

Himod



Product Documentation

English

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INDEX

1 – The series	1
1.1 – Main features and advantages	1
2 – Configuration	2
2.1 – Version A	2
2.2 – Version W	3
2.3 – Version D	4
2.4 – Version H	5
2.5 – Version F	6
2.6 – Version C	7
2.7 – Air control	8
3 – Operating limits	8
4 – Component features	9
4.1 – Fan	9
4.2 – Compressor	9
4.3 – Coils	9
4.4 – Frame and panels	9
4.5 – Filters	10
4.6 – Refrigerants	10
4.7 – Electrical panel	10
4.8 – Accessibility	10
4.9 – Control system (Microface and Hiromatic G)	10
4.10 – Packing	11
4.11 – Product quality and safety	11
5 – Condensing section	12
5.1 – Air condensers	12
5.2 – Water condensers	14
5.3 – Dry coolers	14
6 – Technical notes	16
6.1 – Optional alternative refrigerant, R407C	16
7 – Electrical characteristics 50/60 Hz unit	18
8 – Technical data and performances 50/60Hz unit	25
9 – Sound Pressure Level	69
9.1 – Sound emission values	69
9.2 – Sound emission spectra	71
10 – Aeraulic features	73
11 – Options	91
11.1 – Filtration	91
11.2 – Reheating and humidity control	93
11.3 – Humidification and dehumidification system	100
11.4 – Water valve (models W/H)	101

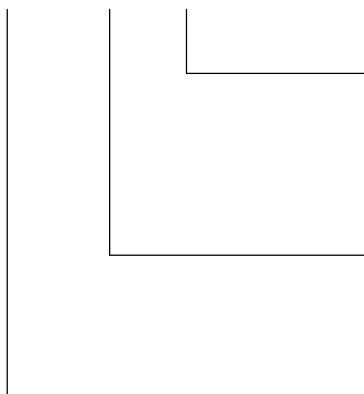
11.5 – Flooding alarm (Liquistat)	101
11.6 – Smoke alarm (Smokestat)	101
11.7 – Fire alarm (Firestat)	101
11.8 – Fresh air kit	102
11.9 – Intake and delivery hoods	102
11.10 – Silencing cartridges for supply hoods – Silent Carts (Over models)	102
11.11 – HiSAS – Semi–activer silencer (Under models)	103
11.12 – Delivery plenum with horizontal flow (Over models)	103
11.13 – Adjustable Louvred Grille (Over models)	103
11.14 – Base frames: TBD models	103
11.15 – Base modules (Over models)	104
11.16 – Automatic pump for condensate discharge	104
11.17 – Non–return valves (models A and D)	104
11.18 – Additional temperature and humidity sensor (EEAP)	104
11.19 – Microprocessor control with graphic display (HIROMATIC G)	105
11.20 – Special packing	106
11.21 – Air intake from the bottom (Over models)	106
11.22 – Dampers	106
11.23 – Accessory combination	107
12 – Overall dimensions	108

1 – The series

HIMOD is the series of air conditioners developed to meet the requirements of data processing centres, for fixed telephone networks, Internet and other technological rooms with medium and high capacity by applying the most advanced technologies. This series includes units with a rated cooling capacity ranging from 20 to 85 kW.

A mark with four alphanumeric characters identifies the model.

20UA



Version

- A Direct expansion unit with external air cooled condenser
- C Chilled water unit
- D Dualfluid unit (direct expansion + chilled water) with external air cooled condenser
- F Freecooler unit with water cooled condenser
- H Dualfluid unit (direct expansion + chilled water) with water cooled condenser
- W Direct expansion unit with water cooled condenser

Air distribution

- U Underfloor air flow (Under)
- O Upward air flow (Over)

Model

1.1 – Main features and advantages

- ✓ New **ventilating section** with single suction centrifugal fans and impeller with backward curved blades; variable speed motor with external rotor.
- ✓ High sensible cooling capacity; **high SHR (Sensible Heat Ratio)**
- ✓ Very high energy efficiency thanks to the innovative motor fan and scroll compressors with high COP (Coefficient Of Performance)
- ✓ Available power supply as follows: 400 V / 3 ph / 50 Hz, 208 ÷ 230 V / 3ph / 60 Hz, 380 V / 3ph / 60 Hz, 460 V / 3ph / 60 Hz.
- ✓ Low absorbed power in the humidification and dehumidification processes
- ✓ Low energy consumption (35% lower than conventional models); **high EER (Energy Efficiency Ratio)**
- ✓ Low operating cost
- ✓ Lower impact on the environment: all materials used are fully recyclable.
- ✓ Low internal air–side pressure drop
- ✓ Available static pressure up to 350 Pa, standard configuration
- ✓ Noise level and available static pressure adjustable by means of a transformer supplied as standard.
- ✓ Filters up to F5 available, frame made in cardboard; filters with higher efficiency up to F9 located externally.
- ✓ All cooling capacities available both for freecooler units and for dualfluid units
- ✓ Modular construction permits upgrading and extension
- ✓ Modular and standard optional accessories
- ✓ Sandwich construction with non–flammable – Class 0 (ISO 1182.2)
- ✓ Short delivery times
- ✓ Reduced cost of spare parts due to common components throughout the range modularity (e.g. one fan for the whole machine range).

2 – Configuration

Here is a short description of the particular features of each of the six available cooling versions.

2.1 – Version A

Direct expansion air–condensed units

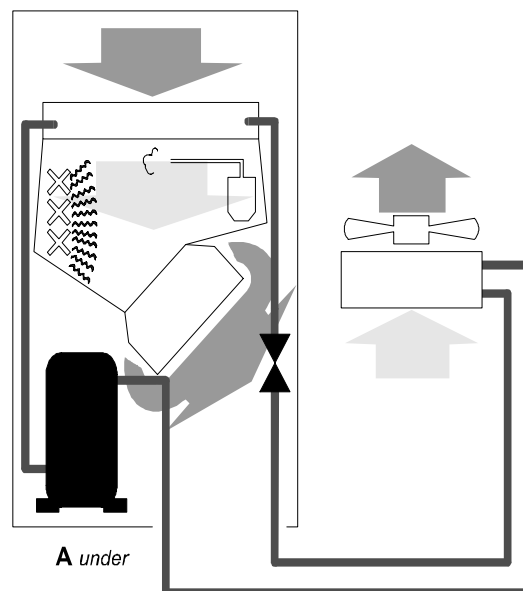
Refrigerating circuit

Models 20/24/28/34/40 are provided with a **single refrigerating circuit**. Models 26/32/42/46 are provided with a **double refrigerating circuit**. The refrigerating circuit includes the compressor and an externally equalised thermostatic expansion valve controlling the refrigerant flow to the evaporator so as to keep superheat stable. Before the thermal expansion valve there is a **sight glass** permitting a visual check of the refrigerant charge. A **dryer filter** is installed in the liquid line in order to obtain better cleaning and less humidity in the circuit. The welded steel **liquid receiver** is available in the refrigerating circuit to ensure a constant and even refrigerant flow to the expansion valve. On–off valves are installed as standard to assist in maintenance of the circuits.

For safe operation, during the start–up it is advisable to install the optional non–return valve (supplied on request) on the connection of the refrigerant with the external condenser to protect the compressor from unexpected refrigerant migrations (see installation diagram). A suitably sized safety valve is installed on the liquid receiver; the valve is equipped with flanged connections to allow the refrigerant to be discharged outside through suitable pipes. All low temperature parts of the refrigerating circuit are insulated. The refrigerating circuit is also provided with a maximum pressure switch and a minimum pressure switch. The minimum pressure switch has automatic resetting, whereas – for safety reasons due to possible high pressure in the compressor – the maximum pressure switch has manual resetting. The pressure switch calibration values are shown in the installation manual supplied with the machine. The units are supplied without the external condenser and with the refrigeration circuit pressurised with dry nitrogen. The customer himself has to make the connection with the external condenser and the charge with refrigerant. All the instructions for the necessary operations are contained in the installation manual.

External condensing unit

The units may be connected with a wide range of our condensers in standard or low noise version. For technical data and performances please refer to the relevant technical documentation. Par. NO TAG describes the suggested couplings for Himod units as a function of the outdoor air temperature.

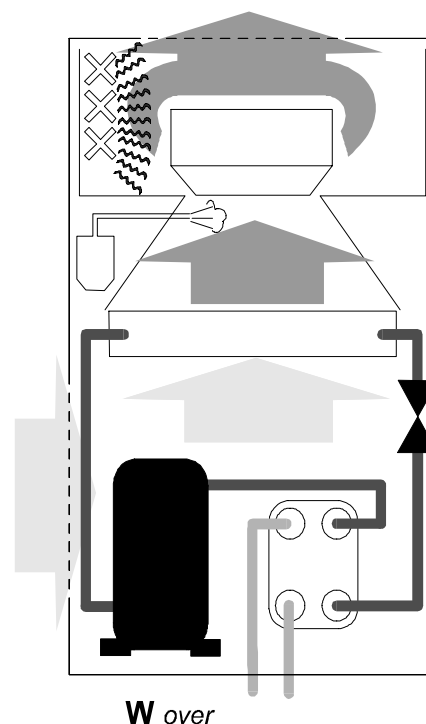


2.2 – Version W

*Direct expansion water–condensed units***Refrigerating circuit**

Models 20/24/28/34/40 are provided with a **single refrigerating circuit**. Models 26/32/42/46 are provided with a **double refrigerating circuit**. The refrigerating circuit includes the compressor and an externally equalised thermostatic expansion valve controlling the refrigerant flow to the evaporator so as to keep superheat stable. Before the thermal expansion valve there is a **sight glass** permitting a visual check of the refrigerant charge. A **dryer filter** is installed in the liquid line in order to obtain better cleaning and less humidity in the circuit. On–off valves are installed as standard to assist in maintenance of the circuits.

A suitably sized safety valve is installed after the condenser; the valve is equipped with flanged connections to allow the refrigerant to be discharged outside through suitable pipes. All low temperature parts of the refrigerating circuit are insulated. The refrigerating circuit is also provided with a maximum pressure switch and a minimum pressure switch. The minimum pressure switch has automatic resetting, whereas – for safety reasons due to possible high pressure in the compressor – the maximum pressure switch has manual resetting. The pressure switch calibration values are shown in the installation manual supplied with the machine.

**Condenser**

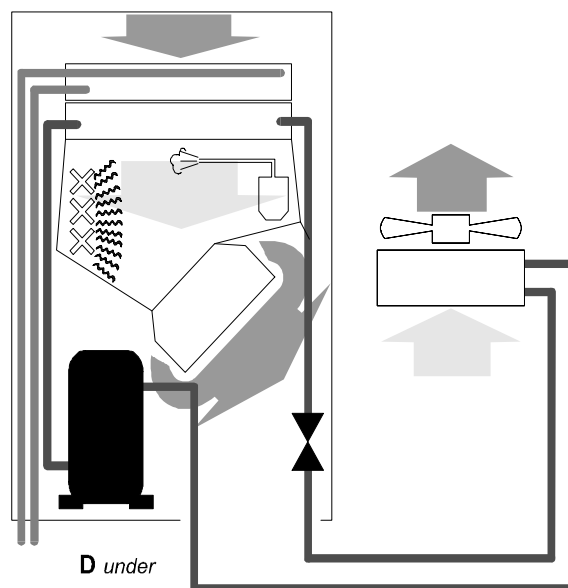
The units are provided with one (single refrigerating circuit) or two (double refrigerating circuit) stainless steel water condenser with braze–welded plates, each condenser has one pressostatic valve for the condensation temperature control; this advanced exchanger type gives the highest efficiency in heat exchange. In addition, a certain oversizing of the exchanger has been provided so as to reduce pressure drops (and energy consumption of the water pump) as much as possible and thus to allow the unit to operate with the external chiller in closed circuit, even at high outdoor temperatures.

The units operate with **mains water, tower water or water in closed circuit with an external cooler**. When operating in a closed circuit, the water is cooled by outdoor air in a heat exchanger; in this case, to avoid unwanted ice formation during winter, it is advisable to use a water/glycol mixture (refer to the installation manual for suitable percentages). The circulation of the water–glycol mixture is forced (the pump is not supplied). If mains water or tower water is used, when installing the unit, fit a **mechanical filter** on the water line to protect the condenser against possible impurities contained in the water (for condenser cleaning see the installation manual).

The 55U W and 65U W units are provided with two shell tube heat condensers easy for internal cleaning.

Refrigerating circuit

Models 20/24/28/34/40 are provided with a **single refrigerating circuit**. Models 26/32/42/46 are provided with a **double refrigerating circuit**. The refrigerating circuit includes the compressor and an externally equalised thermostatic expansion valve controlling the refrigerant flow to the evaporator so as to keep superheat stable. Before the thermal expansion valve there is a **sight glass** permitting a visual check of the refrigerant charge. A **dryer filter** is installed in the liquid line in order to obtain better cleaning and less humidity in the circuit. The welded steel **liquid receiver** is available in the refrigerating circuit to ensure a constant and even refrigerant flow to the expansion valve. On–off valves are installed as standard to assist in maintenance of the circuits. For safe operation, during the start–up it is advisable to install the optional non–return valve (supplied on request) on the connection of the refrigerant with the external condenser to protect the compressor from unexpected refrigerant migrations (see installation diagramme).



A suitably sized safety valve is installed on the liquid receiver; the valve is equipped with flanged connections to allow the refrigerant to be discharged outside through suitable pipes. All low temperature parts of the refrigerating circuit are insulated. The refrigerating circuit is also provided with a maximum pressure switch and a minimum pressure switch. The minimum pressure switch has automatic resetting, whereas – for safety reasons due to possible high pressure in the compressor – the maximum pressure switch has manual resetting. The pressure switch calibration values are shown in the installation manual supplied with the machine.

The units are supplied without the external condenser and with refrigeration circuit pressurised with dry nitrogen. The customer himself has to make the connection with the external condenser and charge with refrigerant. All the instructions for the necessary operations are contained in the installation manual.

External condensing unit

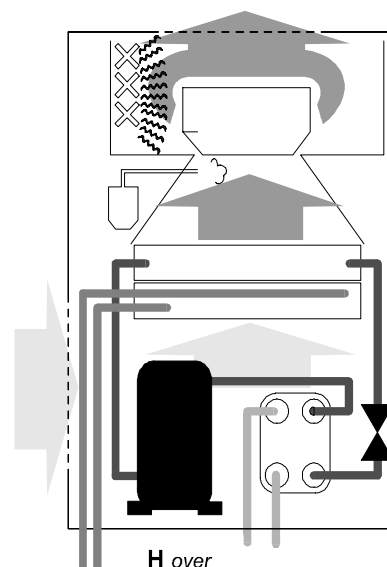
The units may be connected to a wide range of our condensers in standard or low noise version. For technical data and performances please refer to the relevant technical documentation. Para. 5.1 describes the suggested couplings for Himod units as a function of the outdoor air temperature.

Water circuit

The unit is provided with a 3–way modulating valve complete with incremental motor for the water flow control to the coil; the opening or closing signals, generated by the electronic control, manage the valve actuator movement in order to keep the ambient temperature at the required value. Through a series of menus it is possible to set all parameters on the control for a correct adjustment, i.e. set–points, proportional bands, proportional or proportional+integral adjustment, integrating factor and valve feature. It is possible to adjust the valve manually in closing position (coil side) by means of a suitable wrench.

Refrigerating circuit

Models 20/24/28/34/40 are provided with a **single refrigerating circuit**. Models 26/32/42/46 are provided with a **double refrigerating circuit**. The refrigerating circuit includes the compressor and an externally equalised thermostatic expansion valve controlling the refrigerant flow to the evaporator so as to keep superheat stable. Before the thermal expansion valve there is a **sight glass** permitting a visual check of the refrigerant charge. A **dryer filter** is installed in the liquid line in order to obtain better cleaning and less humidity in the circuit. **On—off valves** are installed as standard to assist in maintenance of the circuits. A suitably sized **safety valve** is installed after the condenser; the valve is equipped with flanged connections to allow the refrigerant to be discharged outside through suitable pipes. All low temperature parts of the refrigerating circuit are insulated. The refrigerating circuit is also provided with a maximum pressure switch and a minimum pressure switch. The minimum pressure switch has automatic resetting, whereas — for safety reasons due to possible high pressure in the compressor — the maximum pressure switch has manual resetting. The pressure switch calibration values are shown in the installation manual supplied with the machine.

**Condenser**

The units are provided with one (single refrigerating circuit) or two (double refrigerating circuit) stainless steel water condenser with braze—welded plates, each condenser has one pressostatic valve for the condensation temperature control; this advanced exchanger type gives the highest efficiency in heat exchange. In addition, a certain oversizing of the exchanger has been provided so as to reduce pressure drops (and energy consumption of the water pump) as much as possible and thus to allow the unit to operate with the external chiller in closed circuit, even at high outdoor temperatures.

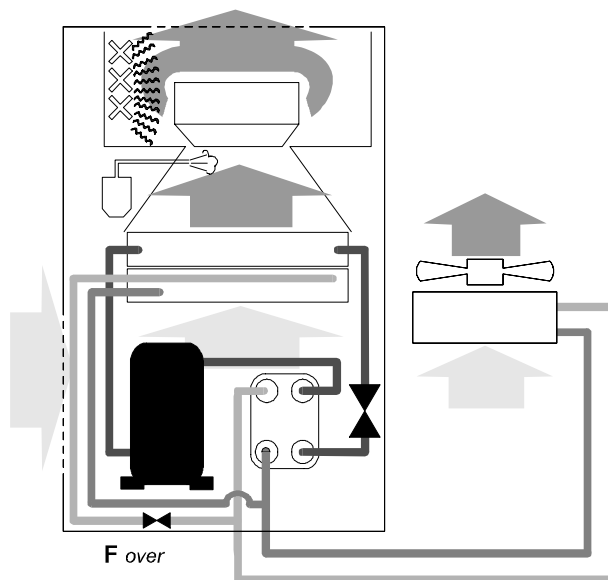
The units operate with **mains water, tower water or water in closed circuit** with an external chiller. When operating in a closed circuit, the water is cooled by outdoor air in a heat exchanger; in this case, in order to avoid unwanted ice formation during winter, it is advisable to use a water/glycol mixture (refer to the installation manual for suitable percentages). The circulation of the water—glycol mixture is forced (the pump is not supplied). If mains water or tower water is used, when installing the unit fit a **mechanical filter** on the water line to protect the condenser against possible impurities contained in the water (for condenser cleaning see the installation manual).

Hydraulic circuit

The unit is provided with a **3—way modulating valve**, complete with incremental motor for the water flow control to the coil; the opening or closing signals, generated by the electronic control, adjust the valve in order to keep the ambient temperature at the required value. Through a series of menus it is possible to set all parameters on the control for a correct adjustment, i.e. set—points, proportional bands, proportional or proportional+integral adjustment, integrating factor and valve feature. It is possible to adjust the valve manually closed (coil side) by means of a suitable wrench.

Refrigerating circuit

Models 20/24/28/34/40 are provided with a **single refrigerating circuit**. Models 26/32/42/46 are provided with a **double refrigerating circuit**. The refrigerating circuit includes the compressor and an externally equalised thermostatic expansion valve controlling the refrigerant flow to the evaporator so as to keep superheat stable. Before the thermal expansion valve there is a **sight glass** permitting a visual check of the refrigerant charge. A **dryer filter** is installed in the liquid line in order to obtain better cleaning and less humidity in the circuit. **On-off valves** are installed as standard to assist in maintenance of the circuits. A suitably sized **safety valve** is installed after the condenser; the valve is equipped with flanged connections to allow the refrigerant to be discharged outside through suitable pipes. All low temperature parts of the refrigerating circuit are insulated. The refrigerating circuit is also provided with a maximum pressure switch and a minimum pressure switch.



The minimum pressure switch has automatic resetting, whereas — for safety reasons due to possible high pressure in the compressor — the maximum pressure switch has manual resetting. The pressure switch calibration values are shown in the installation manual supplied with the machine.

Condenser

The units are provided with one (single refrigerating circuit) or two (double refrigerating circuit) stainless steel water condensers with braze-welded plates, each condenser has one pressostatic valve for the condensation temperature control; this advanced exchanger type gives the highest efficiency in heat exchange. In addition, a certain oversizing of the exchanger has been provided so as to reduce pressure drops (and energy consumption of the water pump) as much as possible and thus to allow the unit to operate with the external chiller in closed circuit, even at high outdoor temperatures.

The units operate with **water in closed circuit** with an external cooler. When operating in a closed circuit, the water is cooled by the outdoor air in a heat exchanger; in this case, in order to avoid unwanted ice formation during winter, it is advisable to use a water/glycol mixture (refer to the installation manual for the suitable percentages). The circulation of the water-glycol mixture is forced (the pump is not supplied). To minimize water consumption and the condensing pressure check during the different seasons of the year, the unit is provided with a water register supplied as standard on the machine.

Hydraulic circuit

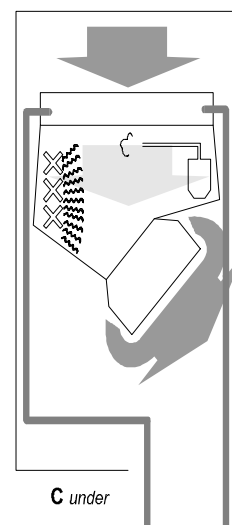
The unit is provided with a **2-way modulating valve**, complete with incremental motor for the water flow control to the freecooling coil; the opening or closing signals, generated by the electronic control, manage the valve in order to keep the ambient temperature at the required level.

2.6 – Version C

*Chilled water units***Hydraulic circuit**

The unit is provided with a **3-way modulating valve**, complete with incremental motor for the water flow control to the coil; the opening or closing signals, generated by the electronic control, manage the valve in order to keep the ambient temperature at the required level.

Through a series of menus it is possible to set all parameters on the control for a correct adjustment, i.e. set-points, proportional bands, proportional or proportional+integral adjustment, integrating factor and valve feature. It is possible to close the valve manually (coil side) by means of a suitable wrench.

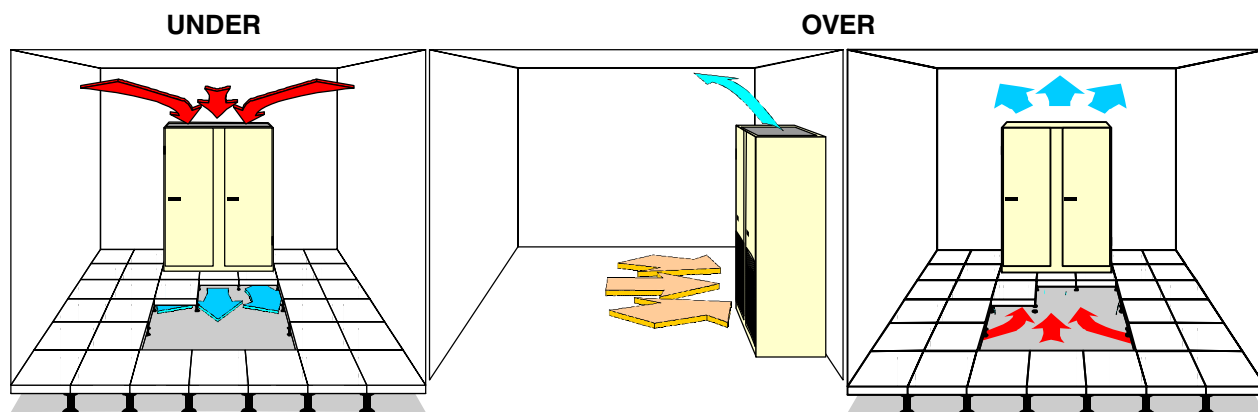


Here is a summary list of the particular features of the different versions:

	Heat exchange	Refrigerating circuit	Installation
A	The unit cools the air by an air/refrigerant coil (direct expansion). The refrigerating circuit condenser is externally mounted, air-cooled.	The refrigerating circuits are not pre-charged with refrigerant. There is a liquid receiver on which the safety valve is installed.	The unit must be connected to the external condenser and the refrigerant must be charged.
W	The unit cools the air by an air/refrigerant coil (direct expansion). The refrigerating circuit plate condenser is indoor, water-cooled.	The refrigerating circuits are pre-charged with refrigerant. The safety valve is installed downstream of the condenser.	The unit must be connected to external cooling water pipework.
D	The dualfluid unit cools the air flow by means of an air/refrigerant coil (direct expansion) or, as an alternative, an air/water coil. The refrigerating circuit condenser is externally mounted, air-cooled.	The refrigerating circuits are not pre-charged with refrigerant. There is a liquid receiver on which the safety valve is installed.	It is necessary to connect the unit to the external condenser, to charge it with refrigerant and to connect the chilled water piping for the air/water coil.
H	The dualfluid unit cools the air flow by means of an air/refrigerant coil (direct expansion) or, as an alternative, an air/water coil. The refrigerating circuit plate condenser is indoor, water-cooled.	The refrigerating circuits are pre-charged with refrigerant. The safety valve is installed downstream of the condenser.	The unit must be connected to the chilled water piping for the air/water coil and to the cooling water piping for the water/refrigerant condenser.
F	The freecooler unit cools the air flow by means of an air/refrigerant coil (direct expansion) or, as an alternative, an air/water coil. The water flow is cooled by an external dry-cooler. When the external temperature is higher than the ZET, the water exchanges heat with the refrigerant in the internal water/refrigerant plate condenser. When the external temperature is lower than the ZET, the water is cooled as much as sufficiently to cool the air directly in the air/water coil.	The refrigerating circuits are pre-charged with refrigerant. The safety valve is installed downstream of the condenser.	The unit must be connected to the closed water circuit with the dry-cooler.
C	The unit cools the air flow by an air/water coil.	The unit has no refrigerating circuit.	The unit must be connected to the chilled water piping.

2.7 – Air control

All units are available in the three configurations shown below.



3 – Operating limits

All versions

Himod units are suitable for operating within the following working ranges (the limits apply to new units on which correct installation and maintenance has been carried out):

Ambient conditions:

from 18.0°C, 45% R.H. at 27.0°C, 55% R.H.

Air flow

The minimum and maximum values are shown in the tables of the available static pressure. However, safety devices are provided as standard to protect the various components from any damages due to operation outside the indicated limits.

Voltage tolerances

400 V $\pm$ 10%	$\Rightarrow$ Frequency: 50 Hz $\pm$ 2 Hz
208 $\div$ 230 V $\pm$ 10%	$\Rightarrow$ Frequency: 60 Hz $\pm$ 2 Hz
380 V $\pm$ 10%	$\Rightarrow$ Frequency: 60 Hz $\pm$ 2 Hz
460 V $\pm$ 10%	$\Rightarrow$ Frequency: 60 Hz $\pm$ 2 Hz

Versions A and D

Outdoor conditions:

low limit = 10°C (from 9°C to –20°C with Variex accessory installed on the condenser)

high limit determined by the size of the coupled condenser. Exceeding these limits causes the compressor to trip due to the safety pressure switch, which can only be reset manually.

Condenser installation:

Max. distance between ambient unit and external air condenser:
30 m equivalent length.

Max. geodetic height difference between condenser and unit:
3 m (if the condenser is placed underneath the ambient unit).

4 – Component features

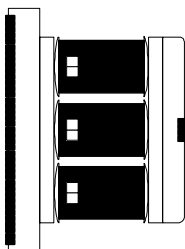
4.1 – Fan

Innovative application of single suction centrifugal fans incorporating an impeller with backward curved blades in treated and painted steel.

High efficiency.

The motor is three—phase with protection degree IP54; provided with internal thermal protection.

The fan wheel is statically and dynamically balanced; the bearings are self—lubricating.



The fan is mounted on vibration—damping rubber supports to reduce the mechanical contact with the frame and, thus, to minimize the vibration.

Available head up to 350 Pa.

Modularity.

Variable speed: autotransformer with several different settings; possibility to optimize air flow, available head, dehumidification operation.

4.2 – Compressor

Hermetic SCROLL compressors

High COP.

High MTBF (Minimum Time Between Failures)

Low sound level.

Insulated against vibration.

Protection degree IP54.

Provided with internal thermal protection.

Low start current (equalization of the internal pressures).



4.3 – Coils

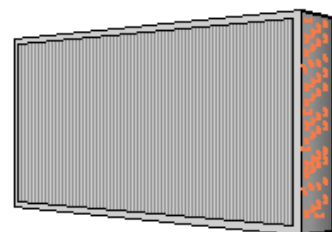
Large face area.

Comprising copper pipes and aluminium fins.

Fins treated to withstand corrosive atmospheres.

Low pressure drop.

High SHR (Sensible Heat Ratio).



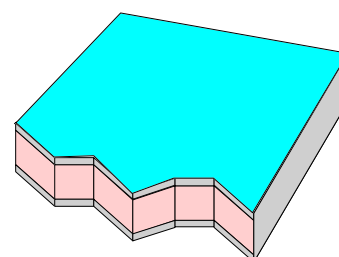
4.4 – Frame and panels

Made of sheet steel.

Sandwich panels lined with non—flammable insulation material Class 0 (ISO 1182.2).

All surfaces in the air flow are washable in order to reduce the formation of bacteria.

All materials are CFC—free and may be recycled.



4.5 – Filters

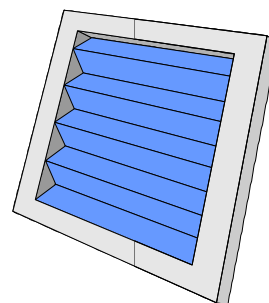
Removable filters.

Filtration from G4 to F9 (CEN EN779 – resp. corresponding to EU4 and EU9 according to Eurovent EU4/5).

The folded structure of the filters gives high filtration efficiency and low pressure drop.

The filter media used consists of synthetic fibre cells. The frame is made of cardboard.

Pre-filtration system for Over models.



4.6 – Refrigerants

The units are designed for use with refrigerant R22 or, as option, R407C.

4.7 – Electrical panel

Manufactured in accordance with IEC204–1 standard.

It is housed at the front of the unit, isolated from the air flow and enclosed by a plastic cover to protect the parts which are supplied with a voltage higher than 24 V.

The units are designed for operating at 400V/3ph/50Hz; 208–230V/3ph/60Hz; 380V/3ph/60Hz; 460V/3ph/60Hz.



4.8 – Accessibility

Access to the compressor is possible even when the unit is operating by removing the front panel.

Ordinary maintenance is easier thanks to the front access enabling the replacement of the air filters, the intervention on the components of the refrigerating circuit – such as compressor, liquid receiver, thermal expansion valve, refrigerant sight glass, drying filter – or on the fan, the humidifier, the electric board, the electronic control, the heating elements.



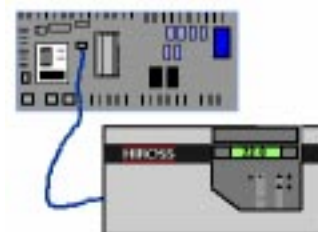
4.9 – Control system (Microface and Hiromatic G)

Very simple user interface.

Easily understandable LCD display for immediate operation of the control system.

Net connectivity of several units with standard control.

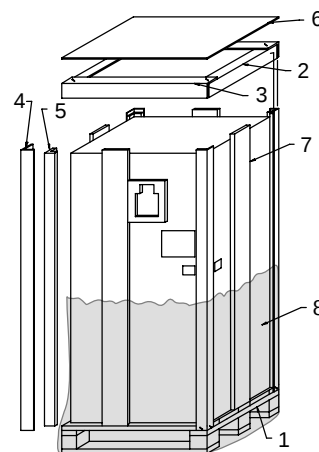
Compatible with our Hiromatic graphic display.



4.10 – Packing

The air conditioners are usually packed with wooden pallet (1), shockproof angulars in pressed cardboard (2, 3, 4)/polystyrene (5), panels in cardboard (6)/polystyrene (7) and extensible polythene film (8).

On request, wooden crates or cases can be supplied for the sea transport.



4.11 – Product quality and safety

The product conforms to European Union directives 98/37/CE (89/392/CEE; 91/368/CEE; 93/68/CEE), 89/336/CEE; 73/23/CEE.

Further, the Company Quality System of Air Conditioning Division is approved by LRQA according to the standards UNI EN ISO 9001: 1994 and the product is the result of activities performed in compliance with the provisions contained in the Quality procedures and plans.

Il Sistema Garanzia Qualità della Divisione Air Conditioning è certificato da Lloyd's Register Quality Assurance conforme alla norma ISO 9001:1994.



Units are supplied complete with a test certificate and conformity declaration and control component list.



Himod units are marked as they comply with the European directives concerning mechanical, electrical and electromagnetic safety.

5 – Condensing section

5.1 – Air condensers

The units may be connected to a wide range of our condensers (single circuit HCA or double circuit HBA).

The following paragraphs describe the suggested coupling for Himod units as a function of the outdoor air temperature. The data given below are approximate and must always be verified on the basis of the specific performances and different operating conditions.



Standard Model	Performances			Electric data			Overall dimensions		
	Duty (d)	Air flow	SPL 5 m	Supply	Number of fans	Total absorbed power	Width	Depth	Height (e)
	kW	m ³ /h	dB(A)	V/ph/Hz	n°	kW	mm	mm	mm
HCA07	7.1	1900	44	230/1/50 ^(a)	1	0.18	803	451	703
HCA10	9.4	4100	47	230/1/50 ^(a)	2	0.36	1253	451	703
HCA14	14.5	4430	44	230/1/50 ^(a)	1	0.29	1175	797	890
HCA17	16.5	4160	44	230/1/50 ^(a)	1	0.29	1175	797	890
HCA24	24.0	7950	51	230/1/50 ^(b)	1	0.52	1325	1098	992
HCA29	28.3	7530	51	230/1/50 ^(b)	1	0.52	1325	1098	992
HCA33	32.1	8320	47	230/1/50 ^(a)	2	0.58	2125	797	890
HBA33	32.1	8320	47	230/1/50 ^(a)	2	0.58	2125	797	890
HCA42	41.6	15900	54	230/1/50 ^(b)	2	1.04	2425	1098	992
HCA49	47.9	15900	54	230/1/50 ^(b)	2	1.04	2425	1098	992
HBA49	47.9	15900	54	230/1/50 ^(b)	2	1.04	2425	1098	992
HCA58	56.6	15060	54	230/1/50 ^(b)	2	1.04	2425	1098	992
HCA74	72	23850	57	230/1/50 ^(b)	3	1.56	3526	1098	992
HBA74	72	23850	57	230/1/50 ^(b)	3	1.56	3526	1098	992
HCA87	84.9	22590	57	230/1/50 ^(b)	3	1.56	3526	1098	992
HBA87	84.9	22590	57	230/1/50 ^(b)	3	1.56	3526	1098	992
HCA95	91.5	21750	57	230/1/50 ^(b)	3	1.56	3526	1098	992
HCA99	113	30120	58	230/1/50 ^(b)	4	2.08	4625	1098	992

Low noise Model	Performances			Electric data			Overall dimensions		
	Duty (d)	Air flow	SPL 5 m	Supply	Number of fans	Total absorbed power	Width	Depth	Height (e)
	kW	m ³ /h	db(A)	V/ph/Hz	n°	kW	mm	mm	mm
HCA07	5.0	1230	38	230/1/50 ^(a)	1	0.16	803	451	703
HCA10	7.2	2750	41	230/1/50 ^(a)	2	0.32	1253	451	703
HCA14	11.1	3230	40	230/1/50 ^(a)	1	0.20	1175	797	890
HCA17	12.7	2920	40	230/1/50 ^(a)	1	0.20	1175	797	890
HCA24	20.4	6260	45	230/1/50 ^(b)	1	0.37	1325	1098	992
HCA29	23.6	5950	45	230/1/50 ^(b)	1	0.37	1325	1098	992
HCA33	25	5840	43	230/1/50 ^(a)	2	0.39	2125	797	890
HBA33	25	5840	43	230/1/50 ^(a)	2	0.39	2125	797	890
HCA42	36.4	12520	48	230/1/50 ^(b)	2	0.74	2425	1098	992
HCA49	40.8	12520	48	230/1/50 ^(b)	2	0.74	2425	1098	992
HBA49	40.8	12520	48	230/1/50 ^(b)	2	0.74	2425	1098	992
HCA58	47.2	11900	48	230/1/50 ^(b)	2	0.74	2425	1098	992
HCA74	61.2	18780	51	230/1/50 ^(b)	3	1.11	3526	1098	992
HBA74	61.2	18780	51	230/1/50 ^(b)	3	1.11	3526	1098	992
HCA87	70.8	17850	51	230/1/50 ^(b)	3	1.11	3526	1098	992
HBA87	70.8	17850	51	230/1/50 ^(b)	3	1.11	3526	1098	992
HCA95	73.5	16710	51	230/1/50 ^(b)	3	1.11	3526	1098	992
HCA99	95	25380	51	230/1/50 ^(b)	4	1.63	4625	1098	992

(a): available with 230V/1ph/60Hz.

(b): available with 400V/3ph/60Hz

(c): vertical flow installation.

(d): at the following conditions: dT (condensing temp – outdoor temp) = 15 °C; outdoor temperature 35 °C; 0 m a.s.l.

Coupling of remote air condensers

R22/R407C

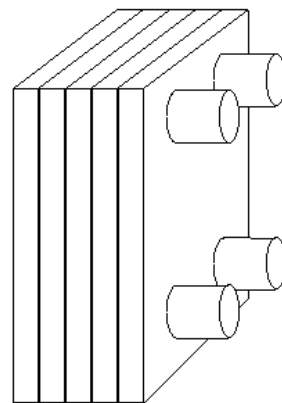
MODEL	External temperature up to 30°C		External temperature up to 35°C		External temperature up to 40°C		External temperature up to 46°C	
	standard	low noise	standard	low noise	standard	low noise	standard	low noise
20 U/O A/D	HCA 17	HCA 24	HCA 17	HCA 24	HCA 24	HCA 29	HCA 42	HCA 42
24 U/O A/D	HCA 24	HCA 24	HCA 24	HCA 29	HCA 29	HCA 42	HCA 49	HCA 49
28 U/O A/D	HCA 24	HCA 24	HCA 29	HCA 33	HCA 33	HCA 42	HCA 58	HCA 58
34 U/O A/D	HCA 24	HCA 33	HCA 33	HCA 42	HCA 42	HCA 49	HCA 58	HCA 74
40 U/O A/D	HCA 33	HCA 42	HCA 42	HCA 42	HCA 49	HCA 58	HCA 74	HCA 87
26 U/O A/D	2 x HCA 10	2 x HCA 14	2 x HCA 14	2 x HCA 17 or 1 x HBA 33	2 x HCA 17 or 1 x HBA 33	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49
32 U/O A/D	2 x HCA 14	2 x HCA 17 or 1 x HBA 33	2 x HCA 14	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 49	2 x HCA 33 or 1 x HBA 74
42 U/O A/D	2 x HCA 14	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 29	2 x HCA 33 or 1 x HBA 74	2 x HCA 42 or 1 x HBA 87
46 U/O A/D	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 24 or 1 x HBA 49	2 x HCA 29	2 x HCA 29	2 x HCA 33 or 1 x HBA 74	2 x HCA 42 or 1 x HBA 87	2 x HCA 49
55 U/A	2 x HCA 24 or 1 x HBA 49	2 x HCA 29	2 x HCA 29 or 1 x HBA 49	2 x HCA 33	2 x HCA 42 or 1 x HBA 74	2 x HCA 42	2 x HCA 58 or 1 x HBA 99	2 x HCA 58 or 1 x HBA 99
65 U/A	2 x HCA 24 or 1 x HBA 49	2 x HCA 29	2 x HCA 29	2 x HCA 42	2 x HCA 42 or 1 x HBA 87	2 x HCA 49	2 x HCA 58 or 1 x HBA 99	2 x HCA 58 or 1 x HBA 99

The coupling applies for a total equivalent distance of max. 30 m and in compliance with the instructions for the unit installation.
Max. geodetic height difference between condenser and unit: 3 m (if the condenser is placed underneath the ambient unit).

5.2 – Water condensers.

The water—condensed units are provided with a water/refrigerant exchanger with braze—welded **plates** made of **stainless steel**; this advanced exchanger type gives the highest efficiency in heat exchange. In addition, a certain oversizing of the exchanger has been provided so as to reduce pressure drops (and energy consumption of the water pump) as much as possible and thus to allow the unit to operate with the external chiller in closed circuit, even at high outdoor temperatures.

The O/UW units are designed for operating with mains water, tower water or water in closed circuit with an external chiller. When operating in a closed circuit, the water is cooled by the outdoor air in a heat exchanger; in this case, to avoid unwanted ice formation during winter, it is advisable to use a water/glycol mixture. The circulation of the water—glycol mixture is forced (the pump is not supplied). If mains water or tower water is used, when installing the unit fit a mechanical filter on the water line to protect the condenser against possible impurities contained in the water (for condenser cleaning see the installation manual).



5.3 – Dry coolers

Our dry—coolers are built with a copper/aluminium cooling coil and axial fan(s). The main data on dry coolers is shown in the following table:

Standard Model	Performances			Electric data			Overall dimensions		
	Duty (a)	Air flow	SPL 10 m	Supply	Number of fans	Total absorbed power	Width	Depth	Height (b)
	kW	m ³ /h	db(A)	V/ph/Hz	n°	kW	mm	mm	mm
DSM009	9	6.600	50	230/1/50	1	0.64	1.250	900	990
DSM013	13.5	5.100	50	230/1/50	1	0.64	1.250	900	990
DSM018	17.6	13.200	53	230/1/50	2	1.28	2.050	900	990
DSM022	22.4	12.600	53	230/1/50	2	1.28	2.050	900	990
DSM028	27.5	18.900	54	230/1/50	3	1.92	2.850	1.260	990
DST030	33	20.500	55	400/3/50	2	1.44	2.750	1.260	1.140
DST040	39	20.000	55	400/3/50	2	1.44	2.730	1.260	1.140
DST050	50	30.750	57	400/3/50	3	2.16	3.900	1.260	1.140
DST060	58	30.000	57	400/3/50	3	2.16	3.900	1.260	1.140
DST070	68	28.350	57	400/3/50	3	2.16	3.900	1.260	1.140
DST080	80	40.000	58	400/3/50	4	2.88	5.060	1.260	1.140
DST110	108	52.500	59	400/3/50	3	4.35	5.010	1.640	1.500
DST135	134	70.000	60	400/3/50	4	5.8	6.520	1.640	1.500
DST175	175	110.000	64	400/3/50	4	12.8	6.520	1.640	1.570
DST220	220	106.000	64	400/3/50	4	12.8	6.520	1.640	1.570
DST270	270	132.500	65	400/3/50	5	16	8.055	1.640	1.570
DST290	284	204.000	67	400/3/50	8	25.6	6.155	2.420	1.570
DST330	326	208.000	63	400/3/50	8	17.6	7.355	2.440	1.770
DST360	362	255.000	68	400/3/50	10	32	7.555	2.420	1.770
DST400	400	190.000	63	400/3/50	8	17.6	7.355	2.440	1.770
DST450	447	235.000	68	400/3/50	10	2	7.555	2.420	1.570
DST500	500	237.500	64	400/3/50	10	32	9.055	2.440	1.770

Low Noise Model	Performances			Electric data			Overall dimensions		
	Duty ^(a)	Air flow	SPL 10 m ^(c)	Supply	Number of fans	Total absorbed power	Width	Depth	Height ^(b)
	kW	m ³ /h	db(A)	V/ph/Hz	n°	kW	mm	mm	mm
DLM008	7.5	4.700	39	230/1/50	1	0.29	1250	900	990
DLM011	10.5	3.700	39	230/1/50	1	0.29	1250	900	990
DLM015	15.5	9.500	42	230/1/50	2	0.58	2.050	900	990
DLM018	18	9.000	42	230/1/50	2	0.58	2.050	900	990
DLM023	23	14.000	43	230/1/50	3	0.87	2.850	1260	990
DLT027	27.5	15.000	47	400/3/50	2	0.7	2.750	1260	1.140
DLT030	30	14.500	47	400/3/50	2	0.7	2.730	1260	1.140
DLT040	40	22.500	49	400/3/50	3	1.05	3.900	1260	1.140
DLT047	47	21.750	49	400/3/50	3	1.05	3.900	1260	1.140
DLT055	54	20.250	49	400/3/50	3	1.05	3.900	1260	1.140
DLT065	65	29.000	50	400/3/50	4	1.4	5.060	1260	1.140
DLT085	84	40.500	54	400/3/50	3	2.16	5.010	1.640	1.500
DLT110	112	54.000	55	400/3/50	4	2.88	6.520	1.640	1.500
DLT130	130	67.000	51	400/3/50	4	3.72	6.520	1.640	1.570
DLT160	157	62.000	51	400/3/50	4	3.72	6.520	1.640	1.570
DLT190	190	77.500	52	400/3/50	5	4.65	8.055	1.640	1.570
DLT210	212	123.000	54	400/3/50	8	7.44	6.155	2.420	1.570
DLT250	253	132.000	51	400/3/50	8	6.88	7.355	2.440	1.770
DLT270	270	153.750	55	400/3/50	10	9.3	7.555	2.420	1.770
DLT290	290	118.000	51	400/3/50	8	6.88	7.355	2.440	1.770
DLT310	310	137.500	55	400/3/50	10	9.3	7.555	2.420	1.570
DLT350	350	147.500	52	400/3/50	10	8.6	9.055	2.440	1.770

(a): at the following conditions: outdoor temperature = 35 °C, inlet/outlet water temperature = 45 °C/40 °C.

(b): vertical flow installation.

(c): according to DIN45635.

