

Hirange X under

Engineering
Data Manual



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1 – THE SERIES

- UxxA:
- direct expansion unit
 - under air discharge
 - remote air-cooled condenser
- UxxW:
- direct expansion unit
 - under air discharge
 - built-in water or water/glycol cooled condenser

1.1 – MAIN FEATURES

Vertically shaped units, from approximately 25 to 75 kW nominal cooling capacity.

The small dimensions, high capacity ratio (SHR), improved accessibility for maintenance, high values of EER (Energy Efficiency Ratio), and low noise emission are the main characteristics of the new HIRANGE series.

There is an electronic microprocessor control and 24V secondary circuit. The units are fully designed, manufactured and tested in conformity with the Company Quality Assurance System, which is in accordance with EN 29000 European norms.

1.2 – DIMENSIONS AND ACCESSIBILITY

Accessibility for the following standard maintenance is granted from the front: air filters, compressors, condenser connections, liquid receiver, fans, humidifier, thermostatic valve, liquid gauge, filter dryer, 3-way water modulating valve, electrical panel, controller, electrical heaters.

The extraordinary replacement of the cooling and hot-gas or hot-water heating coils can be done from the lateral panels of the unit. The refrigerant, electrical and hydraulically connections are provided from the bottom of the unit.

1.3 – METAL CABINET

The HIRANGE features a welded casing and steel plate panels, pearl-white in colour (RAL 7032) and protected by powder painting. Quick locks on the panels allow immediate dismounting; the back side of the unit is welded to the frame. The panel covering the electrical panel is mounted on hinges for easy maintenance.

Air intake is from the top of the unit.

The compressors are located in the lower part of the unit, separated from the air flow. It is possible to remove the front panel to gain access to the compressor section during operation.

Thermal and acoustic lining of the panels is in 1" thick, 30 kg/m³ dense, self-extinguishing polyurethane foam, in compliance with the following standards: ASTM D 1992, MVSS302, UL94 HBF, California Fest 117 sect. A, UNI-ISO 3795.

On request, a special non-combustible lining can be provided (see "Special features" section).

1.4 – REFRIGERATION CIRCUIT

Two refrigeration circuits (except for the U34 A/W, which has a single circuit) with hermetic compressors.

The compressors are equipped with their own crankcase heater to prevent the presence of liquid at start-up.

An internal thermal protection against overheating of the motor is provided as standard.

Each circuit incorporates a thermostatic expansion valve with external equalizer, which controls the refrigerant flow to the evaporator so as to maintain a constant value of vapour superheat. A liquid gauge with moisture indicator is installed to allow a visual check of the refrigerant charge.

A filter dryer is provided in each liquid line to ensure a clean moisture free system for maximum efficiency and an increased working life.

A solenoid valve (in UxxA units only) protects each compressor against refrigerant migration when the compressor is not operating. The refrigeration circuit is provided with a welded steel liquid refrigerant receiver, to ensure a continuous, smooth flow of liquid refrigerant to the expansion valve.

Shut-off valves, fitted as standard on the compressor and liquid receiver outlet, facilitate the extraordinary maintenance of the circuits.

For safe operation in most applications it is recommended to fit, during the installation of UxxA units, non-return valves (supplied separately as an accessory on request) on both refrigerant connections to the external air condenser; these protect the compressor against undesired refrigerant migration.

A safety valve is provided on the liquid receiver; this valve is equipped with a flare connection to allow possible piping of the refrigerant discharge.

The low temperature refrigerant piping is thermally lined.

During dehumidification a shut-off valve closes and stops the refrigerant passage through part of one of the finned coils. In this way there is a lower evaporation temperature in the front coil, with a noticeably increased dehumidification effect.

Each compressor is equipped with two pressure switches for protection against high condensing and low evaporating pressures. The low pressure switch features automatic reset and an adjustable delay (0-300s, 180s default) for winter operation, whilst to avoid compressor cycling at high discharge pressures, the high pressure switch is equipped with manual reset. The set point values of the pressure switches are indicated in the Service Manual, supplied with the unit.

1.5 – HEAT TRANSFER COILS

These consist of two independent coils in copper tubes, with aluminium fins arranged in a V configuration, and are generously dimensioned with a large face area so as to increase the SHR and optimize the EER; this is achieved by reducing the air pressure drop and turbulence and increasing the evaporating temperature, and thus the efficiency, of the compressor.

Plastic corrosion-free pans are installed for the condensate drain; a specially designed rubber gasket prevents the by-pass of air and allows a correct draining of the condensate even in the presence of high static air pressures.

The position and inclination of the coil and use of a metallic wire barrier have been specially designed, with the help of accurate laboratory tests, to prevent water drops separating from the coil, even in conditions of high dehumidification.

1.6 – CONDENSING SECTION (UxxW units)

The unit is provided with a stainless-steel, plate water condensers; this advanced feature allows the maximum heat exchange efficiency. Additionally, generous oversizing is provided to minimize the pressure drop (and the water pump energy consumption) and to allow operation with a rad-cooler, even at high outdoor temperatures.

The UxxW units are provided for operation with city water, tower water or a rad-cooler. In the rad-cooler circuit, the water is cooled by the ambient air in an external heat exchanger (rad-cooler); a certain glycol percentage must be provided by the installer to prevent undesired freezing during winter operation (see Service Manual for the required glycol percentage). The mixture is circulated, in a closed-circuit, by an appropriately designed pump group (not supplied). In case of use with city or tower water, it is recommended to provide, during the installation, a water filter to protect the condenser against possible impurities in the water (for condenser cleaning see Service Manual). To minimize the water consumption and to control the condensing pressure in case of seasonal variations in the water temperature, a factory mounted 2-way water regulating valve can be supplied on request.

1.7 – REFRIGERANT, WATER AND ELECTRICAL CONNECTIONS

The connections are provided from the bottom of the units, through the raised floor.

A base frame (optional) can be installed to support the unit.

1.8 – FAN SECTION

The units are equipped with one (U24, U34 and U35 A/W) or two double inlet centrifugal fans with (forwardly bladed) impellers and housing in deep galvanized steel plate. The electrical motors are built-in, at least class IP20, directly keyed on the motor shaft, with internal thermal protection. The impellers are statically and dynamically balanced with lifetime lubricated bearings for quiet, vibration-free operation.

Three-phase, 6 pole motors are used.

The fans are completely mounted on antivibrated bases with elastic supports to minimize the transmission of vibration to the structure and noise generation; a sealing gasket is installed on the air discharge: this results in exceptionally quiet operation.

An ample discharge plenum is situated between the fan discharge and floor in order to increase the static pressure and improve the underfloor air.

V-belt transmission fans can be supplied on request for standard fan characteristics or higher static pressure requirements (see "Special features" section).

An air flow sensor is installed as standard to monitor a fan failure.

1.9 – AIR FILTER SECTION

The filter section is placed at the top of the unit and provides filtration of the recirculated air to obtain the required degree of air cleanliness in the room.

One size of filters fits all units within the series. The filters can be removed from the front of the unit by simply opening the front panels.

They feature cleanable, 4" thick, pleated type air filter cells, specially designed to minimize the pressure drop and improve the efficiency. The standard filter class is EU 3 (Eurovent EU4/5 standard).

On request, EU 4 or EU 5 filters can be fitted (with additional pressure drop), delivered as a separate kit; in this case special transmission ratios can be provided (see "Special features" section) to compensate for the increased pressure drop, without any air flow decrease. Additionally, if an elevated degree of filtration is required without excessive pressure drops or an increased air flow rate, special 300 mm EU5 filters can be used, these being placed in a metal hood (supplied as a kit) which is positioned on top of the unit.

1.10 – ELECTRONIC CONTROL

The units are equipped with the new exclusive HIROMATIC (TM) ADVANCED (or COMPACT in U34 A/W units) microprocessor based controller. This modular expandable controller is compatible with the complete HIROMATIC family through the HIROBUS (TM) interconnection system. The basic version, which temperature and monitors also the relative humidity (optional in U34 A/W), can be upgraded on request to also control humidity; a special algorithm provides very precise control without instability.

The standard controller is equipped with a custom made Liquid Crystal Display. This display has ample dimensions (100x30mm) and very good readability due to the high contrast (20 to 1).

A special version with GRAPHIC display can be supplied on request.

The temperature and humidity readings are given by HUMITEMP, a novel sensor containing a microprocessor for linearization, temperature compensation of humidity readings and a check of the integrity of the measurements.

The display continuously visualizes:

- Return air temperature in degrees Celsius or Fahrenheit
- Return air humidity (optional in U34 A/W)
- System status e.g. UNIT ON, ALARM, MANUAL OPERATION, etc.
- Status (ON/OFF) of each single component of the conditioner using graphic symbols:
 - Fan
 - Compressor(s)
 - Heating and dehumidification (optional)
 - Humidifier (optional)

Additionally 3 LEDs inform of:

- Presence of mains supply
- Conditioner ON/OFF
- General alarm

Parameters defining the operation of the unit are gathered in the following groups, called menus (the items in brackets are active only when the relevant options are fitted):

- **SETUP:** for standard settings recall, selection of °C/°F autorestart and remote ON/OFF
- **CONTROL PARAMETERS:** including proportional bands, selection of integral control with its integration factor and hysteresis of dehumidification.
- **ALARM THRESHOLD LEVELS:** for return air temperature and humidity (humidity is optional on the U34), plus room temperature/humidity with the optional EEAP sensor. The low pressure alarm delay is programmable. The minimum flow threshold level is selected on the control for the U34 and directly on the differential pressure switch for all other units.

- **INSTALLATION OF OPTIONAL DEVICES:** e.g. heaters, humidifier, liquistat sensor and additional room sensor.
- **SERVICE:** for intelligent manual operation including interlocking timings, electrical overload protection, monitoring of the analogue signals from the sensors and valve position.

An important feature of the controller is its ease of operation.

Short messages in English help the user through the menu. Push-buttons allow modification of all parameters, passwords at two different levels avoid unauthorized or accidental modification of the parameters and set points.

The push-buttons are also used to switch ON/OFF the unit, to silence and reset an alarm and to recall the status report.

1.11 – ELECTRICAL PANEL

The electrical panel is housed in a compartment isolated from the air stream and protected by safety locks using a special key, to prevent unauthorized access.

Additionally a plastic shield protects that part of the electrical panel which has a power supply in excess of 24 V. The electrical panel is in accordance with IEC 204-2 recommendations. The units are designed for both 380 and 415 V-3-50+N power supplies. On request a 220-240 V/3/50 power supply can be provided.

Circuit breakers with thermal protection against short circuits are supplied for the electrical apparatus. A single phase transformer for power supply to the 24 V secondary circuit is provided for maximum safety. A second winding of 10 Vac is provided to the electronic controller to galvanically isolate the control from the auxiliary circuit and to increase noise suppression.

The electrical panel is pre-arranged for installation of the optional "Liquistat".

A locking main switch is provided as standard on the safety shield and is mechanically interlocked to prevent removal of the shield whilst the switch is in the "on" position.

Automatic restart is provided after a power failure. Additional terminals are provided as standard on the electrical panel for remote start-up, report of fan and compressor operation status, or connection to external optional devices (Firestat, Smokestat, clogged filter alarm).

1.12 – PACKING

Standard packing consists of a wooden pallet and cardboard box. Polythene foam protects the unit's painted surface.

On request, a cardboard box with an additional wooden crate or wooden case for sea transport can be supplied.

1.13 – TESTS

Every unit is tested, during manufacturing and before delivery, in accordance with the Manufacturing and Inspection Plan (PFC), as provided by the company Quality Assurance System and Manual and in accordance with EN 29000 European Standards.

A Quality Test certificate is issued and supplied with the unit, guaranteeing the compliance with the applicable standards and procedures.

1.14 – APPLICATION RANGES

The Hirange units are provided for operation within the following ranges (the limits are intended for new or correctly maintained and installed units):

- Room conditions:
 - Between 18°C, 45% R.H. and 27°C, 55% R.H.
 - To prevent an excessive quantity of condensate which could lead to the presence of water drops, the latent capacity of the selected conditions (difference between total and sensible cooling capacity minus absorbed fan power) must not exceed the following values:

U24 A/W	5.2	kW
U34 A/W	5.2	kW
U35 A/W	5.2	kW
U45 A/W	6.7	kW
U55 A/W	6.7	kW
U65 A/W	11.6	kW
U75 A/W	11.6	kW

- Outdoor ambient conditions (UxxA and UxxW with rad cooler):
 - lower limit = -10°C (-25°C with Variex on the air condenser)
 - upper limit(*): see performance tables with various matched air condensers.

(*) If this limit is surpassed the compressor stops and must be manually reset before it can restart.

- Air flow:
 - min. and max. values are listed in the "available static pressure tables".

Safety devices are provided to protect the unit's components from damage in case of operation outside of the indicated limits.

- Voltage:
 - units U24A/W, U34A/W, U35A/W, U55A/W, U65A/W, U75A/W:
 - 380-415 +/- 10%,
 - 220-240 +/- 10% (optional)
 - unit U45A/W:
 - 380 +/- 10%, 415 -10+6%
 - 240 -10 +6% (optional)
- Frequency: 50 Hz
- Hot water conditions for optional heating coil:
 - max. inlet water temperature = 110°C
 - max. water head = 8.5 bar
- Max. length of piping between conditioner and air cooled condenser: 30 m equivalent.
- Max. level difference between condenser and conditioner: 3 m (when condenser is below conditioner).
- Storage conditions: between -20°C and +55°C.

The warranty is invalidated for any possible damage or malfunction that may occur during or in consequence of operation outside the "application ranges".

2 – TECHNICAL DATA AND PERFORMANCES

2.1 – HIRANGE UNDER AIR COOLED UNITS – series UxxA

TYPE		U24A	U34A	U35A
POWER SUPPLY		380/415–3–50	380/415–3–50	380/415–3–50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:				
room air conditions: 24°C DB; 50% R.H. (17°C WB)				
condensing temperature: 45°C				
total cooling capacity	kW	25.4	33.0	34.9
sensible cooling capacity	kW	23.5	31.3	33.5
total power input (fans and compressor)	kW	8.9	12.6	12.4
compressor power input	kW	6.7	9.4	9.2
compressor current input	A	11.8	15.5	15.9
fans power input	kW	2.2	3.2	3.2
fan current	A	5.7	6.3	6.3
volume air flow rate	m ³ /s	2.352	3.017	3.017
available static pressure	Pa	20	20	20
SHR (sensible/total capacity ratio)	–	0.93	0.95	0.96
EER (energy efficiency ratio, room unit only)	–	2.9	2.6	2.8
noise (SPL at 2 m free field)	dB (A)	54.5	57.4	58.0
power supply		380/3/50	380/3/50	380/3/50
FANS				
quantity	no.	1	1	1
type		15x15	15x15	15x15
poles	no.	6	6	6
COMPRESSORS				
type		hermetic	hermetic	hermetic
quantity	no.	2	1	2
nominal power	HP	3.5	10	5
refrigerant		R22	R22	R22
EVAPORATIVE COILS				
tubes/fins		copper/aluminium	copper/aluminium	copper/aluminium
quantity	no.	2	2	2
fpi		12	12	12
rows	no.	4	5	5
total face area	m ²	1.44	1.44	1.44
configuration		V	V	V
WATER CONNECTIONS				
unit discharge line (solder, ext. diameter)	mm	16	18	16
unit liquid line (solder, ext. diameter)	mm	16	16	16
advised refrigerant pipeline to the condenser (ext. diameter)	mm	18	18	18
DIMENSIONS				
length	mm	1450	1450	1450
depth	mm	750	750	750
height	mm	1950	1950	1950
footprint	m ²	1.09	1.09	1.09
WEIGHTS				
net	kg.	410	425	430
gross	kg.	430	445	450

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

TYPE		U45A	U55A
POWER SUPPLY		380/415-3-50	380/415-3-50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
condensing temperature: 45°C			
total cooling capacity	kW	43.7	52.7
sensible cooling capacity	kW	41.7	49.8
total power input (fans and compressor)	kW	17.1	19.0
compressor power input	kW	12.8	13.9
compressor current input	A	21.7	23.8
fans power input	kW	4.3	5.1
fan current	A	11.7	12.0
volume air flow rate	m ³ /s	4.375	5.250
available static pressure	Pa	20	20
SHR (sensible/total capacity ratio)	-	0.95	0.94
EER (energy efficiency ratio, room unit only)	-	2.6	2.8
noise (SPL at 2 m free field)	dB (A)	56.4	57.1
power supply		380/3/50	380/3/50
FANS			
quantity	no.	2	2
type		15x15	15x15
poles	no.	6	6
COMPRESSORS			
type		hermetic	hermetic
quantity	no.	2	2
nominal power	HP	6.5	7.5
refrigerant		R22	R22
EVAPORATIVE COILS			
tubes/fins		copper/aluminium	copper/aluminium
quantity	no.	2	2
fpi		12	12
rows	no.	4	4
total face area	m ²	2.30	2.30
configuration		inclined	V
WATER CONNECTIONS			
unit discharge line (solder, ext. diameter)	mm	18	18
unit liquid line (solder, ext. diameter)	mm	16	16
advised refrigerant pipeline to the condenser (ext. diameter)	mm	18	22
DIMENSIONS			
length	mm	2200	2200
depth	mm	750	750
height	mm	1950	1950
footprint	m ²	1.65	1.65
WEIGHTS			
net	kg.	620	650
gross	kg.	645	675

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

TYPE		U65A	U75A
POWER SUPPLY		380/415-3-50	380/415-3-50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
condensing temperature: 45°C			
total cooling capacity	kW	67.1	74.5
sensible cooling capacity	kW	65.1	71.2
total power input (fans and compressor)	kW	25.5	29.9
compressor power input	kW	18.9	23.3
compressor current input	A	31.1	38.5
fans power input	kW	6.6	6.6
fan current	A	13.0	13.0
volume air flow rate	m ³ /s	5.923	5.923
available static pressure	Pa	20	20
SHR (sensible/total capacity ratio)	-	0.97	0.96
EER (energy efficiency ratio, room unit only)	-	2.6	2.5
noise (SPL at 2 m free field)	dB (A)	61.3	61.6
power supply		380/3/50	380/3/50
FANS			
quantity	no.	2	2
type		15x15	15x15
poles	no.	6	6
COMPRESSORS			
type		hermetic	hermetic
quantity	no.	2	2
nominal power	HP	10	12
refrigerant		R22	R22
EVAPORATIVE COILS			
tubes/fins		copper/aluminium	copper/aluminium
quantity	no.	2	2
fpi		12	12
rows	no.	5	5
total face area	m ²	2.65	2.65
configuration		V	V
WATER CONNECTIONS			
unit discharge line (solder, ext. diameter)	mm	18	18
unit liquid line (solder, ext. diameter)	mm	16	16
advised refrigerant pipeline to the condenser (ext. diameter)	mm	22	28/22 (in/out)
DIMENSIONS			
length	mm	2500	2500
depth	mm	750	750
height	mm	1950	1950
footprint	m ²	1.88	1.88
WEIGHTS			
net	kg.	715	725
gross	kg.	750	760

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

2.1.1 – Performance tables

The following tables indicate the performances of the units at different condensing temperatures.

