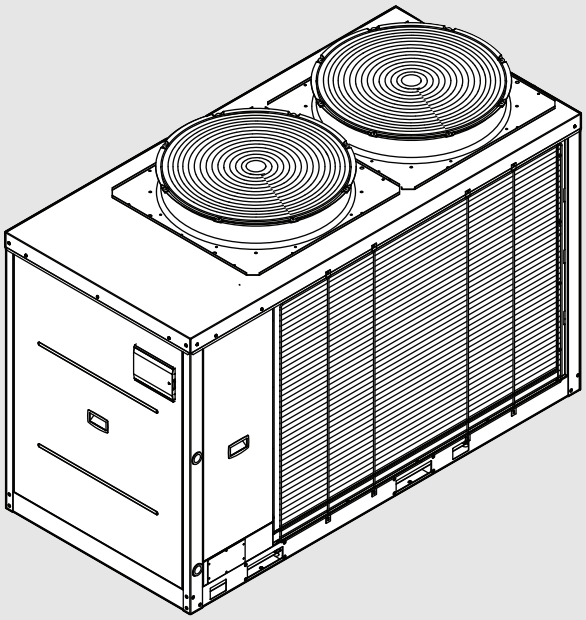
BOSCH

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.
Heating mode	44°C	-20°C
Domestic hot water mode	44°C	-20°C
Cooling mode	48°C	-10°C

Water temperature production	Max.	Min.
Heating mode	60°C	25°C
Domestic hot water mode	60°C	25°C
Cooling mode	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 multiples 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)[3]	Unit in storage (unit not fed)
		Cooling[1]	Heating[2]		
+11°C	[1]	Possible	Possible	Possible	Possible[4]
+2°C	[2]				
-5°C	[4]				
-7°C	[3]				
-10°C	[4]				
From -10°C to -15°C		Not possible		• Water empty unit or with an appropriate glycol percentage	Not possible
From -15°C to -20°C					
From -20°C to -30°C			Not possible	• Water empty unit or with an appropriate glycol percentage • Suitable for pumps with inverter regulation on board	

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.

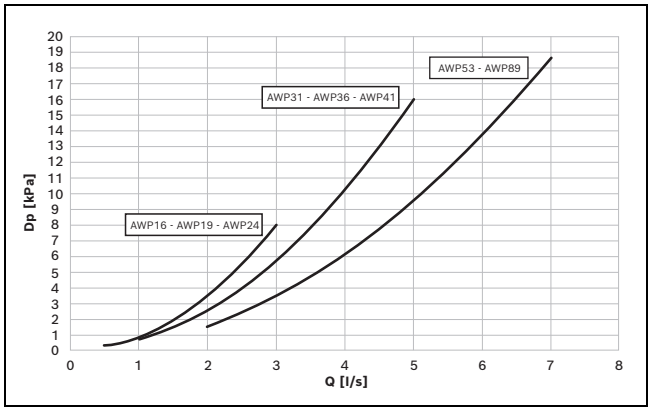


Fig. 1

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 AWP41The 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.

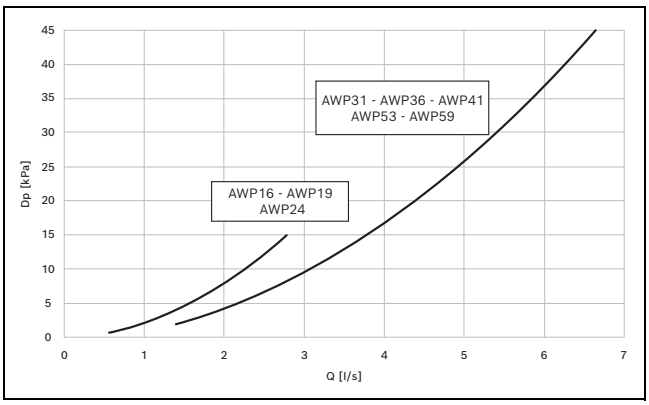


Fig. 2

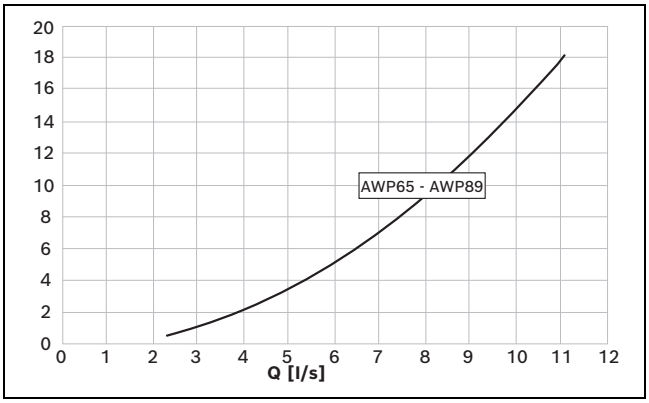


Fig. 3

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 (Ta < +5°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.

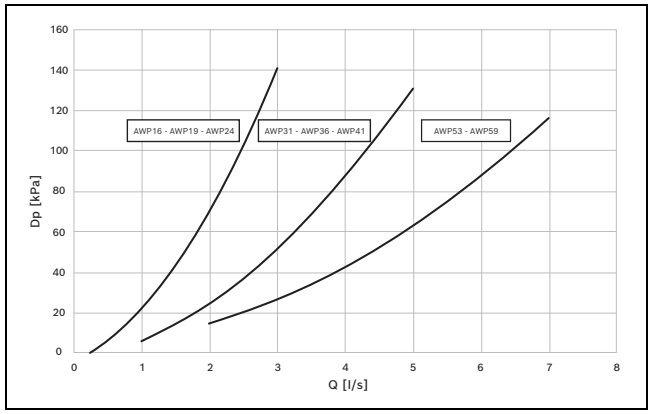


Fig. 4

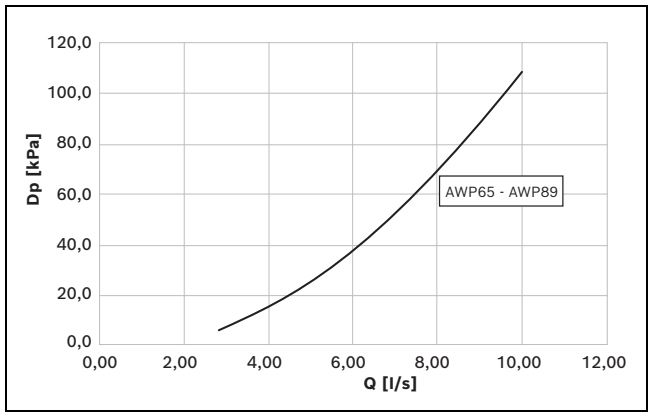


Fig. 5 Internal exchanger pressure drop curves

The pressure drops on the water side are calculated by considering an average water temperature at 7°C.

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

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

Q [l/s] = kWf/(4,186 x 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[1)]

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 11/2”.

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”.