Coupling of Dry—coolers

MODEL	External temperature up to 30°C		External temperature up to 35°C		External temperature up to 40°C	
	standard	low noise	standard	low noise	standard	low noise
20 U/O W/F/H	1 x DSM 013	1 x DLM 015	1 x DSM 018	1 x DLM 018	1 x DSM 028	1 x DLT 027
24 U/O W/F/H	1 x DSM 018	1 x DLM 018	1 x DSM 022	1 x DLM 023	1 x DST 040	1 x DLT 040
28 U/O W/F/H	1 x DSM 018	1 x DLM 018	1 x DSM 028	1 x DLT 027	1 x DST 040	1 x DLT 040
34 U/O W/F/H	1 x DSM 022	1 x DLM 023	1 x DST 030	1 x DLT 030	1 x DST 050	1 x DLT 047
40 U/O W/F/H	1 x DSM 028	1 x DLT 027	1 x DST 040	1 x DLT 040	1 x DST 070	1 x DLT 065
26 U/O W/F/H	1 x DSM 018	1 x DLM 018	1 x DSM 028	1 x DLT 027	1 x DST 040	1 x DLT 040
32 U/O W/F/H	1 x DSM 022	1 x DLM 023	1 x DST 030	1 x DLT 030	1 x DST 050	1 x DLT 047
42 U/O W/F/H	1 x DSM 028	1 x DLT 027	1 x DST 050	1 x DLT 040	1 x DST 060	1 x DLT 065
46 U/O W/F/H	1 x DST 040	1 x DLT 040	1 x DST 060	1 x DLT 055	1 x DST 080	1 x DLT 085
55 U/W	1 x DST 050	1 x DLT 047	1 x DST 060	1 x DLT 055	1 x DST 110	1 x DLT 110
65 U/W	1 x DST 060	1 x DLT 055	1 x DST 070	1 x DLT 065	1 x DST 135	1 x DLT 130

6 – Technical notes

6.1 – Optional alternative refrigerant, R407C.

The revision of the European regulation 3093/94 and recent international agreements (Montreal, London, Copenhagen, Vienna and San José) have abolished – with precise expiry dates – the production of the HCFC fluids (e.g.: R22) considered as harmful for the ozone layer. The new HFC fluids (hydrofluorocarbons) which have to replace them contain no chlorine, a dangerous substance for the ozone layer. Refrigerant R407C is considered as the most suitable substance for replacing R22.

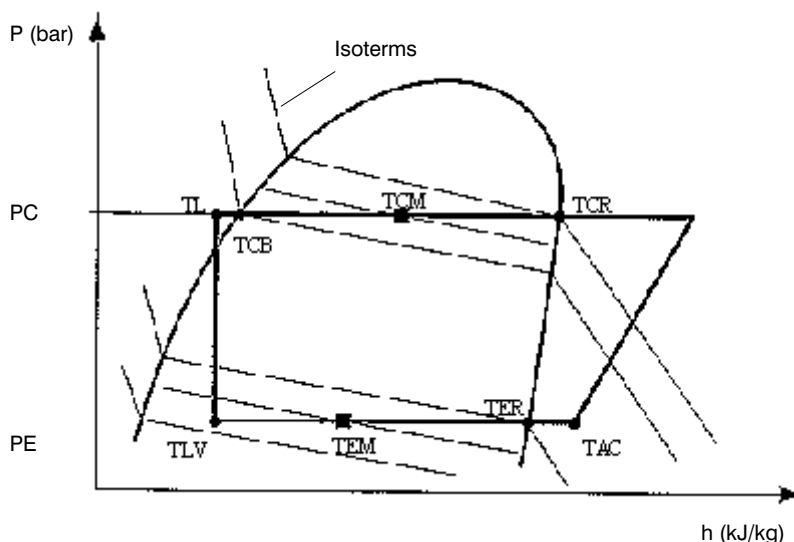
Its main features are:

- ✓ Non-azeotropic mixture made of R32/R125/R134a in which the percentage weight composition is, in ratio, 23/25/52.
- ✓ Thermophysical features similar to R22.
- ✓ ODP (Ozone Depletion Potential) equal to 0.
- ✓ Not flammable in the air.
- ✓ Low toxicity.

The new HFC fluids are essentially incompatible with the mineral oils which are usually used with R12 and R22.

Therefore, new synthetic lubricants based on polyester molecules have been developed for their use.

Note: Considering the unique thermophysical properties of RC407C the refrigeration cycle is illustrated in the diagram below.



High pressure side

TCB: condensation temperature bubble point (Liquid)

TCR: condensation temperature dew point (Vapor)

TCM: average condensation temperature $(TCB + TCM)/2$

TL: temperature of the refrigerant at the expansion valve inlet

Overheating = $TAC - TER$

Low pressure side

TLV: liquid-steam temperature

TER: evaporation temperature dew point (Vapor)

TEM: average evaporation temperature $(TLV + TER)/2$

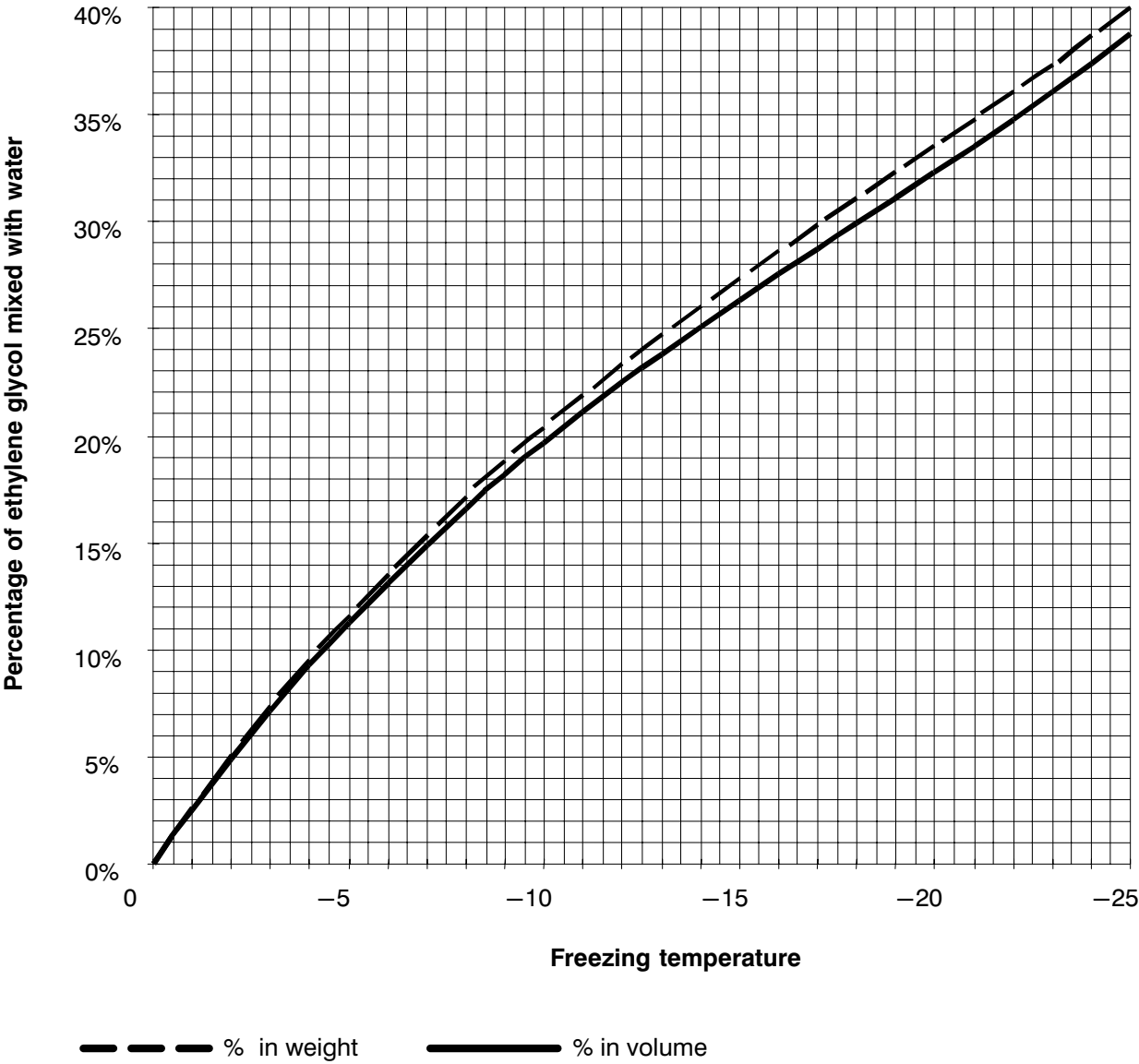
TAC: temperature of the overheated vapour at the compressor inlet

Sub-cooling = $TCB - TL$

Attention

The differences between the units operating with the fluid R407C and those operating with the fluid R22 are described below.

Featuring of ethylene glycol mixture



7 — Electrical characteristics 50/60 Hz unit

50 Hz	3 ph / 400 V											
Component	STANDARD R22								OPTIONAL R407C			
	FAN (3ph – 160 → 400V)				COMPRESSOR (3ph – 400V)				COMPRESSOR (3ph – 400V)			
Model 50 Hz	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)
20U A/W	3.9	4.5	13	1.0	7.8	10.8	70.5	4.3	8.0	10.8	70.5	4.4
24U A/W	4.2	4.5	13	1.3	11.2	15.0	94	5.3	11.1	15	94	5.8
28U A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.1	12.0	18.5	116	6.3	13.7	18.5	116	6.9
34U A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	13.7	21.2	127	7.2	15.3	21.2	127	8.1
40U A/W	2 x 4.3	2 x 4.5	2 x 13	2 x 1.35	17.1	26.0	159	8.9	17.6	26	159	10.0
26U A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.1	2 x 5.9	2 x 7.5	2 x 51	2 x 2.63	2 x 6.1	2 x 7.5	2 x 51	2 x 2.93
32U A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	2 x 7.5	2 x 9.6	2x59.5	2 x 3.24	2 x 7.6	2 x 9.6	2x59.5	2 x 3.62
42U A/W	2 x 4.3	2 x 4.5	2 x 13	2 x 1.35	2 x 7.9	2x10.8	2x70.5	2 x 4.30	2 x 8.0	2x10.8	2x70.5	2 x 4.40
46U A/W	2 x 4.3	2 x 4.5	2 x 13	2 x 1.5	2x11.3	2x15.0	2 x 94	2 x 5.30	2x11.1	2x15.0	2 x 94	2 x 5.80
55U A/W	2 x 4.4	2 x 4.5	2 x 13	2 x 1.83	2x12.8	2x16.9	2x130	2 x 7.25	2x12.4	2x16.9	2x130	2 x 6.89
65U A/W	2 x 4.4	2 x 4.5	2 x 13	2 x 2.07	2x15.0	2x19.4	2x130	2 x 7.90	2x17.5	2x19.4	2x130	2 x 7.52
20O A/W	4.1	4.5	13	2.2	7.9	10.8	70.5	4.3	8.0	10.8	70.5	4.4
24O A/W	4.3	4.5	13	2.8	11.2	15.0	94	5.3	11.1	15	94	5.8
28O A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	12.0	18.5	116	6.3	13.7	18.5	116	6.9
34O A/W	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	13.7	21.2	127	7.2	15.3	21.2	127	8.1
40O A/W	2 x 4.5	2 x 4.5	2 x 13	2 x 1.6	17.1	26.0	159	8.9	17.6	26	159	10.0
26O A/W	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	2 x 5.9	2 x 7.5	2 x 51	2 x 2.63	2 x 6.1	2 x 7.5	2 x 51	2 x 2.93
32O A/W	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	2 x 7.5	2 x 9.6	2x59.5	2 x 3.24	2 x 7.6	2 x 9.6	2x59.5	2 x 3.62
42O A/W	2 x 4.5	2 x 4.5	2 x 13	2 x 1.6	2 x 7.9	2x10.8	2x70.5	2 x 4.30	2 x 8.0	2x10.8	2x70.5	2 x 4.40
46O A/W	2 x 4.4	2 x 4.5	2 x 13	2 x 1.75	2x11.3	2x15.0	2 x 94	2 x 5.30	2x11.1	2x15.0	2 x 94	2 x 5.80
20U D/H	4.1	4.5	13	1.1	7.8	10.8	70.5	4.3	8.0	10.8	70.5	4.4
24U D/H	4.4	4.5	13	1.5	11.3	15.0	94	5.3	11.1	15	94	5.8
28U D/H	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	12.0	18.5	116	6.3	13.7	18.5	116	6.9
34U D/H	2 x 4.2	2 x 4.5	2 x 13	2 x 1.3	13.7	21.2	127	7.2	15.3	21.2	127	8.1
40U D/H	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	17.1	26.0	159	8.9	17.6	26	159	10.0
26U D/H	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	2 x 5.9	2 x 7.5	2 x 51	2 x 2.63	2 x 6.1	2 x 7.5	2 x 51	2 x 2.93
32U D/H	2 x 4.2	2 x 4.5	2 x 13	2 x 1.3	2 x 7.5	2 x 9.6	2x59.5	2 x 3.24	2 x 7.6	2 x 9.6	2x59.5	2 x 3.62
42U D/H	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	2 x 7.9	2x10.8	2x70.5	2 x 4.30	2 x 8.0	2x10.8	2x70.5	2 x 4.40
46U D/H	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	2x11.3	2x15.0	2 x 94	2 x 5.30	2x11.1	2x15.0	2 x 94	2 x 5.80
20O D/H	4.1	4.5	13	1.2	7.8	10.8	70.5	4.3	8.0	10.8	70.5	4.4
24O D/H	4.5	4.5	13	1.6	11.2	15.0	94	5.3	11.1	15	94	5.8
28O D/H	2 x 4.2	2 x 4.5	2 x 13	2 x 1.25	12.0	18.5	116	6.3	13.7	18.5	116	6.9
34O D/H	2 x 4.3	2 x 4.5	2 x 13	2 x 1.5	13.7	21.2	127	7.2	15.3	21.2	127	8.1
40O D/H	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	17.1	26.0	159	8.9	17.6	26	159	10.0
26O D/H	2 x 4.2	2 x 4.5	2 x 13	2 x 1.25	2 x 5.9	2 x 7.5	2 x 51	2 x 2.63	2 x 6.1	2 x 7.5	2 x 51	2 x 2.93
32O D/H	2 x 4.3	2 x 4.5	2 x 13	2 x 1.5	2 x 7.4	2 x 9.6	2x59.5	2 x 3.24	2 x 7.6	2 x 9.6	2x59.5	2 x 3.62
42O D/H	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	2 x 7.9	2x10.8	2x70.5	2 x 4.30	2 x 8.0	2x10.8	2x70.5	2 x 4.40
46O D/H	2 x 4.5	2 x 4.5	2 x 13	2 x 1.9	2x11.3	2x15.0	2 x 94	2 x 5.30	2x11.1	2x15.0	2 x 94	2 x 5.80
20U F	4.1	4.5	13	1.1	8.7	10.8	70.5	5.1	9.3	10.8	70.5	5.3
24U F	4.4	4.5	13	1.5	12.8	15.0	94	6.4	12.9	15	94	6.9
28U F	2 x 4.1	2 x 4.5	2 x 13	1.4	13.8	18.5	116	7.3	16.1	18.5	116	8.1
34U F	2 x 4.2	2 x 4.5	2 x 13	2 x 1.3	15.8	21.2	127	8.4	17.4	21.2	127	9.7
40U F	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	20.7	26.0	159	10.3	20.8	26	159	11.5
26U F	2 x 4.1	2 x 4.5	2 x 13	2 x 1.2	2 x 6.5	2 x 7.5	2 x 51	2 x 2.63	2 x 7.0	2 x 7.5	2 x 51	2 x 2.93
32U F	2 x 4.2	2 x 4.5	2 x 13	2 x 1.3	2 x 8.4	2 x 9.6	2x59.5	2 x 3.24	2 x 8.6	2 x 9.6	2x59.5	2 x 3.62
42U F	2 x 4.3	2 x 4.5	2 x 13	2 x 1.45	2 x 9.4	2x10.8	2x70.5	2 x 4.30	2 x 9.7	2x10.8	2x70.5	2 x 4.40
46U F	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	2x13.2	2x15.0	2 x 94	2 x 5.30	2x13.2	2x15.0	2 x 94	2 x 5.80
20O F	4.1	4.5	13	1.2	8.7	10.8	70.5	5.1	9.1	10.8	70.5	5.3
24O F	4.5	4.5	13	1.6	13.0	15.0	94.0	6.4	13.1	15	94	6.9
28O F	2 x 4.2	2 x 4.5	2 x 13	2 x 1.25	13.8	18.5	116.0	7.3	16.1	18.5	116	8.1
34O F	2 x 4.3	2 x 4.5	2 x 13	2 x 1.5	15.8	21.2	127.0	8.4	17.4	21.2	127	9.6
40O F	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	20.6	26.0	159.0	10.3	20.7	26	159	11.5
26O F	2 x 4.2	2 x 4.5	2 x 13	2 x 1.25	2 x 6.5	2 x 7.5	2 x 51	2 x 2.63	2 x 7.0	2 x 7.5	2 x 51	2 x 2.93
32O F	2 x 4.3	2 x 4.5	2 x 13	2 x 1.5	2 x 8.3	2 x 9.6	2x59.5	2 x 3.24	2 x 8.6	2 x 9.6	2x59.5	2 x 3.62

Component	STANDARD R22								OPTIONAL R407C			
	FAN (3ph – 160 → 400V)				COMPRESSOR (3ph – 400V)				COMPRESSOR (3ph – 400V)			
Model 50 Hz	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)
42O F	2 x 4.4	2 x 4.5	2 x 13	2 x 1.65	2 x 9.3	2x10.8	2x70.5	2 x 4.30	2 x 9.6	2x10.8	2x70.5	2 x 4.40
46O F	2 x 4.5	2 x 4.5	2 x 13	2 x 1.9	2x13.2	2x15.0	2 x 94	2 x 5.30	2x13.2	2x15.0	2 x 94	2 x 5.80

Component	FAN (3ph – 160 → 400V)			
Model 50 Hz	OA	FLA	LRA	absorbed power (kW)
27U C	4.3	4.4	16	1.4
45U C	4.3	4.4	16	1.4
55U C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
65U C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
80U C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
85U C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
27O C	4.3	4.4	16	1.5
45O C	4.3	4.4	16	1.5
55O C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
65O C	2 x 4.3	2 x 4.4	2 x 16	2 x 1.5
80O C	2 x 4.4	2 x 4.4	2 x 16	2 x 1.6
85O C	2 x 4.4	2 x 4.4	2 x 16	2 x 1.6

60 Hz	3 ph / 208 ÷ 230 V											
Component	STANDARD R22								OPTIONAL R407C			
	FAN (3ph – 160 → 460V)				COMPRESSOR (3ph – 208 ÷ 230V)				COMPRESSOR (3ph – 208 ÷ 230V)			
Model 60 Hz	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)
20U A/W	3.2	3.5	16	0.81	14.8	20.7	133	4.5	14.8	20.7	133	4.6
24U A/W	3.4	3.5	16	1.1	15.7	22.7	172	5.2	15.7	22.7	172	5.3
28U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	22.3	32.0	203	6.5	23.1	32.0	203	6.9
34U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	25.3	39.4	232	7.9	26.3	39.4	232	8.4
40U A/W	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	29.0	42.3	278	9	30.8	42.3	278	9.6
26U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	2 x 7.8	2x13.9	2 x 91	2 x 2.85	2 x 8.2	2x13.9	2 x 91	2 x 2.95
32U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	2x10.8	2x17.1	2 x 98	2 x 3.65	2x11.5	2x17.1	2 x 98	2 x 3.6
42U A/W	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2x14.8	2x20.7	2x133	2 x 4.5	2x14.9	2x20.7	2x133	2 x 4.6
46U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2x15.9	2x22.7	2x172	2 x 5.25	2x15.9	2x22.7	2x172	2 x 5.3
20O A/W	3.3	3.5	16	0.9	14.7	20.7	133	4.5	14.8	20.7	133	4.6
24O A/W	3.4	3.5	16	1.2	15.7	22.7	172	5.2	15.7	22.7	172	5.3
28O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	22.3	32.0	203	6.5	23.1	32.0	203	6.9
34O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	25.3	39.4	232	7.9	26.3	39.4	232	8.4
40O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	29	42.3	278	9.0	30.8	42.3	278	9.6
26O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	2 x 7.8	2x13.9	2 x 91	2 x 2.85	2 x 8.2	2x13.9	2 x 91	2 x 2.95
32O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	2x10.8	2x17.1	2 x 98	2 x 3.6	2x11.5	2x17.1	2 x 98	2 x 3.6
42O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	2x14.8	2x20.7	2x133	2 x 4.5	2x14.9	2x20.7	2x133	2 x 4.6
46O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.35	2x15.8	2x22.7	2x172	2 x 5.25	2x15.8	2x22.7	2x172	2 x 5.3
20U D/H	3.3	3.5	16	1.0	14.7	20.7	133	4.5	14.8	20.7	133	4.6
24U D/H	3.3	3.5	16	1.3	15.8	22.7	172	5.2	15.8	22.7	172	5.3
28U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	22.3	32.0	203	6.5	23.1	32.0	203	6.9
34U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	25.3	39.4	232	7.9	26.3	39.4	232	8.4
40U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	29	42.3	278	9.0	30.8	42.3	278	9.6
26U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	2 x 7.8	2x13.9	2 x 91	2 x 5.85	2 x 8.2	2x13.9	2 x 91	2 x 2.95
32U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2x10.8	2x17.1	2 x 98	2 x 3.6	2x11.5	2x17.1	2 x 98	2 x 3.55
42U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.1	2x14.8	2x20.7	2x133	2 x 4.5	2x14.9	2x20.7	2x133	2 x 4.6
46U D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2x15.9	2x22.7	2x172	2 x 5.25	2x15.9	2x22.7	2x172	2 x 5.3
20O D/H	3.4	3.5	16	1.0	14.7	20.7	133	4.4	14.7	20.7	133	4.6
24O D/H	3.3	3.5	16	1.3	15.7	22.7	172	5.2	15.7	22.7	172	5.3
28O D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	22.3	32.0	203	6.5	23.1	32.0	203	6.9
34O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	25.3	39.4	232	7.9	26.3	39.4	232	8.4
40O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	29.0	42.3	278	9.0	30.8	42.3	278	9.6
26O D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	2 x 7.8	2x13.9	2 x 91	2 x 2.85	2 x 8.2	2x13.9	2 x 91	2 x 2.95
32O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2x10.8	2x17.1	2 x 98	2 x 3.6	2x11.5	2x17.1	2 x 98	2 x 3.65
42O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2x14.8	2x20.7	2x133	2 x 4.5	2x14.9	2x20.7	2x133	2 x 4.6
46O D/H	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2x15.8	2x22.7	2x172	2 x 5.25	2x15.8	2x22.7	2x172	2 x 5.3
20U F	3.3	3.5	16	1.0	15.7	20.7	133	4.9	15.9	20.7	133	5.1
24U F	3.3	3.5	16	1.3	17.1	22.7	172	5.8	17.1	22.7	172	5.9
28U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	24.0	32.0	203	7.2	25.2	32.0	203	7.9
34U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	27.1	39.4	232	8.8	28.7	39.4	232	9.6
40U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	31.0	42.3	278	10.0	33.7	42.3	278	11.0
26U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	2 x 8.5	2x13.9	2 x 91	2 x 3.2	2 x 8.9	2x13.9	2 x 91	2 x 3.3
32U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2x11.8	2x17.1	2 x 98	2 x 3.95	2x12.9	2x17.1	2 x 98	2 x 4.15
42U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2x15.8	2x20.7	2x133	2 x 4.95	2x16.2	2x20.7	2x133	2 x 5.2
46U F	2 x 3.2	2 x 3.5	2 x 16	2.7	2x17.5	2x22.7	2x172	2x 5.95	2x17.5	2x22.7	2x172	2 x 6.05
20O F	3.4	3.5	16	1.0	15.7	20.7	133	4.9	15.8	20.7	133	5.1
24O F	3.3	3.5	16	1.3	17.0	22.7	172	5.8	17.0	22.7	172	5.9
28O F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	24.0	32.0	203	7.2	25.2	32.0	203	7.9
34O F	2 x 3.3	2 x 5	2 x 16	2 x 1.2	27.0	39.4	232	8.8	28.7	39.4	232	9.6
40O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	31.0	42.3	278	10.0	33.7	42.3	278	11.0
26O F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	2 x 8.5	2x13.9	2 x 91	2 x 3.2	2 x 8.9	2x13.9	2 x 91	2 x 3.3
32O F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2x11.8	2x17.1	2 x 98	2 x 3.95	2x12.9	2x17.1	2 x 98	2 x 4.15
42O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2x15.8	2x20.7	2x133	2 x 4.95	2x16.2	2x20.7	2x133	2 x 5.2
46O F	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2x17.4	2x22.7	2x172	2 x 5.95	2x17.4	2x22.7	2x172	2 x 6.05

60 Hz	3 ph / 380 V											
Component	STANDARD R22								OPTIONAL R407C			
	FAN (3ph – 160 → 460V)				COMPRESSOR (3ph – 380V)				COMPRESSOR (3ph – 380V)			
Model 60 Hz	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)
20U A/W	3.2	3.5	16	0.8	8.9	12.0	64.0	4.5	—	—	—	—
24U A/W	3.4	3.5	16	1.1	9.4	13.5	70.0	5.2	—	—	—	—
28U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	11.3	18.2	112	4.5	11.5	18.2	112	6.9
34U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	15.1	23.5	144	5.2	16.1	23.5	144	8.4
40U A/W	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	17.3	28.8	151	6.5	18.0	28.8	151	9.6
26U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	—	—	—	—	—	—	—	—
32U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	2 x 5.9	2 x 9.5	2x57.0	2 x 3.65	—	—	—	—
42U A/W	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 8.9	2x12.0	2x64.0	2 x 4.5	—	—	—	—
46U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 9.5	2x13.5	2x70.0	2 x 5.25	—	—	—	—
20O A/W	3.3	3.5	16	0.9	7.4	12.0	64.0	4.5	—	—	—	—
24O A/W	3.4	3.5	16	1.2	9.4	13.5	70.0	5.2	—	—	—	—
28O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	11.3	18.2	112	6.5	11.5	18.2	112	6.9
34O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	15.1	21.8	144	7.9	16.1	21.8	144	8.4
40O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	17.3	25.1	151	9.0	18.0	25.1	151	9.6
26O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	—	—	—	—	—	—	—	—
32O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	2 x 5.9	2 x 9.5	2x57.0	2 x 3.6	—	—	—	—
42O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	2 x 8.9	2x12.0	2x64.0	2 x 4.5	—	—	—	—
46O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.35	2 x 9.4	2x13.5	2x70.0	2 x 5.25	—	—	—	—
20U D/H	3.3	3.5	16	1.0	8.8	12.0	64.0	4.5	—	—	—	—
24U D/H	3.3	3.5	16	1.3	9.4	13.5	70.0	5.2	—	—	—	—
28U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	11.3	18.2	112	6.5	11.5	18.2	112	6.9
34U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	15.1	21.8	144	7.9	16.1	21.8	144	8.4
40U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	17.3	25.1	151	9.0	18.0	25.1	151	9.6
26U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	—	—	—	—	—	—	—	—
32U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 5.9	2 x 9.5	2x57.0	2 x 3.6	—	—	—	—
42U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 8.9	2x12.0	2x64.0	2 x 4.5	—	—	—	—
46U D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 9.5	2x13.5	2x70.0	2 x 5.25	—	—	—	—
20O D/H	3.4	3.5	16	1.0	8.8	12.0	64.0	4.4	—	—	—	—
24O D/H	3.3	3.5	16	1.3	9.4	13.5	70.0	5.2	—	—	—	—
28O D/H	2 x 3.4	2 x 3.5	2 x 16	2.1	11.3	18.2	112	6.5	11.5	18.2	112	6.9
34O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	15.1	21.8	144	7.9	16.0	21.8	144	8.4
40O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	17.3	25.1	151	9.0	18.0	25.1	151	9.6
26O D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	—	—	—	—	—	—	—	—
32O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 5.8	2 x 9.5	2x57.0	2 x 3.6	—	—	—	—
42O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 8.9	2x12.0	2x64.0	2 x 4.5	—	—	—	—
46O D/H	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2 x 9.4	2x13.5	2x70.0	2 x 5.25	—	—	—	—
20U F	3.3	3.5	16	1.0	9.5	12.0	64.0	4.9	—	—	—	—
24U F	3.3	3.5	16	1.3	10.2	13.5	70.0	5.8	—	—	—	—
28U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	11.9	18.2	112	7.2	12.4	18.2	112	7.9
34U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	16.1	21.8	144	8.8	17.6	21.8	144	9.6
40U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	18.5	25.1	151	10.0	19.7	25.1	151	11.0
26U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	—	—	—	—	—	—	—	—
32U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 6.2	2 x 9.5	2x57.0	2 x 3.95	—	—	—	—
42U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 9.5	2x12.0	2x64.0	2 x 4.95	—	—	—	—
46U F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2x10.4	2x13.5	2x70.0	2 x 5.95	—	—	—	—
20O F	3.4	3.5	16	1.0	9.4	12.0	64.0	4.9	—	—	—	—
24O F	3.3	3.5	16	1.3	10.2	13.5	70.0	5.8	—	—	—	—
28O F	2 x 3.4	2 x 3.5	2 x 16	2 x 0.95	11.9	18.2	112	7.2	12.4	18.2	112	7.9
34O F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	16.1	21.8	144	8.8	17.5	21.8	144	9.6
40O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	18.5	25.1	151	10.0	19.7	25.1	151	11.0
26O F	2 x 3.4	2 x 3.5	2 x 16	2 x 0.95	—	—	—	—	—	—	—	—
32O F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 6.2	2 x 9.5	2x57.0	2 x 3.95	—	—	—	—
42O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 9.5	2x12.0	2x64.0	2 x 4.95	—	—	—	—
46O F	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2x10.4	2x13.5	2x70.0	2 x 5.95	—	—	—	—

60 Hz	3 ph / 460 V											
Component	STANDARD R22								OPTIONAL R407C			
	FAN (3ph – 160 → 460V)				COMPRESSOR (3ph – 460V)				COMPRESSOR (3ph – 460V)			
Model 60 Hz	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)	OA	FLA	LRA	absorbed power (kW)
20U A/W	3.2	3.5	16	0.8	7.4	10.2	63	4.5	7.6	10.2	63	4.6
24U A/W	3.4	3.5	16	1.1	7.8	11.4	70.5	5.2	8.0	11.4	70.5	5.3
28U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	11.3	16.4	95.0	6.5	11.1	16.4	95.0	6.9
34U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	12.1	19.1	125.0	7.9	13.1	19.1	125.0	8.4
40U A/W	2 x 3.4	2 x 5	2 x 16	2 x 1.1	13.7	22.8	127.0	9	15.1	22.8	127.0	9.6
26U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.9	2 x 4.5	2 x 6.8	2x44.0	2 x 2.85	2 x 4.7	2 x 6.8	2x44.0	2 x 2.95
32U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	2 x 5.8	2 x 7.9	2x50.0	2 x 3.65	2 x 5.7	2 x 7.9	2x50.0	2 x 3.6
42U A/W	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 7.5	2x10.2	2x63.0	2 x 4.5	2 x 7.6	2x10.2	2x63.0	2 x 4.6
46U A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 7.9	2x11.4	2x70.5	2 x 5.25	2 x 8.0	2x11.4	2x70.5	2 x 5.3
20O A/W	3.3	3.5	16	0.9	7.4	10.2	63	4.5	7.6	10.2	63	4.6
24O A/W	3.4	3.5	16	1.2	7.8	11.4	70.5	5.2	8.0	11.4	70.5	5.3
28O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	11.3	16.4	95.0	6.5	11.1	16.4	95.0	6.9
34O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	12.1	19.1	125.0	7.9	13.1	19.1	125.0	8.4
40O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	13.7	22.8	127.0	9.0	15.1	22.8	127.0	9.6
26O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 0.95	2 x 4.5	2 x 6.8	2x44.0	2 x 2.85	2 x 4.7	2 x 6.8	2x44.0	2 x 2.95
32O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.15	2 x 5.8	2 x 7.9	2x50.0	2 x 3.6	2 x 5.7	2 x 7.9	2x50.0	2 x 3.6
42O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.25	2 x 7.5	2x10.2	2x63.0	2 x 4.5	2 x 7.6	2x10.2	2x63.0	2 x 4.6
46O A/W	2 x 3.3	2 x 3.5	2 x 16	2 x 1.35	2 x 7.9	2x11.4	2x70.5	2 x 5.25	2 x 8.0	2x11.4	2x70.5	2 x 5.3
20U D/H	3.3	3.5	16	1.0	7.4	10.2	63	4.5	7.6	10.2	63	4.6
24U D/H	3.3	3.5	16	1.3	7.9	11.4	70.5	5.2	8.0	11.4	70.5	5.3
28U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	11.3	16.4	95.0	6.5	11.1	16.4	95.0	6.9
34U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	12.1	19.1	125.0	7.9	13.1	19.1	125.0	8.4
40U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	13.7	22.8	127.0	9.0	15.1	22.8	127.0	9.6
26U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	2 x 4.5	2 x 6.8	2x44.0	2 x 5.85	2 x 4.7	2 x 6.8	2x44.0	2 x 2.95
32U D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 5.8	2 x 7.9	2x50.0	2 x 3.6	2 x 5.7	2 x 7.9	2x50.0	2 x 3.55
42U D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 7.5	2x10.2	2x63.0	2 x 4.5	2 x 7.6	2x10.2	2x63.0	2 x 4.6
46U D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 7.9	2x11.4	2x70.5	2 x 5.25	2 x 8.0	2x11.4	2x70.5	2 x 5.3
20O D/H	3.4	3.5	16	1.0	7.4	10.2	63	4.4	7.6	10.2	63	4.6
24O D/H	3.3	3.5	16	1.3	7.8	11.4	70.5	5.2	8.0	11.4	70.5	5.3
28O D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	11.3	16.4	95.0	6.5	11.1	16.4	95.0	6.9
34O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	12.1	19.1	125.0	7.9	13.1	19.1	125.0	8.4
40O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	13.7	22.8	127.0	9.0	15.1	22.8	127.0	9.6
26O D/H	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	2 x 4.5	2 x 6.8	2x44.0	2 x 5.85	2 x 4.7	2 x 6.8	2x44.0	2 x 2.95
32O D/H	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 5.8	2 x 7.9	2x50.0	2 x 3.6	2 x 5.8	2 x 7.9	2x50.0	2 x 3.65
42O D/H	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 7.5	2x10.2	2x63.0	2 x 4.5	2 x 7.6	2x10.2	2x63.0	2 x 4.6
46O D/H	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2 x 7.9	2x11.4	2x70.5	2 x 5.25	2 x 8.0	2x11.4	2x70.5	2 x 5.3
20U F	3.3	3.5	16	1.0	7.9	10.2	63	4.9	8.1	10.2	63	5.1
24U F	3.3	3.5	16	1.3	8.6	11.4	70.5	5.8	8.9	11.4	70.5	5.9
28U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	12.1	16.4	95.0	7.2	12.2	16.4	95.0	7.9
34U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	12.9	19.1	125.0	8.8	14.3	19.1	125.0	9.6
40U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	14.7	22.8	127.0	10.0	16.4	22.8	127.0	11.0
26U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.0	2 x 4.9	2 x 6.8	2x44.0	2 x 3.2	2 x 5.1	2 x 6.8	2x44.0	2 x 3.3
32U F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.1	2 x 6.2	2 x 7.9	2x50.0	2 x 3.95	2 x 6.2	2 x 7.9	2x50.0	2 x 4.15
42U F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 7.9	2x10.2	2x63.0	2 x 4.95	2 x 8.2	2x10.2	2x63.0	2 x 5.2
46U F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 8.8	2x11.4	2x70.5	2 x 5.95	2 x 9.1	2x11.4	2x70.5	2 x 6.05
20O F	3.4	3.5	16	1.0	7.8	10.2	63	4.9	8.1	10.2	63	5.1
24O F	3.3	3.5	16	1.3	8.5	11.4	70.5	5.8	8.8	11.4	70.5	5.9
28O F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	12.1	16.4	95.0	7.2	12.2	16.4	95.0	7.9
34O F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	12.9	19.1	125.0	8.8	14.3	19.1	125.0	9.6
40O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	14.7	22.8	127.0	10.0	16.4	22.8	127.0	11.0
26O F	2 x 3.4	2 x 3.5	2 x 16	2 x 1.05	2 x 4.9	2 x 6.8	2x44.0	2 x 3.2	2 x 5.1	2 x 6.8	2x44.0	2 x 3.3
32O F	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2	2 x 6.2	2 x 7.9	2x50.0	2 x 3.95	2 x 6.2	2 x 7.9	2x50.0	2 x 4.15
42O F	2 x 3.2	2 x 3.5	2 x 16	2 x 1.35	2 x 7.9	2x10.2	2x63.0	2 x 4.95	2 x 8.2	2x10.2	2x63.0	2 x 5.2
46O F	2 x 3.1	2 x 3.5	2 x 16	2 x 1.5	2 x 8.7	2x11.4	2x70.5	2 x 5.95	2 x 9.0	2x11.4	2x70.5	2 x 6.05

Component	FAN (3ph – 160 → 460V)			
	OA	FLA	LRA	absorbed power (kW)
Model 60 Hz				
27U C	3.4	3.5	16	1.1
45U C	3.4	3.5	16	1.2
55U C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2
65U C	2 x 3.4	2 x 3.5	2 x 16	2 x 1.2
80U C	2 x 3.2	2 x 3.5	2 x 16	2 x 1.2
85U C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2
27O C	3.3	3.5	16	1.2
45O C	3.3	3.5	16	1.2
55O C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2
65O C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.2
80O C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.3
85O C	2 x 3.3	2 x 3.5	2 x 16	2 x 1.3

The fan "OA" value and the absorbed power are referred to standard air flow; Under unit with underflow air discharge and 20 Pa available external static pressure; Over unit with ducted air discharge and 50 Pa available external static pressure.

The compressor "OA" value is referred to: — ambient conditions: 24°C, 50% R.H.; condensation temperature: 45°C — A/W/D/H; ambient conditions: 24°C, 50% R.H.; external air temperature: 35°C — F. Under unit with underflow air discharge and 20 Pa available external static pressure; Over unit with ducted air discharge and 50 Pa available external static pressure.

NOTE: the indicated fan currents are measured on their terminal boards; to calculate the current absorption of the fans at the machine supply terminals multiply the indicated values by the selected transforming ratio.

Optional electrical data – 50/60 Hz unit

Component Model 50 Hz	ELECTRICAL HEATING (400V / 3Ph / 50Hz)		HUMIDIFIER (400V / 3Ph / 50Hz)	
	FLA	rated power [kW]	FLA	rated power [kW]
20—24 U/O A/W/F/D/H	8.5	5.85	15.5	7.30
27—45 U/O C				
26—28—34—40—46 U/O A/W/F/D/H	17.0	11.70		
55—65 U A/W				
55—65 U A/W (*)	25,4	17,55		
55—65—80—85 U/O C	17.0	11.70		

(*) Only for 17.55 kW electrical heating

Component Model 60 Hz	ELECTRICAL HEATING (208–230V / 3Ph / 60Hz)		HUMIDIFIER (208–230V / 3Ph / 60Hz)	
	FLA	rated power [kW]	FLA	rated power [kW]
20–24 U/O A/W/F/D/H	15.4	5.85	25.8	6.20
27–45 U/O C				
26–28–34–40–46 U/O A/W/F/D/H	30.8	11.70		
55–65–80–85 U/O C				

Component Model 60 Hz	ELECTRICAL HEATING (380V / 3Ph / 60Hz)		HUMIDIFIER (380V / 3Ph / 60Hz)	
	FLA	rated power [kW]	FLA	rated power [kW]
20—24 U/O A/W/F/D/H	8.9	5.85	16.3	7.30
27—45 U/O C				
26—28—34—40—46 U/O A/W/F/D/H	17.8	11.70		
55—65—80—85 U/O C				

Component Model 60 Hz	ELECTRICAL HEATING (460V / 3Ph / 60Hz)		HUMIDIFIER (460V / 3Ph / 60Hz)	
	FLA	rated power [kW]	FLA	rated power [kW]
20–24 U/O A/W/F/D/H	7.4	5.85	13.7	7.30
27–45 U/O C				
26–28–34–40–46 U/O A/W/F/D/H	14.7	11.70		
55–65–80–85 U/O C				

8 — Technical data and performances 50/60Hz unit

Air condensation – down flow

A UNDER R407C – 50 Hz

MODELL		20UA	24UA	28UA	34UA	40UA	26UA	32UA	42UA	46UA	55UA	65UA
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double	double	double
PERFORMANCES ⁽¹⁾												
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750	4.045	4.356
max available external static pressure ⁽²⁾	Pa	450	400	430	400	370	430	400	370	320	230	165
fan absorbed power	kW	0.98	1.31	2.18	2.34	2.64	2.18	2.34	2.64	2.96	3.66	4.14
fan absorbed current	A	3.9	4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.5	59.0	56.4	57.5	59.0	60.8	62.8	64.8
total cooling capacity	kW	20.6	25.8	30.9	35.9	44.8	29.5	36.1	43.4	54.4	58.7	66.6
sensible cooling capacity	kW	19.2	23.5	29.9	34.1	43.3	28.6	33.6	41.3	47.7	54.0	60.6
total absorbed power	kW	5.4	7.1	9.1	10.5	12.7	8.4	10.0	11.4	14.6	18.16	19.94
compressor absorbed power	kW	4.39	5.83	6.88	8.12	10.05	6.22	7.62	8.78	11.68	14.50	15.80
compressor absorbed current	A	8.0	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8.0	2x11.1	2x12.8	2x15.0
SHR (sensible/total ratio)	—	0.93	0.91	0.97	0.95	0.97	0.97	0.93	0.95	0.88	0.92	0.91
EER (output/used energy)	—	3.81	3.63	3.40	3.42	3.53	3.51	3.61	3.80	3.73	3.23	3.34
FANS												
quantity	n.	1	1	2	2	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES										
motor rated power	kW	2.5										
COMPRESSOR												
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
type	—	SCROLL										
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8	2 x 9.0	2x10.0
EVAPORATING COIL												
quantity	n.	1	1	1	1	1	1	1	1	1	2	2
pipes/fins		COPPER/TREATED ALUMINIUM										
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2x1.49	2x1.49
configuration	—	INCLINED										
REFRIGERANT CONNECTION												
gas line (pipe to be welded o.d.)	mm	18	22	22	22	28	16	16	18	22	22	22
liquid line (pipe to be welded o.d.)	mm	16	18	18	18	22	14	14	16	18	18	18
DIMENSIONS												
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750	1750	1750
depth	mm	890										
height	mm	1950										
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS												
net	kg	380	385	580	585	590	580	585	590	605	630	630
gross	kg	385	390	585	590	595	585	590	595	610	635	635

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure; condensation temperature: 45°C

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Air condensation – down flow

A UNDER R22 – 50 Hz

MODELL		20UA	24UA	28UA	34UA	40UA	26UA	32UA	42UA	46UA	55UA	65UA
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double	double	double
PERFORMANCES ⁽¹⁾												
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750	4.045	4.356
max available external static pressure ⁽²⁾	Pa	450	400	430	400	370	430	400	370	320	230	165
fan absorbed power	kW	0.98	1.31	2.18	2.34	2.64	2.18	2.34	2.64	2.96	3.66	4.14
fan absorbed current	A	3.9	4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.5	59.0	56.4	57.5	59.0	60.8	62.8	64.8
total cooling capacity	kW	20.2	25.3	30.5	35.4	44.2	29.1	35.5	42.5	53.7	57.5	65.1
sensible cooling capacity	kW	19.4	23.8	29.9	34.7	42.9	29.1	34.1	41.7	47.2	54.5	59.7
total absorbed power	kW	5.30	7.12	8.40	9.48	11.55	8.02	9.58	11.30	14.60	17.42	19.18
compressor absorbed power	kW	4.32	5.81	6.22	7.14	8.91	5.84	7.24	8.66	11.64	13.76	15.04
compressor absorbed current	A	7.9	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2x11.3	2x12.4	2x14.5
SHR (sensible/total ratio)	—	0.96	0.94	0.98	0.98	0.97	1.00	0.96	0.98	0.88	0.95	0.92
EER (output/used energy)	—	3.81	3.55	3.63	3.73	3.83	3.63	3.71	3.76	3.68	3.31	3.38
FANS												
quantity	n.	1	1	2	2	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES										
motor rated power	kW	2.5										
COMPRESSOR												
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
type	—	SCROLL										
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8	2 x 9.0	2x10.0
EVAPORATING COIL												
quantity	n.	1	1	1	1	1	1	1	1	1	2	2
pipes/fins		COPPER/TREATED ALUMINIUM										
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2x1.49	2x1.49
configuration	—	INCLINED										
REFRIGERANT CONNECTION												
gas line (pipe to be welded o.d.)	mm	22	22	22	28	28	18	18	22	22	22	22
liquid line (pipe to be welded o.d.)	mm	18	18	18	22	22	16	16	18	18	18	18
DIMENSIONS												
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750	1750	1750
depth	mm	890										
height	mm	1950										
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS												
net	kg	380	385	580	585	590	580	585	590	605	630	630
gross	kg	385	390	585	590	595	585	590	595	610	635	635

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure; condensation temperature: 45°C

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Air condensation – up flow

A OVER R407C – 50 Hz

MODELL		200A	240A	280A	340A	400A	260A	320A	420A	460A
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pres- sure ⁽²⁾	Pa	450	380	430	370	330	430	370	330	280
fan absorbed power	kW	1.12	1.42	2.38	2.84	3.12	2.38	2.84	3.12	3.42
fan absorbed current	A	4.1	4.3	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
total cooling capacity	kW	20.30	25.90	30.70	35.7	44.40	29.30	35.80	42.40	53.60
sensible cooling capacity	kW	18.90	23.40	29.70	34.30	43.40	28.30	33.30	41.10	46.70
total absorbed power	kW	5.5	7.3	9.3	11.0	13.2	8.6	10.5	11.9	15.1
compressor absorbed power	kW	4.39	5.83	6.89	8.12	10.04	6.22	7.62	8.78	11.68
compressor absorbed current	A	8.0	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8.0	2 x 11.1
SHR (sensible/total ratio)	—	0.93	0.90	0.97	0.96	0.98	0.97	0.93	0.97	0.87
EER (output/used energy)	—	3.69	3.55	3.30	3.25	3.36	3.41	3.41	3.56	3.55
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATING COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	22	22	22	28	28	18	18	22	22
liquid line (pipe to be welded o.d.)	mm	18	18	18	22	22	16	16	18	18
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	395	590	595	600	590	595	600	615
gross	kg	395	400	595	600	605	595	600	605	620

- At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure; condensation temperature: 45°C
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths — between the air conditioner and the condensing unit — up to 30 equivalent m.

