5 | 3.5 | 3.5 | 3.6 | 3.8 | 3.9 | 4.1 | 4.3 |
|    | A2           | 48.7                          | 44.9 | 41.9 | 37.4 | 33.8 | 28.6 | 25.3 | 22.7 | 20.1 | 3.8                           | 3.9 | 3.9 | 4.0 | 4.0 | 4.3 | 4.4 | 4.6 | 4.8 |
|    | A7           | 59.1                          | 55.6 | 51.1 | 45.8 | 41.4 | 36.2 | 32.0 | 28.7 | 25.3 | 4.7                           | 4.9 | 4.8 | 4.9 | 5.0 | 5.5 | 5.7 | 5.8 | 6.0 |
|    | A10          | 62.8                          | 58.3 | 54.5 | 48.9 | 44.2 | 38.7 | 34.2 | 30.6 | 26.9 | 5.0                           | 5.1 | 5.2 | 5.3 | 5.4 | 5.8 | 6.0 | 6.2 | 6.4 |
|    | A18          | 73.7                          | 68.5 | 64.2 | 57.8 | 52.3 | 45.8 | 40.3 | 36.0 | 31.5 | 5.8                           | 6.0 | 6.1 | 6.3 | 6.4 | 7.0 | 7.2 | 7.4 | 7.7 |
|    | A-20         | 23.9                          | 20.9 | 18.8 | 14.6 | 11.5 | 8.1  | 5.1  | –    | –    | 2.1                           | 2.0 | 2.0 | 1.8 | 1.7 | 1.4 | 1.0 | –   | –   |
|    | A-15         | 28.1                          | 25.1 | 22.9 | 19.8 | 17.2 | 14.0 | 11.8 | 9.5  | 7.0  | 2.3                           | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 | 2.1 | 2.0 | 1.8 |
| 35 | A-10         | 33.2                          | 29.8 | 27.5 | 24.0 | 21.4 | 17.7 | 15.1 | 12.5 | 10.1 | 2.7                           | 2.6 | 2.6 | 2.6 | 2.6 | 2.5 | 2.5 | 2.4 | 2.3 |
|    | A-7          | 35.9                          | 32.8 | 30.4 | 26.9 | 24.2 | 21.0 | 18.5 | 15.9 | 13.5 | 2.9                           | 2.8 | 2.8 | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 |
|    | A-2          | 41.0                          | 37.5 | 35.2 | 31.3 | 28.2 | 24.1 | 21.3 | 18.7 | 16.2 | 3.1                           | 3.1 | 3.1 | 3.2 | 3.2 | 3.4 | 3.5 | 3.6 | 3.7 |
|    | A2           | 47.3                          | 44.1 | 41.2 | 36.8 | 33.1 | 28.1 | 24.8 | 22.2 | 19.5 | 3.4                           | 3.5 | 3.5 | 3.6 | 3.6 | 3.8 | 3.9 | 4.0 | 4.1 |
|    | A7           | 58.0                          | 54.3 | 50.2 | 45.0 | 40.6 | 35.5 | 31.3 | 27.9 | 24.6 | 4.2                           | 4.3 | 4.3 | 4.4 | 4.5 | 4.8 | 5.0 | 5.1 | 5.2 |
|    | A10          | 61.9                          | 57.3 | 53.6 | 48.0 | 43.3 | 37.9 | 33.4 | 29.8 | 26.1 | 4.4                           | 4.5 | 4.6 | 4.7 | 4.7 | 5.1 | 5.3 | 5.4 | 5.5 |
|    | A18          | 72.5                          | 67.3 | 63.1 | 56.7 | 51.1 | 44.7 | 39.3 | 34.9 | 30.5 | 5.1                           | 5.2 | 5.3 | 5.5 | 5.6 | 6.0 | 6.2 | 6.3 | 6.5 |
|    | A-20         | 23.0                          | 20.2 | 18.2 | 13.8 | 10.6 | 7.3  | –    | –    | –    | 1.9                           | 1.8 | 1.8 | 1.6 | 1.5 | 1.2 | –   | –   | –   |
|    | A-15         | 27.3                          | 24.5 | 22.4 | 19.5 | 16.6 | 13.4 | 11.1 | 8.8  | 6.6  | 2.1                           | 2.1 | 2.1 | 2.0 | 2.0 | 1.9 | 1.8 | 1.7 | 1.6 |
|    | A-10         | 32.1                          | 29.2 | 27.0 | 23.5 | 20.9 | 17.1 | 14.6 | 11.9 | 9.6  | 2.4                           | 2.4 | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.2 | 2.1 |
| 40 | A-7          | 35.2                          | 32.2 | 29.9 | 26.5 | 23.8 | 20.7 | 18.3 | 15.8 | 13.4 | 2.5                           | 2.5 | 2.6 | 2.6 | 2.6 | 2.8 | 2.8 | 2.9 | 3.0 |
|    | A-2          | 40.2                          | 37.1 | 34.6 | 30.8 | 27.7 | 23.8 | 21.0 | 18.4 | 15.9 | 2.8                           | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 |
|    | A2           | 46.5                          | 43.1 | 40.5 | 36.2 | 32.6 | 27.6 | 24.3 | 21.7 | 19.1 | 3.0                           | 3.1 | 3.1 | 3.2 | 3.2 | 3.4 | 3.4 | 3.5 | 3.6 |
|    | A7           | 57.3                          | 53.7 | 49.4 | 44.2 | 39.8 | 34.8 | 30.6 | 27.3 | 23.9 | 3.7                           | 3.8 | 3.8 | 3.9 | 4.0 | 4.3 | 4.4 | 4.4 | 4.5 |
|    | A10          | 60.9                          | 56.4 | 52.7 | 47.1 | 42.5 | 37.2 | 32.7 | 29.0 | 25.3 | 3.9                           | 4.0 | 4.1 | 4.1 | 4.2 | 4.5 | 4.6 | 4.7 | 4.7 |
|    | A18          | 71.3                          | 66.1 | 61.9 | 55.5 | 50.0 | 43.7 | 38.3 | 33.9 | 29.5 | 4.5                           | 4.6 | 4.7 | 4.8 | 4.9 | 5.3 | 5.4 | 5.4 | 5.5 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      |     | COP EN14511                   |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |     | Percentage of compressor load |     |     |     |     |     |     |     |  |  |
| 45 | A-20         | 22.2                          | 19.5 | 17.3 | 12.9 | 9.7  | —    | —    | —    | —    | 1.7 | 1.7                           | 1.6 | 1.4 | 1.2 | —   | —   | —   | —   |  |  |
|    | A-15         | 26.5                          | 23.8 | 21.8 | 19.0 | 15.9 | 12.8 | 10.7 | —    | —    | 1.9 | 1.9                           | 1.9 | 1.8 | 1.8 | 1.7 | 1.6 | —   | —   |  |  |
|    | A-10         | 31.6                          | 28.8 | 26.6 | 23.1 | 20.2 | 16.5 | 14.0 | 11.4 | 9.0  | 2.2 | 2.2                           | 2.2 | 2.1 | 2.1 | 2.0 | 2.0 | 1.9 | 1.8 |  |  |
|    | A-7          | 34.7                          | 31.8 | 29.5 | 26.2 | 23.6 | 20.6 | 18.1 | 15.7 | 13.4 | 2.3 | 2.3                           | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.7 |  |  |
|    | A-2          | 39.4                          | 36.4 | 34.1 | 30.4 | 27.3 | 23.5 | 20.7 | 18.2 | 15.7 | 2.5 | 2.5                           | 2.6 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 |  |  |
|    | A2           | 45.3                          | 42.2 | 39.9 | 35.6 | 32.0 | 27.2 | 23.9 | 21.3 | 18.6 | 2.7 | 2.8                           | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 |  |  |
|    | A7           | 56.4                          | 53.1 | 48.6 | 43.4 | 39.0 | 34.2 | 30.0 | 26.6 | 23.2 | 3.4 | 3.4                           | 3.4 | 3.5 | 3.5 | 3.8 | 3.8 | 3.9 | 3.9 |  |  |
|    | A10          | 60.0                          | 55.4 | 51.8 | 46.2 | 41.6 | 36.4 | 31.9 | 28.2 | 24.5 | 3.5 | 3.6                           | 3.6 | 3.7 | 3.7 | 4.0 | 4.0 | 4.1 | 4.1 |  |  |
|    | A18          | 70.0                          | 64.8 | 60.6 | 54.3 | 48.8 | 42.6 | 37.2 | 32.8 | 28.6 | 3.9 | 4.0                           | 4.1 | 4.2 | 4.3 | 4.6 | 4.7 | 4.7 | 4.7 |  |  |
| 50 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-15         | —                             | 22.1 | 20.3 | 17.8 | 15.2 | 12.2 | 10.2 | —    | —    | —   | 1.6                           | 1.6 | 1.6 | 1.5 | 1.5 | 1.4 | —   | —   |  |  |
|    | A-10         | 29.0                          | 26.5 | 24.6 | 21.8 | 19.5 | 15.8 | 13.3 | 10.9 | 8.4  | 1.8 | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 |  |  |
|    | A-7          | 32.0                          | 29.3 | 27.2 | 24.2 | 21.8 | 19.3 | 17.2 | 14.9 | 12.9 | 1.9 | 1.9                           | 2.0 | 2.0 | 2.0 | 2.1 | 2.2 | 2.2 | 2.3 |  |  |
|    | A-2          | 36.1                          | 33.2 | 30.9 | 27.5 | 24.8 | 21.7 | 19.2 | 16.9 | 14.6 | 2.1 | 2.1                           | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.4 |  |  |
|    | A2           | 41.4                          | 38.1 | 35.5 | 31.7 | 28.5 | 24.7 | 21.7 | 19.3 | 16.8 | 2.3 | 2.3                           | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.5 | 2.5 |  |  |
|    | A7           | 52.7                          | 48.6 | 45.4 | 40.5 | 36.4 | 30.5 | 26.7 | 23.6 | 20.4 | 3.0 | 3.1                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |  |  |
|    | A10          | 56.0                          | 51.7 | 48.3 | 43.1 | 38.7 | 32.5 | 28.3 | 25.0 | 21.6 | 3.1 | 3.2                           | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.3 |  |  |
|    | A18          | 65.2                          | 60.3 | 56.4 | 50.4 | 45.1 | 37.8 | 32.9 | 28.9 | 25.1 | 3.5 | 3.6                           | 3.7 | 3.8 | 3.8 | 3.8 | 3.9 | 3.8 | 3.8 |  |  |
| 55 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-10         | —                             | —    | —    | 21.2 | 18.9 | 15.2 | 12.7 | 10.3 | 7.6  | —   | —                             | —   | 1.6 | 1.6 | 1.6 | 1.5 | 1.4 | 1.3 |  |  |
|    | A-7          | 31.0                          | 28.5 | 26.4 | 23.4 | 21.0 | 17.9 | 15.7 | 13.5 | 11.4 | 1.8 | 1.7                           | 1.7 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 |  |  |
|    | A-2          | 35.4                          | 32.5 | 30.2 | 26.9 | 24.1 | 20.8 | 18.2 | 15.9 | 13.6 | 1.9 | 1.9                           | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |  |  |
|    | A2           | 40.8                          | 37.6 | 35.0 | 31.2 | 28.0 | 24.4 | 21.3 | 18.9 | 16.4 | 2.1 | 2.1                           | 2.1 | 2.2 | 2.2 | 2.2 | 2.3 | 2.2 | 2.2 |  |  |
|    | A7           | 51.8                          | 47.8 | 44.6 | 39.7 | 35.6 | 29.9 | 26.1 | 23.0 | 19.8 | 2.7 | 2.7                           | 2.8 | 2.8 | 2.9 | 2.8 | 2.8 | 2.8 | 2.7 |  |  |
|    | A10          | 55.0                          | 50.8 | 47.4 | 42.2 | 37.8 | 31.7 | 27.6 | 24.3 | 20.9 | 2.8 | 2.9                           | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 2.9 | 2.9 |  |  |
|    | A18          | 64.0                          | 59.0 | 55.0 | 49.0 | 44.0 | 36.7 | 31.8 | 28.0 | 24.1 | 3.2 | 3.2                           | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.3 | 3.3 |  |  |
| 60 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-10         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-7          | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —   | —                             | —   | —   | —   | —   | —   | —   | —   |  |  |
|    | A-2          | —                             | —    | —    | —    | —    | 19.2 | 16.3 | 14.0 | 11.3 | —   | —                             | —   | —   | —   | 1.6 | 1.6 | 1.5 | 1.4 |  |  |
|    | A2           | —                             | —    | —    | —    | —    | 22.7 | 19.6 | 17.1 | 14.7 | —   | —                             | —   | —   | —   | 1.8 | 1.8 | 1.8 | 1.8 |  |  |
|    | A7           | —                             | —    | —    | —    | —    | 28.1 | 24.0 | 20.8 | 17.8 | —   | —                             | —   | —   | —   | 2.3 | 2.3 | 2.2 | 2.2 |  |  |
|    | A10          | —                             | —    | —    | —    | —    | 29.8 | 25.4 | 21.9 | 18.8 | —   | —                             | —   | —   | —   | 2.5 | 2.4 | 2.3 | 2.3 |  |  |
|    | A18          | —                             | —    | —    | —    | —    | 34.6 | 29.3 | 25.5 | 21.7 | —   | —                             | —   | —   | —   | 2.8 | 2.7 | 2.6 | 2.6 |  |  |

Table 34

## 7.10 Performance Cooling - AWP36

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100<br>%                      | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>%                      | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 0  | A15          | 44.4                          | 42.2 | 38.7 | 34.6 | 31.3 | 28.0 | 24.9 | 21.4 | 19.9 | 4.2                           | 4.2 | 4.3 | 4.6 | 4.7 | 4.8 | 5.1 | 5.4 | 5.6 |  |  |
|    | A20          | 42.4                          | 40.3 | 37.0 | 33.1 | 29.9 | 26.7 | 23.6 | 20.3 | 18.9 | 3.6                           | 3.6 | 3.6 | 3.9 | 4.0 | 4.1 | 4.3 | 4.5 | 4.7 |  |  |
|    | A25          | 40.4                          | 38.5 | 35.3 | 31.5 | 28.4 | 25.4 | 22.4 | 19.2 | 17.8 | 3.1                           | 3.1 | 3.1 | 3.3 | 3.4 | 3.5 | 3.7 | 3.8 | 3.9 |  |  |
|    | A30          | 39.7                          | 37.8 | 34.7 | 30.9 | 27.9 | 24.8 | 21.9 | 18.7 | 17.2 | 2.7                           | 2.8 | 2.8 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 |  |  |
|    | A35          | 38.9                          | 37.1 | 34.0 | 30.3 | 27.3 | 24.2 | 21.3 | 18.1 | 16.7 | 2.4                           | 2.4 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 |  |  |
|    | A40          | 36.8                          | 35.0 | 32.1 | 28.6 | 25.7 | 22.8 | 19.9 | 16.9 | 15.5 | 2.1                           | 2.1 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 |  |  |
|    | A44          | 31.4                          | 30.0 | 27.5 | 24.4 | 21.9 | 19.4 | 16.9 | 14.2 | 13.0 | 1.7                           | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |  |  |
| 5  | A15          | 56.1                          | 53.4 | 49.0 | 43.8 | 39.6 | 35.5 | 31.4 | 27.1 | 25.2 | 5.2                           | 5.2 | 5.3 | 5.6 | 5.8 | 6.0 | 6.4 | 6.6 | 6.9 |  |  |
|    | A20          | 53.5                          | 51.0 | 46.7 | 41.8 | 37.7 | 33.7 | 29.9 | 25.7 | 23.8 | 4.4                           | 4.5 | 4.5 | 4.8 | 5.0 | 5.1 | 5.4 | 5.6 | 5.8 |  |  |
|    | A25          | 50.9                          | 48.5 | 44.5 | 39.7 | 35.9 | 32.0 | 28.3 | 24.2 | 22.4 | 3.8                           | 3.9 | 3.9 | 4.1 | 4.3 | 4.4 | 4.6 | 4.7 | 4.9 |  |  |
|    | A30          | 48.3                          | 46.0 | 42.2 | 37.7 | 34.0 | 30.2 | 26.6 | 22.8 | 21.0 | 3.3                           | 3.3 | 3.4 | 3.6 | 3.7 | 3.7 | 3.9 | 4.0 | 4.0 |  |  |
|    | A35          | 45.7                          | 43.5 | 39.9 | 35.6 | 32.1 | 28.5 | 25.0 | 21.3 | 19.6 | 2.8                           | 2.9 | 2.9 | 3.1 | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 |  |  |
|    | A40          | 43.0                          | 41.0 | 37.6 | 33.5 | 30.1 | 26.6 | 23.3 | 19.8 | 18.1 | 2.5                           | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 |  |  |
|    | A44          | 40.8                          | 38.9 | 35.7 | 31.7 | 28.5 | 25.2 | 22.0 | 18.5 | 16.9 | 2.2                           | 2.2 | 2.3 | 2.6 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |  |  |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |      |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|------|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |      |      |
| 7  | A15          | 59.2                          | 56.0 | 50.3 | 45.8 | 41.0 | 37.3 | 33.3 | 29.7 | 27.5                          | 5.6 | 5.6 | 5.9 | 6.1 | 6.3 | 6.6 | 6.9 | 7.3  | 7.6  |
|    | A20          | 56.5                          | 53.5 | 48.0 | 43.7 | 39.1 | 35.5 | 31.6 | 28.1 | 26.1                          | 4.8 | 4.8 | 5.0 | 5.2 | 5.4 | 5.6 | 5.8 | 6.2  | 6.4  |
|    | A25          | 53.9                          | 51.0 | 45.7 | 41.6 | 37.2 | 33.7 | 30.0 | 26.6 | 24.5                          | 4.1 | 4.1 | 4.3 | 4.4 | 4.6 | 4.8 | 4.9 | 5.2  | 5.3  |
|    | A30          | 51.2                          | 48.4 | 43.4 | 39.4 | 35.2 | 31.9 | 28.3 | 25.0 | 23.0                          | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.2 | 4.3  | 4.4  |
|    | A35          | 48.4                          | 45.8 | 41.0 | 37.2 | 33.2 | 30.0 | 26.5 | 23.3 | 21.4                          | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.5 | 3.6  | 3.7  |
|    | A40          | 45.6                          | 43.2 | 38.6 | 35.0 | 31.2 | 28.1 | 24.7 | 21.6 | 19.8                          | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0  | 3.0  |
|    | A44          | –                             | –    | –    | –    | 29.5 | 26.6 | 23.3 | 20.3 | 18.4                          | –   | –   | –   | –   | 2.5 | 2.6 | 2.6 | 2.6  | 2.6  |
| 10 | A15          | 65.2                          | 61.7 | 55.4 | 50.3 | 45.1 | 41.0 | 36.5 | 32.5 | 30.1                          | 6.1 | 6.2 | 6.5 | 6.7 | 7.0 | 7.3 | 7.6 | 8.1  | 8.4  |
|    | A20          | 62.4                          | 59.0 | 52.9 | 48.1 | 43.1 | 39.1 | 34.7 | 30.8 | 28.5                          | 5.2 | 5.3 | 5.5 | 5.7 | 5.9 | 6.2 | 6.4 | 6.8  | 7.0  |
|    | A25          | 59.5                          | 56.3 | 50.4 | 45.8 | 41.0 | 37.1 | 32.9 | 29.1 | 26.8                          | 4.5 | 4.5 | 4.7 | 4.9 | 5.1 | 5.2 | 5.4 | 5.6  | 5.8  |
|    | A30          | 56.6                          | 53.7 | 47.9 | 43.5 | 38.9 | 35.1 | 31.0 | 27.4 | 25.2                          | 3.9 | 3.9 | 4.0 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7  | 4.8  |
|    | A35          | 53.5                          | 50.7 | 45.3 | 41.1 | 36.6 | 33.1 | 29.1 | 25.6 | 23.4                          | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | 3.9  | 4.0  |
|    | A40          | 50.5                          | 47.8 | 42.6 | 38.7 | 34.4 | 31.0 | 27.2 | 23.7 | 21.6                          | 2.8 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3  | 3.3  |
|    | A44          | –                             | –    | –    | –    | 32.5 | 29.3 | 25.5 | 22.2 | 20.1                          | –   | –   | –   | –   | 2.7 | 2.8 | 2.8 | 2.8  | 2.8  |
| 12 | A15          | 69.4                          | 65.7 | 58.8 | 53.5 | 47.9 | 42.8 | 38.7 | 34.4 | 31.8                          | 6.6 | 6.6 | 6.9 | 7.2 | 7.5 | 7.6 | 8.1 | 8.7  | 9.0  |
|    | A20          | 66.4                          | 62.9 | 56.3 | 51.2 | 45.7 | 41.5 | 36.8 | 32.6 | 30.1                          | 5.6 | 5.6 | 5.8 | 6.1 | 6.3 | 6.6 | 6.8 | 7.2  | 7.5  |
|    | A25          | 63.4                          | 60.0 | 53.6 | 48.7 | 43.5 | 39.4 | 34.9 | 30.9 | 28.4                          | 4.7 | 4.8 | 5.0 | 5.2 | 5.4 | 5.5 | 5.7 | 6.0  | 6.2  |
|    | A30          | 60.3                          | 57.1 | 51.0 | 46.3 | 41.3 | 37.3 | 32.9 | 29.0 | 26.6                          | 4.1 | 4.2 | 4.3 | 4.4 | 4.6 | 4.7 | 4.8 | 5.0  | 5.1  |
|    | A35          | 57.1                          | 54.1 | 48.2 | 43.8 | 39.0 | 35.2 | 30.9 | 27.1 | 24.8                          | 3.5 | 3.6 | 3.6 | 3.8 | 3.9 | 4.0 | 4.0 | 4.1  | 4.2  |
|    | A40          | 53.8                          | 51.0 | 45.4 | 41.2 | 36.6 | 32.9 | 28.8 | 25.1 | 22.9                          | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4  | 3.4  |
|    | A44          | –                             | –    | –    | –    | 34.6 | 31.1 | 27.1 | 23.5 | 21.3                          | –   | –   | –   | –   | 2.9 | 2.9 | 2.9 | 2.9  | 2.9  |
| 15 | A15          | 78.0                          | 73.9 | 67.1 | 60.0 | 53.6 | 48.0 | 43.2 | 38.3 | 35.4                          | 6.6 | 6.7 | 7.0 | 7.2 | 7.5 | 7.7 | 8.2 | 8.7  | 9.2  |
|    | A20          | 74.7                          | 70.7 | 64.2 | 57.4 | 51.2 | 45.8 | 41.1 | 36.4 | 33.5                          | 5.6 | 5.7 | 5.9 | 6.0 | 6.3 | 6.5 | 6.8 | 7.2  | 7.5  |
|    | A25          | 71.3                          | 67.5 | 61.3 | 54.7 | 48.8 | 43.5 | 39.0 | 34.4 | 31.6                          | 4.7 | 4.8 | 5.0 | 5.1 | 5.3 | 5.4 | 5.7 | 6.0  | 6.2  |
|    | A30          | 67.9                          | 64.3 | 58.3 | 51.9 | 46.3 | 41.2 | 36.8 | 32.3 | 29.6                          | 4.1 | 4.1 | 4.3 | 4.4 | 4.5 | 4.6 | 4.8 | 4.9  | 5.0  |
|    | A35          | 64.3                          | 60.9 | 55.2 | 49.1 | 43.6 | 38.8 | 34.5 | 30.2 | 27.6                          | 3.5 | 3.5 | 3.6 | 3.7 | 3.8 | 3.5 | 4.0 | 4.1  | 4.1  |
|    | A40          | 60.7                          | 57.5 | 52.0 | 46.2 | 40.9 | 36.2 | 32.1 | 28.0 | 25.4                          | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.3 | 3.4  | 3.4  |
|    | A44          | –                             | –    | –    | –    | 38.7 | 34.2 | 30.2 | 26.1 | 23.7                          | –   | –   | –   | –   | 2.8 | 2.8 | 2.9 | 2.9  | 2.9  |
| 18 | A15          | 85.0                          | 80.4 | 73.0 | 65.1 | 58.2 | 52.0 | 46.7 | 41.3 | 38.1                          | 7.3 | 7.4 | 7.7 | 7.9 | 8.2 | 8.5 | 9.0 | 9.7  | 10.3 |
|    | A20          | 81.4                          | 77.0 | 69.9 | 62.3 | 55.6 | 49.6 | 44.5 | 39.3 | 36.2                          | 6.1 | 6.2 | 6.4 | 6.6 | 6.9 | 7.0 | 7.5 | 8.0  | 8.3  |
|    | A25          | 77.7                          | 73.6 | 66.7 | 59.4 | 52.9 | 47.1 | 42.2 | 37.1 | 34.1                          | 5.2 | 5.3 | 5.4 | 5.6 | 5.8 | 5.9 | 6.2 | 6.5  | 6.8  |
|    | A30          | 74.0                          | 70.1 | 63.5 | 56.5 | 50.2 | 44.6 | 39.8 | 34.9 | 32.0                          | 4.4 | 4.5 | 4.6 | 4.7 | 4.9 | 4.9 | 5.2 | 5.4  | 5.5  |
|    | A35          | 70.2                          | 66.0 | 60.1 | 53.4 | 47.4 | 42.0 | 37.3 | 32.6 | 29.7                          | 3.8 | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.4  | 4.5  |
|    | A40          | 66.2                          | 62.7 | 56.7 | 50.2 | 44.4 | 39.2 | 34.7 | 30.2 | 27.4                          | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.5 | 3.6 | 3.7  | 3.6  |
|    | A44          | –                             | –    | –    | –    | 42.0 | 37.0 | 32.6 | 28.2 | 25.5                          | –   | –   | –   | –   | 3.0 | 3.0 | 3.1 | 3.1  | 3.1  |
| 20 | A15          | 89.7                          | 84.9 | 77.0 | 68.6 | 61.2 | 54.7 | 49.0 | 43.4 | 40.0                          | 7.7 | 7.9 | 8.2 | 8.4 | 8.8 | 9.0 | 9.7 | 10.5 | 11.0 |
|    | A20          | 86.0                          | 81.3 | 73.8 | 65.7 | 58.5 | 52.2 | 46.7 | 41.2 | 37.9                          | 6.5 | 6.6 | 6.8 | 7.0 | 7.3 | 7.5 | 7.9 | 8.5  | 8.9  |
|    | A25          | 82.1                          | 77.7 | 70.4 | 62.6 | 55.7 | 49.6 | 44.3 | 39.0 | 35.8                          | 5.5 | 5.6 | 5.8 | 5.9 | 6.1 | 6.2 | 6.6 | 6.9  | 7.2  |
|    | A30          | 78.2                          | 74.0 | 67.0 | 59.5 | 52.9 | 46.9 | 41.8 | 36.7 | 33.5                          | 4.6 | 4.7 | 4.9 | 5.0 | 5.2 | 5.2 | 5.4 | 5.7  | 5.8  |
|    | A35          | 74.1                          | 70.2 | 63.5 | 56.2 | 49.9 | 44.1 | 39.2 | 34.2 | 31.2                          | 4.0 | 4.0 | 4.2 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7  | 4.7  |
|    | A40          | 69.9                          | 66.2 | 59.8 | 52.9 | 46.8 | 41.2 | 36.5 | 31.7 | 28.7                          | 3.4 | 3.5 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.8  | 3.8  |
|    | A44          | –                             | –    | –    | –    | 44.2 | 38.8 | 34.3 | 29.6 | 26.7                          | –   | –   | –   | –   | 3.2 | 3.2 | 3.2 | 3.2  | 3.2  |