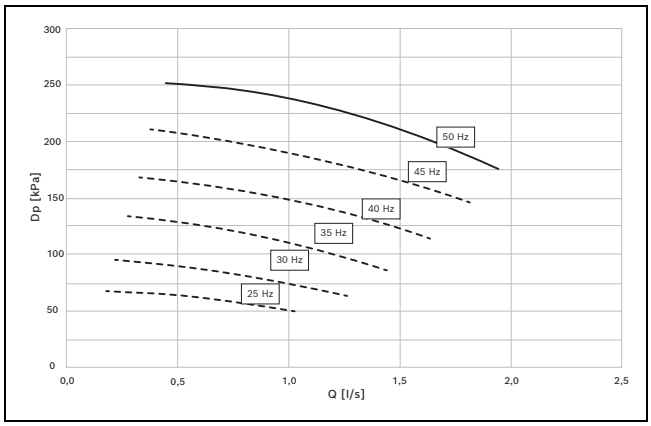


Fig. 6 Pump available pressure curves for sizes AWP16AWP19AWP24

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

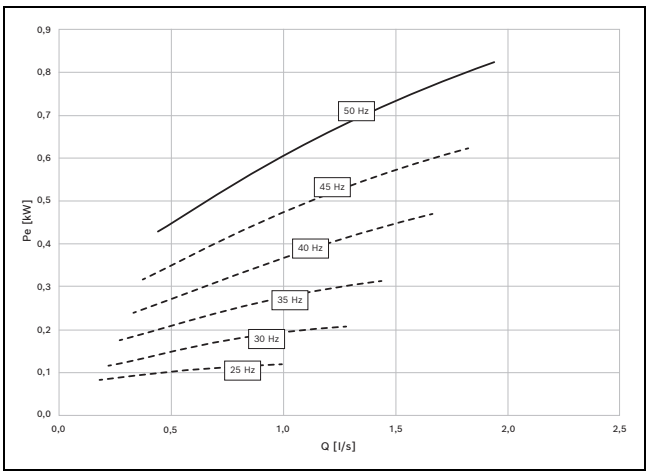


Fig. 7 Pump absorption curves for sizes AWP16 – AWP19AWP24

- 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

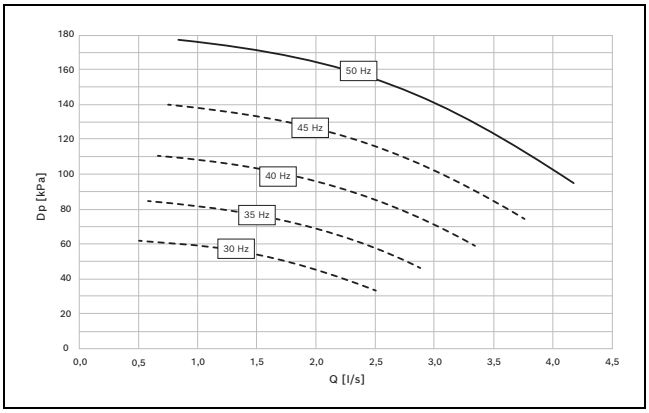


Fig. 8 Pump available pressure curves for sizes AWP31 – AWP36AWP41

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

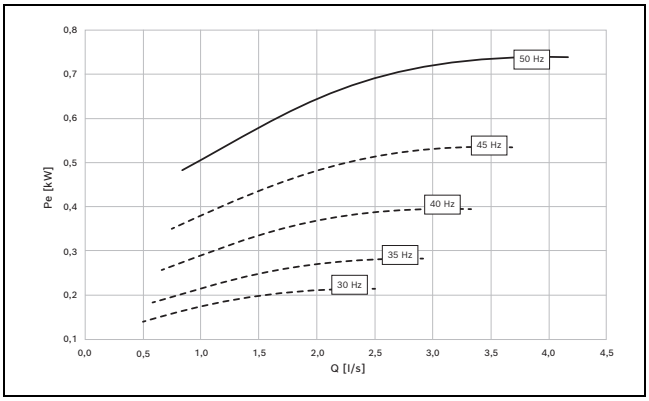


Fig. 9 Pump available pressure for sizes AWP31 – AWP36AWP41

- 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

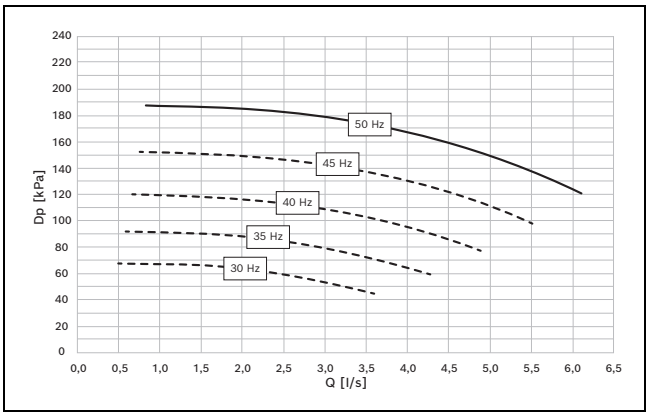


Fig. 10 Pump available pressure curves for sizes AWP53 – AWP59

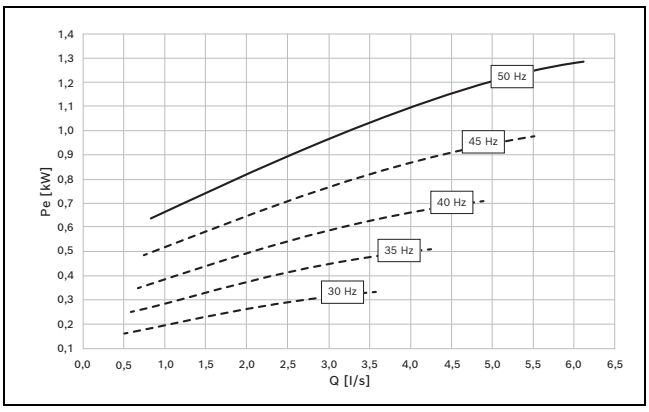


Fig. 11 Pump absorption curves for sizes AWP53 – AWP59

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)

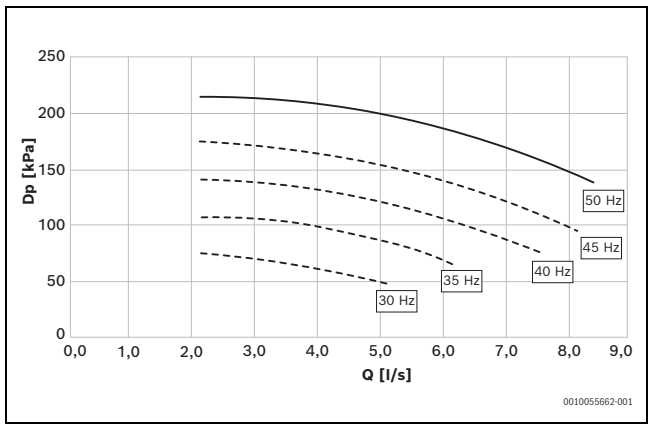


Fig. 12 Pressure curve for sizes AWP65 – AWP75 – AWP89

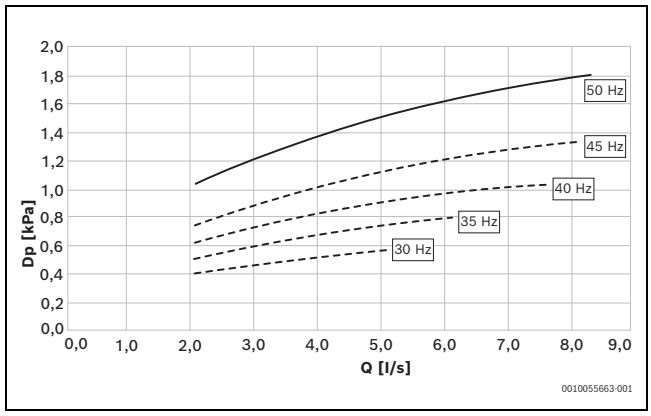


Fig. 13 Absorption curve for sizes AWP65 – AWP75 – AWP89

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
Panel Heating													
Heating													
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
Cooling													
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
Fan Coils													
Heating													
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
Cooling													
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
Radiators													
Heating													