Air condensation – up flow

A OVER R22 – 50 Hz

MODELL		200A	240A	280A	340A	400A	260A	320A	420A	460A
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pressure ⁽²⁾	Pa	450	380	430	370	330	430	370	330	280
fan absorbed power	kW	1.12	1.42	2.38	2.84	3.12	2.38	2.84	3.12	3.42
fan absorbed current	A	4.1	4.3	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.1	2 x 4.3	2 x 4.4	2 x 5.8
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
total cooling capacity	kW	19.8	25.2	30.4	35.1	43.5	29.1	34.9	41.5	52.9
sensible cooling capacity	kW	19.0	23.4	29.5	34.4	42.6	28.2	33.5	41.5	47.1
total absorbed power	kW	5.4	7.2	8.6	10.0	12.0	8.2	10.1	11.8	15.1
compressor absorbed power	kW	4.32	5.80	6.23	7.14	8.91	5.84	7.24	8.66	11.64
compressor absorbed current	A	7.9	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	—	0.96	0.93	0.97	0.98	0.98	0.97	0.96	1.00	0.89
EER (output/used energy)	—	3.64	3.49	3.53	3.52	3.62	3.54	3.46	3.52	3.51
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATING COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	395	590	595	600	590	595	600	615
gross	kg	395	400	595	600	605	595	600	605	620

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure; condensation temperature: 45°C

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Water condensation – down flow

W UNDER R407C – 50 Hz

MODELL		20UW	24UW	28UW	34UW	40UW	26UW	32UW	42UW	46UW	55UW	65UW
REFRIGERANT CIRCUIT		single	single		single	single	double	double	double	double	double	double
PERFORMANCES ⁽¹⁾												
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750	4.045	4.356
max avail ext. static pres. ⁽²⁾	Pa	450	400	430	400	370	430	400	370	320	230	165
fan absorbed power	kW	0.98	1.31	2.18	2.34	2.64	2.18	2.34	2.64	2.96	3.66	4.14
fan absorbed current	A	3.9	4.2	8.2	2 x 4.1	2 x 4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.3	59.0	56.4	57.5	59.0	60.8	62.8	64.8
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C												
total cooling capacity	kW	21.30	27.0	32.3	37.0	46.4	30.6	37.80	45.80	56.4	61.7	69.6
sensible cooling capacity	kW	19.60	24.50	30.20	35.10	44.60	29.00	34.40	42.10	49.00	54.9	61.3
total absorbed power	kW	4.90	6.55	8.33	9.57	11.72	7.72	9.20	10.50	13.46	16.58	18.30
comp. absorbed power	kW	3.92	5.24	6.15	7.23	9.08	5.54	6.86	7.86	10.50	12.92	14.16
comp. absorbed current	A	7.7	10.3	12.7	14.2	16.3	2 x 5.7	2 x 7.2	2 x 7.7	2x10.3	2x11.8	2x14.1
SHR (sensible/total ratio)	–	0.92	0.91	0.93	0.95	0.96	0.95	0.91	0.92	0.87	0.89	0.88
EER (output/used energy)	–	4.35	4.12	3.88	3.87	3.96	3.96	4.11	4.36	4.19	3.72	3.80
water flow	l/s	0.25	0.33	0.41	0.47	0.60	0.19	0.22	0.26	0.34	0.764	0.906
water side pressure drop	kPa	2+3	3+5	3+2	3+2	3+4	1+1	1+1	1+1	1+1	1+2	2+2
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C												
total cooling capacity	kW	20.60	25.8	33.9	35.9	44.8	29.5	36.10	43.40	54.4	58.7	66.6
sensible cooling capacity	kW	19.20	23.5	29.90	34.10	43.30	28.60	33.60	41.30	47.70	54.0	60.6
total absorbed power	kW	5.4	7.1	9.1	10.5	12.7	8.4	10.0	11.4	14.6	18.16	19.24
comp. absorbed power	kW	4.39	5.83	6.88	8.12	10.05	6.22	7.62	8.78	11.68	14.50	15.80
comp. absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8	2x11.1	2x12.8	2x15.0
SHR (sensible/total ratio)	–	0.93	0.91	0.97	0.95	0.97	0.97	0.93	0.95	0.88	0.92	0.91
EER (output/used energy)	–	3.84	3.63	3.40	3.42	3.53	3.51	3.62	3.80	3.73	3.23	3.34
water flow	l/s	0.48	0.81	0.97	1.03	1.41	0.73	0.95	1.05	1.73	2.600	3.250
water side pressure drop	kPa	7+10	20+28	16+10	12+11	16+21	12+14	19+24	8+11	22+31	17+17	26+27
FANS												
quantity	n.	1	1	2	2	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES										
motor rated power	kW	2.5										
COMPRESSOR												
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
type	–	SCROLL										
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8	2 x 9.0	2x10.0
EVAPORATIN COIL												
quantity	n.	1	1	1	1	1	1	1	1	1	2	2
pipes/fins		COPPER/TREATED ALUMINIUM										
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2x1.49	2x1.49
configuration	–	INCLINED										
CONDENSER												
type	–	PLATE TYPE EXCHANGER IN AISI 316									SHELL AND TUBE HEAT EXCHANGER	
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
water connections	inch	1”	1”	1¼”	1¼”	1¼”	1/2”	1/2”	1”	1”	1¼”	1¼”
DIMENSIONS												
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750	1750	1750
depth	mm	890										
height	mm	1950									2250	2250
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS												
net	kg	390	395	590	595	600	590	595	600	615	810	810
gross	kq	395	400	595	600	605	595	600	605	620	820	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – down flow

W UNDER R22 – 50 Hz

MODELL		20UW	24UW	28UW	34UW	40UW	26UW	32UW	42UW	46UW	55UW	65UW
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double	double	double
PERFORMANCES ⁽¹⁾												
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750	4.045	4.356
max avail ext. static pres. ⁽²⁾	Pa	450	400	420	400	370	430	400	370	320	230	165
fan absorbed power	kW	0.98	1.31	2.18	2.34	2.64	2.18	2.34	2.64	2.96	3.66	4.14
fan absorbed current	A	3.9	4.2	8.2	2 x 4.1	2 x 4.2	2 x 4.1	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.3	59.0	56.4	57.5	59.0	60.8	62.8	64.8
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C												
total cooling capacity	kW	20.90	26.3	31.90	36.60	45.80	30.10	36.40	44.10	55.70	60.5	68.6
sensible cooling capacity	kW	19.60	24.40	30.30	35.20	43.50	29.20	34.30	42.40	48.50	55.7	61.1
total absorbed power	kW	4.89	6.59	7.71	8.64	10.55	7.42	8.82	10.48	13.54	15.95	17.62
comp. absorbed power	kW	3.91	5.28	5.53	6.30	7.91	5.24	6.48	7.84	10.58	12.28	13.48
comp. absorbed current	A	7.3	10.6	11.0	12.6	15.8	2 x 5.6	2 x 7.1	2 x 7.3	2x10.7	2x11.4	2x13.7
SHR (sensible/total ratio)	–	0.94	0.93	0.95	0.96	0.95	0.97	0.94	0.96	0.87	0.92	0.89
EER (output/used energy)	–	4.27	4.00	4.14	4.24	4.34	4.06	4.13	4.21	4.11	3.80	3.89
water flow	l/s	0.25	0.32	0.37	0.43	0.53	0.17	0.21	0.25	0.33	0.741	0.877
water side pressure drop	kPa	2+3	3+4	2+1	2+2	2+3	1+1	1+1	0+1	1+1	1+1	2+2
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C												
total cooling capacity	kW	20.2	25.3	30.5	35.4	44.2	29.1	35.5	42.5	53.7	57.6	65.1
sensible cooling capacity	kW	19.4	23.8	29.9	34.7	42.9	29.1	34.1	41.7	47.2	54.5	59.7
total absorbed power	kW	5.3	7.12	8.4	9.5	11.6	8.0	9.6	11.3	14.6	17.46	19.18
comp. absorbed power	kW	4.32	5.81	6.22	7.14	8.91	5.84	7.24	8.66	11.64	13.76	15.04
comp. absorbed current	A	7.9	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2x11.3	2x12.4	2x14.5
SHR (sensible/total ratio)	–	0.96	0.94	0.98	0.98	0.97	1.00	0.96	0.98	0.88	0.95	0.92
EER (output/used energy)	–	3.81	3.44	3.63	3.73	3.83	3.63	3.71	3.76	3.68	3.31	3.38
water flow	l/s	0.47	0.78	0.79	0.86	1.14	0.67	0.90	1.00	1.61	2.501	3.139
water side pressure drop	kPa	6+9	18+25	11+6	8+8	10+13	10+12	17+22	7+10	19+27	15+16	24+26
FANS												
quantity	n.	1	1	2	2	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES										
motor rated power	kW	2.5										
COMPRESSOR												
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
type	–	SCROLL										
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8	2 x 9.0	2x10.0
EVAPORATIN COIL												
quantity	n.	1	1	1	1	1	1	1	1	1	2	2
pipes/fins		COPPER/TREATED ALUMINIUM										
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49	2x1.49	2x1.49
configuration	–	INCLINED										
CONDENSER												
type	–	PLATE TYPE EXCHANGER IN AISI 316									SHELL AND TUBE HEAT EXCHANGER	
quantity	n.	1	1	1	1	1	2	2	2	2	2	2
water connections	inch	1”	1”	1¼”	1¼”	1¼”	1/2”	1/2”	1”	1”	1¼”	1¼”
DIMENSIONS												
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750	1750	1750
depth	mm	890										
height	mm	1950									2250	2250
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS												
net	kg	390	395	590	595	600	590	595	600	615	810	810
gross	kg	395	400	595	600	605	595	600	605	620	820	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – up flow

W OVER R407C – 50 Hz

MODELL		200W	240W	280W	340W	400W	260W	320W	420W	460W
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available ext. static pres. ⁽²⁾	Pa	450	380	430	370	330	430	370	330	280
fan absorbed power	kW	1.12	1.42	2.38	2.84	3.12	2.38	2.84	3.12	3.42
fan absorbed current	A	4.1	4.3	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	21.20	27.00	32.1	37.3	46.4	30.3	37.30	44.50	55.5
sensible cooling capacity	kW	19.30	24.00	30.00	34.70	43.90	28.90	33.90	41.90	47.90
total absorbed power	kW	5.04	6.65	8.54	10.07	12.20	7.92	9.70	10.98	13.90
compressor absorbed power	kW	3.92	5.23	6.16	7.23	9.08	5.54	6.86	7.86	10.48
compressor absorbed current	A	7.7	10.3	12.7	14.2	16.3	2 x 5.7	2 x 7.2	2 x 7.7	2 x 10.3
SHR (sensible/total ratio)	—	0.91	0.89	0.93	0.93	0.95	0.95	0.91	0.94	0.86
EER (output/used energy)	—	4.21	4.06	3.76	3.70	3.80	3.83	3.85	4.05	3.99
water flow	l/s	0.25	0.32	0.41	0.47	0.60	0.19	0.22	0.26	0.34
water side pressure drop	kPa	2+3	3+4	3+2	2+2	3+4	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	20.3	26.1	30.7	35.7	44.4	29.3	35.8	42.4	53.6
sensible cooling capacity	kW	18.9	23.5	29.7	34.3	43.4	28.3	33.3	41.1	46.7
total absorbed power	kW	5.5	7.3	9.3	11.0	13.2	8.6	10.5	11.9	15.1
compressor absorbed power	kW	4.39	5.83	6.89	8.12	10.04	6.22	7.62	8.78	11.68
compressor absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8	2 x 11.1
SHR (sensible/total ratio)	—	0.93	0.90	0.97	0.96	0.98	0.97	0.93	0.97	0.87
EER (output/used energy)	—	3.69	3.57	3.30	3.25	3.36	3.41	3.41	3.56	3.55
water flow	l/s	0.47	0.77	0.96	1.02	1.39	0.72	0.93	1.02	1.69
water side pressure drop	kPa	7+9	17+24	16+10	12+11	16+20	11+14	19+24	8+11	21+30
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1”	1”	1¼”	1¼”	1¼”	1/2”	1/2”	1”	1”
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	400	405	600	605	610	600	605	610	625
gross	kg	405	410	605	610	615	605	610	615	630

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – up flow

W OVER R22 – 50 Hz

MODELL		200W	240W	280W	340W	400W	260W	320W	420W	460W
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available ext. static pres. ⁽²⁾	Pa	450	380	430	370	330	430	370	330	280
fan absorbed power	kW	1.12	1.42	2.38	2.84	3.12	2.38	2.84	3.12	3.42
fan absorbed current	A	4.1	4.3	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.1	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	20.70	26.40	31.70	36.70	45.50	30.10	36.20	43.50	54.80
sensible cooling capacity	kW	19.40	24.00	30.10	34.90	43.20	28.90	34.00	42.20	47.70
total absorbed power	kW	5.03	6.69	7.91	9.19	11.04	7.62	9.32	10.96	13.98
compressor absorbed power	kW	3.91	5.27	5.53	6.35	7.92	5.24	6.48	7.84	10.56
compressor absorbed current	A	7.2	10.5	11.0	12.6	15.8	2 x 5.6	2 x 7.1	2 x 7.3	2 x 10.7
SHR (sensible/total ratio)	—	0.94	0.91	0.95	0.95	0.95	0.96	0.94	0.97	0.87
EER (output/used energy)	—	4.12	3.95	4.01	3.99	4.12	3.95	3.88	3.97	3.92
water flow	l/s	0.24	0.31	0.37	0.42	0.53	0.17	0.21	0.25	0.32
water side pressure drop	kPa	2+2	3+4	2+1	2+2	2+3	1+1	1+1	1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	19.80	25.18	30.37	35.10	43.50	29.10	34.90	41.50	52.90
sensible cooling capacity	kW	19.00	23.66	29.46	34.40	42.60	28.20	33.50	41.50	47.10
total absorbed power	kW	5.44	7.23	8.61	9.98	12.03	8.22	10.08	11.78	15.06
compressor absorbed power	kW	4.32	5.81	6.23	7.14	8.91	5.84	7.24	8.66	11.64
compressor absorbed current	A	7.9	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	—	0.96	0.94	0.97	0.98	0.98	0.97	0.96	1.00	0.89
EER (output/used energy)	—	3.64	3.48	3.53	3.52	3.62	3.54	3.46	3.52	3.51
water flow	l/s	0.46	0.74	0.78	0.86	1.13	0.66	0.89	0.98	1.57
water side pressure drop	kPa	6+9	16+23	10+6	8+8	10+13	10+12	17+22	7+10	18+26
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1”	1”	1¼”	1¼”	1¼”	1/2”	1/2”	1”	1”
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	400	405	600	605	610	600	605	610	625
gross	kq	405	410	605	610	615	605	610	615	630

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – Air condensation – down flow

D UNDER R407C – 50 Hz

MODELS		20UD	24UD	28UD	34UD	40UD	26UD	32UD	42UD	46UD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.15	1.57	2.46	2.68	3.00	2.46	2.68	3.00	3.46
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.4
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	20.20	25.5	30.9	35.9	44.6	29.5	35.80	43.20	54.5
sensible cooling capacity	kW	19.00	23.60	29.90	34.40	43.50	28.60	33.70	41.50	48.60
total absorbed power	kW	5.54	7.40	9.34	10.80	13.05	8.68	10.30	11.78	15.14
compressor absorbed power	kW	4.39	5.83	6.88	8.12	10.05	6.22	7.62	8.78	11.68
compressor absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8.0	2 x 11.1
SHR (sensible/total ratio)	—	0.94	0.93	0.97	0.96	0.97	0.97	0.94	0.96	0.89
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	3.65	3.45	3.31	3.32	3.42	3.40	3.48	3.67	3.60
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.0	33.5	51.70	63.50	67.30	51.70	63.50	67.30	71.90
sensible cooling capacity	kW	22.5	26.1	42.40	48.90	52.50	42.40	48.90	52.50	56.80
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.34	1.60	2.46	3.03	3.21	2.46	3.03	3.21	3.43
water side pressure drop	kPa	56	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded, o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); condensation temperature 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – Air condensation – down flow

D UNDER R22 – 50 Hz

MODELS		20UD	24UD	28UD	34UD	40UD	26UD	32UD	42UD	46UD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.1	1.5	1.4	2.6	2.9	1.4	2.6	2.9	3.3
fan absorbed current	A	4.1	4.4	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	19.8	25.0	30.5	35.2	44.1	29.1	35.1	41.8	53.9
sensible cooling capacity	kW	19.2	23.6	29.9	34.5	42.8	29.1	33.7	41.8	47.9
total absorbed power	kW	5.4	7.3	7.6	9.7	11.8	7.2	9.8	11.6	15.0
compressor absorbed power	kW	4.3	5.8	6.2	7.1	8.9	5.8	7.2	8.7	11.7
compressor absorbed current	A	7.8	11.3	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	—	0.97	0.94	0.98	0.98	0.97	1.00	0.96	1.00	0.89
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	3.66	3.42	4.01	3.63	3.75	4.02	3.60	3.61	3.59
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.0	33.5	51.7	63.5	67.3	51.7	63.5	67.3	71.9
sensible cooling capacity	kW	22.5	26.1	42.4	48.9	52.5	42.4	48.9	52.5	56.8
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.34	1.60	2.46	3.03	3.21	2.46	3.03	3.21	3.43
water side pressure drop	kPa	56	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	22	22	22	28	28	18	18	22	22
liquid line (pipe to be welded, o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); condensation temperature 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – Air condensation – up flow

D OVER R407C – 50 Hz

MODELS		20OD	24OD	28OD	34OD	40OD	26OD	32OD	42OD	46OD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.24	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.2	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	19.60	25.10	30.8	35.2	44.4	29.4	34.40	42.70	54.0
sensible cooling capacity	kW	18.30	22.90	29.90	33.40	42.70	28.50	32.30	41.00	47.20
total absorbed power	kW	5.62	7.49	9.50	11.05	13.50	8.84	10.56	12.24	15.56
compressor absorbed power	kW	4.38	5.83	6.88	8.11	10.04	6.22	7.62	8.78	11.68
compressor absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8	2 x 11.1
SHR (sensible/total ratio)	—	0.93	0.91	0.97	0.95	0.96	0.97	0.94	0.96	0.87
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	3.49	3.35	3.24	3.19	3.29	3.33	3.26	3.49	3.47
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.80	58.60	63.90	50.80	58.60	63.90	67.40
sensible cooling capacity	kW	22.7	26.4	41.70	46.30	51.10	41.70	46.30	51.10	54.60
sound pressure level ⁽³⁾	dB(A)	52.50	56.70	57.40	57.60	61.10	57.40	57.60	61.10	62.90
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.17	1.36	2.42	2.8	3.04	2.42	2.8	3.04	3.21
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded, o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); condensation temperature 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths — between the air conditioner and the condensing unit — up to 30 equivalent m.

Dualfluid – Air condensation – up flow

D OVER R22 – 50 Hz

MODELS		200D	240D	280D	340D	400D	260D	320D	420D	460D
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.24	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.2	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	19.40	24.70	30.60	34.50	43.90	29.00	33.90	41.90	53.30
sensible cooling capacity	kW	18.60	22.90	29.70	33.50	42.20	29.00	32.50	41.10	46.90
total absorbed power	kW	5.56	7.46	8.84	10.09	12.38	8.46	10.18	12.12	15.52
compressor absorbed power	kW	4.32	5.80	6.22	7.15	8.92	5.84	7.24	8.66	11.64
compressor absorbed current	A	7.8	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.4	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	—	0.96	0.93	0.97	0.97	0.96	1.00	0.96	0.98	0.88
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	3.49	3.31	3.46	3.42	3.55	3.43	3.33	3.46	3.43
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.80	58.60	63.90	50.80	58.60	63.90	67.40
sensible cooling capacity	kW	22.7	26.4	41.70	46.30	51.10	41.70	46.30	51.10	54.60
sound pressure level ⁽³⁾	dB(A)	52.50	56.70	57.40	57.60	61.10	57.40	57.60	61.10	62.90
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.35	1.62	2.42	2.8	3.04	2.42	2.8	3.04	3.21
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	22	22	22	28	28	16	16	22	22
liquid line (pipe to be welded, o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); condensation temperature 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths — between the air conditioner and the condensing unit — up to 30 equivalent m.

Dualfluid – water condensation – down flow

H UNDER R407C – 50 Hz

MODELL		20UH	24UH	28UH	34UH	40UH	26UH	32UD	42UH	46UH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available ext. static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.15	1.57	2.46	2.68	3.00	2.46	2.68	3.00	3.46
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4
sound pressure level ⁽³⁾	db(A)	51.30	55.40	55.80	57.60	58.7	55.8	57.60	59.10	61.20
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	21.20	26.4	32.3	37.1	46.1	30.5	38.00	45.60	56.6
sensible cooling capacity	kW	19.50	24.10	30.20	35.30	43.90	29.34	34.20	42.40	49.60
total absorbed power	kW	5.07	6.81	8.61	9.91	12.09	8.06	9.54	10.86	13.96
compressor absorbed power	kW	3.92	5.24	6.15	7.23	9.09	5.60	6.86	7.86	10.50
compressor absorbed current	A	7.7	10.3	12.7	14.2	16.3	2 x 5.8	2 x 7.2	2 x 7.7	2 x 10.3
SHR (sensible/total ratio)	–	0.92	0.91	0.93	0.95	0.95	0.96	0.90	0.93	0.88
EER (output/used energy)	–	4.18	3.88	3.75	3.74	3.81	3.78	3.98	4.20	4.05
water flow	l/s	0.25	0.33	0.41	0.47	0.60	0.32	0.22	0.26	0.34
water side pressure drop	kPa	2+3	3+5	3+2	2+2	3+4	2+3	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	20.20	25.5	30.9	35.9	44.6	29.5	35.80	43.20	54.5
sensible cooling capacity	kW	19.00	23.60	29.90	34.40	43.50	28.60	33.70	41.50	48.60
total absorbed power	kW	5.54	7.40	9.34	10.80	13.05	8.68	10.30	11.78	15.14
compressor absorbed power	kW	4.39	5.83	6.88	8.12	10.05	6.22	7.62	8.78	11.68
compressor absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8	2 x 11.1
SHR (sensible/total ratio)	–	0.94	0.93	0.97	0.96	0.97	0.97	0.94	0.96	0.89
EER (output/used energy)	–	3.65	3.45	3.31	3.32	3.42	3.40	3.48	3.67	3.60
water flow	l/s	0.47	0.81	0.97	1.03	1.41	0.73	0.94	1.05	1.74
water side pressure drops	kPa	7+9	19+27	16+10	12+11	16+21	12+14	19+24	8+11	23+32
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.0	33.5	51.70	63.50	67.30	51.70	63.50	67.30	71.90
sensible cooling capacity	kW	22.5	26.1	42.40	48.90	52.50	42.40	48.90	52.50	56.80
sound pressure level ⁽³⁾	db(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.34	1.60	2.46	3.03	3.21	2.46	3.03	3.21	3.43
water side pressure drop	kPa	56	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

- At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – down flow

H UNDER R22– 50 Hz

MODELL		20UH	24UH	28UH	34UH	40UH	26UH	32UD	42UH	46UH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available ext. static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.15	1.57	2.46	2.68	2.87	2.46	2.68	3.00	3.46
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.4
sound pressure level ⁽³⁾	db(A)	51.30	55.40	55.80	57.60	58.70	55.80	57.60	59.10	61.20
water temperature at the condenser inlet: 15°C — condensation temperature: 40°C										
total cooling capacity	kW	20.60	26.0	31.90	36.50	45.66	30.10	36.20	43.50	55.90
sensible cooling capacity	kW	19.60	24.10	30.30	35.00	43.38	29.20	34.00	42.10	48.60
total absorbed power	kW	5.06	6.85	7.99	9.02	10.77	7.70	9.16	10.84	14.04
compressor absorbed power	kW	3.91	5.28	5.53	6.34	7.90	5.24	6.48	7.84	10.58
compressor absorbed current	A	7.2	10.7	11.0	12.6	15.8	2 x 5.6	2 x 7.1	2 x 7.3	2 x 10.7
SHR (sensible/total ratio)	—	0.95	0.93	0.95	0.96	0.95	0.97	0.94	0.97	0.87
EER (output/used energy)	—	4.07	3.80	3.99	4.05	4.24	3.91	3.95	4.01	3.98
water flow	l/s	0.24	0.32	0.37	0.43	0.44	0.18	0.21	0.26	0.33
water side pressure drop	kPa	2+2	3+4	2+1	2+2	2+2	1+1	1+1	0+1	1+1
water temperature at the condenser inlet: 30°C — condensation temperature: 45°C										
total cooling capacity	kW	19.80	25.0	30.50	35.20	44.10	29.10	34.90	42.40	53.80
sensible cooling capacity	kW	19.20	23.70	29.90	34.50	42.81	29.10	33.80	41.60	47.90
total absorbed power	kW	5.47	7.39	8.68	9.82	11.77	8.30	9.92	11.66	15.10
compressor absorbed power	kW	4.32	5.82	6.22	7.14	8.90	5.84	7.24	8.66	11.64
compressor absorbed current	A	7.8	11.3	12.0	13.7	17.1	2 x 5.9	2 x 7.5	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	—	0.97	0.95	0.98	0.98	0.97	1.00	0.97	0.98	0.89
EER (output/used energy)	—	3.62	3.38	3.51	3.58	3.75	3.51	3.52	3.64	3.56
water flow	l/s	0.46	0.77	0.79	0.86	1.14	0.67	0.90	1.00	1.62
water side pressure drop	kPa	6+9	18+25	11+6	8+8	10+14	10+12	17+22	7+10	19+27
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.0	33.5	51.70	63.50	67.30	51.70	63.50	67.30	71.90
sensible cooling capacity	kW	22.5	26.1	42.40	48.90	52.50	42.40	48.90	52.50	56.80
sound pressure level ⁽³⁾	db(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.34	1.60	2.46	3.03	3.21	2.46	3.03	3.21	3.43
water side pressure drop	kPa	56	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

- At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – up flow

H OVER R407C – 50 Hz

MODELL		20OH	24OH	28OH	34OH	40OH	26OH	32OD	42OH	46OH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available ext. static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.24	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.2	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	db(A)	52.90	57.10	57.80	58.10	61.60	57.80	58.10	61.60	63.40
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	20.30	26.20	31.9	36.1	46.0	30.5	36.00	44.80	55.9
sensible cooling capacity	kW	18.60	23.30	30.40	34.20	43.70	29.20	32.70	41.70	48.40
total absorbed power	kW	5.16	6.89	8.77	10.16	12.54	8.16	9.78	11.32	14.36
compressor absorbed power	kW	3.92	5.23	6.15	7.22	9.08	5.54	6.84	7.86	10.48
compressor absorbed current	A	7.7	10.3	12.7	14.2	16.3	2 x 5.7	2 x 7.2	2 x 7.7	2 x 10.3
SHR (sensible/total ratio)	–	0.92	0.89	0.95	0.95	0.95	0.96	0.91	0.93	0.87
EER (output/used energy)	–	3.93	3.80	3.64	3.55	3.67	3.74	3.68	3.96	3.89
water flow	l/s	0.24	0.31	0.41	0.46	0.59	0.19	0.21	0.26	0.34
water side pressure drop	kPa	2+2	3+4	3+2	2+2	3+4	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	19.60	25.10	30.8	35.2	44.4	29.4	34.40	42.70	54.0
sensible cooling capacity	kW	18.30	22.90	29.90	33.40	42.70	28.50	32.30	41.00	47.20
total absorbed power	kW	5.62	7.49	9.50	11.05	13.50	8.84	10.56	12.24	15.56
compressor absorbed power	kW	4.38	5.83	6.88	8.11	10.04	6.22	7.62	8.78	11.68
compressor absorbed current	A	8	11.1	13.7	15.3	17.6	2 x 6.1	2 x 7.6	2 x 8	2 x 11.1
SHR (sensible/total ratio)	–	0.93	0.91	0.97	0.95	0.96	0.97	0.94	0.96	0.87
EER (output/used energy)	–	3.49	3.35	3.24	3.19	3.29	3.33	3.26	3.49	3.47
water flow	l/s	0.44	0.74	0.97	0.99	1.39	0.73	0.89	1.02	1.69
water side pressure drop	kPa	6+8	16+22	16+10	11+10	15+20	12+14	17+22	8+11	21+30
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.80	58.60	63.90	50.80	58.60	63.90	67.40
sensible cooling capacity	kW	22.7	26.4	41.70	46.30	51.10	41.70	46.30	51.10	54.60
sound pressure level ⁽³⁾	db(A)	52.50	56.70	57.40	57.60	61.10	57.40	57.60	61.10	62.90
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.17	1.36	2.42	2.8	3.04	2.42	2.8	3.04	3.21
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – up flow

H OVER R22 – 50 Hz

MODELL		20OH	24OH	28OH	34OH	40OH	26OH	32OD	42OH	46OH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available ext. static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.24	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.2	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
sound pressure level ⁽³⁾	db(A)	52.90	57.10	57.80	58.10	61.60	57.80	58.10	61.60	63.40
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	20.00	25.70	31.70	35.70	45.50	30.20	34.90	43.10	55.20
sensible cooling capacity	kW	18.80	23.30	30.10	33.90	42.70	29.30	33.10	41.40	48.00
total absorbed power	kW	5.14	6.92	8.15	9.29	11.38	7.86	9.40	11.30	14.44
compressor absorbed power	kW	3.90	5.26	5.53	6.35	7.92	5.24	6.46	7.84	10.56
compressor absorbed current	A	7.2	10.4	11.0	12.6	15.8	2 x 5.6	2 x 7.0	2 x 7.3	2 x 10.7
SHR (sensible/total ratio)	–	0.94	0.91	0.95	0.95	0.94	0.97	0.95	0.96	0.87
EER (output/used energy)	–	3.89	3.71	3.89	3.84	4.00	3.84	3.71	3.81	3.82
water flow	l/s	0.24	0.31	0.37	0.42	0.53	0.18	0.21	0.25	0.32
water side pressure drop	kPa	2+2	3+4	2+1	2+2	2+3	1+1	1+1	0+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	19.40	24.70	30.60	34.50	43.90	29.00	33.90	41.90	53.30
sensible cooling capacity	kW	18.60	22.90	29.70	33.50	42.20	29.00	32.50	41.10	46.90
total absorbed power	kW	5.56	7.46	8.84	10.09	12.38	8.46	10.18	12.16	15.52
compressor absorbed power	kW	4.32	5.80	6.22	7.15	8.92	5.84	7.24	8.70	11.64
compressor absorbed current	A	7.8	11.2	12.0	13.7	17.1	2 x 5.9	2 x 7.4	2 x 7.9	2 x 11.3
SHR (sensible/total ratio)	–	0.96	0.93	0.97	0.97	0.96	1.00	0.96	0.98	0.88
EER (output/used energy)	–	3.49	3.31	3.46	3.42	3.55	3.43	3.33	3.45	3.43
water flow	l/s	0.44	0.71	0.79	0.83	1.12	0.67	0.86	0.98	1.57
water side pressure drop	kPa	6+8	15+21	11+6	8+7	10+13	10+12	16+20	7+10	18+26
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.80	58.60	63.90	50.80	58.60	63.90	67.40
sensible cooling capacity	kW	22.7	26.4	41.70	46.30	51.10	41.70	46.30	51.10	54.60
sound pressure level ⁽³⁾	db(A)	52.50	56.70	57.40	57.60	61.10	57.40	57.60	61.10	62.90
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.35	1.62	2.42	2.8	3.04	2.42	2.8	3.04	3.21
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

- At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – down flow

F UNDER R407C – 50 Hz

MODELS		20UF	24UF	28UF	34UF	40UF	26UF	32UF	42UF	46UF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.15	1.57	2.46	2.68	3.00	2.46	2.68	3.00	3.46
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.2	2 x 4.2	2 x 4.3	2 x 4.4
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	18.40	23.70	28.8	33.60	41.7	27.70	32.60	40.30	51.00
sensible cooling capacity	kW	18.40	22.50	28.60	32.60	41.40	27.70	32.60	40.30	46.40
total absorbed power	kW	6.52	8.96	11.14	12.73	15.68	1.06	12.06	13.24	17.83
compressor absorbed power	kW	5.37	7.46	8.69	10.05	12.68	7.62	9.38	10.24	14.36
compressor absorbed current	A	9.5	13.4	16.6	17.4	21.6	2 x 6.9	2 x 8.5	2 x 9.3	2 x 13.0
SHR (sensible/total ratio)	—	1.00	0.95	0.99	0.97	0.99	1.00	1.00	1.00	0.91
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	2.83	2.64	2.59	2.64	2.66	2.75	2.70	3.04	2.86
inlet mixture temperature	°C	42.4	42.0	42.7	42.0	42.5	41.5	40.8	39.5	39.9
condenser water pressure drop	kPa	36	36	55	46	38	38	38	36	36
valve water pressure drop	kPa	53	53	35	44	52	13	13	13	13
PERFORMANCES IN FREECOOLING MODE										
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
ZET Zero Energy Temperature	°C	3.5	2.5	5.1	6.3	3.0	4.9	4.1	6.2	4.4
inlet mixture temperature	°C	9.2	7.8	11.1	11.6	8.8	10.4	8.8	10.0	8.2
water flow	l/s	1.12	1.12	1.71	1.92	2.08	1.28	1.28	2.11	2.11
water side pressure drop	kPa	41	35	71	49	56	42	24	58	58
dry cooler pressure drop	kPa	7	11	26	24	17	15	11	14	7
dry cooler (std version)	mod.	DSM018	DSM022	DSM028	DST030	DST040	DSM028	DST030	DST050	DST060
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kg	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); outdoor temperature: 35° C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – down flow

F UNDER R22 – 50 Hz

MODELS		20UF	24UF	28UF	34UF	40UF	26UF	32UF	42UF	46UF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	435	325	410	390	340	410	390	340	280
fan absorbed power	kW	1.15	1.57	2.46	2.68	3.00	2.46	2.68	3.00	3.46
fan absorbed current	A	4.1	4.4	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.1	2 x 4.2	2 x 4.3	2 x 4.4
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	18.50	24.00	28.30	33.00	40.50	27.40	32.30	40.10	49.60
sensible cooling capacity	kW	18.50	22.80	28.30	33.00	40.50	27.40	32.30	40.10	46.60
total absorbed power	kW	6.34	8.71	10.13	11.37	14.10	9.38	11.56	12.93	17.36
compressor absorbed power	kW	5.19	7.21	7.68	8.70	11.11	6.92	8.88	9.94	13.90
compressor absorbed current	A	9.2	13.3	14.2	15.9	20.3	2 x 6.4	2 x 8.3	2 x 8.9	2 x 12.9
SHR (sensible/total ratio)	—	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.94
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	2.92	2.75	2.79	2.91	2.87	2.92	2.80	2.66	2.85
inlet mixture temperature	°C	42.3	42.0	42.1	41.7	41.9	41.3	40.7	39.7	39.8
condenser water pressure drop	kPa	36	37	55	46	38	38	38	36	36
valve water pressure drop	kPa	53	53	35	44	52	13	13	13	13
PERFORMANCES IN FREECOOLING MODE										
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
ZET Zero Energy Temperature	°C	3.5	2.5	5.5	6.1	3.8	4.9	4.1	6.1	4.2
inlet mixture temperature	°C	9.2	7.8	11.4	11.5	9.4	10.3	8.8	10.0	8.0
water flow	l/s	1.12	1.12	1.71	1.92	2.08	1.28	1.28	2.11	2.11
water side pressure drop	kPa	41	35	71	49	56	42	24	58	58
dry cooler pressure drop	kPa	7	11	26	24	17	15	11	14	7
dry cooler (std version)	mod.	DSM018	DSM022	DSM028	DST030	DST040	DSM028	DST030	DST050	DST060
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	790	795	800	790	795	800	815
gross	kq	505	515	795	800	805	795	800	805	820

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); outdoor temperature: 35° C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – up flow

F OVER R407C – 50 Hz

MODELS		20OF	24OF	28OF	34OF	40OF	26OF	32OF	42OF	46OF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.07	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECANICAL COOLING										
total cooling capacity	kW	17.90	22.60	28.8	33.20	41.5	27.70	31.30	39.70	49.90
sensible cooling capacity	kW	17.90	22.00	28.60	31.80	40.90	27.70	31.30	39.70	44.90
total absorbed power	kW	6.56	8.96	11.31	12.95	16.10	10.23	12.23	13.66	18.18
compressor absorbed power	kW	5.32	7.35	8.69	10.00	12.64	7.60	9.30	10.20	14.30
compressor absorbed current	A	9.4	13.3	16.7	17.4	21.5	2 x 6.9	2 x 8.5	2 x 9.2	2 x 12.9
SHR (sensible/total ratio)	—	1.00	0.97	0.99	0.96	0.99	1.00	1.00	1.00	0.90
sound pressure level ⁽³⁾	dB(A)	52.7	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	2.73	2.53	2.55	2.56	2.58	2.70	2.56	2.91	2.74
inlet mixture temperature	°C	42.2	41.7	42.7	42.0	42.5	41.5	40.6	39.7	39.9
condenser water pressure drop	kPa	37	37	55	46	38	38	38	36	36
valve water pressure drop	kPa	53	53	35	44	52	13	13	13	13
PERFORMANCES IN FREECOOLING MODE										
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
ZET Zero Energy Temperature	°C	4.2	3.0	4.9	5.7	2.9	4.6	4.1	6.2	4.3
inlet mixture temperature	°C	9.6	8.3	11.0	11.0	8.7	10.1	8.7	9.9	7.9
water flow	l/s	1.12	1.12	1.71	1.92	2.08	1.28	1.28	2.11	2.11
water side pressure drop	kPa	41	35	71	49	57	42	24	58	58
dry cooler pressure drop	kPa	7	11	26	24	17	15	11	14	7
dry cooler (std version)	mod.	DSM018	DSM022	DSM028	DST030	DST040	DSM028	DST030	DST050	DST060
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	800	810	815	800	805	810	825
gross	kq	505	515	805	815	820	805	810	815	830

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); outdoor temperature: 35° C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – up flow

F OVER R22 – 50 Hz

MODELS		20OF	24OF	28OF	34OF	40OF	26OF	32OF	42OF	46OF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	435	325	410	350	305	410	350	305	240
fan absorbed power	kW	1.07	1.66	2.62	2.94	3.46	2.62	2.94	3.46	3.88
fan absorbed current	A	4.1	4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.2	2 x 4.3	2 x 4.4	2 x 4.4
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECANICAL COOLING										
total cooling capacity	kW	18.00	23.00	28.20	32.30	40.50	27.30	31.60	39.60	49.40
sensible cooling capacity	kW	18.00	22.30	28.20	32.30	40.50	27.30	31.60	39.60	45.40
total absorbed power	kW	6.39	8.74	10.30	11.60	14.53	9.55	11.75	13.36	17.72
compressor absorbed power	kW	5.15	7.13	7.68	8.66	11.07	6.92	8.82	9.90	13.84
compressor absorbed current	A	9.1	13.2	14.2	15.8	2.2	2 x 6.4	2 x 8.2	2 x 8.9	2 x 12.8
SHR (sensible/total ratio)	—	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.92
sound pressure level ⁽³⁾	dB(A)	52.7	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	2.83	2.63	2.74	2.79	2.79	2.86	2.69	2.96	2.79
inlet mixture temperature	°C	42.1	41.7	42.1	41.6	41.9	41.3	40.6	39.7	39.8
condenser water pressure drop	kPa	36	37	55	46	38	38	38	36	36
valve water pressure drop	kPa	53	53	35	44	52	13	13	13	13
PERFORMANCES IN FREECOOLING MODE										
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
ZET Zero Energy Temperature	°C	4.2	0.0	5.4	5.9	3.6	4.7	4.0	6.0	3.9
inlet mixture temperature	°C	9.6	5.4	11.3	11.2	9.1	10.2	8.5	9.8	7.6
water flow	l/s	1.12	1.06	1.71	1.92	2.08	1.28	1.28	2.10	2.11
water side pressure drop	kPa	41	27	71	49	57	42	24	58	58
dry cooler pressure drop	kPa	7	11	26	24	17	15	11	14	7
dry cooler (std version)	mod.	DSM018	DSM022	DSM028	DST030	DST040	DSM028	DST030	DST050	DST060
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	2.5								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	6	7.8	9	10	13	2 x 4	2 x 5	2 x 6	2 x 7.8
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	510	800	810	815	800	805	810	825
gross	kq	505	515	805	815	820	805	810	815	830

1. At the following standard conditions: power supply voltage 400/3/50 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); outdoor temperature: 35° C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Air condensation – down flow

A UNDER R407C – 60 Hz

MODELS		20UA	24UA	28UA	34UA	40UA	26UA	32UA	42UA	46UA
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750
max available external static pres- sure ⁽²⁾	Pa	320	240	290	270	235	290	270	235	190
fan absorbed power	kW	0.81	4.07	1.80	1.94	2.18	1.80	1.94	2.18	2.38
fan absorbed current	A	3.2	3.4	3.3x2	3.3x2	3.4x2	3.3x2	3.3x2	3.4x2	3.3x2
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.5	59.0	56.4	57.5	59.0	60.8
total cooling capacity	kW	21.3	24.3	30.5	37.5	44.4	28.5	33.8	43.2	50.8
sensible cooling capacity	kW	19.6	23.1	29.6	35.4	43	28.3	33.5	42.1	46.3
total absorbed power	kW	5.39	6.38	8.70	10.32	11.77	7.68	9.18	11.38	13.03
compressor absorbed power	kW	4.58	5.31	6.89	8.38	9.59	5.88	7.24	9.20	10.64
compressor absorbed current 208—230V	A	14.8	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.9x2	15.9x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.1	18.0	n.a	n.a	n.a	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.0	4.7x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.92	0.95	0.97	0.94	0.97	0.99	0.99	0.97	0.91
EER (output/used energy)	—	3.95	3.81	3.51	3.63	3.77	3.72	3.68	3.80	3.90
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	3.4x2	4x2	5x2	6x2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	380	369	580	585	590	580	585	590	573
gross	kg	385	374	585	590	595	585	590	595	578

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure; condensation temperature: 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Air condensation – down flow

A UNDER R22 – 60 Hz

MODELS		20UA	24UA	28UA	34UA	40UA	26UA	32UA	42UA	46UA
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750
max available external static pres- sure ⁽²⁾	Pa	320	240	290	270	235	290	270	235	190
fan absorbed power	kW	0.81	1.07	1.80	1.94	2.18	1.80	1.94	2.18	2.38
fan absorbed current	A	3.2	3.4	3.3x2	3.3x2	3.4x2	3.3x2	3.3x2	3.4x2	3.3x2
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.5	59.0	56.4	57.5	59.0	60.8
total cooling capacity	kW	20.5	23.9	30.1	36.9	43.7	28.3	33.4	42.7	50.3
sensible cooling capacity	kW	19.5	23.2	29.5	35.4	42.8	28.3	33.4	41.9	46.3
total absorbed power	kW	5.28	6.30	8.29	9.81	11.2	7.55	9.19	11.20	12.90
compressor absorbed power	kW	4.47	5.23	6.49	7.87	9.02	5.74	7.26	9.02	10.50
compressor absorbed current 208–230V	A	14.8	15.7	22.3	25.3	29.0	7.8x2	10.8x2	14.8x2	15.9x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a	5.9x2	8.9x2	9.5x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.95	0.97	0.98	0.96	0.98	1	1	0.98	0.92
EER (output/used energy)	–	3.88	3.79	3.63	3.76	3.90	3.75	3.64	3.82	3.9
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.4x2	4x2	5x2	6x2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	22	22	22	28	28	18	18	22	22
liquid line (pipe to be welded o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	380	369	580	585	590	580	585	590	573
gross	kg	385	374	585	590	595	585	590	595	578

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure; condensation temperature: 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Air condensation – up flow

A OVER R407C – 60 Hz

MODELS		200A	240A	280A	340A	400A	260A	320A	420A	460A
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pressure ⁽²⁾	Pa	315	240	295	230	195	295	230	195	155
fan absorbed power	kW	0.93	1.15	1.94	2.32	2.50	1.94	2.32	2.50	2.68
fan absorbed current	A	3.3	3.3	3.3x2	3.3x2	3.3x2	3.3x2	3.3x2	3.3x2	3.2x2
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
total cooling capacity	kW	21	24	30.4	37.2	43.6	28.5	33.4	42.3	50.2
sensible cooling capacity	kW	19.1	22.6	29.7	34.9	42.5	27.8	33.1	41.8	45.6
total absorbed power	kW	5.50	6.46	8.84	10.70	12.10	7.83	9.55	11.70	13.32
compressor absorbed power	kW	4.58	5.31	6.89	8.38	9.59	5.88	7.24	9.18	10.64
compressor absorbed current 208–230V	A	14.8	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.8x2	15.8x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.0	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.1	4.7x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.91	0.94	0.98	0.94	0.97	0.98	0.99	0.99	0.91
EER (output/used energy)	—	3.81	3.72	3.44	3.48	3.60	3.64	3.50	3.62	3.77
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	3.4x2	4x2	5x2	6x2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	22	22	22	28	28	18	18	22	22
liquid line (pipe to be welded o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	379	590	595	600	590	595	600	583
gross	kg	395	384	595	600	605	595	600	605	588