UNIT U24A

airflow [m ³ /s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RH _{in} [%]	Tout [°C]	RH _{out} [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
2.352	20	40.0	22.0	50	13.7	82	25.0	23.4	6.1	10.9	31.3
2.352	20	40.0	23.0	50	14.6	82	25.9	23.7	6.2	11.0	32.1
2.352	20	40.0	24.0	50	15.4	82	26.8	24.1	6.2	11.0	32.9
2.352	20	40.0	25.0	50	16.3	82	27.5	24.3	6.2	11.0	33.8
2.352	20	40.0	26.0	50	17.1	82	28.5	24.7	6.2	11.1	34.6
2.352	20	40.0	27.0	50	18.0	82	29.3	25.0	6.3	11.1	35.5
2.352	20	45.0	22.0	50	13.9	82	23.9	22.9	6.6	11.6	30.4
2.352	20	45.0	23.0	50	14.8	82	24.5	23.2	6.7	11.7	31.3
2.352	20	45.0	24.0	50	15.6	82	25.5	23.5	6.7	11.8	32.1
2.352	20	45.0	25.0	50	16.5	82	26.1	23.8	6.8	11.8	32.9
2.352	20	45.0	26.0	50	17.3	82	27.0	24.2	6.8	11.9	33.8
2.352	20	45.0	27.0	50	18.2	82	27.8	24.4	6.8	11.9	34.7
2.352	20	50.0	22.0	50	14.3	81	22.3	21.7	7.1	12.3	29.5
2.352	20	50.0	23.0	50	15.1	82	22.9	22.2	7.2	12.4	30.4
2.352	20	50.0	24.0	50	15.8	82	24.1	23.0	7.2	12.5	31.2
2.352	20	50.0	25.0	50	16.7	82	24.7	23.3	7.3	12.6	32.1
2.352	20	50.0	26.0	50	17.5	82	25.5	23.6	7.4	12.6	32.9
2.352	20	50.0	27.0	50	18.4	82	26.4	23.9	7.4	12.7	33.8
2.352	20	55.0	22.0	50	14.5	80	21.3	21.3	7.6	13.0	29.0
2.352	20	55.0	23.0	50	15.2	82	22.0	22.0	7.7	13.1	29.6
2.352	20	55.0	24.0	50	16.0	82	22.5	22.5	7.7	13.2	30.3
2.352	20	55.0	25.0	50	16.8	82	23.6	22.9	7.8	13.3	31.2
2.352	20	55.0	26.0	50	17.7	82	24.1	23.1	7.9	13.4	32.1
2.352	20	55.0	27.0	50	18.6	82	25.0	23.4	7.9	13.5	32.8
2.352	20	58.0	22.0	50	14.7	79	20.7	20.7	7.9	13.4	28.7
2.352	20	58.0	23.0	50	15.4	80	21.5	21.5	7.9	13.5	29.3
2.352	20	58.0	24.0	50	16.2	81	22.0	22.0	8.0	13.6	30.0
2.352	20	58.0	25.0	50	17.0	82	22.5	22.5	8.1	13.7	30.7
2.352	20	58.0	26.0	50	17.8	82	23.6	22.9	8.2	13.9	31.5
2.352	20	58.0	27.0	50	18.7	82	24.2	23.2	8.3	14.0	32.3

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34A

airflow [m ³ /s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHIn [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
3.017	20	40.0	22.0	50	13.4	85	33.0	31.3	8.7	14.5	41.7
3.017	20	40.0	23.0	50	14.2	85	34.2	31.8	8.7	14.6	42.8
3.017	20	40.0	24.0	50	15.1	85	35.1	32.1	8.8	14.7	44.0
3.017	20	40.0	25.0	50	15.9	84	36.3	32.6	8.9	14.8	45.2
3.017	20	40.0	26.0	50	16.8	84	37.5	32.9	9.0	14.9	46.4
3.017	20	40.0	27.0	50	17.7	84	38.5	33.2	9.0	15.0	47.6
3.017	20	45.0	22.0	50	13.6	85	31.0	30.5	9.2	15.2	40.1
3.017	20	45.0	23.0	50	14.5	85	31.8	30.9	9.3	15.4	41.3
3.017	20	45.0	24.0	50	15.3	85	33.0	31.3	9.4	15.5	42.4
3.017	20	45.0	25.0	50	16.2	85	34.0	31.7	9.5	15.6	43.6
3.017	20	45.0	26.0	50	17.0	85	35.3	32.2	9.6	15.7	44.7
3.017	20	45.0	27.0	50	17.9	85	36.2	32.5	9.7	15.8	45.9
3.017	20	50.0	22.0	50	14.0	83	28.9	28.9	9.8	15.9	38.7
3.017	20	50.0	23.0	50	14.7	84	29.8	29.8	9.8	16.1	39.6
3.017	20	50.0	24.0	50	15.6	84	30.6	30.2	10.0	16.2	40.8
3.017	20	50.0	25.0	50	16.4	85	32.0	31.0	10.1	16.4	42.0
3.017	20	50.0	26.0	50	17.2	85	32.8	31.4	10.2	16.5	43.1
3.017	20	50.0	27.0	50	18.1	85	34.0	31.8	10.3	16.6	44.2
3.017	20	55.0	22.0	50	14.5	80	27.3	27.3	10.3	16.7	37.6
3.017	20	55.0	23.0	50	15.2	81	28.1	28.1	10.4	16.8	38.5
3.017	20	55.0	24.0	50	16.0	82	28.8	28.8	10.5	17.0	39.5
3.017	20	55.0	25.0	50	16.7	83	29.8	29.8	10.7	17.1	40.3
3.017	20	55.0	26.0	50	17.5	84	30.7	30.4	10.8	17.3	41.3
3.017	20	55.0	27.0	50	18.3	85	31.7	31.1	10.9	17.5	42.6
3.017	20	58.0	22.0	50	14.7	79	26.3	26.3	10.7	17.1	36.9
3.017	20	58.0	23.0	50	15.5	80	27.0	27.0	10.8	17.3	37.9
3.017	20	58.0	24.0	50	16.3	81	27.8	27.8	10.9	17.5	38.8
3.017	20	58.0	25.0	50	17.0	82	28.6	28.6	11.0	17.6	39.7
3.017	20	58.0	26.0	50	17.8	83	29.4	29.4	11.2	17.8	40.6
3.017	20	58.0	27.0	50	18.5	84	30.3	30.3	11.3	17.9	41.5

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35A

airflow [m ³ /s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
3.017	20	40.0	22.0	50	12.8	88	34.7	33.3	8.5	14.7	43.0
3.017	20	40.0	23.0	50	13.7	88	35.4	33.7	8.5	14.8	44.1
3.017	20	40.0	24.0	50	14.5	88	36.8	34.2	8.6	14.9	45.2
3.017	20	40.0	25.0	50	15.4	88	37.7	34.5	8.6	15.0	46.5
3.017	20	40.0	26.0	50	16.2	88	39.0	35.0	8.7	15.1	47.6
3.017	20	40.0	27.0	50	17.1	88	40.1	35.3	8.8	15.2	48.7
3.017	20	45.0	22.0	50	13.1	88	32.7	32.3	9.1	15.7	41.7
3.017	20	45.0	23.0	50	13.9	88	33.9	33.1	9.1	15.8	42.9
3.017	20	45.0	24.0	50	14.7	88	34.9	33.5	9.2	15.9	44.0
3.017	20	45.0	25.0	50	15.6	88	36.0	33.9	9.3	16.1	45.2
3.017	20	45.0	26.0	50	16.4	88	37.0	34.3	9.4	16.2	46.3
3.017	20	45.0	27.0	50	17.3	88	38.1	34.7	9.4	16.3	47.5
3.017	20	50.0	22.0	50	13.5	86	30.9	30.9	9.6	16.7	40.7
3.017	20	50.0	23.0	50	14.2	87	31.8	31.8	9.7	16.8	41.6
3.017	20	50.0	24.0	50	15.0	88	32.8	32.4	9.8	17.0	42.7
3.017	20	50.0	25.0	50	15.8	88	33.8	33.2	9.9	17.1	43.8
3.017	20	50.0	26.0	50	16.6	88	35.1	33.6	10.0	17.3	45.0
3.017	20	50.0	27.0	50	17.5	88	36.0	34.0	10.1	17.5	46.2
3.017	20	55.0	22.0	50	13.9	83	29.5	29.5	10.2	17.7	39.6
3.017	20	55.0	23.0	50	14.6	84	30.3	30.3	10.3	17.9	40.5
3.017	20	55.0	24.0	50	15.4	85	31.1	31.1	10.4	18.0	41.5
3.017	20	55.0	25.0	50	16.2	86	31.8	31.8	10.5	18.2	42.5
3.017	20	55.0	26.0	50	16.9	87	32.6	32.6	10.6	18.4	43.4
3.017	20	55.0	27.0	50	17.7	88	33.8	33.3	10.8	18.6	44.7
3.017	20	58.0	22.0	50	14.1	82	28.5	28.5	10.6	18.3	38.9
3.017	20	58.0	23.0	50	14.9	83	29.3	29.3	10.7	18.5	39.9
3.017	20	58.0	24.0	50	15.7	84	29.9	29.9	10.8	18.7	40.8
3.017	20	58.0	25.0	50	16.4	85	30.7	30.7	10.9	18.9	41.8
3.017	20	58.0	26.0	50	17.1	86	31.8	31.8	11.0	19.1	42.7
3.017	20	58.0	27.0	50	17.9	87	32.6	32.6	11.1	19.3	43.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45A

airflow [m ³ /s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHIn [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
4.375	20	40.0	22.0	50	14.1	81	43.1	41.3	11.8	20.1	54.9
4.375	20	40.0	23.0	50	15.0	81	44.4	41.9	11.9	20.3	56.3
4.375	20	40.0	24.0	50	15.9	81	45.7	42.5	12.0	20.4	57.7
4.375	20	40.0	25.0	50	16.8	81	46.9	42.9	12.1	20.6	59.2
4.375	20	40.0	26.0	50	17.6	81	48.4	43.4	12.2	20.7	60.7
4.375	20	40.0	27.0	50	18.5	81	49.6	44.0	12.3	20.9	61.9
4.375	20	45.0	22.0	50	14.4	80	41.0	40.0	12.6	21.4	53.6
4.375	20	45.0	23.0	50	15.2	81	42.3	41.1	12.7	21.6	55.0
4.375	20	45.0	24.0	50	16.0	81	43.7	41.7	12.8	21.7	56.4
4.375	20	45.0	25.0	50	16.9	81	44.9	42.1	12.9	21.9	57.9
4.375	20	45.0	26.0	50	17.8	81	46.4	42.8	13.0	22.1	59.2
4.375	20	45.0	27.0	50	18.6	81	47.2	43.2	13.1	22.3	60.6
4.375	20	50.0	22.0	50	14.5	80	39.3	39.3	13.5	22.8	52.7
4.375	20	50.0	23.0	50	15.3	81	40.3	40.3	13.6	23.0	53.8
4.375	20	50.0	24.0	50	16.3	80	41.4	40.3	13.7	23.2	55.1
4.375	20	50.0	25.0	50	17.1	81	42.8	41.4	13.9	23.4	56.6
4.375	20	50.0	26.0	50	17.9	81	43.7	41.9	14.0	23.6	57.8
4.375	20	50.0	27.0	50	18.8	81	45.1	42.5	14.1	23.8	59.2
4.375	20	55.0	22.0	50	14.9	78	37.4	37.4	14.5	24.4	52.1
4.375	20	55.0	23.0	50	15.7	79	38.5	38.5	14.7	24.5	53.1
4.375	20	55.0	24.0	50	16.4	80	39.5	39.5	14.8	24.7	54.2
4.375	20	55.0	25.0	50	17.2	81	40.5	40.5	14.9	24.9	55.3
4.375	20	55.0	26.0	50	18.1	81	41.2	41.2	15.0	25.1	56.4
4.375	20	55.0	27.0	50	19.0	81	42.6	41.3	15.1	25.3	57.8
4.375	20	58.0	22.0	50	15.1	77	36.5	36.5	15.2	25.4	51.6
4.375	20	58.0	23.0	50	15.8	78	37.5	37.5	15.3	25.5	52.7
4.375	20	58.0	24.0	50	16.7	79	38.3	38.3	15.5	25.8	53.9
4.375	20	58.0	25.0	50	17.5	79	39.2	39.2	15.6	25.9	54.8
4.375	20	58.0	26.0	50	18.3	80	40.2	40.2	15.7	26.1	55.9
4.375	20	58.0	27.0	50	19.0	81	41.2	41.2	15.8	26.3	57.0

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55A

airflow [m³/s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHIn [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
5.250	20	40.0	22.0	50	14.0	81	52.8	50.2	12.8	22.3	65.6
5.250	20	40.0	23.0	50	14.9	81	54.5	50.8	12.9	22.5	67.4
5.250	20	40.0	24.0	50	15.8	81	56.1	51.4	13.0	22.7	69.3
5.250	20	40.0	25.0	50	16.7	81	58.0	52.0	13.1	22.8	71.1
5.250	20	40.0	26.0	50	17.5	81	59.8	52.9	13.2	22.9	73.1
5.250	20	40.0	27.0	50	18.4	81	61.2	53.5	13.3	23.1	74.6
5.250	20	45.0	22.0	50	14.3	81	49.6	48.5	13.6	23.4	63.0
5.250	20	45.0	23.0	50	15.1	81	51.1	49.4	13.8	23.6	64.9
5.250	20	45.0	24.0	50	16.1	81	52.7	49.8	13.9	23.8	66.8
5.250	20	45.0	25.0	50	16.8	81	54.5	50.9	14.0	24.0	68.6
5.250	20	45.0	26.0	50	17.6	81	57.5	52.1	14.1	24.2	70.1
5.250	20	45.0	27.0	50	18.6	81	57.6	52.1	14.3	24.3	71.9
5.250	20	50.0	22.0	50	14.6	79	46.5	46.5	14.5	24.6	60.9
5.250	20	50.0	23.0	50	15.4	80	47.7	47.7	14.6	24.8	62.5
5.250	20	50.0	24.0	50	16.3	80	49.3	48.2	14.8	25.0	64.1
5.250	20	50.0	25.0	50	17.2	80	50.0	48.6	14.9	25.2	66.1
5.250	20	50.0	26.0	50	18.4	78	51.6	47.3	15.0	25.3	66.6
5.250	20	50.0	27.0	50	18.8	81	54.0	51.0	15.2	25.6	69.3
5.250	20	55.0	22.0	50	15.1	77	43.7	43.7	15.3	25.7	59.1
5.250	20	55.0	23.0	50	15.8	78	45.0	45.0	15.5	26.0	60.6
5.250	20	55.0	24.0	50	16.6	79	46.4	46.4	15.6	26.2	62.0
5.250	20	55.0	25.0	50	17.4	80	47.4	47.4	15.8	26.4	63.3
5.250	20	55.0	26.0	50	18.1	81	48.9	48.9	15.9	26.6	64.7
5.250	20	55.0	27.0	50	19.5	78	49.8	46.4	16.0	26.8	65.7
5.250	20	58.0	22.0	50	15.3	76	42.2	42.2	15.8	26.5	57.9
5.250	20	58.0	23.0	50	16.1	77	43.5	43.5	16.0	26.7	59.4
5.250	20	58.0	24.0	50	16.9	77	44.5	44.5	16.2	26.9	60.7
5.250	20	58.0	25.0	50	17.6	78	45.9	45.9	16.3	27.2	62.0
5.250	20	58.0	26.0	50	18.4	79	47.2	47.2	16.5	27.4	63.5
5.250	20	58.0	27.0	50	19.2	80	48.3	48.3	16.7	27.6	65.1

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U65A

airflow [m³/s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHIn [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
5.923	20	40.0	22.0	50	12.9	88	66.8	64.8	17.4	29.2	84.4
5.923	20	40.0	23.0	50	13.7	88	69.1	65.8	17.6	29.4	86.6
5.923	20	40.0	24.0	50	14.6	88	71.2	66.7	17.7	29.6	89.0
5.923	20	40.0	25.0	50	15.4	88	73.3	67.4	17.9	29.8	91.5
5.923	20	40.0	26.0	50	16.3	88	76.0	68.4	18.0	29.9	93.8
5.923	20	40.0	27.0	50	17.1	88	77.7	69.2	18.1	30.1	96.0
5.923	20	45.0	22.0	50	13.2	87	62.8	62.8	18.5	30.6	81.4
5.923	20	45.0	23.0	50	13.9	88	64.4	64.4	18.7	30.8	83.3
5.923	20	45.0	24.0	50	14.8	88	67.1	65.1	18.9	31.1	85.8
5.923	20	45.0	25.0	50	15.6	88	69.2	66.0	19.1	31.3	88.1
5.923	20	45.0	26.0	50	16.5	88	71.5	66.9	19.3	31.5	90.5
5.923	20	45.0	27.0	50	17.3	88	73.1	67.6	19.4	31.7	92.7
5.923	20	50.0	22.0	50	13.7	85	59.4	59.4	19.7	32.1	79.0
5.923	20	50.0	23.0	50	14.4	86	61.0	61.0	19.9	32.3	81.0
5.923	20	50.0	24.0	50	15.1	87	62.6	62.6	20.1	32.6	82.9
5.923	20	50.0	25.0	50	15.8	88	64.6	64.6	20.2	32.8	84.7
5.923	20	50.0	26.0	50	16.8	88	66.4	64.7	20.4	33.1	86.8
5.923	20	50.0	27.0	50	17.6	88	68.5	66.0	20.7	33.4	89.3
5.923	20	55.0	22.0	50	14.2	82	55.7	55.7	20.8	33.6	76.8
5.923	20	55.0	23.0	50	14.9	83	57.5	57.5	21.1	33.9	78.6
5.923	20	55.0	24.0	50	15.6	84	59.3	59.3	21.3	34.2	80.4
5.923	20	55.0	25.0	50	16.4	85	60.9	60.9	21.5	34.5	82.2
5.923	20	55.0	26.0	50	17.1	86	62.5	62.5	21.7	34.8	84.2
5.923	20	55.0	27.0	50	17.8	87	64.1	64.1	21.9	35.1	86.2
5.923	20	58.0	22.0	50	14.4	80	53.8	53.8	21.5	34.5	75.3
5.923	20	58.0	23.0	50	15.2	81	55.4	55.4	21.8	34.9	77.2
5.923	20	58.0	24.0	50	15.9	82	57.0	57.0	22.0	35.2	78.9
5.923	20	58.0	25.0	50	16.7	83	58.6	58.6	22.3	35.5	80.8
5.923	20	58.0	26.0	50	17.4	84	60.2	60.2	22.5	35.8	82.8
5.923	20	58.0	27.0	50	18.2	85	61.8	61.8	22.7	36.2	84.8

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75A

airflow [m³/s]	available static pressure [Pa]	cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
			Tin [°C]	RHIn [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
5.923	20	40.0	22.0	50	12.0	93	73.9	70.9	21.5	36.0	95.3
5.923	20	40.0	23.0	50	12.9	93	76.1	71.9	21.7	36.3	97.7
5.923	20	40.0	24.0	50	13.7	93	78.2	72.6	22.0	36.7	100.2
5.923	20	40.0	25.0	50	14.6	92	80.2	73.3	22.2	37.0	102.8
5.923	20	40.0	26.0	50	15.4	92	82.8	74.2	22.4	37.3	105.2
5.923	20	40.0	27.0	50	16.3	92	85.0	74.9	22.6	37.6	107.9
5.923	20	45.0	22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7
5.923	20	45.0	23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1
5.923	20	45.0	24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5
5.923	20	45.0	25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0
5.923	20	45.0	26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5
5.923	20	45.0	27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0
5.923	20	50.0	22.0	50	12.8	90	65.7	65.7	24.0	39.6	90.0
5.923	20	50.0	23.0	50	13.4	91	68.2	68.2	24.3	40.0	92.4
5.923	20	50.0	24.0	50	14.2	92	69.9	69.3	24.6	40.4	94.9
5.923	20	50.0	25.0	50	15.0	92	72.3	70.4	24.9	40.8	97.2
5.923	20	50.0	26.0	50	15.9	92	74.3	71.1	25.2	41.2	99.7
5.923	20	50.0	27.0	50	16.7	92	76.9	72.0	25.5	41.6	102.2
5.923	20	55.0	22.0	50	13.2	87	62.4	62.4	25.4	41.5	87.7
5.923	20	55.0	23.0	50	14.0	88	63.9	63.9	25.7	41.9	89.7
5.923	20	55.0	24.0	50	14.7	89	65.8	65.8	26.0	42.4	92.0
5.923	20	55.0	25.0	50	15.4	91	67.9	67.9	26.3	42.8	94.5
5.923	20	55.0	26.0	50	16.1	92	70.3	69.6	26.6	43.3	96.9
5.923	20	55.0	27.0	50	16.9	92	72.2	70.4	27.0	43.7	99.4
5.923	20	58.0	22.0	50	13.5	85	60.2	60.2	26.3	42.8	86.6
5.923	20	58.0	23.0	50	14.2	87	62.1	62.1	26.5	43.2	88.4
5.923	20	58.0	24.0	50	15.0	88	63.6	63.6	26.9	43.6	90.4
5.923	20	58.0	25.0	50	15.7	89	65.7	65.7	27.2	44.1	92.6
5.923	20	58.0	26.0	50	16.4	90	67.6	67.6	27.6	44.6	95.2
5.923	20	58.0	27.0	50	17.0	92	70.3	69.7	27.9	45.1	97.5

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

The standard air condenser is equipped with a pressure switch which stops the fans when the condensing pressure decreases below the set value, due to the low ambient temperature, thus preventing too low and undesired condensing temperatures and excessive dehumidification.