SIZE			AWP16	AWP19	AWP24	AWP31	AWP36	AWP41	AWP53	AWP59	AWP65	AWP75	AWP89
Max. Heating capacity (EN 14511:2018)	12	kW	23.06	27.70	32.64	46.50	51.91	56.69	75.56	85.90	96.20	105.00	127.00
COP (EN 14511:2018)	2		2.55	2.41	2.33	2.70	2.68	2.70	2.53	2.45	2.78	2.70	2.60
Max. Heating capacity (EN 14511:2018)	15	kW	16.6	17.3	15.1	28.8	31.0	33.4	48.5	51.0	59.0	64.0	76.0
COP (EN 14511:2018)	2		1.97	1.75	1.87	1.77	1.78	1.73	1.59	1.45	1.72	1.70	1.65
ErP Space Heating Energy Class - AVERAGE climate - W55			A++	A++	A+	A++	A++	A+	A++	A+	–	–	–
SCOP - MEDIUM climate - W55	9		3.24	3.22	3.18	3.24	3.19	3.16	3.20	3.16	3.42	3.38	3.36
ns,h - MEDIUM climate - W55	10	%	127	126	124	126	125	124	125	123	134	132	131
SCOP - COLD climate - W55	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
Radiant panels													
Heating													
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
Cooling													
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
Terminal units													
Heating													
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
Cooling													
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
Radiators													
Heating													
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
SCOP - MEDIUM climate - W55	9	–	3.2	3.2	3.2	3.2	3.2	3.3	3.2	3.2	3.4	3.4	3.4
ns,h - MEDIUM climate - W55	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^3/h	11520	13500	13500	23040	27000	27000	34560	40500	65700	65700	65700
Standard airflow - Super silent mode		m^3/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)

Description Heating system	Unit	AWP16	AWP19	AWP24	AWP31	AWP36	AWP41	AWP53	AWP59	AWP65	AWP75	AWP89
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
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

Description Heating system	Unit	AWP16	AWP19	AWP24	AWP31	AWP36	AWP41	AWP53	AWP59	AWP65	AWP75	AWP89
Maximum flow	l/s	2.6	2.6	2.6	5.0	5.0	5.0	6.4	6.4	10	10	10
Minimum system volume for 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
Size	kW	AWP16 – AWP24	AWP31 – AWP41	AWP53 – AWP59	AWP65 – AWP89
Min. water volume for defrost	l	200	400	650	850
Capacity of the second heat source	**kW**	**10**	**10**	**10**	**10**
Reduced minimum water volume due to second heat source	l	180	360	590	740
Capacity of the second heat source	**kW**	**20**	**20**	**20**	**20**
Reduced minimum water volume due to second heat source	l	130	300	550	680
Capacity of the second heat source	**kW**	**30**	**30**	**30**	**30**
Reduced minimum water volume due to second heat source	l	120	250	490	610
Capacity of the second heat source	**kW**	**50**	**50**	**50**	**50**
Reduced minimum water volume due to second heat source	l	120	230	360	470
Capacity of the second heat source	**kW**	**100**	**100**	**100**	**100**
Reduced minimum water volume due to second heat source	l	120	230	300	300
Capacity of the second heat source	**kW**	**150**	**150**	**150**	**150**
Reduced minimum water volume due to second heat source	l	120	230	300	300
Capacity of the second heat source	**kW**	**200**	**200**	**200**	**200**
Reduced minimum water volume due to second heat source	l	120	230	300	300
Capacity of the second heat source	**kW**	**300**	**300**	**300**	**300**
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

Sound levels refer to units at nominal operating conditions.

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

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

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

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 [1]		≈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 [1]		≈10%	≈18%	≈50%			≈10%	≈17.3 %	≈55%			≈6%	≈17.9 %	≈59%	

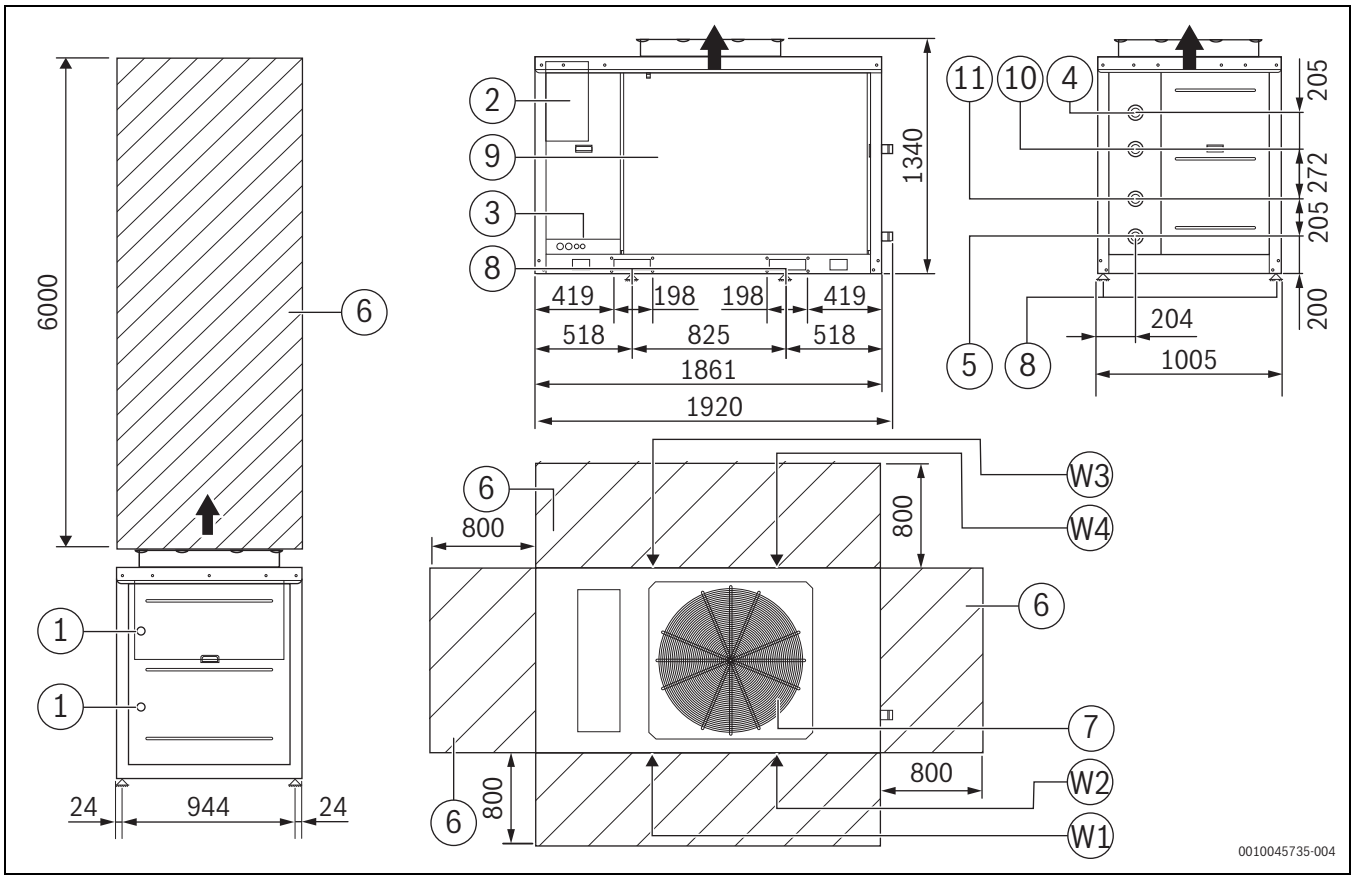
	AWP53					AWP59					AWP65				
	Normal mode	Silence mode	Super silence mode	Night mode	ErP	Normal mode	Silence mode	Super silence mode	Night mode	ErP	Normal mode	Silence mode	Super silence mode	Night mode	ErP
Noise power dB [A]	78	77	75	71	71	83	80	78	71	71	82	80	77	74	–
Capacity reduction from standard mode [1]		≈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 [1]		≈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[1)]	kg	315	315	315
Shipping weight[2)]	kg	333	333	333