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure; condensation temperature: 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Air condensation – up flow

A OVER R22 – 60 Hz

MODELS		200A	240A	280A	340A	400A	260A	320A	420A	460A
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pressure ⁽²⁾	Pa	315	240	295	230	195	295	230	195	155
fan absorbed power	kW	0.93	1.15	1.94	2.32	2.50	1.94	2.32	2.50	2.68
fan absorbed current	A	3.3	3.3	3.3x2	3.3x2	3.3x2	3.3x2	3.3x2	3.3x2	3.2x2
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
total cooling capacity	kW	20.4	23.8	30	36.6	42.9	28.3	33	41.8	49.5
sensible cooling capacity	kW	19.1	22.8	29.4	35.1	42.9	28.3	33	41.8	45.5
total absorbed power	kW	5.39	6.38	8.44	10.18	11.53	7.70	9.56	11.49	13.19
compressor absorbed power	kW	4.46	5.23	6.49	7.87	9.02	5.74	7.24	8.98	10.50
compressor absorbed current 208–230V	A	14.7	15.7	22.3	25.3	29.0	7.8x2	10.8x2	14.8x2	15.8x2
compr. absorbed current 380V	A	7.4	9.4	11.3	15.1	17.3	n.a.	5.9x2	8.9x2	9.4x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	—	0.94	0.96	0.98	0.96	1	1	1	1	0.92
EER (output/used energy)	—	3.78	3.72	3.55	3.59	3.72	3.67	3.46	3.64	3.75
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	3.4x2	4x2	5x2	6x2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
REFRIGERANT CONNECTION										
gas line (pipe to be welded o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	379	590	595	600	590	595	600	583
gross	kg	395	384	595	600	605	595	600	605	588

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure; condensation temperature: 45°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Water condensation – down flow

W UNDER R407C – 60 Hz

MODELS		20UW	24UW	28UW	34UW	40UW	26UW	32UW	42UW	46UW
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750
max available external static pressure ⁽²⁾	Pa	320	240	290	270	235	290	270	235	190
fan absorbed power	kW	0.81	1.07	1.80	1.94	2.18	1.80	1.94	2.18	2.38
fan absorbed current	A	3.2	3.4	3.3X2	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.3	59.0	56.4	57.5	59.0	60.8
water temperature at the condenser inlet: 15°C — condensation temperature: 40°C										
total cooling capacity	kW	22.5	25.7	31.7	38.9	46.6	29.8	35.2	44.2	52.7
sensible cooling capacity	kW	20.1	23.4	30.2	35.9	43.6	28.7	34	42.9	47.2
total absorbed power	kW	4.96	5.84	7.98	9.42	10.74	7	8.54	10.53	11.96
compressor absorbed power	kW	4.15	4.77	6.18	7.49	8.56	5.20	6.60	8.34	9.56
compr. absorbed current 208—230V	A	13.9	14.6	21.5	24.5	28.5	7.5x2	10.5X2	13.9x2	14.7x2
compr. absorbed current 380V	A	n.a.	n.a.	10.8	14.9	16.9	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.2	7.5	10.3	12.3	14.1	4.3x2	5.5x2	7.2x2	7.6x2
SHR (sensible/total ratio)	—	0.89	0.91	0.95	0.92	0.94	0.96	0.97	0.97	0.90
EER (output/used energy)	—	4.55	4.40	3.97	4.13	4.34	4.26	4.12	4.20	4.41
water flow	l/s	0.265	0.301	0.411	0.497	0.582	0.181	0.218	0.276	0.321
water side pressure drop	kPa	2+3	3+4	3+2	3+3	3+4	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C — condensation temperature: 45°C										
total cooling capacity	kW	21.6	24.7	30.5	37.5	44.4	28.5	33.8	43.2	50.8
sensible cooling capacity	kW	19.7	23.2	29.9	35.2	42.6	28.3	33.8	41.9	46.3
total absorbed power	kW	5.39	6.38	8.70	10.32	11.77	7.67	9.17	11.39	13.03
compressor absorbed power	kW	4.58	5.31	6.89	8.38	9.59	5.86	7.22	9.20	10.64
compr. absorbed current 208—230V	A	14.8	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.9x2	15.8x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.1	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.0	4.6x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.91	0.94	0.98	0.94	0.96	0.99	1.00	0.97	0.91
EER (output/used energy)	—	4.01	3.86	3.51	3.63	3.77	3.72	3.69	3.79	3.90
water flow	l/s	0.534	0.688	0.961	1.150	1.339	0.699	0.919	1.153	1.535
water side pressure drop	kPa	8+12	14+20	16+10	15+14	14+19	11+13	18+23	10+14	18+24
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	3	7.8	9	10	2X3.34	2X4	2X5	2X6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	379	590	595	600	590	595	600	583
gross	kg	395	384	595	600	605	595	600	605	588

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – down flow

W UNDER R22 – 60 Hz

MODELS		20UW	24UW	28UW	34UW	40UW	26UW	32UW	42UW	46UW
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.611	1.833	2.772	3.067	3.475	2.772	3.067	3.475	3.750
max available external static pressure ⁽²⁾	Pa	320	240	290	270	235	290	270	235	190
fan absorbed power	kW	0.81	1.07	1.80	1.94	2.18	1.80	1.94	2.18	2.38
fan absorbed current	A	3.2	3.4	3.3X2	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2
sound pressure level ⁽³⁾	dB(A)	51.1	54.4	56.4	57.3	59.0	56.4	57.5	59.0	60.8
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	21.1	24.9	31	38.1	44.9	29.6	34.9	44.3	52.1
sensible cooling capacity	kW	19.7	23.7	30	35.8	43.1	29	33.8	42.1	46.9
total absorbed power	kW	4.87	5.81	7.67	9.02	10.30	6.92	8.58	10.38	11.91
compressor absorbed power	kW	4.06	4.73	5.86	7.09	8.12	5.12	6.64	8.20	9.52
compr. absorbed current 208–230V	A	13.9	14.6	20.9	23.8	27.3	7.3x2	9.9x2	13.9x2	14.7x2
compr. absorbed current 380V	A	8.3x2	8.7	10.8	14.2	16.3	n.a.	5.6x2	8.4x2	8.7x2
compr. absorbed current 460V	A	7.1	7.2	10.7	11.3	12.9	4.2x2	5.5x2	7.1x2	7.3x2
SHR (sensible/total ratio)	–	0.93	0.95	0.97	0.94	0.96	0.98	0.97	0.95	0.9
EER (output/used energy)	–	4.34	4.29	4.04	4.22	4.36	4.28	4.07	4.26	4.37
water flow	l/s	0.25	0.292	0.365	0.444	0.525	0.170	0.206	0.259	0.305
water side pressure drop	kPa	2+3	3+4	2+1	2+2	2+3	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	20.5	24.2	29.8	36.7	42.7	28.3	33.5	43.3	50.2
sensible cooling capacity	kW	19.5	23.3	29.8	35.2	42.7	28.3	33.5	42	46.1
total absorbed power	kW	5.28	6.31	8.29	9.81	11.20	7.55	9.19	11.20	12.9
compressor absorbed power	kW	4.47	5.23	6.49	7.87	9.02	5.74	7.26	9.02	10.52
compr. absorbed current 208–230V	A	14.8	15.7	22.3	25.3	29.0	7.8x2	10.8x2	14.8x2	15.8x2
compr. absorbed current 380V	A	8.9	9.4	11.3	15.1	17.3	n.a.	7.8x2	8.9x2	9.5x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.9x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.95	0.96	1	0.96	1	1	1	0.97	0.92
EER (output/used energy)	–	3.89	3.84	3.6	3.74	3.82	3.74	3.64	3.87	3.89
water flow	l/s	0.49	0.657	0.769	0.939	1.112	0.643	0.851	1.041	1.423
water side pressure drop	kPa	7+10	13+18	10+6	10+9	10+13	9+11	16+20	8+11	15+21
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	2X3.34	2X4	2X5	2X6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1”	1”	1¼”	1¼”	1¼”	1/2”	1/2”	1”	1”
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	390	379	590	595	600	590	595	600	583
gross	kg	395	384	595	600	605	595	600	605	588

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – up flow

W OVER R407C – 60 Hz

MODELS		200W	240W	280W	340W	400W	260W	320W	420W	460W
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pressure ⁽²⁾	Pa	315	240	295	230	195	295	230	195	155
fan absorbed power	kW	0.93	1.15	1.94	2.32	2.50	1.94	2.32	2.50	2.68
fan absorbed current	A	3.3	3.3	3.3X2	3.3X2	3.3X2	3.3X2	3.3X2	3.3X2	3.2X2
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
water temperature at the condenser inlet: 15°C — condensation temperature: 40°C										
total cooling capacity	kW	22.4	25.6	31.6	38.8	45.4	29.4	34.8	43.5	51.8
sensible cooling capacity	kW	19.7	23.6	30	35.8	43.8	28.5	33.8	42.5	46.8
total absorbed power	kW	5.07	5.92	8.13	9.80	11.07	7.15	8.49	10.84	12.25
compressor absorbed power	kW	4.14	4.77	6.18	7.49	8.57	5.20	6.18	8.34	9.56
compr. absorbed current 208—230V	A	13.9	14.6	21.5	24.5	28.5	7.6x2	10.5X2	13.9x2	14.7x2
compr. absorbed current 380V	A	n.a.	n.a.	10.8	14.9	16.9	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.2	7.5	10.3	12.3	14.1	4.3x2	5.5x2	7.2x2	7.6x2
SHR (sensible/total ratio)	—	0.88	0.92	0.95	0.92	0.96	0.97	0.97	0.98	0.90
EER (output/used energy)	—	4.41	4.32	3.89	3.96	4.10	4.11	4.10	4.01	4.23
water flow	l/s	0.261	0.301	0.408	0.494	0.579	0.179	0.216	0.273	0.316
water side pressure drop	kPa	2+3	3+4	3+2	3+3	3+4	1+1	1+1	1+1	1.+1
water temperature at the condenser inlet: 30°C — condensation temperature: 45°C										
total cooling capacity	kW	21.6	24.5	30.4	37.2	43.6	28.5	33.4	42.3	50.0
sensible cooling capacity	kW	19.4	23.1	29.5	35.1	42.9	28.2	33.3	42.1	46.2
total absorbed power	kW	5.51	6.46	8.84	10.69	12.10	7.83	9.41	11.70	13.32
compressor absorbed power	kW	4.58	5.31	6.89	8.38	9.59	5.88	7.10	9.20	10.64
compr. absorbed current 208—230V	A	14.8	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.8x2	15.8x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.1	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.0	4.6x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.90	0.94	0.97	0.94	0.98	0.99	1.00	0.99	0.92
EER (output/used energy)	—	3.92	3.80	3.44	3.48	3.60	3.64	3.55	3.62	3.75
water flow	l/s	0.521	0.688	0.953	1.136	1.323	0.691	0.916	1.129	1.498
water side pressure drop	kPa	8+11	14+20	16+9	14+13	14+18	10+13	18+23	9+13	17+23
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2X3.34	2X4	2X5	2X6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	400	389	600	605	610	600	605	610	593
gross	kg	405	394	605	610	615	605	610	615	598

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Water condensation – up flow

W OVER R22 – 60 Hz

MODELS		200W	240W	280W	340W	400W	260W	320W	420W	460W
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.607	1.858	2.728	2.997	3.463	2.728	2.997	3.463	3.667
max available external static pressure ⁽²⁾	Pa	315	240	295	230	195	295	230	195	155
fan absorbed power	kW	0.93	1.15	1.94	2.32	2.50	1.94	2.32	2.50	2.68
fan absorbed current	A	3.3	3.3	3.3X2	3.3X2	3.3X2	3.3X2	3.3X2	3.3X2	3.2X2
sound pressure level ⁽³⁾	dB(A)	52.7	55.8	57.8	60.0	61.6	57.8	60.0	61.6	62.9
water temperature at the condenser inlet: 15°C — condensation temperature: 40°C										
total cooling capacity	kW	21.1	24.9	30.8	37.7	44.5	29.1	34.7	44	51.4
sensible cooling capacity	kW	19.4	23.6	29.9	35.5	43.6	28.5	33.7	42.2	46.2
total absorbed power	kW	4.98	5.89	7.81	9.40	10.63	7.07	8.95	10.68	12.20
compressor absorbed power	kW	4.05	4.73	5.86	7.09	8.12	5.12	6.64	8.18	9.50
compr. absorbed current 208—230V	A	13.9	14.6	20.9	23.8	27.3	7.3x2	9.9X2	13.9x2	14.7x2
compr. absorbed current 380V	A	8.3	8.7	10.8	14.2	16.3	n.a.	5.6x2	8.4x2	8.7x2
compr. absorbed current 460V	A	7.0	7.2	10.7	11.3	12.9	4.2x2	5.5x2	7.1x2	7.3x2
SHR (sensible/total ratio)	—	0.92	0.95	0.97	0.94	0.98	0.98	0.97	0.96	0.90
EER (output/used energy)	—	4.23	4.22	3.94	4.02	4.18	4.11	3.88	4.12	4.21
water flow	l/s	0.248	0.292	0.363	0.443	0.522	0.169	0.205	0.256	0.302
water side pressure drop	kPa	2+3	3+4	2+1	2+2	2+3	1+1	1+1	0+1	1+1
water temperature at the condenser inlet: 30°C — condensation temperature: 45°C										
total cooling capacity	kW	20.5	24.2	29.6	36.1	42.7	28.2	33.3	42.8	49.6
sensible cooling capacity	kW	19.3	23.2	29.6	35	42.7	28.2	33.3	41.9	45.6
total absorbed power	kW	5.39	6.39	8.43	10.18	11.53	7.70	9.56	11.50	13.19
compressor absorbed power	kW	4.46	5.23	6.48	7.87	9.02	5.74	7.24	9	10.50
compr. absorbed current 208—230V	A	14.7	15.7	22.3	25.3	29.1	7.8x2	10.8x2	14.8x2	15.8x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a.	5.9x2	8.9x2	9.4x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	—	0.94	0.96	1	0.97	1	1	1	0.98	0.92
EER (output/used energy)	—	3.81	3.78	3.51	3.54	3.71	3.67	3.48	3.72	3.76
water flow	l/s	0.48	0.657	0.761	0.939	1.098	0.639	0.842	1.021	1.394
water side pressure drop	kPa	7+10	13+18	10+6	10+9	10+13	9+11	15+19	8+11	14+20
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2x3.4	2x4	2x5	2x6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	400	389	600	605	610	600	605	610	593
gross	kg	405	394	605	610	615	605	610	615	598

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s) and compressor(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – Air condensation – down flow

D UNDER R407C – 60 Hz

MODELL		20UD	24UD	28UD	34UD	40UD	26UD	32UD	42UD	46UD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2	3.2X2
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	21	25.3	30.5	37.3	44.2	28.7	33.9	43.8	51.1
sensible cooling capacity	kW	19.3	23.1	29.6	35.4	43.1	28.3	33	42	47.1
total absorbed power	kW	5.53	6.57	8.90	10.58	12.01	7.89	9.28	11.62	13.36
compressor absorbed power	kW	4.58	5.31	6.89	8.38	9.59	5.88	7.08	9.20	10.64
compr. absorbed current 208—230V	A	14.8	15.8	23.1	26.3	30.8	8.2x2	11.5x2	14.9x2	15.9x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.1	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.0	4.7x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.92	0.91	0.97	0.95	0.97	0.99	0.97	0.96	0.92
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	3.80	3.86	3.43	3.52	3.68	3.64	3.65	3.77	3.82
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.1	33.5	51.7	63.5	67.3	51.7	63.5	67.3	71.9
sensible cooling capacity	kW	22.5	26.1	42.4	48.9	52.5	42.4	48.9	52.5	56.8
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.340	1.600	2.460	3.030	3.210	2.460	3.030	3.210	3.430
water side pressure drop	kPa	57	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2X3.34	2X4	2X5	2x6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded, o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – Air condensation – down flow

D UNDER R22 – 60 Hz

MODELL		20UD	24UD	28UD	34UD	40UD	26UD	32UD	42UD	46UD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2	3.2X2
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	20.1	24.5	30.1	36.7	43.7	28.3	33.4	42.9	50.5
sensible cooling capacity	kW	19.3	23.1	29.5	35.2	42.3	28.3	33.4	41.7	46.9
total absorbed power	kW	5.41	6.50	8.50	10.07	11.44	7.76	9.45	11.43	13.23
compressor absorbed power	kW	4.46	5.24	6.49	7.87	9.02	5.74	7.24	9.02	10.52
compr. absorbed current 208–230V	A	14.7	15.8	22.3	25.3	29.0	7.8x2	10.8x2	14.8x2	15.9x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a.	5.9x2	8.9x2	9.5x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.96	0.94	0.98	0.96	0.97	1	1	0.97	0.93
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	–	3.71	3.77	3.54	3.64	3.82	3.65	3.54	3.76	3.81
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.1	33.5	51.7	63.5	67.3	51.7	63.5	67.3	71.9
sensible cooling capacity	kW	22.5	26.1	42.4	48.9	52.5	42.4	48.9	52.5	56.8
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.340	1.600	2.460	3.030	3.210	2.460	3.030	3.210	3.430
water side pressure drop	kPa	57	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34X2	4X2	5X2	6X2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	22	22	22	28	28	18	18	22	22
liquid line (pipe to be welded, o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – Air condensation – up flow

D OVER R407C – 60 Hz

MODELL		20OD	24OD	28OD	34OD	40OD	26OD	32OD	42OD	46OD
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.7	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4X2	3.3X2	3.2X2	3.4X2	3.3X2	3.2X2	3.1X2
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	20.4	23.5	30.1	36.6	43.5	28.6	32.7	43.3	50.5
sensible cooling capacity	kW	18.6	22.3	29.6	34	42.3	28.3	32.1	41.4	45.6
total absorbed power	kW	5.58	6.62	9.04	10.76	12.30	8.02	9.64	11.89	13.65
compressor absorbed power	kW	4.56	5.30	6.89	8.39	9.59	5.88	7.28	9.18	10.64
compr. absorbed current 208—230V	A	14.7	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.8x2	15.8x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.0	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.1	4.7x2	5.8x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.91	0.95	0.98	0.93	0.97	0.99	0.98	0.96	0.90
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	3.66	3.55	3.33	3.40	3.54	3.57	3.39	3.64	3.70
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.8	58.6	63.9	50.8	58.6	63.9	67.4
sensible cooling capacity	kW	22.7	26.4	41.7	46.3	51.1	41.7	46.3	51.1	54.6
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.350	1.620	2.420	2.8	3.040	2.420	2.8	3.040	3.210
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34x2	4x2	5x2	6x2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	18	22	22	22	28	16	16	18	22
liquid line (pipe to be welded, o.d.)	mm	16	18	18	18	22	14	14	16	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – Air condensation – up flow

D OVER R22 – 60 Hz

MODELL		200D	240D	280D	340D	400D	260D	320D	420D	460D
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pres- sure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.70	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4X2	3.3X2	3.2X2	3.4X2	3.3X2	3.2X2	3.1X2
PERFORMANCES WITH MECHANICAL COOLING										
total cooling capacity	kW	19.6	23.6	29.7	36	43	28.2	32.1	42.4	49.8
sensible cooling capacity	kW	18.7	22.6	29.7	34.2	41.7	28.2	32.1	41.1	45.8
total absorbed power	kW	5.46	6.54	8.63	10.24	11.72	7.89	9.53	11.69	13.52
compressor absorbed power	kW	4.44	5.22	6.49	7.88	9.02	5.74	7.24	8.98	10.50
compr. absorbed current 208–230V	A	14.7	15.6	22.3	25.3	29.0	7.8x2	10.8x2	14.8x2	15.8x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a.	5.8x2	8.9x2	9.4x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.95	0.96	1	0.95	0.97	1	1	0.97	0.92
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	–	3.60	3.60	3.44	3.52	3.67	3.57	3.34	3.62	3.69
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.8	58.6	63.9	50.8	58.6	63.9	67.4
sensible cooling capacity	kW	22.7	26.4	41.7	46.3	51.1	41.7	46.3	51.1	54.6
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.350	1.620	2.420	2.8	3.040	2.420	2.8	3.040	3.210
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34X2	4X2	5X2	6X2
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CHILLED WATER CONNECTIONS										
water connections	inch	1”	1¼”	1¼”	1¼”	1½”	1¼”	1¼”	1½”	1½”
REFRIGERANT CONNECTIONS										
gas line (pipe to be welded, o.d.)	mm	22	22	22	28	28	16	16	22	22
liquid line (pipe to be welded, o.d.)	mm	18	18	18	22	22	16	16	18	18
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class. The standard diameters of the pipes only apply for lengths – between the air conditioner and the condensing unit – up to 30 equivalent m.

Dualfluid – water condensation – down flow

H UNDER R407C – 60 Hz

MODELL		20UH	24UH	28UH	34UH	40UH	26UH	32UD	42UH	46UH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available exter. static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2	3.2X2
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	58.7	55.8	57.6	59.1	61.2
water temperature at the condenser inlet: 15°C — condensation temperature: 40°C										
total cooling capacity	kW	22.1	26.5	31.6	38.7	46.0	30.0	35.7	45.5	52.3
sensible cooling capacity	kW	19.7	23.6	30.2	35.9	43.7	28.7	34.2	43.3	48
total absorbed power	kW	5.09	6.04	8.19	9.68	10.98	7.21	8.80	10.77	12.29
compressor absorbed power	kW	4.14	4.78	6.18	7.49	8.56	5.20	6.60	8.34	9.56
compr. absorbed current 208—230V	A	13.9	14.7	21.5	24.5	28.5	7.5x2	10.5x2	14.0x2	14.8x2
compr. absorbed current 380V	A	n.a.	n.a.	10.8	14.9	16.9	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.2	7.5	10.3	12.3	14.1	4.3x2	5.5x2	7.2x2	7.5x2
SHR (sensible/total ratio)	—	0.89	0.89	0.95	0.93	0.95	0.96	0.96	0.95	0.92
EER (output/used energy)	—	4.35	4.39	3.86	4.00	4.19	4.16	4.06	4.22	4.26
water flow	l/s	0.261	0.310	0.411	0.496	0.582	0.181	0.217	0.276	0.322
water side pressure drop	kPa	2+3	3+4	3+2	3+3	3+4	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C — condensation temperature: 45°C										
total cooling capacity	kW	21.4	25.4	30.5	37.3	44.2	28.7	33.9	43.8	51.1
sensible cooling capacity	kW	19.5	23.1	29.9	35.2	42.7	28.3	33.6	42.1	47.1
total absorbed power	kW	5.53	6.58	8.90	10.58	12	7.88	9.43	11.63	13.36
compressor absorbed power	kW	4.58	5.32	6.89	8.38	9.59	5.86	7.24	9.20	10.64
compr. absorbed current 208—230V	A	14.8	15.8	23.1	26.3	30.8	8.2x2	11.5x2	14.9x2	15.9x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.1	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.0	4.6x2	5.7x2	7.6x2	8.0x2
SHR (sensible/total ratio)	—	0.91	0.91	0.98	0.94	0.97	0.99	0.99	0.96	0.92
EER (output/used energy)	—	3.86	3.87	3.43	3.53	3.68	3.64	3.59	3.77	3.82
water flow	l/s	0.521	0.722	0.961	1.143	1.339	0.699	0.916	1.156	1.544
water side pressure drop	kPa	8+11	16+22	16+10	15+14	14+19	11+13	18+23	10+14	18+25
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.1	33.5	51.7	63.5	67.3	51.7	63.5	67.3	71.9
sensible cooling capacity	kW	22.5	26.1	42.4	48.9	52.5	42.4	48.9	52.5	56.8
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.340	1.600	2.460	3.030	3.210	2.460	3.030	3.210	3.430
water side pressure drop	kPa	57	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34x2	4x2	5x2	6x2
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
CONDENSER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – down flow

H UNDER R22 – 60 Hz

MODELL		20UH	24UH	28UH	34UH	40UH	26UH	32UD	42UH	46UH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available exter. static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3X2	3.4X2	3.3X2	3.3X2	3.4X2	3.3X2	3.2X2
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	58.7	55.8	57.6	59.1	61.2
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	20.8	25.6	31	37.9	45.2	29.6	35.1	44.5	52.2
sensible cooling capacity	kW	19.6	23.3	30	35.6	43	29	33.7	42.2	47.5
total absorbed power	kW	5.01	6.01	7.88	9.28	10.54	7.13	8.84	10.62	12.25
compressor absorbed power	kW	4.05	4.75	5.86	7.09	8.12	5.12	6.64	8.20	9.52
compr. absorbed current 208–230V	A	13.9	14.6	20.9	23.8	27.3	7.3X2	9.9X2	13.9x2	14.7X2
compr. absorbed current 380V	A	8.3	8.7	10.8	14.2	16.3	n.a.	5.6x2	8.4x2	8.8x2
compr. absorbed current 460V	A	7.0	7.2	10.7	11.3	12.9	4.2x2	5.5X2	7.1x2	7.3x2
SHR (sensible/total ratio)	–	0.94	0.91	0.97	0.94	0.95	0.98	0.96	0.95	0.91
EER (output/used energy)	–	4.16	4.26	3.93	4.08	4.29	4.15	3.97	4.19	4.26
water flow	l/s	0.248	0.299	0.365	0.444	0.523	0.170	0.205	0.259	0.306
water side pressure drop	kPa	2+3	3+4	2+1	2+2	2+3	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	20.3	24.9	29.8	36.5	43.4	28.3	33.3	42.6	51
sensible cooling capacity	kW	19.3	23.2	29.8	35	42.6	28.3	33.3	41.8	46.9
total absorbed power	kW	5.42	6.50	8.50	10.07	11.44	7.76	9.45	11.44	13.23
compressor absorbed power	kW	4.46	5.24	6.49	7.87	9.02	5.74	7.26	9.02	10.52
compr. absorbed current 208–230V	A	14.7	15.8	22.3	25.3	29.0	7.8x2	10.8X2	14.8x2	15.9x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a.	5.9x2	8.9x2	9.5x2
compr. absorbed current 460V	A	7.4	7.9	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.95	0.93	1	0.96	0.98	1	1	0.98	0.92
EER (output/used energy)	–	3.75	3.83	3.51	3.63	3.80	3.64	3.53	3.73	3.85
water flow	l/s	0.480	0.683	0.769	0.939	1.104	0.643	0.850	1.046	1.423
water side pressure drop	kPa	7+10	14+19	10+6	10+9	10+13	9+11	16+20	8+11	15+21
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.1	33.5	51.7	63.5	67.3	51.7	63.5	67.3	71.9
sensible cooling capacity	kW	22.5	26.1	42.4	48.9	52.5	42.4	48.9	52.5	56.8
sound pressure level ⁽³⁾	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.340	1.600	2.460	3.030	3.210	2.460	3.030	3.210	3.430
water side pressure drop	kPa	57	46	79	99	79	79	99	79	89
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34X2	4X2	5X2	6X2
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – up flow

H OVER R407C – 60 Hz

MODELL		20OH	24OH	28OH	34OH	40OH	26OH	32OD	42OH	46OH
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m ³ /s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available exter. static pressure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.70	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4x2	3.3x2	3.2x2	3.4x2	3.3x2	3.2x2	3.1x2
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	21.5	25.1	31.7	38.0	45.5	29.8	34.3	44.5	51.8
sensible cooling capacity	kW	19.2	22.8	30.3	35	42.9	28.9	32.9	42.1	46.8
total absorbed power	kW	5.15	6.08	8.32	9.86	11.27	7.34	8.98	11.04	12.58
compressor absorbed power	kW	4.13	4.76	6.18	7.49	8.57	5.20	6.62	8.34	9.56
compr. absorbed current 208–230V	A	13.8	14.7	21.5	24.6	28.5	7.5x2	10.5x2	13.9x2	14.8x2
compr. absorbed current 380V	A	n.a.	n.a.	10.8	14.8	16.9	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.2	7.5	10.3	12.3	14.1	4.3x2	5.5x2	7.2x2	7.5x2
SHR (sensible/total ratio)	–	0.89	0.91	0.96	0.92	0.94	0.97	0.96	0.95	0.90
EER (output/used energy)	–	4.18	4.12	3.81	3.85	4.04	4.06	3.82	4.03	4.12
water flow	l/s	0.254	0.295	0.411	0.486	0.577	0.180	0.210	0.272	0.317
water side pressure drop	kPa	2+3	3+4	3+2	3+2	3+3	1+1	1+1	1+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	20.7	24.1	30.1	36.6	43.5	28.6	32.7	43.3	50.5
sensible cooling capacity	kW	18.7	22.4	29.7	34	42.6	28.3	32.4	41.8	46.1
total absorbed power	kW	5.59	6.63	9.03	10.75	12.30	8.02	9.66	11.9	13.66
compressor absorbed power	kW	4.57	5.31	6.89	8.39	9.59	5.88	7.26	9.20	10.64
compr. absorbed current 208–230V	A	14.7	15.7	23.1	26.3	30.8	8.2x2	11.5x2	14.9x2	15.8x2
compr. absorbed current 380V	A	n.a.	n.a.	11.5	16.0	18.0	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	7.6	8.0	11.1	13.1	15.1	4.7x2	5.8x2	7.6x2	8.0x2
SHR (sensible/total ratio)	–	0.90	0.93	0.98	0.93	0.98	0.99	0.99	0.96	0.914
EER (output/used energy)	–	3.71	3.63	3.33	3.40	3.54	3.57	3.38	3.64	3.70
water flow	l/s	0.496	0.661	0.961	1.109	1.315	0.696	0.872	1.125	1.503
water side pressure drop	kPa	7+10	13+18	16+10	14+13	14+18	11+13	16+21	9+13	17+23
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	29.8	50.8	58.6	63.9	50.8	58.6	63.9	67.4
sensible cooling capacity	kW	22.7	25.6	41.7	46.3	51.1	41.7	46.3	51.1	54.6
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.350	1.420	2.420	2.8	3.040	2.420	2.8	3.040	3.210
water side pressure drop	kPa	58	27	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34x2	4x2	5x2	6x2
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m ²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m ²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Dualfluid – water condensation – up flow

H OVER R22 – 60 Hz

MODELL		200H	240H	280H	340H	400H	260H	320D	420H	460H
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available exter. static pressure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.70	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4x2	3.3x2	3.2x2	3.4x2	3.3x2	3.2x2	3.1x2
sound pressure level ⁽³⁾	dB(A)	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
water temperature at the condenser inlet: 15°C – condensation temperature: 40°C										
total cooling capacity	kW	20.5	24.4	31.1	37.2	44.7	29.4	33.8	43.5	51.7
sensible cooling capacity	kW	19	22.9	30.1	34.6	42.5	28.8	32.8	41.8	46.6
total absorbed power	kW	5.06	6.04	8.01	9.45	10.83	7.26	8.98	10.88	12.53
compressor absorbed power	kW	4.04	4.72	5.86	7.09	8.12	5.12	6.62	8.18	9.50
compr. absorbed current 208–230V	A	13.8	14.6	20.9	23.8	27.3	7.3x2	9.9x2	13.9x2	14.7x2
compr. absorbed current 380V	A	8.3	8.7	10.7	14.2	16.3	n.a	5.6x2	8.4x2	8.7x2
compr. absorbed current 460V	A	7.0	7.2	10.7	11.3	12.9	4.2x2	5.5x2	7.1x2	7.3x2
SHR (sensible/total ratio)	–	0.93	0.94	0.97	0.93	0.95	0.98	0.97	0.96	0.90
EER (output/used energy)	–	4.05	4.03	3.88	3.94	4.13	4.05	3.76	4	4.13
water flow	l/s	0.242	0.287	0.364	0.437	0.520	0.170	0.199	0.256	0.302
water side pressure drop	kPa	2+2	2+3	2+1	2+2	2+3	1+1	1+1	0+1	1+1
water temperature at the condenser inlet: 30°C – condensation temperature: 45°C										
total cooling capacity	kW	19.9	23.5	29.8	36	43	28.2	32.2	42.3	49.9
sensible cooling capacity	kW	18.7	22.6	29.8	34.5	41.8	28.2	32.2	41.1	45.9
total absorbed power	kW	5.46	6.55	8.63	10.24	11.73	7.89	9.60	11.70	13.52
compressor absorbed power	kW	4.44	5.22	6.49	7.88	9.02	5.74	7.24	9	10.50
compr. absorbed current 208–230V	A	14.7	15.7	22.4	25.3	29.0	7.8x2	10.8x2	14.8x2	15.8x2
compr. absorbed current 380V	A	8.8	9.4	11.3	15.1	17.3	n.a	5.9x2	8.9x2	9.4x2
compr. absorbed current 460V	A	7.4	7.8	11.3	12.1	13.7	4.5x2	5.8x2	7.5x2	7.9x2
SHR (sensible/total ratio)	–	0.94	0.96	1	0.96	0.97	1	1	0.97	0.92
EER (output/used energy)	–	3.65	3.59	3.45	3.51	3.67	3.57	3.36	3.62	3.69
water flow	l/s	0.459	0.636	0.769	0.908	1.092	0.643	0.813	1.021	1.394
water side pressure drop	kPa	6+9	12+17	10+6	9+9	10+12	9+11	14+18	8+11	14+20
PERFORMANCES IN DUALFLUID MODE										
total cooling capacity	kW	28.4	33.9	50.8	58.6	63.9	50.8	58.6	63.9	67.4
sensible cooling capacity	kW	22.7	26.4	41.7	46.3	51.1	41.7	46.3	51.1	54.6
sound pressure level ⁽³⁾	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet/outlet water temperature	°C	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12	7/12
water flow	l/s	1.350	1.620	2.420	2.8	3.040	2.420	2.80	3.040	3.210
water side pressure drop	kPa	58	47	77	86	72	77	86	72	79
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	–	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	–	SCROLL								
rated power	HP	5	6	7.8	9	10	3.34x2	4x2	5x2	6x2
EVAPORATIN COIL/CHILLED WATER										
quantity	n.	2	2	2	2	2	2	2	2	2
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	–	INCLINED								
CONDENSER										
type	–	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1/2"	1/2"	1"	1"
CHILLED WATER CONNECTIONS										
water connections	inch	1"	1¼"	1¼"	1¼"	1½"	1¼"	1¼"	1½"	1½"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP)

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – down flow

F UNDER R407C – 60 Hz

MODELL		20UF	24UF	28UF	34UF	40UF	26UF	32UF	42UF	46UF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3x2	3.4x2	3.3x2	3.3x2	3.4x2	3.3x2	3.2x2
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECANICAL COOLING (Tc=50° C; mixture inlet temperature = 38° C)										
total cooling capacity	kW	20.4	24.5	30.3	35.2	42.5	28.5	33.8	41.8	50.3
sensible cooling capacity	kW	19.2	22.8	29.1	34.4	41.8	27.9	32.8	41.3	45.8
total absorbed power	kW	6.03	7.19	9.88	11.79	13.39	8.64	10.51	12.83	14.85
compressor absorbed power	kW	5.08	5.93	7.87	9.60	10.97	6.62	8.30	10.40	12.12
compr. absorbed current 208—230V	A	15.9	17.1	25.2	28.7	33.7	8.9x2	12.9x2	16.2x2	17.5x2
compr. absorbed current 380V	A	n.a.	n.a.	12.4	17.6	19.7	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	8.1	8.1	12.2	14.3	16.4	5.1x2	6.2x2	8.2x2	9.1x2
SHR (sensible/total ratio)	—	0.94	0.93	0.96	0.98	0.98	0.98	0.97	0.99	0.91
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	3.38	3.41	3.07	2.98	3.17	3.29	3.22	3.26	3.39
inlet mixture temperature	°C	38	38	38	38	38	38	38	38	38
condenser water pressure drop	kPa	40	83	49	46	44	39	49	30	56
valve water pressure drop	kPa	59	122	32	45	60	53	67	44	83
PERFORMANCES IN FREECOOLING MODE										
sound pressure level	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet mixture temperature	°C	7	7	7	7	7	7	7	7	7
water flow	l/s	1.110	1.590	1.620	1.920	2.240	1.290	1.450	1.920	2.620
water side pressure drop	kPa	46	74	65	49	65	43	30	49	86
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2x3.34	2x4	2x5	2x6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); outdoor temperature: 35°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – down flow

F UNDER R22 – 60 Hz

MODELL		20UF	24UF	28UF	34UF	40UF	26UF	32UF	42UF	46UF
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.547	1.744	2.772	3.044	3.308	2.772	3.044	3.308	3.639
max available external static pressure ⁽²⁾	Pa	280	165	255	225	185	255	225	185	120
fan absorbed power	kW	0.95	1.26	2.02	2.20	2.42	2.02	2.20	2.42	2.72
fan absorbed current	A	3.3	3.3	3.3x2	3.4x2	3.3x2	3.3x2	3.4x2	3.3x2	3.2x2
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECHANICAL COOLING (Tc=50°C; mixture inlet temperature = 38°C)										
total cooling capacity	kW	19.9	23.7	28.8	34.8	41.3	27.4	33.1	41.4	48.1
sensible cooling capacity	kW	19.3	22.8	28.8	34.8	41.3	27.4	33.1	41.4	45.7
total absorbed power	kW	5.87	7.07	9.20	10.95	12.43	8.46	10.08	12.34	14.59
compressor absorbed power	kW	4.92	5.81	7.19	8.75	10.02	6.44	7.88	9.92	11.88
compr. absorbed current 208—230V	A	15.7	17.1	24.0	27.1	31.0	8.5x2	11.8x2	15.8x2	17.5x2
compr. absorbed current 380V	A	9.4	10.2	11.9	16.0	18.5	n.a.	6.2x2	9.5x2	10.4x2
compr. absorbed current 460V	A	7.9	8.6	12.1	12.9	14.7	4.9x2	6.2x2	7.9x2	8.7x2
SHR (sensible/total ratio)	—	0.97	0.96	1	1	1	1	1	1	0.95
sound pressure level ⁽³⁾	dB(A)	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
EER (output/used energy)	—	3.38	3.35	3.13	3.18	3.32	3.23	3.29	3.36	3.30
inlet mixture temperature	°C	38	38	38	38	38	38	38	38	38
condenser water pressure drop	kPa	34	76	53	50	50	34	65	41	49
valve water pressure drop	kPa	50	112	34	49	68	45	88	60	72
PERFORMANCES IN FREECOOLING MODE										
sound pressure level	dB(A)	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
inlet mixture temperature	°C	7	7	7	7	7	7	7	7	7
water flow	l/s	1.020	1.520	1.680	2.010	2.380	1.200	1.670	2.230	2.450
water side pressure drop	kPa	40	68	70	54	72	38	39	65	76
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2X3.34	2X4	2X5	2X6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	790	795	800	790	795	800	783
gross	kg	505	499	795	800	805	795	800	805	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 20 Pa available external static pressure (ESP); outdoor temperature: 35°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – up flow

F OVER R407C – 60 Hz

MODELL		200F	240F	280F	340F	400F	260F	320F	420F	460F
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.70	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4x2	3.3x2	3.2x2	3.4x2	3.3x2	3.2x2	3.1x2
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECANICAL COOLING (Tc=50° C; mixture inlet temperature = 38° C)										
total cooling capacity	kW	19.7	23.1	30.2	34.7	42.7	28.6	32.9	42.4	49.7
sensible cooling capacity	kW	18.4	22.2	28.9	33.4	41.5	27.7	31.9	40.7	44.8
total absorbed power	kW	6.09	7.24	10.01	11.97	13.69	8.78	10.69	13.11	15.14
compressor absorbed power	kW	5.07	5.92	7.87	9.60	10.98	6.64	8.32	10.40	12.12
compr. absorbed current 208—230V	A	15.8	17.0	25.2	28.7	33.7	8.9x2	12.9x2	16.2x2	17.4x2
compr. absorbed current 380V	A	n.a.	n.a.	12.4	17.5	19.7	n.a.	n.a.	n.a.	n.a.
compr. absorbed current 460V	A	8.1	8.8	12.2	14.3	16.4	5.1x2	6.2x2	8.2x2	9.0x2
SHR (sensible/total ratio)	—	0.93	0.96	0.96	0.96	0.97	0.97	0.97	0.96	0.90
sound pressure level ⁽³⁾	dB(A)	52.7	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	3.24	3.19	3.02	2.90	3.12	3.25	3.08	3.24	3.29
inlet mixture temperature	°C	38	38	38	38	38	38	38	38	38
condenser water pressure drop	kPa	36	70	49	43	43	39	44	29	53
valve water pressure drop	kPa	53	102	32	42	58	52	60	42	78
PERFORMANCES IN FREECOOLING MODE										
sound pressure level	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet mixture temperature	°C	7	7	7	7	7	7	7	7	7
water flow	l/s	1.050	1.460	1.620	1.860	2.2	1.290	1.380	1.870	2.550
water side pressure drop	kPa	42	63	65	47	63	43	28	47	82
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2x3.34	2x4	2x5	2x6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	800	810	815	800	805	810	783
gross	kg	505	499	805	815	820	805	810	815	788

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); outdoor temperature: 35°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Freecooler – up flow

F OVER R22 – 60 Hz

MODELL		200F	240F	280F	340F	400F	260F	320F	420F	460F
REFRIGERANT CIRCUIT		single	single	single	single	single	double	double	double	double
PERFORMANCES ⁽¹⁾										
air flow	m³/s	1.567	1.764	2.744	2.911	3.294	2.744	2.911	3.294	3.569
max available external static pressure ⁽²⁾	Pa	285	170	260	215	145	260	215	145	80
fan absorbed power	kW	1.02	1.32	2.14	2.36	2.70	2.14	2.36	2.70	3.02
fan absorbed current	A	3.4	3.3	3.4x2	3.3x2	3.2x2	3.4x2	3.3x2	3.2x2	3.1x2
glycol	%	30	30	30	30	30	30	30	30	30
PERFORMANCES WITH MECANICAL COOLING (Tc=50°C; mixture inlet temperature = 38°C)										
total cooling capacity	kW	19.2	22.9	28.7	34.3	41.3	27.2	31.9	40.7	48.1
sensible cooling capacity	kW	18.4	22.5	28.7	34.3	41.3	27.2	31.9	40.7	45.2
total absorbed power	kW	5.92	7.11	9.33	11.12	12.72	8.59	10.24	12.61	14.88
compressor absorbed power	kW	4.90	5.79	7.19	8.75	10.02	6.44	7.88	9.90	11.86
compr. absorbed current 208—230V	A	15.7	17.0	24.0	27.0	31.0	8.5x2	11.8x2	15.8x2	17.4x2
compr. absorbed current 380V	A	9.4	10.2	11.9	16.1	18.5	n.a.	6.2x2	9.5x2	10.4x2
compr. absorbed current 460V	A	7.8	8.5	12.1	12.9	14.7	4.9x2	6.2x2	7.9x2	8.7x2
SHR (sensible/total ratio)	—	0.96	0.98	1	1	1	1	1	1	0.94
sound pressure level ⁽³⁾	dB(A)	52.7	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
EER (output/used energy)	—	3.24	3.22	3.08	3.09	3.24	3.17	3.12	3.23	3.23
inlet mixture temperature	°C	38	38	38	38	38	38	38	38	38
condenser water pressure drop	kPa	31	65	53	47	48	34	59	39	47
valve water pressure drop	kPa	46	96	34	45	65	45	81	58	69
PERFORMANCES IN FREECOOLING MODE										
sound pressure level	dB(A)	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
inlet mixture temperature	°C	7	7	7	7	7	7	7	7	7
water flow	l/s	0.980	1.410	1.680	1.940	2.320	1.2	1.6	2.190	2.390
water side pressure drop	kPa	37	59	70	50	69	38	36	62	73
FANS										
quantity	n.	1	1	2	2	2	2	2	2	2
type	—	CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	kW	1.65								
COMPRESSOR										
quantity	n.	1	1	1	1	1	2	2	2	2
type	—	SCROLL								
rated power	HP	5	6	7.8	9	10	2x3.34	2x4	2x5	2x6
EVAPORATIN COIL										
quantity	n.	1	1	1	1	1	1	1	1	1
pipes/fins		COPPER/TREATED ALUMINIUM								
front surface	m²	0.74	0.74	1.49	1.49	1.49	1.49	1.49	1.49	1.49
configuration	—	INCLINED								
DRY COOLER										
type	—	PLATE TYPE EXCHANGER IN AISI 316								
quantity	n.	1	1	1	1	1	2	2	2	2
water connections	inch	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
DIMENSIONS										
width	mm	1000	1000	1750	1750	1750	1750	1750	1750	1750
depth	mm	890								
height	mm	1950								
footprint	m²	0.89	0.89	1.56	1.56	1.56	1.56	1.56	1.56	1.56
WEIGHTS										
net	kg	500	494	800	810	815	800	805	810	793
gross	kg	505	499	805	815	820	805	810	815	798

1. At the following standard conditions: power supply voltage 208–230–380–460/3/60 [V/Ph/Hz]; ambient conditions 24°C db; 50% R.H. (17°C wb); 50 Pa available external static pressure (ESP); outdoor temperature: 35°C.

2. Max. external static pressure for the indicated air flow

3. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. EER refers to the ambient unit only. The air flow of the units refers to the standard configuration with filter of the G4 class.