For a more accurate selection of the external condenser, in order to eventually oversize it for quieter operation, with the aim of the VARIEX device (option), that reduces the condenser fans speed to maintain the fixed value of the condensing temperature, in the following tables are indicated the performances of the units, with different matched condensers, at various temperatures of the condenser air intake.

By selecting an oversized external air condenser it is possible to increase the efficiency of the unit, which results in operation at lower condensing pressures, or a substantial decrease in the noise emitted by the condenser, as explained above; this improved quietness becomes more evident in combination with lower ambient temperatures, ie. during the night, exactly when increased quietness is required.

Additionally, the oversized condenser grants an extra capacity, which can be utilized in case of unexpectedly high ambient temperatures, which may occur during very short periods of the year.

The tables which follow list the performances of the units matched with Hiross air condensers. It must be noted that all data is valid only for standard air condensers (without Variex). When the Variex is fitted the capacity of the Hirange does not reach the values shown in the tables but, conversely, the noise reduction of the external condenser is remarkable as, for a large part of the year, the fans remain off or are running at low speed.

UNIT U24A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN103 no. 2 cond. air flow [m³/s] 1.650												
2.352	30.0	50	47.4	22.0	50	14.0	82	23.2	22.6	6.9	12.0	30.0
2.352	30.0	50	48.3	24.0	50	15.7	83	24.4	23.2	7.1	12.3	31.6
2.352	30.0	50	49.2	26.0	50	17.5	82	25.8	23.7	7.3	12.5	33.1
2.352	35.0	50	52.1	22.0	50	14.2	82	22.0	22.0	7.3	12.6	29.3
2.352	35.0	50	52.8	24.0	50	16.0	82	23.1	22.4	7.5	12.9	30.7
2.352	35.0	50	53.7	26.0	50	17.7	82	24.6	23.2	7.7	13.2	32.2
2.352	40.0	50	56.7	22.0	50	14.6	80	21.0	21.0	7.8	13.2	28.8
2.352	40.0	50	57.4	24.0	50	16.1	81	22.1	22.1	8.0	13.5	30.1

AIR CONDITIONING: ACN105 no. 2 cond. air flow [m³/s] 1.640												
2.352	30.0	50	42.6	22.0	50	13.8	82	24.4	23.1	6.4	11.3	30.8
2.352	30.0	50	43.3	24.0	50	15.5	82	25.8	23.7	6.6	11.5	32.4
2.352	30.0	50	43.9	26.0	50	17.3	82	27.4	24.2	6.7	11.7	33.9
2.352	35.0	50	47.3	22.0	50	14.0	82	23.3	22.6	6.9	12.0	30.0
2.352	35.0	50	48.0	24.0	50	15.7	82	24.6	23.2	7.0	12.2	31.6
2.352	35.0	50	48.6	26.0	50	17.5	82	26.0	23.8	7.2	12.4	33.1
2.352	40.0	50	52.0	22.0	50	14.2	82	22.0	22.0	7.3	12.6	29.3
2.352	40.0	50	52.6	24.0	50	15.9	82	23.4	22.7	7.5	12.9	30.8
2.352	40.0	50	53.3	26.0	50	17.6	82	24.6	23.3	7.7	13.2	32.4

AIR CONDITIONING: ACN108 no. 2 cond. air flow [m³/s] 3.300												
2.352	30.0	50	39.1	22.0	50	13.7	82	25.4	23.5	6.1	10.8	31.4
2.352	30.0	50	39.5	24.0	50	15.4	82	26.9	24.1	6.2	10.9	33.0
2.352	30.0	50	40.0	26.0	50	17.2	82	28.4	24.6	6.3	11.1	34.7
2.352	35.0	50	43.8	22.0	50	13.9	82	24.1	23.0	6.5	11.5	30.7
2.352	35.0	50	44.4	24.0	50	15.6	82	25.5	23.6	6.7	11.7	32.2
2.352	35.0	50	44.8	26.0	50	17.3	82	27.1	24.1	6.8	11.8	33.8
2.352	40.0	50	48.6	22.0	50	14.1	82	22.8	22.2	7.0	12.1	29.8
2.352	40.0	50	49.1	24.0	50	15.8	83	24.2	23.1	7.2	12.4	31.4
2.352	40.0	50	49.6	26.0	50	17.5	82	25.7	23.7	7.3	12.6	33.0
2.352	46.0	50	54.4	22.0	50	14.4	81	21.6	21.6	7.5	12.9	29.0
2.352	46.0	50	54.8	24.0	50	16.0	82	22.6	22.6	7.7	13.2	30.4
2.352	46.0	50	55.3	26.0	50	17.7	83	24.0	23.1	7.9	13.5	32.1

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U24A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN110 no. 2 cond. air flow [m ³ /s] 3.280												
2.352	30.0	50	36.5	22.0	50	13.6	82	26.1	23.8	5.8	10.4	31.9
2.352	30.0	50	36.8	24.0	50	15.3	82	27.7	24.4	5.9	10.5	33.5
2.352	30.0	50	37.2	26.0	50	17.0	82	29.2	25.0	5.9	10.6	35.2
2.352	35.0	50	41.3	22.0	50	13.8	82	24.7	23.3	6.3	11.1	31.1
2.352	35.0	50	41.7	24.0	50	15.5	82	26.3	23.9	6.4	11.3	32.7
2.352	35.0	50	42.0	26.0	50	17.2	82	27.9	24.4	6.5	11.4	34.3
2.352	40.0	50	46.2	22.0	50	14.0	82	23.5	22.7	6.8	11.8	30.2
2.352	40.0	50	46.5	24.0	50	15.7	82	24.9	23.4	6.9	12.0	31.8
2.352	40.0	50	46.9	26.0	50	17.4	82	26.5	23.9	7.0	12.2	33.4
2.352	46.0	50	52.0	22.0	50	14.2	82	22.0	22.0	7.3	12.6	29.3
2.352	46.0	50	52.3	24.0	50	15.9	82	23.5	22.7	7.5	12.8	30.8
2.352	46.0	50	52.6	26.0	50	17.6	82	24.8	23.4	7.6	13.1	32.5
AIR CONDITIONING: ACN112 no. 2 cond. air flow [m ³ /s] 4.950												
2.352	30.0	50	36.2	22.0	50	13.6	82	26.2	23.8	5.8	10.4	31.9
2.352	30.0	50	36.5	24.0	50	15.3	82	27.7	24.4	5.8	10.5	33.6
2.352	30.0	50	36.8	26.0	50	17.0	82	29.4	25.0	5.9	10.5	35.2
2.352	35.0	50	41.0	22.0	50	13.8	82	24.9	23.3	6.3	11.1	31.1
2.352	35.0	50	41.3	24.0	50	15.5	82	26.4	23.9	6.3	11.2	32.7
2.352	35.0	50	41.7	26.0	50	17.2	82	27.9	24.5	6.4	11.3	34.4
2.352	40.0	50	45.9	22.0	50	13.9	82	23.5	22.8	6.7	11.8	30.3
2.352	40.0	50	46.1	24.0	50	15.7	82	25.1	23.4	6.9	11.9	31.9
2.352	40.0	50	46.5	26.0	50	17.4	82	26.5	24.0	7.0	12.1	33.5
2.352	46.0	50	51.7	22.0	50	14.2	82	22.1	22.1	7.3	12.5	29.3
2.352	46.0	50	52.0	24.0	50	15.9	82	23.5	22.8	7.4	12.8	30.9
2.352	46.0	50	52.3	26.0	50	17.6	82	24.9	23.4	7.6	13.0	32.5
AIR CONDITIONING: ACN115 no. 2 cond. air flow [m ³ /s] 4.920												
2.352	35.0	50	39.3	22.0	50	13.7	82	25.4	23.5	6.1	10.8	31.4
2.352	35.0	50	39.5	24.0	50	15.4	82	26.8	24.1	6.2	10.9	33.1
2.352	35.0	50	39.7	26.0	50	17.2	82	28.5	24.7	6.2	11.0	34.7
2.352	40.0	50	44.2	22.0	50	13.9	82	24.0	22.9	6.6	11.5	30.6
2.352	40.0	50	44.4	24.0	50	15.6	82	25.5	23.6	6.7	11.7	32.2
2.352	40.0	50	44.6	26.0	50	17.3	82	27.1	24.2	6.8	11.8	33.8
2.352	46.0	50	50.0	22.0	50	14.2	82	22.5	22.1	7.1	12.3	29.5
2.352	46.0	50	50.2	24.0	50	15.8	82	23.9	23.0	7.3	12.5	31.2
2.352	46.0	50	50.5	26.0	50	17.5	82	25.5	23.6	7.4	12.7	32.8

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U24A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL103 no. 2 cond. air flow [m³/s] 0.830												
2.352	30.0	50	55.4	22.0	50	14.5	80	21.3	21.3	7.6	13.0	28.9
2.352	30.0	50	56.4	24.0	50	16.1	82	22.3	22.3	7.9	13.4	30.2
2.352	30.0	50	57.7	26.0	50	17.8	82	23.5	22.8	8.1	13.8	31.6
AIR CONDITIONING: ACL105 no. 2 cond. air flow [m³/s] 0.820												
2.352	30.0	50	49.4	22.0	50	14.2	81	22.6	22.1	7.1	12.2	29.6
2.352	30.0	50	50.5	24.0	50	15.8	82	23.9	22.9	7.3	12.6	31.1
2.352	30.0	50	51.5	26.0	50	17.6	82	25.1	23.5	7.5	12.9	32.7
2.352	35.0	50	54.1	22.0	50	14.4	81	21.6	21.6	7.5	12.9	29.1
2.352	35.0	50	54.9	24.0	50	16.1	81	22.7	22.2	7.7	13.2	30.3
2.352	35.0	50	55.9	26.0	50	17.7	82	23.9	23.1	8.0	13.6	31.9
AIR CONDITIONING: ACL108 no. 2 cond. air flow [m³/s] 1.650												
2.352	30.0	50	43.5	22.0	50	13.9	82	24.1	23.0	6.5	11.4	30.7
2.352	30.0	50	44.2	24.0	50	15.6	82	25.6	23.6	6.6	11.6	32.2
2.352	30.0	50	44.8	26.0	50	17.3	82	27.1	24.1	6.8	11.8	33.8
2.352	35.0	50	48.1	22.0	50	14.1	82	22.9	22.3	6.9	12.1	29.9
2.352	35.0	50	48.7	24.0	50	15.8	82	24.4	23.1	7.1	12.3	31.4
2.352	35.0	50	49.5	26.0	50	17.5	82	25.8	23.7	7.3	12.6	33.0
2.352	40.0	50	52.9	22.0	50	14.3	81	21.8	21.8	7.4	12.7	29.2
2.352	40.0	50	53.4	24.0	50	16.0	82	23.0	22.4	7.6	13.0	30.6
2.352	40.0	50	54.1	26.0	50	17.7	82	24.5	23.2	7.8	13.3	32.2

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U24A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	

AIR CONDITIONING: ACL110 no. 2 cond. air flow [m³/s] 1.640

2.352	30.0	50	40.3	22.0	50	13.7	82	25.1	23.4	6.2	11.0	31.2
2.352	30.0	50	40.8	24.0	50	15.5	82	26.6	24.0	6.3	11.1	32.8
2.352	30.0	50	41.3	26.0	50	17.2	82	28.0	24.5	6.4	11.3	34.4
2.352	35.0	50	45.0	22.0	50	13.9	83	23.7	22.9	6.7	11.7	30.5
2.352	35.0	50	45.5	24.0	50	15.6	82	25.2	23.5	6.8	11.8	32.0
2.352	35.0	50	46.0	26.0	50	17.4	82	26.7	24.0	6.9	12.0	33.6
2.352	40.0	50	49.7	22.0	50	14.1	82	22.4	22.4	7.1	12.3	29.6
2.352	40.0	50	50.2	24.0	50	15.8	82	23.9	23.0	7.3	12.5	31.2
2.352	40.0	50	50.8	26.0	50	17.6	82	25.3	23.6	7.4	12.8	32.8
2.352	46.0	50	55.5	22.0	50	14.5	80	21.3	21.3	7.6	13.1	28.9
2.352	46.0	50	55.9	24.0	50	16.0	82	22.4	22.4	7.8	13.3	30.3
2.352	46.0	50	56.5	26.0	50	17.8	82	23.8	23.0	8.0	13.6	31.8

AIR CONDITIONING: ACL112 no. 2 cond. air flow [m³/s] 2.470

2.352	30.0	50	39.2	22.0	50	13.7	82	25.4	23.5	6.1	10.8	31.4
2.352	30.0	50	39.7	24.0	50	15.4	82	26.8	24.1	6.2	11.0	33.0
2.352	30.0	50	40.2	26.0	50	17.2	82	28.4	24.6	6.3	11.1	34.6
2.352	35.0	50	44.0	22.0	50	13.9	82	24.1	23.0	6.5	11.5	30.6
2.352	35.0	50	44.4	24.0	50	15.6	82	25.5	23.6	6.7	11.7	32.2
2.352	35.0	50	44.9	26.0	50	17.3	82	27.0	24.2	6.8	11.8	33.8
2.352	40.0	50	48.7	22.0	50	14.2	81	22.8	22.1	7.0	12.1	29.7
2.352	40.0	50	49.1	24.0	50	15.8	82	24.3	23.1	7.2	12.4	31.4
2.352	40.0	50	49.7	26.0	50	17.5	82	25.6	23.7	7.3	12.6	33.0
2.352	46.0	50	54.5	22.0	50	14.4	81	21.5	21.5	7.6	12.9	29.1
2.352	46.0	50	54.9	24.0	50	16.0	82	22.6	22.6	7.7	13.2	30.4
2.352	46.0	50	55.3	26.0	50	17.7	82	24.0	23.1	7.9	13.5	32.0

AIR CONDITIONING: ACL115 no. 2 cond. air flow [m³/s] 2.460

2.352	30.0	50	37.0	22.0	50	13.6	82	26.0	23.7	5.8	10.5	31.8
2.352	30.0	50	37.3	24.0	50	15.3	82	27.6	24.3	5.9	10.6	33.4
2.352	30.0	50	37.7	26.0	50	17.1	82	29.0	24.9	6.0	10.7	35.1
2.352	35.0	50	41.8	22.0	50	13.8	82	24.6	23.2	6.3	11.2	31.0
2.352	35.0	50	42.2	24.0	50	15.5	82	26.2	23.8	6.4	11.3	32.5
2.352	35.0	50	42.6	26.0	50	17.2	82	27.6	24.4	6.5	11.5	34.3
2.352	40.0	50	46.6	22.0	50	14.0	82	23.4	22.7	6.8	11.9	30.2
2.352	40.0	50	47.0	24.0	50	15.7	82	24.8	23.3	6.9	12.1	31.7
2.352	40.0	50	47.3	26.0	50	17.4	82	26.4	23.9	7.1	12.2	33.3
2.352	46.0	50	52.4	22.0	50	14.3	81	21.9	21.9	7.4	12.7	29.3
2.352	46.0	50	52.8	24.0	50	16.0	82	23.1	22.4	7.5	12.9	30.7
2.352	46.0	50	53.1	26.0	50	17.6	82	24.7	23.3	7.7	13.1	32.4

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	

AIR CONDITIONING: ACN108 no. 1 cond. air flow [m³/s] 3.300

3.017	30.0	50	52.3	22.0	50	14.2	82	28.3	28.3	10.0	16.3	38.4
3.017	30.0	50	53.2	24.0	50	15.8	83	29.6	29.6	10.3	16.7	40.0
3.017	30.0	50	54.1	26.0	50	17.4	85	30.9	30.9	10.7	17.1	41.6
3.017	35.0	50	56.7	22.0	50	14.6	79	26.8	26.8	10.5	17.0	37.4
3.017	35.0	50	57.6	24.0	50	16.2	81	28.2	28.2	10.9	17.4	39.0

AIR CONDITIONING: ACN110 no. 1 cond. air flow [m³/s] 3.280

3.017	30.0	50	46.2	22.0	50	13.6	85	30.4	30.4	9.3	15.4	39.7
3.017	30.0	50	47.1	24.0	50	15.4	85	32.0	31.0	9.7	15.8	41.8
3.017	30.0	50	47.9	26.0	50	17.1	85	33.9	31.7	9.9	16.2	43.8
3.017	35.0	50	50.8	22.0	50	14.0	82	28.8	28.8	9.8	16.1	38.7
3.017	35.0	50	51.6	24.0	50	15.6	84	30.2	30.2	10.1	16.5	40.4
3.017	35.0	50	52.3	26.0	50	17.4	84	31.6	30.7	10.5	16.9	42.2
3.017	40.0	50	55.4	22.0	50	14.5	80	27.2	27.2	10.4	16.8	37.7
3.017	40.0	50	56.0	24.0	50	16.0	82	28.7	28.7	10.7	17.2	39.3
3.017	40.0	50	56.8	26.0	50	17.6	83	30.0	30.0	11.0	17.6	40.9

AIR CONDITIONING: ACN112 no. 1 cond. air flow [m³/s] 4.950

3.017	30.0	50	45.5	22.0	50	13.7	84	30.7	30.1	9.3	15.3	39.9
3.017	30.0	50	46.2	24.0	50	15.4	85	32.5	31.1	9.5	15.7	42.0
3.017	30.0	50	47.1	26.0	50	17.1	85	34.2	31.8	9.9	16.1	44.1
3.017	35.0	50	50.0	22.0	50	14.0	83	29.1	29.1	9.8	16.0	38.9
3.017	35.0	50	50.7	24.0	50	15.5	85	30.6	30.6	10.0	16.3	40.5
3.017	35.0	50	51.4	26.0	50	17.3	85	32.3	31.2	10.3	16.7	42.5
3.017	40.0	50	54.6	22.0	50	14.4	81	27.5	27.5	10.3	16.6	37.8
3.017	40.0	50	55.2	24.0	50	16.0	82	28.9	28.9	10.6	17.1	39.6
3.017	40.0	50	55.9	26.0	50	17.5	84	30.3	30.3	10.9	17.4	41.2

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN115 no. 1 cond. air flow [m ³ /s] 4.920												
3.017	30.0	50	41.3	22.0	50	13.4	85	32.5	31.0	8.8	14.7	41.3
3.017	30.0	50	41.8	24.0	50	15.2	85	34.4	31.8	9.0	15.0	43.4
3.017	30.0	50	42.5	26.0	50	16.9	84	36.2	32.5	9.3	15.3	45.6
3.017	35.0	50	45.9	22.0	50	13.6	85	30.4	30.4	9.3	15.3	39.8
3.017	35.0	50	46.4	24.0	50	15.4	85	32.4	31.1	9.6	15.7	42.0
3.017	35.0	50	47.1	26.0	50	17.1	84	34.4	31.8	9.8	16.0	44.0
3.017	40.0	50	50.6	22.0	50	14.0	83	29.0	29.0	9.8	16.0	38.6
3.017	40.0	50	51.0	24.0	50	15.6	84	30.4	30.4	10.1	16.4	40.5
3.017	40.0	50	51.5	26.0	50	17.3	85	32.2	31.1	10.4	16.7	42.5
3.017	46.0	50	56.2	22.0	50	14.6	80	27.0	27.0	10.5	16.9	37.5
3.017	46.0	50	56.7	24.0	50	16.1	82	28.5	28.5	10.8	17.3	39.1
3.017	46.0	50	57.1	26.0	50	17.7	83	29.8	29.8	11.0	17.7	40.9

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	

AIR CONDITIONING: ACL110 no. 1 cond. air flow [m³/s] 1.640

3.017	30.0	50	54.9	22.0	50	14.4	81	27.5	27.5	10.3	16.7	37.7
3.017	30.0	50	55.9	24.0	50	16.0	82	28.7	28.7	10.7	17.2	39.4
3.017	30.0	50	56.9	26.0	50	17.6	83	30.0	30.0	11.0	17.6	40.9