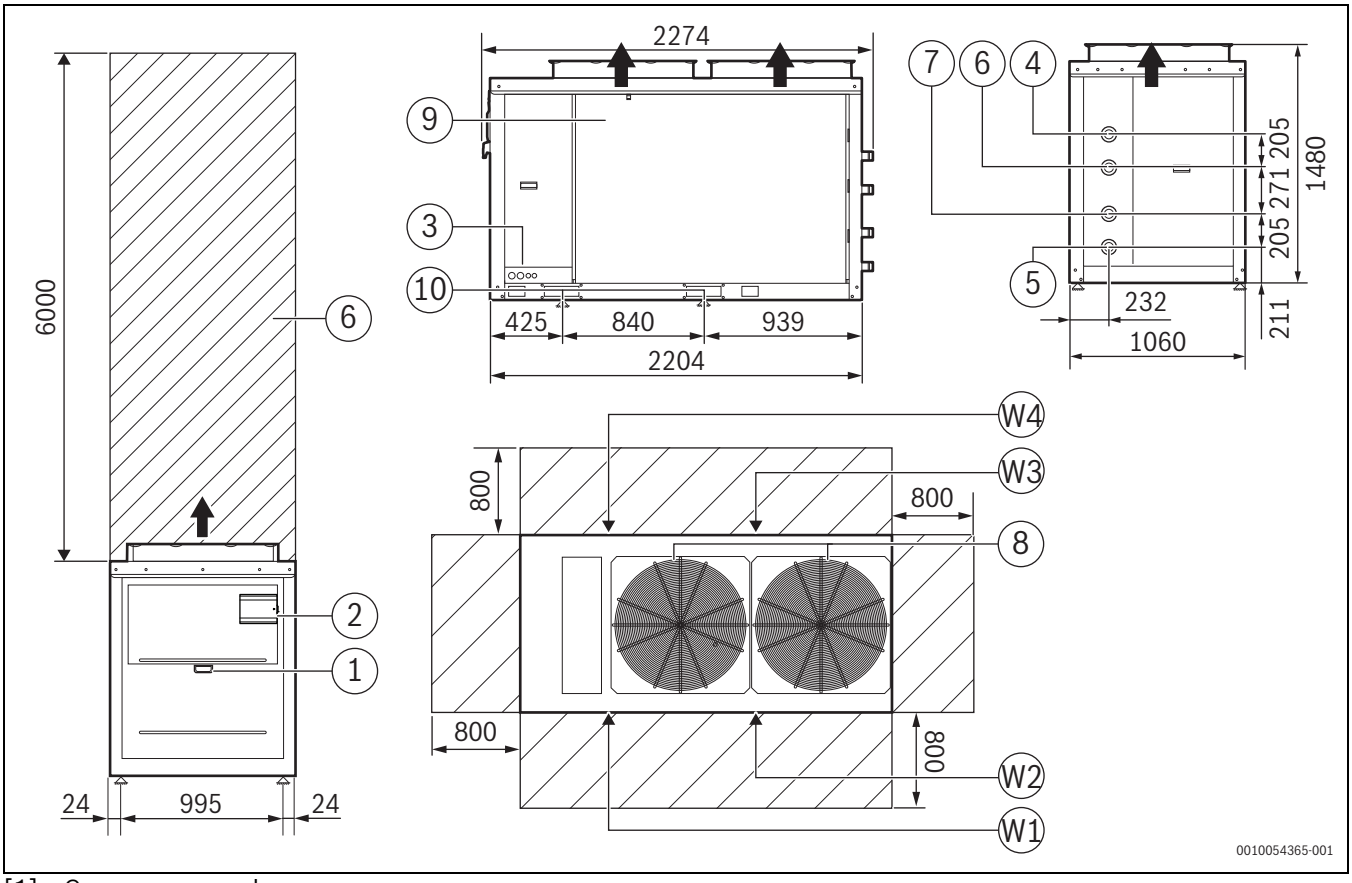
Table 13

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[1)]	kg	315	527
Shipping weight[2)]	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



[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[1)]	kg	496	496	496
Shipping weight[2)]	kg	513	513	513