Table 35

### 7.11 Performance Heating - AWP41

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100<br>%                      | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>%                      | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 25 | A-20         | 29.6                          | 26.5 | 23.0 | 18.8 | 14.0 | 9.8  | 5.6  | –    | –    | 2.7                           | 2.6 | 2.5 | 2.3 | 2.0 | 1.7 | 1.3 | –   | –   |  |  |
|    | A-15         | 33.1                          | 30.2 | 26.9 | 23.2 | 19.4 | 15.9 | 12.7 | 10.3 | 8.1  | 2.9                           | 2.9 | 2.8 | 2.7 | 2.7 | 2.6 | 2.6 | 2.5 | 2.4 |  |  |
|    | A-10         | 37.4                          | 34.6 | 31.3 | 27.6 | 23.6 | 20.5 | 16.0 | 13.5 | 10.9 | 3.2                           | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.1 | 3.1 | 3.1 |  |  |
|    | A-2          | 46.6                          | 43.0 | 39.3 | 35.2 | 30.6 | 26.8 | 22.2 | 19.4 | 16.8 | 3.8                           | 3.8 | 3.9 | 3.9 | 4.0 | 4.0 | 4.4 | 4.5 | 4.7 |  |  |
|    | A-7          | 41.0                          | 37.7 | 34.3 | 30.4 | 26.3 | 22.9 | 19.3 | 16.3 | 13.6 | 3.5                           | 3.4 | 3.4 | 3.5 | 3.5 | 3.6 | 4.0 | 3.8 | 4.0 |  |  |
|    | A2           | 53.7                          | 49.6 | 45.7 | 41.2 | 35.9 | 31.6 | 25.9 | 23.3 | 20.7 | 4.2                           | 4.3 | 4.3 | 4.4 | 4.5 | 4.6 | 5.0 | 5.2 | 5.5 |  |  |
|    | A7           | 64.2                          | 60.6 | 56.1 | 50.7 | 44.4 | 39.1 | 32.8 | 29.4 | 26.1 | 5.3                           | 5.3 | 5.4 | 5.5 | 5.7 | 5.8 | 6.5 | 6.7 | 7.0 |  |  |
|    | A10          | 68.2                          | 64.5 | 59.8 | 54.1 | 47.5 | 41.8 | 35.0 | 31.4 | 27.8 | 5.6                           | 5.7 | 5.8 | 5.9 | 6.1 | 6.2 | 6.9 | 7.2 | 7.5 |  |  |
|    | A18          | 79.9                          | 75.6 | 70.3 | 63.9 | 56.2 | 49.4 | 41.4 | 37.0 | 32.5 | 6.6                           | 6.7 | 6.9 | 7.1 | 7.3 | 7.5 | 8.4 | 8.7 | 9.1 |  |  |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |     |
| 30 | A-20         | 27.9                          | 25.1 | 21.9 | 18.0 | 12.8 | 8.9  | 5.0  | –    | –                             | 2.4 | 2.3 | 2.2 | 2.1 | 1.7 | 1.4 | 1.1 | –   | –   |
|    | A-15         | 31.8                          | 29.1 | 25.9 | 22.5 | 18.9 | 15.3 | 12.2 | 9.9  | 7.6                           | 2.6 | 2.6 | 2.5 | 2.5 | 2.4 | 2.3 | 2.3 | 2.2 | 2.1 |
|    | A-10         | 36.3                          | 33.6 | 30.5 | 26.9 | 23.1 | 20.0 | 15.5 | 12.9 | 10.3                          | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 2.7 | 2.7 |
|    | A-7          | 40.4                          | 36.7 | 33.4 | 29.8 | 25.7 | 22.4 | 18.8 | 15.9 | 13.3                          | 3.2 | 3.1 | 3.1 | 3.1 | 3.2 | 3.2 | 3.5 | 3.4 | 3.5 |
|    | A-2          | 45.9                          | 42.0 | 38.5 | 34.5 | 29.9 | 26.2 | 21.7 | 18.9 | 16.3                          | 3.5 | 3.4 | 3.5 | 3.5 | 3.6 | 3.6 | 3.9 | 4.0 | 4.1 |
|    | A2           | 52.7                          | 48.7 | 44.9 | 40.4 | 35.2 | 30.9 | 25.3 | 22.7 | 20.1                          | 3.8 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1 | 4.4 | 4.6 | 4.8 |
|    | A7           | 63.2                          | 59.6 | 55.2 | 49.8 | 43.6 | 38.2 | 32.0 | 28.7 | 25.3                          | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.7 | 5.8 | 6.0 |
|    | A10          | 67.1                          | 63.5 | 58.9 | 53.2 | 46.6 | 40.9 | 34.2 | 30.6 | 26.9                          | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.5 | 6.0 | 6.2 | 6.4 |
|    | A18          | 78.6                          | 74.4 | 69.2 | 62.7 | 55.1 | 48.2 | 40.3 | 36.0 | 31.5                          | 5.7 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 7.2 | 7.4 | 7.7 |
| 35 | A-20         | 26.5                          | 23.9 | 20.9 | 17.0 | 11.9 | 8.1  | –    | –    | –                             | 2.2 | 2.1 | 2.0 | 1.8 | 1.5 | 1.2 | –   | –   | –   |
|    | A-15         | 30.6                          | 28.1 | 25.1 | 21.9 | 18.4 | 14.7 | 11.8 | 9.5  | 7.0                           | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.1 | 2.0 | 1.9 | 1.7 |
|    | A-10         | 35.9                          | 32.8 | 29.8 | 26.3 | 22.5 | 19.4 | 15.1 | 12.5 | 10.1                          | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.5 | 2.6 |
|    | A-7          | 39.7                          | 35.9 | 32.8 | 29.2 | 25.2 | 22.0 | 18.5 | 15.6 | 13.1                          | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 3.1 | 3.2 | 3.3 |
|    | A-2          | 45.2                          | 41.2 | 37.8 | 33.9 | 29.4 | 25.7 | 21.3 | 18.5 | 15.9                          | 3.0 | 3.1 | 3.1 | 3.1 | 3.2 | 3.3 | 3.5 | 3.6 | 3.7 |
|    | A2           | 51.9                          | 47.9 | 44.1 | 39.7 | 34.6 | 30.3 | 24.8 | 22.2 | 19.5                          | 3.3 | 3.4 | 3.5 | 3.5 | 3.6 | 3.7 | 3.9 | 4.0 | 4.1 |
|    | A7           | 62.0                          | 58.7 | 54.3 | 48.9 | 42.7 | 37.4 | 31.3 | 27.9 | 24.6                          | 4.1 | 4.2 | 4.2 | 4.3 | 4.4 | 4.5 | 5.0 | 5.1 | 5.2 |
|    | A10          | 66.1                          | 62.5 | 57.9 | 52.2 | 45.6 | 40.0 | 33.4 | 29.8 | 26.1                          | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 5.3 | 5.4 | 5.5 |
|    | A18          | 77.4                          | 73.2 | 68.0 | 61.6 | 53.9 | 47.1 | 39.3 | 34.9 | 30.5                          | 5.0 | 5.1 | 5.2 | 5.4 | 5.5 | 5.7 | 6.2 | 6.3 | 6.5 |
| 40 | A-20         | 25.3                          | 23.0 | 20.2 | 15.9 | 11.0 | 7.5  | –    | –    | –                             | 2.0 | 1.9 | 1.8 | 1.6 | 1.3 | 1.0 | –   | –   | –   |
|    | A-15         | 29.7                          | 27.3 | 24.5 | 21.4 | 17.8 | 13.9 | 11.2 | 8.9  | 6.6                           | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 | 1.8 | 1.8 | 1.7 | 1.5 |
|    | A-10         | 34.6                          | 32.1 | 29.2 | 25.9 | 22.0 | 18.8 | 14.6 | 11.9 | 9.6                           | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 | 2.2 | 2.1 | 2.1 |
|    | A-7          | 38.7                          | 35.2 | 32.2 | 28.8 | 24.9 | 21.7 | 18.3 | 15.6 | 12.7                          | 2.6 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 | 2.8 | 2.8 | 2.8 |
|    | A-2          | 43.9                          | 40.5 | 37.2 | 33.3 | 28.9 | 25.3 | 21.0 | 18.3 | 15.6                          | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 3.1 | 3.1 | 3.2 |
|    | A2           | 50.5                          | 47.2 | 43.5 | 39.1 | 34.0 | 29.7 | 24.3 | 21.7 | 19.1                          | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 |
|    | A7           | 61.3                          | 57.8 | 53.4 | 48.1 | 42.0 | 36.7 | 30.6 | 27.3 | 23.9                          | 3.7 | 3.7 | 3.8 | 3.9 | 4.0 | 4.0 | 4.4 | 4.4 | 4.5 |
|    | A10          | 65.2                          | 61.5 | 57.0 | 51.4 | 44.8 | 39.1 | 32.7 | 29.0 | 25.3                          | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.6 | 4.7 | 4.7 |
|    | A18          | 76.2                          | 72.0 | 66.8 | 60.4 | 52.7 | 46.0 | 38.3 | 33.9 | 29.5                          | 4.4 | 4.5 | 4.6 | 4.7 | 4.9 | 5.0 | 5.4 | 5.4 | 5.5 |
| 45 | A-20         | 24.4                          | 22.2 | 19.6 | 14.4 | 10.0 | –    | –    | –    | –                             | 1.8 | 1.7 | 1.7 | 1.4 | 1.1 | –   | –   | –   | –   |
|    | A-15         | 28.9                          | 26.7 | 24.0 | 20.7 | 17.0 | 13.1 | 10.5 | –    | –                             | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.6 | 1.5 | –   | –   |
|    | A-10         | 33.9                          | 31.6 | 28.8 | 25.6 | 21.4 | 18.2 | 14.0 | 11.4 | 9.0                           | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.0 | 1.9 | 1.8 |
|    | A-7          | 37.5                          | 34.7 | 31.8 | 28.4 | 24.6 | 21.5 | 17.9 | 15.2 | 12.3                          | 2.3 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.4 |
|    | A-2          | 42.8                          | 39.9 | 36.7 | 32.9 | 28.5 | 24.9 | 20.6 | 17.9 | 15.1                          | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 | 2.8 | 2.7 | 2.8 |
|    | A2           | 49.4                          | 46.5 | 42.8 | 38.5 | 33.4 | 29.2 | 23.9 | 21.3 | 18.6                          | 2.7 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.1 |
|    | A7           | 60.4                          | 56.9 | 52.6 | 47.3 | 41.2 | 35.9 | 30.0 | 26.6 | 23.2                          | 3.3 | 3.3 | 3.4 | 3.5 | 3.5 | 3.6 | 3.8 | 3.9 | 3.9 |
|    | A10          | 64.2                          | 60.6 | 56.0 | 50.4 | 43.9 | 38.2 | 31.9 | 28.2 | 24.5                          | 3.4 | 3.5 | 3.6 | 3.6 | 3.7 | 3.8 | 4.0 | 4.1 | 4.1 |
|    | A18          | 74.8                          | 70.7 | 65.5 | 59.1 | 51.5 | 44.8 | 37.2 | 32.8 | 28.6                          | 3.8 | 3.9 | 4.0 | 4.2 | 4.3 | 4.3 | 4.7 | 4.7 | 4.7 |
| 50 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | –                             | –    | 22.1 | 19.4 | 15.8 | 12.0 | 9.3  | –    | –                             | –   | –   | 1.6 | 1.6 | 1.5 | 1.4 | 1.3 | –   | –   |
|    | A-10         | 31.1                          | 29.0 | 26.5 | 23.6 | 20.4 | 17.4 | 13.3 | 10.9 | 8.4                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 |
|    | A-7          | 34.1                          | 32.0 | 29.3 | 26.2 | 22.8 | 19.9 | 17.2 | 14.8 | 11.9                          | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.2 | 2.2 | 2.1 |
|    | A-2          | 38.5                          | 36.1 | 33.2 | 29.8 | 25.9 | 22.6 | 19.2 | 16.8 | 14.1                          | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 |
|    | A2           | 44.0                          | 41.4 | 38.1 | 34.2 | 29.7 | 25.9 | 21.7 | 19.3 | 16.8                          | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.5 | 2.5 | 2.5 |
|    | A7           | 57.1                          | 53.8 | 49.7 | 44.7 | 38.8 | 33.8 | 26.7 | 23.6 | 20.4                          | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.2 | 3.2 | 3.2 |
|    | A10          | 60.6                          | 57.2 | 52.8 | 47.5 | 41.3 | 35.9 | 28.3 | 25.0 | 21.6                          | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.3 |
|    | A18          | 70.6                          | 66.6 | 61.6 | 55.5 | 48.2 | 41.9 | 32.9 | 28.9 | 25.1                          | 3.6 | 3.6 | 3.7 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.8 |
| 55 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-15         | –                             | –    | –    | –    | –    | –    | –    | –    | –                             | –   | –   | –   | –   | –   | –   | –   | –   | –   |
|    | A-10         | –                             | –    | –    | 22.9 | 19.6 | 16.7 | 12.7 | 10.3 | 7.6                           | –   | –   | –   | 1.6 | 1.6 | 1.6 | 1.5 | 1.4 | 1.3 |
|    | A-7          | 33.4                          | 31.2 | 28.6 | 25.5 | 22.2 | 19.1 | 16.4 | 14.2 | 11.2                          | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.8 |
|    | A-2          | 37.8                          | 35.5 | 32.6 | 29.2 | 25.4 | 21.9 | 18.6 | 16.3 | 13.5                          | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.0 |
|    | A2           | 43.4                          | 40.8 | 37.6 | 33.7 | 29.3 | 25.5 | 21.3 | 18.9 | 16.4                          | 2.1 | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.2 | 2.2 |
|    | A7           | 56.5                          | 52.9 | 48.8 | 43.9 | 38.1 | 33.0 | 26.1 | 23.0 | 19.8                          | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 2.9 | 2.8 | 2.8 | 2.7 |
|    | A10          | 59.6                          | 56.2 | 51.9 | 46.6 | 40.4 | 35.0 | 27.6 | 24.3 | 20.9                          | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.0 | 2.9 | 2.9 |
|    | A18          | 69.4                          | 65.3 | 60.2 | 54.2 | 46.9 | 40.8 | 31.8 | 28.0 | 24.1                          | 3.2 | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.4 | 3.3 | 3.3 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |   |   |   |   |      |      |      |      | COP EN14511                   |   |   |   |   |     |     |     |     |
|----|--------------|-------------------------------|---|---|---|---|------|------|------|------|-------------------------------|---|---|---|---|-----|-----|-----|-----|
|    |              | Percentage of compressor load |   |   |   |   |      |      |      |      | Percentage of compressor load |   |   |   |   |     |     |     |     |
| 60 | A-20         | —                             | — | — | — | — | —    | —    | —    | —    | —                             | — | — | — | — | —   | —   | —   | —   |
|    | A-15         | —                             | — | — | — | — | —    | —    | —    | —    | —                             | — | — | — | — | —   | —   | —   | —   |
|    | A-10         | —                             | — | — | — | — | —    | —    | —    | —    | —                             | — | — | — | — | —   | —   | —   | —   |
|    | A-7          | —                             | — | — | — | — | —    | —    | —    | —    | —                             | — | — | — | — | —   | —   | —   | —   |
|    | A-2          | —                             | — | — | — | — | 20.2 | 16.9 | 14.6 | 11.9 | —                             | — | — | — | — | 1.6 | 1.6 | 1.6 | 1.4 |
|    | A2           | —                             | — | — | — | — | 24.1 | 20.0 | 17.6 | 15.1 | —                             | — | — | — | — | 1.8 | 1.8 | 1.8 | 1.7 |
|    | A7           | —                             | — | — | — | — | 31.3 | 24.5 | 21.3 | 18.2 | —                             | — | — | — | — | 2.4 | 2.3 | 2.2 | 2.1 |
|    | A10          | —                             | — | — | — | — | 33.1 | 25.9 | 22.5 | 19.1 | —                             | — | — | — | — | 2.6 | 2.4 | 2.4 | 2.2 |
|    | A18          | —                             | — | — | — | — | 38.7 | 29.8 | 26.0 | 22.1 | —                             | — | — | — | — | 2.9 | 2.7 | 2.7 | 2.5 |