AIR CONDITIONING: ACL112 no. 1 cond. air flow [m³/s] 2.470

3.017	30.0	50	52.4	22.0	50	14.2	82	28.3	28.3	10.0	16.3	38.3
3.017	30.0	50	53.3	24.0	50	15.8	83	29.6	29.6	10.4	16.7	39.9
3.017	30.0	50	54.3	26.0	50	17.4	85	30.8	30.8	10.7	17.2	41.6
3.017	35.0	50	56.8	22.0	50	14.6	79	26.8	26.8	10.5	17.0	37.3
3.017	35.0	50	57.7	24.0	50	16.2	81	28.1	28.1	10.9	17.4	38.9

AIR CONDITIONING: ACL115 no. 1 cond. air flow [m³/s] 2.460

3.017	30.0	50	47.4	22.0	50	13.7	84	30.0	30.0	9.5	15.6	39.4
3.017	30.0	50	48.2	24.0	50	15.5	85	31.7	30.8	9.8	15.9	41.4
3.017	30.0	50	49.1	26.0	50	17.2	84	33.4	31.5	10.1	16.4	43.4
3.017	35.0	50	51.8	22.0	50	14.1	82	28.5	28.5	10.0	16.2	38.4
3.017	35.0	50	52.6	24.0	50	15.7	84	29.8	29.8	10.3	16.6	40.2
3.017	35.0	50	53.3	26.0	50	17.3	85	31.1	31.1	10.6	17.0	41.8
3.017	40.0	50	56.4	22.0	50	14.6	80	26.8	26.8	10.5	16.9	37.5
3.017	40.0	50	57.1	24.0	50	16.1	81	28.3	28.3	10.8	17.3	39.1
3.017	40.0	50	58.0	26.0	50	17.8	83	29.5	29.5	11.2	17.8	40.7

AIR CONDITIONING: ACL120 no. 1 cond. air flow [m³/s] 3.280

3.017	30.0	50	43.4	22.0	50	13.5	85	31.6	30.7	9.0	15.0	40.6
3.017	30.0	50	44.0	24.0	50	15.3	85	33.4	31.5	9.3	15.3	42.7
3.017	30.0	50	44.8	26.0	50	17.0	84	35.3	32.1	9.6	15.7	44.8
3.017	35.0	50	48.0	22.0	50	13.8	84	29.7	29.7	9.5	15.7	39.4
3.017	35.0	50	48.6	24.0	50	15.5	84	31.3	30.5	9.8	16.0	41.2
3.017	35.0	50	49.2	26.0	50	17.2	85	33.2	31.5	10.1	16.4	43.4
3.017	40.0	50	52.6	22.0	50	14.2	82	28.2	28.2	10.1	16.3	38.3
3.017	40.0	50	53.2	24.0	50	15.8	83	29.6	29.6	10.3	16.7	40.0
3.017	40.0	50	53.7	26.0	50	17.3	85	31.0	31.0	10.6	17.1	41.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN103 no. 2 cond. air flow [m³/s] 1.650												
3.017	30.0	50	53.3	22.0	50	13.7	84	30.0	30.0	10.1	17.4	40.2
3.017	30.0	50	54.3	24.0	50	15.3	86	31.4	31.4	10.4	17.9	41.8
3.017	30.0	50	55.1	26.0	50	16.8	88	32.8	32.8	10.7	18.4	43.4
3.017	35.0	50	57.7	22.0	50	14.1	82	28.6	28.6	10.6	18.3	39.2

AIR CONDITIONING: ACN105 no. 2 cond. air flow [m³/s] 1.640												
3.017	30.0	50	46.9	22.0	50	13.1	88	32.2	32.2	9.3	16.0	41.3
3.017	30.0	50	47.6	24.0	50	14.9	88	33.6	32.8	9.5	16.5	43.3
3.017	30.0	50	48.5	26.0	50	16.5	88	35.4	33.8	9.8	17.0	45.3
3.017	35.0	50	51.6	22.0	50	13.6	85	30.6	30.6	9.9	17.0	40.5
3.017	35.0	50	52.3	24.0	50	15.1	87	32.0	32.0	10.1	17.5	42.3
3.017	35.0	50	53.0	26.0	50	16.7	89	33.4	33.4	10.4	17.9	43.9
3.017	40.0	50	56.1	22.0	50	14.0	83	29.1	29.1	10.4	18.0	39.5
3.017	40.0	50	56.9	24.0	50	15.5	85	30.5	30.5	10.7	18.5	41.1
3.017	40.0	50	57.5	26.0	50	17.1	86	32.0	32.0	11.0	19.0	42.9

AIR CONDITIONING: ACN108 no. 2 cond. air flow [m³/s] 3.300												
3.017	30.0	50	42.2	22.0	50	13.0	88	33.6	32.6	8.7	15.1	42.4
3.017	30.0	50	42.9	24.0	50	14.6	88	35.7	33.7	8.9	15.5	44.6
3.017	30.0	50	43.5	26.0	50	16.4	88	37.4	34.5	9.2	15.9	46.6
3.017	35.0	50	46.9	22.0	50	13.1	88	32.2	32.2	9.3	16.0	41.3
3.017	35.0	50	47.6	24.0	50	14.9	88	33.7	32.8	9.5	16.5	43.3
3.017	35.0	50	48.1	26.0	50	16.5	88	35.7	33.9	9.8	16.9	45.4
3.017	40.0	50	51.8	22.0	50	13.6	85	30.5	30.5	9.9	17.1	40.5
3.017	40.0	50	52.2	24.0	50	15.1	87	32.1	32.1	10.1	17.5	42.3
3.017	40.0	50	52.7	26.0	50	16.8	88	33.8	33.0	10.4	17.9	44.0
3.017	46.0	50	57.4	22.0	50	14.1	82	28.7	28.7	10.5	18.2	39.2
3.017	46.0	50	57.9	24.0	50	15.7	84	30.0	30.0	10.8	18.7	41.0

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN110 no. 2 cond. air flow [m³/s] 3.280												
3.017	30.0	50	38.9	22.0	50	12.8	88	34.9	33.4	8.3	14.4	43.2
3.017	30.0	50	39.3	24.0	50	14.5	88	36.9	34.2	8.5	14.7	45.4
3.017	30.0	50	39.8	26.0	50	16.2	88	39.1	35.0	8.7	15.0	47.7
3.017	35.0	50	43.6	22.0	50	13.0	88	33.3	32.5	8.9	15.4	42.0
3.017	35.0	50	44.0	24.0	50	14.7	88	35.3	33.6	9.1	15.7	44.3
3.017	35.0	50	44.5	26.0	50	16.4	88	36.9	34.4	9.3	16.1	46.4
3.017	40.0	50	48.4	22.0	50	13.3	87	31.6	31.6	9.5	16.4	41.1
3.017	40.0	50	48.8	24.0	50	14.9	88	33.4	32.7	9.7	16.7	43.0
3.017	40.0	50	49.3	26.0	50	16.6	88	35.3	33.7	9.9	17.1	45.1
3.017	46.0	50	54.1	22.0	50	13.8	84	29.7	29.7	10.2	17.6	40.0
3.017	46.0	50	54.5	24.0	50	15.3	86	31.4	31.4	10.4	18.0	41.7
3.017	46.0	50	54.9	26.0	50	16.8	88	32.8	32.8	10.6	18.4	43.5

AIR CONDITIONING: ACN112 no. 2 cond. air flow [m³/s] 4.950												
3.017	30.0	50	38.4	22.0	50	12.8	88	35.2	33.5	8.2	14.3	43.3
3.017	30.0	50	38.8	24.0	50	14.5	88	37.1	34.3	8.4	14.6	45.5
3.017	30.0	50	39.3	26.0	50	16.2	88	39.3	35.0	8.6	14.9	47.8
3.017	35.0	50	43.1	22.0	50	13.0	88	33.4	32.6	8.8	15.3	42.2
3.017	35.0	50	43.6	24.0	50	14.7	88	35.4	33.6	9.0	15.6	44.4
3.017	35.0	50	44.0	26.0	50	16.4	88	37.2	34.5	9.2	16.0	46.5
3.017	40.0	50	47.9	22.0	50	13.2	87	31.8	31.8	9.4	16.3	41.1
3.017	40.0	50	48.3	24.0	50	14.9	88	33.6	32.7	9.6	16.6	43.1
3.017	40.0	50	48.7	26.0	50	16.5	88	35.5	33.8	9.8	17.0	45.2
3.017	46.0	50	53.7	22.0	50	13.7	84	30.0	30.0	10.1	17.5	40.0
3.017	46.0	50	54.1	24.0	50	15.3	86	31.4	31.4	10.4	17.9	41.9
3.017	46.0	50	54.4	26.0	50	16.8	88	33.0	33.0	10.6	18.3	43.6

AIR CONDITIONING: ACN115 no. 2 cond. air flow [m³/s] 4.920												
3.017	30.0	50	36.0	22.0	50	12.7	88	35.8	33.8	7.9	13.8	43.9
3.017	30.0	50	36.3	24.0	50	14.4	88	38.0	34.6	8.1	14.1	46.1
3.017	30.0	50	36.6	26.0	50	16.1	88	40.0	35.4	8.2	14.3	48.5
3.017	35.0	50	40.8	22.0	50	12.9	88	34.3	33.1	8.6	14.8	42.8
3.017	35.0	50	41.1	24.0	50	14.6	88	36.3	34.0	8.7	15.1	45.0
3.017	35.0	50	41.5	26.0	50	16.3	88	38.1	34.8	8.9	15.4	47.1
3.017	40.0	50	45.7	22.0	50	13.1	88	32.4	32.4	9.1	15.8	41.6
3.017	40.0	50	46.0	24.0	50	14.8	88	34.5	33.3	9.3	16.1	43.8
3.017	40.0	50	46.3	26.0	50	16.5	88	36.4	34.2	9.5	16.5	45.9
3.017	46.0	50	51.5	22.0	50	13.5	85	30.7	30.7	9.8	17.0	40.4
3.017	46.0	50	51.7	24.0	50	15.0	87	32.4	32.4	10.0	17.3	42.3
3.017	46.0	50	52.0	26.0	50	16.8	88	34.0	33.1	10.3	17.7	44.2

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL108 no. 2 cond. air flow [m ³ /s] 1.650												
3.017	30.0	50	48.0	22.0	50	13.2	87	31.8	31.8	9.4	16.3	41.1
3.017	30.0	50	48.8	24.0	50	14.9	88	33.4	32.7	9.7	16.7	43.0
3.017	30.0	50	49.7	26.0	50	16.6	88	35.0	33.7	10.0	17.2	45.0
3.017	35.0	50	52.6	22.0	50	13.6	85	30.3	30.3	10.0	17.2	40.2
3.017	35.0	50	53.3	24.0	50	15.2	87	31.8	31.8	10.2	17.7	42.0
3.017	35.0	50	54.1	26.0	50	16.8	88	33.0	33.0	10.5	18.2	43.7
3.017	40.0	50	57.2	22.0	50	14.1	82	28.7	28.7	10.5	18.2	39.3
3.017	40.0	50	58.0	24.0	50	15.6	84	30.1	30.1	10.8	18.7	40.9

AIR CONDITIONING: ACL110 no. 2 cond. air flow [m ³ /s] 1.640												
3.017	30.0	50	43.8	22.0	50	13.0	88	33.2	32.5	8.9	15.4	42.0
3.017	30.0	50	44.5	24.0	50	14.7	88	34.9	33.5	9.2	15.8	44.2
3.017	30.0	50	45.2	26.0	50	16.4	88	36.9	34.3	9.4	16.2	46.1
3.017	35.0	50	48.5	22.0	50	13.3	87	31.6	31.6	9.5	16.4	41.1
3.017	35.0	50	49.1	24.0	50	14.8	89	33.0	33.0	9.7	16.8	42.9
3.017	35.0	50	49.8	26.0	50	16.6	88	35.0	33.7	10.0	17.2	45.0
3.017	40.0	50	53.2	22.0	50	13.7	84	30.1	30.1	10.0	17.3	40.1
3.017	40.0	50	53.8	24.0	50	15.2	86	31.6	31.6	10.3	17.8	41.9
3.017	40.0	50	54.4	26.0	50	16.8	88	33.0	33.0	10.6	18.3	43.6

AIR CONDITIONING: ACL112 no. 2 cond. air flow [m ³ /s] 2.470												
3.017	30.0	50	42.4	22.0	50	13.0	88	33.5	32.6	8.7	15.1	42.4
3.017	30.0	50	43.0	24.0	50	14.6	88	35.6	33.7	9.0	15.5	44.5
3.017	30.0	50	43.6	26.0	50	16.4	88	37.5	34.5	9.2	15.9	46.5
3.017	35.0	50	47.1	22.0	50	13.2	87	32.1	32.1	9.3	16.1	41.3
3.017	35.0	50	47.7	24.0	50	14.9	88	33.7	32.8	9.5	16.5	43.3
3.017	35.0	50	48.3	26.0	50	16.5	88	35.5	33.9	9.8	16.9	45.3
3.017	40.0	50	51.9	22.0	50	13.6	85	30.5	30.5	9.9	17.1	40.5
3.017	40.0	50	52.3	24.0	50	15.1	87	32.1	32.1	10.1	17.5	42.2
3.017	40.0	50	52.9	26.0	50	16.6	89	33.5	33.5	10.4	17.9	44.0
3.017	46.0	50	57.5	22.0	50	14.1	82	28.7	28.7	10.6	18.2	39.2
3.017	46.0	50	58.0	24.0	50	15.6	84	30.1	30.1	10.8	18.7	40.9

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35A

airflow [m³/s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL115 no. 2 cond. air flow [m³/s] 2.460												
3.017	30.0	50	39.5	22.0	50	12.8	88	34.6	33.3	8.4	14.5	43.1
3.017	30.0	50	39.9	24.0	50	14.5	88	36.6	34.1	8.6	14.9	45.3
3.017	30.0	50	40.4	26.0	50	16.2	88	39.0	34.9	8.8	15.2	47.5
3.017	35.0	50	44.2	22.0	50	13.0	88	33.1	32.5	9.0	15.5	41.9
3.017	35.0	50	44.7	24.0	50	14.7	88	35.0	33.5	9.2	15.9	44.1
3.017	35.0	50	45.1	26.0	50	16.4	88	36.9	34.3	9.4	16.2	46.2
3.017	40.0	50	49.0	22.0	50	13.3	87	31.5	31.5	9.5	16.5	40.9
3.017	40.0	50	49.4	24.0	50	14.8	88	33.0	33.0	9.8	16.8	42.8
3.017	40.0	50	49.9	26.0	50	16.6	88	35.0	33.6	10.0	17.3	44.9
3.017	46.0	50	54.7	22.0	50	13.9	84	29.5	29.5	10.2	17.7	39.9
3.017	46.0	50	55.2	24.0	50	15.3	86	31.2	31.2	10.5	18.1	41.6
3.017	46.0	50	55.5	26.0	50	16.9	87	32.6	32.6	10.7	18.5	43.4
AIR CONDITIONING: ACL120 no. 2 cond. air flow [m³/s] 3.280												
3.017	30.0	50	37.2	22.0	50	12.7	88	35.5	33.6	8.1	14.1	43.6
3.017	30.0	50	37.5	24.0	50	14.4	88	37.5	34.4	8.3	14.3	45.8
3.017	30.0	50	37.9	26.0	50	16.2	88	39.7	35.2	8.4	14.6	48.1
3.017	35.0	50	42.0	22.0	50	13.0	88	33.6	32.7	8.7	15.1	42.5
3.017	35.0	50	42.4	24.0	50	14.6	88	35.9	33.8	8.9	15.4	44.7
3.017	35.0	50	42.7	26.0	50	16.3	88	37.6	34.6	9.1	15.7	46.9
3.017	40.0	50	46.8	22.0	50	13.1	88	32.2	32.2	9.3	16.0	41.3
3.017	40.0	50	47.2	24.0	50	14.9	88	33.8	32.8	9.5	16.4	43.5
3.017	40.0	50	47.5	26.0	50	16.5	88	36.0	34.0	9.7	16.7	45.5
3.017	46.0	50	52.6	22.0	50	13.6	85	30.3	30.3	10.0	17.2	40.3
3.017	46.0	50	52.9	24.0	50	15.2	87	31.9	31.9	10.2	17.6	42.1
3.017	46.0	50	53.2	26.0	50	16.7	89	33.4	33.4	10.4	18.0	43.9

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN105 no. 2 cond. air flow [m ³ /s] 1.640												
4.375	30.0	50	51.5	22.0	50	14.6	79	38.7	38.7	13.8	23.2	52.5
4.375	30.0	50	52.3	24.0	50	16.3	81	40.3	40.3	14.2	23.9	54.7
4.375	30.0	50	53.3	26.0	50	18.1	81	42.0	40.8	14.6	24.6	56.8
4.375	35.0	50	56.2	22.0	50	14.9	78	37.1	37.1	14.8	24.7	51.9
4.375	35.0	50	57.1	24.0	50	16.6	79	38.7	38.7	15.2	25.4	53.9
4.375	35.0	50	57.8	26.0	50	18.2	80	40.3	40.3	15.7	26.0	55.8

AIR CONDITIONING: ACN108 no. 2 cond. air flow [m ³ /s] 3.300												
4.375	30.0	50	45.5	22.0	50	14.4	80	40.9	40.0	12.7	21.5	53.5
4.375	30.0	50	46.2	24.0	50	16.1	81	43.1	41.4	13.0	22.1	56.1
4.375	30.0	50	47.0	26.0	50	17.8	81	45.2	42.4	13.4	22.7	58.5
4.375	35.0	50	50.3	22.0	50	14.6	80	39.1	39.1	13.6	22.9	52.7
4.375	35.0	50	50.9	24.0	50	16.2	81	40.8	40.8	13.9	23.4	54.9
4.375	35.0	50	51.6	26.0	50	18.0	81	43.1	41.7	14.3	24.0	57.4
4.375	40.0	50	55.0	22.0	50	14.9	78	37.5	37.5	14.5	24.4	52.0
4.375	40.0	50	55.7	24.0	50	16.5	79	39.1	39.1	14.9	25.0	54.2
4.375	40.0	50	56.2	26.0	50	18.1	81	40.8	40.8	15.3	25.5	56.2

AIR CONDITIONING: ACN110 no. 2 cond. air flow [m ³ /s] 3.280												
4.375	30.0	50	41.2	22.0	50	14.2	81	42.7	41.1	12.0	20.4	54.6
4.375	30.0	50	41.7	24.0	50	15.9	81	44.9	42.2	12.3	20.9	57.3
4.375	30.0	50	42.2	26.0	50	17.7	81	47.4	43.1	12.6	21.3	60.1
4.375	35.0	50	45.9	22.0	50	14.4	80	40.7	39.9	12.7	21.6	53.4
4.375	35.0	50	46.5	24.0	50	16.1	81	42.9	41.4	13.1	22.2	56.1
4.375	35.0	50	46.9	26.0	50	17.8	81	45.2	42.4	13.4	22.6	58.6
4.375	40.0	50	50.8	22.0	50	14.6	80	39.0	39.0	13.6	23.0	52.5
4.375	40.0	50	51.2	24.0	50	16.2	81	40.7	40.7	14.0	23.5	54.8
4.375	40.0	50	51.8	26.0	50	18.0	81	43.1	41.6	14.3	24.1	57.3
4.375	46.0	50	56.5	22.0	50	15.0	78	37.0	37.0	14.9	24.9	51.8
4.375	46.0	50	57.1	24.0	50	16.6	79	38.7	38.7	15.2	25.4	54.0
4.375	46.0	50	57.4	26.0	50	18.2	80	40.4	40.4	15.6	25.9	56.0