Chilled water unit – down flow

C UNDER – 50/60 Hz

MODELS			27UC			45UC			55UC		
PERFORMANCES ⁽¹⁾											
air flow	m³/s		2.348	2.107	⁽⁴⁾ 1.822	2.455	2.210	⁽⁴⁾ 1.929	4.420	3.980	⁽⁴⁾ 3.640
max available external static pressure ⁽²⁾	50Hz	Pa	150	250	350	150	250	350	150	250	325
	60Hz		—	100	200	—	100	200	—	120	190
fan absorbed power	50Hz	kW	2.1	1.7	1,4	2.0	1.7	1.4	4.1	3.5	2.8
	60Hz		—	1.4	1.1	—	1.4	1.1	—	2.7	2.3
fan absorbed current	50Hz	A	4,4	4,4	4,3	4,4	4,4	8,6	4.5x2	4.4x2	4.3x2
	60Hz		—	3.2	3.4	—	3.2	3.3	—	3.3x2	3.3x2
sound pressure level ⁽³⁾	dB(A)		60.6	57.6	53.9	61.9	58.7	55.2	62.6	59.9	57.6
inlet water temperature: 7°C — outlet water temperature: 12°C											
total cooling capacity	kW		30,4	29,0	26,8	46,6	43,3	39,1	64,2	60,5	57,4
sensible cooling capacity	kW		30,4	27,8	24,9	39,2	35,8	31,6	59,7	55,1	51,1
SHR (sensible/total ratio)	—		1.00	0.96	0.93	0.84	0.83	0.81	0.93	0.91	0.89
water flow	l/s		1,45	1,38	1,28	2,22	2,06	1,87	3,06	2,88	2,74
water side pressure drop	kPa		65	60	52	71	63	53	117	105	95
inlet water temperature: 10°C — outlet water temperature: 15°C											
total cooling capacity	kW		23,6	21,8	19,5	29,7	27,2	24,1	46,2	42,6	39,6
sensible cooling capacity	kW		23,6	21,8	19,5	29,7	27,2	24,1	46,2	42,6	39,6
SHR (sensible/total ratio)	—		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
water flow	l/s		1,13	1,04	0,93	1,42	1,30	1,15	2,21	2,03	1,89
water side pressure drop	kPa		41	36	29	34	30	25	64	56	49
FANS											
quantity	n.		1			1			2		
type	—		CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	50Hz (60Hz)	kW	2.5 (1.6)								
CHILLED WATER COIL											
quantity	n.		1			2			1		
pipes/fins			COPPER/TREATED ALUMINIUM								
front surface	m²		0.74			1.49			1.49		
configuration	—		INCLINED								
CHILLED WATER CONNECTIONS											
water connections	inch		1"			1¼"			1¼"		
DIMENSIONS											
width	mm		1000			1000			1750		
depth	mm		890								
height	mm		1950								
footprint	m²		0.89			0.89			1.56		
WEIGHTS											
net	kg		290			340			495		
gross	kg		295			345			500		

4. At the following standard conditions: ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure (ESP).

5. Max. external static pressure for the indicated air flow

6. Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge.

7. Standard air flow.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. The air flow of the units refers to the standard configuration with filter of the G4 class.

Chilled water unit – down flow

C UNDER – 50/60 Hz

MODELS			65UC			80UC			85UC		
PERFORMANCES ⁽¹⁾											
air flow	m³/s		4.260	3.840	⁽⁴⁾ 3.530	5.220	4.720	⁽⁴⁾ 4.300	5.180	4.680	⁽⁴⁾ 4.250
max available external static pressure ⁽²⁾	50Hz	Pa	150	250	325	150	250	320	150	250	320
	60Hz		—	130	190	—	100	170	—	100	180
fan absorbed power	50Hz	kW	4.2	3.5	2.8	4.1	3.5	2.8	4.1	3.5	2.8
	60Hz		—	2.8	2.3	—	2.7	2.3	—	2.7	2.3
fan absorbed current	50Hz	A	4.5x2	4.4x2	4.3x2	4.4x2	4.3x2	4.3x2	4.4x2	4.4x2	4.3x2
	60Hz		—	3.2x2	3.3x2	—	3.1x2	3.2x2	—	3.1x2	3.2x2
sound pressure level ⁽³⁾	dB(A)		62.0	59.3	57.2	64.6	61.5	59.1	64.6	61.4	59.0
inlet water temperature: 7°C — outlet water temperature: 12°C											
total cooling capacity	kW		79.3	73.7	69.4	83.9	78.5	73.8	99.5	92.7	86.7
sensible cooling capacity	kW		65.0	59.7	55.6	73.8	67.5	62.8	79.6	73.2	67.6
SHR (sensible/total ratio)	—		0.82	0.81	0.80	0.88	0.86	0.85	0.80	0.79	0.78
water flow	l/s		3.78	3.51	3.31	4.00	3.74	3.52	4.74	4.42	4.13
water side pressure drop	kPa		105	93	83	98	88	79	120	107	96
inlet water temperature: 10°C — outlet water temperature: 15°C											
total cooling capacity	kW		50.8	46.5	43.3	58.0	53.6	49.8	63.8	58.6	54.0
sensible cooling capacity	kW		50.8	46.5	43.3	58.0	53.6	49.8	63.8	58.6	54.0
SHR (sensible/total ratio)	—		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
water flow	l/s		2.42	2.22	2.07	2.77	2.56	2.38	3.04	2.80	2.58
water side pressure drop	kPa		48	42	37	54	48	42	58	51	45
FANS											
quantity	n.		2			2			2		
type	—		CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	50Hz [60Hz]	kW	2.5 (1.6)								
CHILLED WATER COIL											
quantity	n.		1			2			2		
pipes/fins			COPPER/TREATED ALUMINIUM								
front surface	m²		1.49			2.98			2.98		
configuration	—		INCLINED								
CHILLED WATER CONNECTIONS											
water connections	inch		1½"								
DIMENSIONS											
width	mm		1750								
depth	mm		890								
height	mm		1950								
footprint	m²		1.56								
WEIGHTS											
net	kg		555			590			610		
gross	kg		560			595			615		

- At the following standard conditions: ambient conditions 24°C db; 50% R.H.(17°C wb); 20 Pa available external static pressure (ESP).
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 20 Pa available external static pressure, with down flow air discharge.
- Standard air flow.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. The air flow of the units refers to the standard configuration with filter of the G4 class.

Chilled water unit – up flow

C OVER – 50/60 Hz

MODELS			27OC			45OC			55OC		
PERFORMANCES ⁽¹⁾											
air flow	m³/s		2.532	2.263	⁽⁴⁾ 1.950	2.583	2.331	⁽⁴⁾ 2.042	4.12	3.70	⁽⁴⁾ 3.25
max available external static pressure ⁽²⁾	50Hz	Pa	150	250	350	150	250	350	150	250	345
	60Hz		—	100	200	—	100	200	—	120	210
fan absorbed power	50Hz	kW	2,2	1.9	1.5	2.1	1.8	1.5	4.2	3.6	2.9
	60Hz		—	1.5	1.2	—	1.4	1.2	—	2.9	2.4
fan absorbed current	50Hz	A	4,4	4.4	4,3	4.4	4.4	4.3	4.4x2	4.4x2	4.3x2
	60Hz		—	3.1	3.3	—	3.1	3.3	—	3.2x2	3.3x2
sound pressure level ⁽³⁾	dB(A)		65,5	61.8	58.2	65.3	61.8	58.6	66.4	63.5	60.5
inlet water temperature: 7°C — outlet water temperature: 12°C											
total cooling capacity	kW		31.9	30.5	28.1	47.3	44.2	40.2	66.8	62.4	57.5
sensible cooling capacity	kW		31.9	29.3	26.1	39.3	36.3	32.5	58.8	53.7	48.3
SHR (sensible/total ratio)	—		1.00	0.96	0.93	0.83	0.82	0.81	0.88	0.86	0.84
water flow	l/s		1.52	1.45	1.34	2.26	2.11	1.91	3.18	2.98	2.74
water side pressure drop	kPa		71	66	57	73	65	55	125	111	96
inlet water temperature: 10°C — outlet water temperature: 15°C											
total cooling capacity	kW		24.8	21,7	20.4	30.7	28.1	25.1	45.6	41.8	37.6
sensible cooling capacity	kW		24.8	21,7	20.4	30.7	28.1	25.1	45.6	41.8	37.6
SHR (sensible/total ratio)	—		1.00	21,7	1.00	1.00	1.00	1.00	1.00	1.00	1.00
water flow	l/s		1.18	1,04	0.97	1.46	1.34	1.20	2.17	2.00	1.80
water side pressure drop	kPa		45	27	32	36	31	26	63	54	45
FANS											
quantity	n.		1			1			2		
type	—		CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	50Hz (60Hz)	kW	2.5 (1.6)								
CHILLED WATER COIL											
quantity	n.		1			2			1		
pipes/fins			COPPER/TREATED ALUMINIUM								
front surface	m²		0.74			1.49			1.49		
configuration	—		INCLINED								
CHILLED WATER CONNECTIONS											
water connections	inch		1”			1¼”			1¼”		
DIMENSIONS											
width	mm		1000			1000			1750		
depth	mm		890								
height	mm		1950								
footprint	m²		0.89			0.89			1.56		
WEIGHTS											
net	kg		290			340			495		
gross	kg		295			345			500		

- At the following standard conditions: ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure (ESP).
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge.
- Standard air flow.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. The air flow of the units refers to the standard configuration with filter of the G4 class.

Chilled water unit – up flow

C OVER – 50/60 Hz

MODELS			65OC			80OC			85OC		
PERFORMANCES ⁽¹⁾											
air flow	m ³ /s		4.040	3.620	⁽⁴⁾ 3.20	5.220	4.720	⁽⁴⁾ 4.130	5.120	4.620	⁽⁴⁾ 4.040
max available external static pressure ⁽²⁾	50Hz	Pa	150	250	355	150	250	335	150	250	330
	60Hz		—	140	220	—	95	200	—	90	190
fan absorbed power	50Hz	kW	4.2	3.6	3.0	4.2	3.7	3.0	4.2	3.7	3.0
	60Hz		—	2.9	2.4	—	2.9	2.4	—	2.9	2.4
fan absorbed current	50Hz	A	4.5x2	4.5x2	4.3x2	4.3x2	4.4x2	4.3x2	4.3x2	4.4x2	4.4x2
	60Hz		—	3.2x2	3.3x2	—	3.1x2	3.3x2	—	3.1x2	3.3x2
sound pressure level ⁽³⁾	dB(A)		66	63.3	60.4	68	64.8	61.5	67.8	64.6	61.3
inlet water temperature: 7°C — outlet water temperature: 12°C											
total cooling capacity	kW		78.9	72.8	66.3	84.6	79.1	72.1	95.8	89.3	81.5
sensible cooling capacity	kW		63.1	57.5	51.7	72.8	67.2	60.6	77.6	71.5	64.4
SHR (sensible/total ratio)	—		0.80	0.79	0.78	0.86	0.85	0.84	0.81	0.80	0.79
water flow	l/s		3.76	3.47	3.16	4.03	3.77	3.44	4.57	4.26	3.89
water side pressure drop	kPa		104	91	77	99	89	76	113	101	87
inlet water temperature: 10°C — outlet water temperature: 15°C											
total cooling capacity	kW		49.5	45.1	40.5	57.6	53.2	47.8	62.2	57.2	51.1
sensible cooling capacity	kW		49.5	45.1	40.5	57.6	53.2	47.8	62.2	57.2	51.1
SHR (sensible/total ratio)	—		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
water flow	l/s		2.36	2.15	1.93	2.75	2.54	2.28	2.97	2.73	2.44
water side pressure drop	kPa		46	39	33	53	47	40	56	49	41
FANS											
quantity	n.		2			2			2		
type	—		CENTRIFUGAL WITH BACKWARDS CURVED BLADES								
motor rated power	50Hz (60Hz)	kW	2.5 (1.6)								
CHILLED WATER COIL											
quantity	n.		1			2			2		
pipes/fins			COPPER/TREATED ALUMINIUM								
front surface	m ²		1.49			2.98			2.98		
configuration	—		INCLINED								
CHILLED WATER CONNECTIONS											
water connections	inch		1½"			1½"			1½"		
DIMENSIONS											
width	mm		1750								
depth	mm		890								
height	mm		1950								
footprint	m ²		1.56								
WEIGHTS											
net	kg		555			590			610		
gross	kg		560			595			615		

- At the following standard conditions: ambient conditions 24°C db; 50% R.H.(17°C wb); 50 Pa available external static pressure (ESP).
- Max. external static pressure for the indicated air flow
- Measured at 1 m height and 2 m front distance, in free field, with working fan(s); 50 Pa available external static pressure, with ducted air discharge.
- Standard air flow.

Cooling capacities are gross. To obtain the net cooling capacities the fan heat load must be subtracted. The air flow of the units refers to the standard configuration with filter of the G4 class.

9 – Sound Pressure Level

Himod units have been designed with particular care to counteract sound and vibration problems. Exhaustive research in our laboratories has resulted in Himod units providing the highest possible ventilation efficiency coupled with the lowest possible noise levels. This has been achieved using a combination of acoustic insulation, oversizing of various components and an aeraulic circuit enhancing an equalization and minimising pressure drop.



9.1 – Sound emission values

All tests performed in our laboratories in the conditions described. The instrument is placed at 1 m from the ground in front of the machine at 2 m distance. Delivery head: Under unit with underflow air discharge and 20 Pa available external static pressure; Over unit with ducted air discharge and 50 Pa available external static pressure. Standard air flow with clean G4 filters. Ambient temperature 24°C and relative humidity 50%. Condensing temperature 45°C. The noise levels refer to free field conditions.

Air/water-cooled direct expansion version

Sound emission		UNDER Models										
		20Ux	24Ux	28Ux	34Ux	40Ux	26Ux	32Ux	42Ux	46Ux	55Ux	65Ux
Only ventilation at 2 m in front of the unit, free field												
SPL sound pressure level	[dB(A)]	50.8	54.2	56.1	57.3	58.7	56.1	57.3	58.7	60.5	62.5	64.5
With compressor operating at 2 m in front of the unit in free field												
SPL sound pressure level	[dB(A)]	51.1	54.4	56.4	57.5	59.0	56.4	57.5	59.0	60.8	62.8	64.8
PWL sound power level at discharge	[dB(A)]	74.0	77.2	76.0	77.4	79.6	76.0	77.4	79.6	81.5	84.2	86.3

Sound emission	OVER Models									
	200x	240x	280x	340x	400x	260x	320x	420x	460x	
Only ventilation at 2 m in front of the unit, free field										
SPL sound pressure level	[dB(A)]	52.2	55.8	57.3	59.5	61.1	57.3	59.5	61.1	62.5
With compressor operating at 2 m in front of the unit in free field										
SPL sound pressure level	[dB(A)]	52.7	55.4	57.8	60.0	61.6	57.8	60.0	61.6	62.9
PWL sound power level at discharge	[dB(A)]	74.6	78.0	76.7	79.0	81.6	76.7	79.0	81.6	82.4

Freecooler and dualfluid version

Sound emission	UNDER Models									
	20Ux	24Ux	28Ux	34Ux	40Ux	26Ux	32Ux	42Ux	46Ux	
Only ventilation at 2 m in front of the unit, free field										
SPL sound pressure level	[dB(A)]	51.0	55.1	55.5	57.3	58.7	55.5	57.3	58.7	60.9
With compressor operating at 2 m in front of the unit in free field										
SPL sound pressure level	[dB(A)]	51.3	55.4	55.8	57.6	59.1	55.8	57.6	59.1	61.2
PWL sound power level at discharge	[dB(A)]	74.4	78.2	77.0	78.4	80.2	77.0	78.4	80.2	82.4

Sound emission	OVER Models									
	200x	240x	280x	340x	400x	260x	320x	420x	460x	
Only ventilation at 2 m in front of the unit, free field										
SPL sound pressure level	[dB(A)]	52.5	56.7	57.4	57.6	61.1	57.4	57.6	61.1	62.9
With compressor operating at 2 m in front of the unit in free field										
SPL sound pressure level	[dB(A)]	52.9	57.1	57.8	58.1	61.6	57.8	58.1	61.6	63.4
PWL sound power level at discharge	[dB(A)]	74.9	78.7	77.7	79.2	81.6	77.7	79.2	81.6	83.4

Chilled water version

Sound emissions	UNDER Models					
	27UC	45UC	55UC	65UC	80UC	85UC
Only ventilation at 2 m in front of the unit, free field						
SPL sound pressure level [dB(A)]	53.9	55.2	57.6	57.2	59.1	59.0
PWL sound power level at discharge [dB(A)]	77.6	78.5	81.1	80.7	83.9	83.7

Sound emissions	OVER Models					
	27OC	45OC	55OC	65OC	80OC	85OC
Only ventilation at 2 m in front of the unit, free field						
SPL sound pressure level [dB(A)]	58.2	58.6	60.5	60.4	61.5	61.3
PWL sound power level at discharge [dB(A)]	79.2	80.0	80.0	79.7	83.4	83.1

9.2 – Sound emission spectra

UNDER Models

The following tables show sound levels for every octave band frequency.

Model	Mode	Level	octave band frequency (Hz)									Sound Level
			31.5	63	125	250	500	1000	2000	4000	8000	
20 UA/W	(1)	SPL	57.3	57.3	61.1	54.7	45	42.1	40.4	30.9	18.9	50.8
	(2)	SPL	58.0	58.0	61.4	54.9	45.1	42.5	41.0	31.2	20.7	51.1
	(3)	PWL	70.1	70.1	79.0	75.1	70.9	69.8	63.4	55.5	45.1	74.0
24 UA/W	(1)	SPL	59.1	59.1	65.5	57	48.4	45.2	43.8	35.1	22.8	54.2
	(2)	SPL	59.8	59.8	65.5	57.2	48.5	45.6	44.4	35.4	24.6	54.4
	(3)	PWL	72.2	72.2	83.1	77.5	74.3	53.0	66.7	59.4	48.8	77.2
26–28 U A/W	(1)	SPL	55.6	55.6	64.3	59.1	53.0	48.9	45.7	37.2	22.7	56.1
	(2)	SPL	56.3	56.3	64.6	59.3	53.1	49.3	46.3	37.5	24.5	56.4
	(3)	PWL	69.5	69.5	81.7	76.7	73.0	71.5	65.6	58.0	48.7	76.0
32–34 U A/W	(1)	SPL	56.7	56.7	65.9	59.9	54.2	50.1	46.8	38.5	23.7	57.3
	(2)	SPL	57.4	57.4	66.2	60.1	54.3	50.5	47.4	38.8	25.5	57.5
	(3)	PWL	71.1	71.1	83.5	77.8	74.4	73.0	66.9	59.5	49.7	77.4
40–42 U A/W	(1)	SPL	57.8	57.8	67.6	61.0	55.8	51.5	48.4	40.6	25.7	58.7
	(2)	SPL	58.5	58.0	67.9	61.2	55.9	51.9	49.0	41.2	27.5	59.0
	(3)	PWL	73.7	73.7	85.6	79.8	76.0	75.2	69.2	62.0	51.7	79.6
46 U A/W	(1)	SPL	59.8	59.8	68.7	62.9	57.6	53.6	50.6	42.9	27.9	60.5
	(2)	SPL	60.5	60.5	69.0	63.1	57.7	54.0	51.2	43.5	29.7	60.8
	(3)	PWL	75.7	75.7	86.7	81.7	78.5	77.3	71.4	64.3	53.9	81.5
55 U A/W	(1)	SPL	59.7	59.7	69.2	64.6	59.8	55.9	53.2	45.6	31.3	62.5
	(2)	SPL	60.4	60.4	69.5	64.8	59.9	56.2	53.8	46.2	33.0	62.8
	(3)	PWL	76.2	76.2	87.8	84.0	81.3	80.1	74.6	67.6	57.9	84.2
65 U A/W	(1)	SPL	61.5	61.5	70.7	67.2	61.7	57.8	55.1	47.5	33.2	64.5
	(2)	SPL	62.2	62.2	71.0	67.4	61.8	58.2	55.7	48.1	35.0	64.8
	(3)	PWL	78.0	78.0	89.3	87.0	83.2	82.1	76.5	69.5	58.8	86.3
20 U F/D/H	(1)	SPL	56.0	56.0	62.2	54.2	45.1	42.2	40.6	31.6	19.7	51.0
	(2)	SPL	56.7	56.7	62.5	54.4	45.2	42.6	41.2	31.9	21.5	51.3
	(3)	PWL	68.4	68.4	80.3	74.9	71.4	70.0	63.9	56.4	46.5	74.4
24 U F/D/H	(1)	SPL	58.7	58.7	65.3	58.2	49.4	46.7	45.8	37.9	26.5	55.1
	(2)	SPL	59.4	59.4	65.6	58.4	49.5	47.1	46.4	38.2	28.3	55.4
	(3)	PWL	71.0	71.0	83.2	78.3	75.1	73.9	68.3	61.6	51.9	78.2
26–28 U F/D/H	(1)	SPL	54.4	54.4	64.1	58.2	52.4	48.2	45.1	36.8	22.3	55.5
	(2)	SPL	55.1	55.1	64.4	58.4	52.5	48.6	45.7	37.1	24.1	55.8
	(3)	PWL	69.0	69.0	83.7	77.1	74.1	72.4	66.8	59.8	50.4	77.0
32–34 U F/D/H	(1)	SPL	55.6	55.6	66.3	59.5	54.3	50.0	47.1	39.4	24.8	57.3
	(2)	SPL	56.3	56.3	66.6	59.0	54.4	50.4	47.7	39.7	26.6	57.6
	(3)	PWL	70.8	70.8	84.8	78.4	75.5	73.9	68.2	61.4	51.8	78.4
40–42 U F/D/H	(1)	SPL	57.0	57.0	66.9	61.1	55.8	51.7	48.9	41.4	27.0	58.7
	(2)	SPL	57.7	57.7	67.2	61.4	55.9	52.1	49.5	41.7	28.8	59.1
	(3)	PWL	72.8	72.8	85.6	80.3	77.2	75.8	70.2	63.5	53.9	80.2
46 U F/D/H	(1)	SPL	58.5	58.5	68.1	63.3	57.9	54.2	51.5	43.9	29.6	60.9
	(2)	SPL	59.2	59.2	68.4	63.5	58.0	54.6	52.1	44.2	31.4	61.2
	(3)	PWL	74.3	74.3	86.8	82.4	79.3	78.3	72.8	66.0	56.5	82.4
27 UC	(1)	SPL	66.2	58.1	60.9	54.2	50.9	78.9	44.3	35.6	25.9	53.9
	(4)	PWL	72.0	72.0	83.2	77.8	74.6	73.3	67.3	60.1	49.7	77.6
45 UC	(1)	SPL	64.8	57.8	58.7	58.5	52.5	48.6	45.4	37.0	26.4	55.2
	(4)	PWL	73.6	73.6	83.8	78.8	75.5	74.3	68.3	61.1	50.4	78.5
55 UC	(1)	SPL	69.3	61.2	64.3	57.9	54.6	52.7	48.3	39.8	30.3	57.6
	(4)	PWL	74.9	74.9	86.4	81.3	78.1	76.9	71.1	64.1	53.9	81.1
65 UC	(1)	SPL	68.6	60.5	64.0	57.5	54.2	52.2	47.9	39.4	30.1	57.2
	(4)	PWL	74.2	74.2	86.1	80.9	77.7	76.4	70.7	63.7	53.7	80.7
80 UC	(1)	SPL	69.4	62.4	61.8	62.4	56.3	52.7	49.6	41.3	30.0	59.1
	(4)	PWL	79.6	79.6	88.3	84.1	80.7	79.8	73.9	66.8	55.4	83.9
85 UC	(1)	SPL	69.2	62.2	61.8	62.3	56.2	52.6	49.5	41.2	30.0	59.0
	(4)	PWL	79.3	79.3	88.2	83.9	80.5	79.6	73.7	66.6	55.3	83.7

NOTES

1. Only ventilation (20 Pa available external static pressure), 2 m in front of the unit and 1 m height, in free field conditions.
2. Working compressor (20 Pa available external static pressure), 2 m in front of the unit and 1 m height, in free field conditions.
3. Working compressor, on discharge.
4. Only ventilation, on discharge.

The sound pressure levels for each octave band are expressed in dB with a tolerance of (–0/+2) dB.

OVER Models

The following tables show sound levels for every octave band frequency.

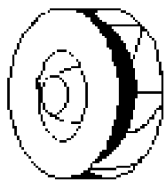
Model	Mode	Level	octave band frequency (Hz)									Sound Level [dB(A)]
			31.5	63	125	250	500	1000	2000	4000	8000	
20 OA/W	(1)	SPL	57.8	57.8	55.5	56.4	48.1	46.2	42.1	32.4	22.3	52.2
	(2)	SPL	58.6	58.6	56.2	56.7	48.6	46.7	42.5	32.9	22.8	52.7
	(3)	PWL	69.4	69.4	80.4	75.3	71.6	70.3	64.1	56.5	46.4	74.6
24 OA/W	(1)	SPL	61.0	61.0	60.2	59.3	52.0	50.0	46.1	37.2	26.6	55.8
	(2)	SPL	60.2	60.2	59.5	59.0	51.5	49.5	45.7	36.7	26.1	55.4
	(3)	PWL	72.5	72.5	83.5	78.3	75.0	73.8	67.8	60.7	50.2	78.0
26–28 O A/W	(1)	SPL	55.1	55.1	62.8	57.7	54.3	51.5	49.1	43.6	30.9	57.3
	(2)	SPL	55.9	55.9	63.5	58.0	54.8	52.0	49.5	44.1	31.4	57.8
	(3)	PWL	68.9	68.9	83.1	76.9	73.8	72.1	66.4	59.3	50.0	76.7
32–34 O A/W	(1)	SPL	56.7	56.7	64.6	59.5	56.6	53.8	51.5	46.6	34.1	59.5
	(2)	SPL	57.5	57.5	65.3	59.8	57.1	54.3	51.9	47.1	34.6	60.0
	(3)	PWL	70.9	70.9	84.9	78.9	76.1	74.5	68.9	62.4	53.1	79.0
40–42 O A/W	(1)	SPL	57.0	57.0	64.6	61.0	57.8	55.5	53.6	48.9	36.8	61.1
	(2)	SPL	57.8	57.8	65.3	61.3	58.3	56.0	54.0	49.4	37.3	61.6
	(3)	PWL	72.5	72.5	86.1	81.5	78.5	77.4	72.1	65.6	56.6	81.6
46 O A/W	(1)	SPL	59.5	59.5	66.0	62.5	59.3	56.9	54.7	49.9	37.3	62.5
	(2)	SPL	60.3	60.3	66.7	62.8	59.8	57.4	55.1	50.4	37.8	62.9
	(3)	PWL	74.7	74.7	86.8	82.4	79.3	78.2	72.7	65.9	56.2	82.4
20 O F/D/H	(1)	SPL	56.4	56.4	57.1	56.0	48.8	46.4	42.8	33.8	23.6	52.5
	(2)	SPL	57.2	57.2	57.8	56.3	49.3	46.9	43.2	34.3	24.1	52.9
	(3)	PWL	68.3	68.3	81.4	75.2	72.0	70.5	64.5	57.3	47.4	74.9
24 O F/D/H	(1)	SPL	58.9	58.9	59.3	59.9	52.7	51.0	47.8	39.5	29.8	56.7
	(2)	SPL	59.7	59.7	60.0	60.2	53.2	51.5	48.2	40.0	30.3	57.1
	(3)	PWL	71.0	71.0	83.4	78.8	75.7	74.5	69.1	62.4	52.8	78.7
26–28 O F/D/H	(1)	SPL	54.2	54.2	63.2	57.3	54.4	51.5	49.3	44.2	31.6	57.4
	(2)	SPL	55.0	55.0	63.9	57.6	54.9	52.0	49.7	44.7	32.1	57.8
	(3)	PWL	69.1	69.1	84.3	77.5	74.8	73.1	67.6	61.0	51.7	77.7
32–34 O F/D/H	(1)	SPL	54.8	54.8	63.4	57.6	54.7	51.7	49.4	44.3	31.6	57.6
	(2)	SPL	55.6	55.6	64.1	57.9	55.2	52.2	49.8	44.8	32.1	58.1
	(3)	PWL	70.8	70.8	84.9	79.1	76.3	74.8	69.2	62.9	53.9	79.2
40–42 O F/D/H	(1)	SPL	57.0	57.0	64.6	61.0	57.8	55.5	53.6	48.9	36.8	61.1
	(2)	SPL	57.8	57.8	65.3	61.3	58.3	56.0	54.0	49.4	37.3	61.6
	(3)	PWL	72.5	72.5	86.1	81.5	78.5	77.4	72.1	65.6	56.6	81.6
46 O F/D/H	(1)	SPL	58.0	58.0	65.6	62.8	59.6	57.4	55.5	50.8	38.8	62.9
	(2)	SPL	58.8	58.8	66.3	63.1	60.1	57.9	55.9	51.3	39.3	63.4
	(3)	PWL	73.5	73.5	87.1	83.3	80.3	79.3	74.0	67.5	58.6	83.4
27 OC	(1)	SPL	63.8	63.8	61.2	61.8	54.2	52.4	48.8	39.7	28.5	58.2
	(4)	PWL	73.8	73.8	84.2	79.5	76.2	75.0	69.2	62.1	51.5	79.2
45 OC	(1)	SPL	65.0	65.0	61.5	60.6	53.6	53.1	49.4	40.3	28.7	58.6
	(4)	PWL	75.1	75.1	84.7	79.7	76.9	75.9	70.0	62.9	51.9	80.0
55 OC	(1)	SPL	58.5	58.5	65.3	60.9	56.7	55.1	52.8	47.9	35.1	60.5
	(4)	PWL	72.5	72.5	85.5	80.1	77.1	75.7	70.1	63.5	54.0	80.0
65 OC	(1)	SPL	58.4	58.4	65.3	60.8	56.7	54.9	52.6	47.5	34.8	60.4
	(4)	PWL	72.1	72.1	85.3	79.8	76.8	75.3	69.7	63.0	53.6	79.7
80 OC	(1)	SPL	62.1	62.1	65.3	62.0	57.5	56.3	53.9	48.4	34.0	61.5
	(4)	PWL	78.3	78.3	87.9	83.6	80.2	79.3	73.5	66.4	55.4	83.4
85 OC	(1)	SPL	61.5	61.5	65.2	61.9	57.3	56.1	53.7	47.2	34.1	61.3
	(4)	PWL	77.7	77.7	87.7	83.4	80.0	79.0	73.3	66.2	55.4	83.1

NOTES

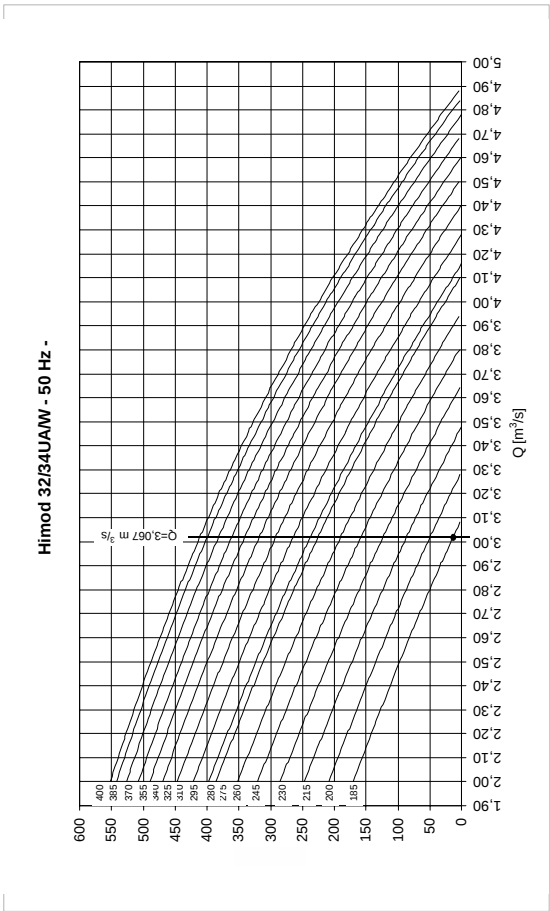
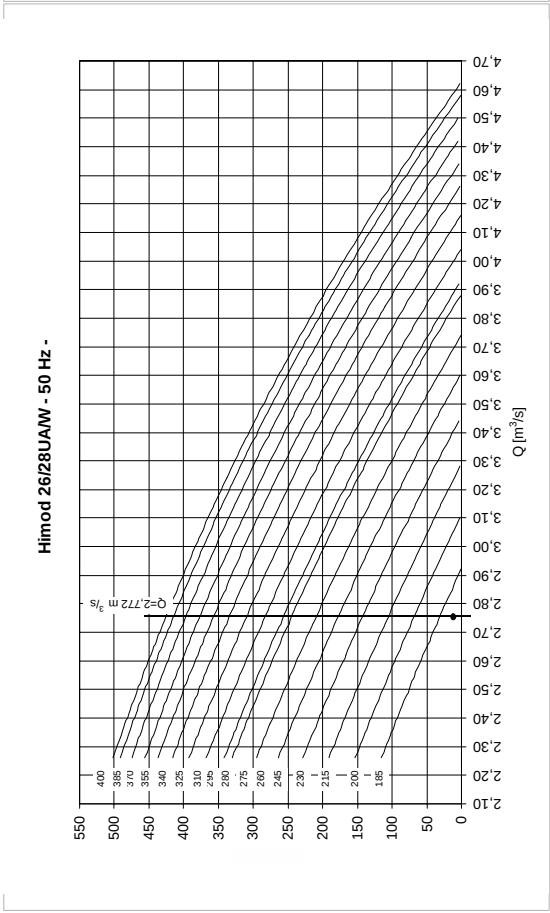
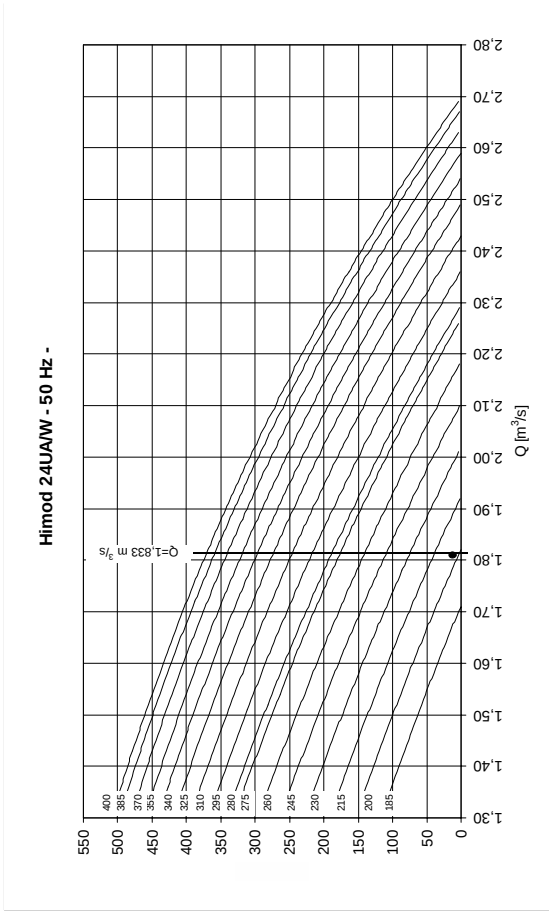
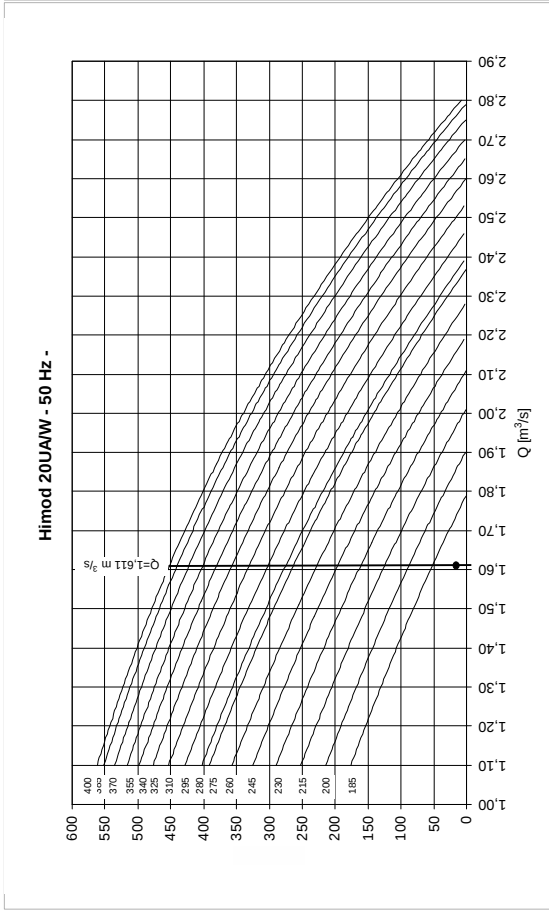
1. Only ventilation (50 Pa available external static pressure), 2 m in front of the unit and 1 m height, in free field conditions.
2. Working compressor (50 Pa available external static pressure), 2 m in front of the unit and 1 m height, in free field conditions.
3. Working compressor, on discharge.
4. Only ventilation, on discharge.

The sound pressure levels for each octave band are expressed in dB with a tolerance of (–0/+2) dB.

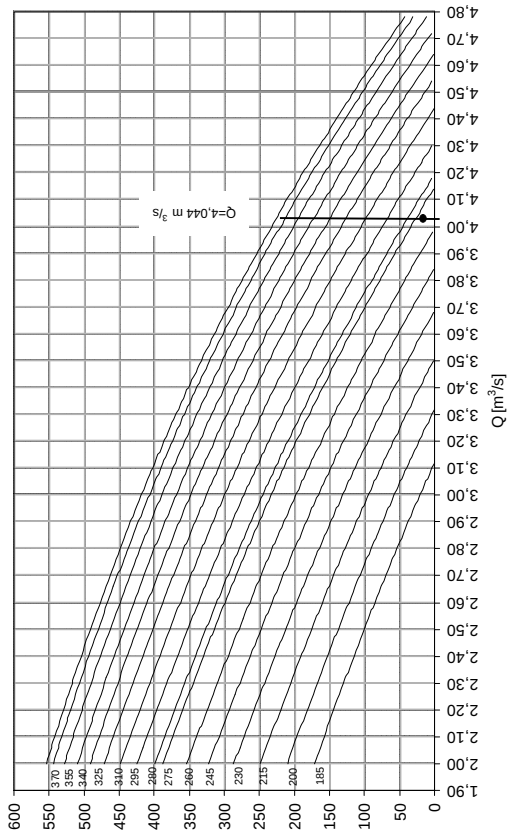
10 – Aeraulic features



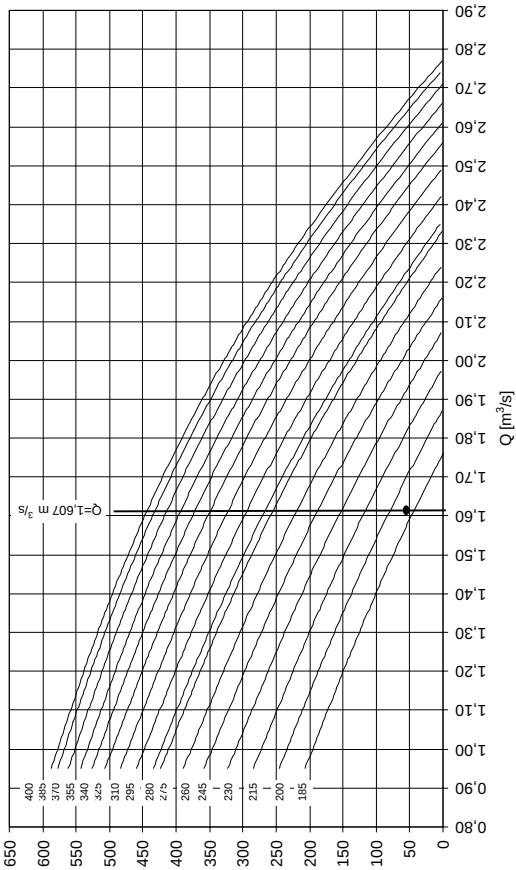
The useful static pressure values for all units, for the ventilating sections on air flow changing, are given below.