Table 36

## 7.12 Performance Cooling - AWP41

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 0  | A15          | 53.1                          | 51.2 | 49.3 | 46.3 | 42.6 | 39.6 | 33.2 | 26.4 | 21.0 | 4.1                           | 4.2 | 4.2 | 4.2 | 4.3 | 4.3 | 4.7 | 5.2 | 5.6 |
|    | A20          | 51.1                          | 49.3 | 47.5 | 44.6 | 41.0 | 38.2 | 32.0 | 25.3 | 20.1 | 3.5                           | 3.6 | 3.6 | 3.6 | 3.7 | 3.7 | 4.1 | 4.4 | 4.7 |
|    | A25          | 49.2                          | 47.5 | 45.7 | 43.0 | 39.5 | 36.8 | 30.8 | 24.2 | 19.1 | 3.1                           | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 3.5 | 3.8 | 4.0 |
|    | A30          | 45.2                          | 43.7 | 42.1 | 39.5 | 36.4 | 33.8 | 28.2 | 22.2 | 17.4 | 2.5                           | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 | 2.9 | 3.1 | 3.2 |
|    | A35          | 44.5                          | 43.0 | 41.5 | 39.0 | 35.9 | 33.4 | 27.8 | 21.7 | 16.9 | 2.3                           | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.6 | 2.7 | 2.8 |
|    | A40          | 42.1                          | 40.7 | 39.3 | 37.0 | 34.0 | 31.6 | 26.3 | 20.4 | 15.7 | 2.0                           | 2.0 | 2.0 | 2.1 | 2.1 | 2.1 | 2.3 | 2.3 | 2.3 |
|    | A44          | 37.6                          | 36.3 | 35.0 | 33.0 | 30.4 | 28.2 | 23.4 | 18.0 | 13.8 | 1.6                           | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 | 1.9 |
|    | A44          | 37.6                          | 36.3 | 35.0 | 33.0 | 30.4 | 28.2 | 23.4 | 18.0 | 13.8 | 1.6                           | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 | 1.9 |
| 5  | A15          | 64.2                          | 61.9 | 59.6 | 56.0 | 51.4 | 47.8 | 40.1 | 31.9 | 25.4 | 5.0                           | 5.0 | 5.0 | 5.1 | 5.2 | 5.2 | 5.7 | 6.2 | 6.8 |
|    | A20          | 61.2                          | 59.0 | 56.8 | 53.4 | 49.1 | 45.7 | 38.2 | 30.3 | 24.0 | 4.2                           | 4.3 | 4.3 | 4.4 | 4.4 | 4.5 | 4.9 | 5.3 | 5.7 |
|    | A25          | 58.1                          | 56.1 | 54.1 | 50.8 | 46.7 | 43.4 | 36.3 | 28.6 | 22.6 | 3.6                           | 3.7 | 3.7 | 3.8 | 3.8 | 3.9 | 4.2 | 4.5 | 4.8 |
|    | A30          | 55.1                          | 53.2 | 51.3 | 48.2 | 44.3 | 41.2 | 34.4 | 27.0 | 21.2 | 3.1                           | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | 3.6 | 3.8 | 4.0 |
|    | A35          | 52.0                          | 50.2 | 48.5 | 45.6 | 41.9 | 39.0 | 32.5 | 25.3 | 19.7 | 2.7                           | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.1 | 3.2 | 3.3 |
|    | A40          | 48.9                          | 47.2 | 45.6 | 42.9 | 39.5 | 36.7 | 30.5 | 23.6 | 18.2 | 2.3                           | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 |
|    | A44          | 46.4                          | 44.8 | 43.3 | 40.7 | 37.5 | 34.8 | 28.9 | 22.3 | 17.0 | 2.0                           | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.4 | 2.3 |
|    | A44          | 46.4                          | 44.8 | 43.3 | 40.7 | 37.5 | 34.8 | 28.9 | 22.3 | 17.0 | 2.0                           | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.4 | 2.3 |
| 7  | A15          | 68.1                          | 66.4 | 63.2 | 58.8 | 54.1 | 49.7 | 42.0 | 33.7 | 27.9 | 5.3                           | 5.3 | 5.4 | 5.5 | 5.6 | 5.8 | 6.1 | 6.8 | 7.5 |
|    | A20          | 65.0                          | 63.4 | 60.4 | 56.2 | 51.6 | 47.4 | 40.0 | 32.1 | 26.4 | 4.5                           | 4.5 | 4.6 | 4.7 | 4.8 | 5.0 | 5.2 | 5.7 | 6.2 |
|    | A25          | 61.9                          | 60.4 | 57.5 | 53.5 | 49.2 | 45.2 | 38.1 | 30.4 | 24.9 | 3.8                           | 3.9 | 3.9 | 4.0 | 4.1 | 4.3 | 4.5 | 4.8 | 5.2 |
|    | A30          | 58.7                          | 57.3 | 54.6 | 50.8 | 46.7 | 42.9 | 36.1 | 28.6 | 23.3 | 3.3                           | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 4.1 | 4.3 |
|    | A35          | 55.4                          | 54.1 | 51.6 | 48.0 | 44.2 | 40.5 | 34.1 | 26.9 | 21.7 | 2.8                           | 2.9 | 2.9 | 3.0 | 3.1 | 3.1 | 3.3 | 3.4 | 3.6 |
|    | A40          | 52.2                          | 51.0 | 48.6 | 45.2 | 41.6 | 38.1 | 32.0 | 25.1 | 20.0 | 2.4                           | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 |
|    | A44          | —                             | —    | —    | —    | 39.5 | 36.2 | 30.3 | 23.6 | 18.7 | —                             | —   | —   | —   | 2.3 | 2.4 | 2.5 | 2.5 | 2.5 |
|    | A44          | —                             | —    | —    | —    | 39.5 | 36.2 | 30.3 | 23.6 | 18.7 | —                             | —   | —   | —   | 2.3 | 2.4 | 2.5 | 2.5 | 2.5 |
| 10 | A15          | 74.9                          | 73.1 | 69.6 | 64.8 | 59.6 | 54.7 | 46.2 | 37.0 | 30.5 | 5.8                           | 5.9 | 6.0 | 6.1 | 6.2 | 6.4 | 6.7 | 7.5 | 8.3 |
|    | A20          | 71.7                          | 69.9 | 66.6 | 61.8 | 57.0 | 52.3 | 44.1 | 35.2 | 28.9 | 4.9                           | 5.0 | 5.1 | 5.2 | 5.3 | 5.5 | 5.7 | 6.3 | 6.9 |
|    | A25          | 68.3                          | 66.6 | 63.4 | 59.0 | 54.3 | 49.8 | 42.0 | 33.3 | 27.2 | 4.2                           | 4.2 | 4.5 | 4.4 | 4.5 | 4.7 | 4.9 | 5.3 | 5.7 |
|    | A30          | 64.9                          | 63.3 | 60.3 | 56.1 | 51.7 | 47.4 | 39.8 | 31.5 | 25.5 | 3.6                           | 3.6 | 3.7 | 3.8 | 3.9 | 4.0 | 4.2 | 4.4 | 4.7 |
|    | A35          | 61.4                          | 59.9 | 57.1 | 53.1 | 48.9 | 44.8 | 37.6 | 29.5 | 23.7 | 3.1                           | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.6 | 3.7 | 3.9 |
|    | A40          | 57.8                          | 56.4 | 53.8 | 50.1 | 46.0 | 42.2 | 35.3 | 27.5 | 21.9 | 2.7                           | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.1 | 3.1 | 3.2 |
|    | A44          | —                             | —    | —    | —    | 43.8 | 40.0 | 33.4 | 25.9 | 20.4 | —                             | —   | —   | —   | 2.5 | 2.6 | 2.7 | 2.7 | 2.7 |
|    | A44          | —                             | —    | —    | —    | 43.8 | 40.0 | 33.4 | 25.9 | 20.4 | —                             | —   | —   | —   | 2.5 | 2.6 | 2.7 | 2.7 | 2.7 |
| 12 | A15          | 79.7                          | 77.7 | 74.0 | 68.9 | 63.4 | 58.2 | 49.1 | 39.2 | 32.2 | 6.2                           | 6.2 | 6.3 | 6.5 | 6.7 | 6.8 | 7.2 | 7.9 | 8.9 |
|    | A20          | 76.2                          | 74.3 | 70.9 | 65.9 | 60.6 | 55.6 | 46.9 | 37.3 | 30.5 | 5.2                           | 5.3 | 5.4 | 5.5 | 5.7 | 5.8 | 6.1 | 6.7 | 7.3 |
|    | A25          | 72.7                          | 71.0 | 67.6 | 62.9 | 57.8 | 53.0 | 44.6 | 35.4 | 28.8 | 4.4                           | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | —   | 5.6 | 6.0 |
|    | A30          | 69.1                          | 67.5 | 64.3 | 59.8 | 55.0 | 50.4 | 42.3 | 33.4 | 27.0 | 3.8                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.7 | 5.0 |
|    | A35          | 65.4                          | 63.8 | 60.9 | 56.6 | 52.1 | 47.7 | 40.0 | 31.3 | 25.1 | 3.3                           | 3.3 | 3.4 | 3.4 | 3.5 | 3.6 | 3.8 | 3.9 | 4.1 |
|    | A40          | 61.6                          | 60.2 | 57.4 | 53.4 | 49.1 | 44.9 | 37.6 | 29.2 | 23.2 | 2.8                           | 2.8 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 |
|    | A44          | —                             | —    | —    | —    | 46.6 | 42.6 | 35.6 | 27.4 | 21.6 | —                             | —   | —   | —   | 2.7 | 3.7 | 2.8 | 2.9 | 2.9 |
|    | A44          | —                             | —    | —    | —    | 46.6 | 42.6 | 35.6 | 27.4 | 21.6 | —                             | —   | —   | —   | 2.7 | 3.7 | 2.8 | 2.9 | 2.9 |
| 15 | A15          | 88.8                          | 86.6 | 81.7 | 76.6 | 70.5 | 64.7 | 53.1 | 43.3 | 35.5 | 6.1                           | 6.1 | 6.2 | 6.4 | 6.6 | 6.7 | 7.0 | 7.8 | 8.8 |
|    | A20          | 84.5                          | 82.8 | 78.2 | 73.4 | 67.5 | 61.9 | 50.7 | 41.3 | 33.7 | 5.1                           | 5.1 | 5.2 | 5.4 | 5.5 | 5.7 | 5.9 | 6.5 | 7.2 |
|    | A25          | 81.0                          | 79.0 | 74.6 | 70.1 | 64.4 | 59.0 | 48.2 | 39.1 | 31.8 | 4.3                           | 4.4 | 4.4 | 4.5 | 4.7 | 4.8 | 4.9 | 5.4 | 5.9 |
|    | A30          | 77.0                          | 75.1 | 71.1 | 66.7 | 61.3 | 56.1 | 45.7 | 37.0 | 29.8 | 3.7                           | 3.7 | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.5 | 4.8 |
|    | A35          | 73.0                          | 71.2 | 67.3 | 63.1 | 58.1 | 53.1 | 43.1 | 34.7 | 27.7 | 3.1                           | 3.2 | 3.2 | 3.3 | 3.4 | 3.5 | 3.5 | 3.8 | 3.9 |
|    | A40          | 68.8                          | 67.2 | 63.4 | 59.5 | 54.7 | 50.0 | 40.4 | 32.3 | 25.6 | 2.7                           | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 | 3.0 | 3.2 | 3.2 |
|    | A44          | —                             | —    | —    | —    | 52.0 | 47.7 | 38.2 | 30.3 | 23.8 | —                             | —   | —   | —   | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 |
|    | A44          | —                             | —    | —    | —    | 52.0 | 47.7 | 38.2 | 30.3 | 23.8 | —                             | —   | —   | —   | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |      |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |      |
| 18 | A15          | 96.7                          | 94.3 | 89.0 | 83.4 | 76.7 | 70.3 | 57.6 | 46.9 | 38.3 | 6.6                           | 6.7 | 6.8 | 7.0 | 7.2 | 7.4 | 7.6 | 8.6 | 9.8  |
|    | A20          | 92.6                          | 90.3 | 85.2 | 79.9 | 73.5 | 67.3 | 55.0 | 44.7 | 36.3 | 5.5                           | 5.6 | 5.7 | 5.8 | 6.1 | 6.2 | 6.4 | 7.1 | 7.9  |
|    | A25          | 88.3                          | 86.1 | 81.3 | 76.2 | 70.2 | 64.2 | 52.3 | 42.4 | 34.3 | 4.7                           | 4.7 | 4.8 | 4.9 | 5.1 | 5.2 | 5.4 | 5.9 | 6.5  |
|    | A30          | 84.0                          | 81.9 | 77.3 | 72.6 | 66.8 | 61.0 | 49.6 | 40.0 | 32.1 | 4.0                           | 4.0 | 4.1 | 4.2 | 4.4 | 4.4 | 4.5 | 4.9 | 5.3  |
|    | A35          | 79.9                          | 78.0 | 73.3 | 68.8 | 63.2 | 57.8 | 46.7 | 37.5 | 29.9 | 3.3                           | 3.5 | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | 4.1 | 4.3  |
|    | A40          | 75.0                          | 73.3 | 69.1 | 64.9 | 59.6 | 54.4 | 43.8 | 34.9 | 27.5 | 2.9                           | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.4 | 3.5  |
|    | A44          | –                             | –    | –    | –    | 56.6 | 51.6 | 41.4 | 32.8 | 25.6 | –                             | –   | –   | –   | 2.8 | 2.8 | 2.8 | 2.9 | 2.9  |
| 20 | A15          | 102.2                         | 99.6 | 94.0 | 88.1 | 80.9 | 74.1 | 60.6 | 49.3 | 40.2 | 7.0                           | 7.1 | 7.2 | 7.4 | 7.7 | 7.9 | 8.1 | 9.2 | 10.4 |
|    | A20          | 97.8                          | 95.4 | 90.0 | 84.3 | 77.5 | 71.0 | 57.9 | 46.9 | 38.1 | 5.9                           | 5.9 | 6.0 | 6.2 | 6.4 | 6.6 | 6.7 | 7.6 | 8.5  |
|    | A25          | 93.5                          | 91.2 | 86.0 | 80.5 | 74.1 | 67.7 | 55.0 | 44.5 | 35.9 | 5.0                           | 5.0 | 5.1 | 5.2 | 5.4 | 5.5 | 5.6 | 6.3 | 6.9  |
|    | A30          | 88.8                          | 86.6 | 81.7 | 76.6 | 70.5 | 64.4 | 52.2 | 42.0 | 33.7 | 4.2                           | 4.2 | 4.3 | 4.4 | 4.6 | 4.7 | 4.8 | 5.2 | 5.6  |
|    | A35          | 84.1                          | 82.0 | 77.3 | 72.6 | 66.8 | 60.9 | 49.2 | 39.4 | 31.3 | 3.6                           | 3.6 | 3.6 | 3.8 | 3.9 | 4.0 | 4.0 | 4.3 | 4.5  |
|    | A40          | 79.3                          | 77.3 | 73.0 | 68.5 | 62.9 | 57.3 | 46.0 | 36.7 | 28.9 | 3.1                           | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.6 | 3.7  |
|    | A44          | –                             | –    | –    | –    | 59.8 | 54.4 | 43.5 | 34.4 | 26.8 | –                             | –   | –   | –   | 2.9 | 3.0 | 3.0 | 3.1 | 3.1  |

2.3

Table 37

### 7.13 Performance Heating - AWP53

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 25 | A-20         | 35.1                          | 32.7 | 31.5 | 29.9 | 27.4 | 25.2 | 23.0 | –    | –    | 2.2                           | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | –   | –   |
|    | A-15         | 42.4                          | 40.8 | 38.1 | 36.9 | 32.7 | 29.9 | 27.7 | 25.9 | 21.7 | 2.7                           | 2.7 | 2.7 | 2.9 | 2.8 | 3.0 | 3.2 | 3.3 | 3.7 |
|    | A-10         | 50.6                          | 47.4 | 45.4 | 41.6 | 38.7 | 35.1 | 32.3 | 29.2 | 23.8 | 3.2                           | 3.2 | 3.3 | 3.3 | 3.4 | 3.6 | 3.8 | 3.9 | 4.3 |
|    | A-7          | 55.5                          | 51.4 | 48.8 | 45.8 | 42.2 | 37.4 | 35.1 | 32.3 | 25.2 | 3.5                           | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4.2 | 4.4 | 4.7 |
|    | A-2          | 60.7                          | 55.6 | 53.6 | 50.0 | 46.0 | 40.4 | 37.5 | 34.2 | 26.9 | 3.8                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.6 | 4.7 | 5.0 |
|    | A2           | 67.2                          | 63.0 | 59.6 | 55.3 | 50.8 | 44.2 | 40.5 | 36.7 | 28.6 | 4.2                           | 4.3 | 4.3 | 4.5 | 4.6 | 4.6 | 5.0 | 5.1 | 5.5 |
|    | A7           | 80.4                          | 76.0 | 71.7 | 65.9 | 60.4 | 53.4 | 48.8 | 44.0 | 34.0 | 5.4                           | 5.5 | 5.6 | 5.7 | 5.8 | 6.0 | 6.5 | 6.6 | 7.0 |
|    | A10          | 84.2                          | 79.9 | 75.5 | 69.7 | 63.8 | 56.4 | 51.5 | 46.4 | 35.7 | 5.6                           | 5.7 | 5.8 | 6.0 | 6.1 | 6.3 | 6.8 | 7.0 | 7.4 |
|    | A18          | 97.9                          | 92.8 | 87.6 | 80.8 | 73.8 | 65.0 | 59.3 | 53.3 | 40.8 | 6.4                           | 6.6 | 6.7 | 6.9 | 7.1 | 7.3 | 7.9 | 8.1 | 8.6 |
| 30 | A-20         | 34.1                          | 31.8 | 30.4 | 28.6 | 26.4 | 24.0 | 22.1 | –    | –    | 1.9                           | 1.9 | 1.9 | 2.0 | 2.0 | 2.1 | 2.2 | –   | –   |
|    | A-15         | 41.3                          | 39.5 | 37.2 | 35.2 | 31.8 | 28.8 | 26.6 | 24.6 | 20.4 | 2.3                           | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.8 | 2.9 | 3.3 |
|    | A-10         | 49.1                          | 46.2 | 43.8 | 40.6 | 37.5 | 33.7 | 30.9 | 28.4 | 22.5 | 2.8                           | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.4 | 3.5 | 3.8 |
|    | A-7          | 54.6                          | 50.5 | 47.8 | 44.3 | 40.9 | 36.1 | 33.5 | 31.2 | 23.9 | 3.1                           | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.7 | 4.0 | 4.1 |
|    | A-2          | 59.6                          | 55.5 | 52.5 | 48.6 | 44.6 | 39.3 | 36.2 | 33.2 | 25.5 | 3.4                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 4.1 | 4.3 | 4.5 |
|    | A2           | 65.8                          | 61.9 | 58.4 | 53.9 | 49.4 | 43.2 | 39.5 | 35.6 | 27.4 | 3.8                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.5 | 4.6 | 4.9 |
|    | A7           | 79.5                          | 74.4 | 70.5 | 64.7 | 59.1 | 52.1 | 47.5 | 42.7 | 32.5 | 4.8                           | 4.9 | 5.0 | 5.1 | 5.3 | 5.4 | 5.8 | 6.0 | 6.2 |
|    | A10          | 83.2                          | 78.8 | 74.3 | 68.5 | 62.5 | 55.0 | 50.1 | 45.0 | 34.1 | 5.0                           | 5.1 | 5.3 | 5.4 | 5.6 | 5.7 | 6.1 | 6.3 | 6.6 |
|    | A18          | 96.4                          | 91.3 | 86.0 | 79.2 | 72.1 | 63.3 | 57.6 | 51.6 | 39.1 | 5.7                           | 5.9 | 6.0 | 6.2 | 6.4 | 6.6 | 7.1 | 7.3 | 7.7 |
| 35 | A-20         | 32.6                          | 31.0 | 29.4 | 27.4 | 25.4 | 22.9 | 21.3 | –    | –    | 1.6                           | 1.6 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | –   | –   |
|    | A-15         | 40.3                          | 38.3 | 36.2 | 33.6 | 31.0 | 27.7 | 25.5 | 23.4 | 19.1 | 2.0                           | 2.1 | 2.1 | 2.2 | 2.2 | 2.3 | 2.4 | 2.5 | 2.7 |
|    | A-10         | 47.5                          | 45.3 | 42.8 | 39.7 | 36.4 | 32.4 | 29.7 | 27.0 | 21.5 | 2.5                           | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 3.2 |
|    | A-7          | 53.3                          | 49.6 | 46.8 | 43.3 | 39.7 | 35.2 | 32.1 | 29.2 | 22.9 | 2.7                           | 2.8 | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 |
|    | A-2          | 58.2                          | 54.7 | 51.6 | 47.5 | 43.5 | 38.4 | 34.9 | 31.6 | 24.5 | 3.0                           | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.6 | 3.7 | 3.8 |
|    | A2           | 64.3                          | 61.0 | 57.4 | 52.9 | 48.2 | 42.4 | 38.4 | 34.7 | 26.4 | 3.3                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 4.0 | 4.1 | 4.2 |
|    | A7           | 78.1                          | 73.3 | 69.3 | 63.8 | 58.1 | 51.0 | 46.4 | 41.5 | 31.2 | 4.3                           | 4.3 | 4.5 | 4.6 | 4.7 | 4.8 | 5.1 | 5.2 | 5.3 |
|    | A10          | 82.3                          | 77.9 | 73.3 | 67.4 | 61.3 | 53.8 | 48.9 | 43.7 | 32.8 | 4.5                           | 4.6 | 4.7 | 4.8 | 4.9 | 5.1 | 5.4 | 5.5 | 5.6 |
|    | A18          | 95.2                          | 90.0 | 84.7 | 77.8 | 70.7 | 61.9 | 56.2 | 50.1 | 37.7 | 5.1                           | 5.2 | 5.4 | 5.5 | 5.7 | 5.9 | 6.3 | 6.4 | 6.6 |
| 40 | A-20         | 31.5                          | 29.8 | 28.4 | 26.2 | 24.3 | 22.2 | –    | –    | –    | 1.4                           | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 | –   | –   | –   |
|    | A-15         | 39.4                          | 37.2 | 35.3 | 32.7 | 29.6 | 26.8 | 24.6 | 22.3 | 17.8 | 1.8                           | 1.8 | 1.9 | 1.9 | 1.9 | 2.0 | 2.1 | 2.1 | 2.2 |
|    | A-10         | 46.7                          | 43.9 | 41.6 | 38.5 | 35.5 | 31.3 | 28.5 | 25.8 | 20.5 | 2.2                           | 2.2 | 2.2 | 2.3 | 2.4 | 2.4 | 2.5 | 2.6 | 2.7 |
|    | A-7          | 51.5                          | 48.7 | 46.0 | 42.3 | 38.6 | 34.0 | 30.9 | 27.9 | 21.7 | 2.4                           | 2.4 | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 |
|    | A-2          | 56.7                          | 53.7 | 50.5 | 46.4 | 42.2 | 37.1 | 33.7 | 30.4 | 23.2 | 2.6                           | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.1 |
|    | A2           | 63.3                          | 59.8 | 56.2 | 51.5 | 46.7 | 41.0 | 37.1 | 33.6 | 25.2 | 2.9                           | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.5 |
|    | A7           | 75.4                          | 72.1 | 68.1 | 62.1 | 57.0 | 50.1 | 45.2 | 40.3 | 30.2 | 3.7                           | 3.8 | 3.9 | 4.0 | 4.1 | 4.2 | 4.4 | 4.5 | 4.5 |
|    | A10          | 80.7                          | 76.2 | 72.2 | 66.6 | 60.3 | 52.8 | 48.0 | 42.8 | 31.7 | 4.0                           | 4.0 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7 | 4.8 | 4.7 |
|    | A18          | 94.3                          | 89.1 | 83.7 | 76.8 | 69.6 | 60.8 | 55.1 | 49.0 | 36.6 | 4.6                           | 4.7 | 4.8 | 4.9 | 5.0 | 5.2 | 5.4 | 5.5 | 5.6 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      |     | COP EN14511                   |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |     | Percentage of compressor load |     |     |     |     |     |     |     |  |  |
| 45 | A-20         | 30.5                          | 28.8 | 27.6 | 25.4 | 23.6 | 20.7 | –    | –    | –    | 1.2 | 1.2                           | 1.2 | 1.3 | 1.3 | 1.3 | –   | –   | –   |  |  |
|    | A-15         | 38.6                          | 36.5 | 34.4 | 31.7 | 28.7 | 26.0 | 23.7 | 21.4 | 16.9 | 1.6 | 1.6                           | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 |  |  |
|    | A-10         | 45.7                          | 43.1 | 40.9 | 37.4 | 34.7 | 30.3 | 27.8 | 24.7 | 19.7 | 1.9 | 1.9                           | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.1 | 2.2 |  |  |
|    | A-7          | 50.6                          | 47.5 | 45.4 | 41.5 | 37.7 | 32.9 | 29.8 | 27.1 | 21.0 | 2.1 | 2.1                           | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 |  |  |
|    | A-2          | 55.8                          | 52.5 | 49.7 | 45.4 | 41.2 | 36.0 | 32.4 | 29.5 | 22.3 | 2.3 | 2.3                           | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.6 |  |  |
|    | A2           | 62.4                          | 58.8 | 55.0 | 50.3 | 45.7 | 39.9 | 35.7 | 32.5 | 24.0 | 2.6 | 2.6                           | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | 2.9 | 2.8 |  |  |
|    | A7           | 74.0                          | 70.7 | 67.3 | 60.9 | 56.1 | 48.6 | 43.9 | 39.0 | 29.0 | 3.5 | 3.5                           | 3.5 | 3.5 | 3.6 | 3.6 | 3.8 | 3.8 | 3.7 |  |  |
|    | A10          | 79.3                          | 74.9 | 71.0 | 65.0 | 58.9 | 51.1 | 46.8 | 41.5 | 30.8 | 3.5 | 3.5                           | 3.7 | 3.7 | 3.8 | 3.8 | 4.0 | 4.0 | 3.9 |  |  |
|    | A18          | 93.0                          | 88.3 | 82.9 | 75.9 | 68.8 | 59.1 | 53.9 | 47.7 | 35.4 | 4.0 | 4.1                           | 4.2 | 4.3 | 4.4 | 4.4 | 4.7 | 4.7 | 4.6 |  |  |
| 50 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-15         | 37.7                          | 35.9 | 33.7 | 31.0 | 27.7 | 25.2 | 22.6 | 20.4 | 16.2 | 1.4 | 1.4                           | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 |  |  |
|    | A-10         | 44.8                          | 42.0 | 40.1 | 36.6 | 33.9 | 29.6 | 27.0 | 23.8 | 18.9 | 1.6 | 1.7                           | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |  |  |
|    | A-7          | 49.5                          | 46.5 | 44.6 | 40.7 | 36.8 | 32.1 | 28.9 | 26.1 | 19.6 | 1.8 | 1.9                           | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 |  |  |
|    | A-2          | 54.9                          | 51.6 | 48.8 | 44.5 | 40.4 | 35.1 | 31.6 | 28.5 | 21.3 | 2.0 | 2.1                           | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 |  |  |
|    | A2           | 61.6                          | 57.9 | 54.1 | 49.2 | 44.8 | 38.9 | 34.9 | 31.6 | 23.3 | 2.3 | 2.3                           | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.3 |  |  |
|    | A7           | 73.0                          | 69.6 | 65.9 | 60.0 | 55.2 | 47.0 | 42.6 | 37.9 | 28.1 | 2.8 | 2.9                           | 3.0 | 3.0 | 3.1 | 3.0 | 3.1 | 3.1 | 2.9 |  |  |
|    | A10          | 78.4                          | 73.9 | 70.2 | 64.3 | 57.7 | 49.8 | 45.9 | 40.7 | 29.6 | 3.0 | 3.0                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.3 | 3.3 | 3.1 |  |  |
|    | A18          | 91.1                          | 86.9 | 80.6 | 73.8 | 66.8 | 57.4 | 52.5 | 46.7 | 34.3 | 3.4 | 3.5                           | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 | 3.8 | 3.7 |  |  |
| 55 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-15         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-10         | 44.1                          | 41.1 | 39.2 | 35.8 | 33.0 | 28.4 | 26.1 | 22.8 | 18.1 | 1.4 | 1.4                           | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |  |  |
|    | A-7          | 48.5                          | 45.7 | 43.9 | 39.8 | 35.6 | 31.3 | 28.0 | 25.2 | 18.9 | 1.6 | 1.6                           | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.5 |  |  |
|    | A-2          | 54.0                          | 50.8 | 48.1 | 43.6 | 39.1 | 34.3 | 30.6 | 27.7 | 20.5 | 1.8 | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 |  |  |
|    | A2           | 60.9                          | 57.2 | 53.3 | 48.4 | 43.6 | 38.1 | 34.0 | 30.7 | 22.5 | 2.0 | 2.0                           | 2.0 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 1.9 |  |  |
|    | A7           | 75.5                          | 68.1 | 64.4 | 58.9 | 54.1 | 45.8 | 41.4 | 36.5 | 27.0 | 2.6 | 2.5                           | 2.6 | 2.6 | 2.7 | 2.6 | 2.6 | 2.6 | 2.4 |  |  |
|    | A10          | 77.5                          | 72.8 | 69.1 | 63.1 | 57.0 | 48.3 | 44.7 | 39.4 | 28.4 | 2.6 | 2.7                           | 2.7 | 2.8 | 2.8 | 2.7 | 2.8 | 2.8 | 2.5 |  |  |
|    | A18          | 89.8                          | 85.6 | 79.3 | 72.5 | 65.5 | 56.2 | 51.3 | 45.6 | 33.3 | 3.0 | 3.1                           | 3.1 | 3.2 | 3.2 | 3.2 | 3.3 | 3.2 | 3.0 |  |  |
| 60 | A-20         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-15         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-10         | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-7          | –                             | –    | –    | –    | –    | –    | –    | –    | –    | –   | –                             | –   | –   | –   | –   | –   | –   | –   |  |  |
|    | A-2          | –                             | –    | –    | –    | –    | 32.5 | 28.4 | 22.9 | 18.3 | –   | –                             | –   | –   | –   | 1.5 | 1.4 | 1.3 | 1.2 |  |  |
|    | A2           | –                             | –    | –    | –    | –    | 36.3 | 32.7 | 27.2 | 23.0 | –   | –                             | –   | –   | –   | 1.8 | 1.8 | 1.6 | 1.5 |  |  |
|    | A7           | –                             | –    | –    | –    | –    | 44.4 | 40.6 | 35.3 | 31.0 | –   | –                             | –   | –   | –   | 2.3 | 2.2 | 2.1 | 2.1 |  |  |
|    | A10          | –                             | –    | –    | –    | –    | 47.2 | 43.4 | 38.0 | 33.7 | –   | –                             | –   | –   | –   | 2.4 | 2.4 | 2.3 | 2.2 |  |  |
|    | A18          | –                             | –    | –    | –    | –    | 55.3 | 50.1 | 43.8 | 38.2 | –   | –                             | –   | –   | –   | 2.7 | 2.8 | 2.7 | 2.6 |  |  |