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN112 no. 2 cond. air flow [m ³ /s] 4.950												
4.375	30.0	50	40.6	22.0	50	14.2	81	42.9	41.2	11.9	20.2	54.8
4.375	30.0	50	41.1	24.0	50	15.9	81	45.3	42.3	12.2	20.7	57.4
4.375	30.0	50	41.6	26.0	50	17.7	81	47.8	43.2	12.4	21.2	60.2
4.375	35.0	50	45.4	22.0	50	14.4	80	41.0	39.9	12.6	21.5	53.4
4.375	35.0	50	45.9	24.0	50	16.1	81	43.3	41.5	13.0	22.0	56.2
4.375	35.0	50	46.3	26.0	50	17.8	81	45.4	42.5	13.3	22.5	58.7
4.375	40.0	50	50.2	22.0	50	14.6	80	39.1	39.1	13.5	22.9	52.7
4.375	40.0	50	50.6	24.0	50	16.3	80	41.2	40.2	13.8	23.3	54.9
4.375	40.0	50	51.1	26.0	50	18.0	81	43.3	41.8	14.2	23.9	57.5
4.375	46.0	50	56.0	22.0	50	14.9	78	37.1	37.1	14.8	24.7	51.9
4.375	46.0	50	56.5	24.0	50	16.5	79	39.0	39.0	15.1	25.2	53.9
4.375	46.0	50	56.8	26.0	50	18.1	81	40.7	40.7	15.4	25.7	56.0
AIR CONDITIONING: ACN115 no. 2 cond. air flow [m ³ /s] 4.920												
4.375	30.0	50	37.6	22.0	50	14.1	81	44.3	41.7	11.4	19.5	55.4
4.375	30.0	50	38.0	24.0	50	15.8	81	46.6	42.8	11.7	19.9	58.3
4.375	30.0	50	38.4	26.0	50	17.6	81	49.1	43.7	11.9	20.3	61.1
4.375	35.0	50	42.4	22.0	50	14.2	81	42.3	40.9	12.2	20.7	54.3
4.375	35.0	50	42.8	24.0	50	16.0	81	44.5	42.0	12.4	21.1	57.0
4.375	35.0	50	43.2	26.0	50	17.7	81	46.9	43.0	12.7	21.6	59.8
4.375	40.0	50	47.2	22.0	50	14.4	81	40.2	40.2	13.0	22.0	53.0
4.375	40.0	50	47.6	24.0	50	16.1	81	42.5	41.2	13.3	22.5	55.8
4.375	40.0	50	47.9	26.0	50	17.9	81	44.7	42.3	13.6	22.9	58.3
4.375	46.0	50	53.1	22.0	50	14.7	79	38.2	38.2	14.1	23.7	52.2
4.375	46.0	50	53.5	24.0	50	16.4	80	39.9	39.9	14.4	24.2	54.5
4.375	46.0	50	53.7	26.0	50	18.1	81	41.9	40.8	14.7	24.7	56.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	

AIR CONDITIONING: ACL108 no. 2 cond. air flow [m³/s] 1.650

4.375	30.0	50	52.9	22.0	50	14.7	79	38.2	38.2	14.1	23.7	52.3
4.375	30.0	50	53.8	24.0	50	16.4	80	39.9	39.9	14.5	24.3	54.4
4.375	30.0	50	54.7	26.0	50	18.0	81	41.3	41.3	14.9	25.0	56.5
4.375	35.0	50	57.7	22.0	50	15.0	77	36.6	36.6	15.1	25.2	51.6

AIR CONDITIONING: ACL110 no. 2 cond. air flow [m³/s] 1.640

4.375	30.0	50	47.5	22.0	50	14.4	81	39.9	39.9	13.0	22.1	53.2
4.375	30.0	50	48.3	24.0	50	16.1	81	42.3	41.1	13.4	22.7	55.6
4.375	30.0	50	49.1	26.0	50	17.9	81	44.3	42.1	13.8	23.3	58.0
4.375	35.0	50	52.3	22.0	50	14.7	79	38.3	38.3	14.0	23.5	52.5
4.375	35.0	50	53.0	24.0	50	16.3	81	40.2	40.2	14.3	24.1	54.4
4.375	35.0	50	53.6	26.0	50	18.1	81	41.9	40.8	14.7	24.7	56.8
4.375	40.0	50	57.1	22.0	50	15.0	77	36.7	36.7	15.0	25.1	51.8
4.375	40.0	50	57.8	24.0	50	16.7	79	38.3	38.3	15.4	25.7	53.9

AIR CONDITIONING: ACL112 no. 2 cond. air flow [m³/s] 2.470

4.375	30.0	50	45.6	22.0	50	14.4	80	40.9	39.9	12.7	21.5	53.4
4.375	30.0	50	46.5	24.0	50	16.1	81	42.9	41.4	13.1	22.2	56.1
4.375	30.0	50	47.1	26.0	50	17.8	81	45.2	42.4	13.4	22.7	58.5
4.375	35.0	50	50.4	22.0	50	14.6	80	39.1	39.1	13.6	22.9	52.7
4.375	35.0	50	51.0	24.0	50	16.3	80	41.0	40.2	13.9	23.5	54.8
4.375	35.0	50	51.8	26.0	50	18.0	81	43.1	41.6	14.3	24.1	57.3
4.375	40.0	50	55.2	22.0	50	14.9	78	37.4	37.4	14.6	24.4	52.0
4.375	40.0	50	55.8	24.0	50	16.5	79	39.1	39.1	15.0	25.0	54.2
4.375	40.0	50	56.4	26.0	50	18.1	81	40.8	40.8	15.3	25.6	56.1

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL115 no. 2 cond. air flow [m ³ /s] 2.460												
4.375	30.0	50	42.0	22.0	50	14.2	81	42.3	41.0	12.1	20.6	54.4
4.375	30.0	50	42.5	24.0	50	15.9	81	44.5	42.1	12.4	21.1	57.1
4.375	30.0	50	43.1	26.0	50	17.7	81	46.9	43.0	12.7	21.6	59.8
4.375	35.0	50	46.7	22.0	50	14.3	81	40.3	40.3	12.9	21.8	53.2
4.375	35.0	50	47.3	24.0	50	16.1	81	42.7	41.2	13.2	22.4	55.8
4.375	35.0	50	47.8	26.0	50	17.8	81	44.7	42.3	13.6	22.9	58.3
4.375	40.0	50	51.5	22.0	50	14.6	79	38.7	38.7	13.8	23.3	52.5
4.375	40.0	50	52.0	24.0	50	16.2	81	40.6	40.6	14.1	23.7	54.6
4.375	40.0	50	52.5	26.0	50	18.0	81	42.8	41.5	14.5	24.3	57.1
4.375	46.0	50	57.4	22.0	50	15.0	77	36.7	36.7	15.1	25.2	51.7
4.375	46.0	50	57.8	24.0	50	16.7	79	38.3	38.3	15.4	25.7	53.9
AIR CONDITIONING: ACL120 no. 2 cond. air flow [m ³ /s] 3.280												
4.375	30.0	50	39.1	22.0	50	14.1	81	43.5	41.5	11.6	19.9	55.1
4.375	30.0	50	39.5	24.0	50	15.9	81	45.8	42.5	11.9	20.3	57.9
4.375	30.0	50	40.0	26.0	50	17.6	81	48.6	43.5	12.2	20.7	60.6
4.375	35.0	50	43.8	22.0	50	14.4	80	41.4	40.1	12.4	21.1	53.9
4.375	35.0	50	44.4	24.0	50	16.0	81	43.7	41.8	12.7	21.6	56.6
4.375	35.0	50	44.7	26.0	50	17.8	81	46.5	42.7	13.0	22.0	59.3
4.375	40.0	50	48.7	22.0	50	14.5	80	39.7	39.7	13.2	22.4	52.9
4.375	40.0	50	49.1	24.0	50	16.3	80	41.6	40.4	13.6	22.9	55.3
4.375	40.0	50	49.5	26.0	50	17.9	81	43.9	42.0	13.9	23.4	57.9
4.375	46.0	50	54.6	22.0	50	14.8	78	37.7	37.7	14.4	24.2	52.1
4.375	46.0	50	54.9	24.0	50	16.4	80	39.5	39.5	14.8	24.7	54.2
4.375	46.0	50	55.3	26.0	50	18.1	81	41.2	41.2	15.1	25.2	56.3

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN105 no. 2 cond. air flow [m ³ /s] 1.640												
5.250	30.0	50	54.3	22.0	50	15.0	77	44.1	44.1	15.2	25.6	59.4
5.250	30.0	50	55.4	24.0	50	16.6	79	46.3	46.3	15.7	26.3	61.7
5.250	30.0	50	56.3	26.0	50	18.3	80	48.1	48.1	16.2	27.0	64.2
AIR CONDITIONING: ACN108 no. 2 cond. air flow [m ³ /s] 3.300												
5.250	30.0	50	47.9	22.0	50	14.5	80	47.6	47.6	14.1	24.1	61.7
5.250	30.0	50	48.7	24.0	50	16.3	80	50.0	48.5	14.5	24.7	64.7
5.250	30.0	50	49.6	26.0	50	17.9	81	52.6	50.5	15.0	25.3	67.6
5.250	35.0	50	52.4	22.0	50	14.9	78	45.1	45.1	14.9	25.2	60.2
5.250	35.0	50	53.2	24.0	50	16.4	80	47.3	47.3	15.3	25.8	62.7
5.250	35.0	50	53.9	26.0	50	18.0	81	49.5	49.5	15.7	26.3	65.1
5.250	40.0	50	56.9	22.0	50	15.2	76	42.7	42.7	15.6	26.2	58.5
5.250	40.0	50	57.5	24.0	50	16.8	78	44.8	44.8	16.1	26.8	60.7
5.250	46.0	50	57.8	22.0	50	15.3	76	42.2	42.2	15.8	26.4	58.1
AIR CONDITIONING: ACN110 no. 2 cond. air flow [m ³ /s] 3.280												
5.250	30.0	50	43.1	22.0	50	14.2	81	50.7	49.2	13.3	23.0	64.1
5.250	30.0	50	43.8	24.0	50	15.9	81	53.8	50.5	13.7	23.5	67.3
5.250	30.0	50	44.4	26.0	50	17.7	82	55.8	51.8	14.1	24.0	70.5
5.250	35.0	50	47.6	22.0	50	14.4	80	47.8	47.8	14.0	24.0	61.8
5.250	35.0	50	48.3	24.0	50	16.1	81	50.8	49.3	14.5	24.6	64.9
5.250	35.0	50	48.9	26.0	50	17.9	81	53.4	50.6	14.8	25.1	67.9
5.250	40.0	50	52.3	22.0	50	14.8	78	45.2	45.2	14.8	25.1	60.1
5.250	40.0	50	52.9	24.0	50	16.4	80	47.5	47.5	15.3	25.7	62.8
5.250	40.0	50	53.4	26.0	50	18.0	81	49.6	49.6	15.6	26.2	65.4
5.250	46.0	50	57.9	22.0	50	15.3	76	42.2	42.2	15.8	26.4	58.0

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN112 no. 2 cond. air flow [m ³ /s] 4.950												
5.250	30.0	50	42.5	22.0	50	14.2	81	51.0	49.4	13.2	22.9	64.4
5.250	30.0	50	43.1	24.0	50	15.9	81	54.2	50.7	13.6	23.4	67.7
5.250	30.0	50	43.8	26.0	50	17.7	81	57.5	51.9	13.9	23.9	71.0
5.250	35.0	50	47.0	22.0	50	14.4	81	48.2	48.2	13.9	23.8	62.0
5.250	35.0	50	47.6	24.0	50	16.1	81	51.1	49.5	14.4	24.4	65.4
5.250	35.0	50	48.2	26.0	50	17.8	81	53.7	50.8	14.7	25.0	68.3
5.250	40.0	50	51.7	22.0	50	14.8	79	45.7	45.7	14.7	24.9	60.2
5.250	40.0	50	52.2	24.0	50	16.4	80	47.9	47.9	15.1	25.5	63.1
5.250	40.0	50	52.7	26.0	50	18.1	81	50.3	49.0	15.5	26.1	65.8
5.250	46.0	50	57.3	22.0	50	15.3	76	42.5	42.5	15.7	26.3	58.3
5.250	46.0	50	57.7	24.0	50	16.9	78	44.7	44.7	16.1	26.9	60.7

AIR CONDITIONING: ACN115 no. 2 cond. air flow [m ³ /s] 4.920												
5.250	30.0	50	39.0	22.0	50	14.0	81	53.5	50.4	12.6	22.1	66.1
5.250	30.0	50	39.5	24.0	50	15.7	81	56.8	51.7	12.9	22.5	69.5
5.250	30.0	50	40.0	26.0	50	17.5	81	59.9	52.9	13.2	22.9	73.1
5.250	35.0	50	43.7	22.0	50	14.3	81	49.9	48.4	13.4	23.1	63.7
5.250	35.0	50	44.2	24.0	50	16.0	81	53.2	50.4	13.8	23.6	67.2
5.250	35.0	50	44.6	26.0	50	17.7	81	57.4	51.6	14.1	24.1	70.4
5.250	40.0	50	48.4	22.0	50	14.5	80	47.4	47.4	14.2	24.2	61.5
5.250	40.0	50	48.8	24.0	50	16.3	80	49.9	48.5	14.6	24.7	64.7
5.250	40.0	50	49.3	26.0	50	17.9	81	52.7	50.5	14.9	25.2	67.8
5.250	46.0	50	54.1	22.0	50	15.0	78	44.3	44.3	15.2	25.5	59.4
5.250	46.0	50	54.5	24.0	50	16.5	79	46.7	46.7	15.5	26.1	62.1
5.250	46.0	50	54.8	26.0	50	18.1	81	49.0	49.0	15.9	26.6	64.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL108 no. 2 cond. air flow [m ³ /s] 1.650												
5.250	30.0	50	55.8	22.0	50	15.1	77	43.4	43.4	15.4	25.9	58.8
5.250	30.0	50	56.9	24.0	50	16.8	78	45.1	45.1	16.0	26.7	61.1
5.250	30.0	50	57.9	26.0	50	18.4	79	47.2	47.2	16.5	27.4	63.6
AIR CONDITIONING: ACL110 no. 2 cond. air flow [m ³ /s] 1.640												
5.250	30.0	50	50.1	22.0	50	14.6	79	46.4	46.4	14.5	24.6	60.9
5.250	30.0	50	51.0	24.0	50	16.2	81	48.6	48.6	14.9	25.2	63.5
5.250	30.0	50	51.8	26.0	50	18.1	81	50.6	49.2	15.4	25.8	66.4
5.250	35.0	50	54.5	22.0	50	15.0	77	44.0	44.0	15.2	25.6	59.3
5.250	35.0	50	55.4	24.0	50	16.6	79	46.1	46.1	15.7	26.3	61.9
5.250	35.0	50	56.2	26.0	50	18.3	80	48.1	48.1	16.2	26.9	64.3
AIR CONDITIONING: ACL112 no. 2 cond. air flow [m ³ /s] 2.470												
5.250	30.0	50	48.0	22.0	50	14.5	80	47.6	47.6	14.1	24.1	61.6
5.250	30.0	50	48.9	24.0	50	16.3	80	49.8	48.5	14.6	24.7	64.6
5.250	30.0	50	49.7	26.0	50	17.9	81	52.4	50.4	15.0	25.3	67.6
5.250	35.0	50	52.6	22.0	50	14.8	78	45.2	45.2	14.9	25.2	59.9
5.250	35.0	50	53.3	24.0	50	16.4	80	47.3	47.3	15.3	25.8	62.6
5.250	35.0	50	54.1	26.0	50	18.1	81	49.3	49.3	15.8	26.4	65.1
5.250	40.0	50	57.1	22.0	50	15.2	76	42.7	42.7	15.7	26.2	58.2
5.250	40.0	50	57.8	24.0	50	16.9	78	44.7	44.7	16.1	26.9	60.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL115 no. 2 cond. air flow [m ³ /s] 2.460												
5.250	30.0	50	43.9	22.0	50	14.3	81	49.8	48.4	13.4	23.2	63.6
5.250	30.0	50	44.7	24.0	50	16.0	81	52.9	50.3	13.9	23.8	67.0
5.250	30.0	50	45.3	26.0	50	17.7	81	55.6	51.6	14.2	24.2	69.9
5.250	35.0	50	48.5	22.0	50	14.5	80	47.3	47.3	14.2	24.2	61.5
5.250	35.0	50	49.1	24.0	50	16.3	81	49.7	48.5	14.6	24.8	64.5
5.250	35.0	50	49.9	26.0	50	17.9	81	52.4	50.4	15.0	25.4	67.5
5.250	40.0	50	53.1	22.0	50	14.9	78	44.9	44.9	15.0	25.3	59.8
5.250	40.0	50	53.7	24.0	50	16.5	80	47.1	47.1	15.4	25.9	62.5
5.250	40.0	50	54.3	26.0	50	18.1	81	49.3	49.3	15.8	26.4	64.9
AIR CONDITIONING: ACL120 no. 2 cond. air flow [m ³ /s] 3.280												
5.250	30.0	50	40.7	22.0	50	14.1	81	52.1	49.9	12.9	22.5	65.3
5.250	30.0	50	41.3	24.0	50	15.8	81	55.2	51.2	13.3	23.0	68.7
5.250	30.0	50	41.8	26.0	50	17.6	81	58.5	52.4	13.6	23.4	72.1
5.250	35.0	50	45.3	22.0	50	14.4	80	49.2	48.1	13.7	23.5	62.8
5.250	35.0	50	45.9	24.0	50	16.0	81	52.3	50.0	14.1	24.0	66.2
5.250	35.0	50	46.4	26.0	50	17.8	81	54.9	51.3	14.4	24.5	69.3
5.250	40.0	50	50.0	22.0	50	14.6	79	46.4	46.4	14.5	24.6	61.0
5.250	40.0	50	50.5	24.0	50	16.2	81	48.8	48.8	14.8	25.1	63.8
5.250	40.0	50	51.0	26.0	50	18.0	81	51.6	50.1	15.2	25.6	66.9
5.250	46.0	50	55.7	22.0	50	15.1	77	43.5	43.5	15.4	25.9	58.8
5.250	46.0	50	56.1	24.0	50	16.7	78	45.7	45.7	15.8	26.5	61.7
5.250	46.0	50	56.5	26.0	50	18.3	80	47.8	47.8	16.2	27.0	64.3

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U65A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN108 no. 2 cond. air flow [m ³ /s] 3.300												
5.923	30.0	50	52.5	22.0	50	13.9	83	57.6	57.6	20.2	32.8	77.8
5.923	30.0	50	53.6	24.0	50	15.5	85	60.1	60.1	20.9	33.8	81.3
5.923	30.0	50	54.5	26.0	50	17.1	86	62.7	62.7	21.6	34.6	84.5
5.923	35.0	50	56.9	22.0	50	14.3	81	54.6	54.6	21.3	34.2	75.7
5.923	35.0	50	58.0	24.0	50	15.9	82	57.0	57.0	22.0	35.2	78.9
AIR CONDITIONING: ACN110 no. 2 cond. air flow [m ³ /s] 3.280												
5.923	30.0	50	46.5	22.0	50	13.3	86	61.8	61.8	18.9	31.0	80.7
5.923	30.0	50	47.3	24.0	50	14.8	88	64.7	64.7	19.4	31.7	84.1
5.923	30.0	50	48.0	26.0	50	16.6	88	68.4	65.9	20.0	32.5	88.2
5.923	35.0	50	51.0	22.0	50	13.8	84	58.6	58.6	19.9	32.4	78.6
5.923	35.0	50	51.8	24.0	50	15.3	86	61.4	61.4	20.5	33.2	82.1
5.923	35.0	50	52.4	26.0	50	16.8	88	64.5	64.5	21.0	33.9	85.2
5.923	40.0	50	55.6	22.0	50	14.2	82	55.5	55.5	20.9	33.8	76.4
5.923	40.0	50	56.3	24.0	50	15.8	83	58.2	58.2	21.6	34.7	79.9
5.923	40.0	50	57.0	26.0	50	17.3	85	60.9	60.9	22.2	35.5	83.3
AIR CONDITIONING: ACN112 no. 2 cond. air flow [m ³ /s] 4.950												
5.923	30.0	50	45.7	22.0	50	13.3	87	62.2	62.2	18.7	30.8	81.1
5.923	30.0	50	46.4	24.0	50	14.9	88	65.6	64.1	19.2	31.5	84.8
5.923	30.0	50	47.1	26.0	50	16.6	88	68.9	66.2	19.8	32.2	88.9
5.923	35.0	50	50.3	22.0	50	13.7	84	59.3	59.3	19.7	32.1	78.8
5.923	35.0	50	50.9	24.0	50	15.2	86	62.1	62.1	20.3	32.9	82.4
5.923	35.0	50	51.6	26.0	50	16.7	88	65.0	65.0	20.8	33.6	85.8
5.923	40.0	50	54.9	22.0	50	14.2	82	55.8	55.8	20.8	33.6	76.9
5.923	40.0	50	55.6	24.0	50	15.7	84	58.7	58.7	21.4	34.4	80.4
5.923	40.0	50	56.2	26.0	50	17.2	85	61.5	61.5	22.0	35.2	83.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U65A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN115 no. 2 cond. air flow [m ³ /s] 4.920												
5.923	30.0	50	41.3	22.0	50	13.0	88	65.6	63.9	17.7	29.5	83.4
5.923	30.0	50	42.0	24.0	50	14.7	88	69.3	66.0	18.2	30.2	87.8
5.923	30.0	50	42.6	26.0	50	16.4	88	73.6	67.5	18.7	30.8	92.0
5.923	35.0	50	46.0	22.0	50	13.3	87	62.0	62.0	18.8	30.9	81.0
5.923	35.0	50	46.5	24.0	50	14.9	88	65.5	64.1	19.2	31.5	84.7
5.923	35.0	50	47.2	26.0	50	16.6	88	68.8	66.2	19.8	32.2	88.9
5.923	40.0	50	50.8	22.0	50	13.8	84	58.7	58.7	19.9	32.3	78.8
5.923	40.0	50	51.2	24.0	50	15.2	86	61.9	61.9	20.4	33.0	82.3
5.923	40.0	50	51.7	26.0	50	16.7	88	65.0	65.0	20.8	33.6	85.6
5.923	46.0	50	56.4	22.0	50	14.3	81	54.9	54.9	21.1	34.0	76.0
5.923	46.0	50	56.9	24.0	50	15.8	83	57.9	57.9	21.7	34.8	79.5
5.923	46.0	50	57.3	26.0	50	17.4	85	60.7	60.7	22.3	35.6	83.2