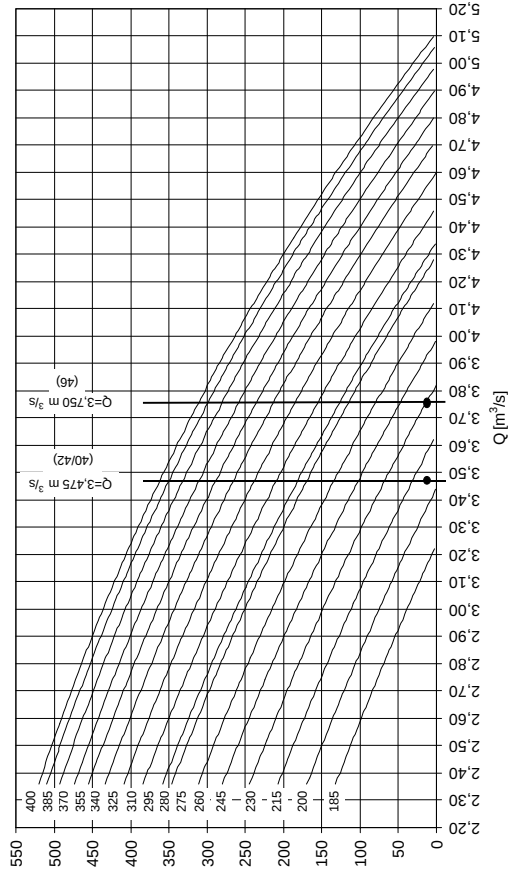
Himod 55 UAW



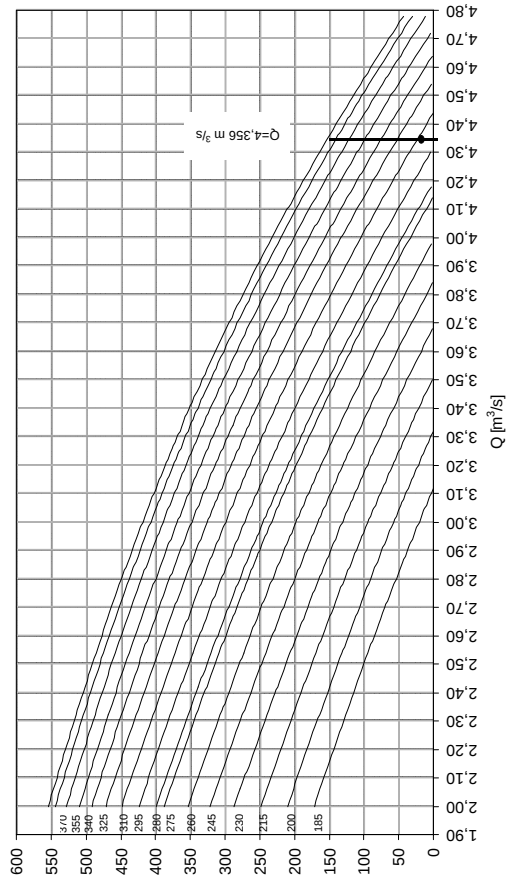
Himod 200AW - 50 Hz-



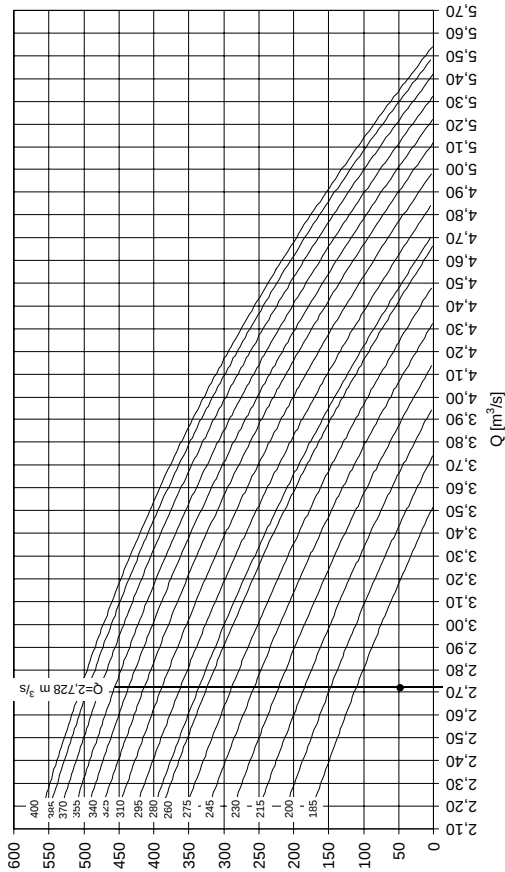
Himod 40/42/46UAW - 50 Hz -



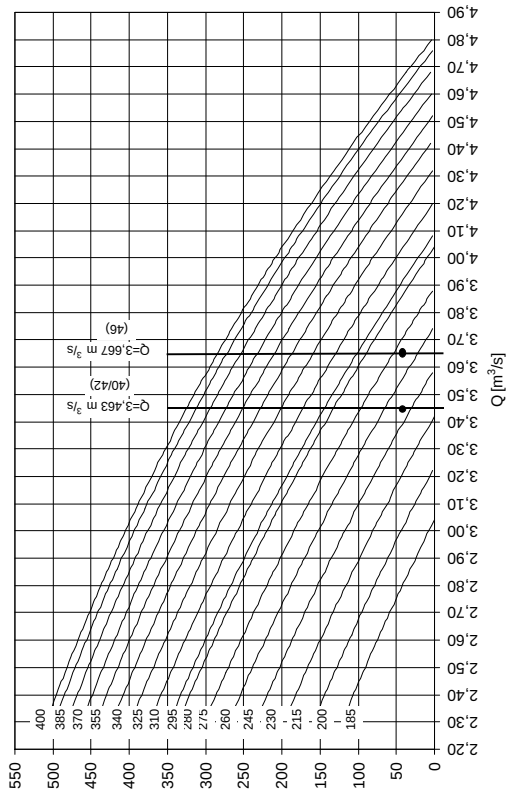
Himod 65 UAW



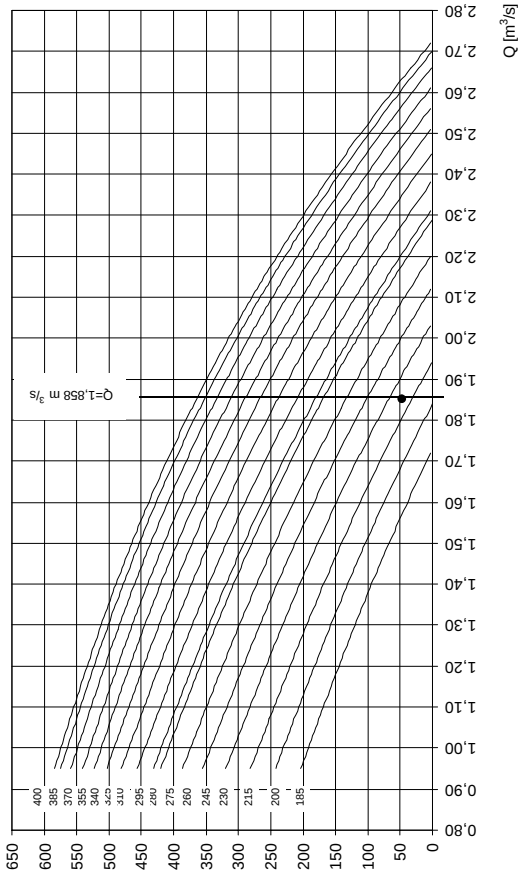
Himod 26/28OAW - 50 Hz -



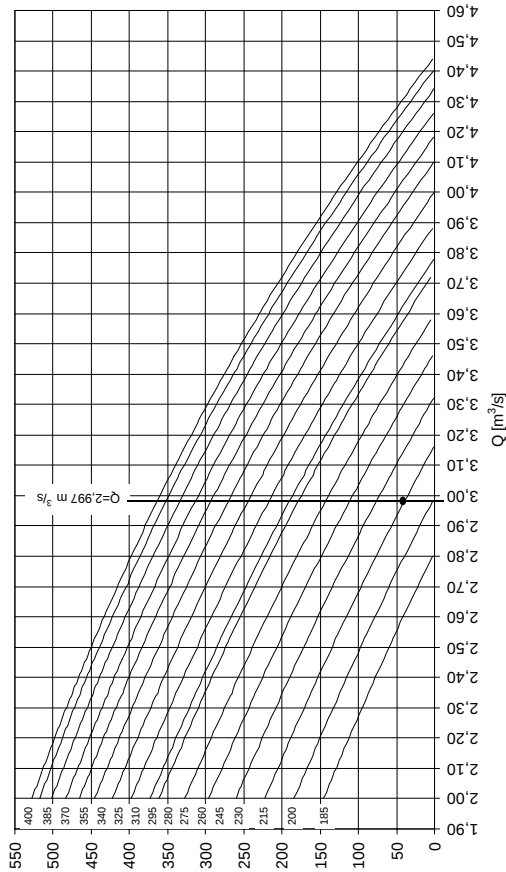
Himod 40/42/46OAW - 50 Hz -



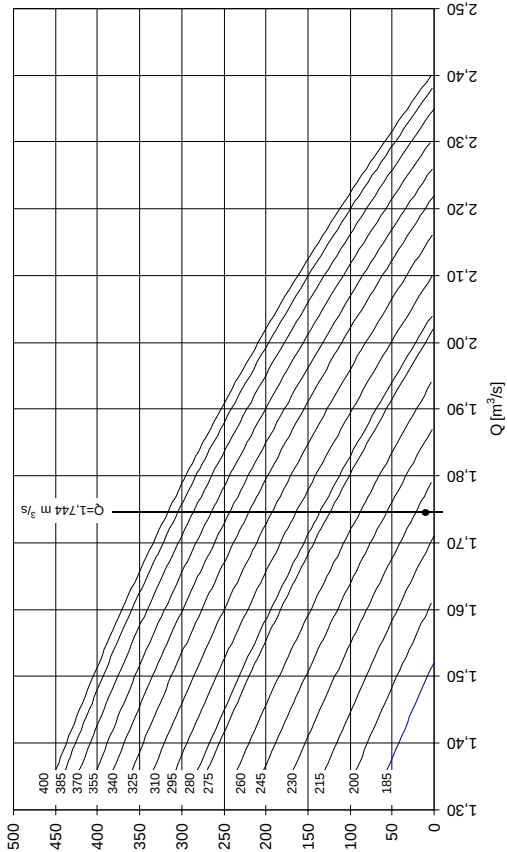
Himod 24OAW - 50 Hz -



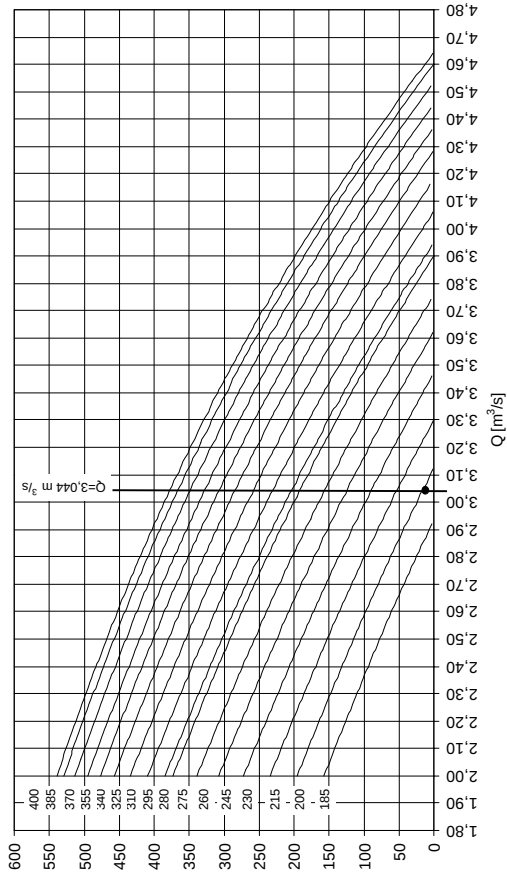
Himod 32/34OAW - 50 Hz -



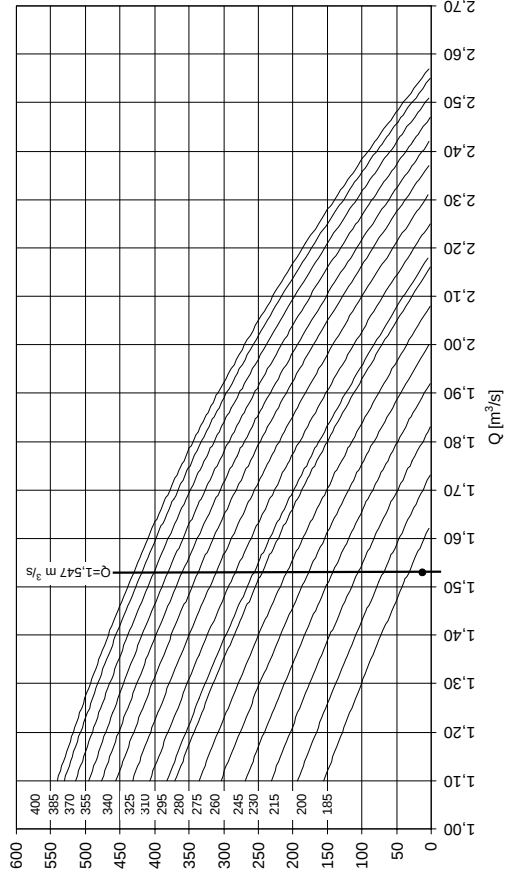
Himod 24UF/D/H - 50 Hz -



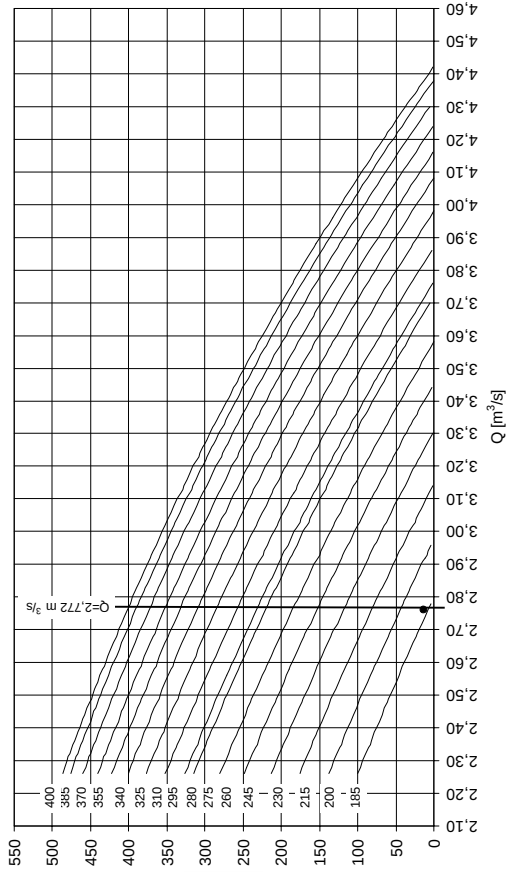
Himod 32/34UF/D/H - 50 Hz -



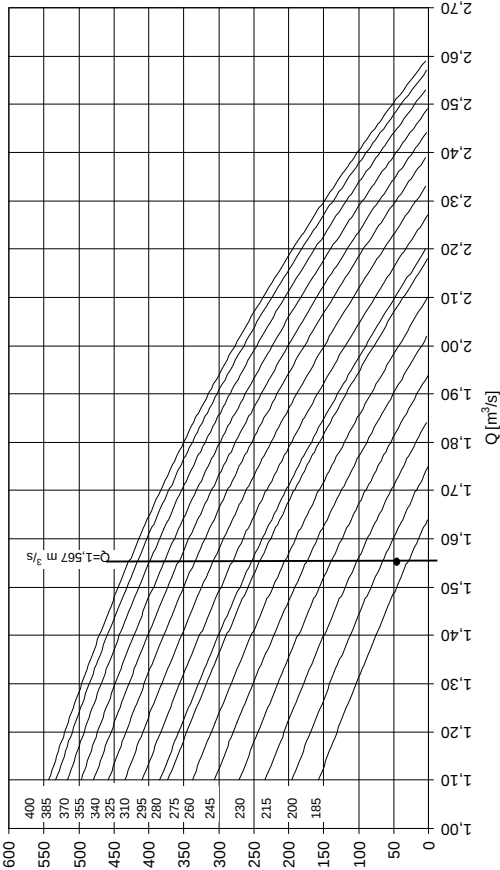
Himod 20UF/D/H - 50 Hz -



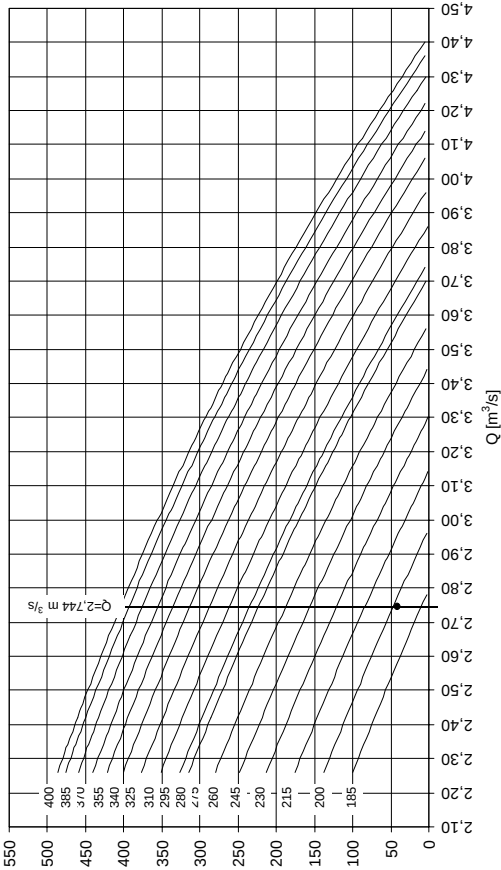
Himod 26/28UF/D/H - 50 Hz -



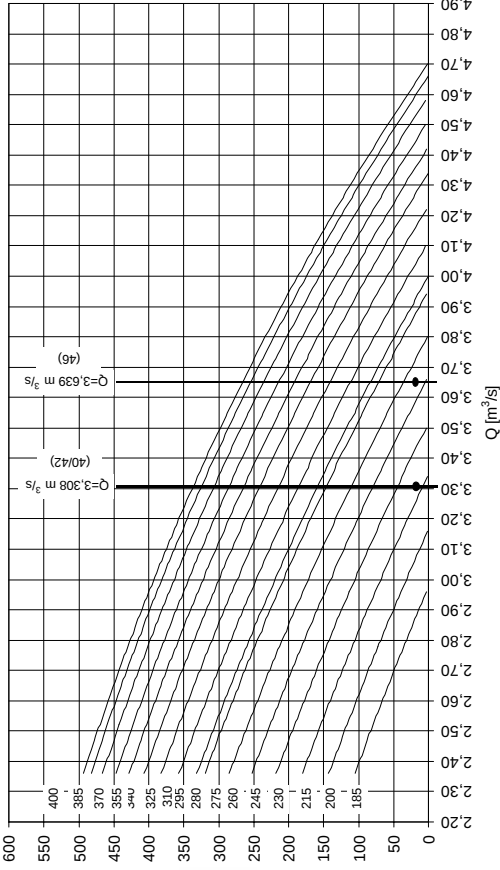
Himod 20OF/D/H - 50 Hz-



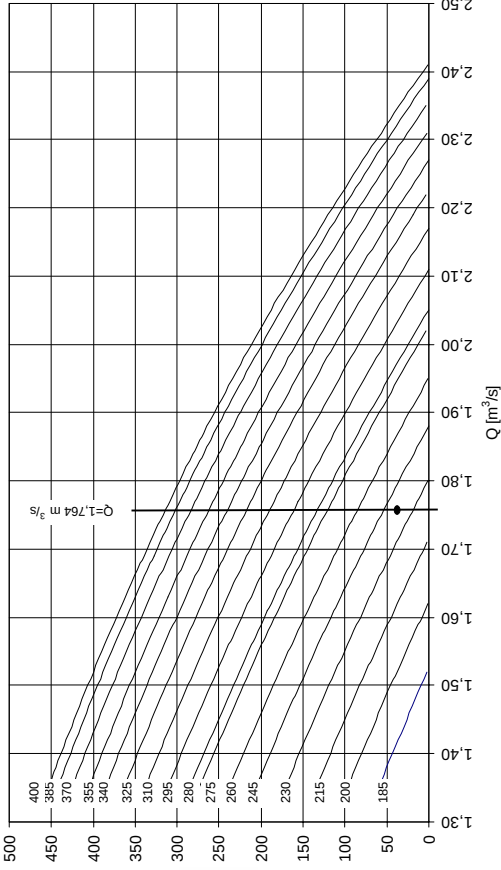
Himod 26/28OF/D/H - 50 Hz -



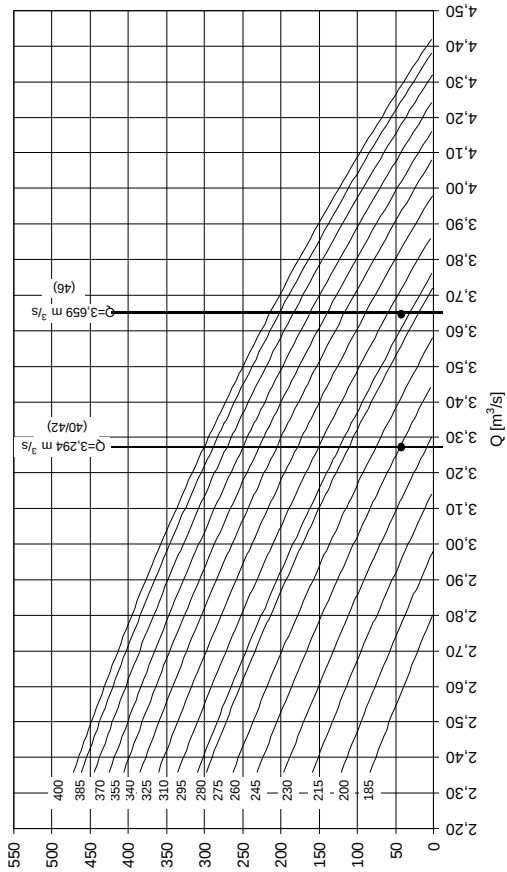
Himod 40/42/46UF/D/H - 50 Hz-



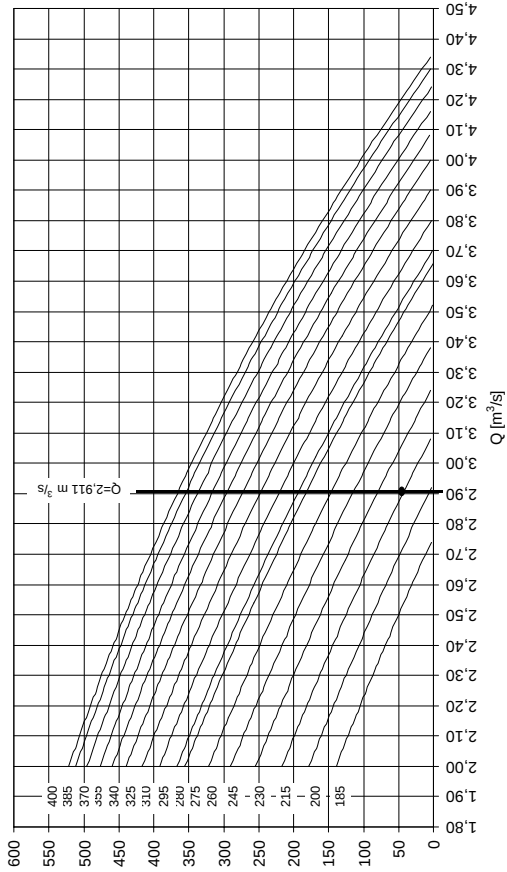
Himod 24OF/D/H - 50 Hz -



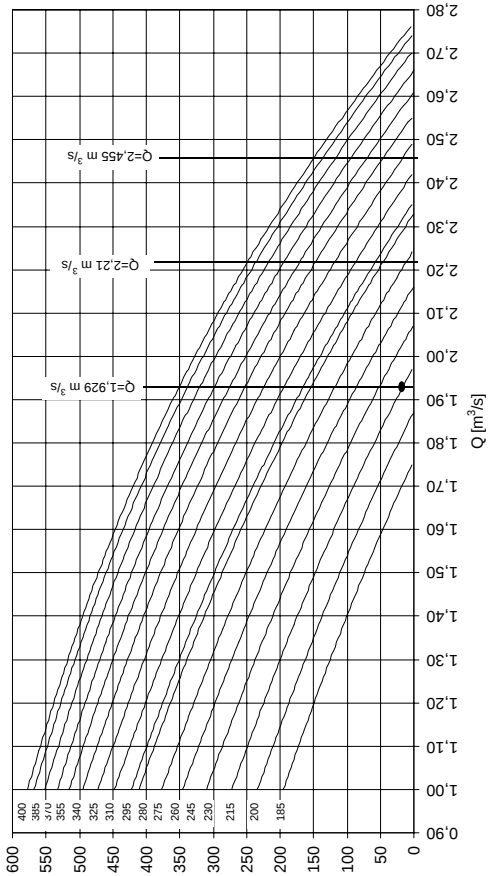
Himod 40/42/46OF/D/H - 50 Hz -



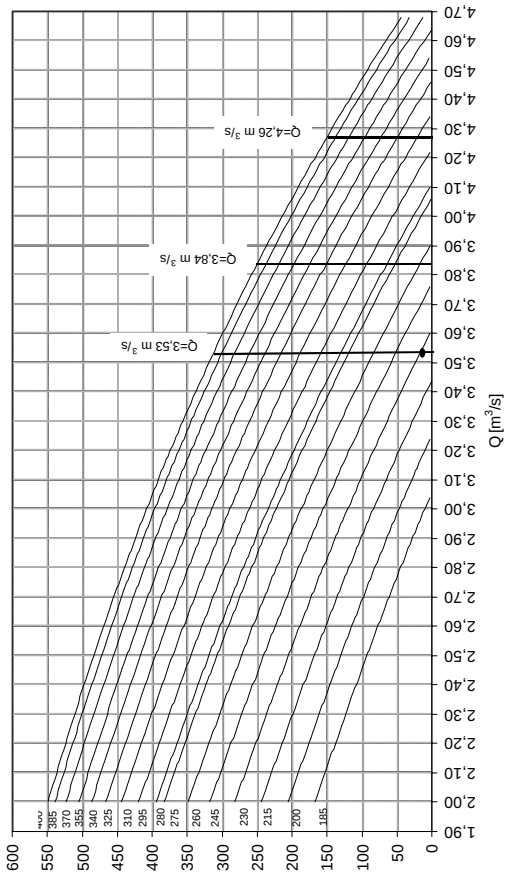
Himod 32/34OF/D/H - 50 Hz -



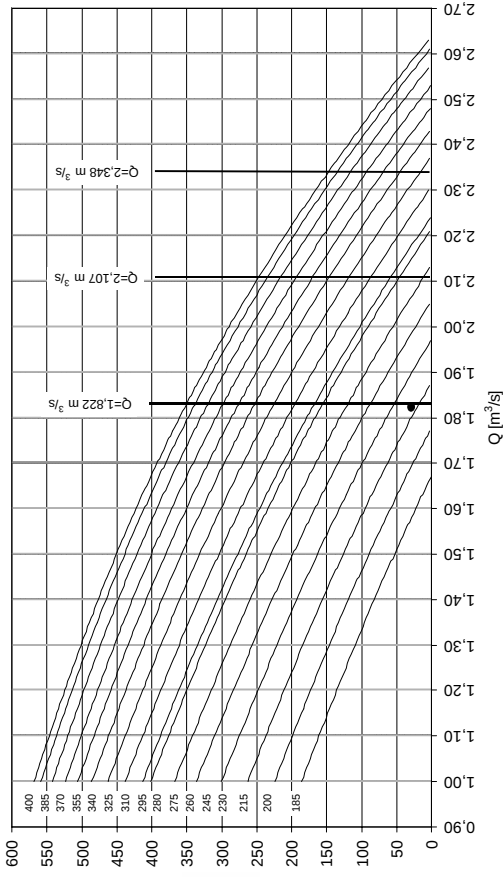
Himod 45UC - 50 Hz -



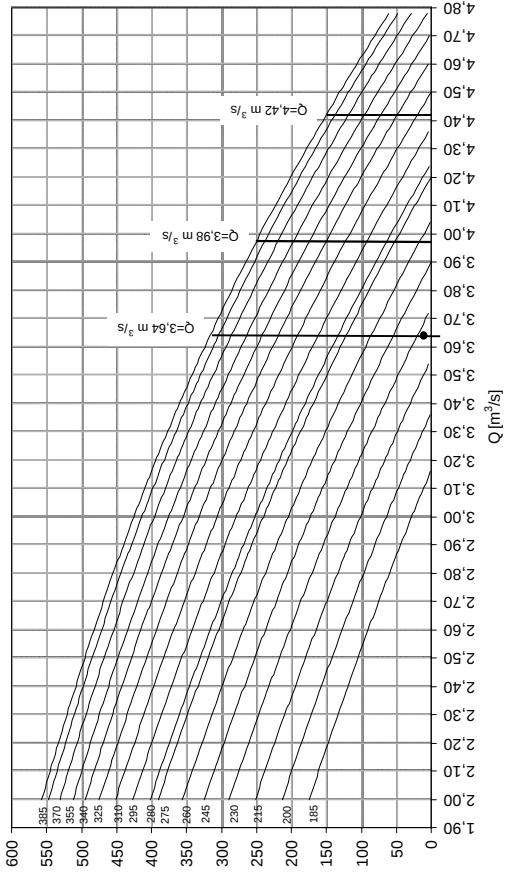
Himod 65UC - 50 Hz -



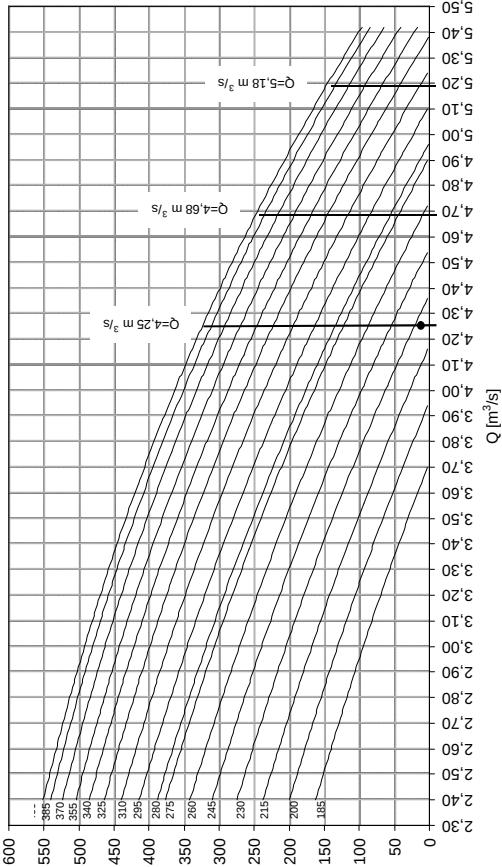
Himod 27UC - 50 Hz -



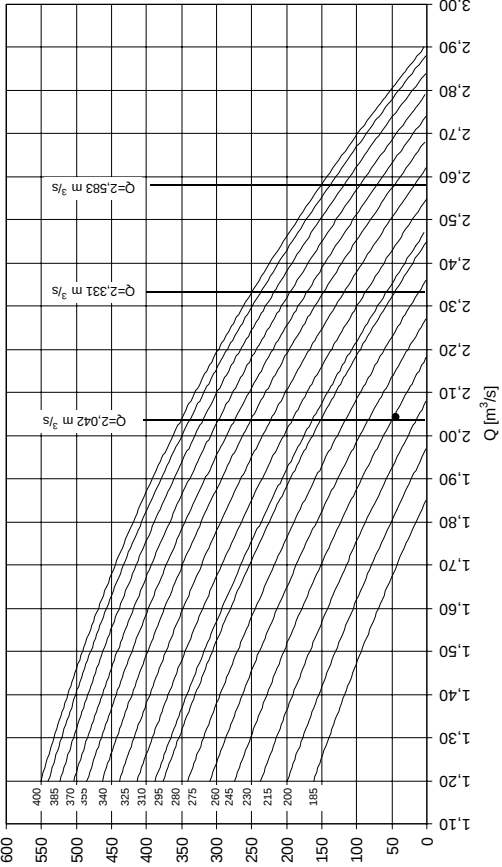
Himod 55UC - 50 Hz -



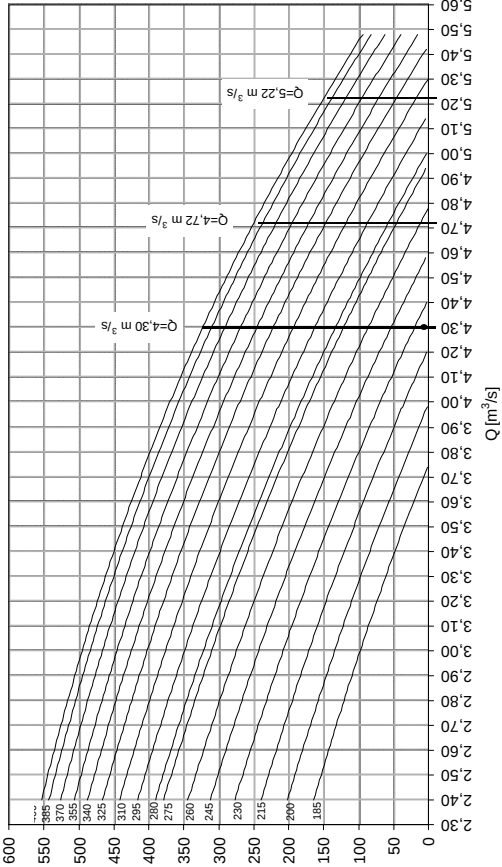
Himod 85UC - 50 Hz -



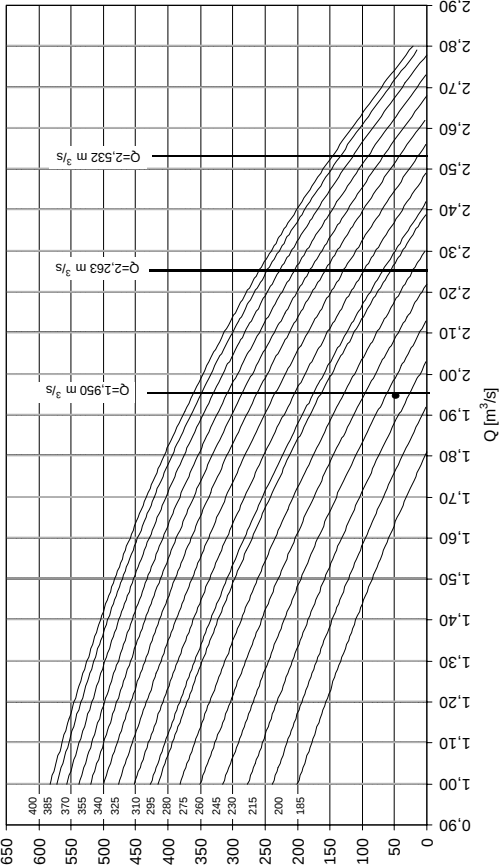
Himod 45OC - 50 Hz -



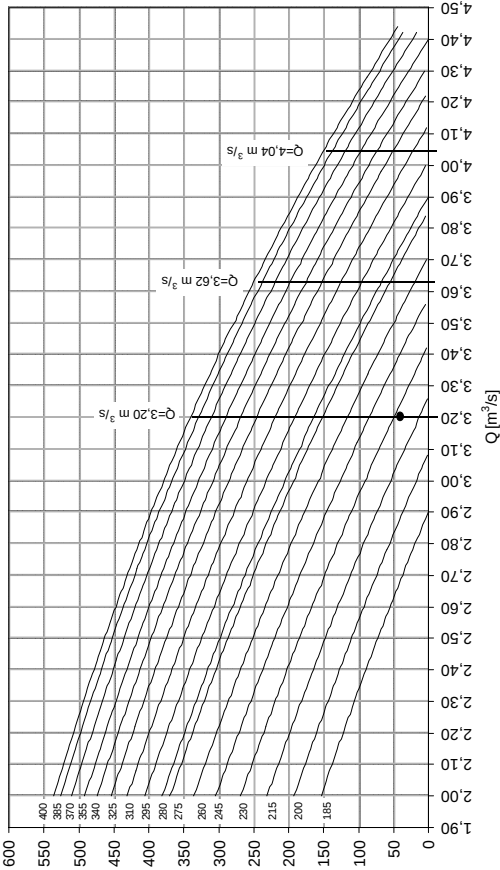
Himod 80UC - 50 Hz -



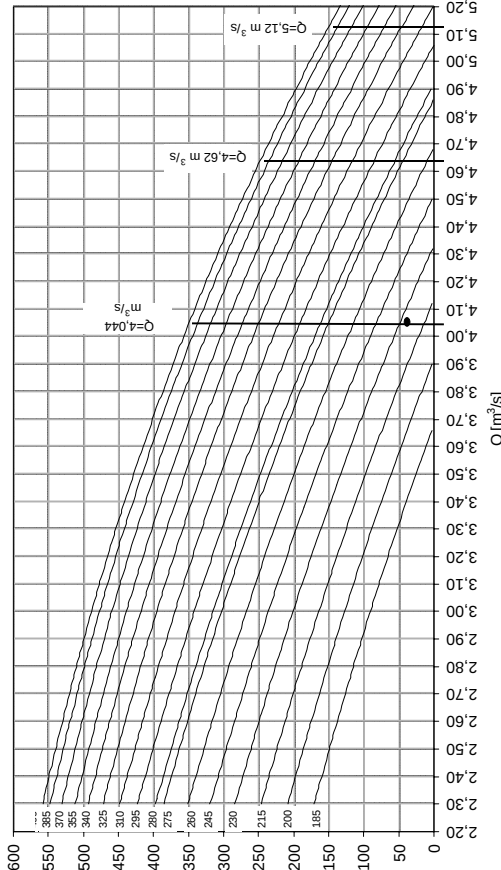
Himod 27OC - 50 Hz -



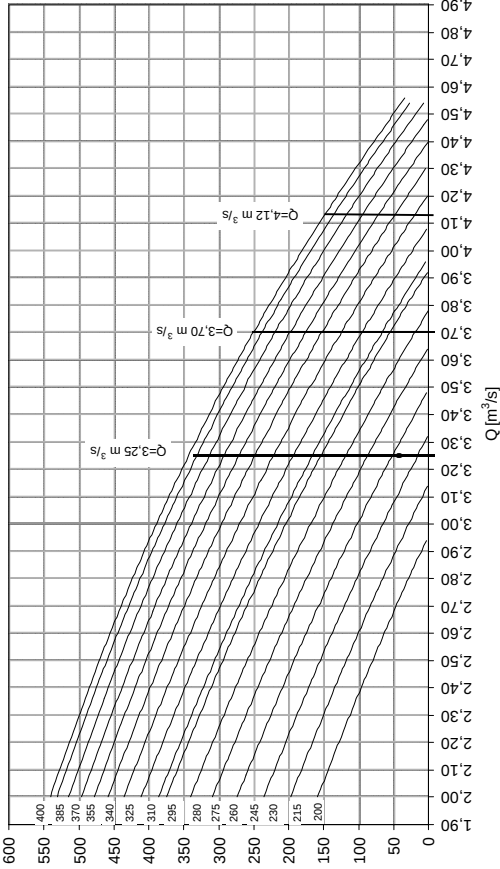
Himod 65OC - 50 Hz -



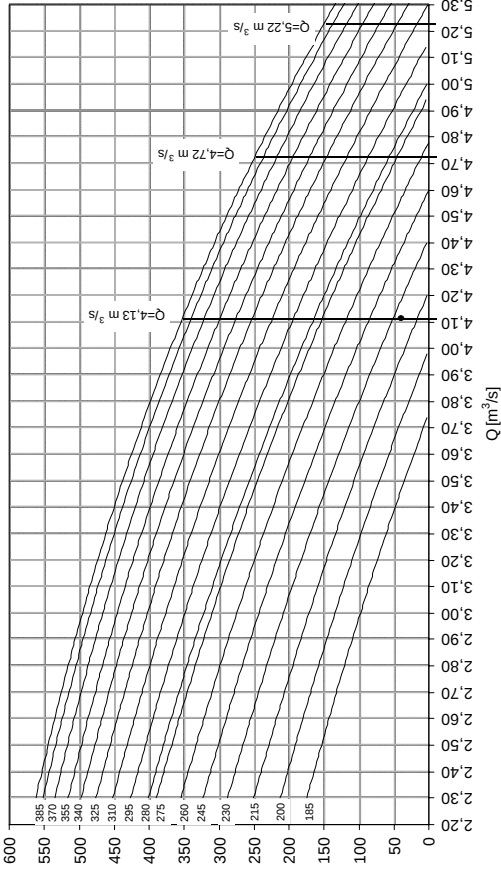
Himod 85OC - 50 Hz -



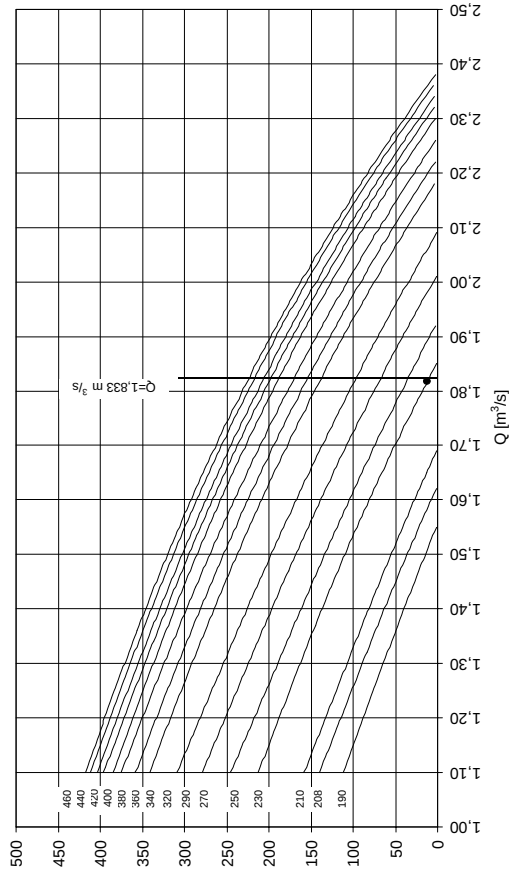
Himod 55OC - 50 Hz -



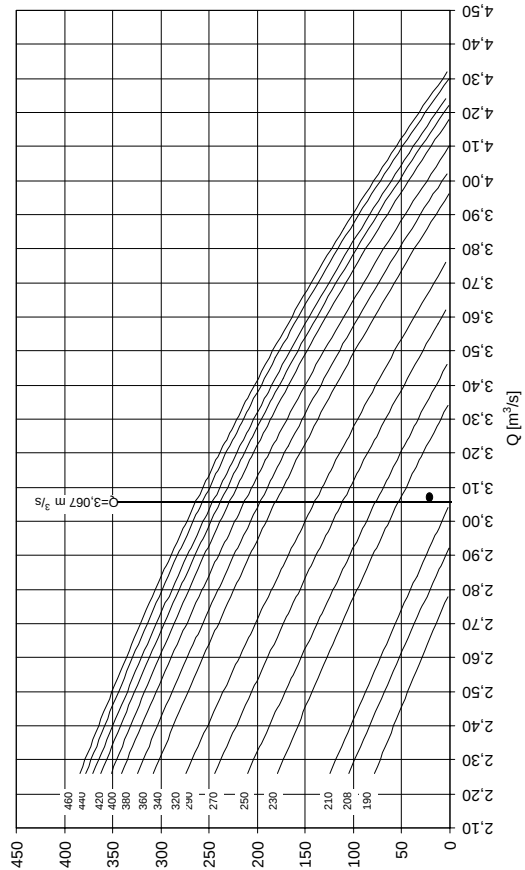
Himod 80OC - 50 Hz -



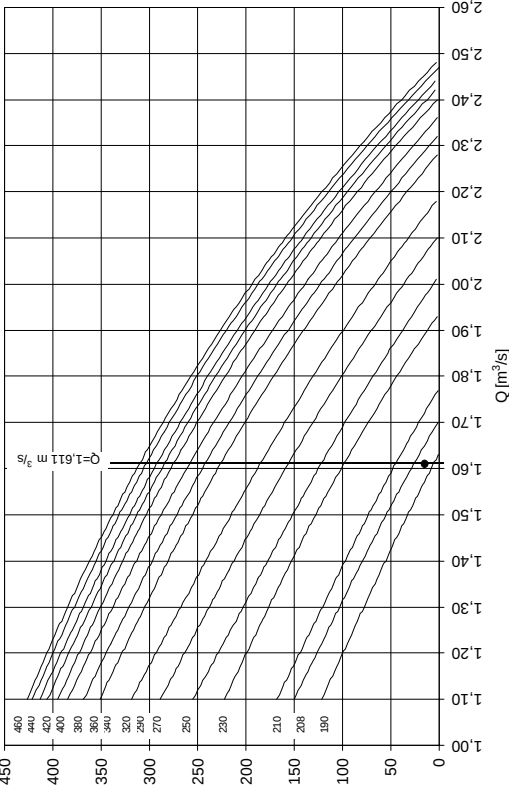
Himod 24UAW - 60 Hz -



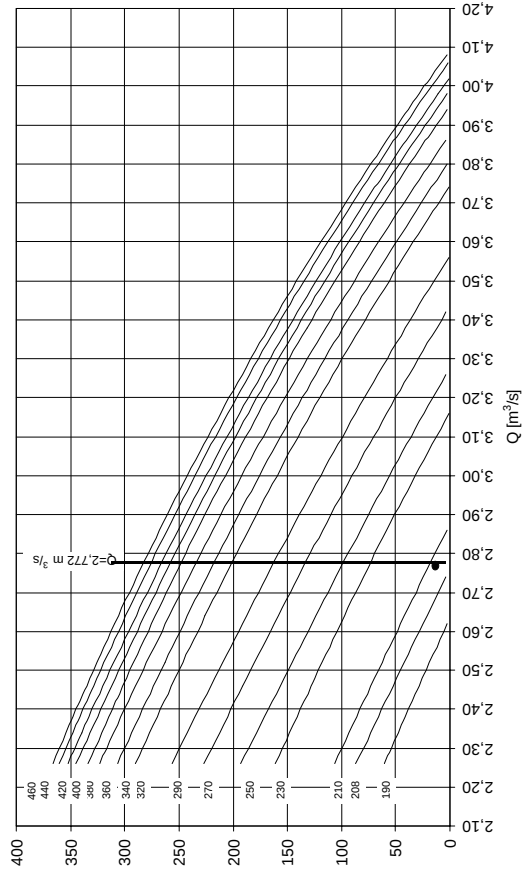
Himod 32/34UAW - 60 Hz -



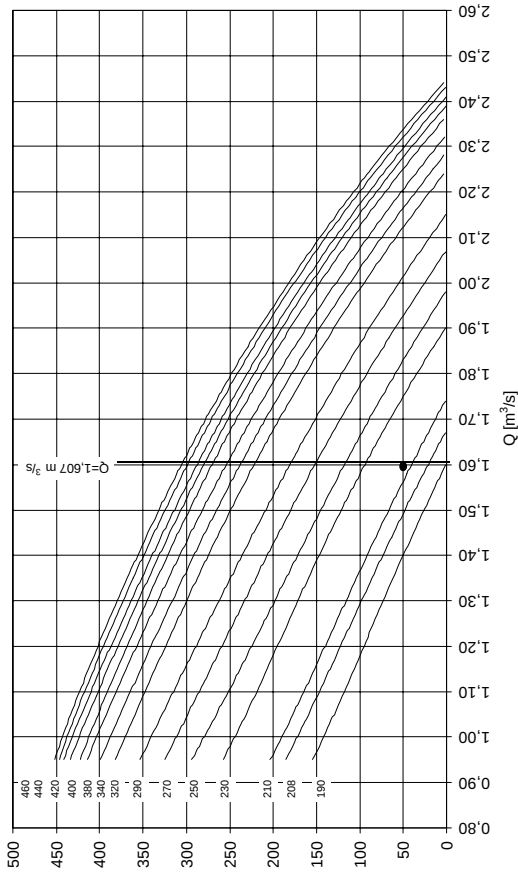
Himod 20UAW - 60 Hz -



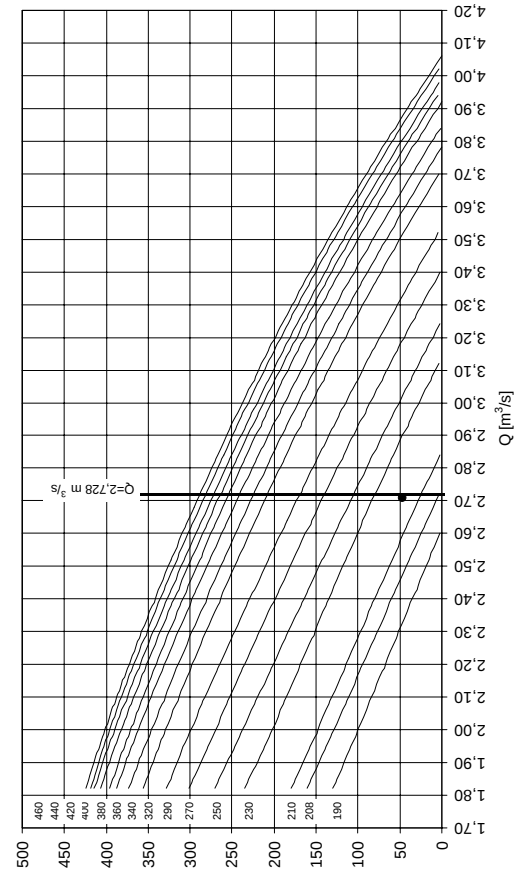
Himod 26/28UAW - 60 Hz -



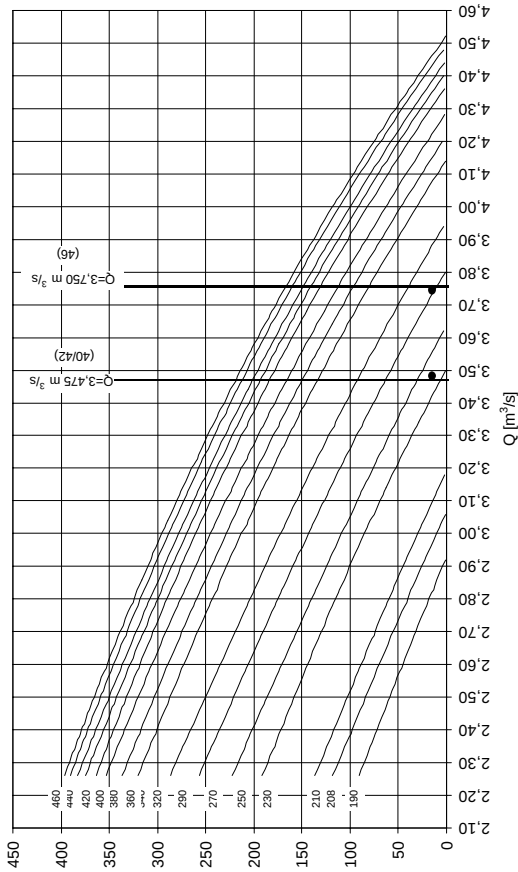
Himod 200AW - 60 Hz -



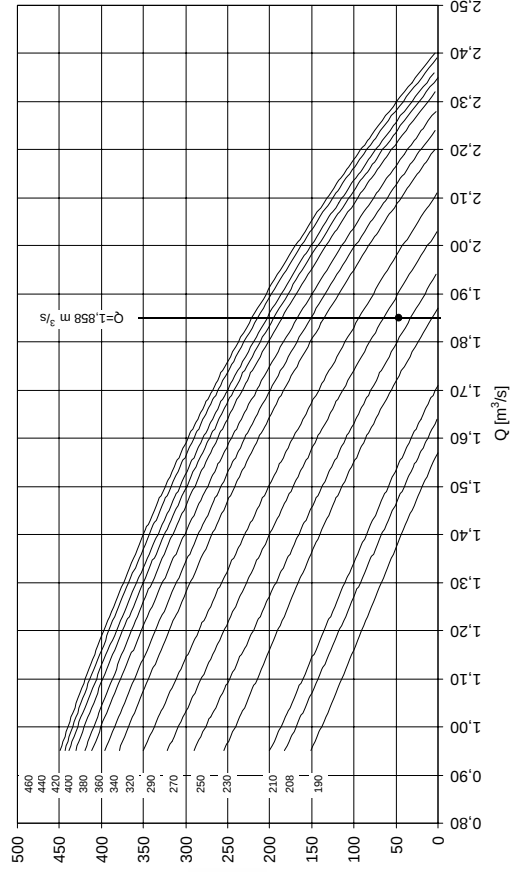
Himod 26280AW - 60 Hz -



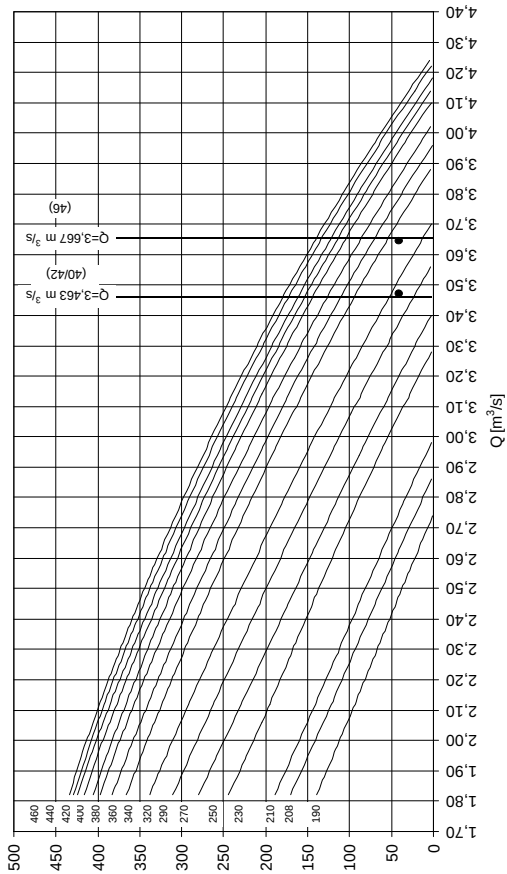
Himod 40/42/46UAW - 60 Hz -



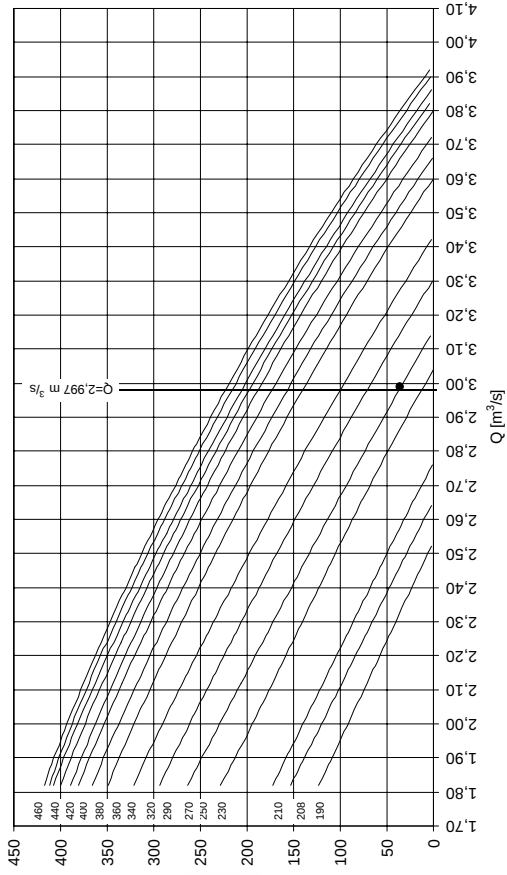
Himod 240AW - 60 Hz -



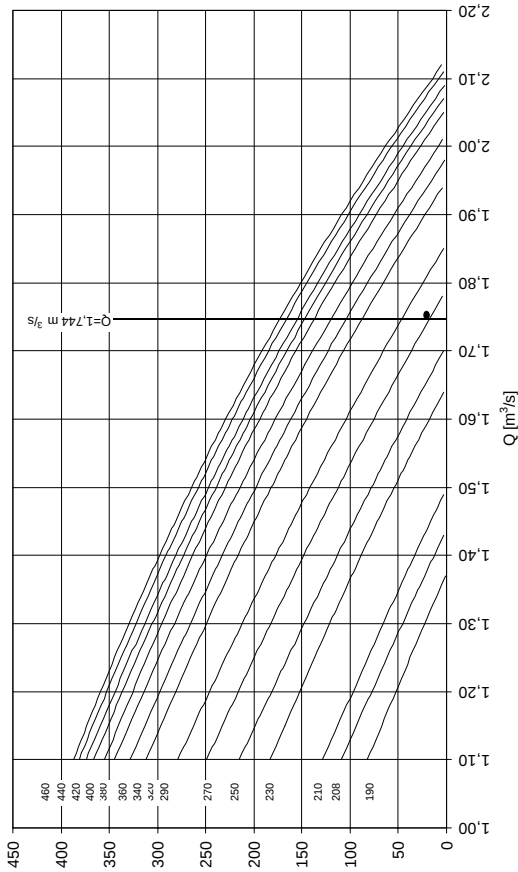
Himod 40/42/46OAW - 60 Hz -



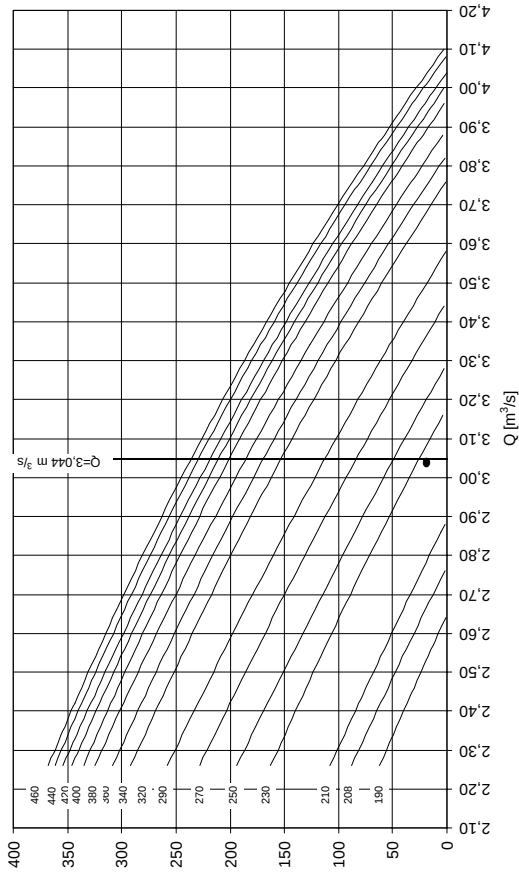
Himod 32/34OAW - 60 Hz -



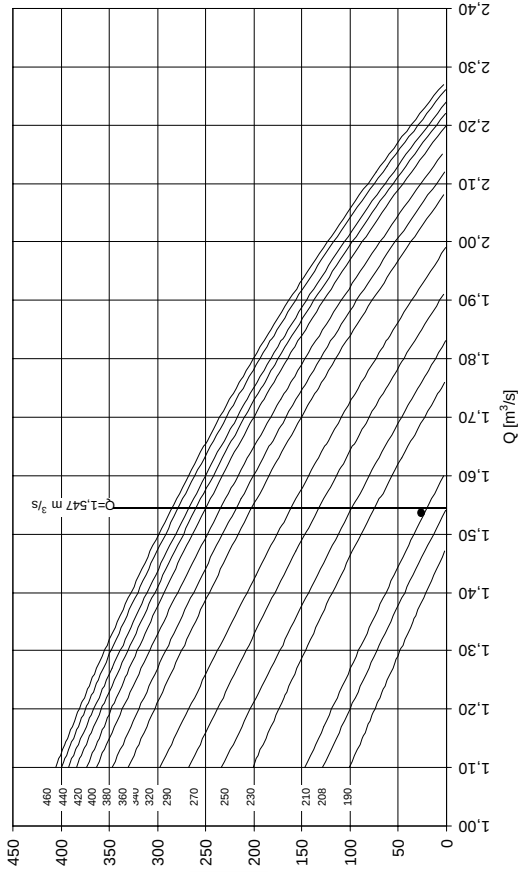
Himod 24UF/D/H - 60 Hz -



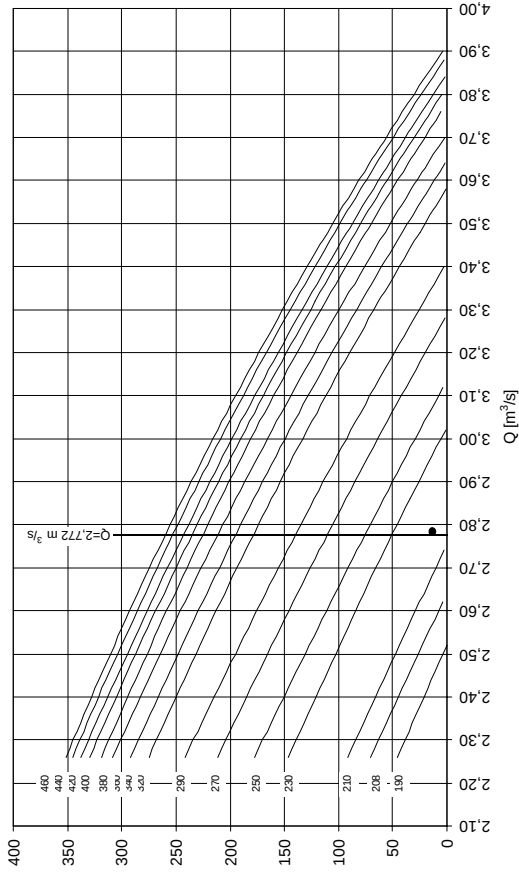
Himod 32/34UF/D/H - 60 Hz -



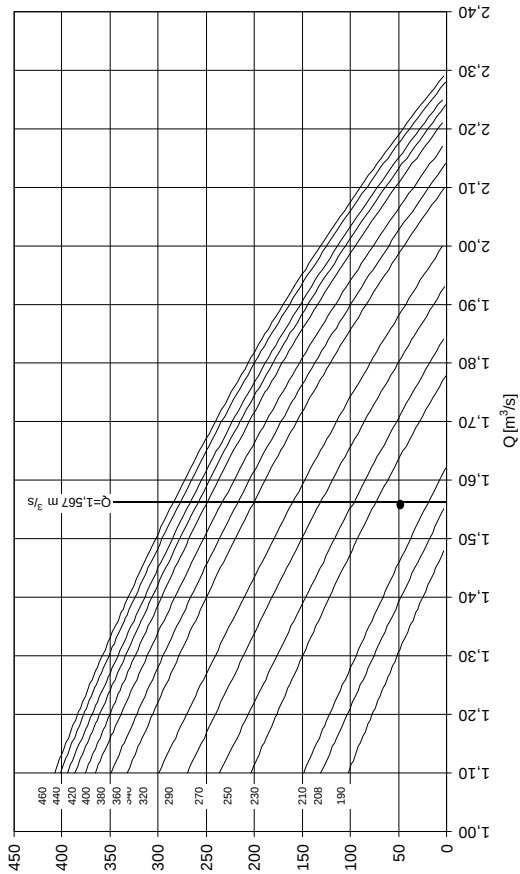
Himod 20UF/D/H - 60 Hz -



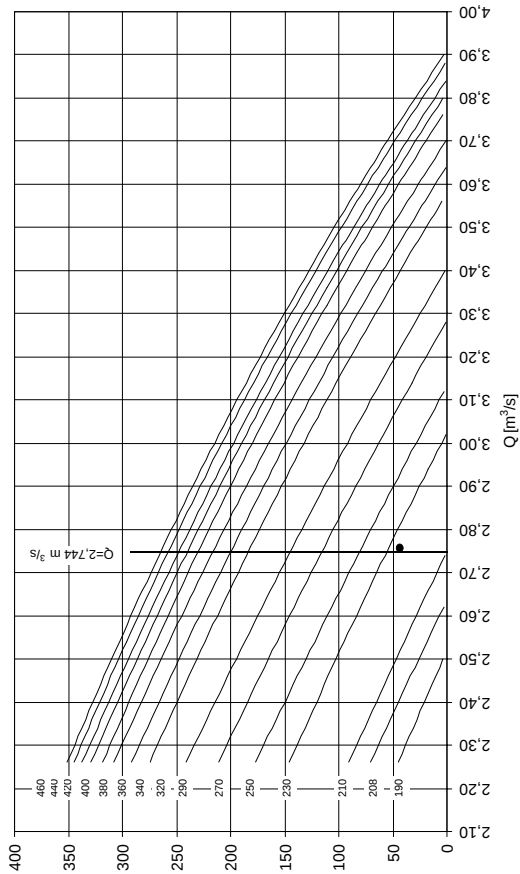
Himod 26/28UF/D/H - 60 Hz -



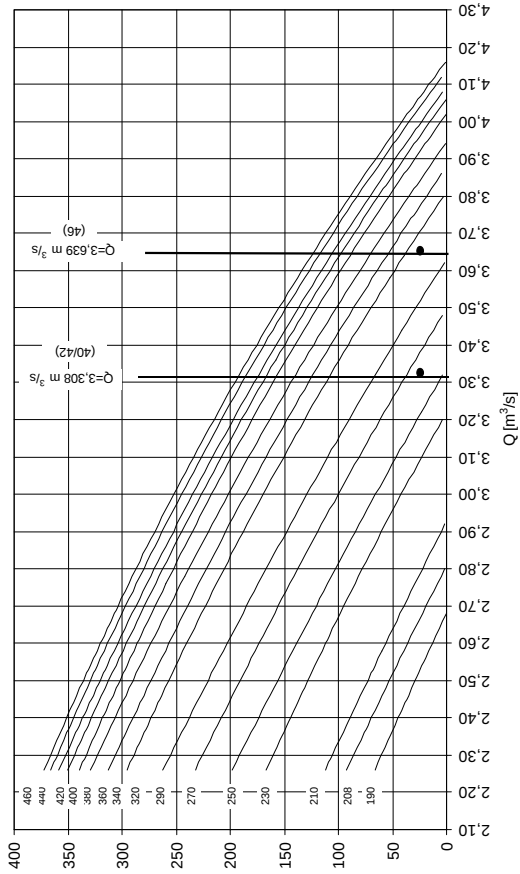
Himod 200F/D/H - 60 Hz -



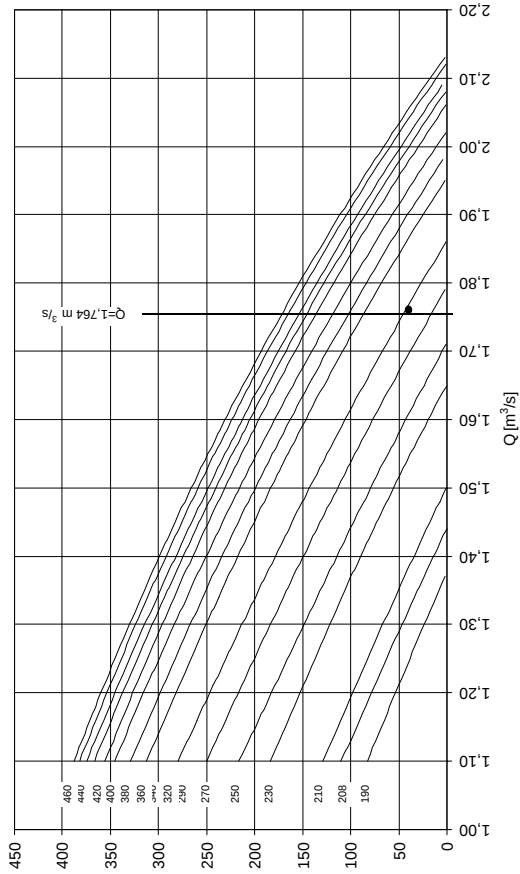
Himod 26/280F/D/H - 60 Hz -