Table 38

## 7.14 Performance Cooling - AWP53

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      |          |     | EER EN14511                   |     |     |     |     |     |     |  |  |  |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|----------|-----|-------------------------------|-----|-----|-----|-----|-----|-----|--|--|--|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      |          |     | Percentage of compressor load |     |     |     |     |     |     |  |  |  |
| °C | °C           | 100<br>%                      | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>% | 95% | 90%                           | 80% | 70% | 60% | 50% | 40% | 30% |  |  |  |
| 0  | A15          | 64.8                          | 61.4 | 57.9 | 53.1 | 48.5 | 42.6 | 39.0 | 35.0 | 27.2 | 4.2      | 4.3 | 4.4                           | 4.5 | 4.7 | 4.8 | 5.1 | 5.2 | 5.5 |  |  |  |
|    | A20          | 62.5                          | 59.2 | 55.8 | 51.1 | 46.6 | 40.8 | 37.3 | 33.4 | 25.7 | 3.7      | 3.8 | 3.9                           | 4.1 | 4.2 | 4.3 | 4.6 | 4.7 | 5.1 |  |  |  |
|    | A25          | 60.7                          | 57.4 | 54.1 | 49.5 | 45.1 | 39.4 | 35.9 | 32.0 | 24.3 | 3.3      | 3.4 | 3.5                           | 3.6 | 3.7 | 3.9 | 4.0 | 4.1 | 4.4 |  |  |  |
|    | A30          | 58.6                          | 55.4 | 52.2 | 47.7 | 43.4 | 37.7 | 34.3 | 30.4 | 22.8 | 2.9      | 3.0 | 3.1                           | 3.2 | 3.3 | 3.4 | 3.5 | 3.5 | 3.7 |  |  |  |
|    | A35          | 56.6                          | 53.5 | 50.4 | 46.0 | 41.7 | 36.2 | 32.8 | 28.9 | 21.4 | 2.5      | 2.6 | 2.7                           | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 |  |  |  |
|    | A40          | 53.8                          | 50.9 | 47.8 | 43.6 | 39.5 | 34.1 | 30.8 | 27.0 | 19.6 | 2.1      | 2.2 | 2.3                           | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |  |  |  |
|    | A44          | –                             | –    | –    | –    | 35.6 | 30.6 | 27.6 | 24.1 | 17.3 | –        | –   | –                             | –   | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |  |  |  |
| 5  | A15          | 75.9                          | 71.9 | 67.8 | 62.2 | 56.8 | 49.9 | 45.7 | 41.0 | 31.9 | 4.9      | 5.1 | 5.2                           | 5.4 | 5.5 | 5.6 | 6.0 | 6.2 | 6.5 |  |  |  |
|    | A20          | 73.1                          | 69.2 | 65.2 | 59.8 | 54.5 | 47.8 | 43.7 | 39.1 | 30.0 | 4.4      | 4.5 | 4.6                           | 4.8 | 5.0 | 5.1 | 5.4 | 5.6 | 6.0 |  |  |  |
|    | A25          | 70.3                          | 66.6 | 62.7 | 57.4 | 52.3 | 45.6 | 41.6 | 37.1 | 28.2 | 3.8      | 4.0 | 4.1                           | 4.2 | 4.4 | 4.5 | 4.7 | 4.9 | 5.2 |  |  |  |
|    | A30          | 67.5                          | 63.9 | 60.1 | 55.0 | 50.0 | 43.5 | 39.5 | 35.1 | 26.3 | 3.3      | 3.4 | 3.6                           | 3.7 | 3.8 | 3.9 | 4.0 | 4.1 | 4.3 |  |  |  |
|    | A35          | 64.7                          | 61.2 | 57.5 | 52.6 | 47.7 | 41.3 | 37.5 | 33.1 | 24.4 | 2.9      | 3.0 | 3.1                           | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.5 |  |  |  |
|    | A40          | 61.8                          | 58.4 | 54.9 | 50.1 | 45.4 | 39.2 | 35.4 | 31.1 | 22.5 | 2.5      | 2.6 | 2.6                           | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |  |  |  |
|    | A44          | –                             | –    | –    | –    | 43.5 | 37.4 | 33.7 | 29.5 | 21.0 | –        | –   | –                             | –   | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 |  |  |  |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |       |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |      |
|----|--------------|-------------------------------|-------|-------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|
|    |              | Percentage of compressor load |       |       |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |      |
| 7  | A15          | 80.4                          | 76.1  | 71.8  | 65.8 | 60.1 | 52.7 | 48.2 | 43.2 | 33.5                          | 5.2 | 5.3 | 5.5 | 5.6 | 5.8 | 5.9 | 6.3 | 6.5 | 6.9  |
|    | A20          | 77.5                          | 73.3  | 69.1  | 63.3 | 57.7 | 50.5 | 46.1 | 41.1 | 31.5                          | 4.6 | 4.7 | 4.9 | 5.0 | 5.2 | 5.4 | 5.7 | 5.8 | 6.3  |
|    | A25          | 74.5                          | 70.5  | 66.4  | 60.8 | 55.3 | 48.2 | 43.9 | 39.1 | 29.5                          | 4.0 | 4.1 | 4.3 | 4.4 | 4.6 | 4.8 | 4.9 | 5.1 | 5.5  |
|    | A30          | 71.6                          | 67.8  | 63.8  | 58.4 | 52.9 | 46.0 | 41.8 | 37.0 | 27.6                          | 3.5 | 3.6 | 3.7 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.6  |
|    | A35          | 68.9                          | 64.9  | 61.1  | 55.8 | 50.6 | 43.8 | 39.7 | 35.0 | 25.7                          | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.6 | 3.7  |
|    | A40          | 65.7                          | 62.1  | 58.4  | 53.3 | 48.2 | 41.6 | 37.5 | 32.9 | 23.8                          | 2.6 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 2.9  |
|    | A44          | –                             | –     | –     | –    | 46.3 | 39.8 | 35.8 | 31.3 | 22.2                          | –   | –   | –   | –   | 2.6 | 2.6 | 2.5 | 2.5 | 2.4  |
| 10 | A15          | 87.5                          | 82.8  | 78.0  | 71.5 | 65.2 | 57.2 | 52.2 | 46.7 | 35.9                          | 5.6 | 5.7 | 5.9 | 6.1 | 6.3 | 6.4 | 6.8 | 7.0 | 7.4  |
|    | A20          | 84.3                          | 79.8  | 75.2  | 68.9 | 62.7 | 54.8 | 49.9 | 44.5 | 33.8                          | 4.9 | 5.1 | 5.3 | 5.4 | 5.6 | 5.8 | 6.1 | 6.3 | 6.8  |
|    | A25          | 81.2                          | 76.8  | 72.3  | 66.2 | 60.2 | 52.4 | 47.6 | 42.3 | 31.8                          | 4.3 | 4.5 | 4.6 | 4.8 | 5.0 | 5.2 | 5.3 | 5.5 | 5.9  |
|    | A30          | 78.1                          | 73.9  | 69.5  | 63.6 | 57.7 | 50.1 | 45.4 | 40.1 | 29.8                          | 3.8 | 3.9 | 4.0 | 4.2 | 4.3 | 4.5 | 4.6 | 4.7 | 4.9  |
|    | A35          | 75.0                          | 70.9  | 66.7  | 60.9 | 55.2 | 47.8 | 43.2 | 38.0 | 27.8                          | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.8 | 3.9 | 4.0  |
|    | A40          | 71.9                          | 68.0  | 63.9  | 58.3 | 52.7 | 45.5 | 41.0 | 35.9 | 215.8                         | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2  |
|    | A44          | –                             | –     | –     | –    | 50.8 | 43.6 | 39.2 | 34.2 | 24.2                          | –   | –   | –   | –   | 2.8 | 2.8 | 2.8 | 2.7 | 2.6  |
| 12 | A15          | 92.4                          | 87.5  | 82.4  | 75.5 | 68.9 | 60.3 | 54.9 | 49.1 | 37.7                          | 5.8 | 6.0 | 6.2 | 6.4 | 6.6 | 6.8 | 7.2 | 7.4 | 7.9  |
|    | A20          | 89.2                          | 84.4  | 79.5  | 72.8 | 66.2 | 57.8 | 52.6 | 46.8 | 35.5                          | 5.1 | 5.3 | 5.5 | 5.7 | 6.0 | 6.2 | 6.4 | 6.7 | 7.2  |
|    | A25          | 85.9                          | 81.3  | 76.5  | 70.0 | 63.6 | 55.3 | 50.2 | 44.6 | 33.4                          | 4.5 | 4.7 | 4.9 | 5.1 | 5.3 | 5.5 | 5.6 | 5.8 | 6.2  |
|    | A30          | 82.7                          | 78.3  | 73.6  | 67.3 | 61.1 | 52.9 | 48.0 | 42.4 | 31.3                          | 3.9 | 4.1 | 4.2 | 4.4 | 4.6 | 4.7 | 4.8 | 4.9 | 5.2  |
|    | A35          | 79.5                          | 75.2  | 70.7  | 64.6 | 58.5 | 50.6 | 45.7 | 40.2 | 29.3                          | 3.4 | 3.6 | 3.7 | 3.8 | 3.9 | 4.1 | 4.1 | 4.1 | 4.2  |
|    | A40          | 76.3                          | 72.2  | 67.8  | 61.9 | 56.0 | 48.2 | 43.4 | 38.1 | 27.3                          | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4  |
|    | A44          | –                             | –     | –     | –    | 54.0 | 46.4 | 41.7 | 36.4 | 25.7                          | –   | –   | –   | –   | 3.0 | 3.0 | 2.9 | 2.9 | 2.8  |
| 15 | A15          | 100.2                         | 94.8  | 89.4  | 81.9 | 74.2 | 65.2 | 59.3 | 53.0 | 40.5                          | 6.2 | 6.5 | 6.7 | 6.9 | 7.1 | 7.4 | 7.9 | 8.1 | 8.7  |
|    | A20          | 96.7                          | 91.6  | 86.3  | 79.0 | 71.8 | 62.6 | 56.9 | 50.6 | 38.2                          | 5.5 | 5.7 | 6.0 | 6.2 | 6.5 | 6.7 | 7.0 | 7.3 | 7.9  |
|    | A25          | 93.5                          | 88.4  | 83.2  | 76.1 | 69.1 | 60.1 | 54.4 | 48.2 | 36.0                          | 4.9 | 5.1 | 5.3 | 5.5 | 5.7 | 6.0 | 6.1 | 6.3 | 6.8  |
|    | A30          | 90.1                          | 85.2  | 80.2  | 73.3 | 66.4 | 57.6 | 52.1 | 45.9 | 33.8                          | 4.3 | 4.4 | 4.6 | 4.8 | 5.0 | 5.2 | 5.2 | 5.4 | 5.7  |
|    | A35          | 86.7                          | 82.1  | 77.2  | 70.4 | 63.8 | 55.1 | 49.7 | 43.7 | 31.7                          | 3.7 | 3.9 | 4.0 | 4.1 | 4.3 | 4.4 | 4.4 | 4.5 | 4.6  |
|    | A40          | 83.4                          | 78.9  | 74.2  | 67.7 | 61.2 | 52.7 | 47.4 | 41.5 | 29.7                          | 3.2 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.7 | 3.7 | 3.7  |
|    | A44          | –                             | –     | –     | –    | 59.1 | 50.8 | 45.6 | 39.8 | 28.1                          | –   | –   | –   | –   | 3.3 | 3.3 | 3.2 | 3.2 | 3.1  |
| 18 | A15          | 108.6                         | 102.8 | 96.9  | 88.8 | 80.5 | 70.6 | 64.0 | 57.2 | 43.5                          | 6.7 | 6.9 | 7.2 | 7.5 | 7.7 | 8.2 | 8.6 | 9.0 | 9.7  |
|    | A20          | 105.0                         | 99.4  | 93.7  | 85.7 | 77.9 | 67.9 | 61.5 | 54.7 | 41.1                          | 5.9 | 6.2 | 6.5 | 6.8 | 7.1 | 7.4 | 7.7 | 8.0 | 8.8  |
|    | A25          | 101.5                         | 96.1  | 90.5  | 82.7 | 75.1 | 65.2 | 59.0 | 52.2 | 38.8                          | 5.2 | 5.5 | 5.7 | 6.0 | 6.3 | 6.5 | 6.7 | 7.0 | 7.6  |
|    | A30          | 98.0                          | 92.8  | 87.3  | 79.8 | 72.3 | 62.6 | 56.6 | 49.9 | 36.6                          | 4.6 | 4.8 | 5.0 | 5.2 | 5.5 | 5.7 | 5.8 | 6.0 | 6.3  |
|    | A35          | 95.3                          | 89.5  | 84.2  | 76.9 | 69.6 | 60.1 | 54.2 | 47.6 | 34.4                          | 4.1 | 4.2 | 4.4 | 4.5 | 4.7 | 4.9 | 4.9 | 5.0 | 5.1  |
|    | A40          | 91.2                          | 86.3  | 81.1  | 74.0 | 66.9 | 57.6 | 51.8 | 45.3 | 32.3                          | 3.5 | 3.7 | 3.8 | 3.9 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1  |
|    | A44          | –                             | –     | –     | –    | 64.8 | 55.7 | 50.0 | 43.6 | 30.7                          | –   | –   | –   | –   | 3.6 | 3.7 | 3.5 | 3.5 | 3.4  |
| 20 | A15          | 114.6                         | 108.6 | 101.3 | 93.7 | 85.5 | 74.4 | 67.4 | 60.2 | 45.7                          | 7.0 | 7.3 | 7.5 | 8.0 | 8.2 | 8.8 | 9.1 | 9.7 | 10.5 |
|    | A20          | 110.9                         | 105.0 | 98.8  | 90.5 | 80.4 | 71.6 | 64.3 | 57.6 | 43.2                          | 6.3 | 6.5 | 6.8 | 7.2 | 7.4 | 7.9 | 8.1 | 8.6 | 9.5  |
|    | A25          | 107.3                         | 101.5 | 95.6  | 87.4 | 79.3 | 68.9 | 62.3 | 55.1 | 40.9                          | 5.5 | 5.8 | 6.1 | 6.4 | 6.7 | 7.0 | 7.2 | 7.5 | 8.2  |
|    | A30          | 103.7                         | 98.1  | 92.4  | 84.4 | 76.5 | 66.2 | 59.8 | 52.7 | 38.6                          | 4.9 | 5.1 | 5.3 | 5.6 | 5.8 | 6.1 | 6.2 | 6.4 | 6.8  |
|    | A35          | 100.1                         | 94.8  | 89.2  | 81.4 | 73.7 | 63.6 | 57.4 | 50.4 | 36.4                          | 4.3 | 4.5 | 4.7 | 4.9 | 5.1 | 5.3 | 5.2 | 5.4 | 5.6  |
|    | A40          | 96.6                          | 91.5  | 86.1  | 78.5 | 71.0 | 61.1 | 55.0 | 48.1 | 34.3                          | 3.8 | 3.9 | 4.1 | 4.2 | 4.4 | 4.5 | 4.4 | 4.4 | 4.4  |
|    | A44          | –                             | –     | –     | –    | 68.9 | 59.2 | 53.2 | 46.4 | 32.6                          | –   | –   | –   | –   | 3.9 | 3.9 | 3.8 | 3.8 | 3.7  |

Table 39

## 7.15 Performance Heating - AWP59

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |      |      |      |      |      |      |      |          | COP EN14511                   |     |     |     |     |     |     |     |  |  |
|----|--------------|-------------------------------|-------|------|------|------|------|------|------|------|----------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|--|--|
|    |              | Percentage of compressor load |       |      |      |      |      |      |      |      |          | Percentage of compressor load |     |     |     |     |     |     |     |  |  |
| °C | °C           | 100<br>%                      | 95%   | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100<br>% | 95%                           | 90% | 80% | 70% | 60% | 50% | 40% | 30% |  |  |
| 25 | A-20         | 38.6                          | 37.1  | 35.1 | 32.2 | 30.1 | 27.6 | 25.7 | –    | –    | 2.1      | 2.1                           | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | –   | –   |  |  |
|    | A-15         | 47.2                          | 44.6  | 42.6 | 39.7 | 36.2 | 33.5 | 30.2 | 27.0 | 21.5 | 2.6      | 2.6                           | 2.7 | 2.8 | 2.8 | 3.0 | 3.1 | 3.5 | 3.7 |  |  |
|    | A-10         | 54.4                          | 52.3  | 49.7 | 46.0 | 41.8 | 37.4 | 33.8 | 29.0 | 22.4 | 3.0      | 3.0                           | 3.1 | 3.3 | 3.3 | 3.4 | 3.5 | 3.9 | 4.1 |  |  |
|    | A-7          | 60.0                          | 56.6  | 54.7 | 50.4 | 45.7 | 42.6 | 37.7 | 31.7 | 25.0 | 3.3      | 3.3                           | 3.5 | 3.6 | 3.7 | 3.9 | 4.0 | 4.3 | 4.6 |  |  |
|    | A-2          | 65.8                          | 62.6  | 60.0 | 55.0 | 50.1 | 46.0 | 40.4 | 34.6 | 26.5 | 3.6      | 3.6                           | 3.8 | 4.0 | 4.1 | 4.3 | 4.4 | 4.8 | 5.0 |  |  |
|    | A2           | 73.1                          | 70.0  | 66.6 | 60.8 | 55.6 | 50.3 | 43.7 | 38.1 | 28.3 | 4.0      | 4.1                           | 4.3 | 4.5 | 4.6 | 4.8 | 4.8 | 5.5 | 5.6 |  |  |
|    | A7           | 89.9                          | 84.7  | 80.3 | 73.0 | 66.6 | 59.9 | 52.8 | 44.5 | 34.4 | 5.0      | 5.0                           | 5.3 | 5.5 | 5.6 | 5.8 | 6.0 | 6.6 | 7.0 |  |  |
|    | A10          | 94.1                          | 89.8  | 85.1 | 77.4 | 70.5 | 63.2 | 55.7 | 46.9 | 36.1 | 5.2      | 5.3                           | 5.5 | 5.8 | 5.9 | 6.1 | 6.3 | 6.9 | 7.3 |  |  |
|    | A18          | 109.3                         | 104.3 | 98.9 | 89.8 | 81.6 | 73.1 | 64.1 | 53.8 | 41.3 | 5.9      | 6.0                           | 6.4 | 6.6 | 6.9 | 7.1 | 7.3 | 8.1 | 8.6 |  |  |
| 30 | A-20         | 36.4                          | 35.0  | 33.5 | 31.1 | 28.1 | 26.0 | 23.8 | –    | –    | 1.8      | 1.8                           | 1.9 | 1.9 | 1.9 | 2.0 | 2.1 | –   | –   |  |  |
|    | A-15         | 45.4                          | 42.7  | 40.5 | 37.4 | 34.5 | 31.6 | 28.6 | 25.1 | 20.1 | 2.2      | 2.2                           | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 3.0 | 3.2 |  |  |
|    | A-10         | 53.2                          | 50.9  | 48.2 | 44.2 | 39.8 | 36.2 | 32.4 | 27.9 | 21.7 | 2.6      | 2.7                           | 2.8 | 2.9 | 2.9 | 3.0 | 3.2 | 3.5 | 3.7 |  |  |
|    | A-7          | 58.5                          | 55.2  | 53.0 | 48.4 | 44.4 | 40.3 | 36.1 | 30.1 | 24.1 | 2.9      | 2.9                           | 3.0 | 3.2 | 3.3 | 3.4 | 3.6 | 3.8 | 4.2 |  |  |
|    | A-2          | 64.4                          | 61.2  | 58.4 | 53.2 | 48.6 | 43.9 | 39.1 | 32.8 | 25.5 | 3.2      | 3.2                           | 3.4 | 3.5 | 3.6 | 3.8 | 3.9 | 4.3 | 4.5 |  |  |
|    | A2           | 71.9                          | 68.6  | 65.1 | 59.2 | 53.9 | 48.4 | 42.7 | 36.1 | 27.1 | 3.6      | 3.6                           | 3.8 | 4.0 | 4.1 | 4.3 | 4.4 | 4.8 | 5.0 |  |  |
|    | A7           | 88.5                          | 83.8  | 79.4 | 72.0 | 65.4 | 58.6 | 51.4 | 43.1 | 32.8 | 4.4      | 4.5                           | 4.7 | 4.9 | 5.1 | 5.3 | 5.4 | 5.9 | 6.2 |  |  |
|    | A10          | 93.1                          | 88.7  | 84.0 | 76.2 | 69.2 | 61.9 | 54.2 | 45.4 | 34.5 | 4.6      | 4.7                           | 5.0 | 5.2 | 5.4 | 5.5 | 5.7 | 6.2 | 6.5 |  |  |
|    | A18          | 107.9                         | 102.8 | 97.4 | 88.3 | 80.0 | 71.4 | 62.5 | 52.1 | 39.5 | 5.3      | 5.4                           | 5.7 | 6.0 | 6.2 | 6.4 | 6.6 | 7.2 | 7.6 |  |  |
| 35 | A-20         | 35.2                          | 33.6  | 31.9 | 29.2 | 26.8 | 24.5 | 22.1 | –    | –    | 1.5      | 1.5                           | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | –   | –   |  |  |
|    | A-15         | 43.8                          | 41.8  | 39.5 | 36.0 | 33.0 | 29.8 | 26.7 | 23.0 | 18.7 | 1.9      | 1.9                           | 2.0 | 2.1 | 2.1 | 2.2 | 2.3 | 2.5 | 2.7 |  |  |
|    | A-10         | 52.1                          | 49.6  | 46.9 | 42.6 | 38.9 | 35.1 | 31.1 | 26.5 | 21.0 | 2.4      | 2.3                           | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 3.0 | 3.2 |  |  |
|    | A-7          | 58.0                          | 54.3  | 51.4 | 46.6 | 42.4 | 38.2 | 33.8 | 28.6 | 22.5 | 2.6      | 2.6                           | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 | 3.3 | 3.5 |  |  |
|    | A-2          | 63.8                          | 60.1  | 56.9 | 51.6 | 46.8 | 42.0 | 37.0 | 31.2 | 24.1 | 2.8      | 2.9                           | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.6 | 3.8 |  |  |
|    | A2           | 71.0                          | 67.3  | 63.7 | 57.7 | 52.3 | 46.7 | 40.9 | 34.3 | 26.1 | 3.1      | 3.2                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 4.1 | 4.3 |  |  |
|    | A7           | 87.2                          | 83.0  | 78.7 | 71.2 | 64.5 | 57.5 | 50.3 | 42.0 | 31.6 | 4.0      | 4.0                           | 4.2 | 4.4 | 4.6 | 4.7 | 4.8 | 5.2 | 5.3 |  |  |
|    | A10          | 92.3                          | 87.9  | 83.2 | 75.2 | 68.1 | 60.7 | 53.0 | 44.2 | 33.1 | 4.2      | 4.3                           | 4.4 | 4.6 | 4.8 | 4.9 | 5.1 | 5.5 | 5.6 |  |  |
|    | A18          | 106.7                         | 101.5 | 96.2 | 87.0 | 78.7 | 70.0 | 61.0 | 50.6 | 38.1 | 4.7      | 4.8                           | 5.1 | 5.3 | 5.5 | 5.7 | 5.8 | 6.3 | 6.6 |  |  |
| 40 | A-20         | 34.1                          | 32.7  | 31.1 | 28.3 | 25.6 | 23.4 | –    | –    | –    | 1.3      | 1.3                           | 1.4 | 1.4 | 1.4 | 1.5 | –   | –   | –   |  |  |
|    | A-15         | 42.2                          | 40.0  | 38.6 | 34.8 | 31.8 | 28.7 | 24.8 | 21.0 | 17.4 | 1.7      | 1.7                           | 1.7 | 1.8 | 1.8 | 1.9 | 1.9 | 2.0 | 2.2 |  |  |
|    | A-10         | 51.0                          | 48.4  | 45.6 | 41.1 | 38.1 | 34.1 | 30.0 | 25.2 | 19.6 | 2.0      | 2.0                           | 2.1 | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | 2.6 |  |  |
|    | A-7          | 55.8                          | 52.9  | 49.9 | 44.9 | 40.5 | 36.1 | 31.6 | 26.4 | 21.9 | 2.2      | 2.2                           | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 | 2.7 | 2.9 |  |  |
|    | A-2          | 62.0                          | 58.8  | 55.6 | 50.0 | 45.2 | 40.2 | 35.5 | 29.6 | 23.4 | 2.5      | 2.5                           | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 3.1 | 3.2 |  |  |
|    | A2           | 69.7                          | 66.2  | 62.6 | 56.5 | 51.0 | 45.3 | 40.3 | 33.6 | 25.3 | 2.8      | 2.9                           | 3.0 | 3.1 | 3.2 | 3.2 | 3.4 | 3.6 | 3.6 |  |  |
|    | A7           | 87.0                          | 82.5  | 78.2 | 70.5 | 63.7 | 56.7 | 49.4 | 41.0 | 30.5 | 3.6      | 3.6                           | 3.8 | 3.9 | 4.1 | 4.2 | 4.2 | 4.5 | 4.5 |  |  |
|    | A10          | 91.8                          | 87.2  | 82.6 | 74.5 | 67.3 | 59.8 | 52.0 | 43.2 | 32.0 | 3.7      | 3.8                           | 4.0 | 4.1 | 4.3 | 4.4 | 4.5 | 4.7 | 4.7 |  |  |
|    | A18          | 105.7                         | 100.5 | 95.3 | 86.0 | 77.6 | 68.9 | 60.0 | 49.5 | 37.0 | 4.2      | 4.3                           | 4.5 | 4.7 | 4.9 | 5.0 | 5.2 | 5.5 | 5.6 |  |  |
| 45 | A-20         | 29.1                          | 29.1  | 29.1 | 26.5 | 23.6 | 21.7 | –    | –    | –    | 1.0      | 1.1                           | 1.1 | 1.2 | 1.2 | 1.2 | –   | –   | –   |  |  |
|    | A-15         | 40.8                          | 39.3  | 37.6 | 33.8 | 30.1 | 27.5 | 23.9 | 20.0 | 16.2 | 1.4      | 1.5                           | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 |  |  |
|    | A-10         | 50.2                          | 47.3  | 44.5 | 40.1 | 36.5 | 33.2 | 29.0 | 24.1 | 18.9 | 1.8      | 1.8                           | 1.8 | 1.9 | 1.9 | 2.0 | 2.0 | 2.1 | 2.1 |  |  |
|    | A-7          | 54.6                          | 50.7  | 48.6 | 43.3 | 38.8 | 34.3 | 29.6 | 24.2 | 20.5 | 1.9      | 1.9                           | 2.0 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.3 |  |  |
|    | A-2          | 60.6                          | 57.2  | 54.4 | 48.7 | 43.7 | 38.6 | 33.7 | 27.8 | 22.4 | 2.2      | 2.2                           | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.5 | 2.6 |  |  |
|    | A2           | 68.0                          | 65.3  | 61.7 | 55.4 | 49.7 | 43.9 | 38.9 | 32.2 | 24.7 | 2.5      | 2.5                           | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 | 3.0 |  |  |
|    | A7           | 86.6                          | 82.2  | 77.9 | 70.1 | 63.2 | 56.1 | 48.7 | 40.4 | 29.8 | 3.2      | 3.2                           | 3.4 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.7 |  |  |
|    | A10          | 91.4                          | 86.8  | 82.2 | 74.0 | 66.7 | 59.1 | 51.3 | 42.4 | 31.2 | 3.3      | 3.4                           | 3.5 | 3.7 | 3.8 | 3.8 | 3.9 | 4.0 | 3.9 |  |  |
|    | A18          | 104.9                         | 99.7  | 94.5 | 85.2 | 76.7 | 68.0 | 59.3 | 48.6 | 36.1 | 3.8      | 3.8                           | 4.0 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7 | 4.6 |  |  |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |      |      |      |      |      |      | COP EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| 50 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | 36.2                          | 36.2 | 36.2 | 31.7 | 28.9 | 26.0 | 22.9 | 19.1 | 15.2 | 1.1                           | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 |
|    | A-10         | 43.5                          | 43.5 | 43.5 | 39.4 | 35.0 | 31.9 | 28.1 | 23.2 | 18.1 | 1.4                           | 1.5 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
|    | A-7          | 52.7                          | 49.1 | 47.4 | 41.9 | 37.2 | 32.5 | 28.6 | 23.2 | 19.3 | 1.7                           | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 |
|    | A-2          | 58.8                          | 55.9 | 53.4 | 47.5 | 42.3 | 37.1 | 32.6 | 26.6 | 21.1 | 1.9                           | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.1 |
|    | A2           | 66.3                          | 64.5 | 60.9 | 54.4 | 48.7 | 42.8 | 37.6 | 30.9 | 23.3 | 2.1                           | 2.2 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.4 |
|    | A7           | 86.2                          | 81.3 | 77.0 | 69.2 | 62.3 | 55.2 | 47.7 | 39.5 | 28.9 | 2.8                           | 2.8 | 2.9 | 3.0 | 3.0 | 3.1 | 3.1 | 3.2 | 2.9 |
|    | A10          | 90.2                          | 85.6 | 81.1 | 72.9 | 65.6 | 58.1 | 50.3 | 41.5 | 30.3 | 2.9                           | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | 3.1 |
|    | A18          | 103.3                         | 98.1 | 93.0 | 83.7 | 75.4 | 66.7 | 58.2 | 47.7 | 35.2 | 3.2                           | 3.3 | 3.4 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 3.7 |
| 55 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | 38.2                          | 38.2 | 38.2 | 38.2 | 33.7 | 29.9 | 27.0 | 21.4 | 17.7 | 1.1                           | 1.2 | 1.2 | 1.4 | 1.4 | 1.4 | 1.5 | 1.4 | 1.4 |
|    | A-7          | 51.0                          | 47.7 | 45.4 | 40.7 | 35.8 | 30.9 | 26.9 | 21.4 | 18.3 | 1.4                           | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.4 | 1.5 |
|    | A-2          | 57.2                          | 54.4 | 51.6 | 46.0 | 40.7 | 35.3 | 30.4 | 25.2 | 20.0 | 1.6                           | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
|    | A2           | 64.9                          | 62.9 | 59.4 | 52.7 | 46.9 | 40.9 | 34.8 | 29.9 | 22.2 | 1.9                           | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 | 1.9 |
|    | A7           | 85.8                          | 80.3 | 76.1 | 68.2 | 61.2 | 54.0 | 46.5 | 38.3 | 27.6 | 2.5                           | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.6 | 2.6 | 2.4 |
|    | A10          | 89.2                          | 84.6 | 80.2 | 71.8 | 64.5 | 56.9 | 49.0 | 40.3 | 29.0 | 2.5                           | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 2.5 |
|    | A18          | 101.9                         | 96.7 | 91.8 | 82.4 | 74.0 | 65.5 | 57.0 | 46.5 | 34.0 | 2.8                           | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 | 3.0 |
| 60 | A-20         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-15         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-10         | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-7          | —                             | —    | —    | —    | —    | —    | —    | —    | —    | —                             | —   | —   | —   | —   | —   | —   | —   | —   |
|    | A-2          | —                             | —    | —    | —    | —    | 33.7 | 29.2 | 23.8 | 19.0 | —                             | —   | —   | —   | —   | 1.5 | 1.5 | 1.4 | 1.2 |
|    | A2           | —                             | —    | —    | —    | —    | 39.5 | 33.5 | 28.1 | 22.3 | —                             | —   | —   | —   | —   | 2.0 | 1.8 | 1.7 | 1.4 |
|    | A7           | —                             | —    | —    | —    | —    | 47.6 | 43.4 | 36.9 | 31.7 | —                             | —   | —   | —   | —   | 2.4 | 2.3 | 2.2 | 2.0 |
|    | A10          | —                             | —    | —    | —    | —    | 50.0 | 45.7 | 39.2 | 34.1 | —                             | —   | —   | —   | —   | 2.5 | 2.5 | 2.3 | 2.2 |
|    | A18          | —                             | —    | —    | —    | —    | 58.1 | 52.9 | 45.3 | 39.3 | —                             | —   | —   | —   | —   | 2.9 | 2.9 | 2.7 | 2.6 |