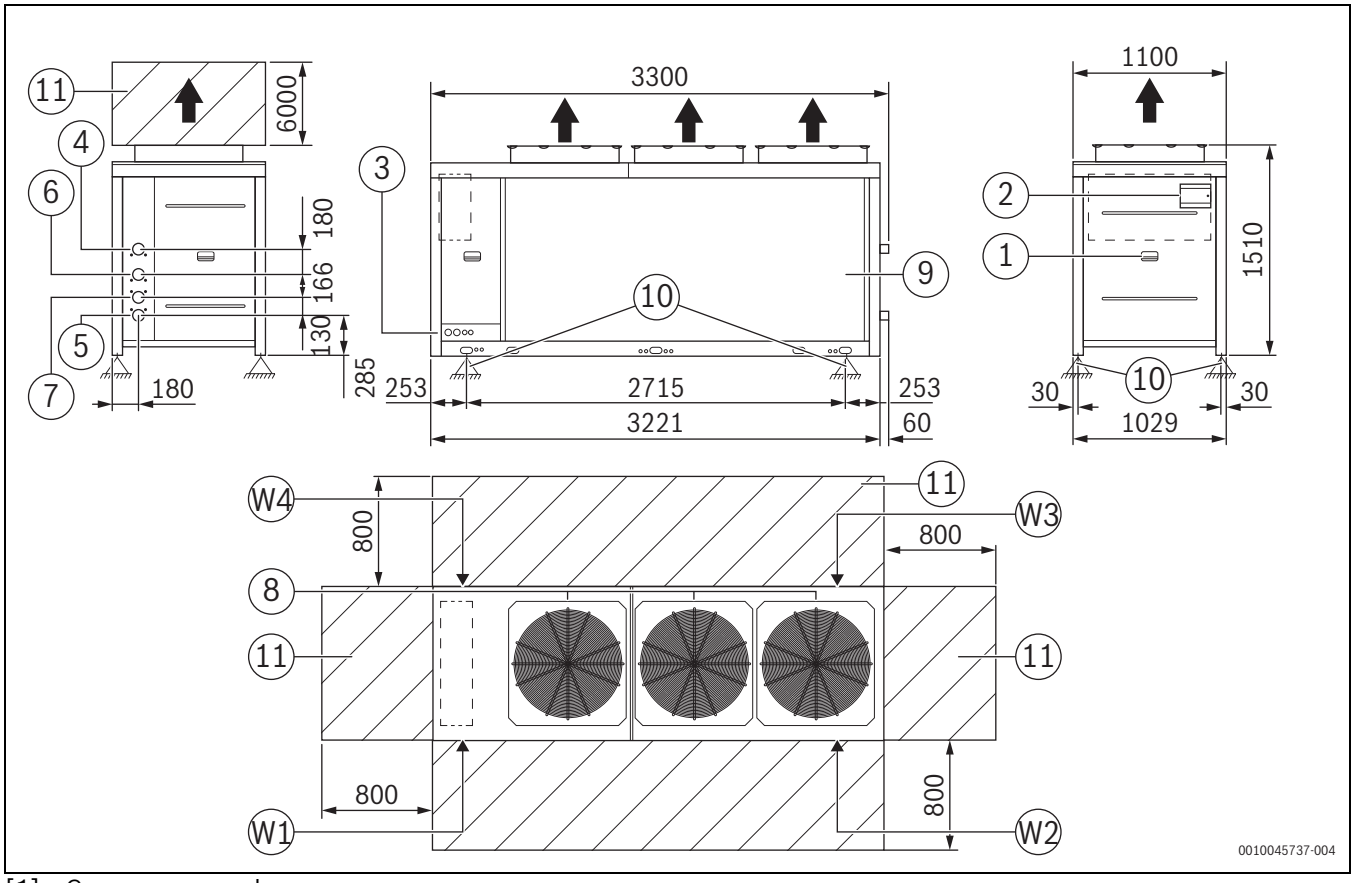
Table 15

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[1)]	kg	496	738
Shipping weight[2)]	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[1)]	kg	754	754
Shipping weight[2)]	kg	808	808

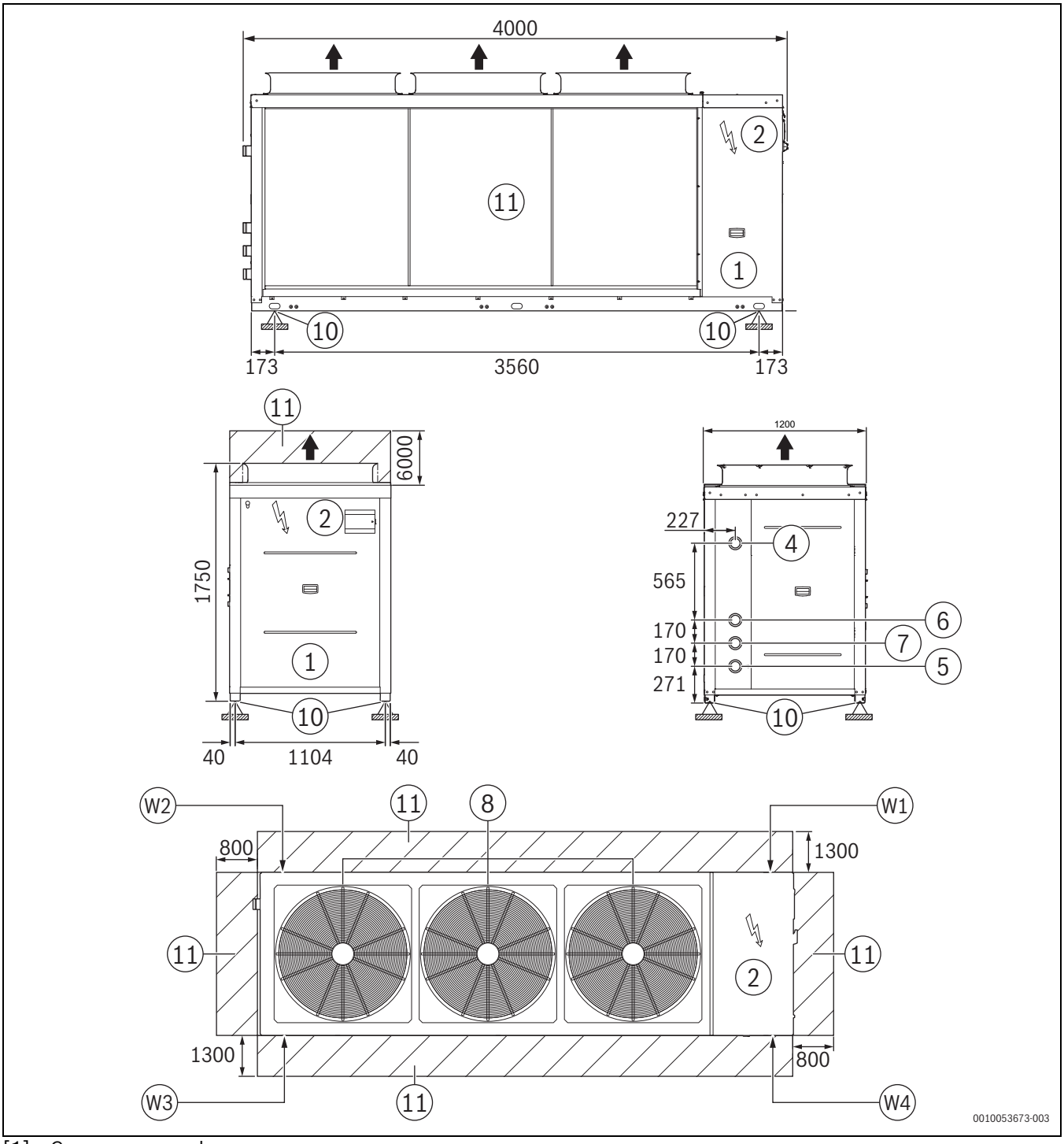
Table 17

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[1)]	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



[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[1)]	kg	1143	1143
Shipping weight[2)]	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[1)]	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