AIR CONDITIONING: ACN108 no. 4 cond. air flow [m ³ /s] 3.300												
5.923	30.0	50	42.0	22.0	50	13.0	88	65.2	63.7	17.8	29.7	82.9
5.923	30.0	50	42.6	24.0	50	14.7	88	68.8	65.8	18.3	30.4	87.4
5.923	30.0	50	43.3	26.0	50	16.4	88	72.8	67.3	18.8	31.0	91.7
5.923	35.0	50	46.7	22.0	50	13.4	86	61.5	61.5	18.9	31.1	80.7
5.923	35.0	50	47.2	24.0	50	14.8	88	64.8	64.8	19.4	31.7	84.2
5.923	35.0	50	47.8	26.0	50	16.6	88	68.4	65.9	19.9	32.4	88.4
5.923	40.0	50	51.3	22.0	50	13.8	84	58.4	58.4	20.0	32.5	78.5
5.923	40.0	50	51.9	24.0	50	15.3	86	61.4	61.4	20.5	33.2	82.1
5.923	40.0	50	52.3	26.0	50	16.8	88	64.5	64.5	21.0	33.8	85.4
5.923	46.0	50	57.0	22.0	50	14.3	81	54.6	54.6	21.3	34.2	75.7
5.923	46.0	50	57.5	24.0	50	15.9	83	57.3	57.3	21.9	35.0	79.2
5.923	46.0	50	58.0	26.0	50	17.4	84	60.3	60.3	22.5	35.8	82.8

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U65A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL110 no. 2 cond. air flow [m ³ /s] 1.640												
5.923	30.0	50	55.1	22.0	50	14.2	82	55.8	55.8	20.8	33.6	76.6
5.923	30.0	50	56.4	24.0	50	15.8	83	58.2	58.2	21.6	34.7	79.8
5.923	30.0	50	57.3	26.0	50	17.3	85	60.8	60.8	22.3	35.6	83.0
AIR CONDITIONING: ACL112 no. 2 cond. air flow [m ³ /s] 2.470												
5.923	30.0	50	52.8	22.0	50	13.9	83	57.4	57.4	20.3	32.9	77.8
5.923	30.0	50	53.8	24.0	50	15.5	85	60.1	60.1	21.0	33.8	81.0
5.923	30.0	50	54.7	26.0	50	17.1	86	62.6	62.6	21.6	34.7	84.3
5.923	35.0	50	57.2	22.0	50	14.4	81	54.2	54.2	21.3	34.3	75.8
AIR CONDITIONING: ACL115 no. 2 cond. air flow [m ³ /s] 2.460												
5.923	30.0	50	47.6	22.0	50	13.4	86	61.0	61.0	19.1	31.4	80.2
5.923	30.0	50	48.3	24.0	50	14.9	88	64.1	64.1	19.6	32.0	83.5
5.923	30.0	50	49.2	26.0	50	16.8	88	66.9	64.9	20.3	32.8	87.4
5.923	35.0	50	52.1	22.0	50	13.8	84	58.0	58.0	20.1	32.7	77.9
5.923	35.0	50	52.8	24.0	50	15.4	85	60.9	60.9	20.7	33.5	81.4
5.923	35.0	50	53.6	26.0	50	17.0	87	63.4	63.4	21.4	34.3	84.9
5.923	40.0	50	56.7	22.0	50	14.3	81	54.6	54.6	21.2	34.1	76.0
5.923	40.0	50	57.3	24.0	50	15.9	83	57.4	57.4	21.8	35.0	79.2
AIR CONDITIONING: ACL120 no. 2 cond. air flow [m ³ /s] 3.280												
5.923	30.0	50	43.5	22.0	50	13.0	88	63.8	63.8	18.2	30.2	82.1
5.923	30.0	50	44.2	24.0	50	14.8	88	67.7	65.3	18.7	30.8	86.3
5.923	30.0	50	44.9	26.0	50	16.5	88	71.6	66.7	19.2	31.5	90.5
5.923	35.0	50	48.2	22.0	50	13.5	85	60.6	60.6	19.3	31.5	79.9
5.923	35.0	50	48.7	24.0	50	15.0	88	63.7	63.7	19.7	32.2	83.4
5.923	35.0	50	49.4	26.0	50	16.8	88	66.8	64.9	20.3	32.9	87.3
5.923	40.0	50	52.9	22.0	50	13.9	83	57.3	57.3	20.3	33.0	77.7
5.923	40.0	50	53.4	24.0	50	15.5	85	60.2	60.2	20.9	33.7	81.4
5.923	40.0	50	53.9	26.0	50	17.0	87	63.3	63.3	21.4	34.4	84.6

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN108 no. 2 cond. air flow [m ³ /s] 3.300												
5.923	30.0	50	55.4	22.0	50	13.3	87	61.9	61.9	25.5	41.7	87.7
5.923	30.0	50	56.4	24.0	50	14.9	88	64.6	64.6	26.4	42.9	91.2
5.923	30.0	50	57.7	26.0	50	16.3	91	68.1	68.1	27.4	44.5	95.3
AIR CONDITIONING: ACN110 no. 2 cond. air flow [m ³ /s] 3.280												
5.923	30.0	50	48.5	22.0	50	12.6	91	67.3	67.3	23.7	39.0	90.9
5.923	30.0	50	49.4	24.0	50	14.2	92	70.8	69.6	24.5	40.2	95.1
5.923	30.0	50	50.3	26.0	50	15.9	92	74.0	71.1	25.3	41.3	99.6
5.923	35.0	50	53.1	22.0	50	13.1	88	63.7	63.7	24.8	40.7	88.3
5.923	35.0	50	53.9	24.0	50	14.5	90	67.1	67.1	25.7	41.9	92.7
5.923	35.0	50	54.9	26.0	50	16.1	92	70.1	69.7	26.6	43.3	97.0
5.923	40.0	50	57.8	22.0	50	13.5	85	60.4	60.4	26.2	42.7	86.7
AIR CONDITIONING: ACN112 no. 2 cond. air flow [m ³ /s] 4.950												
5.923	30.0	50	47.6	22.0	50	12.5	91	67.9	67.9	23.4	38.7	91.3
5.923	30.0	50	48.5	24.0	50	14.1	93	71.4	70.0	24.2	39.8	95.6
5.923	30.0	50	49.3	26.0	50	15.8	92	75.1	71.4	25.0	40.9	100.1
5.923	35.0	50	52.2	22.0	50	13.0	88	64.1	64.1	24.6	40.4	88.8
5.923	35.0	50	53.1	24.0	50	14.4	91	67.6	67.6	25.5	41.6	93.2
5.923	35.0	50	53.9	26.0	50	16.0	92	71.2	70.0	26.3	42.8	97.5
5.923	40.0	50	56.9	22.0	50	13.4	86	61.1	61.1	25.9	42.3	87.0
5.923	40.0	50	57.5	24.0	50	15.0	88	63.9	63.9	26.7	43.4	90.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACN115 no. 2 cond. air flow [m ³ /s] 4.920												
5.923	30.0	50	42.7	22.0	50	12.2	93	71.9	70.0	22.2	37.0	93.8
5.923	30.0	50	43.4	24.0	50	13.9	93	75.6	71.6	22.8	37.9	98.4
5.923	30.0	50	44.0	26.0	50	15.6	92	79.4	73.0	23.5	38.8	103.1
5.923	35.0	50	47.4	22.0	50	12.5	91	67.9	67.9	23.4	38.7	91.5
5.923	35.0	50	48.1	24.0	50	14.1	93	71.7	70.1	24.1	39.6	95.9
5.923	35.0	50	48.7	26.0	50	15.8	92	75.8	71.5	24.8	40.6	100.3
5.923	40.0	50	52.1	22.0	50	13.0	88	64.1	64.1	24.6	40.3	88.9
5.923	40.0	50	52.7	24.0	50	14.4	91	68.0	68.0	25.4	41.5	93.3
5.923	40.0	50	53.4	26.0	50	16.0	92	71.6	70.1	26.2	42.6	97.8
5.923	46.0	50	57.8	22.0	50	13.5	85	60.4	60.4	26.2	42.7	86.7
AIR CONDITIONING: ACN110 no. 4 cond. air flow [m ³ /s] 3.280												
5.923	30.0	50	41.6	22.0	50	12.1	93	72.4	70.4	21.9	36.6	94.6
5.923	30.0	50	42.2	24.0	50	13.8	92	76.7	71.9	22.5	37.4	99.0
5.923	30.0	50	42.7	26.0	50	15.6	92	80.7	73.3	23.1	38.3	103.7
5.923	35.0	50	46.3	22.0	50	12.3	92	68.8	68.8	23.1	38.2	92.1
5.923	35.0	50	46.9	24.0	50	14.0	92	72.9	70.4	23.8	39.2	96.5
5.923	35.0	50	47.4	26.0	50	15.8	92	76.8	71.9	24.5	40.1	101.1
5.923	40.0	50	51.0	22.0	50	12.8	89	65.2	65.2	24.3	39.9	89.4
5.923	40.0	50	51.5	24.0	50	14.2	92	69.2	68.9	25.0	41.0	93.9
5.923	40.0	50	52.1	26.0	50	16.0	92	72.9	70.5	25.8	42.0	98.5
5.923	46.0	50	56.7	22.0	50	13.4	86	61.0	61.0	25.9	42.3	87.2
5.923	46.0	50	57.1	24.0	50	14.9	88	64.3	64.3	26.6	43.2	90.7
5.923	46.0	50	57.7	26.0	50	16.3	91	68.0	68.0	27.5	44.5	95.3
AIR CONDITIONING: ACN112 no. 4 cond. air flow [m ³ /s] 4.950												
5.923	30.0	50	39.3	22.0	50	12.0	93	74.2	71.2	21.3	35.8	95.8
5.923	30.0	50	39.7	24.0	50	13.7	93	78.4	72.7	21.9	36.6	100.4
5.923	30.0	50	40.2	26.0	50	15.4	92	82.4	74.2	22.5	37.4	105.3
5.923	35.0	50	44.0	22.0	50	12.2	93	70.6	69.6	22.5	37.4	93.3
5.923	35.0	50	44.5	24.0	50	13.9	93	74.6	71.3	23.1	38.3	97.8
5.923	35.0	50	44.9	26.0	50	15.7	92	79.0	72.7	23.7	39.1	102.5
5.923	40.0	50	48.8	22.0	50	12.6	91	67.2	67.2	23.7	39.1	90.7
5.923	40.0	50	49.2	24.0	50	14.1	93	70.8	69.8	24.4	40.1	95.3
5.923	40.0	50	49.7	26.0	50	15.8	92	74.6	71.3	25.1	41.1	100.0
5.923	46.0	50	54.5	22.0	50	13.2	87	62.7	62.7	25.2	41.3	87.9
5.923	46.0	50	54.9	24.0	50	14.7	89	65.9	65.9	26.0	42.3	92.1
5.923	46.0	50	55.3	26.0	50	16.1	92	70.0	69.5	26.7	43.4	96.7

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75A

airflow [m ³ /s]	OUTDOOR AIR		cond. temp. [°C]	INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. [kW]
	Tair [°C]	RH [%]		Tin [°C]	RHin [%]	Tout [°C]	RHout [%]	Total [kW]	Sens. [kW]	power [kW]	current [A]	
AIR CONDITIONING: ACL112 no. 2 cond. air flow [m ³ /s] 2.470												
5.923	30.0	50	55.6	22.0	50	13.3	87	62.0	62.0	25.5	41.8	87.3
5.923	30.0	50	56.7	24.0	50	14.9	88	64.4	64.4	26.5	43.1	91.1
5.923	30.0	50	57.9	26.0	50	16.4	90	67.7	67.7	27.5	44.6	95.2
AIR CONDITIONING: ACL115 no. 2 cond. air flow [m ³ /s] 2.460												
5.923	30.0	50	49.8	22.0	50	12.7	90	66.4	66.4	24.0	39.5	90.1
5.923	30.0	50	50.7	24.0	50	14.2	92	69.7	69.2	24.8	40.7	94.4
5.923	30.0	50	51.8	26.0	50	15.9	92	73.0	70.6	25.7	41.9	98.7
5.923	35.0	50	54.4	22.0	50	13.2	87	62.6	62.6	25.2	41.3	88.1
5.923	35.0	50	55.1	24.0	50	14.7	89	65.8	65.8	26.0	42.4	91.9
5.923	35.0	50	56.2	26.0	50	16.1	92	69.5	69.2	27.0	43.8	96.1
AIR CONDITIONING: ACL120 no. 2 cond. air flow [m ³ /s] 3.280												
5.923	30.0	50	45.2	22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.6
5.923	30.0	50	46.0	24.0	50	14.0	93	73.5	70.8	23.5	38.8	97.0
5.923	30.0	50	46.7	26.0	50	15.7	92	77.3	72.2	24.3	39.9	101.5
5.923	35.0	50	49.9	22.0	50	12.8	90	65.8	65.8	24.0	39.5	90.1
5.923	35.0	50	50.5	24.0	50	14.2	92	70.0	69.3	24.7	40.6	94.4
5.923	35.0	50	51.3	26.0	50	15.9	92	73.7	70.7	25.5	41.7	98.9
5.923	40.0	50	54.5	22.0	50	13.2	87	62.6	62.6	25.2	41.3	88.0
5.923	40.0	50	55.1	24.0	50	14.7	89	65.8	65.8	26.0	42.4	91.9
5.923	40.0	50	55.9	26.0	50	16.1	92	69.4	69.3	26.9	43.7	96.4

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

2.2 – HIRANGE UNDER WATER OR GLYCOL-COOLED UNITS – series UxxW

TYPE	U24W	U34W	U35W
POWER SUPPLY	380/415-3-50	380/415-3-50	380/415-3-50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 15°C			
condensing temperature: 40°C			
total cooling capacity	kW 26.8	35.1	36.8
sensible cooling capacity	kW 24.1	32.1	34.2
total power input (fans and compressor)	kW 8.4	12.0	11.8
compressor power input	kW 6.2	8.8	8.6
compressor current input	A 11.0	14.7	14.9
fans power input	kW 2.2	3.2	3.2
fans current	A 5.7	6.3	6.3
volume air flow rate	m ³ /s 2.352	3.017	3.017
available static pressure	Pa 20	20	20
water flow rate	l/s 0.283	0.391	0.422
water pressure drop	kPa 3	5	6
SHR (sensible/total capacity ratio)	— 0.90	0.92	0.93
EER (energy efficiency ratio, room unit only)	— 3.2	2.9	3.1
noise (SPL at 2 m free field)	dB (A) 54.5	57.4	58.0
power supply	380/3/50	380/3/50	380/3/50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 30°C			
condensing temperature: 45°C			
total cooling capacity	kW 25.4	33.0	34.9
sensible cooling capacity	kW 23.5	31.3	33.5
total power input (fans and compressor)	kW 8.9	12.6	12.4
compressor power input	kW 6.7	9.4	9.2
compressor current input	A 11.8	15.5	15.9
fans power input	kW 2.2	3.2	3.2
fans current	A 5.7	6.3	6.3
volume air flow rate	m ³ /s 2.352	3.017	3.017
available static pressure	Pa 20	20	20
water flow rate	l/s 0.587	0.832	0.933
water pressure drop	kPa 11	21	27
SHR (sensible/total capacity ratio)	— 0.93	0.95	0.96
EER (energy efficiency ratio, room unit only)	— 2.9	2.6	2.8
noise (SPL at 2 m free field)	dB (A) 54.5	57.4	58.0
power supply	380/3/50	380/3/50	380/3/50
FANS			
quantity	n. 1	1	1
type	15x15	15x15	15x15
poles	n. 6	6	6
COMPRESSOR			
type	hermetic	hermetic	hermetic
quantity	no. 2	1	2
nominal power	HP 3.5	10	5
refrigerant	R22	R22	R22
EVAPORATIVE COIL			
tubes/fins	copper/aluminium	copper/aluminium	copper/aluminium
quantity	2	2	2
fpi	12	12	12
rows	n. 4	5	5
total face area	m ² 1.44	1.44	1.44
configuration	V	V	V
CONDENSER			
type		stainless steel plate heat exchanger	
quantity	2	1	2
WATER CONNECTIONS			
inlet and discharge lines, female GAS	inch 1	1	1
DIMENSIONS			
length	mm 1450	1450	1450
depth	mm 750	750	750
height	mm 1950	1950	1950
footprint	m ² 1.09	1.09	1.09
WEIGHTS			
net	kg. 426	442	447
gross	kg. 446	462	467

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

TYPE		U45W	U55W
POWER SUPPLY		380/415-3-50	380/415-3-50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 15°C			
condensing temperature: 40°C			
total cooling capacity	kW	45.7	56.1
sensible cooling capacity	kW	42.5	51.4
total power input (fans and compressor)	kW	16.3	18.1
compressor power input	kW	12.0	13.0
compressor current input	A	20.4	22.7
fans power input	kW	4.3	5.1
fans current	A	11.7	12.0
volume air flow rate	m ³ /s	4.375	5.250
available static pressure	Pa	20	20
water flow rate	l/s	0.511	0.598
water pressure drop	kPa	5	3
SHR (sensible/total capacity ratio)	-	0.93	0.92
EER (energy efficiency ratio, room unit only)	-	2.8	3.1
noise (SPL at 2 m free field)	dB (A)	56.4	57.1
power supply		380/3/50	380/3/50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 30°C			
condensing temperature: 45°C			
total cooling capacity	kW	43.7	52.7
sensible cooling capacity	kW	41.7	49.8
total power input (fans and compressor)	kW	17.1	19.0
compressor power input	kW	12.8	13.9
compressor current input	A	21.7	23.8
fans power input	kW	4.3	5.1
fans current	A	11.7	12.0
volume air flow rate	m ³ /s	4.375	5.250
available static pressure	Pa	20	20
water flow rate	l/s	1.167	1.242
water pressure drop	kPa	24	14
SHR (sensible/total capacity ratio)	-	0.95	0.94
EER (energy efficiency ratio, room unit only)	-	2.6	2.8
noise (SPL at 2 m free field)	dB (A)	56.4	57.1
power supply		380/3/50	380/3/50
FANS			
quantity	n.	2	2
type		15x15	15x15
poles	n.	6	6
COMPRESSOR			
type		hermetic	hermetic
quantity	no.	2	2
nominal power	HP	6.5	7.5
refrigerant		R22	R22
EVAPORATIVE COIL			
tubes/fins		copper/aluminium	copper/aluminium
quantity		2	2
fpi		12	12
rows	n.	4	4
total face area	m ²	2.30	2.30
configuration		V	V
CONDENSER			
type		stainless steel plate heat exchanger	
quantity		1	2
WATER CONNECTIONS			
inlet and discharge lines, female GAS	inch	1	1
DIMENSIONS			
length	mm	2200	2200
depth	mm	750	750
height	mm	1950	1950
footprint	m ²	1.65	1.65
WEIGHTS			
net	kg.	646	677
gross	kg.	671	702