Table 40

## 7.16 Performance Cooling - AWP59

| To | Tae<br>DB/WB | Cooling capacity EN14511      |      |      |      |      |      |      |      |      | EER EN14511                   |     |     |     |     |     |     |     |     |
|----|--------------|-------------------------------|------|------|------|------|------|------|------|------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              | Percentage of compressor load |      |      |      |      |      |      |      |      | Percentage of compressor load |     |     |     |     |     |     |     |     |
| °C | °C           | 100 %                         | 95%  | 90%  | 80%  | 70%  | 60%  | 50%  | 40%  | 30%  | 100 %                         | 95% | 90% | 80% | 70% | 60% | 50% | 40% | 30% |
| 0  | A15          | 74.3                          | 70.8 | 67.3 | 61.0 | 55.4 | 49.4 | 43.5 | 36.6 | 28.3 | 3.9                           | 4.0 | 4.1 | 4.3 | 4.5 | 4.6 | 4.7 | 5.1 | 5.4 |
|    | A20          | 71.6                          | 68.2 | 64.9 | 58.8 | 53.3 | 47.4 | 41.6 | 34.8 | 26.6 | 3.5                           | 3.6 | 3.6 | 3.8 | 4.0 | 4.2 | 4.3 | 4.6 | 5.0 |
|    | A25          | 69.3                          | 66.0 | 62.8 | 56.8 | 51.5 | 45.7 | 39.9 | 33.2 | 25.1 | 3.0                           | 3.1 | 3.2 | 3.4 | 3.5 | 3.7 | 3.8 | 4.1 | 4.3 |
|    | A30          | 66.9                          | 63.8 | 60.6 | 54.8 | 49.5 | 43.9 | 38.2 | 31.6 | 23.6 | 2.7                           | 2.7 | 2.8 | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 | 3.6 |
|    | A35          | 64.8                          | 61.8 | 58.6 | 53.0 | 47.9 | 42.3 | 36.7 | 30.2 | 22.1 | 2.3                           | 2.4 | 2.4 | 2.6 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 |
|    | A40          | 61.4                          | 58.5 | 55.5 | 50.1 | 45.2 | 39.9 | 34.4 | 28.1 | 20.2 | 2.0                           | 2.1 | 2.1 | 2.2 | 2.3 | 2.4 | 2.4 | 2.4 | 2.3 |
|    | A44          | —                             | —    | —    | —    | —    | 35.9 | 30.5 | 25.1 | 17.8 | —                             | —   | —   | —   | —   | 2.2 | 2.2 | 2.2 | 2.1 |
| 5  | A15          | 86.9                          | 82.8 | 78.8 | 71.4 | 64.8 | 57.8 | 50.9 | 42.8 | 33.1 | 4.6                           | 4.7 | 4.9 | 5.1 | 5.3 | 5.4 | 5.6 | 6.1 | 6.4 |
|    | A20          | 83.7                          | 79.8 | 75.9 | 68.7 | 62.3 | 55.5 | 48.7 | 40.7 | 31.2 | 4.1                           | 4.2 | 4.3 | 4.5 | 4.7 | 4.9 | 5.1 | 5.5 | 5.9 |
|    | A25          | 80.6                          | 76.8 | 73.0 | 66.0 | 59.8 | 53.1 | 46.4 | 38.7 | 29.2 | 3.6                           | 3.7 | 3.8 | 4.0 | 4.2 | 4.3 | 4.5 | 4.8 | 5.1 |
|    | A30          | 77.4                          | 73.8 | 70.1 | 63.4 | 57.3 | 50.8 | 44.2 | 36.6 | 27.3 | 3.1                           | 3.2 | 3.3 | 3.5 | 3.6 | 3.8 | 3.9 | 4.1 | 4.3 |
|    | A35          | 74.2                          | 70.7 | 67.1 | 60.7 | 54.8 | 48.4 | 42.0 | 34.5 | 25.3 | 2.7                           | 2.8 | 2.8 | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 |
|    | A40          | 70.9                          | 67.6 | 64.1 | 57.9 | 52.2 | 46.0 | 39.8 | 32.4 | 23.4 | 2.3                           | 2.4 | 2.4 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.7 |
|    | A44          | —                             | —    | —    | —    | —    | 44.1 | 37.7 | 30.8 | 21.8 | —                             | —   | —   | —   | —   | 2.4 | 2.3 | 2.3 | 2.2 |
| 7  | A15          | 92.1                          | 87.7 | 83.4 | 75.6 | 68.6 | 61.1 | 53.7 | 45.1 | 34.7 | 4.8                           | 5.0 | 5.1 | 5.4 | 5.6 | 5.7 | 5.9 | 6.4 | 6.8 |
|    | A20          | 88.8                          | 84.6 | 80.4 | 72.8 | 66.0 | 58.7 | 51.4 | 42.9 | 32.7 | 4.3                           | 4.4 | 4.5 | 4.8 | 5.0 | 5.2 | 5.4 | 5.8 | 6.2 |
|    | A25          | 85.4                          | 81.4 | 77.3 | 70.0 | 63.4 | 56.2 | 49.1 | 40.8 | 30.7 | 3.7                           | 3.9 | 3.9 | 4.2 | 4.4 | 4.6 | 4.7 | 5.0 | 5.4 |
|    | A30          | 82.1                          | 78.3 | 74.3 | 67.2 | 60.8 | 53.8 | 46.8 | 38.6 | 28.6 | 3.3                           | 3.4 | 3.4 | 3.6 | 3.8 | 4.0 | 4.1 | 4.3 | 4.5 |
|    | A35          | 79.2                          | 75.1 | 71.2 | 64.4 | 58.2 | 51.4 | 44.5 | 36.5 | 26.7 | 2.9                           | 2.9 | 3.0 | 3.1 | 3.3 | 3.4 | 3.5 | 3.6 | 3.6 |
|    | A40          | 75.4                          | 71.8 | 68.2 | 61.6 | 55.5 | 48.9 | 42.2 | 34.4 | 24.7 | 2.5                           | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 2.9 | 2.9 |
|    | A44          | 47.0                          | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 40.4 | 32.7 | 23.1 | 2.5                           | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.3 |

| To | Tae<br>DB/WB | Cooling capacity EN14511<br>Percentage of compressor load |       |       |       |      |      |      |      | EER EN14511<br>Percentage of compressor load |     |     |     |     |     |     |     |     |     |
|----|--------------|-----------------------------------------------------------|-------|-------|-------|------|------|------|------|----------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    |              |                                                           |       |       |       |      |      |      |      |                                              |     |     |     |     |     |     |     |     |     |
| 10 | A15          | 100.1                                                     | 95.5  | 90.7  | 82.2  | 74.5 | 66.3 | 58.2 | 48.7 | 37.3                                         | 5.2 | 5.3 | 5.5 | 5.8 | 6.0 | 6.2 | 6.4 | 6.9 | 7.3 |
|    | A20          | 96.7                                                      | 92.1  | 87.5  | 79.2  | 71.8 | 63.7 | 55.7 | 46.4 | 35.1                                         | 4.6 | 4.7 | 4.8 | 5.1 | 5.4 | 5.6 | 5.8 | 6.2 | 6.7 |
|    | A25          | 93.1                                                      | 88.7  | 84.2  | 76.2  | 69.0 | 61.1 | 53.3 | 44.1 | 33.0                                         | 4.0 | 4.2 | 4.2 | 4.5 | 4.7 | 4.9 | 5.1 | 5.4 | 5.8 |
|    | A30          | 89.6                                                      | 85.4  | 81.0  | 73.3  | 66.2 | 58.6 | 50.9 | 41.9 | 30.9                                         | 3.5 | 3.6 | 3.7 | 3.9 | 4.1 | 4.3 | 4.5 | 4.6 | 4.8 |
|    | A35          | 86.1                                                      | 82.0  | 77.8  | 70.3  | 63.5 | 56.0 | 48.5 | 39.7 | 28.8                                         | 3.1 | 3.2 | 3.2 | 3.4 | 3.6 | 3.7 | 3.8 | 3.9 | 3.9 |
|    | A40          | 82.5                                                      | 78.6  | 74.6  | 67.4  | 60.8 | 53.5 | 46.1 | 37.5 | 26.8                                         | 2.7 | 2.8 | 2.8 | 2.9 | 3.1 | 3.1 | 3.2 | 3.2 | 3.1 |
|    | A44          | 51.5                                                      | 51.5  | 51.5  | 51.5  | 51.5 | 51.5 | 44.6 | 35.7 | 25.1                                         | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 | 2.6 |
| 12 | A15          | 105.9                                                     | 100.9 | 95.9  | 86.8  | 78.7 | 70.0 | 61.4 | 51.2 | 39.1                                         | 5.4 | 5.6 | 5.7 | 6.1 | 6.3 | 6.6 | 6.8 | 7.3 | 7.5 |
|    | A20          | 102.2                                                     | 97.4  | 92.5  | 83.7  | 75.8 | 67.3 | 58.8 | 48.8 | 36.8                                         | 4.8 | 5.0 | 5.0 | 5.4 | 5.7 | 5.9 | 6.1 | 6.6 | 7.1 |
|    | A25          | 98.5                                                      | 93.9  | 89.1  | 80.6  | 72.9 | 64.6 | 56.3 | 46.5 | 34.6                                         | 4.2 | 4.4 | 4.4 | 4.7 | 5.0 | 5.2 | 5.4 | 5.7 | 6.1 |
|    | A30          | 94.9                                                      | 90.5  | 85.8  | 77.6  | 70.1 | 62.0 | 53.8 | 44.2 | 32.5                                         | 3.7 | 3.8 | 3.9 | 4.1 | 4.3 | 4.5 | 4.7 | 4.9 | 5.1 |
|    | A35          | 91.2                                                      | 87.0  | 82.5  | 74.6  | 67.3 | 59.4 | 51.4 | 41.9 | 30.4                                         | 3.2 | 3.3 | 3.4 | 3.6 | 3.8 | 3.9 | 4.0 | 4.1 | 4.1 |
|    | A40          | 87.6                                                      | 83.5  | 79.2  | 71.5  | 64.5 | 56.8 | 49.0 | 39.7 | 28.3                                         | 2.8 | 2.9 | 2.9 | 3.1 | 3.2 | 3.3 | 3.4 | 3.4 | 3.3 |
|    | A44          | 54.7                                                      | 54.7  | 54.7  | 54.7  | 54.7 | 54.7 | 46.0 | 38.0 | 26.6                                         | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.7 |
| 15 | A15          | 110.2                                                     | 105.0 | 99.6  | 90.3  | 81.9 | 73.0 | 64.2 | 55.4 | 44.4                                         | 5.7 | 5.9 | 6.0 | 6.4 | 6.7 | 6.8 | 7.0 | 7.8 | 8.5 |
|    | A20          | 106.5                                                     | 101.4 | 96.2  | 87.2  | 78.9 | 70.3 | 61.1 | 50.6 | 38.0                                         | 5.0 | 5.2 | 5.3 | 5.7 | 6.0 | 6.3 | 6.6 | 7.1 | 7.6 |
|    | A25          | 102.7                                                     | 97.9  | 93.0  | 84.1  | 76.0 | 67.6 | 58.6 | 48.2 | 35.8                                         | 4.5 | 4.6 | 4.7 | 5.0 | 5.3 | 5.6 | 5.8 | 6.2 | 6.6 |
|    | A30          | 99.0                                                      | 94.4  | 89.6  | 81.0  | 73.2 | 65.0 | 56.1 | 46.0 | 33.6                                         | 3.9 | 4.1 | 4.1 | 4.4 | 4.6 | 4.9 | 5.1 | 5.2 | 5.5 |
|    | A35          | 95.3                                                      | 91.0  | 86.3  | 78.0  | 70.4 | 62.4 | 53.7 | 43.7 | 31.5                                         | 3.4 | 3.6 | 3.6 | 3.8 | 4.0 | 4.2 | 4.3 | 4.4 | 4.5 |
|    | A40          | 91.8                                                      | 87.5  | 83.0  | 75.0  | 67.6 | 59.8 | 51.3 | 41.5 | 29.5                                         | 3.0 | 3.1 | 3.1 | 3.3 | 3.5 | 3.6 | 3.7 | 3.6 | 3.6 |
|    | A44          | 56.1                                                      | 56.1  | 56.1  | 56.1  | 56.1 | 56.1 | 48.2 | 39.8 | 27.9                                         | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.0 |
| 18 | A15          | 119.5                                                     | 113.9 | 108.0 | 98.9  | 89.7 | 80.5 | 71.2 | 60.0 | 47.5                                         | 6.1 | 6.3 | 6.4 | 6.9 | 7.4 | 7.6 | 7.8 | 8.4 | 8.8 |
|    | A20          | 115.6                                                     | 110.2 | 104.5 | 94.6  | 85.7 | 76.3 | 66.0 | 54.7 | 39.2                                         | 5.4 | 5.6 | 5.7 | 6.2 | 6.6 | 6.9 | 7.3 | 7.8 | 8.0 |
|    | A25          | 111.7                                                     | 106.6 | 101.0 | 91.4  | 82.6 | 73.5 | 63.6 | 52.3 | 38.6                                         | 4.8 | 5.0 | 5.1 | 5.5 | 5.8 | 6.1 | 6.4 | 6.8 | 7.3 |
|    | A30          | 107.9                                                     | 102.8 | 97.5  | 88.2  | 79.7 | 70.7 | 61.0 | 49.9 | 36.4                                         | 4.2 | 4.4 | 4.5 | 4.8 | 5.1 | 5.4 | 5.6 | 5.8 | 6.1 |
|    | A35          | 103.5                                                     | 99.2  | 94.1  | 85.1  | 76.8 | 68.0 | 58.5 | 47.6 | 34.2                                         | 3.7 | 3.9 | 3.9 | 4.2 | 4.4 | 4.6 | 4.8 | 4.8 | 5.0 |
|    | A40          | 100.2                                                     | 95.5  | 90.7  | 82.0  | 73.9 | 64.5 | 56.1 | 45.4 | 32.2                                         | 3.3 | 3.4 | 3.4 | 3.6 | 3.8 | 3.9 | 4.1 | 4.0 | 4.0 |
|    | A44          | 62.2                                                      | 62.2  | 62.2  | 62.2  | 62.2 | 62.2 | 54.1 | 43.6 | 30.5                                         | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.6 | 3.4 | 3.3 |
| 20 | A15          | 126.4                                                     | 120.4 | 114.2 | 103.3 | 93.6 | 83.3 | 73.1 | 62.9 | 49.1                                         | 6.4 | 6.7 | 6.8 | 7.2 | 7.7 | 7.8 | 8.0 | 8.8 | 9.1 |
|    | A20          | 122.1                                                     | 116.4 | 110.3 | 99.8  | 90.4 | 80.5 | 70.6 | 60.8 | 44.5                                         | 5.7 | 5.9 | 6.0 | 6.5 | 7.0 | 7.4 | 7.9 | 8.6 | 8.9 |
|    | A25          | 118.1                                                     | 112.6 | 106.7 | 96.5  | 87.4 | 77.6 | 67.1 | 55.1 | 40.2                                         | 5.1 | 5.3 | 5.3 | 5.8 | 6.2 | 6.6 | 6.9 | 7.3 | 7.9 |
|    | A30          | 114.1                                                     | 108.8 | 103.1 | 93.4  | 84.3 | 74.4 | 64.5 | 52.7 | 38.4                                         | 4.5 | 4.7 | 4.7 | 5.1 | 5.4 | 5.7 | 6.0 | 6.2 | 6.6 |
|    | A35          | 110.2                                                     | 105.1 | 99.6  | 90.2  | 81.4 | 72.1 | 62.0 | 50.4 | 36.2                                         | 4.0 | 4.1 | 4.1 | 4.5 | 4.7 | 5.0 | 5.1 | 5.2 | 5.4 |
|    | A40          | 106.3                                                     | 101.4 | 96.1  | 87.0  | 78.2 | 68.8 | 59.1 | 48.1 | 34.1                                         | 3.5 | 3.6 | 3.6 | 3.9 | 4.1 | 4.2 | 4.3 | 4.3 | 4.3 |
|    | A44          | 64.5                                                      | 64.5  | 64.5  | 64.5  | 64.5 | 64.5 | 56.7 | 46.1 | 32.5                                         | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.8 | 3.7 | 3.6 |