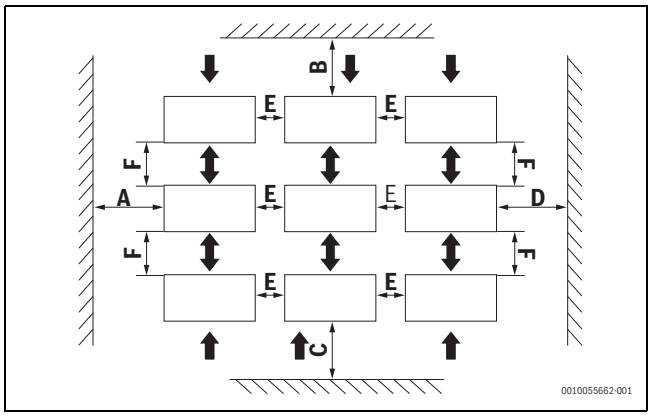


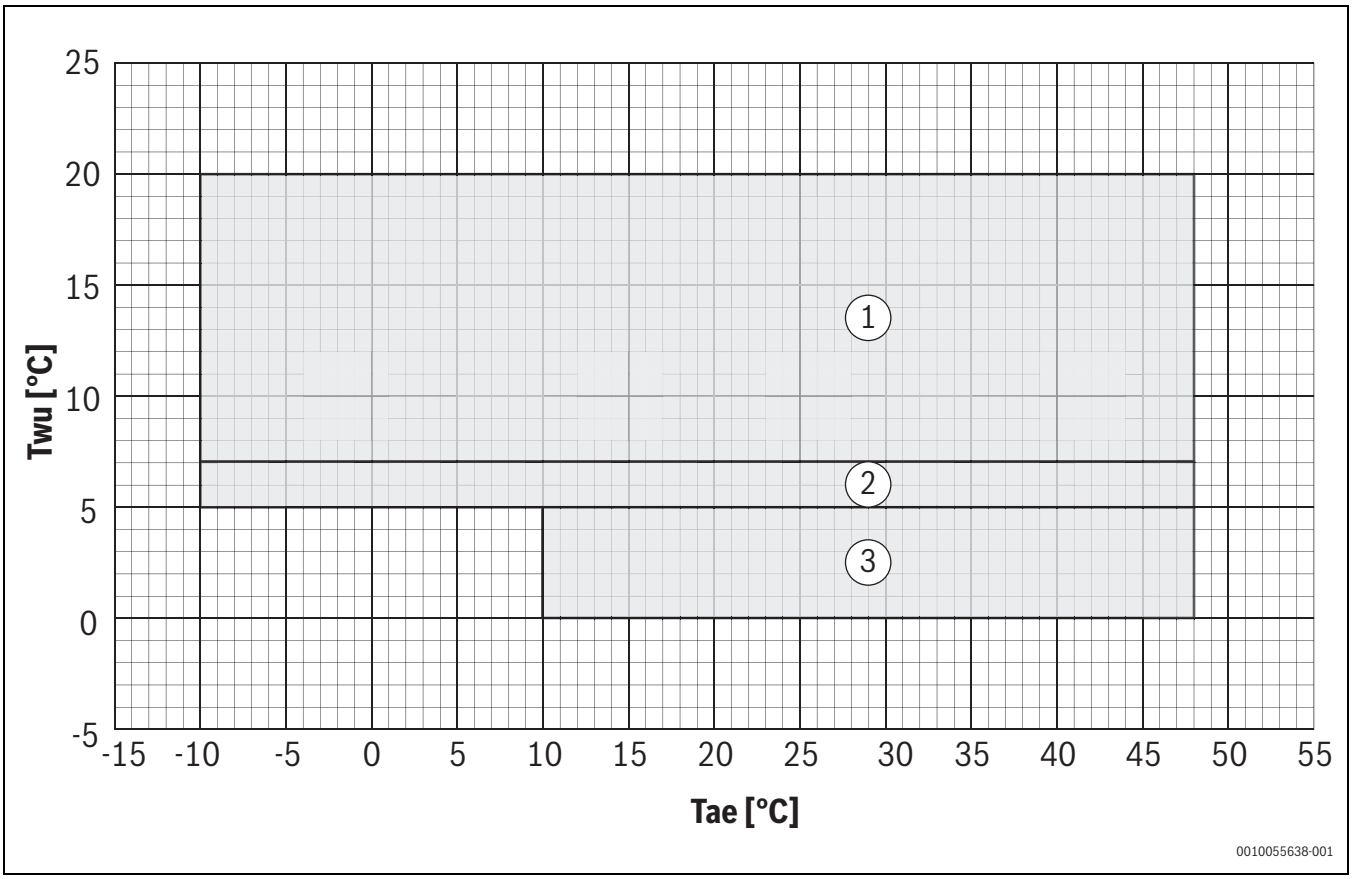
Fig. 14

A, D, E ≥ 800 mm
B, C **Chassis 1-3:**
≥ 2 m with walls also for single units
≥ 800 mm without walls
Chassis 4:
≥ 2 m with walls also for single units
≥ 1.3 m without walls
F **Chassis 1-3:** ≥ 1.1 m
Chassis 4: ≥ 1.8 m