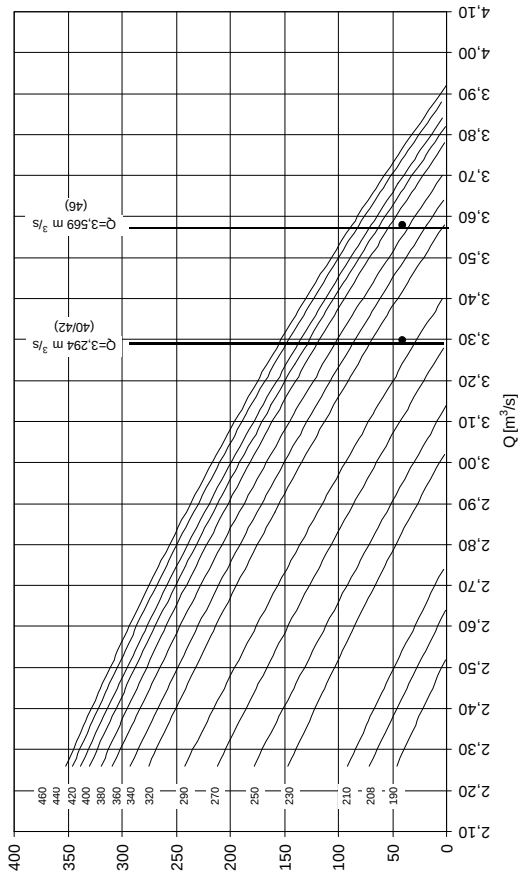
Himod 40/42/46UF/D/H - 60 Hz -



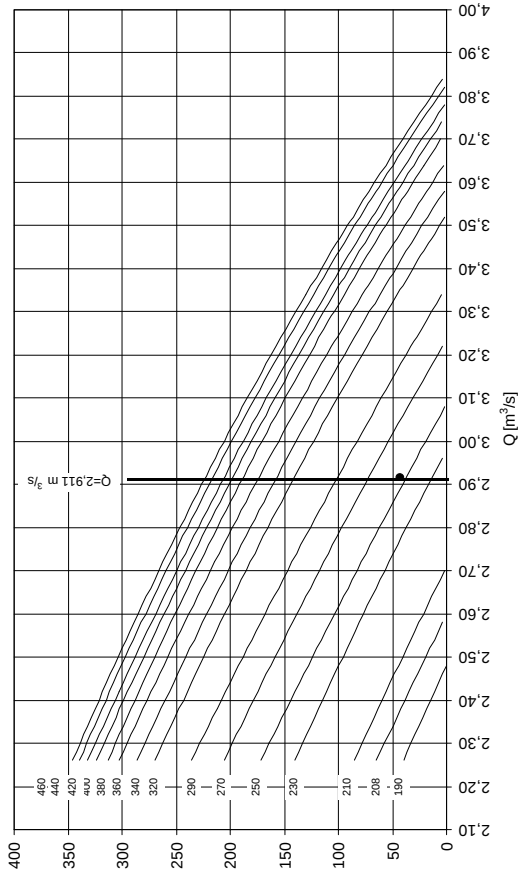
Himod 240F/D/H - 60 Hz -



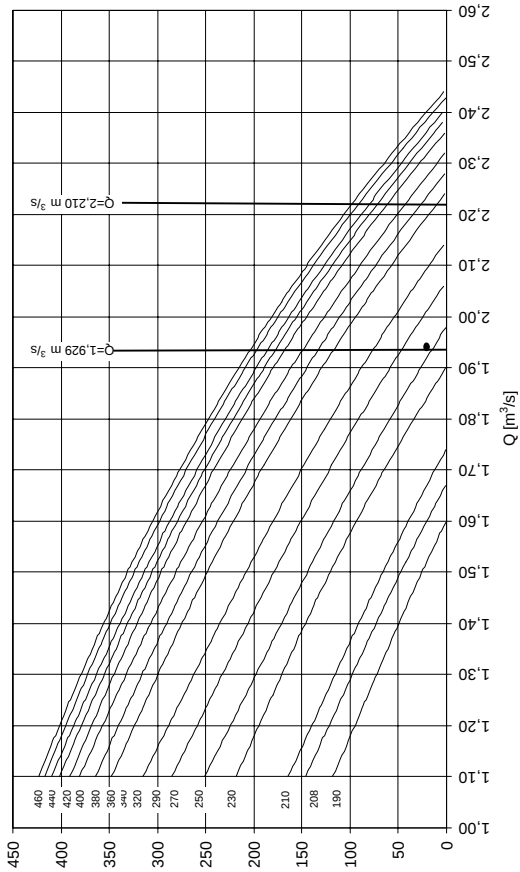
Himod 40/42/46OF/D/H - 60 Hz -



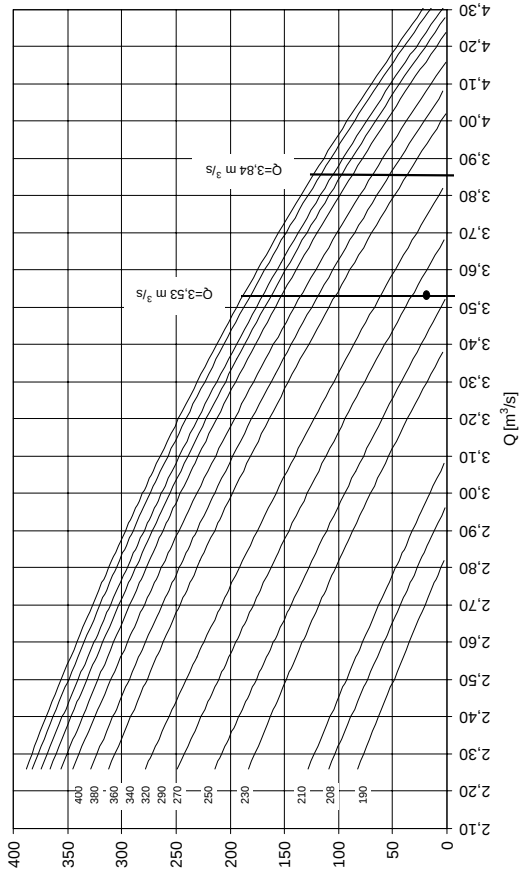
Himod 32/34OF/D/H - 60 Hz -



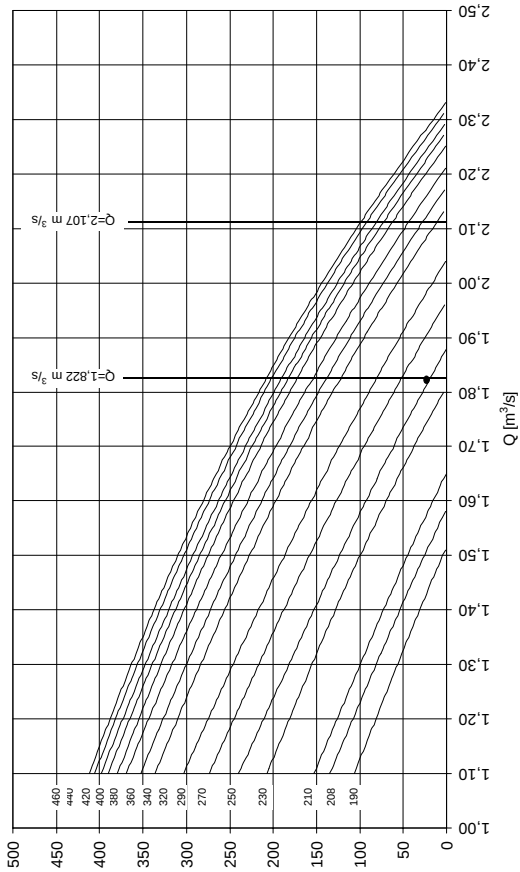
Himod 45UC - 60 Hz -



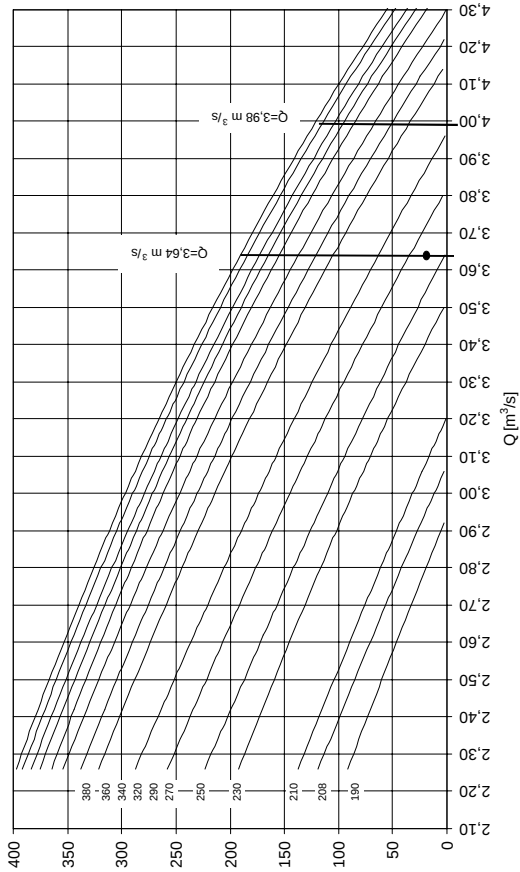
Himod 65UC - 60 Hz



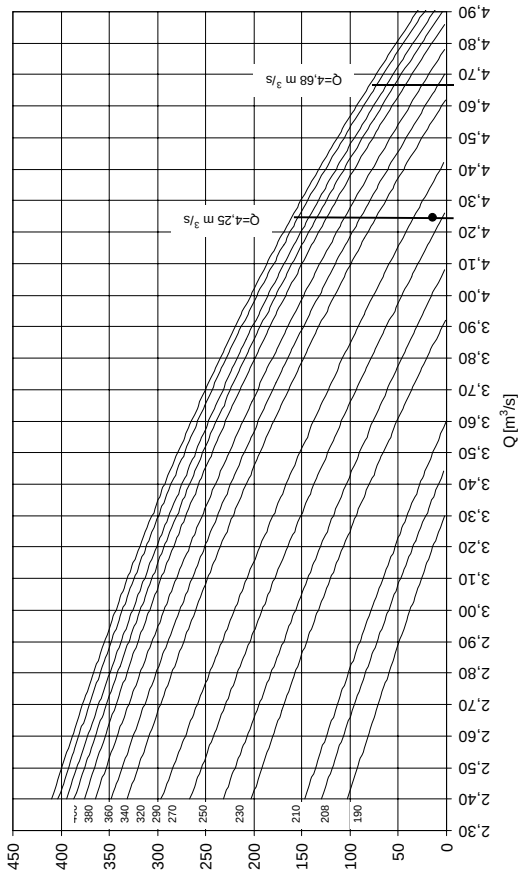
Himod 27UC - 60 Hz -



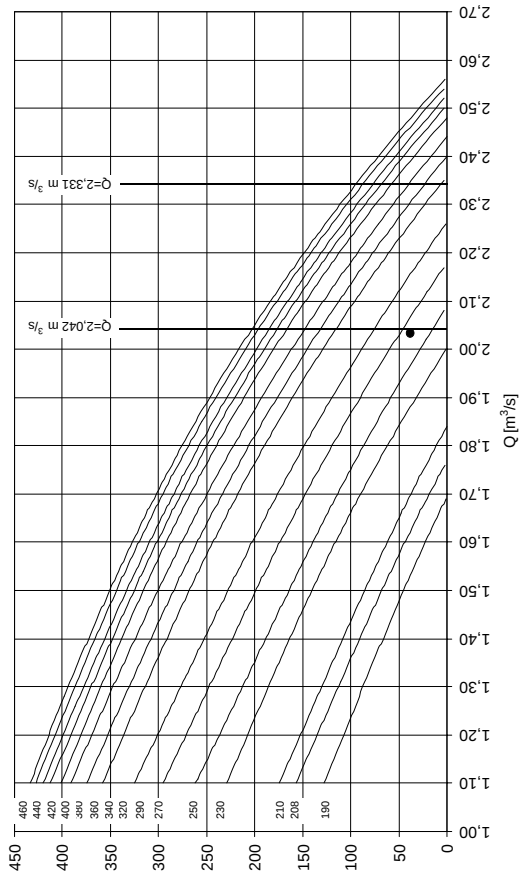
Himod 55UC - 60 Hz



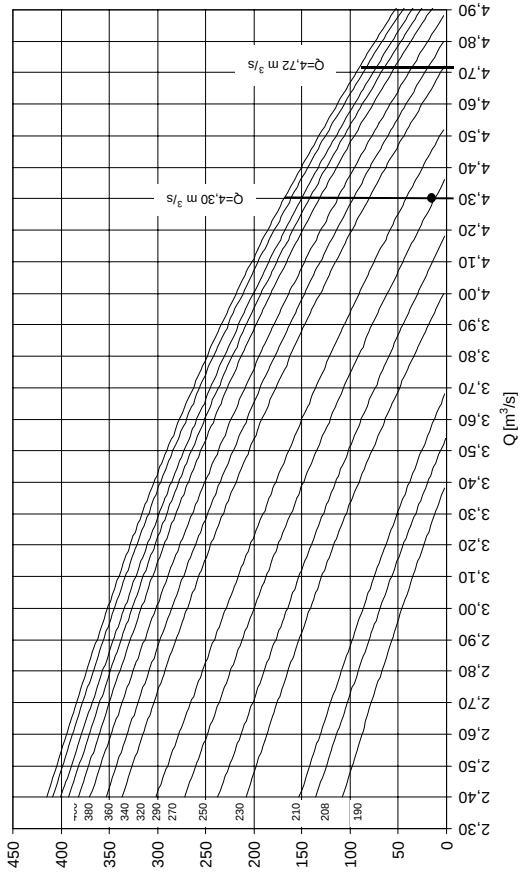
Himod 85UC - 60 Hz



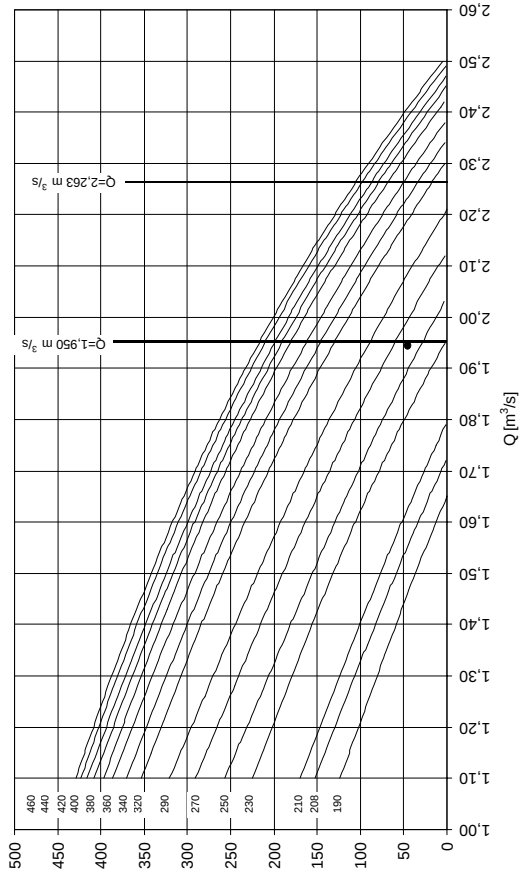
Himod 450C - 60 Hz -



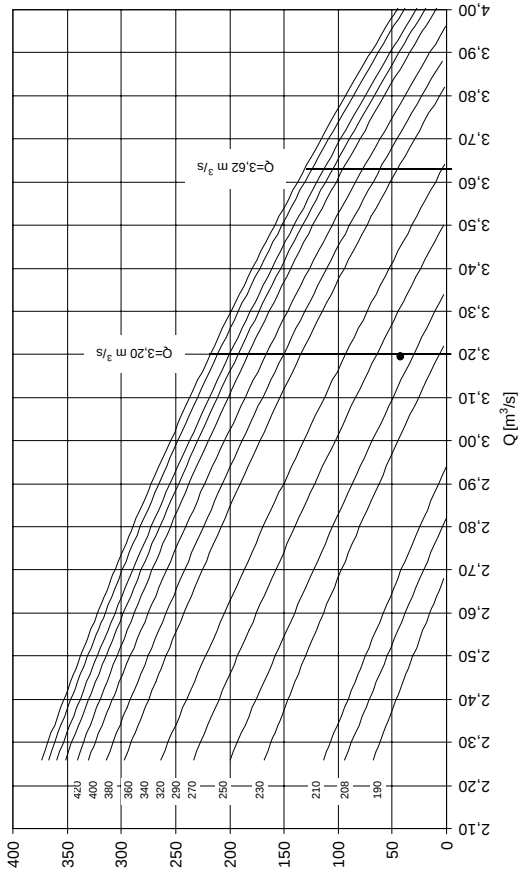
Himod 80UC - 60 Hz



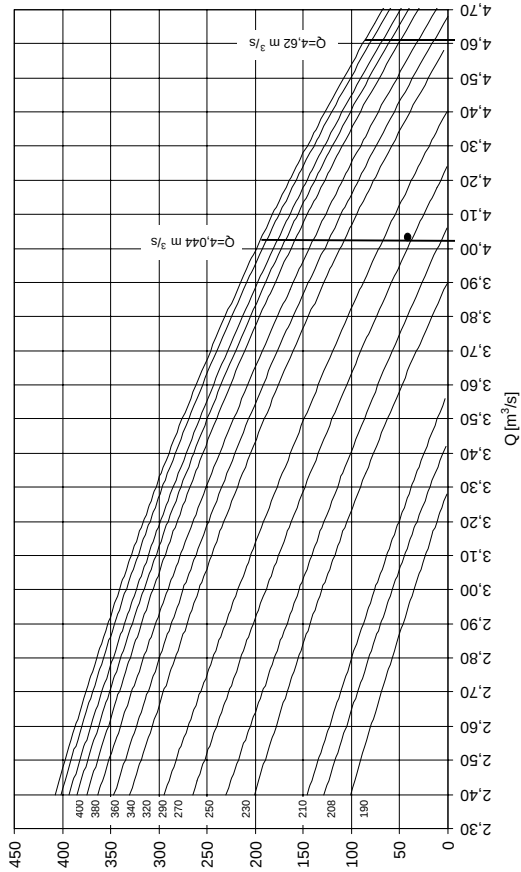
Himod 270C - 60 Hz -



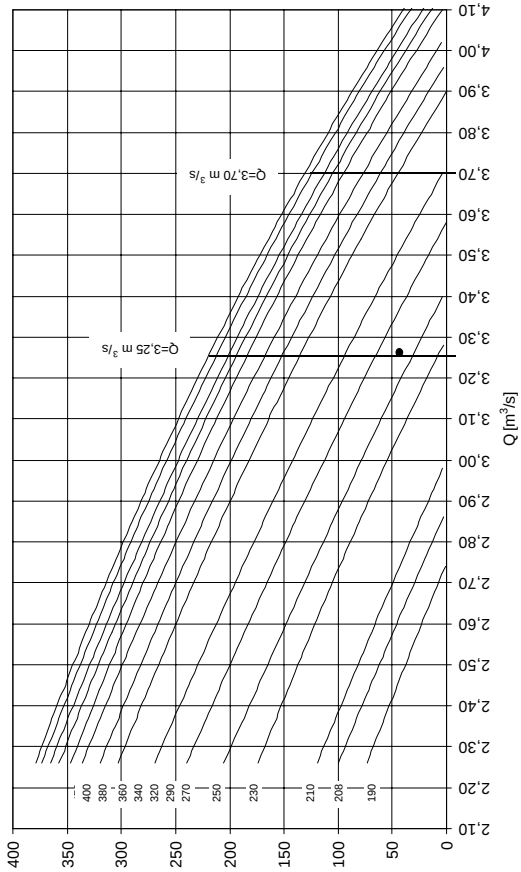
Himod 650C - 60 Hz



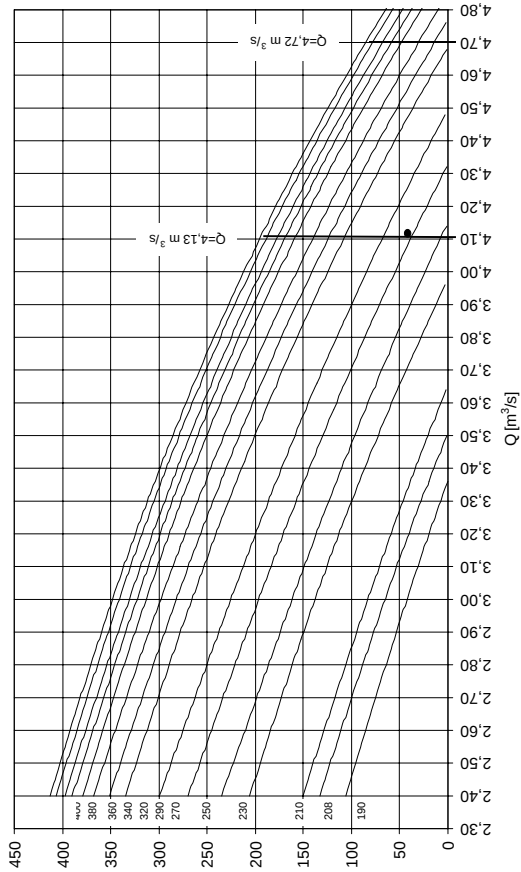
Himod 850C - 60 Hz



Himod 550C - 60 Hz



Himod 800C - 60 Hz

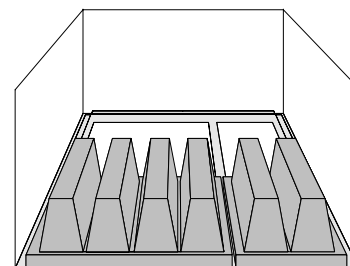


11 – Options

11.1 – Filtration

High efficiency filters F5 height 100 mm

Optional high efficiency filters, of the folded type, 100 mm height, interchangeable with the standard series, can be supplied in the filtration class F5 in accordance with the CEN EN 779 standard. These filters have a higher filtration efficiency than the standard ones with higher pressure drop.



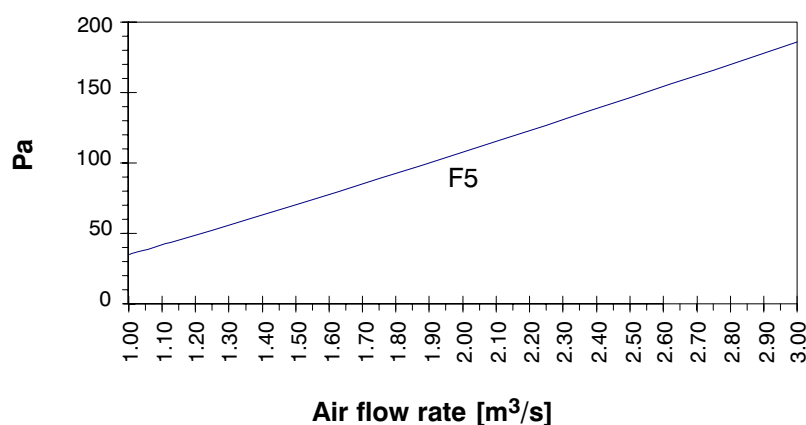
Features of the high efficiency filters

Filtration class CEN EN 779	F5
Filter quantity for each unit 20÷24 A/W/F/D/H 27÷45 C	2
Filter quantity for each unit 26÷46 A/W/F/D/H 55÷65U A/W 55÷85 C	4
Height [mm]	100

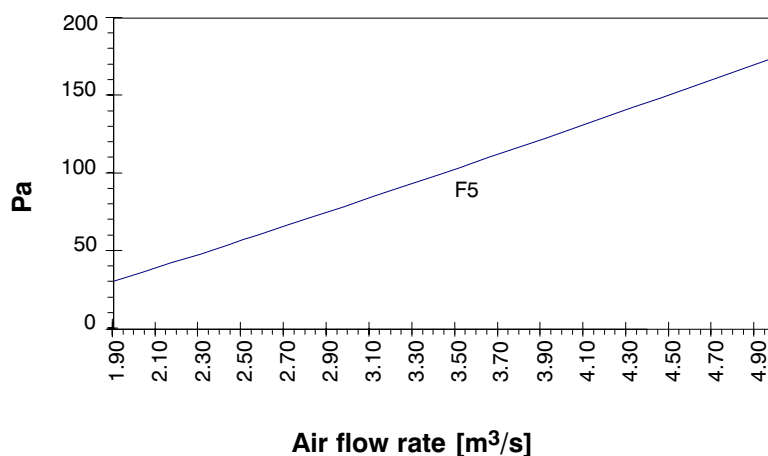
ADDITIONAL PRESSURE DROP: F5 FILTERS SUBSTITUTING G4 FILTERS

The pressure drops shown in the tables below must be deducted from the static pressures given in the tables of the aeraulic features.

HIMOD 20–24 U/O A/W/F/D/H 27–45 U/O C



HIMOD 26–46 U/O A/W/F/D/H 55–65 U A/W 55–85 U/O C



High efficiency filters F6, F7 and F9 height 290 mm

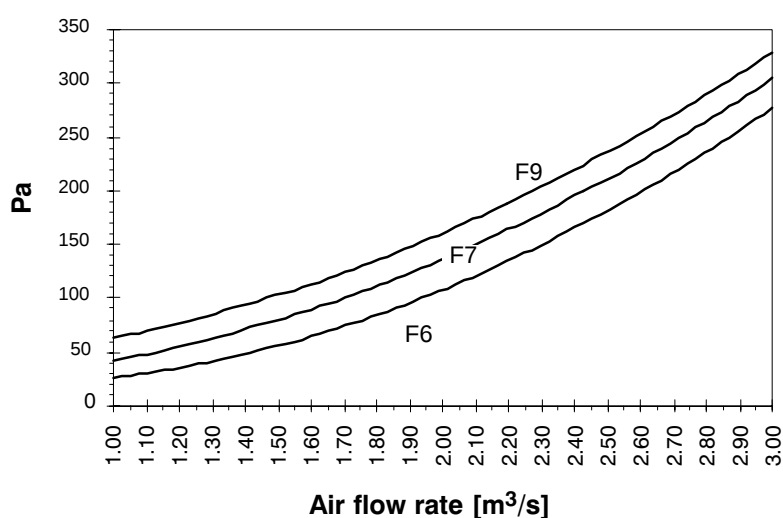
Optional high efficiency filters, filtration class F6, F7 and F9 in accordance with the CEN EN 779 standard, are made of fibreglass filter media. The filters placed in "V" sections with a solid external frame can withstand remarkable pressure and flow variations. Features of high efficiency filters:

Filtration class CEN EN 779	F6	F7	F9
Filter quantity for each unit 20÷24 A/W/F/D/H 27÷45 C	1+1	1+1	1+1
Filter quantity for each unit 26÷46 A/W/F/D/H 55÷65U A/W 55÷85 C	2+1	2+1	2+1
Height [mm]	290	290	290

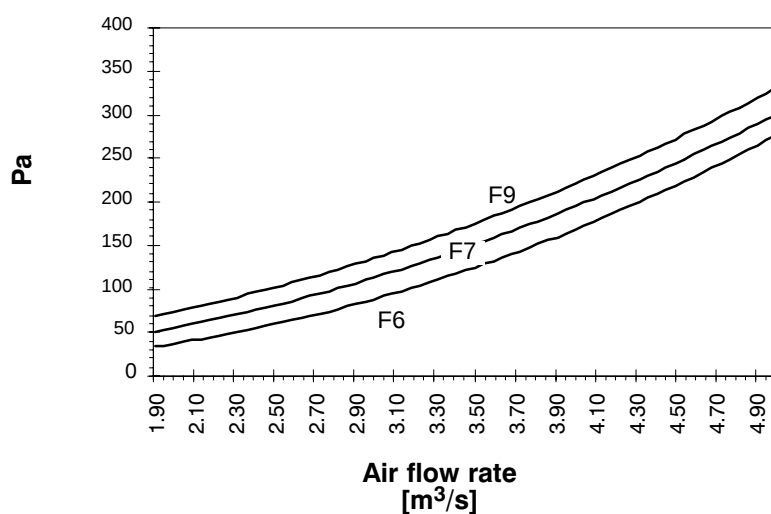
Installation of F6, F7 and F9 filters in addition to internal filter G4: additional pressure drops.

The pressure drops shown in the tables below must be deducted from the static pressures given in the tables of the aeraulic features.

HIMOD 20–24 U/O A/W/F/D/H 27–45 U/O C



HIMOD 26–46 U/O A/W/F/D/H 55–65 U A/W 55–85 U/O C



Filter holding duct

If 290 mm high filters are needed, a metal hood must be supplied to support them, of the same colour as the unit and installed on the top.