Table 41

## 7.17 Performance Heating - AWP65

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |       |       |      |      |      | COP EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |      |      |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%   | 70%   | 60%  | 50%  | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 25 | A-20         | 44.9                          | 39.1  | 35.6  | 32.3  | 29.0 | 25.7 | 15.8 | 2.16                          | 2.18 | 2.19 | 2.20 | 2.20 | 2.22 | 2.27 |
|    | A-15         | 56.0                          | 49.4  | 45.7  | 42.1  | 38.5 | 34.8 | 23.9 | 2.55                          | 2.56 | 2.57 | 2.58 | 2.59 | 2.61 | 2.66 |
|    | A-10         | 60.6                          | 53.9  | 50.2  | 46.3  | 42.5 | 38.7 | 27.4 | 2.78                          | 2.82 | 2.83 | 2.84 | 2.86 | 2.88 | 2.94 |
|    | A-7          | 66.4                          | 59.2  | 55.2  | 51.1  | 46.9 | 42.1 | 30.0 | 3.23                          | 3.28 | 3.30 | 3.32 | 3.34 | 3.38 | 3.44 |
|    | A2           | 91.1                          | 81.3  | 75.7  | 70.0  | 64.2 | 57.8 | 37.8 | 3.89                          | 3.96 | 4.00 | 4.02 | 4.04 | 4.10 | 4.18 |
|    | A7           | 104.0                         | 92.8  | 86.4  | 80.0  | 73.4 | 65.0 | 45.0 | 5.05                          | 5.22 | 5.31 | 5.41 | 5.50 | 5.60 | 5.71 |
|    | A10          | 112.3                         | 100.1 | 93.1  | 86.1  | 78.9 | 69.1 | 47.8 | 5.46                          | 5.65 | 5.76 | 5.88 | 5.99 | 6.10 | 6.22 |
|    | A18          | 137.7                         | 122.3 | 113.5 | 104.6 | 95.5 | 83.1 | 56.6 | 6.13                          | 6.38 | 6.52 | 6.67 | 6.83 | 6.97 | 7.10 |
| 30 | A-20         | 44.3                          | 38.5  | 35.1  | 31.9  | 28.6 | 25.3 | 15.3 | 2.02                          | 2.06 | 2.08 | 2.09 | 2.10 | 2.15 | 2.19 |
|    | A-15         | 55.2                          | 48.0  | 43.8  | 39.7  | 35.7 | 31.6 | 23.4 | 2.34                          | 2.35 | 2.35 | 2.36 | 2.36 | 2.36 | 2.41 |
|    | A-10         | 59.8                          | 52.0  | 47.4  | 43.0  | 38.6 | 34.2 | 26.8 | 2.56                          | 2.59 | 2.60 | 2.61 | 2.61 | 2.61 | 2.67 |
|    | A-7          | 66.2                          | 57.6  | 52.5  | 47.6  | 42.7 | 37.9 | 29.4 | 2.97                          | 3.02 | 3.04 | 3.05 | 3.06 | 3.10 | 3.16 |
|    | A2           | 84.4                          | 73.4  | 67.0  | 60.8  | 54.5 | 48.3 | 37.0 | 3.58                          | 3.65 | 3.68 | 3.70 | 3.71 | 3.80 | 3.88 |
|    | A7           | 102.8                         | 91.6  | 85.2  | 78.7  | 72.1 | 63.9 | 43.8 | 4.62                          | 4.77 | 4.85 | 4.93 | 5.02 | 5.10 | 5.20 |
|    | A10          | 110.9                         | 98.7  | 91.8  | 84.7  | 77.6 | 68.0 | 46.6 | 4.98                          | 5.15 | 5.25 | 5.35 | 5.45 | 5.55 | 5.66 |
|    | A18          | 135.7                         | 120.4 | 111.7 | 102.9 | 93.9 | 81.7 | 55.3 | 5.58                          | 5.80 | 5.93 | 6.06 | 6.20 | 6.30 | 6.42 |
| 35 | A-20         | 43.7                          | 38.0  | 34.7  | 31.5  | 28.2 | 25.0 | 15.0 | 1.91                          | 1.94 | 1.97 | 1.98 | 1.99 | 2.01 | 2.05 |
|    | A-15         | 54.5                          | 47.4  | 43.2  | 39.2  | 35.2 | 31.2 | 23.1 | 2.18                          | 2.19 | 2.18 | 2.18 | 2.17 | 2.17 | 2.21 |
|    | A-10         | 59.0                          | 51.3  | 46.8  | 42.5  | 38.1 | 33.8 | 26.5 | 2.37                          | 2.39 | 2.41 | 2.41 | 2.41 | 2.40 | 2.45 |
|    | A-7          | 65.3                          | 56.8  | 51.8  | 47.0  | 42.2 | 37.4 | 29.0 | 2.74                          | 2.77 | 2.80 | 2.82 | 2.82 | 2.82 | 2.88 |
|    | A2           | 84.1                          | 73.2  | 66.7  | 60.5  | 54.3 | 48.1 | 36.2 | 3.28                          | 3.34 | 3.38 | 3.40 | 3.42 | 3.44 | 3.51 |
|    | A7           | 100.9                         | 90.6  | 84.2  | 77.8  | 71.2 | 63.0 | 42.9 | 4.19                          | 4.33 | 4.39 | 4.46 | 4.56 | 4.66 | 4.75 |
|    | A10          | 109.7                         | 97.5  | 90.6  | 83.6  | 76.5 | 67.0 | 45.7 | 4.51                          | 4.66 | 4.74 | 4.82 | 4.93 | 5.05 | 5.15 |
|    | A18          | 134.0                         | 118.8 | 110.2 | 101.4 | 92.5 | 80.5 | 54.2 | 5.04                          | 5.23 | 5.34 | 5.44 | 5.59 | 5.76 | 5.88 |
| 40 | A-20         | 42.4                          | 36.9  | 33.7  | 30.6  | 27.4 | 24.3 | 14.6 | 1.89                          | 1.92 | 1.93 | 1.97 | 1.98 | 1.99 | 2.03 |
|    | A-15         | 52.9                          | 46.0  | 42.0  | 38.1  | 34.2 | 30.3 | 22.5 | 2.04                          | 2.05 | 2.05 | 2.04 | 2.05 | 2.08 | 2.12 |
|    | A-10         | 57.3                          | 49.8  | 45.5  | 41.2  | 37.0 | 32.8 | 25.7 | 2.15                          | 2.16 | 2.17 | 2.17 | 2.18 | 2.20 | 2.25 |
|    | A-7          | 63.4                          | 55.2  | 50.3  | 45.7  | 41.0 | 36.3 | 28.1 | 2.41                          | 2.43 | 2.44 | 2.45 | 2.45 | 2.48 | 2.53 |
|    | A2           | 83.6                          | 72.7  | 66.3  | 60.2  | 54.0 | 47.9 | 35.8 | 3.20                          | 3.25 | 3.27 | 3.33 | 3.35 | 3.41 | 3.47 |
|    | A7           | 99.3                          | 88.2  | 82.0  | 75.6  | 69.2 | 61.3 | 41.7 | 3.80                          | 3.92 | 3.98 | 4.02 | 4.09 | 4.17 | 4.26 |
|    | A10          | 106.8                         | 93.8  | 87.2  | 80.5  | 73.6 | 65.1 | 44.2 | 4.09                          | 4.26 | 4.33 | 4.40 | 4.50 | 4.62 | 4.71 |
|    | A18          | 130.1                         | 114.1 | 105.9 | 97.5  | 89.0 | 78.2 | 52.4 | 4.44                          | 4.66 | 4.75 | 4.84 | 4.97 | 5.14 | 5.25 |
| 45 | A-20         | 42.0                          | 36.5  | 33.3  | 30.2  | 27.1 | 24.0 | 14.4 | 1.87                          | 1.89 | 1.90 | 1.90 | 1.92 | 1.97 | 2.01 |
|    | A-15         | 52.4                          | 45.6  | 41.6  | 37.7  | 33.8 | 30.0 | 22.2 | 1.90                          | 1.91 | 1.91 | 1.91 | 1.93 | 1.99 | 2.03 |
|    | A-10         | 55.8                          | 48.5  | 44.3  | 40.2  | 36.0 | 31.9 | 23.6 | 1.93                          | 1.93 | 1.93 | 1.92 | 1.95 | 2.00 | 2.04 |
|    | A-7          | 60.1                          | 52.3  | 47.7  | 43.3  | 38.8 | 34.4 | 26.0 | 2.07                          | 2.08 | 2.08 | 2.08 | 2.07 | 2.13 | 2.18 |
|    | A2           | 83.1                          | 72.3  | 65.9  | 59.8  | 53.7 | 47.6 | 35.5 | 3.12                          | 3.16 | 3.16 | 3.16 | 3.16 | 3.25 | 3.31 |
|    | A7           | 98.1                          | 87.7  | 81.4  | 75.1  | 68.7 | 60.9 | 41.1 | 3.40                          | 3.52 | 3.56 | 3.59 | 3.63 | 3.69 | 3.76 |
|    | A10          | 106.0                         | 93.1  | 86.5  | 79.8  | 73.0 | 64.7 | 43.8 | 3.67                          | 3.86 | 3.92 | 3.97 | 4.06 | 4.18 | 4.27 |
|    | A18          | 128.7                         | 112.9 | 104.8 | 96.5  | 88.0 | 77.4 | 51.7 | 3.85                          | 4.09 | 4.17 | 4.24 | 4.35 | 4.53 | 4.62 |
| 50 | A-20         | -                             | -     | -     | -     | -    | -    | -    | -                             | -    | -    | -    | -    | -    | -    |
|    | A-15         | 51.4                          | 44.8  | 40.8  | 37.0  | 33.2 | 29.4 | 21.8 | 1.77                          | 1.78 | 1.79 | 1.81 | 1.82 | 1.83 | 1.86 |
|    | A-10         | 54.2                          | 47.1  | 43.0  | 39.0  | 35.0 | 31.0 | 22.7 | 1.81                          | 1.81 | 1.82 | 1.84 | 1.85 | 1.86 | 1.90 |
|    | A-7          | 59.6                          | 51.8  | 47.3  | 42.9  | 38.5 | 34.1 | 23.8 | 1.84                          | 1.89 | 1.90 | 1.90 | 1.89 | 1.90 | 1.93 |
|    | A2           | 82.9                          | 72.1  | 65.8  | 59.7  | 53.5 | 47.4 | 33.3 | 2.54                          | 2.57 | 2.59 | 2.59 | 2.58 | 2.57 | 2.62 |
|    | A7           | 97.1                          | 86.8  | 76.4  | 70.5  | 64.4 | 58.3 | 38.6 | 3.02                          | 3.07 | 3.13 | 3.15 | 3.20 | 3.25 | 3.31 |
|    | A10          | 104.5                         | 87.3  | 81.1  | 74.8  | 68.4 | 61.9 | 40.9 | 3.21                          | 3.36 | 3.42 | 3.46 | 3.58 | 3.67 | 3.74 |
|    | A18          | 126.5                         | 111.0 | 103.0 | 94.8  | 86.5 | 77.1 | 51.2 | 3.50                          | 3.67 | 3.74 | 3.80 | 3.95 | 4.08 | 4.17 |
| 55 | A-20         | -                             | -     | -     | -     | -    | -    | -    | -                             | -    | -    | -    | -    | -    | -    |
|    | A-15         | 50.5                          | 44.0  | 40.1  | 36.4  | 32.7 | 28.9 | 21.5 | 1.65                          | 1.70 | 1.71 | 1.71 | 1.71 | 1.72 | 1.75 |
|    | A-10         | 52.6                          | 45.7  | 41.7  | 37.8  | 34.0 | 30.1 | 22.2 | 1.69                          | 1.74 | 1.74 | 1.73 | 1.72 | 1.72 | 1.76 |
|    | A-7          | 59.0                          | 51.3  | 46.8  | 42.5  | 38.1 | 33.8 | 23.4 | 1.73                          | 1.77 | 1.76 | 1.75 | 1.72 | 1.73 | 1.76 |
|    | A2           | 82.1                          | 71.4  | 65.1  | 59.1  | 53.0 | 47.0 | 32.8 | 2.39                          | 2.40 | 2.40 | 2.38 | 2.36 | 2.44 | 2.49 |
|    | A7           | 96.1                          | 83.6  | 76.2  | 69.1  | 62.1 | 55.0 | 38.1 | 2.80                          | 2.88 | 2.89 | 2.89 | 2.90 | 2.91 | 2.96 |
|    | A10          | 103.0                         | 86.1  | 80.0  | 73.8  | 67.5 | 61.0 | 40.4 | 3.01                          | 3.12 | 3.15 | 3.17 | 3.19 | 3.24 | 3.31 |
|    | A18          | 124.2                         | 109.1 | 101.2 | 93.2  | 85.1 | 76.7 | 50.7 | 3.25                          | 3.41 | 3.44 | 3.47 | 3.51 | 3.59 | 3.66 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |      |      |   |   |   |   | COP EN14511                   |      |      |   |   |   |   |
|----|--------------|-------------------------------|------|------|---|---|---|---|-------------------------------|------|------|---|---|---|---|
|    |              | Percentage of compressor load |      |      |   |   |   |   | Percentage of compressor load |      |      |   |   |   |   |
| 60 | A-20         | –                             | –    | –    | – | – | – | – | –                             | –    | –    | – | – | – | – |
|    | A-15         | –                             | –    | –    | – | – | – | – | –                             | –    | –    | – | – | – | – |
|    | A-10         | –                             | –    | –    | – | – | – | – | –                             | –    | –    | – | – | – | – |
|    | A-7          | 41.4                          | 37.2 | 28.7 | – | – | – | – | 1.53                          | 1.57 | 1.64 | – | – | – | – |
|    | A2           | 55.2                          | 49.4 | 37.6 | – | – | – | – | 2.18                          | 2.20 | 2.21 | – | – | – | – |
|    | A7           | 60.8                          | 54.3 | 40.5 | – | – | – | – | 2.63                          | 2.64 | 2.66 | – | – | – | – |
|    | A10          | 64.4                          | 57.5 | 42.8 | – | – | – | – | 2.86                          | 2.88 | 2.91 | – | – | – | – |
|    | A18          | 76.4                          | 68.0 | 50.0 | – | – | – | – | 3.12                          | 3.15 | 3.17 | – | – | – | – |

Table 42

### 7.18 Performance Cooling - AWP65

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |       |      |      |      |      | EER EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|------|------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |      |      |      |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%   | 70%  | 60%  | 50%  | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 5  | A15          | 96.4                          | 87.4  | 81.0  | 74.5 | 67.9 | 61.3 | 56.0 | 4.29                          | 4.40 | 4.51 | 4.60 | 4.71 | 5.00 | 5.20 |
|    | A20          | 96.2                          | 86.6  | 80.4  | 74.0 | 67.5 | 61.0 | 55.4 | 3.88                          | 4.20 | 4.30 | 4.40 | 4.40 | 4.70 | 4.70 |
|    | A25          | 96.0                          | 85.9  | 79.8  | 73.5 | 67.1 | 60.7 | 54.9 | 3.86                          | 4.00 | 4.10 | 4.20 | 4.30 | 4.41 | 4.52 |
|    | A30          | 92.6                          | 84.4  | 78.5  | 72.5 | 66.3 | 60.1 | 54.3 | 3.41                          | 3.53 | 3.62 | 3.70 | 3.77 | 3.85 | 3.92 |
|    | A35          | 89.2                          | 81.4  | 75.6  | 69.7 | 63.7 | 57.7 | 53.8 | 3.00                          | 3.10 | 3.17 | 3.23 | 3.28 | 3.33 | 3.36 |
|    | A40          | 85.7                          | 78.2  | 72.6  | 66.9 | 61.1 | 55.2 | 53.2 | 2.63                          | 2.71 | 2.75 | 2.79 | 2.82 | 2.84 | 2.88 |
|    | A45          | 82.2                          | 75.0  | 69.6  | 64.1 | 58.4 | 52.7 | 51.6 | 2.30                          | 2.35 | 2.38 | 2.40 | 2.42 | 2.45 | 2.47 |
|    | A50          | 62.4                          | 56.8  | 51.2  | 49.1 | –    | –    | –    | 2.20                          | 2.21 | 2.22 | 2.23 | –    | –    | –    |
| 7  | A15          | 102.8                         | 93.1  | 86.1  | 79.2 | 72.2 | 65.1 | 57.1 | 4.59                          | 4.73 | 4.83 | 4.95 | 5.07 | 5.20 | 5.45 |
|    | A20          | 102.4                         | 92.2  | 85.4  | 78.7 | 71.7 | 64.8 | 56.5 | 4.15                          | 4.48 | 4.59 | 4.71 | 4.83 | 4.96 | 5.00 |
|    | A25          | 102.1                         | 91.4  | 84.7  | 78.1 | 71.3 | 64.4 | 56.0 | 4.09                          | 4.24 | 4.36 | 4.47 | 4.59 | 4.72 | 4.84 |
|    | A30          | 98.5                          | 89.7  | 83.3  | 76.9 | 70.4 | 63.7 | 55.4 | 3.61                          | 3.74 | 3.84 | 3.93 | 4.02 | 4.11 | 4.19 |
|    | A35          | 94.8                          | 86.4  | 80.3  | 74.1 | 67.7 | 61.2 | 54.8 | 3.15                          | 3.28 | 3.36 | 3.43 | 3.49 | 3.54 | 3.58 |
|    | A40          | 91.2                          | 83.1  | 77.2  | 71.1 | 64.9 | 58.6 | 54.3 | 2.78                          | 2.86 | 2.92 | 2.96 | 3.00 | 3.02 | 3.03 |
|    | A45          | 87.5                          | 79.8  | 74.0  | 68.1 | 62.1 | 56.0 | 52.7 | 2.43                          | 2.49 | 2.52 | 2.55 | 2.56 | 2.57 | 2.58 |
|    | A50          | 64.2                          | 58.1  | 51.8  | 50.0 | –    | –    | –    | 2.40                          | 2.35 | 2.37 | 2.38 | –    | –    | –    |
| 10 | A15          | 112.8                         | 102.0 | 94.2  | 86.5 | 78.8 | 71.0 | 58.2 | 5.09                          | 5.24 | 5.37 | 5.50 | 5.66 | 5.83 | 5.90 |
|    | A20          | 112.1                         | 100.9 | 93.4  | 85.8 | 78.3 | 70.6 | 57.7 | 4.56                          | 4.68 | 4.76 | 4.85 | 4.95 | 5.05 | 5.40 |
|    | A25          | 111.4                         | 99.9  | 92.5  | 85.1 | 77.7 | 70.2 | 57.1 | 4.24                          | 4.38 | 4.47 | 4.57 | 4.68 | 4.78 | 5.01 |
|    | A30          | 107.6                         | 97.9  | 90.9  | 83.7 | 76.6 | 69.3 | 56.5 | 3.93                          | 4.08 | 4.18 | 4.29 | 4.41 | 4.52 | 4.63 |
|    | A35          | 103.7                         | 94.4  | 87.6  | 80.8 | 73.7 | 66.6 | 55.9 | 3.45                          | 3.57 | 3.65 | 3.74 | 3.81 | 3.88 | 3.94 |
|    | A40          | 99.7                          | 90.8  | 84.2  | 77.6 | 70.8 | 63.8 | 55.4 | 3.01                          | 3.11 | 3.17 | 3.22 | 3.27 | 3.30 | 3.31 |
|    | A45          | 95.7                          | 87.1  | 80.9  | 74.4 | 67.8 | 61.0 | 53.7 | 2.63                          | 2.70 | 2.74 | 2.77 | 2.79 | 2.81 | 2.83 |
|    | A50          | 66.0                          | 59.3  | 52.5  | 51.0 | –    | –    | –    | 2.60                          | 2.55 | 2.57 | 2.59 | –    | –    | –    |
| 12 | A15          | 119.8                         | 108.2 | 99.9  | 91.6 | 83.3 | 75.1 | 59.4 | 5.22                          | 5.38 | 5.51 | 5.65 | 5.81 | 6.01 | 6.45 |
|    | A20          | 118.9                         | 107.0 | 98.9  | 90.8 | 82.7 | 74.6 | 58.8 | 4.62                          | 4.73 | 4.81 | 4.90 | 5.00 | 5.09 | 5.70 |
|    | A25          | 118.0                         | 105.9 | 98.0  | 90.1 | 82.1 | 74.1 | 58.2 | 4.30                          | 4.43 | 4.53 | 4.63 | 4.75 | 4.85 | 5.22 |
|    | A30          | 114.0                         | 103.6 | 96.1  | 88.5 | 80.9 | 73.1 | 57.6 | 3.98                          | 4.13 | 4.24 | 4.36 | 4.49 | 4.61 | 4.74 |
|    | A35          | 109.8                         | 99.9  | 92.6  | 85.3 | 77.9 | 70.4 | 57.1 | 3.48                          | 3.61 | 3.70 | 3.78 | 3.87 | 3.95 | 4.02 |
|    | A40          | 105.7                         | 96.1  | 89.1  | 82.1 | 74.8 | 67.5 | 56.5 | 3.04                          | 3.13 | 3.20 | 3.26 | 3.31 | 3.35 | 3.37 |
|    | A45          | 101.4                         | 92.3  | 85.5  | 78.8 | 71.7 | 64.5 | 54.8 | 2.65                          | 2.72 | 2.76 | 2.80 | 2.82 | 2.83 | 2.84 |
|    | A50          | 66.6                          | 59.9  | 52.8  | –    | –    | –    | –    | 2.60                          | 2.58 | 2.61 | –    | –    | –    | –    |
| 15 | A15          | 128.0                         | 115.5 | 106.5 | 97.5 | 88.6 | 79.7 | 60.6 | 5.51                          | 5.69 | 5.84 | 6.01 | 6.20 | 6.45 | 6.71 |
|    | A20          | 126.8                         | 114.2 | 105.4 | 96.7 | 87.9 | 79.2 | 60.0 | 4.86                          | 4.99 | 5.09 | 5.19 | 5.30 | 5.43 | 6.04 |
|    | A25          | 125.5                         | 112.9 | 104.3 | 95.8 | 87.2 | 78.6 | 59.4 | 4.48                          | 4.64 | 4.75 | 4.87 | 4.99 | 5.14 | 5.53 |
|    | A30          | 121.3                         | 110.3 | 102.1 | 94.0 | 85.7 | 77.5 | 58.8 | 4.10                          | 4.28 | 4.41 | 4.54 | 4.69 | 4.85 | 5.02 |
|    | A35          | 117.0                         | 106.3 | 98.5  | 90.6 | 82.6 | 74.6 | 58.2 | 3.58                          | 3.72 | 3.82 | 3.92 | 4.02 | 4.12 | 4.21 |
|    | A40          | 112.6                         | 102.3 | 94.8  | 87.2 | 79.5 | 71.6 | 57.6 | 3.11                          | 3.22 | 3.29 | 3.36 | 3.43 | 3.47 | 3.51 |
|    | A45          | 102.3                         | 98.3  | 91.0  | 83.7 | 76.2 | 68.5 | 55.9 | 2.71                          | 2.79 | 2.84 | 2.88 | 2.91 | 2.92 | 2.93 |
|    | A50          | 67.3                          | 60.5  | 53.1  | –    | –    | –    | –    | 2.70                          | 2.65 | 2.68 | –    | –    | –    | –    |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |       |       |       |      |      | EER EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |      |      | Percentage of compressor load |      |      |      |      |      |      |
| 18 | A15          | 139.1                         | 125.2 | 115.3 | 105.5 | 95.7  | 85.9 | 61.8 | 6.05                          | 6.26 | 6.44 | 6.64 | 6.88 | 7.16 | 7.10 |
|    | A20          | 137.4                         | 123.7 | 114.1 | 104.5 | 94.9  | 85.3 | 61.2 | 5.16                          | 5.27 | 5.36 | 5.45 | 5.54 | 5.64 | 6.41 |
|    | A25          | 135.7                         | 122.2 | 112.8 | 103.4 | 94.0  | 84.6 | 60.6 | 4.78                          | 4.95 | 5.07 | 5.20 | 5.33 | 5.48 | 5.98 |
|    | A30          | 131.3                         | 119.1 | 110.2 | 101.4 | 92.4  | 83.3 | 60.0 | 4.41                          | 4.62 | 4.77 | 4.94 | 5.13 | 5.32 | 5.55 |
|    | A35          | 126.7                         | 114.9 | 106.4 | 97.8  | 89.1  | 80.3 | 59.4 | 3.88                          | 4.00 | 4.12 | 4.24 | 4.36 | 4.48 | 4.61 |
|    | A40          | 121.9                         | 110.7 | 102.5 | 94.1  | 85.7  | 77.2 | 58.8 | 3.33                          | 3.46 | 3.54 | 3.62 | 3.69 | 3.76 | 3.81 |
|    | A45          | 103.3                         | 99.3  | 92.0  | 84.5  | 77.0  | 69.2 | —    | 3.01                          | 3.09 | 3.12 | 3.15 | 3.16 | 3.17 | —    |
|    | A50          | 68.0                          | 61.1  | —     | —     | —     | —    | —    | 2.83                          | 2.84 | —    | —    | —    | —    | —    |
| 20 | A15          | 146.6                         | 131.9 | 121.4 | 110.9 | 100.5 | 90.2 | 63.0 | 6.30                          | 6.50 | 6.65 | 6.81 | 7.00 | 7.30 | 7.40 |
|    | A20          | 144.6                         | 130.2 | 120.0 | 109.8 | 99.6  | 89.5 | 62.4 | 5.50                          | 5.63 | 5.73 | 5.84 | 5.95 | 6.07 | 6.90 |
|    | A25          | 142.7                         | 128.5 | 118.6 | 108.7 | 98.7  | 88.7 | 61.8 | 5.06                          | 5.24 | 5.39 | 5.53 | 5.69 | 5.87 | 6.30 |
|    | A30          | 138.0                         | 125.1 | 115.9 | 106.4 | 96.9  | 87.3 | 61.2 | 4.62                          | 4.86 | 5.04 | 5.22 | 5.43 | 5.66 | 5.94 |
|    | A35          | 133.2                         | 120.8 | 111.8 | 102.7 | 93.4  | 84.1 | 60.6 | 4.01                          | 4.19 | 4.32 | 4.46 | 4.59 | 4.74 | 4.89 |
|    | A40          | 128.3                         | 116.4 | 107.7 | 98.9  | 89.9  | 80.9 | 59.9 | 3.48                          | 3.61 | 3.70 | 3.79 | 3.88 | 3.95 | 4.02 |
|    | A45          | 104.8                         | 100.3 | 92.9  | 85.3  | 77.7  | 69.9 | —    | 3.20                          | 3.24 | 3.27 | 3.30 | 3.31 | 3.32 | —    |
|    | A50          | 68.6                          | 61.7  | —     | —     | —     | —    | —    | 2.96                          | 2.98 | —    | —    | —    | —    | —    |