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

6.11 Operating range

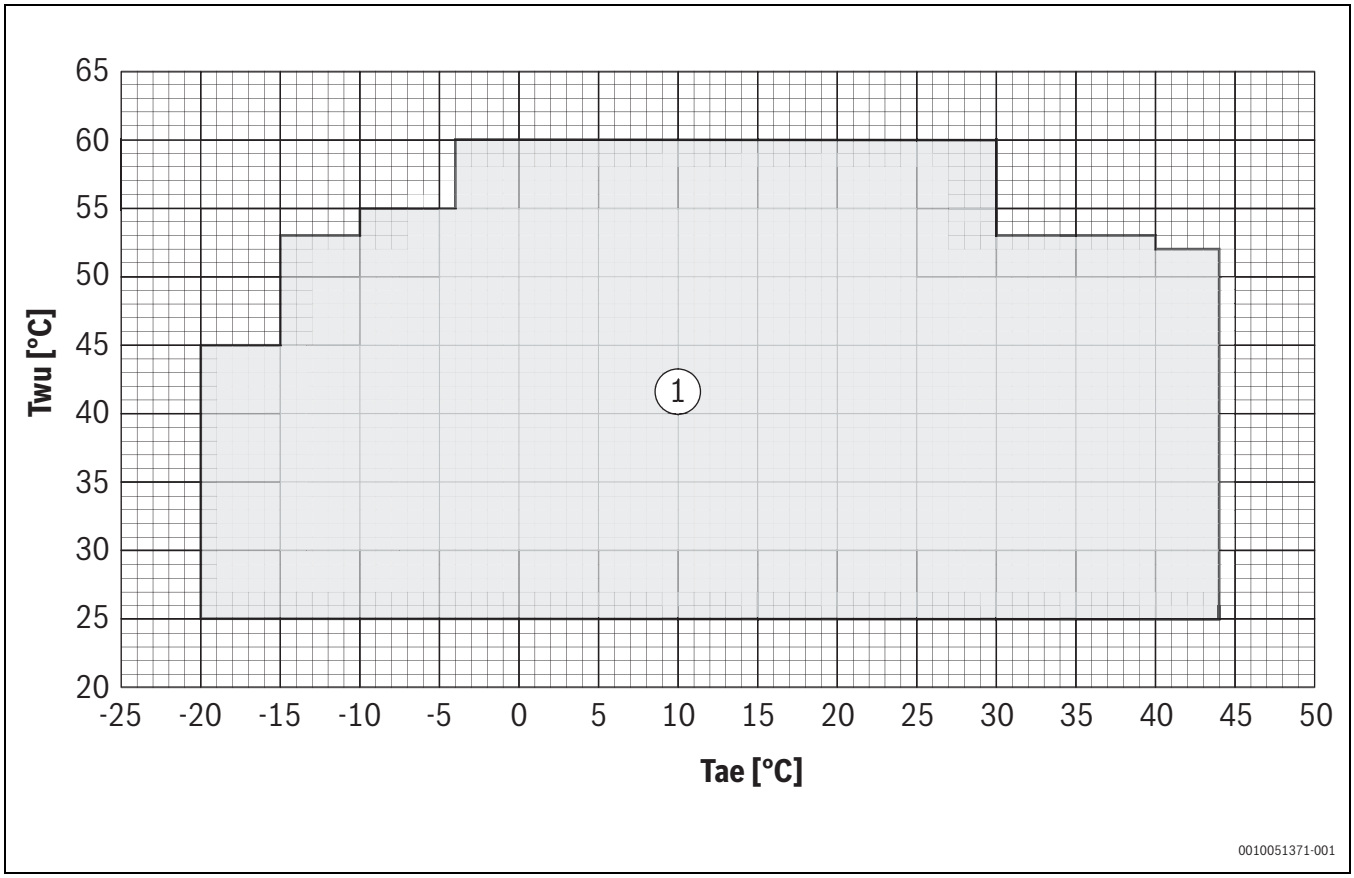
Cooling - AWP16 – AWP89



[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

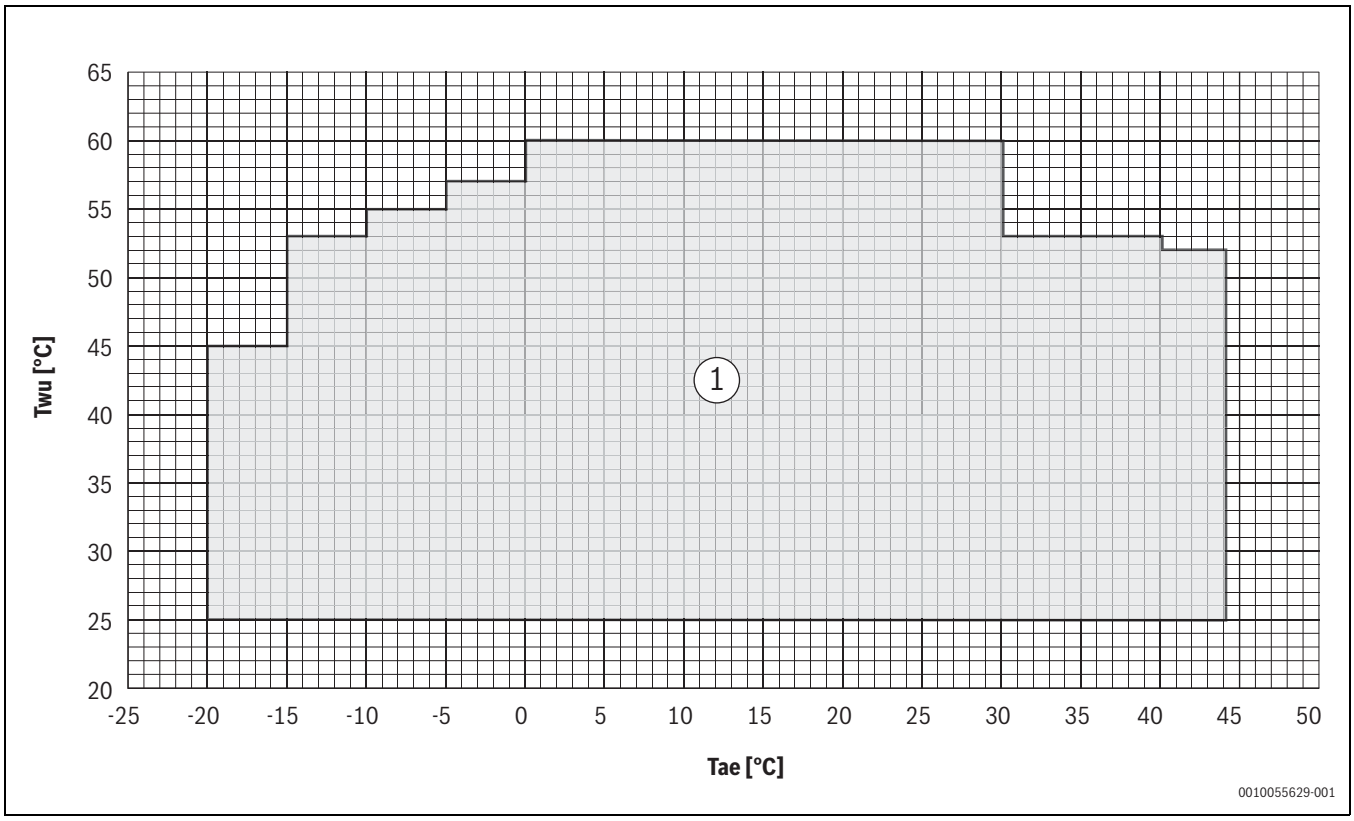
Heating - AWP16 – AWP59



[1] Normal operating range

Twu [°C] = Leaving exchanger water temperature
Tae [°C] = External exchanger inlet air temperature

Heating - AWP65AWP89



[1] Normal operating range

Twu [°C] = Leaving exchanger water temperature

Tae [°C] = External exchanger inlet air 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^2 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)
Refrigerant side						
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	–	–	–
Water side						
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.

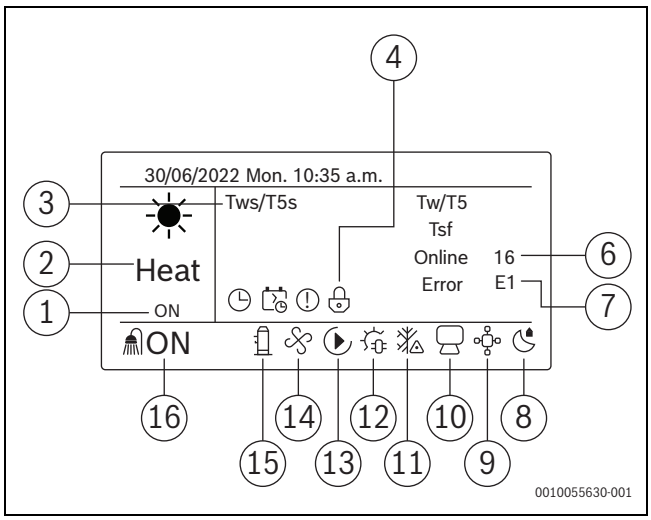


Fig. 15 User interface

[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

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

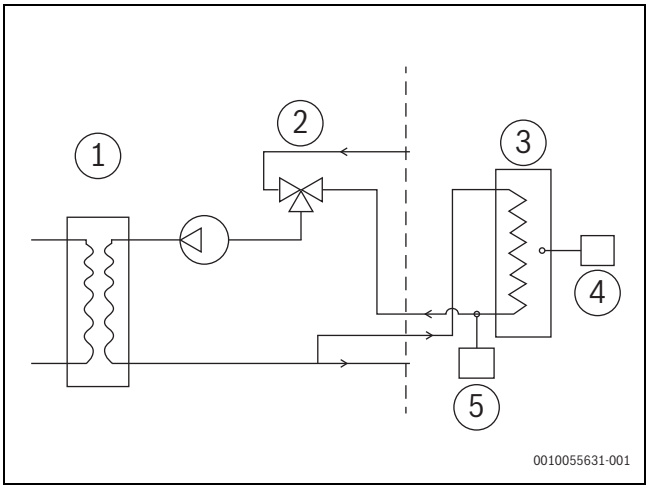


Fig. 16

[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:

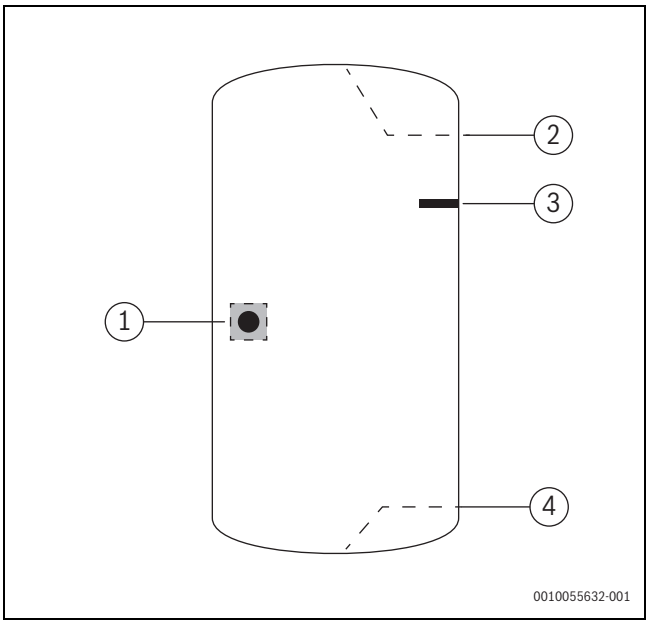


Fig. 17

[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 enables, 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 < offset T4_heat1), the set-point remains unchanged
- When the external air temperature (T4) is between the two offset temperatures (offset T4_heat ≤ T4 < offset T4_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 ≥ offset T4_heat2), the maximum reduction in the set-point temperature will be achieved.