MODELS		20 ÷ 24 A/W/F/D/H 27 ÷ 45 C	26 ÷ 46 A/W/F/D/H 55 ÷ 85 C
Length	mm	1000	1750
Depth	mm	890	890
Height	mm	600	600

Clogged filter alarm

A differential flowmeter – which can be calibrated – may be installed to inform the microprocessor control about the need to replace the filters when they are clogged.

11.2 – Reheating and humidity control

Electric heating (dehumidification system)

The heaters are made of aluminium with high efficiency fins to keep a low power density on the surfaces. The ionization effects are eliminated thanks to the low surface temperature of the heaters. The stages of the electric heating coil are distributed on the three phases so as to avoid balancing problems. There are three steps, two contactors, a temperature electronic control of the ON–OFF type, a safety thermostat with manual reset, a magnetothermal switch protecting from short circuits, harness protection from possible accidental contacts.

When the hot water heating is installed, the dehumidification system is also operating and the relevant humidity sensor and indicator are provided (see "humidification and dehumidification system" for the dehumidification function). The electric heating can be installed combined with the hot gas or hot water reheating.

In the 55U A/W and 65U A/W units can be installed two different electrical heating: with 11.7 kW or 17.55 kW.



Heating capacity (all electrical supply)

MODELS		20 ÷ 24 U/O A/W/F/D/H 27 ÷ 45 U/O C	26 ÷ 46 U/O A/W/F/D/H 55 ÷ 85 U/O C	55 ÷ 65 U A/W	55 ÷ 65 U A/W
3 steps, total capacity	[kW]	5.85	11.7	11.7	17.55
2 steps	[kW]	3.90	7.8	7.8	11.70
1 step	[kW]	1.95	3.9	3.9	5.85

Hot gas reheating (and dehumidification system for units A/W/F/D/H, optional)

Himod can be supplied with a reheating system using the heat which is normally transferred to the condenser to heat the air, thus saving energy. This system is activated during the dehumidification phase (in fact, the relevant humidity sensors and indicators are provided), when the temperature is below the calibration value. In this way no additional energy is required for the reheating. A control valve prevents the refrigerant from flowing to the reheating coil when this is not required. Hot gas reheating is available as an alternative to hot water reheating.

Operation of electric heating and of hot gas reheating

Dehumidification function			
first step		second step	
ON	OFF	ON	OFF
hot gas reheating	electric heating 1st power step	hot gas reheating + electric heating 2 power steps	electric heating 3rd power step

Features of hot gas reheating system

MODELS U/O A/W/F/D/H	20	24	26	28	32	34	40	42	46	55 U A/W	65 U A/W
rows [no.]	2	2	1	1	1	1	1	1	1	1	1
surface [m ²]	0.432	0.432	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882
heating capacity with ambient temperature of 24°C, humidity 50%, condensing temperature 45°C [kW]	12.4	15.9	10.2	20.4	12.1	23.2	29.6	14.3	18.6	20.1	22.5

Hot water heating (and dehumidification system)

The hot water heating coil made of copper pipes and aluminium fins, with one row, test pressure 30 bar, includes an exhaust valve. A three—way on—off valve directly driven by the microprocessor control depending on the ambient temperature and by a hot water thermostat (provided by the customer) is supplied as standard. When the hot water heating is installed, the dehumidification system is also operating and the relevant humidity sensor and indicator are provided (see "humidification and dehumidification system" for the dehumidification function). The hot water heating system can be installed as an alternative to the hot gas reheating system. For the 55 and 65 HIMOD unit model, the "hot water heating" is only available in the A version at the present time.

Operation of electric heating and hot water reheating

Dehumidification function			
first step		second step	
ON	OFF	ON	OFF
hot water reheating	electric heating 1st power step	hot water reheating + electric heating 2 power steps	electric heating 3rd power step

Performances of DX units in post–heating (1)

MODELS UNDER A/W/F/D/H		20	24	26	28	32	34	40	42	46	55	65
rows	[no.]	2		1								
front surface	[m ²]	0.432		0.882								
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.												
power	[kW]	21.7	22.2	29.8	29.8	29.4	29.4	32.8	32.8	34.7	24.9	26.7
water flow	[l/s]	0.36	0.37	0.50	0.50	0.49	0.49	0.55	0.55	0.58	0.41	0.44
coil side pressure drops	[kPa]	1	1	3	3	3	3	4	4	4	3	3
total pressure drops	[kPa]	3	4	8	8	7	7	9	9	10	5	6
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.												
power	[kW]	23.3	23.8	31.7	31.7	31.3	31.3	34.8	34.8	37.0	26.4	28.3
water flow	[l/s]	0.39	0.39	0.53	0.53	0.52	0.52	0.58	0.58	0.61	0.44	0.47
coil side pressure drops	[kPa]	1	1	4	4	4	4	4	4	5	3	3
total pressure drops	[kPa]	4	4	8	8	8	8	10	10	11	6	7

MODELS OVER A/W/F/D/H	20	24	26	28	32	34	40	42	46	
rows [no.]	2		1							
front surface [m ²]	0.432		0.882							
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.										
power [kW]	19.9	22.7	27.2	27.2	29.4	29.4	28.1	28.1	34.9	
water flow [l/s]	0.33	0.38	0.45	0.45	0.49	0.49	0.55	0.55	0.58	
coil side pressure drops [kPa]	1	1	3	3	3	3	4	4	4	
total pressure drops [kPa]	3	4	6	6	7	7	9	9	10	
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.										
power [kW]	21.4	24.4	28.8	28.8	31.3	31.3	35.2	35.2	37.2	
water flow [l/s]	0.35	0.40	0.48	0.48	0.52	0.52	0.59	0.59	0.62	
coil side pressure drops [kPa]	1	1	3	4	4	4	4	4	5	
total pressure drops [kPa]	3	4	7	7	8	8	10	10	11	

Performances of DX units: only heating

MODELS UNDER A/W/F/D/H		20	24	26	28	32	34	40	42	46	55	65
rows	[no.]	2		1								
front surface	[m ²]	0.432		0.882								
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.												
power	[kW]	16.8	18.2	24.7	24.7	26.1	26.1	28.1	28.1	29.3	20.6	21.5
water flow	[l/s]	0.28	0.30	0.41	0.41	0.43	0.43	0.47	0.47	0.49	0.34	0.36
coil side pressure drops	[kPa]	1	1	3	3	3	3	3	3	3	2	2
total pressure drops	[kPa]	2	3	5	5	6	6	7	7	7	4	4
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.												
power	[kW]	18.7	20.3	27.1	27.1	28.7	28.7	30.7	30.7	32.1	22.6	23.6
water flow	[l/s]	0.31	0.34	0.45	0.45	0.48	0.48	0.51	0.51	0.53	0.37	0.39
coil side pressure drops	[kPa]	1	1	3	3	3	3	4	4	4	2	2
total pressure drops	[kPa]	3	3	6	6	7	7	8	8	9	5	5

MODELS OVER A/W/F/D/H	20	24	26	28	32	34	40	42	46	
rows [no.]	2		1							
front surface [m ²]	0.432		0.882							
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.										
power [kW]	16.7	18.3	24.5	24.5	25.8	25.8	28.0	28.0	28.9	
water flow [l/s]	0.28	0.30	0.41	0.41	0.43	0.43	0.46	0.46	0.48	
coil side pressure drops [kPa]	1	1	3	3	3	3	3	3	3	
total pressure drops [kPa]	2	3	5	5	6	6	7	7	7	
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.										
power [kW]	18.7	20.5	26.8	26.8	28.3	28.3	30.7	30.7	31.7	
water flow [l/s]	0.31	0.34	0.44	0.44	0.47	0.47	0.51	0.51	0.53	
coil side pressure drops [kPa]	1	1	3	3	3	3	4	4	4	
total pressure drops [kPa]	3	3	6	6	7	7	8	8	8	

Performances of CW units: post—heating ⁽¹⁾

UNDER C MODELS			27			45			55		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	350	150	250	350	150	250	325
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	100	200	—	100	200	—	120	190
air flow rate		[m³/s]	2.348	2.107	1.822	2.455	2.210	1.929	4.420	3.980	3.640
rows		[no.]	1						2		
front surface		[m²]	0.432						0.882		
ambient temp. 24° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	28.8	27.2	25.1	20.3	19.1	17.6	40.8	38.7	36.9
water flow		[l/s]	0.48	0.45	0.42	0.34	0.32	0.29	0.68	0.64	0.61
coil side pressure drops		[kPa]	2	2	2	1	1	1	6	5	5
total pressure drops		[kPa]	6	5	4	3	3	2	14	13	12
ambient temp. 20° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	29.2	27.5	25.4	20.3	19.1	17.6	41	38.8	37.0
water flow		[l/s]	0.48	0.46	0.42	0.34	0.32	0.29	0.68	0.65	0.62
coil side pressure drops		[kPa]	2	2	2	1	1	1	6	5	5
total pressure drops		[kPa]	6	5	5	3	3	2	15	13	12

UNDER C MODELS			65			80			85		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	325	150	250	320	150	250	320
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	130	190	—	100	170	—	100	180
air flow rate		[m³/s]	4.260	3.840	3.530	5.220	4.720	4.300	5.180	4.680	4.250
rows		[no.]	2								
front surface		[m²]	0.882								
ambient temp. 24° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	41	38.9	37.2	30.6	29.1	27.6	31.2	29.5	28.0
water flow		[l/s]	0.68	0.65	0.62	0.51	0.48	0.46	0.52	0.49	0.46
coil pressure drops		[kPa]	6	5	5	4	3	3	4	3	3
total pressure drops		[kPa]	15	13	12	9	8	7	9	8	7
ambient temp. 20° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	41.0	38.8	37.1	30.9	29.3	27.8	31.3	29.6	28.1
water flow		[l/s]	0.68	0.65	0.62	0.51	0.49	0.42	0.52	0.49	0.47
coil pressure drops		[kPa]	6	5	5	4	3	3	4	3	3
total pressure drops		[kPa]	15	13	12	9	8	7	9	8	7

OVER C MODELS			27			45			55		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	350	150	250	350	150	250	345
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	100	200	—	100	200	—	120	210
air flow rate		[m³/s]	2.532	2.263	1.950	2.583	2.331	2.042	4.120	3.700	3.250
rows		[no.]	1						2		
front surface		[m²]	0.432						0.882		
ambient temp. 24° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	29.9	28.2	26.0	20.9	19.7	18.2	39.7	37.5	35.1
water flow		[l/s]	0.50	0.47	0.43	0.35	0.33	0.30	0.66	0.62	0.58
coil side pressure drops		[kPa]	2	2	2	1	1	1	5	5	4
total pressure drops		[kPa]	6	5	5	3	3	3	15	12	11
ambient temp. 20° C, 50% R.H. water inlet/outlet temperature 80/65° C.											
power		[kW]	30.4	28.6	26.3	20.9	19.7	18.2	39.8	37.6	35.1
water flow		[l/s]	0.50	0.47	0.44	0.35	0.33	0.30	0.66	0.63	0.58
coil side pressure drops		[kPa]	2	2	2	1	1	1	5	5	4
total pressure drops		[kPa]	6	6	5	3	3	3	15	12	11

OVER C MODELS			65			80			85		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	355	150	250	335	150	250	330
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	140	220	—	95	200	—	90	190
air flow rate		[m³/s]	4.040	3.620	3.200	5.220	4.720	4.130	5.120	4.620	4.040
rows		[no.]	2								
front surface		[m²]	0.882								
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	40.1	37.9	35.5	30.6	29.0	27.0	30.9	29.2	27.2
water flow		[l/s]	0.67	0.63	0.59	0.51	0.48	0.45	0.51	0.49	0.45
coil pressure drops		[kPa]	5	5	5	4	3	3	4	3	3
total pressure drops		[kPa]	14	13	11	9	8	7	9	8	7
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	40.0	37.8	35.3	30.9	29.2	27.2	31.0	29.3	27.3
water flow		[l/s]	0.67	0.63	0.59	0.51	0.49	0.45	0.52	0.49	0.45
coil pressure drops		[kPa]	5	5	5	4	3	3	4	3	3
total pressure drops		[kPa]	14	12	11	9	8	7	9	8	7

Performances of CW units: only heating

UNDER C MODELS			27			45			55		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	350	150	250	350	150	250	325
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	100	200	—	100	200	—	120	190
air flow rate		[m³/s]	2.348	2.107	1.822	2.455	2.210	1.929	4.420	3.980	3.640
rows		[no.]	1						2		
front surface		[m²]	0.432						0.882		
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	22.3	20.9	19.2	15.1	14.1	12.9	32.1	30.3	28.8
water flow		[l/s]	0.37	0.35	0.32	0.25	0.23	0.21	0.53	0.50	0.48
coil side pressure drops		[kPa]	1	1	1	1	1	1	4	4	3
total pressure drops		[kPa]	4	3	3	3	2	1	9	8	8
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	24.7	23.2	21.3	16.6	15.6	14.3	35.1	33.2	31.5
water flow		[l/s]	0.41	0.38	0.35	0.27	0.26	0.24	0.58	0.55	0.52
coil side pressure drops		[kPa]	2	1	1	1	1	1	4	4	4
total pressure drops		[kPa]	4	4	3	2	2	2	11	10	9

UNDER C MODELS			65			80			85		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	325	150	250	320	150	250	320
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	130	190	—	100	170	—	100	180
air flow rate		[m³/s]	4.260	3.840	3.530	5.220	4.720	4.300	5.180	4.680	4.250
rows		[no.]	2								
front surface		[m²]	0.882								
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	31.4	29.7	28.3	23.9	22.5	21.3	23.8	22.4	21.2
water flow		[l/s]	0.52	0.49	0.47	0.39	0.37	0.35	0.39	0.37	0.35
coil pressure drops		[kPa]	4	3	3	3	2	2	2	2	2
total pressure drops		[kPa]	9	8	7	5	5	5	5	5	4
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	34.5	32.5	31.0	26.1	24.7	23.4	26.4	24.6	23.2
water flow		[l/s]	0.57	0.54	0.52	0.43	0.41	0.39	0.43	0.41	0.38
coil pressure drops		[kPa]	4	4	4	3	3	2	3	3	2
total pressure drops		[kPa]	11	10	9	6	6	5	6	6	5

OVER C MODELS			27			45			55		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	350	150	250	350	150	250	345
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	100	200	—	100	200	—	120	210
air flow rate		[m³/s]	2.532	2.263	1.950	2.583	2.331	2.042	4.120	3.700	3.250
rows		[no.]	1						2		
front surface		[m²]	0.432						0.882		
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	23.4	21.9	20.0	15.5	14.6	13.4	30.9	29.1	27.0
water flow		[l/s]	0.39	0.36	0.33	0.26	0.24	0.22	0.51	0.48	0.45
coil side pressure drops		[kPa]	1	1	1	1	1	1	4	3	3
total pressure drops		[kPa]	4	4	3	2	2	2	9	8	7
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	25.9	24.2	22.1	17.2	16.2	14.9	31.3	31.8	29.6
water flow		[l/s]	0.43	0.40	0.37	0.28	0.27	0.24	0.56	0.53	0.49
coil side pressure drops		[kPa]	2	2	1	1	1	1	4	4	3
total pressure drops		[kPa]	5	4	4	2	2	2	10	9	8

OVER C MODELS			65			80			85		
Max. available pressure ⁽²⁾	50 Hz	[Pa]	150	250	355	150	250	335	150	250	330
Max. available pressure ⁽²⁾	60 Hz	[Pa]	—	140	220	—	95	200	—	90	190
air flow rate		[m³/s]	4.040	3.620	3.200	5.220	4.720	4.130	5.120	4.620	4.040
rows		[no.]	2								
front surface		[m²]	0.882								
ambient temp. 24°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	30.5	28.7	26.8	23.9	22.5	20.8	23.6	22.2	20.6
water flow		[l/s]	0.51	0.48	0.44	0.39	0.37	0.34	0.39	0.37	0.34
coil pressure drops		[kPa]	4	3	3	3	2	2	2	2	2
total pressure drops		[kPa]	8	8	7	5	5	4	5	5	4
ambient temp. 20°C, 50% R.H. water inlet/outlet temperature 80/65°C.											
power		[kW]	33.5	31.5	29.3	26.1	24.7	22.8	25.9	24.4	22.6
water flow		[l/s]	0.56	0.52	0.49	0.43	0.41	0.38	0.43	0.40	0.37
coil pressure drops		[kPa]	4	4	3	3	3	2	3	3	2
total pressure drops		[kPa]	10	9	8	6	6	5	6	6	4

1. Cooled water in/out 7/12 °C.

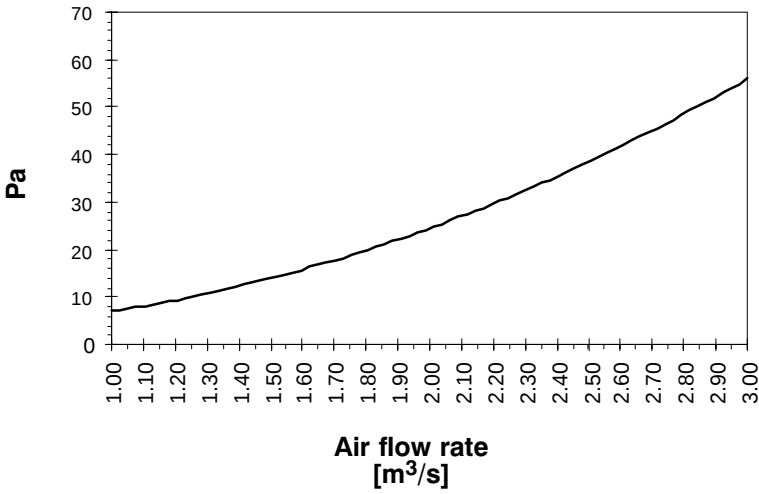
2. Max. available external static pressure for indicated air flow.

NOTE: Standard air flow for DX unit. Under unit ESP = 20 Pa — Over unit ESP = 50 Pa.

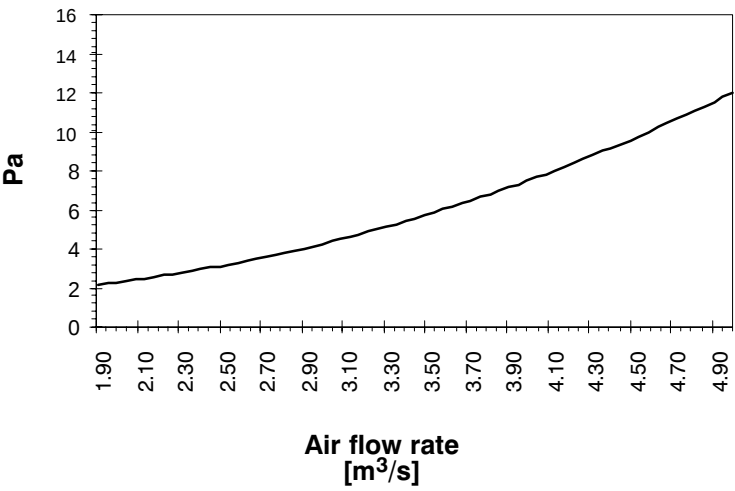
Additional pressure drop of the reheating coils

The pressure drops shown in the tables below must be deducted from the static pressures given in the tables of the aeraulic features.

Pressure drop, MODELS 20÷24 U/O A/W/F/D/H 27÷45 U/O C

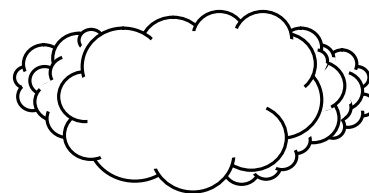


Pressure drop, MODELS 26÷46 U/O A/W/F/D/H 55÷65 U A/W 55÷85 U/O C



11.3 – Humidification and dehumidification system

The humidification system is provided by a HUMIDAIR electronic humidifier. The dehumidification function, which is supplied as standard when the humidifier option is installed, acts by switching on the compressor and reducing the fan speed with consequent reduction of the air flow (models A/W/F/D/H) or by completely opening the chilled water three-way valve (models C).

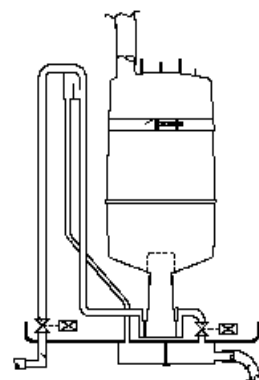


Electronic humidity control

The software of the Hiromatic microprocessor control includes the algorithm which manages the HUMIDAIR electronic modulating humidifier and provides the dehumidification function. There is also a special function which automatically prevents the dehumidification if the temperature is below the required value; when the temperature reaches the correct values, the dehumidification function is automatically reactivated. The dehumidification control may be of the proportional or of the on–off type, according to the requirements of every installation: the on–off system is set as standard by the manufacturer.

HUMIDAIR electric steam humidifier

HUMIDAIR is a steam cylinder with immersed electrodes which produces the required quantity of steam. It is suitable for a large range of water qualities (with varying degrees of hardness) provided that it isn't treated or demineralized. It almost instantaneously produces clean, particle-free steam, letting electric current pass through the water contained in the replaceable plastic cylinder, thus avoiding energy losses which are typical of other systems. HUMIDAIR is provided with the steam cylinder, water inlet and outlet valves and a maximum level sensor. The steam output can be adjusted within a range of values which can be chosen manually and are set by the manufacturer at 70% of the maximum capacity (see the relevant features).



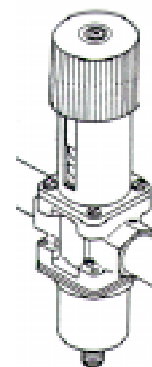
Humidifier features

The steam cylinder is installed out of the air flow to avoid heat losses; the steam is mixed with the delivery air of the evaporating coil by means of a suitable distributor. The Hiromatic control can determine when the cylinder has to be changed. Replacing the cylinder is extremely easy and quick. A self-adaptive flow control system is fitted as standard and controls the current passing through the cylinder water.

HUMIDAIR MODEL	MAIN POWER SUPPLIES	SETTING [kg/h]	ABSORBED CURRENT [A]	POWER [kW]
HAK93H	400V / 3ph / 50Hz	2.7 – 9.0	10.3	7.3
HAK93L	208–230V / 3ph / 60Hz		17.2	6.2
HAK93H	380V / 3ph / 60Hz		10.8	7.3
HAK93H	460V / 3ph / 60Hz		9.1	7.3

11.4 – Water valve (models W/H)

A modulating valve controls the condensing pressure by regulating the water flow to the plate condenser. It is installed at the condenser outlet with the pressure probe positioned on the refrigerant discharge line. It is automatically closed when the compressor is not operating. Thus it is possible to obtain a cost reduction and to optimize water consumption. It is sized for inlet water flow values at a temperature lower than 17°C (mains/well water) resulting in low pressure drop values. To determine a proper water flow value depending on the specific operating conditions refer to the tables giving the performance of the W/H units. For higher water inlet temperatures (tower water/Dry cooler) higher water flows are required.



Features of water regulating valves; inlet water temperature > 18 °C/glycol 0% (valve completely open)

MODELS		20U/O W/H	24U/O W/H	28U/O W/H	34U/O W/H	40U/O W/H	26U/O W/H(*)	32U/O W/H(*)	42U/O W/H(*)	46U/O W/H(*)	55U W(*)	65U W(*)
outlet connections	inch BSP int.	1"	1"	1 1/4"	1 1/4"	1 1/4"	3/4"	3/4"	1"	1"	1 1/4"	1 1/4"
code		378203	378203	378204	378204	378204	378202	378202	378203	378203	378204	378204
valve pressure drop at 0.4 l/s	kPa	7	7	—	—	—	—	—	—	—	—	—
valve pressure drop at 0.5 l/s	kPa	11	11	—	—	—	—	—	—	—	—	—
valve pressure drop at 0.6 l/s	kPa	15	15	—	—	—	—	—	—	—	—	—
valve pressure drop at 0.7 l/s	kPa	21	21	—	—	—	13	13	—	—	—	—
valve pressure drop at 0.8 l/s	kPa	27	27	7	7	7	18	18	7	7	7	7
valve pressure drop at 1.0 l/s	kPa	—	—	10	10	10	27	27	11	11	10	10
valve pressure drop at 1.2 l/s	kPa	—	—	15	15	15	40	40	15	15	15	15
valve pressure drop at 1.4 l/s	kPa	—	—	20	20	20	—	—	21	21	20	20
valve pressure drop at 1.6 l/s	kPa	—	—	27	27	27	—	—	27	27	27	27
valve pressure drop at 1.8 l/s	kPa	—	—	35	35	35	—	—	35	35	35	35

(*) Two valves are fitted, one for each refrigeration circuit.

11.5 – Flooding alarm (Liquistat)

The flooding alarm perceives the presence of water or of another conductive liquid and, opening a circuit, activates an alarm.

There are no moving parts and it is not subject to dirt or vibration. Several sensors can be connected to the same flooding alarm device to control many points in the room. The alarm device is supplied with a sensor. Additional sensors can be ordered separately.

11.6 – Smoke alarm (Smokestat)

A smoke alarm can be installed to stop the conditioning system when the presence of smoke in the intake air is perceived. This is an optical smoke detector (it uses the Tyndall effect), which absorbs very low current (100mA) and is absolutely insensitive to light or wind.



11.7 – Fire alarm (Firestat)

In some applications the fire regulations require the installation of an alarm device (Firestat) which deactivates the air conditioner when the intake air temperature is too high.

11.8 – Fresh air kit

The fresh air kit, which has a G3 class filter installed on the intake side of the fan, is connected by a 100 mm diameter plastic duct. The connection is located in the lower part of the unit for an easier and quicker installation.

As the fresh air intake is positioned close to the fan suction, it will easily mix with the recirculation air.

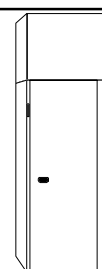
MODELS	Fresh air for clean filters, (dirty filters)** (l/s)	
20 ÷ 24U A/W/F/D/H	33 (29)	30 (26)
26 ÷ 46U A/W/F/D/H 55U/65U A/W	38 (33)	29 (27)
20 ÷ 24O A/W/F/D/H	39 (34)	30 (26)
26 ÷ 46O A/W/F/D/H	40 (36)	31 (29)
27 ÷ 45 OC	39 (34)	30 (26)
27 ÷ 45 U C	33 (29)	30 (26)
55 ÷ 85 U/O C	41 (36)	31 (29)
equivalent length* (m)	12	24

* A 90° curve corresponds to approx. 2 m of linear duct.

** Intake duct diameter $\phi=100\text{mm}$

11.9 – Intake and delivery hoods

Himod can be equipped with intake and supply ducts on the top for connection of the unit to a false ceiling. The air duct is manufactured to complement the design of the unit; it consists of sandwich panels lined with non-flammable insulation material of class 0 (ISO 1182.2), density 30 kg/m³; its height ranges between 500 mm and 1200 mm.



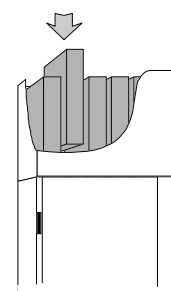
11.10 – Silencing cartridges for supply hoods – Silent Carts (Over models)

These are special cartridges made of self-extinguishing material with a high noise attenuation capacity. They are guaranteed against disintegration and release of particles which could occur as a consequence of friction within the duct.

It is possible to install one or two rows of cartridges in the supply hood by fitting them from the top: one single row for a 600 mm or 900 mm high hood, two rows for a hood height ranging between 1200 mm and 1500 mm.

Despite a small additional pressure drop, these cartridges provide a remarkable sound power level reduction: -8.5 dB(A) at 2 m front distance and at 1.5 m from the ground; -13 dB(A) at 1 m front distance and at 45° from the unit top with a cartridge row in a 1200-mm-high hood; -9.5 dB(A) and -14 dB(A), in the same conditions, with an additional cartridge row.

The reduction values refer to the comparison with noise values measured for each unit at free discharge.



Features of the cartridges

Models	Dimensions [mm]	Free section [mm]	cartridge number	
			1 row	2 rows
20÷24 27÷45	500 x 195 x 500	400 x 100	4	8
26÷46 55÷65 55÷85	500 x 195 x 500	400 x 100	9	18

Attenuation in dB

row no.	Attenuation in dB at different frequency values (Hz)							
	63	125	250	500	1000	2000	4000	8000
1	1	4	7	15	26	28	27	14
2	1	6	12	27	49	53	49	23

Pressure drops

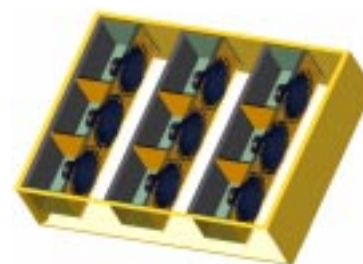
row no.	Pressure drops (Pa) for each module at the different air flows (m ³ /s)				
	0.2	0.3	0.4	0.5	0.6
1	1	2	4	7	9
2	3	6	11	18	26

11.11 – HiSAS – Semi–activer silencer (Under models)

The control of noise is always assuming a great importance in the sector of precision air conditioning.

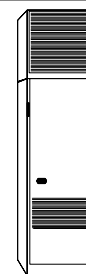
HiSAS technologically represents the most advanced solution for the noise control in the field of HPAC based on the principle of active noise control.

The sound attenuation is equal to around 10 dB(A); the noise demolition in frequency is superior to any other conventional system. (For more details refer to the manual code 271605).

**11.12 – Delivery plenum with horizontal flow (Over models)**

A supply plenum with horizontal air flow can be installed on top of the unit. The 600 or 900 mm high plenum has the same design as the unit; it consists of sandwich panels lined with non-flammable insulation material of class 0 (ISO 1182.2), density 30 kg/m³. It is equipped with a double deflection grille.

A single deflection grille can be supplied on request.

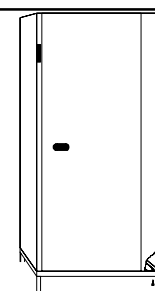
**11.13 – Adjustable Louvred Grille (Over models)**

As an option, an adjustable louvre grille can be supplied separately; this may be installed on top of the unit or in the plenum opening. In this way, the supply air can be deflected from the horizontal, upwards or downwards. We advise against extreme deflection of the louvres which can obstruct the air flow and reduce cooling capacity of the unit.

11.14 – Base frames: TBD models

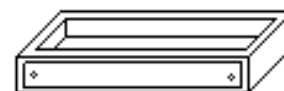
When required, a base frame adjustable in height by ± 25 mm can be supplied. Three sizes are available: height ≤ 300 mm; ≤ 500 mm; ≤ 800 mm.

MODELS	width [mm]	depth [mm]
20÷24 27÷45	990	885
26÷46 55÷65 55÷85	1740	885



11.15 – Base modules (Over models)

A 200 mm high base module can be supplied on request to support the Himod Over units and to allow pipework to enter the base of the unit when a raised floor is not installed. In this case the air conditioning unit must be ordered with a blind front panel.



11.16 – Automatic pump for condensate discharge

The Himod's condensate drain piping can be connected to a pump complete with a flow cutout allowing the pump to stop and reset automatically.

Features of the automatic pump for condensate discharge

water flow	[l/s]	0.083	0.167	0.250	0.333
available head	[kPa]	20	19	18	14

11.17 – Non–return valves (models A and D)

For air–condensed units, a non–return valve is supplied on request in a separate kit. It should be installed on the liquid line near the condenser, vertically with downward flow. The installation of this valve is absolutely necessary when the total charge of the system exceeds the values given in the table:

MODELS		Max. refrigerant charge without non–return valve [kg x circuit]
20–24 xA/D	50–60Hz	4.5
28 xAD	50Hz	10.0
28 xAD	60Hz	4.5
34 xA/D	50–60Hz	10.0
40 xA/D	50Hz	7.7
40 xA/D	60Hz	10.0
26–32–42–46 xA/D (*)	50–60Hz	4.5
55–65 UA (*)	50Hz	4.5

(*) Models with double refrigeration circuit

11.18 – Additional temperature and humidity sensor (EEAP)

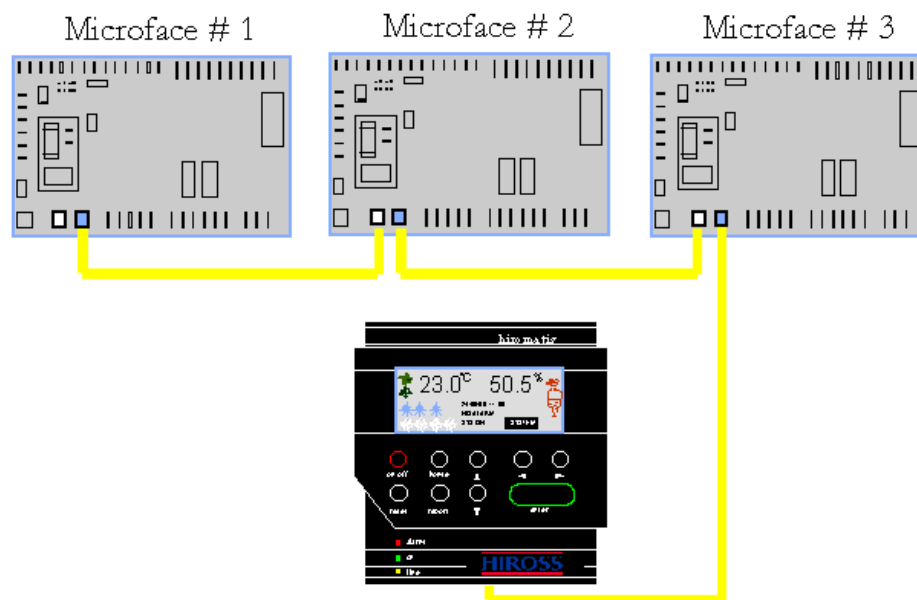
EEAP (Environmental Alarm Package) is an additional temperature and relative humidity sensor similar to the humitemp sensor.

The sensor can be installed in a suitable place up to 20 m from the air conditioner which generates an alarm if the temperature or the relative humidity exceeds one of the four thresholds that can be selected by the user:

High temperature	(from 10°C to 50°C)
low temperature	(from 0°C to 30°C)
high relative humidity	(from 30% to 99%)
low relative humidity	(from 10% to 70%).

11.19 – Microprocessor control with graphic display (HIROMATIC G)

The Hiromatic graphic terminal is particularly suitable for group management. Indeed, thanks to the generous dimensions of the display and to the exceptional contrast, it allows the user to move around freely within the Microface network. Therefore, from a single point, it is possible to control the whole system without moving from one unit to another. The last 200 events occurring in the system; the graphic development of the last 24 hours for each of the units connected (stored since the last start-up), the user's menus available in 8 languages and connectivity through RS 422 to the Hirolink Communication Manager are just some of the features available with Hiromatic. Moreover, as Hiromatic can be supplied in kit form, it may be installed either on the unit or on a remote panel for primary supervision of the system.



Hiromatic controls the date and time functions using them as operating information for the customer and as a reference whenever a status change occurs, causing the storage in the Report status. In addition, details of the event which occurred, the date and time at which the event occurred are stored as well. Thanks to the buffered RAM it is possible to store the operating hours of each component (compressor, fan, electric heaters, humidifier) of the various interconnected units.

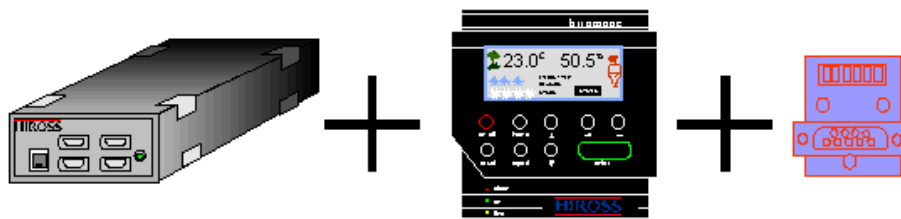
In addition to the date–time function, there is a function for stand–by unit rotation which can be activated *only by means of Hiromatic* at a preset time of day. This is different from the Microface function, in which the rotation occurs when 24 operating hours of one unit have been reached.

Finally, Hiromatic allows the Microface units to be integrated with Hirolink; for this purpose it is necessary to install a RS422 card at the back of Hiromatic. In this way, Hiromatic can control up to 8 Microface units and communicate the relevant data to Hirolink.

Serial communication

Integration

Hiolink is the key to the integration; it works as 'communication manager' between the Hiromatic–Microface units and all the foremost supervision systems available on the market. It also provides the link with our supervision system, which is the ideal solution for all integration requirements within the intelligent building. This permits local access to the units or, as an alternative, modem connection to supervise several installations from a single point.



The components necessary for integration are shown in the picture above. The only 'variations' are the software installed on Hiolink and the relevant hardware configuration which determines a different code.

11.20 – Special packing

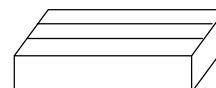
Special packing for sea transport, consisting of a wooden box or crate, can be supplied on request.

11.21 – Air intake from the bottom (Over models)

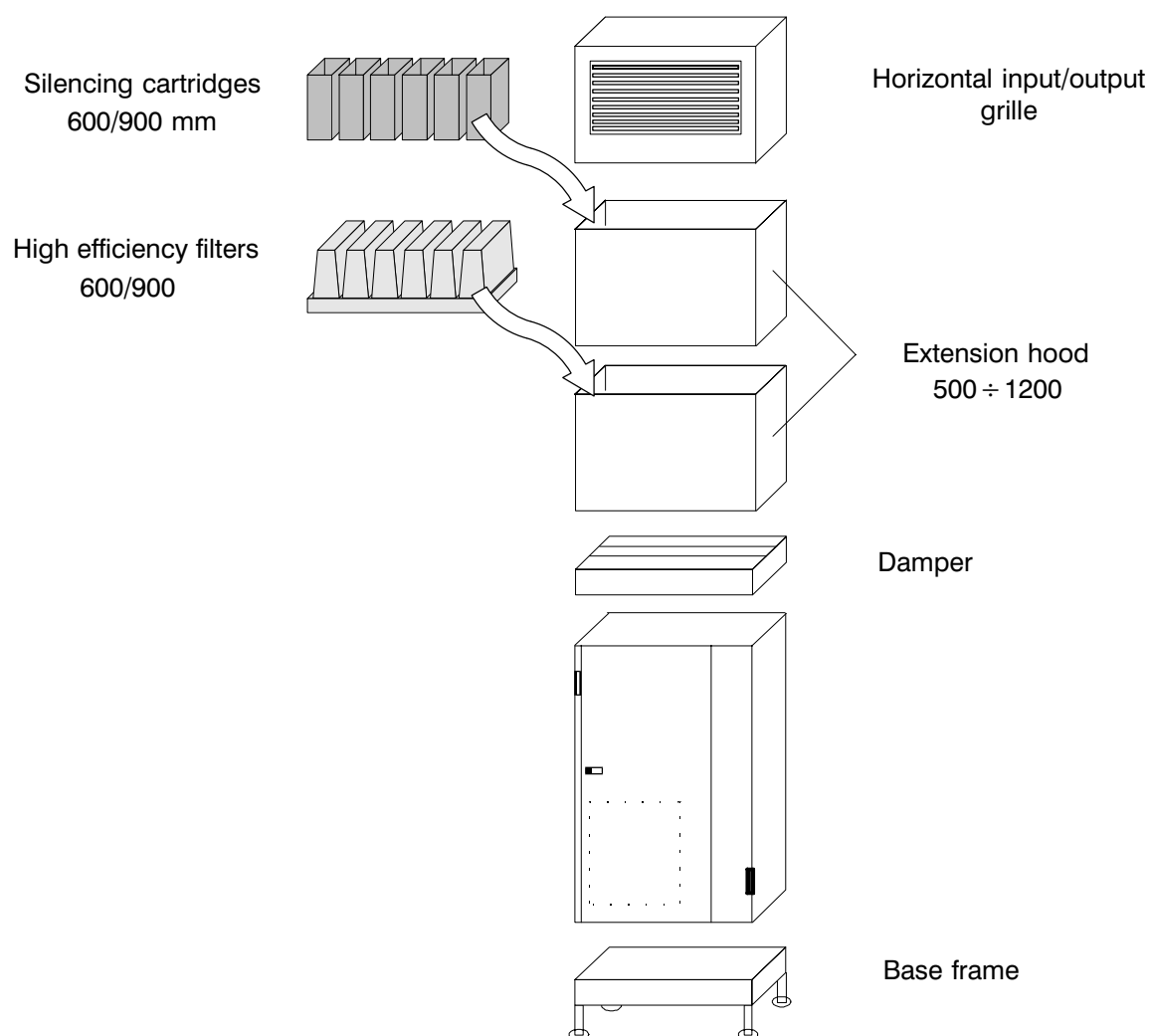
Himod units can be supplied to permit air intake from below. In this case, the front panel with intake grille is replaced by a special blind panel, which further reduces noise levels.

11.22 – Dampers

Himod units can be provided with motorised over–pressure dampers for the Under version and gravity dampers for the Over model.



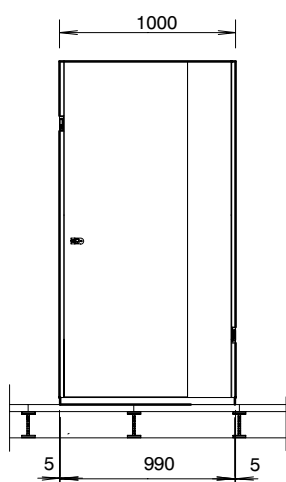
11.23 – Accessory combination



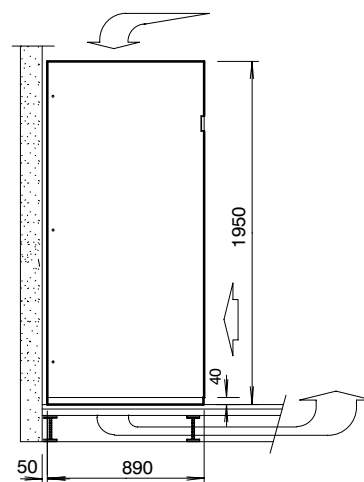
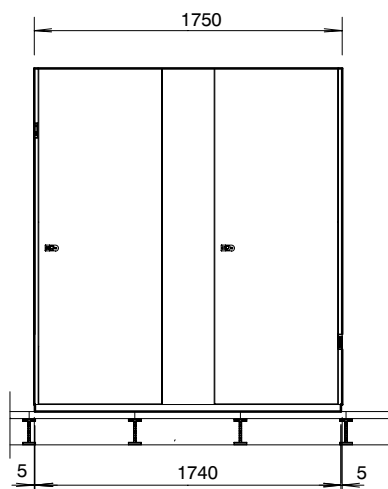
12 – Overall dimensions

Under version

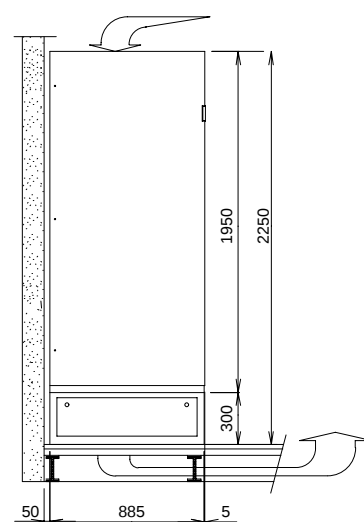
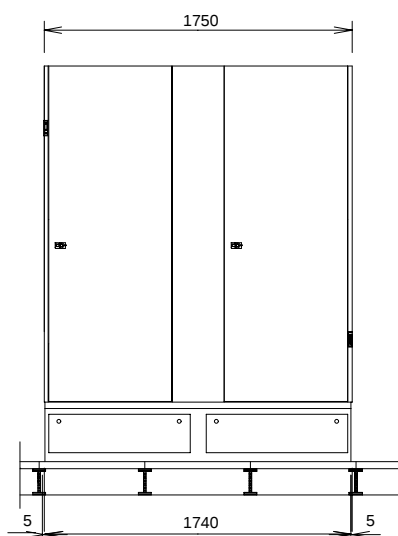
20–24A/W/F/D/H
27–45C



26–46A/W/F/D/H
55–85C 55–65A

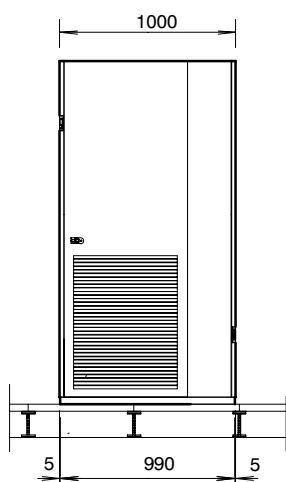


55–65W

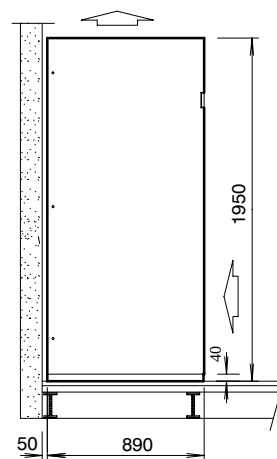
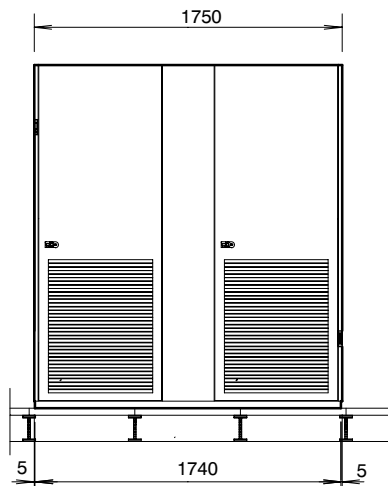


Over version

20–24A/W/F/D/H
27–45C



26–46A/W/F/D/H
55–85C





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