Table 43

### 7.19 Performance Heating - AWP75

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |       |       |       |      |      | COP EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |      |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%   | 70%   | 60%   | 50%  | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 25 | A-20         | 52.1                          | 47.7  | 41.1  | 37.4  | 33.7  | 30.0 | 16.3 | 2.05                          | 2.03 | 2.05 | 2.07 | 2.09 | 2.12 | 2.16 |
|    | A-15         | 63.0                          | 58.1  | 51.0  | 47.1  | 43.1  | 39.2 | 24.4 | 2.35                          | 2.37 | 2.37 | 2.38 | 2.39 | 2.40 | 2.45 |
|    | A-10         | 66.8                          | 62.0  | 54.9  | 50.9  | 46.9  | 42.9 | 27.9 | 2.62                          | 2.66 | 2.68 | 2.70 | 2.71 | 2.73 | 2.79 |
|    | A-7          | 74.2                          | 69.1  | 61.3  | 57.0  | 52.6  | 48.2 | 31.3 | 3.04                          | 3.02 | 3.05 | 3.07 | 3.10 | 3.13 | 3.19 |
|    | A2           | 91.5                          | 85.3  | 75.8  | 70.4  | 65.0  | 59.5 | 38.2 | 3.67                          | 3.63 | 3.66 | 3.70 | 3.74 | 3.79 | 3.86 |
|    | A7           | 111.1                         | 103.6 | 92.2  | 85.7  | 79.1  | 72.4 | 45.5 | 4.73                          | 4.67 | 4.76 | 4.85 | 4.96 | 5.08 | 5.18 |
|    | A10          | 119.6                         | 111.6 | 99.3  | 92.2  | 85.1  | 77.8 | 48.3 | 5.08                          | 5.03 | 5.14 | 5.25 | 5.38 | 5.52 | 5.63 |
|    | A18          | 146.4                         | 136.4 | 120.9 | 112.1 | 103.2 | 94.1 | 57.1 | 5.81                          | 5.87 | 6.01 | 6.16 | 6.36 | 6.57 | 6.70 |
| 30 | A-20         | 51.4                          | 47.0  | 40.5  | 36.8  | 33.2  | 29.6 | 15.8 | 1.96                          | 1.96 | 1.98 | 2.00 | 2.02 | 2.05 | 2.09 |
|    | A-15         | 62.1                          | 56.8  | 48.9  | 44.5  | 40.1  | 35.8 | 23.9 | 2.21                          | 2.22 | 2.21 | 2.22 | 2.23 | 2.23 | 2.27 |
|    | A-10         | 65.9                          | 60.3  | 51.9  | 47.2  | 42.6  | 37.9 | 27.3 | 2.47                          | 2.49 | 2.50 | 2.52 | 2.53 | 2.54 | 2.59 |
|    | A-7          | 73.2                          | 66.9  | 57.6  | 52.5  | 47.3  | 42.1 | 30.7 | 2.86                          | 2.83 | 2.85 | 2.87 | 2.88 | 2.90 | 2.96 |
|    | A2           | 91.1                          | 83.4  | 71.8  | 65.3  | 58.9  | 52.4 | 37.5 | 3.46                          | 3.45 | 3.49 | 3.52 | 3.56 | 3.62 | 3.69 |
|    | A7           | 110.8                         | 101.4 | 89.2  | 82.8  | 76.4  | 69.9 | 44.3 | 4.42                          | 4.44 | 4.52 | 4.61 | 4.72 | 4.83 | 4.92 |
|    | A10          | 115.6                         | 107.9 | 94.8  | 88.1  | 81.3  | 74.4 | 47.1 | 4.69                          | 4.74 | 4.83 | 4.93 | 5.06 | 5.18 | 5.29 |
|    | A18          | 141.2                         | 131.5 | 115.3 | 107.0 | 98.5  | 89.9 | 55.8 | 5.31                          | 5.45 | 5.60 | 5.73 | 5.90 | 6.03 | 6.15 |
| 35 | A-20         | 50.7                          | 46.4  | 39.9  | 36.4  | 32.8  | 29.2 | 15.5 | 1.88                          | 1.91 | 1.93 | 1.95 | 1.98 | 1.99 | 2.03 |
|    | A-15         | 61.3                          | 56.1  | 48.3  | 44.0  | 39.6  | 35.3 | 23.7 | 2.15                          | 2.16 | 2.15 | 2.15 | 2.14 | 2.13 | 2.17 |
|    | A-10         | 65.0                          | 59.5  | 51.2  | 46.6  | 42.0  | 37.4 | 27.0 | 2.33                          | 2.38 | 2.39 | 2.39 | 2.38 | 2.37 | 2.42 |
|    | A-7          | 72.2                          | 66.1  | 56.9  | 51.8  | 46.7  | 41.6 | 30.2 | 2.71                          | 2.57 | 2.58 | 2.59 | 2.59 | 2.57 | 2.63 |
|    | A2           | 89.9                          | 82.3  | 70.8  | 64.5  | 58.1  | 51.8 | 36.7 | 3.24                          | 3.28 | 3.32 | 3.36 | 3.40 | 3.42 | 3.48 |
|    | A7           | 110.6                         | 100.9 | 89.0  | 82.7  | 76.3  | 69.7 | 43.4 | 4.15                          | 4.25 | 4.38 | 4.45 | 4.52 | 4.59 | 4.68 |
|    | A10          | 114.1                         | 106.4 | 94.7  | 88.0  | 81.2  | 74.2 | 46.2 | 4.30                          | 4.57 | 4.72 | 4.80 | 4.90 | 4.97 | 5.07 |
|    | A18          | 139.3                         | 129.8 | 115.1 | 106.7 | 98.2  | 89.6 | 54.7 | 4.80                          | 5.10 | 5.30 | 5.41 | 5.56 | 5.64 | 5.75 |
| 40 | A-20         | 49.2                          | 45.1  | 38.8  | 35.3  | 31.8  | 28.3 | 15.1 | 1.86                          | 1.88 | 1.90 | 1.92 | 1.94 | 1.97 | 2.01 |
|    | A-15         | 59.5                          | 54.5  | 46.9  | 42.7  | 38.5  | 34.3 | 23.0 | 2.01                          | 2.04 | 2.04 | 2.03 | 2.03 | 2.05 | 2.09 |
|    | A-10         | 63.1                          | 57.8  | 49.7  | 45.3  | 40.8  | 36.3 | 26.2 | 2.11                          | 2.18 | 2.18 | 2.18 | 2.19 | 2.21 | 2.25 |
|    | A-7          | 70.1                          | 64.2  | 55.2  | 50.3  | 45.3  | 40.4 | 29.3 | 2.39                          | 2.31 | 2.32 | 2.33 | 2.32 | 2.34 | 2.38 |
|    | A2           | 89.3                          | 81.7  | 70.4  | 64.0  | 57.7  | 51.4 | 36.5 | 3.16                          | 3.20 | 3.22 | 3.24 | 3.26 | 3.31 | 3.38 |
|    | A7           | 109.9                         | 100.3 | 88.9  | 82.6  | 76.1  | 69.6 | 43.3 | 3.76                          | 3.86 | 3.95 | 4.01 | 4.06 | 4.13 | 4.21 |
|    | A10          | 113.4                         | 105.8 | 92.9  | 86.4  | 79.7  | 72.9 | 44.7 | 3.96                          | 4.13 | 4.24 | 4.32 | 4.44 | 4.54 | 4.63 |
|    | A18          | 138.4                         | 128.9 | 113.0 | 104.9 | 96.6  | 88.1 | 52.9 | 4.30                          | 4.56 | 4.70 | 4.79 | 4.92 | 5.05 | 5.15 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |       |       |      |      |      | COP EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |      |      |      | Percentage of compressor load |      |      |      |      |      |      |
| 45 | A-20         | 48.7                          | 44.6  | 38.4  | 34.9  | 31.5 | 28.0 | 14.9 | 1.84                          | 1.86 | 1.87 | 1.89 | 1.91 | 1.95 | 1.99 |
|    | A-15         | 58.9                          | 53.9  | 46.4  | 42.2  | 38.1 | 33.9 | 22.7 | 1.87                          | 1.92 | 1.92 | 1.90 | 1.93 | 1.96 | 2.00 |
|    | A-10         | 60.9                          | 55.7  | 47.9  | 43.6  | 39.3 | 35.0 | 24.2 | 1.90                          | 1.97 | 1.97 | 1.96 | 1.99 | 2.05 | 2.09 |
|    | A-7          | 65.3                          | 59.8  | 51.4  | 46.8  | 42.2 | 37.6 | 26.5 | 2.06                          | 2.05 | 2.05 | 2.06 | 2.06 | 2.10 | 2.14 |
|    | A2           | 88.2                          | 80.7  | 69.5  | 63.2  | 57.0 | 50.8 | 36.0 | 3.07                          | 3.11 | 3.12 | 3.12 | 3.11 | 3.20 | 3.27 |
|    | A7           | 106.6                         | 99.7  | 88.6  | 82.3  | 75.9 | 69.4 | 41.6 | 3.37                          | 3.47 | 3.52 | 3.57 | 3.61 | 3.67 | 3.74 |
|    | A10          | 113.0                         | 105.4 | 92.7  | 86.1  | 79.5 | 72.7 | 44.3 | 3.62                          | 3.70 | 3.76 | 3.83 | 3.99 | 4.11 | 4.19 |
|    | A18          | 137.5                         | 128.1 | 112.3 | 104.2 | 96.0 | 87.6 | 52.2 | 3.79                          | 4.03 | 4.11 | 4.18 | 4.29 | 4.46 | 4.55 |
| 50 | A-20         | –                             | –     | –     | –     | –    | –    | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | 57.9                          | 53.0  | 45.6  | 41.5  | 37.4 | 33.3 | 22.4 | 1.74                          | 1.75 | 1.76 | 1.76 | 1.78 | 1.79 | 1.82 |
|    | A-10         | 59.8                          | 54.7  | 47.1  | 42.9  | 38.7 | 34.4 | 23.8 | 1.77                          | 1.78 | 1.79 | 1.80 | 1.81 | 1.82 | 1.86 |
|    | A-7          | 65.1                          | 59.5  | 51.3  | 46.7  | 42.1 | 37.5 | 24.1 | 1.80                          | 1.86 | 1.87 | 1.85 | 1.85 | 1.86 | 1.89 |
|    | A2           | 87.2                          | 79.8  | 68.7  | 62.5  | 56.3 | 50.2 | 33.8 | 2.49                          | 2.52 | 2.54 | 2.52 | 2.52 | 2.51 | 2.56 |
|    | A7           | 105.2                         | 96.3  | 82.9  | 75.4  | 68.0 | 60.6 | 39.1 | 2.95                          | 3.01 | 3.07 | 3.07 | 3.13 | 3.17 | 3.24 |
|    | A10          | 112.7                         | 105.1 | 92.4  | 85.9  | 79.2 | 72.4 | 41.4 | 3.14                          | 3.29 | 3.35 | 3.37 | 3.50 | 3.59 | 3.66 |
|    | A18          | 136.7                         | 127.2 | 111.6 | 103.6 | 95.3 | 87.0 | 51.7 | 3.42                          | 3.60 | 3.67 | 3.70 | 3.86 | 3.99 | 4.07 |
| 55 | A-20         | –                             | –     | –     | –     | –    | –    | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | 56.8                          | 52.0  | 44.8  | 40.8  | 36.7 | 32.7 | 22.0 | 1.50                          | 1.53 | 1.55 | 1.56 | 1.58 | 1.60 | 1.63 |
|    | A-10         | 58.7                          | 53.8  | 46.3  | 42.1  | 38.0 | 33.8 | 23.3 | 1.59                          | 1.62 | 1.63 | 1.63 | 1.63 | 1.63 | 1.67 |
|    | A-7          | 63.9                          | 58.5  | 50.3  | 45.8  | 41.3 | 36.8 | 23.6 | 1.71                          | 1.71 | 1.72 | 1.71 | 1.70 | 1.70 | 1.73 |
|    | A2           | 86.2                          | 78.8  | 67.9  | 61.8  | 55.7 | 49.6 | 33.3 | 2.36                          | 2.38 | 2.39 | 2.26 | 2.25 | 2.34 | 2.39 |
|    | A7           | 104.8                         | 95.9  | 82.6  | 75.2  | 67.8 | 60.4 | 38.6 | 2.72                          | 2.77 | 2.81 | 2.83 | 2.86 | 2.89 | 2.95 |
|    | A10          | 112.2                         | 104.7 | 92.1  | 85.6  | 79.0 | 72.2 | 40.9 | 2.90                          | 2.94 | 3.06 | 3.08 | 3.17 | 3.21 | 3.27 |
|    | A18          | 135.6                         | 126.2 | 110.8 | 102.8 | 94.7 | 86.4 | 51.2 | 3.14                          | 3.19 | 3.33 | 3.37 | 3.49 | 3.49 | 3.56 |
| 60 | A-20         | –                             | –     | –     | –     | –    | –    | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | –                             | –     | –     | –     | –    | –    | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-10         | –                             | –     | –     | –     | –    | –    | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-7          | 44.5                          | 38.1  | 29.0  | –     | –    | –    | –    | 1.50                          | 1.54 | 1.62 | –    | –    | –    | –    |
|    | A2           | 58.3                          | 52.6  | 37.9  | –     | –    | –    | –    | 2.11                          | 2.19 | 2.20 | –    | –    | –    | –    |
|    | A7           | 68.3                          | 55.2  | 41.1  | –     | –    | –    | –    | 2.51                          | 2.40 | 2.60 | –    | –    | –    | –    |
|    | A10          | 72.2                          | 58.4  | 43.5  | –     | –    | –    | –    | 2.74                          | 2.80 | 2.84 | –    | –    | –    | –    |
|    | A18          | 86.0                          | 69.0  | 50.8  | –     | –    | –    | –    | 3.00                          | 3.09 | 3.13 | –    | –    | –    | –    |

51.2

Table 44

## 7.20 Performance Cooling - AWP75

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |      |      |      |      |      | EER EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|------|------|------|------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |      |      |      |      |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%  | 70%  | 60%  | 50%  | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 5  | A15          | 109.2                         | 99.9  | 90.5 | 83.9 | 77.1 | 70.3 | 57.1 | 4.22                          | 4.33 | 4.45 | 4.55 | 4.65 | 4.75 | 4.96 |
|    | A20          | 108.7                         | 98.8  | 89.7 | 83.3 | 76.6 | 69.9 | 56.7 | 3.82                          | 3.92 | 4.01 | 4.09 | 4.20 | 4.39 | 4.46 |
|    | A25          | 108.1                         | 97.9  | 89.0 | 82.6 | 76.1 | 69.5 | 56.2 | 3.58                          | 3.68 | 3.79 | 3.87 | 4.09 | 4.20 | 4.33 |
|    | A30          | 104.3                         | 95.9  | 87.4 | 81.3 | 75.1 | 68.7 | 55.4 | 3.33                          | 3.45 | 3.56 | 3.65 | 3.73 | 3.81 | 3.87 |
|    | A35          | 100.4                         | 92.4  | 84.3 | 78.3 | 71.2 | 66.0 | 54.8 | 2.93                          | 3.03 | 3.13 | 3.20 | 3.26 | 3.31 | 3.33 |
|    | A40          | 96.4                          | 88.8  | 81.0 | 75.2 | 69.3 | 63.3 | 54.3 | 2.57                          | 2.65 | 2.73 | 2.78 | 2.82 | 2.82 | 2.87 |
|    | A45          | 84.7                          | 77.3  | 71.7 | 66.0 | 60.2 | 54.3 | 52.7 | 2.25                          | 2.32 | 2.37 | 2.39 | 2.40 | 2.44 | 2.45 |
|    | A50          | 64.2                          | 58.5  | 52.7 | 50.0 | –    | –    | –    | 2.19                          | 2.18 | 2.12 | 2.11 | –    | –    | –    |
| 7  | A15          | 116.5                         | 106.5 | 96.4 | 89.2 | 82.1 | 74.8 | 58.2 | 4.52                          | 4.64 | 4.77 | 4.87 | 4.99 | 5.12 | 5.40 |
|    | A20          | 115.8                         | 105.4 | 95.5 | 88.5 | 81.5 | 74.3 | 57.7 | 4.08                          | 4.18 | 4.29 | 4.36 | 4.55 | 4.66 | 4.76 |
|    | A25          | 115.0                         | 104.2 | 94.7 | 87.7 | 80.9 | 73.8 | 57.1 | 3.81                          | 3.92 | 4.03 | 4.12 | 4.37 | 4.47 | 4.62 |
|    | A30          | 111.0                         | 102.0 | 92.9 | 86.3 | 79.7 | 72.9 | 56.5 | 3.53                          | 3.65 | 3.78 | 3.87 | 3.97 | 4.06 | 4.13 |
|    | A35          | 106.7                         | 98.3  | 89.5 | 83.2 | 76.7 | 70.1 | 55.9 | 3.10                          | 3.21 | 3.31 | 3.39 | 3.46 | 3.52 | 3.54 |
|    | A40          | 102.6                         | 94.5  | 86.0 | 80.0 | 73.7 | 67.2 | 55.4 | 2.72                          | 2.81 | 2.89 | 2.94 | 2.99 | 3.00 | 2.98 |
|    | A45          | 90.1                          | 82.2  | 76.3 | 70.2 | 64.0 | 57.7 | 53.7 | 2.38                          | 2.45 | 2.51 | 2.55 | 2.55 | 2.56 | 2.57 |
|    | A50          | 66.1                          | 59.8  | 53.4 | 51.0 | –    | –    | –    | 2.33                          | 2.32 | 2.23 | 2.22 | –    | –    | –    |

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |       |       |       |       |      | EER EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|-------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |       |      | Percentage of compressor load |      |      |      |      |      |      |
| 10 | A15          | 128.0                         | 116.6 | 105.6 | 97.6  | 89.6  | 81.6  | 59.4 | 5.00                          | 5.14 | 5.29 | 5.42 | 5.55 | 5.71 | 5.83 |
|    | A20          | 126.8                         | 115.5 | 104.6 | 96.7  | 88.9  | 81.1  | 58.8 | 4.50                          | 4.61 | 4.72 | 4.81 | 4.90 | 5.00 | 5.20 |
|    | A25          | 125.7                         | 114.1 | 103.5 | 95.8  | 88.1  | 805   | 58.2 | 4.16                          | 4.28 | 4.42 | 4.52 | 4.62 | 4.73 | 4.95 |
|    | A30          | 121.3                         | 111.4 | 101.4 | 94.1  | 86.7  | 79.3  | 57.6 | 3.82                          | 3.96 | 4.11 | 4.22 | 4.33 | 4.45 | 4.55 |
|    | A35          | 116.8                         | 107.4 | 97.7  | 90.7  | 83.7  | 76.4  | 57.1 | 3.35                          | 3.48 | 3.60 | 3.69 | 3.77 | 3.85 | 3.89 |
|    | A40          | 112.3                         | 103.3 | 94.0  | 87.2  | 80.4  | 73.3  | 56.5 | 2.94                          | 3.04 | 3.13 | 3.20 | 3.25 | 3.30 | 3.27 |
|    | A45          | 98.6                          | 89.7  | 83.3  | 76.6  | 69.8  | 62.9  | 54.8 | 2.57                          | 2.65 | 2.72 | 2.76 | 2.70 | 2.76 | 2.78 |
|    | A50          | 67.9                          | 61.1  | 53.8  | 52.1  | —     | —     | —    | 2.51                          | 2.50 | 2.52 | 2.54 | —    | —    | —    |
| 12 | A15          | 131.4                         | 119.8 | 108.2 | 99.9  | 91.6  | 83.3  | 60.6 | 5.08                          | 5.26 | 5.42 | 5.55 | 5.70 | 5.86 | 6.31 |
|    | A20          | 129.9                         | 118.3 | 107.1 | 99.0  | 90.9  | 82.7  | 60.0 | 4.55                          | 4.66 | 4.77 | 4.85 | 4.94 | 5.04 | 5.32 |
|    | A25          | 128.5                         | 116.9 | 105.9 | 98.0  | 90.1  | 82.1  | 59.4 | 4.20                          | 4.33 | 4.47 | 4.57 | 4.67 | 4.78 | 5.05 |
|    | A30          | 124.1                         | 114.0 | 103.6 | 96.1  | 88.5  | 80.9  | 58.8 | 3.85                          | 4.01 | 4.16 | 4.28 | 4.40 | 4.53 | 4.67 |
|    | A35          | 119.6                         | 109.9 | 99.9  | 92.7  | 86.3  | 77.9  | 58.2 | 3.38                          | 3.51 | 3.64 | 3.73 | 3.81 | 3.90 | 3.95 |
|    | A40          | 115.0                         | 105.7 | 96.1  | 89.1  | 82.1  | 74.9  | 57.6 | 2.96                          | 3.06 | 3.16 | 3.22 | 3.29 | 3.34 | 3.33 |
|    | A45          | 104.5                         | 95.0  | 88.1  | 81.1  | 73.9  | 66.5  | 55.9 | 2.59                          | 2.66 | 2.74 | 2.77 | 2.78 | 2.80 | 2.81 |
|    | A50          | 68.6                          | 61.7  | 54.0  | —     | —     | —     | —    | 2.53                          | 2.53 | 2.56 | —    | —    | —    | —    |
| 15 | A15          | 140.7                         | 128.1 | 115.5 | 106.5 | 97.6  | 88.6  | 61.8 | 5.35                          | 5.55 | 5.73 | 5.89 | 6.06 | 6.25 | 6.68 |
|    | A20          | 138.8                         | 126.4 | 114.2 | 105.4 | 96.7  | 87.9  | 61.2 | 4.78                          | 4.90 | 5.03 | 5.13 | 5.23 | 5.34 | 5.68 |
|    | A25          | 136.9                         | 124.7 | 112.9 | 104.3 | 95.8  | 87.2  | 60.6 | 4.37                          | 4.52 | 4.67 | 4.78 | 4.91 | 5.03 | 5.37 |
|    | A30          | 132.3                         | 121.4 | 110.3 | 102.2 | 94.0  | 85.7  | 60.0 | 3.95                          | 4.13 | 4.32 | 4.44 | 4.58 | 4.73 | 4.98 |
|    | A35          | 127.5                         | 117.0 | 106.3 | 98.5  | 90.7  | 82.6  | 59.4 | 3.46                          | 3.60 | 3.75 | 3.85 | 3.95 | 4.05 | 4.16 |
|    | A40          | 122.6                         | 112.6 | 102.4 | 94.8  | 87.2  | 79.5  | 58.8 | 3.03                          | 3.14 | 3.25 | 3.32 | 3.39 | 3.45 | 3.49 |
|    | A45          | 105.8                         | 101.2 | 93.8  | 86.2  | 78.5  | 70.6  | 57.0 | 2.66                          | 2.73 | 2.78 | 2.82 | 2.85 | 2.86 | 2.87 |
|    | A50          | 69.3                          | 62.3  | 54.2  | —     | —     | —     | —    | 2.60                          | 2.60 | 2.63 | —    | —    | —    | —    |
| 18 | A15          | 153.0                         | 139.1 | 125.2 | 115.4 | 105.5 | 95.7  | 63.0 | 5.91                          | 6.10 | 6.31 | 6.49 | 6.69 | 6.93 | 7.01 |
|    | A20          | 150.6                         | 137.2 | 123.7 | 114.1 | 104.5 | 94.9  | 62.4 | 5.09                          | 5.20 | 5.32 | 5.40 | 5.49 | 5.59 | 5.91 |
|    | A25          | 148.2                         | 135.2 | 122.2 | 112.8 | 103.5 | 94.1  | 61.8 | 4.66                          | 4.82 | 4.99 | 5.11 | 5.24 | 5.38 | 5.75 |
|    | A30          | 143.2                         | 131.3 | 119.2 | 110.3 | 101.4 | 92.4  | 61.2 | 4.24                          | 4.44 | 4.66 | 4.81 | 4.98 | 5.17 | 5.52 |
|    | A35          | 138.7                         | 126.6 | 115.0 | 106.4 | 97.8  | 89.1  | 60.6 | 3.73                          | 3.87 | 4.03 | 4.15 | 4.27 | 4.39 | 4.55 |
|    | A40          | 132.9                         | 122.0 | 110.7 | 102.5 | 94.2  | 85.7  | 59.9 | 3.23                          | 3.36 | 3.48 | 3.57 | 3.65 | 3.72 | 3.74 |
|    | A45          | 106.4                         | 102.2 | 94.7  | 87.0  | 79.3  | 71.3  | —    | 2.95                          | 3.03 | 3.06 | 3.08 | 3.10 | 3.11 | —    |
|    | A50          | 70.0                          | 63.0  | —     | —     | —     | —     | —    | 2.77                          | 2.78 | —    | —    | —    | —    | —    |
| 20 | A15          | 161.5                         | 146.7 | 131.9 | 121.4 | 111.0 | 100.6 | 64.3 | 6.20                          | 6.35 | 6.50 | 6.64 | 6.83 | 7.05 | 7.20 |
|    | A20          | 158.7                         | 144.5 | 130.2 | 120.0 | 109.8 | 99.6  | 63.7 | 5.42                          | 5.54 | 5.68 | 5.78 | 5.88 | 6.00 | 6.40 |
|    | A25          | 155.8                         | 142.3 | 128.5 | 118.6 | 108.7 | 98.7  | 63.0 | 4.92                          | 5.10 | 5.29 | 5.43 | 5.57 | 5.74 | 6.19 |
|    | A30          | 150.7                         | 138.0 | 125.2 | 115.9 | 106.4 | 96.9  | 62.4 | 4.43                          | 4.66 | 4.90 | 5.08 | 5.26 | 5.47 | 5.89 |
|    | A35          | 145.3                         | 133.2 | 120.8 | 111.8 | 102.7 | 93.5  | 61.8 | 3.87                          | 4.04 | 4.22 | 4.36 | 4.49 | 4.63 | 4.81 |
|    | A40          | 139.9                         | 128.3 | 116.4 | 107.7 | 98.9  | 89.9  | 61.1 | 3.37                          | 3.51 | 3.64 | 3.73 | 3.82 | 3.91 | 3.99 |
|    | A45          | 107.9                         | 103.3 | 95.7  | 87.9  | 80.1  | 72.0  | —    | 3.14                          | 3.18 | 3.20 | 3.23 | 3.24 | 3.25 | —    |
|    | A50          | 70.7                          | 63.6  | —     | —     | —     | —     | —    | 2.90                          | 2.92 | —    | —    | —    | —    | —    |