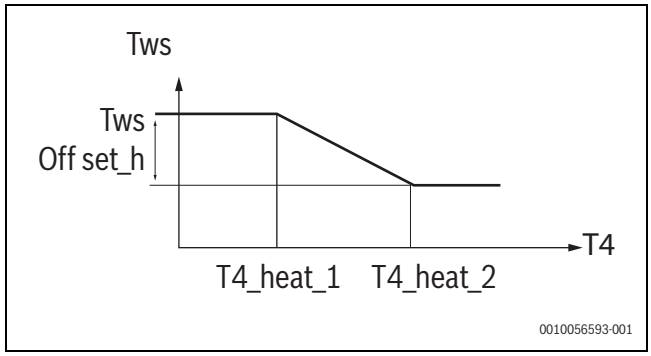


Fig. 18

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.

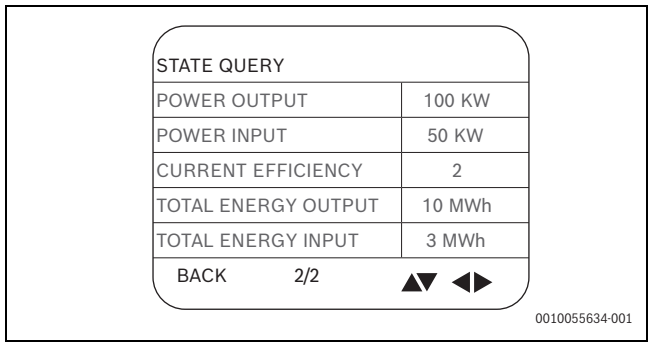


Fig. 19

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 n 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:

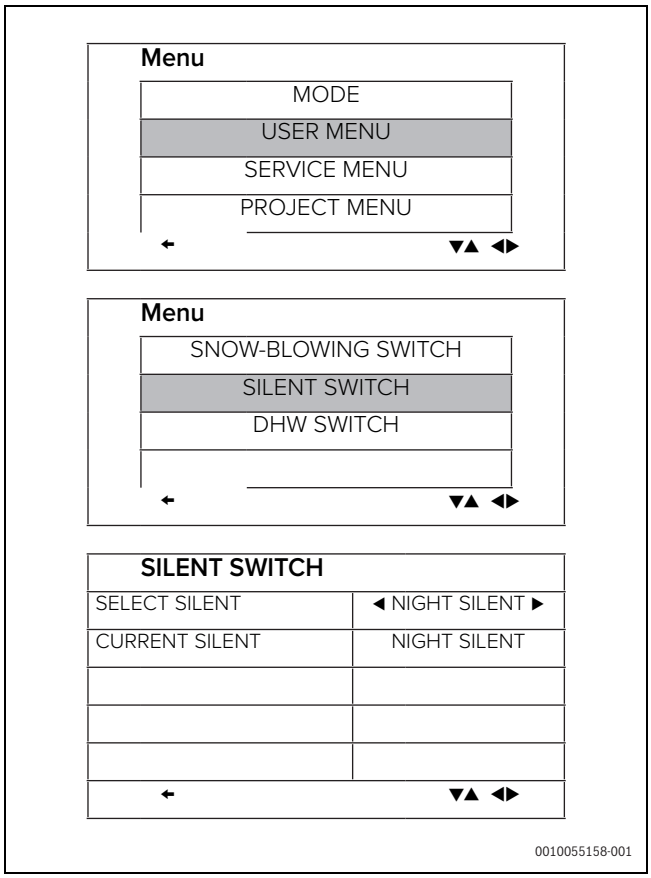


Fig. 20

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 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).

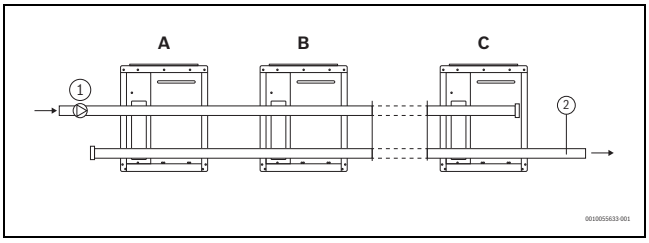


Fig. 21

[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. 1module / 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

Tw

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 Tw ≥ Tws -10 °C, 50% of the units in the system are activated.

In heating mode, if Tw ≤ Tws -10 °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	Tae DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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
5	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
	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
7	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
	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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load.3									COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load.3									COP EN14511 Percentage of compressor load								
	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
30	**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
	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	–
35	**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
	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
40	**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
	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
45	**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
	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
50	**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
	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
55	**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 DB/WB	Heating capacity EN14511 Percentage of compressor load.3									COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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
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
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
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
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
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

To	Tae DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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
30	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	–	–
	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.	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
35	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	–	–
	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
40	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	–
	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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
	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
	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
	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
	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	3.9
	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
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
	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
	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
	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
	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	3.3
	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	3.9
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
	A-2	–	–	–	–	17.5	16.1	13.5	10.8	8.1	–	–	–	–	2.1	2.1	2.2	2.2	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
	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
	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
	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	3.5
60	A-20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-2	–	–	–	–	–	–	11.8	8.9	6.4	–	–	–	–	–	–	1.6	1.5	1.5
	A2	–	–	–	–	–	–	14.2	10.7	6.8	–	–	–	–	–	–	1.8	1.7	1.6
	A7	–	–	–	–	–	–	14.1	10.9	8.6	–	–	–	–	–	–	1.9	1.9	1.9
	A10	–	–	–	–	–	–	15.5	11.9	9.3	–	–	–	–	–	–	2.1	2.0	2.1
	A18	–	–	–	–	–	–	19.0	14.7	11.2	–	–	–	–	–	–	2.5	2.4	2.5

Table 30

7.6 Performance Cooling - AWP24

To	Tae DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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
5	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
	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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 Percentage of compressor load								
	A-20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
60	**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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 Percentage of compressor load								
°C	°C	100 %	95%	90%	80%	70%	60%	50%	40%	30%	100 %	95%	90%	80%	70%	60%	50%	40%	30%
	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
0	**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
	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
5	**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
	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
7	**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
	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
10	**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
	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	5.5	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
12	**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
	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
15	**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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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
30	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	–	–
	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
35	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
	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
40	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
	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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	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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 Percentage of compressor load								
	A-20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	A-7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
60	**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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 Percentage of compressor load								
°C	°C	100 %	95%	90%	80%	70%	60%	50%	40%	30%	100 %	95%	90%	80%	70%	60%	50%	40%	30%
	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
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
	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
5	**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
	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
7	**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
	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
10	**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
	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
12	**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
	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
15	**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

To	Tae DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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	22	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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	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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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	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	437	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 DB/WB	Heating capacity EN14511 Percentage of compressor load									COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load									EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load							EER EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load							EER EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load							EER EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load							EER EN14511 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	81.7	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	1423	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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Heating capacity EN14511 Percentage of compressor load							COP EN14511 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 DB/WB	Cooling capacity EN14511 Percentage of compressor load							EER EN14511 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

Technische Änderungen vorbehalten.