Table 45

## 7.21 Performance Heating - AWP89

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |       |       |       |       |      | COP EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|-------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |       |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%   | 70%   | 60%   | 50%   | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 25 | A-20         | 62.6                          | 55.7  | 51.1  | 46.7  | 40.5  | 33.8  | 16.8 | 1.94                          | 1.96 | 1.96 | 1.97 | 1.98 | 1.99 | 2.03 |
|    | A-15         | 75.7                          | 67.9  | 63.5  | 58.8  | 51.9  | 44.2  | 24.9 | 2.15                          | 2.18 | 2.17 | 2.18 | 2.19 | 2.20 | 2.24 |
|    | A-10         | 80.3                          | 72.5  | 68.3  | 63.6  | 56.4  | 48.3  | 28.4 | 2.45                          | 2.51 | 2.52 | 2.55 | 2.57 | 2.59 | 2.64 |
|    | A-7          | 89.2                          | 80.7  | 76.4  | 71.2  | 63.2  | 54.3  | 31.8 | 2.85                          | 2.76 | 2.79 | 2.82 | 2.86 | 2.88 | 2.93 |
|    | A2           | 110.0                         | 99.6  | 94.4  | 87.9  | 78.2  | 67.0  | 38.7 | 3.45                          | 3.29 | 3.33 | 3.38 | 3.43 | 3.48 | 3.54 |
|    | A7           | 130.0                         | 120.1 | 113.9 | 106.2 | 94.5  | 81.1  | 46.0 | 4.40                          | 4.13 | 4.20 | 4.29 | 4.43 | 4.56 | 4.65 |
|    | A10          | 139.9                         | 129.3 | 122.7 | 114.4 | 101.8 | 87.2  | 48.8 | 4.70                          | 4.42 | 4.51 | 4.62 | 4.77 | 4.93 | 5.03 |
|    | A18          | 171.8                         | 158.5 | 150.1 | 139.8 | 124.0 | 105.8 | 57.6 | 5.50                          | 5.36 | 5.49 | 5.65 | 5.90 | 6.17 | 6.29 |

| To | Tae<br>DB/WB | Heating capacity EN14511      |       |       |       |       |       |      | COP EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|-------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |       |      | Percentage of compressor load |      |      |      |      |      |      |
| 30 | A-20         | 61.5                          | 54.7  | 50.2  | 45.8  | 39.8  | 33.2  | 16.3 | 1.89                          | 1.92 | 1.93 | 1.94 | 1.95 | 1.97 | 2.01 |
|    | A-15         | 74.3                          | 66.7  | 62.3  | 57.7  | 50.9  | 43.4  | 24.4 | 2.07                          | 2.08 | 2.07 | 2.08 | 2.09 | 2.09 | 2.14 |
|    | A-10         | 78.8                          | 71.1  | 67.1  | 62.4  | 55.3  | 47.4  | 27.8 | 2.37                          | 2.39 | 2.41 | 2.43 | 2.45 | 2.47 | 2.52 |
|    | A-7          | 87.5                          | 79.2  | 74.9  | 69.9  | 62.1  | 53.3  | 31.2 | 2.76                          | 2.64 | 2.66 | 2.68 | 2.70 | 2.70 | 2.76 |
|    | A2           | 109.0                         | 98.7  | 93.5  | 87.1  | 77.4  | 66.4  | 38.0 | 3.34                          | 3.26 | 3.30 | 3.35 | 3.41 | 3.44 | 3.51 |
|    | A7           | 129.9                         | 120.1 | 113.8 | 106.2 | 94.5  | 81.1  | 44.8 | 4.22                          | 4.12 | 4.20 | 4.29 | 4.42 | 4.56 | 4.65 |
|    | A10          | 135.3                         | 125.1 | 118.7 | 110.7 | 98.5  | 84.4  | 47.6 | 4.40                          | 4.32 | 4.41 | 4.52 | 4.67 | 4.82 | 4.92 |
|    | A18          | 165.8                         | 153.0 | 144.9 | 134.9 | 119.6 | 102.1 | 56.3 | 5.03                          | 5.11 | 5.27 | 5.40 | 5.59 | 5.77 | 5.88 |
| 35 | A-20         | 60.0                          | 53.4  | 49.0  | 44.7  | 38.8  | 32.4  | 16.0 | 1.85                          | 1.88 | 1.90 | 1.91 | 1.92 | 1.94 | 1.98 |
|    | A-15         | 68.7                          | 61.7  | 57.6  | 53.4  | 47.1  | 40.1  | 24.2 | 2.00                          | 1.98 | 1.97 | 1.98 | 1.99 | 1.99 | 2.03 |
|    | A-10         | 72.9                          | 65.8  | 62.0  | 57.7  | 51.2  | 43.9  | 27.5 | 2.29                          | 2.28 | 2.29 | 2.31 | 2.34 | 2.35 | 2.40 |
|    | A-7          | 85.8                          | 77.6  | 73.5  | 68.5  | 60.8  | 52.2  | 30.7 | 2.66                          | 2.52 | 2.54 | 2.54 | 2.54 | 2.53 | 2.58 |
|    | A2           | 108.0                         | 97.8  | 92.7  | 86.3  | 76.7  | 65.8  | 37.2 | 3.22                          | 3.23 | 3.27 | 3.32 | 3.39 | 3.40 | 3.44 |
|    | A7           | 129.7                         | 119.9 | 113.6 | 106.0 | 94.3  | 81.0  | 43.9 | 4.03                          | 4.12 | 4.19 | 4.28 | 4.42 | 4.55 | 4.64 |
|    | A10          | 133.8                         | 123.7 | 117.4 | 109.5 | 97.4  | 83.5  | 46.7 | 4.09                          | 4.23 | 4.31 | 4.42 | 4.56 | 4.72 | 4.81 |
|    | A18          | 164.0                         | 151.3 | 143.3 | 133.5 | 118.4 | 101.0 | 55.2 | 4.57                          | 4.85 | 5.04 | 5.14 | 5.29 | 5.36 | 5.47 |
| 40 | A-20         | 58.9                          | 52.4  | 48.1  | 43.9  | 38.1  | 31.8  | 15.6 | 1.83                          | 1.86 | 1.87 | 1.89 | 1.90 | 1.92 | 1.96 |
|    | A-15         | 66.4                          | 59.5  | 55.6  | 51.5  | 45.5  | 38.7  | 23.5 | 1.92                          | 1.95 | 1.95 | 1.94 | 1.96 | 1.96 | 2.00 |
|    | A-10         | 72.6                          | 65.6  | 61.8  | 57.5  | 51.0  | 43.7  | 26.7 | 2.08                          | 2.15 | 2.15 | 2.16 | 2.18 | 2.22 | 2.26 |
|    | A-7          | 81.7                          | 73.9  | 69.9  | 65.2  | 57.9  | 49.7  | 29.8 | 2.34                          | 2.26 | 2.28 | 2.29 | 2.29 | 2.30 | 2.34 |
|    | A2           | 107.5                         | 97.4  | 92.2  | 85.9  | 76.4  | 65.5  | 37.0 | 3.12                          | 3.15 | 3.17 | 3.19 | 3.23 | 3.28 | 3.34 |
|    | A7           | 128.7                         | 118.9 | 112.7 | 105.2 | 93.6  | 80.3  | 43.8 | 3.67                          | 3.77 | 3.83 | 3.92 | 4.00 | 4.10 | 4.18 |
|    | A10          | 133.4                         | 123.3 | 117.0 | 109.1 | 97.1  | 83.2  | 45.2 | 3.83                          | 3.88 | 3.96 | 4.05 | 4.24 | 4.38 | 4.46 |
|    | A18          | 162.5                         | 150.0 | 142.0 | 132.3 | 117.3 | 100.1 | 53.4 | 4.30                          | 4.41 | 4.54 | 4.63 | 4.76 | 4.88 | 4.98 |
| 45 | A-20         | 57.9                          | 51.5  | 47.2  | 43.1  | 37.4  | 31.2  | 15.4 | 1.81                          | 1.84 | 1.84 | 1.89 | 1.90 | 1.92 | 1.96 |
|    | A-15         | 64.0                          | 57.4  | 53.7  | 49.7  | 43.9  | 37.4  | 23.2 | 1.84                          | 1.93 | 1.93 | 1.90 | 1.92 | 1.93 | 1.97 |
|    | A-10         | 72.3                          | 65.3  | 61.6  | 57.3  | 50.8  | 43.5  | 24.7 | 1.87                          | 2.02 | 2.01 | 2.01 | 2.03 | 2.09 | 2.13 |
|    | A-7          | 77.6                          | 70.2  | 66.4  | 61.9  | 55.0  | 47.2  | 27.0 | 2.01                          | 2.01 | 2.03 | 2.05 | 2.04 | 2.07 | 2.11 |
|    | A2           | 107.0                         | 96.9  | 91.8  | 85.5  | 76.0  | 65.2  | 36.5 | 3.03                          | 3.06 | 3.07 | 3.07 | 3.07 | 3.15 | 3.22 |
|    | A7           | 127.7                         | 118.0 | 111.9 | 104.4 | 92.9  | 79.7  | 42.1 | 3.31                          | 3.42 | 3.48 | 3.55 | 3.58 | 3.65 | 3.72 |
|    | A10          | 133.0                         | 123.0 | 116.7 | 108.8 | 96.8  | 83.0  | 44.8 | 3.56                          | 3.53 | 3.61 | 3.68 | 3.92 | 4.04 | 4.12 |
|    | A18          | 161.0                         | 148.6 | 140.7 | 131.0 | 116.2 | 99.2  | 52.7 | 3.74                          | 3.97 | 4.05 | 4.12 | 4.23 | 4.39 | 4.48 |
| 50 | A-20         | –                             | –     | –     | –     | –     | –     | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | 63.0                          | 56.5  | 52.8  | 48.9  | 43.2  | 36.8  | 22.9 | 1.70                          | 1.71 | 1.72 | 1.72 | 1.74 | 1.75 | 1.79 |
|    | A-10         | 72.0                          | 65.0  | 61.3  | 57.0  | 50.5  | 43.3  | 24.3 | 1.73                          | 1.74 | 1.75 | 1.75 | 1.77 | 1.78 | 1.82 |
|    | A-7          | 76.8                          | 69.4  | 65.7  | 61.2  | 54.4  | 46.7  | 24.6 | 1.76                          | 1.82 | 1.83 | 1.80 | 1.81 | 1.82 | 1.85 |
|    | A2           | 104.5                         | 94.7  | 89.6  | 83.5  | 74.3  | 63.7  | 34.3 | 2.44                          | 2.46 | 2.49 | 2.46 | 2.47 | 2.45 | 2.50 |
|    | A7           | 127.3                         | 117.6 | 111.5 | 104.0 | 92.5  | 79.4  | 39.6 | 2.89                          | 2.95 | 3.01 | 2.99 | 3.06 | 3.10 | 3.17 |
|    | A10          | 131.0                         | 121.1 | 114.9 | 107.2 | 95.3  | 81.7  | 41.9 | 3.08                          | 3.22 | 3.29 | 3.29 | 3.42 | 3.51 | 3.58 |
|    | A18          | 158.0                         | 145.8 | 138.1 | 128.6 | 114.0 | 97.3  | 52.2 | 3.35                          | 3.53 | 3.60 | 3.60 | 3.77 | 3.91 | 3.98 |
| 55 | A-20         | –                             | –     | –     | –     | –     | –     | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | 62.0                          | 55.6  | 52.0  | 48.1  | 42.5  | 36.2  | 22.5 | 1.33                          | 1.35 | 1.37 | 1.39 | 1.42 | 1.43 | 1.46 |
|    | A-10         | 71.7                          | 64.7  | 61.0  | 56.8  | 50.3  | 43.2  | 23.8 | 1.49                          | 1.50 | 1.52 | 1.54 | 1.55 | 1.55 | 1.58 |
|    | A-7          | 75.9                          | 68.7  | 65.0  | 60.6  | 53.8  | 46.2  | 24.1 | 1.66                          | 1.65 | 1.67 | 1.68 | 1.68 | 1.66 | 1.70 |
|    | A2           | 102.0                         | 92.4  | 87.5  | 81.5  | 72.5  | 62.2  | 33.8 | 2.08                          | 2.09 | 2.11 | 2.13 | 2.14 | 2.13 | 2.17 |
|    | A7           | 126.8                         | 117.2 | 111.1 | 103.6 | 92.2  | 79.1  | 39.1 | 2.60                          | 2.65 | 2.69 | 2.73 | 2.78 | 2.80 | 2.85 |
|    | A10          | 129.0                         | 119.3 | 113.1 | 105.5 | 93.9  | 80.5  | 41.4 | 2.63                          | 2.69 | 2.72 | 2.76 | 2.90 | 2.94 | 3.00 |
|    | A18          | 155.0                         | 143.0 | 135.5 | 126.2 | 111.9 | 95.5  | 51.7 | 3.12                          | 3.18 | 3.32 | 3.35 | 3.47 | 3.48 | 3.55 |
| 60 | A-20         | –                             | –     | –     | –     | –     | –     | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-15         | –                             | –     | –     | –     | –     | –     | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-10         | –                             | –     | –     | –     | –     | –     | –    | –                             | –    | –    | –    | –    | –    | –    |
|    | A-7          | 47.1                          | 39.1  | 29.2  | –     | –     | –     | –    | 1.47                          | 1.51 | 1.59 | –    | –    | –    | –    |
|    | A2           | 67.8                          | 55.9  | 38.1  | –     | –     | –     | –    | 2.09                          | 2.11 | 2.15 | –    | –    | –    | –    |
|    | A7           | 79.0                          | 65.4  | 43.5  | –     | –     | –     | –    | 2.49                          | 2.39 | 2.59 | –    | –    | –    | –    |
|    | A10          | 83.6                          | 69.2  | 46.0  | –     | –     | –     | –    | 2.71                          | 2.75 | 2.80 | –    | –    | –    | –    |
|    | A18          | 99.7                          | 82.1  | 53.7  | –     | –     | –     | –    | 2.99                          | 3.03 | 3.08 | –    | –    | –    | –    |

155.0

Table 46

## 7.22 Performance Cooling - AWP89

| To | Tae<br>DB/WB | Cooling capacity EN14511      |       |       |       |       |       |      | EER EN14511                   |      |      |      |      |      |      |
|----|--------------|-------------------------------|-------|-------|-------|-------|-------|------|-------------------------------|------|------|------|------|------|------|
|    |              | Percentage of compressor load |       |       |       |       |       |      | Percentage of compressor load |      |      |      |      |      |      |
| °C | °C           | 100%                          | 90%   | 80%   | 70%   | 60%   | 50%   | Min. | 100%                          | 90%  | 80%  | 70%  | 60%  | 50%  | Min. |
| 5  | A15          | 122.8                         | 112.8 | 105.2 | 96.2  | 82.0  | 77.0  | 63.3 | 3.91                          | 4.05 | 4.13 | 4.24 | 4.46 | 4.56 | 4.78 |
|    | A20          | 121.5                         | 112.0 | 104.7 | 96.0  | 81.6  | 76.0  | 62.8 | 3.61                          | 3.67 | 3.75 | 3.84 | 4.01 | 4.08 | 4.22 |
|    | A25          | 120.3                         | 111.2 | 104.2 | 95.8  | 81.3  | 75.0  | 62.4 | 3.43                          | 3.57 | 3.69 | 3.82 | 3.88 | 4.00 | 4.14 |
|    | A30          | 116.0                         | 107.2 | 100.4 | 92.4  | 78.4  | 72.3  | 60.0 | 3.04                          | 3.17 | 3.26 | 3.38 | 3.58 | 3.66 | 3.81 |
|    | A35          | 111.5                         | 103.1 | 96.7  | 89.0  | 75.5  | 69.6  | 57.5 | 2.68                          | 2.79 | 2.88 | 2.97 | 3.13 | 3.19 | 3.29 |
|    | A40          | 99.0                          | 92.9  | 85.5  | 77.5  | 71.4  | 65.2  | 56.5 | 2.45                          | 2.52 | 2.60 | 2.72 | 2.76 | 2.81 | 2.74 |
|    | A45          | 89.1                          | 82.1  | 76.1  | 70.1  | 63.9  | 57.6  | 54.8 | 2.21                          | 2.27 | 2.36 | 2.38 | 2.39 | 2.23 | 2.40 |
|    | A50          | 65.5                          | 59.7  | 53.8  | 51.0  | –     | –     | –    | 2.17                          | 2.16 | 2.02 | 1.99 | –    | –    | –    |
| 7  | A15          | 131.2                         | 120.5 | 112.3 | 102.6 | 87.8  | 81.0  | 67.1 | 4.20                          | 4.33 | 4.43 | 4.55 | 4.78 | 4.90 | 5.15 |
|    | A20          | 129.6                         | 119.4 | 111.5 | 102.2 | 87.0  | 80.3  | 66.6 | 3.88                          | 3.92 | 4.00 | 4.10 | 4.28 | 4.36 | 4.52 |
|    | A25          | 128.1                         | 118.3 | 110.8 | 101.8 | 86.2  | 79.6  | 66.1 | 3.62                          | 3.78 | 3.90 | 4.05 | 4.15 | 4.23 | 4.40 |
|    | A30          | 123.4                         | 114.1 | 106.9 | 98.3  | 83.1  | 76.8  | 63.6 | 3.20                          | 3.35 | 3.46 | 3.58 | 3.80 | 3.89 | 4.06 |
|    | A35          | 116.4                         | 109.8 | 102.9 | 94.7  | 80.2  | 73.9  | 61.1 | 2.89                          | 2.95 | 3.04 | 3.15 | 3.32 | 3.39 | 3.50 |
|    | A40          | 105.4                         | 98.9  | 91.0  | 82.0  | 75.5  | 68.9  | 56.8 | 2.59                          | 2.67 | 2.75 | 2.89 | 2.93 | 2.99 | 2.92 |
|    | A45          | 94.8                          | 87.3  | 78.2  | 71.9  | 65.6  | 59.1  | 55.1 | 2.33                          | 2.40 | 2.50 | 2.52 | 2.54 | 2.55 | 2.56 |
|    | A50          | 66.2                          | 61.3  | 54.7  | 52.3  | –     | –     | –    | 2.30                          | 2.29 | 2.09 | 2.05 | –    | –    | –    |
| 10 | A15          | 144.4                         | 132.5 | 123.3 | 112.5 | 94.0  | 88.0  | 73.0 | 4.63                          | 4.77 | 4.90 | 5.04 | 5.31 | 5.44 | 5.77 |
|    | A20          | 142.3                         | 130.9 | 122.2 | 111.9 | 94.0  | 87.3  | 72.4 | 4.27                          | 4.32 | 4.41 | 4.52 | 4.71 | 4.80 | 4.99 |
|    | A25          | 140.1                         | 129.3 | 121.1 | 111.2 | 93.9  | 86.6  | 71.8 | 3.91                          | 4.09 | 4.24 | 4.41 | 4.55 | 4.61 | 4.88 |
|    | A30          | 135.1                         | 124.8 | 116.9 | 107.3 | 90.7  | 83.5  | 69.1 | 3.45                          | 3.62 | 3.74 | 3.88 | 4.14 | 4.25 | 4.47 |
|    | A35          | 129.0                         | 120.1 | 112.5 | 103.5 | 87.4  | 80.6  | 66.5 | 3.04                          | 3.18 | 3.29 | 3.41 | 3.61 | 3.70 | 3.84 |
|    | A40          | 115.4                         | 102.8 | 99.5  | 89.4  | 82.4  | 75.1  | 57.9 | 2.79                          | 2.88 | 2.98 | 3.13 | 3.19 | 3.27 | 3.23 |
|    | A45          | 101.0                         | 92.0  | 85.4  | 78.6  | 71.6  | 64.4  | 56.2 | 2.52                          | 2.60 | 2.67 | 2.71 | 2.61 | 2.70 | 2.72 |
|    | A50          | 69.6                          | 62.6  | 55.1  | 53.4  | –     | –     | –    | 2.46                          | 2.45 | 2.47 | 2.49 | –    | –    | –    |
| 12 | A15          | 154.0                         | 140.8 | 131.0 | 119.4 | 99.6  | 93.3  | 76.5 | 4.95                          | 5.09 | 5.20 | 5.39 | 5.69 | 5.84 | 6.21 |
|    | A20          | 151.2                         | 138.9 | 129.6 | 118.5 | 99.4  | 92.4  | 76.1 | 4.45                          | 4.57 | 4.66 | 4.77 | 4.80 | 5.00 | 5.26 |
|    | A25          | 148.5                         | 137.0 | 128.2 | 117.7 | 99.3  | 91.4  | 75.7 | 4.10                          | 4.31 | 4.47 | 4.50 | 4.65 | 4.70 | 4.93 |
|    | A30          | 143.2                         | 132.2 | 123.8 | 113.7 | 95.8  | 88.3  | 73.0 | 3.62                          | 3.80 | 3.94 | 4.11 | 4.38 | 4.51 | 4.60 |
|    | A35          | 137.7                         | 127.3 | 119.2 | 109.6 | 92.4  | 85.1  | 70.2 | 3.19                          | 3.34 | 3.46 | 3.59 | 3.73 | 3.81 | 3.89 |
|    | A40          | 122.3                         | 114.6 | 105.4 | 91.4  | 84.1  | 76.7  | 59.1 | 2.93                          | 3.03 | 3.14 | 3.16 | 3.22 | 3.27 | 3.30 |
|    | A45          | 107.1                         | 97.4  | 90.3  | 83.2  | 75.7  | 68.1  | 57.3 | 2.54                          | 2.61 | 2.69 | 2.71 | 2.72 | 2.74 | 2.75 |
|    | A50          | 70.3                          | 63.3  | 55.3  | –     | –     | –     | –    | 2.48                          | 2.48 | 2.51 | –    | –    | –    | –    |
| 15 | A15          | 165.3                         | 151.0 | 140.2 | 127.7 | 106.2 | 97.3  | 82.1 | 5.20                          | 5.35 | 5.48 | 5.69 | 6.03 | 6.20 | 6.66 |
|    | A20          | 161.9                         | 148.5 | 138.4 | 126.4 | 105.8 | 97.2  | 81.1 | 4.67                          | 4.80 | 4.90 | 5.02 | 5.15 | 5.27 | 5.61 |
|    | A25          | 158.4                         | 146.0 | 136.5 | 125.2 | 105.4 | 97.0  | 80.1 | 4.20                          | 4.43 | 4.60 | 4.70 | 4.79 | 4.86 | 5.12 |
|    | A30          | 152.8                         | 141.0 | 131.9 | 121.0 | 101.9 | 93.7  | 77.3 | 3.70                          | 3.90 | 4.05 | 4.23 | 4.55 | 4.69 | 4.95 |
|    | A35          | 147.0                         | 135.8 | 127.1 | 116.7 | 98.3  | 90.4  | 74.4 | 3.26                          | 3.42 | 3.55 | 3.69 | 3.94 | 4.05 | 4.10 |
|    | A40          | 130.6                         | 122.3 | 112.3 | 97.2  | 89.4  | 81.5  | 60.2 | 3.00                          | 3.10 | 3.22 | 3.26 | 3.36 | 3.44 | 3.48 |
|    | A45          | 107.5                         | 103.8 | 96.1  | 88.3  | 80.5  | 72.4  | 58.4 | 2.60                          | 2.68 | 2.73 | 2.76 | 2.79 | 2.81 | 2.81 |
|    | A50          | 71.0                          | 63.9  | 55.5  | –     | –     | –     | –    | 2.55                          | 2.55 | 2.57 | –    | –    | –    | –    |
| 18 | A15          | 180.4                         | 164.5 | 152.6 | 138.7 | 115.0 | 105.2 | 87.0 | 5.72                          | 5.89 | 6.06 | 6.25 | 6.50 | 6.72 | 6.91 |
|    | A20          | 176.1                         | 160.6 | 149.0 | 137.0 | 114.4 | 104.9 | 86.6 | 5.00                          | 5.12 | 5.21 | 5.33 | 5.38 | 5.48 | 5.82 |
|    | A25          | 171.9                         | 158.1 | 147.7 | 135.4 | 113.7 | 104.6 | 86.1 | 4.51                          | 4.75 | 4.96 | 5.01 | 5.13 | 5.27 | 5.64 |
|    | A30          | 165.7                         | 152.7 | 142.8 | 130.9 | 110.0 | 101.1 | 83.1 | 3.96                          | 4.17 | 4.34 | 4.55 | 4.93 | 5.11 | 5.50 |
|    | A35          | 160.7                         | 147.2 | 137.7 | 126.3 | 106.1 | 97.5  | 80.1 | 3.49                          | 3.66 | 3.79 | 3.96 | 4.25 | 4.38 | 4.50 |
|    | A40          | 141.6                         | 125.0 | 113.5 | 105.1 | 96.5  | 87.8  | 61.4 | 3.20                          | 3.31 | 3.44 | 3.50 | 3.58 | 3.65 | 3.67 |
|    | A45          | 110.0                         | 104.8 | 97.1  | 89.2  | 81.3  | 73.1  | –    | 2.89                          | 2.97 | 3.00 | 3.02 | 3.03 | 3.04 | –    |
|    | A50          | 71.8                          | 64.5  | –     | –     | –     | –     | –    | 2.72                          | 2.73 | –    | –    | –    | –    | –    |
| 20 | A15          | 190.8                         | 173.8 | 161.0 | 146.2 | 121.1 | 110.6 | 92.0 | 6.03                          | 6.21 | 6.35 | 6.47 | 6.65 | 6.80 | 7.00 |
|    | A20          | 186.3                         | 169.7 | 157.3 | 144.3 | 120.2 | 110.2 | 91.1 | 5.32                          | 5.45 | 5.55 | 5.68 | 5.77 | 5.88 | 6.27 |
|    | A25          | 180.9                         | 166.4 | 155.4 | 142.3 | 119.4 | 109.7 | 90.2 | 4.69                          | 4.97 | 5.19 | 5.34 | 5.50 | 5.62 | 6.07 |
|    | A30          | 174.5                         | 160.8 | 150.2 | 137.6 | 115.5 | 106.1 | 87.1 | 4.12                          | 4.35 | 4.54 | 4.77 | 5.21 | 5.39 | 5.85 |
|    | A35          | 168.1                         | 155.0 | 144.9 | 132.8 | 111.5 | 102.4 | 83.9 | 3.61                          | 3.81 | 3.96 | 4.14 | 4.46 | 4.60 | 4.73 |
|    | A40          | 145.0                         | 131.5 | 119.3 | 110.4 | 101.4 | 92.2  | 62.7 | 3.30                          | 3.42 | 3.57 | 3.66 | 3.71 | 3.85 | 3.92 |
|    | A45          | 113.0                         | 105.9 | 98.1  | 90.1  | 82.1  | 73.8  | –    | 3.07                          | 3.11 | 3.14 | 3.17 | 3.18 | 3.19 | –    |
|    | A50          | 73.0                          | 65.2  | –     | –     | –     | –     | –    | 2.84                          | 2.86 | –    | –    | –    | –    | –    |

Table 47