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

TYPE		U65W	U75W
POWER SUPPLY		380/415-3-50	380/415-3-50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 15°C			
condensing temperature: 40°C			
total cooling capacity	kW	71.2	78.2
sensible cooling capacity	kW	66.7	72.6
total power input (fans and compressor)	kW	24.3	28.6
compressor power input	kW	17.7	22.0
compressor current input	A	29.6	36.7
fans power input	kW	6.6	6.6
fans current	A	13.0	13.0
volume air flow rate	m ³ /s	5.923	5.923
available static pressure	Pa	20	20
water flow rate	l/s	0.792	0.857
water pressure drop	kPa	5	4
SHR (sensible/total capacity ratio)	-	0.94	0.93
EER (energy efficiency ratio, room unit only)	-	2.9	2.7
noise (SPL at 2 m free field)	dB (A)	61.3	61.6
power supply		380/3/50	380/3/50
PERFORMANCE CHARACTERISTICS AT STANDARD RATING CONDITIONS OF:			
room air conditions: 24°C DB; 50% R.H. (17°C WB)			
inlet water temperature: 30°C			
condensing temperature: 45°C			
total cooling capacity	kW	67.1	74.5
sensible cooling capacity	kW	65.1	71.2
total power input (fans and compressor)	kW	25.5	29.9
compressor power input	kW	18.9	23.3
compressor current input	A	31.1	38.5
fans power input	kW	6.6	6.6
fans current	A	13.0	13.0
volume air flow rate	m ³ /s	5.923	5.923
available static pressure	Pa	20	20
water flow rate	l/s	1.694	1.809
water pressure drop	kPa	22	16
SHR (sensible/total capacity ratio)	-	0.97	0.96
EER (energy efficiency ratio, room unit only)	-	2.6	2.5
noise (SPL at 2 m free field)	dB (A)	61.3	61.6
power supply		380/3/50	380/3/50
FANS			
quantity	n.	2	2
type		15x15	15x15
poles	n.	6	6
COMPRESSOR			
type		hermetic	hermetic
quantity	no.	2	2
nominal power	HP	10	12
refrigerant		R22	R22
EVAPORATIVE COIL			
tubes/fins		copper/aluminium	copper/aluminium
quantity		2	2
fpi		12	12
rows	n.	5	5
total face area	m ²	2.65	2.65
configuration		V	V
CONDENSER			
type		stainless steel plate heat exchanger	
quantity		2	2
WATER CONNECTIONS			
inlet and discharge lines, female GAS	inch	1	1
DIMENSIONS			
length	mm	2500	2500
depth	mm	750	750
height	mm	1950	1950
footprint	m ²	1.88	1.88
WEIGHTS			
net	kg.	740	750
gross	kg.	775	785

Cooling capacities do not take into account the heat removed from the fan motors, which must be added to the system heat load.

2.2.1 – Performance tables

The following tables indicate the performances of the units at different condensing temperatures.

UNIT U24W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 2.352 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	13.7	82	25.0	23.4	6.1	10.9	31.3	0.257	2
23.0	50	14.6	82	25.9	23.7	6.2	11.0	32.1	0.265	2
24.0	50	15.4	82	26.8	24.1	6.2	11.0	32.9	0.274	2
25.0	50	16.3	82	27.5	24.3	6.2	11.0	33.8	0.283	3
26.0	50	17.1	82	28.5	24.7	6.2	11.1	34.6	0.292	3
27.0	50	18.0	82	29.3	25.0	6.3	11.1	35.5	0.301	3

UNIT U24W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 2.352 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	13.9	82	23.9	22.9	6.6	11.6	30.4	0.546	10
23.0	50	14.8	82	24.5	23.2	6.7	11.7	31.3	0.570	10
24.0	50	15.6	82	25.5	23.5	6.7	11.8	32.1	0.592	11
25.0	50	16.5	82	26.1	23.8	6.8	11.8	32.9	0.613	12
26.0	50	17.3	82	27.0	24.2	6.8	11.9	33.8	0.638	13
27.0	50	18.2	82	27.8	24.4	6.8	11.9	34.7	0.663	14

UNIT U34W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	13.4	85	33.0	31.3	8.7	14.5	41.7	0.354	4
23.0	50	14.2	85	34.2	31.8	8.7	14.6	42.8	0.366	4
24.0	50	15.1	85	35.1	32.1	8.8	14.7	44.0	0.379	5
25.0	50	15.9	84	36.3	32.6	8.9	14.8	45.2	0.392	5
26.0	50	16.8	84	37.5	32.9	9.0	14.9	46.4	0.405	5
27.0	50	17.7	84	38.5	33.2	9.0	15.0	47.6	0.418	5

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	13.6	85	31.0	30.5	9.2	15.2	40.1	0.772	18
23.0	50	14.5	85	31.8	30.9	9.3	15.4	41.3	0.806	20
24.0	50	15.3	85	33.0	31.3	9.4	15.5	42.4	0.838	21
25.0	50	16.2	85	34.0	31.7	9.5	15.6	43.6	0.873	23
26.0	50	17.0	85	35.3	32.2	9.6	15.7	44.7	0.905	25
27.0	50	17.9	85	36.2	32.5	9.7	15.8	45.9	0.941	26

UNIT U35W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	12.8	88	34.7	33.3	8.5	14.7	43.0	0.384	5
23.0	50	13.7	88	35.4	33.7	8.5	14.8	44.1	0.397	5
24.0	50	14.5	88	36.8	34.2	8.6	14.9	45.2	0.409	5
25.0	50	15.4	88	37.7	34.5	8.6	15.0	46.5	0.424	6
26.0	50	16.2	88	39.0	35.0	8.7	15.1	47.6	0.437	6
27.0	50	17.1	88	40.1	35.3	8.8	15.2	48.7	0.450	7

UNIT U35W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	13.1	88	32.7	32.3	9.1	15.7	41.7	0.867	23
23.0	50	13.9	88	33.9	33.1	9.1	15.8	42.9	0.904	25
24.0	50	14.7	88	34.9	33.5	9.2	15.9	44.0	0.938	27
25.0	50	15.6	88	36.0	33.9	9.3	16.1	45.2	0.975	30
26.0	50	16.4	88	37.0	34.3	9.4	16.2	46.3	1.010	32
27.0	50	17.3	88	38.1	34.7	9.4	16.3	47.5	1.049	34

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 4.375 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	14.1	81	43.1	41.3	11.8	20.1	54.9	0.480	4
23.0	50	15.0	81	44.4	41.9	11.9	20.3	56.3	0.496	5
24.0	50	15.9	81	45.7	42.5	12.0	20.4	57.7	0.511	5
25.0	50	16.8	81	46.9	42.9	12.1	20.6	59.2	0.528	5
26.0	50	17.6	81	48.4	43.4	12.2	20.7	60.7	0.545	6
27.0	50	18.5	81	49.6	44.0	12.3	20.9	61.9	0.559	6

UNIT U45W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 4.375 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	14.4	80	41.0	40.0	12.6	21.4	53.6	1.082	21
23.0	50	15.2	81	42.3	41.1	12.7	21.6	55.0	1.126	23
24.0	50	16.0	81	43.7	41.7	12.8	21.7	56.4	1.167	24
25.0	50	16.9	81	44.9	42.1	12.9	21.9	57.9	1.211	26
26.0	50	17.8	81	46.4	42.8	13.0	22.1	59.2	1.254	28
27.0	50	18.6	81	47.2	43.2	13.1	22.3	60.6	1.295	30

UNIT U55W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 5.250 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	14.0	81	52.8	50.2	12.8	22.3	65.6	0.540	3
23.0	50	14.9	81	54.5	50.8	12.9	22.5	67.4	0.559	3
24.0	50	15.8	81	56.1	51.4	13.0	22.7	69.3	0.579	3
25.0	50	16.7	81	58.0	52.0	13.1	22.8	71.1	0.598	3
26.0	50	17.5	81	59.8	52.9	13.2	22.9	73.1	0.620	4
27.0	50	18.4	81	61.2	53.5	13.3	23.1	74.6	0.636	4

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 5.250 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	14.3	81	49.6	48.5	13.6	23.4	63.0	1.149	12
23.0	50	15.1	81	51.1	49.4	13.8	23.6	64.9	1.200	13
24.0	50	16.1	81	52.7	49.8	13.9	23.8	66.8	1.252	15
25.0	50	16.8	81	54.5	50.9	14.0	24.0	68.6	1.302	16
26.0	50	17.6	81	57.5	52.1	14.1	24.2	70.1	1.343	17
27.0	50	18.6	81	57.6	52.1	14.3	24.3	71.9	1.394	18

UNIT U65W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	12.9	88	66.8	64.8	17.4	29.2	84.4	0.718	4
23.0	50	13.7	88	69.1	65.8	17.6	29.4	86.6	0.742	4
24.0	50	14.6	88	71.2	66.7	17.7	29.6	89.0	0.768	5
25.0	50	15.4	88	73.3	67.4	17.9	29.8	91.5	0.796	5
26.0	50	16.3	88	76.0	68.4	18.0	29.9	93.8	0.821	5
27.0	50	17.1	88	77.7	69.2	18.1	30.1	96.0	0.846	6

UNIT U65W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	14.3	81	49.6	48.5	13.6	23.4	63.0	1.149	12
23.0	50	15.1	81	51.1	49.4	13.8	23.6	64.9	1.200	13
24.0	50	16.1	81	52.7	49.8	13.9	23.8	66.8	1.252	15
25.0	50	16.8	81	54.5	50.9	14.0	24.0	68.6	1.302	16
26.0	50	17.6	81	57.5	52.1	14.1	24.2	70.1	1.343	17
27.0	50	18.6	81	57.6	52.1	14.3	24.3	71.9	1.394	18

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75W

Inlet water temperature 15°C, condensing temperature 40°C, STD air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	12.0	93	73.9	70.9	21.5	36.0	95.3	0.779	3
23.0	50	12.9	93	76.1	71.9	21.7	36.3	97.7	0.803	3
24.0	50	13.7	93	78.2	72.6	22.0	36.7	100.2	0.830	4
25.0	50	14.6	92	80.2	73.3	22.2	37.0	102.8	0.857	4
26.0	50	15.4	92	82.8	74.2	22.4	37.3	105.2	0.883	4
27.0	50	16.3	92	85.0	74.9	22.6	37.6	107.9	0.911	4

UNIT U75W

Inlet water temperature 30°C, condensing temperature 45°C, STD air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	WATER SIDE	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow l/s	Pres.drop kPa
22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7	1.693	14
23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1	1.757	15
24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5	1.823	17
25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0	1.891	18
26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5	1.961	19
27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0	2.031	20

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

2.2.2 – Water cooled UxxW with rad-cooler system

UxxW units can also be used in a closed water circuit, where an external cooler (named Rad cooler) cools the water thanks to the outdoor ambient air.

For a correct rad cooler sizing the Hirange's heat rejection, indicated in UxxW performance tables, must be compared with the capacity of the rad cooler at the same water flow required by the Hirange's water condenser.

The rad cooler selected must equal or exceed the capacity referred to the difference between the condenser inlet temperature (T1 in performance tables and equivalent to the rad cooler outlet temperature) and the design maximum outdoor temperature.

For a given maximum ambient temperature, by choosing a lower condensing temperature, it is possible to increase the unit's capacity and efficiency, and thus a bigger rad cooler is required; conversely, by choosing higher condensing temperatures, we lose some cooling capacity and efficiency of the Hirange but can provide a smaller and cheaper rad cooler. The following example explains this point:

Input data:	
Hirange unit	U24 W
room conditions	22°C 50%
airflow (standard value)	2.352 m ³ /s
max design ambient temperature	32°C
glycol mixture	30% (weight)

1st alternative:

We suppose, for instance, that Tcond = 55°C

We read the Hirange capacities:

total capacity	21.3 kW
sens capacity	21.3 kW

We check if these capacities satisfy our request and then we read the corresponding:

water flow	0.94 l/s
condenser inlet temp. (T1)	43°C
unit pressure drop	30 kPa
heat rejection	29.0 kW

We calculate: $T1 - T_{\max \text{ design ambient}} = 43 - 32 = 11^\circ\text{C}$.

We enter into the Rad cooler performance tables with a mixture flow 0.94 l/s. We find (or, in other cases, interpolate) the cooling capacity.

The ARN 109 gives a capacity of 16.1 kW: less than the heat rejection, not enough.

The ARN 118 gives a capacity of 37.0 kW: more than the heat rejection, acceptable.

We read the corresponding pressure drop of the ARN 118 (22 kPa), to be added to the room unit pressure drop (30kPa) for the selection of the water pumps (also add the foreseen pressure drops in the water piping between the Hirange unit and rad cooler and in the eventual 2 or 3-way water valve).

2nd alternative:

We suppose, for instance, that Tcond = 50°C

We read the Hirange capacities:

total capacity	22.3 kW
sens capacity	21.7 kW

We read the corresponding:

water flow	0.98 l/s
condenser inlet temp. (T1)	38°C
unit pressure drop	32 kPa
heat rejection	29.5 kW

We calculate: $T1 - T_{\max \text{ design ambient}} = 38 - 32 = 6^\circ\text{C}$

We enter into the Rad cooler performance tables with a water flow 0.98 l/s. We find (or, in cases, interpolate) the cooling capacity.

The ARN 118 gives a capacity of 20.8 kW: less than the heat rejection, not enough.

The ARN 127 gives a capacity of 35.8 kW: more than the heat rejection, acceptable. We read the corresponding pressure drop of the ARN 127 (13 kPa)

Conclusion:

With 1st alternative we can reach:

total cooling	21.3 kW
sens. cooling	21.3 kW

using:

one ARN 118 with 0.94 l/s water flow (30% glycol) and 52 kPa pressure drop.

With 2nd alternative we can reach:

total cooling	22.3 kW
sens. cooling	21.7 kW

using:

one ARN 127 with 0.98 l/s water flow (30% glycol) and 45 kPa pressure drop.

The choice should be made on the basis of relevant prices and technical performances. Additionally, the noise aspects of the two rad coolers should be taken into account.

Note that the indicated capacities are those reachable at the maximum design ambient temperature.

The standard rad cooler is equipped with a thermostat which stops the fans when the inlet water temperature is low enough (below 28°C), due to the low ambient air temperature.

The rad cooler can also be provided with the optional Variex, which reduces the fan speed (and consequently the noise) when the water temperature decreases, ie. during the night or in cold seasons.

Please note that, when the Variex is active, this tends to stabilize the water temperature: consequently, as the ambient air temperature decreases, the water and condensing temperatures drop only partially and thus the total capacity of the Hirange tends to be limited; conversely, the noise reduction on the rad cooler is remarkable as, for a large part of the year, the fans remain off or are running at low speed.

For the application where the ambient temperature decreases below 10°C it is suggested to install a water regulating valve (a 3-way type allows correct operation of the water pump) to prevent excessively low condensing and consequently evaporating temperatures, which could cause excessive dehumidification or the risk of the coil freezing.

2.2.3 – Water–glycol cooled with rad cooler system

UNIT U24W

Std air flow rate 2.352 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RH _{in} %	T _{out} °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa
Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C														
22.0	50	13.9	82	23.9	22.9	6.6	11.6	30.4	0.93	28	1.02	35	1.11	43
23.0	50	14.8	82	24.5	23.2	6.7	11.7	31.3	0.96	31	1.06	38	1.17	47
24.0	50	15.6	82	25.4	23.5	6.7	11.8	32.1	0.99	32	1.09	40	1.20	49
25.0	50	16.5	82	26.1	23.8	6.8	11.8	32.9	1.04	35	1.14	43	1.25	54
26.0	50	17.3	82	27.0	24.2	6.8	11.9	33.8	1.07	38	1.19	47	1.31	59
27.0	50	18.2	82	27.8	24.4	6.8	11.9	34.7	1.11	41	1.24	52	1.37	65
Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C														
22.0	50	14.3	81	22.3	21.7	7.1	12.3	29.5	.89	26	.98	32	1.07	40
23.0	50	15.1	82	22.9	22.2	7.2	12.4	30.4	.92	28	1.02	35	1.12	43
24.0	50	15.8	82	24.1	23.0	7.2	12.5	31.2	.95	29	1.05	37	1.15	45
25.0	50	16.7	82	24.7	23.3	7.3	12.6	32.1	1.00	32	1.10	40	1.20	50
26.0	50	17.5	82	25.5	23.6	7.4	12.6	32.9	1.03	35	1.14	43	1.26	54
27.0	50	18.4	82	26.4	23.9	7.4	12.7	33.8	1.07	38	1.19	48	1.32	59
Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C														
22.0	50	14.5	80	21.3	21.3	7.6	13.0	29.0	.86	24	.94	30	1.03	37
23.0	50	15.2	81	22.0	22.0	7.7	13.1	29.6	.89	26	.98	32	1.08	40
24.0	50	16.0	82	22.5	22.5	7.7	13.2	30.3	.92	27	1.01	34	1.11	42
25.0	50	16.8	82	23.6	22.9	7.8	13.3	31.2	.96	30	1.06	37	1.16	46
26.0	50	17.7	82	24.1	23.1	7.9	13.4	32.1	.99	32	1.10	40	1.21	50
27.0	50	18.6	82	25.0	23.4	7.9	13.5	32.8	1.03	35	1.15	44	1.27	55
Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C														
22.0	50	14.7	79	20.7	20.7	7.9	13.4	28.7	.84	23	.92	29	1.01	35
23.0	50	15.4	80	21.5	21.5	7.9	13.5	29.3	.87	25	.96	31	1.06	38
24.0	50	16.2	81	22.0	22.0	8.0	13.6	30.0	.90	26	.99	33	1.09	40
25.0	50	17.0	82	22.5	22.5	8.1	13.7	30.7	.94	29	1.04	35	1.13	44
26.0	50	17.8	82	23.6	22.9	8.2	13.9	31.5	.97	31	1.08	38	1.18	48
27.0	50	18.7	82	24.2	23.2	8.3	14.0	32.3	1.01	33	1.12	42	1.24	53

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U34W

Std air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR			heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RHIn %	Tout °C	RHout %	total kW	sensible kW	power kW	current A	flow rate l/s		Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	

Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C

22.0	50	13.6	85	31.0	30.5	9.2	15.2	40.1	1.27	52	1.43	66	1.60	83
23.0	50	14.5	85	31.8	30.9	9.3	15.4	41.3	1.32	54	1.48	70	1.65	89
24.0	50	15.3	85	33.0	31.3	9.4	15.5	42.4	1.36	58	1.53	75	1.72	95
25.0	50	16.2	85	34.0	31.7	9.5	15.6	43.6	1.39	61	1.58	80	1.77	102
26.0	50	17.0	85	35.3	32.2	9.6	15.7	44.7	1.44	65	1.63	85	1.84	109
27.0	50	17.9	85	36.2	32.5	9.7	15.8	45.9	1.48	68	1.68	90	1.90	117

Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C

22.0	50	14.0	83	28.9	28.9	9.8	15.9	38.7	1.22	48	1.37	60	1.54	77
23.0	50	14.7	84	29.8	29.8	9.8	16.1	39.6	1.27	50	1.42	65	1.59	82
24.0	50	15.6	84	30.6	30.2	10.0	16.2	40.8	1.31	53	1.47	69	1.65	87
25.0	50	16.4	85	32.0	31.0	10.1	16.4	42.0	1.34	56	1.52	73	1.70	94
26.0	50	17.2	85	32.8	31.4	10.2	16.5	43.1	1.38	59	1.57	78	1.76	100
27.0	50	18.1	85	34.0	31.8	10.3	16.6	44.2	1.42	63	1.62	83	1.83	108

Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C

22.0	50	14.5	80	27.3	27.3	10.3	16.7	37.6	1.18	44	1.32	56	1.48	71
23.0	50	15.2	81	28.1	28.1	10.4	16.8	38.5	1.22	46	1.37	60	1.53	76
24.0	50	16.0	82	28.8	28.8	10.5	17.0	39.5	1.26	49	1.42	64	1.59	81
25.0	50	16.7	83	29.8	29.8	10.7	17.1	40.3	1.29	52	1.46	68	1.64	87
26.0	50	17.5	84	30.7	30.4	10.8	17.3	41.3	1.33	55	1.51	72	1.70	93
27.0	50	18.3	85	31.7	31.1	10.9	17.5	42.6	1.37	58	1.56	77	1.76	100

Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C

22.0	50	14.7	79	26.3	26.3	10.7	17.1	36.9	1.15	42	1.29	54	1.45	68
23.0	50	15.5	80	27.0	27.0	10.8	17.3	37.9	1.19	44	1.34	57	1.50	73
24.0	50	16.3	81	27.8	27.8	10.9	17.5	38.8	1.23	47	1.39	61	1.56	77
25.0	50	17.0	82	28.6	28.6	11.0	17.6	39.7	1.26	50	1.43	65	1.60	83
26.0	50	17.8	83	29.4	29.4	11.2	17.8	40.6	1.30	53	1.48	69	1.66	89
27.0	50	18.5	84	30.3	30.3	11.3	17.9	41.5	1.34	55	1.53	74	1.72	96

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U35W

Std air flow rate 3.017 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa

Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C

22.0	50	13.1	88	32.7	32.3	9.1	15.7	41.7	1.43	66	1.62	87	1.84	114
23.0	50	13.9	88	33.9	33.1	9.1	15.8	42.9	1.46	69	1.67	93	1.89	121
24.0	50	14.7	88	34.9	33.5	9.2	15.9	44.0	1.50	73	1.72	97	1.95	129
25.0	50	15.6	88	36.0	33.9	9.3	16.1	45.2	1.53	76	1.77	103	2.02	136
26.0	50	16.4	88	37.0	34.3	9.4	16.2	46.3	1.58	80	1.83	109	2.08	146
27.0	50	17.3	88	38.1	34.7	9.4	16.3	47.5	1.61	83	1.87	115	2.15	155

Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C

22.0	50	13.5	86	30.9	30.9	9.6	16.7	40.7	1.37	60	1.56	80	1.76	105
23.0	50	14.2	87	31.8	31.8	9.7	16.8	41.6	1.40	64	1.61	85	1.82	111
24.0	50	15.0	88	32.8	32.4	9.8	17.0	42.7	1.44	67	1.65	90	1.88	119
25.0	50	15.8	88	33.8	33.2	9.9	17.1	43.8	1.47	70	1.70	95	1.94	125
26.0	50	16.6	88	35.1	33.6	10.0	17.3	45.0	1.52	73	1.75	100	2.00	134
27.0	50	17.5	88	36.0	34.0	10.1	17.5	46.2	1.55	77	1.80	106	2.07	143

Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C

22.0	50	13.9	83	29.5	29.5	10.2	17.7	39.6	1.32	56	1.50	74	1.70	97
23.0	50	14.6	84	30.3	30.3	10.3	17.9	40.5	1.35	59	1.55	79	1.75	103
24.0	50	15.4	85	31.1	31.1	10.4	18.0	41.5	1.39	62	1.59	83	1.81	110
25.0	50	16.2	86	31.8	31.8	10.5	18.2	42.5	1.42	65	1.64	88	1.87	116
26.0	50	16.9	87	32.6	32.6	10.6	18.4	43.4	1.46	68	1.69	93	1.93	124
27.0	50	17.7	88	33.8	33.3	10.8	18.6	44.7	1.49	71	1.73	98	1.99	132

Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C

22.0	50	14.1	82	28.5	28.5	10.6	18.3	38.9	1.29	54	1.47	71	1.66	93
23.0	50	14.9	83	29.3	29.3	10.7	18.5	39.9	1.32	56	1.52	76	1.71	98
24.0	50	15.7	84	29.9	29.9	10.8	18.7	40.8	1.36	59	1.56	79	1.77	105
25.0	50	16.4	85	30.7	30.7	10.9	18.9	41.8	1.39	62	1.60	84	1.83	111
26.0	50	17.1	86	31.8	31.8	11.0	19.1	42.7	1.43	65	1.65	89	1.89	119
27.0	50	17.9	87	32.6	32.6	11.1	19.3	43.7	1.46	68	1.69	94	1.95	126

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U45W

Std air flow rate 4.375 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR			GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin	RHin	Tout	RHout	total	sensible	power	current	heat rej.	flow rate	Pres. drop	flow rate	Pres. drop	flow rate	Pres. drop
°C	%	°C	%	kW	kW	kW	A	kW	l/s	kPa	l/s	kPa	l/s	kPa
Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C														
22.0	50	14.4	80	41.0	40.0	12.6	21.4	53.6	1.76	57	2.00	76	2.26	99
23.0	50	15.2	81	42.3	41.1	12.7	21.6	55.0	1.81	61	2.07	81	2.35	106
24.0	50	16.0	81	43.7	41.7	12.8	21.7	56.4	1.86	64	2.14	86	2.43	114
25.0	50	16.9	81	44.9	42.1	12.9	21.9	57.9	1.91	67	2.21	92	2.52	122
26.0	50	17.8	81	46.4	42.8	13.0	22.1	59.2	1.96	71	2.27	97	2.60	130
27.0	50	18.6	81	47.2	43.2	13.1	22.3	60.6	2.00	74	2.33	102	2.68	138
Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C														
22.0	50	14.5	80	39.3	39.3	13.5	22.8	52.7	1.72	55	1.96	73	2.21	94
23.0	50	15.3	81	40.3	40.3	13.6	23.0	53.8	1.77	58	2.01	77	2.28	100
24.0	50	16.3	80	41.4	40.3	13.7	23.2	55.1	1.82	61	2.08	81	2.36	107
25.0	50	17.1	81	42.8	41.4	13.9	23.4	56.6	1.87	64	2.15	87	2.45	115
26.0	50	17.9	81	43.7	41.9	14.0	23.6	57.8	1.91	67	2.21	92	2.52	122
27.0	50	18.8	81	45.1	42.5	14.1	23.8	59.2	1.96	71	2.27	97	2.60	130
Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C														
22.0	50	14.9	78	37.4	37.4	14.5	24.4	52.1	1.70	53	1.93	70	2.18	91
23.0	50	15.7	79	38.5	38.5	14.7	24.5	53.1	1.75	56	1.99	74	2.24	96
24.0	50	16.4	80	39.5	39.5	14.8	24.7	54.2	1.79	59	2.04	78	2.31	102
25.0	50	17.2	81	40.5	40.5	14.9	24.9	55.3	1.83	61	2.10	82	2.38	108
26.0	50	18.1	81	41.2	41.2	15.0	25.1	56.4	1.87	64	2.15	86	2.44	114
27.0	50	19.0	81	42.6	41.3	15.1	25.3	57.8	1.92	67	2.22	92	2.53	122
Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C														
22.0	50	15.1	77	36.5	36.5	15.2	25.4	51.6	1.69	52	1.91	69	2.15	89
23.0	50	15.8	78	37.5	37.5	15.3	25.5	52.7	1.73	55	1.97	73	2.22	94
24.0	50	16.7	79	38.3	38.3	15.5	25.8	53.9	1.78	58	2.03	77	2.29	100
25.0	50	17.5	79	39.2	39.2	15.6	25.9	54.8	1.81	60	2.07	80	2.35	105
26.0	50	18.3	80	40.2	40.2	15.7	26.1	55.9	1.85	63	2.13	84	2.42	111
27.0	50	19.0	81	41.2	41.2	15.8	26.3	57.0	1.89	65	2.18	89	2.48	117

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U55W

Std air flow rate 5.250 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR			heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RH _{in} %	Tout °C	RH _{out} %	total kW	sensible kW	power kW	current A	flow rate l/s		Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	
Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C															
22.0	50	14.3	81	49.6	48.5	13.6	23.4	63.0	1.90	35	2.11	43	2.31	54	
23.0	50	15.1	81	51.1	49.4	13.8	23.6	64.9	1.98	38	2.18	47	2.41	59	
24.0	50	16.1	81	52.7	49.8	13.9	23.8	66.8	2.04	40	2.26	50	2.49	63	
25.0	50	16.8	81	54.5	50.9	14.0	24.0	68.6	2.10	42	2.33	54	2.58	67	
26.0	50	17.6	81	57.5	52.1	14.1	24.2	70.1	2.13	43	2.37	55	2.62	69	
27.0	50	18.6	81	57.6	52.1	14.3	24.3	71.9	2.21	47	2.46	60	2.74	75	
Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C															
22.0	50	14.6	79	46.5	46.5	14.5	24.6	60.9	1.83	32	2.02	40	2.22	50	
23.0	50	15.4	80	47.7	47.7	14.6	24.8	62.5	1.90	35	2.10	43	2.31	54	
24.0	50	16.3	80	49.3	48.2	14.8	25.0	64.1	1.96	37	2.17	46	2.40	58	
25.0	50	17.2	80	50.0	48.6	14.9	25.2	66.1	2.01	39	2.24	50	2.48	62	
26.0	50	18.4	78	51.6	47.3	15.0	25.3	66.6	2.04	40	2.27	51	2.52	64	
27.0	50	18.8	81	54.0	51.0	15.2	25.6	69.3	2.13	43	2.37	55	2.64	69	
Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C															
22.0	50	15.1	77	43.7	43.7	15.3	25.7	59.1	1.76	30	1.95	37	2.14	46	
23.0	50	15.8	78	45.0	45.0	15.5	26.0	60.6	1.83	32	2.02	40	2.23	50	
24.0	50	16.6	79	46.4	46.4	15.6	26.2	62.0	1.89	34	2.09	43	2.31	54	
25.0	50	17.4	80	47.4	47.4	15.8	26.4	63.3	1.94	36	2.16	46	2.39	57	
26.0	50	18.1	81	48.9	48.9	15.9	26.6	64.7	1.97	37	2.19	47	2.43	59	
27.0	50	19.5	78	49.8	46.4	16.0	26.8	65.7	2.05	40	2.28	51	2.54	64	
Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C															
22.0	50	15.3	76	42.2	42.2	15.8	26.5	57.9	1.72	29	1.91	35	2.09	44	
23.0	50	16.1	77	43.5	43.5	16.0	26.7	59.4	1.79	31	1.98	38	2.18	48	
24.0	50	16.9	77	44.5	44.5	16.2	26.9	60.7	1.85	33	2.04	41	2.26	52	
25.0	50	17.6	78	45.9	45.9	16.3	27.2	62.0	1.90	34	2.11	44	2.34	54	
26.0	50	18.4	79	47.2	47.2	16.5	27.4	63.5	1.93	35	2.14	45	2.38	56	
27.0	50	19.2	80	48.3	48.3	16.7	27.7	65.1	2.00	38	2.23	49	2.48	61	

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U65W

Std air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR			heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RHin %	Tout °C	RHout %	total kW	sensible kW	power kW	current A	flow rate l/s		Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	
Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C															
22.0	50	13.2	87	62.8	62.8	18.5	30.6	81.4	2.60	53	2.93	68	3.26	87	
23.0	50	13.9	88	64.4	64.4	18.7	30.8	83.3	2.69	56	3.02	73	3.38	93	
24.0	50	14.8	88	67.1	65.1	18.9	31.1	85.8	2.78	60	3.13	79	3.51	100	
25.0	50	15.6	88	69.2	66.0	19.1	31.3	88.1	2.85	63	3.23	83	3.62	107	
26.0	50	16.5	88	71.5	66.9	19.3	31.5	90.5	2.94	67	3.24	88	3.76	115	
27.0	50	17.3	88	73.1	67.6	19.4	31.7	92.7	3.01	70	3.43	94	3.88	122	
Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C															
22.0	50	13.7	85	59.4	59.4	19.7	32.1	79.0	2.50	49	2.81	63	3.13	80	
23.0	50	14.4	86	61.0	61.0	19.9	32.3	81.0	2.58	52	2.91	67	3.25	85	
24.0	50	15.1	87	62.6	62.6	20.1	32.6	82.9	2.67	55	3.01	72	3.37	92	
25.0	50	15.8	88	64.6	64.6	20.2	32.8	84.7	2.74	58	3.10	77	3.48	98	
26.0	50	16.8	88	66.4	64.7	20.4	33.1	86.8	2.82	62	3.21	81	3.61	106	
27.0	50	17.6	88	68.5	66.0	20.7	33.4	89.3	2.90	65	3.30	86	3.73	112	
Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C															
22.0	50	14.2	82	55.7	55.7	20.8	33.6	76.8	2.41	45	2.71	58	3.02	74	
23.0	50	14.9	83	57.5	57.5	21.1	33.9	78.6	2.49	48	2.80	62	3.13	79	
24.0	50	15.6	84	59.3	59.3	21.3	34.2	80.4	2.57	51	2.90	67	3.25	85	
25.0	50	16.4	85	60.9	60.9	21.5	34.5	82.2	2.64	54	2.99	71	3.35	91	
26.0	50	17.1	86	62.5	62.5	21.7	34.8	84.2	2.72	57	3.09	75	3.48	98	
27.0	50	17.8	87	64.1	64.1	21.9	35.1	86.2	2.79	60	3.18	80	3.59	104	
Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C															
22.0	50	14.4	80	53.8	53.8	21.5	34.5	75.3	2.36	43	2.65	55	2.95	71	
23.0	50	15.2	81	55.4	55.4	21.8	34.9	77.2	2.44	46	2.74	59	3.06	76	
24.0	50	15.9	82	57.0	57.0	22.0	35.2	78.9	2.51	49	2.84	64	3.18	81	
25.0	50	16.7	83	58.6	58.6	22.3	35.5	80.8	2.58	52	2.92	68	3.28	87	
26.0	50	17.4	84	60.2	60.2	22.5	35.8	82.8	2.66	54	3.02	72	3.40	94	
27.0	50	18.2	85	61.8	61.8	22.7	36.2	84.8	2.73	57	3.11	76	3.51	99	

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

UNIT U75W

Std air flow rate 5.923 m³/s

INDOOR AIR				CAPACITY		COMPRESSOR		heat rej. kW	GLYCOL 20%		GLYCOL 30%		GLYCOL 40%	
Tin °C	RH _{in} %	T _{out} °C	RH _{out} %	total kW	sensible kW	power kW	current A		flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa	flow rate l/s	Pres. drop kPa
Condensing temperature: 45°C; water glycol temperature to the condenser (T1): 33°C														
22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7	2.84	42	3.14	53	3.47	66
23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1	2.93	45	3.25	56	3.60	70
24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5	3.03	48	3.38	60	3.75	76
25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0	3.14	52	3.51	66	3.91	82
26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5	3.25	55	3.65	70	4.06	89
27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0	3.36	59	3.78	75	4.22	96
Condensing temperature: 50°C; water glycol temperature to the condenser (T1): 38°C														
22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7	2.84	42	3.14	53	3.47	66
23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1	2.93	45	3.25	56	3.60	70
24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5	3.03	48	3.38	60	3.75	76
25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0	3.14	52	3.51	66	3.91	82
26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5	3.25	55	3.65	70	4.06	89
27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0	3.36	59	3.78	75	4.22	96
Condensing temperature: 55°C; water glycol temperature to the condenser (T1): 43°C														
22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7	2.84	42	3.14	53	3.47	66
23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1	2.93	45	3.25	56	3.60	70
24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5	3.03	48	3.38	60	3.75	76
25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0	3.14	52	3.51	66	3.91	82
26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5	3.25	55	3.65	70	4.06	89
27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0	3.36	59	3.78	75	4.22	96
Condensing temperature: 58°C; water glycol temperature to the condenser (T1): 46°C														
22.0	50	12.3	93	69.9	69.2	22.8	37.8	92.7	2.84	42	3.14	53	3.47	66
23.0	50	13.1	93	72.2	70.3	23.0	38.1	95.1	2.93	45	3.25	56	3.60	70
24.0	50	13.9	93	74.5	71.2	23.3	38.5	97.5	3.03	48	3.38	60	3.75	76
25.0	50	14.8	92	76.5	71.9	23.5	38.8	100.0	3.14	52	3.51	66	3.91	82
26.0	50	15.7	92	78.5	72.6	23.8	39.2	102.5	3.25	55	3.65	70	4.06	89
27.0	50	16.5	92	81.2	73.5	24.0	39.5	105.0	3.36	59	3.78	75	4.22	96

Cooling capacities and air outlet temperatures do not take into account the heat removed from the fan motors, which must be added to the system heat load.

2.2.4 – Rad cooler performance tables

ARN/ARV* performance with glycol–water mixture percentage (in weight): 20%

MODEL	mixture flow (l/s)	pressure drop (kPa)	Rad cooler heat rejection (kW) at various values of $T_1 - T_{max}$ design ambient (°C)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ARN/ ARV 109	0.30	2	3.1	4.7	6.3	7.9	9.4	11.0	12.6	14.1	15.7	17.3	18.8	20.4	22.0	23.6
	0.40	4	3.1	4.7	6.2	7.8	9.3	10.9	12.4	14.0	15.5	17.1	18.6	20.2	21.7	23.3
	0.50	5	3.1	4.6	6.2	7.7	9.2	10.8	12.3	13.9	15.4	16.9	18.5	20.0	21.6	23.1
	0.60	8	3.1	4.6	6.1	7.7	9.2	10.7	12.2	13.8	15.3	16.8	18.4	19.9	21.4	23.0
	0.70	10	3.0	4.6	6.1	7.6	9.1	10.6	12.2	13.7	15.2	16.7	18.2	19.8	21.3	22.8
	0.80	13	3.0	4.5	6.0	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.7
	0.90	16	3.0	4.5	6.0	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.7
	1.00	19	3.0	4.5	6.0	7.6	9.1	10.6	12.1	13.6	15.1	16.6	18.1	19.6	21.1	22.7
	1.10	22	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
	1.20	26	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
	1.30	30	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
	1.40	35	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5
1.50	39	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	
ARN/ ARV 118	0.30	3	9.3	14.0	18.6	23.3	27.9	32.6	37.2	41.9	46.5	51.2	55.8	60.5	65.1	69.8
	0.40	4	8.5	12.7	16.9	21.2	25.4	29.6	33.8	38.1	42.3	46.5	50.8	55.0	59.2	63.5
	0.50	6	7.9	11.9	15.9	19.9	23.8	27.8	31.8	35.7	39.7	43.7	47.6	51.6	55.6	59.6
	0.60	9	7.6	11.4	15.2	19.1	22.9	26.7	30.5	34.3	38.1	41.9	45.7	49.5	53.3	57.2
	0.70	12	7.4	11.0	14.7	18.4	22.1	25.8	29.4	33.1	36.8	40.5	44.2	47.8	51.5	55.2
	0.80	15	7.2	10.8	14.4	18.0	21.5	25.1	28.7	32.3	35.9	39.5	43.1	46.7	50.3	53.9
	0.90	18	7.0	10.6	14.1	17.6	21.1	24.6	28.2	31.7	35.2	38.7	42.2	45.8	49.3	52.8
	1.00	22	6.9	10.4	13.9	17.4	20.8	24.3	27.8	31.2	34.7	38.2	41.6	45.1	48.6	52.1
	1.10	26	6.8	10.3	13.7	17.1	20.5	23.9	27.4	30.8	34.2	37.6	41.0	44.5	47.9	51.3
	1.20	31	6.8	10.2	13.6	17.0	20.3	23.7	27.1	30.5	33.9	37.3	40.7	44.1	47.5	50.9
	1.30	35	6.7	10.1	13.4	16.8	20.1	23.5	26.8	30.2	33.5	36.9	40.2	43.6	46.9	50.3
	1.40	41	6.7	10.0	13.3	16.7	20.0	23.3	26.6	30.0	33.3	36.6	40.0	43.3	46.6	50.0
1.50	46	6.6	9.9	13.2	16.5	19.8	23.1	26.4	29.7	33.0	36.3	39.6	42.9	46.2	49.5	
ARN/ ARV 127	0.30	2	17.6	26.4	35.2	44.0	52.7	61.5	70.3	79.1	87.9	96.7	105.5	114.3	123.1	131.9
	0.40	3	16.2	24.3	32.4	40.6	48.7	56.8	64.9	73.0	81.1	89.2	97.3	105.4	113.5	121.7
	0.50	4	15.1	22.6	30.2	37.7	45.2	52.8	60.3	67.9	75.4	82.9	90.5	98.0	105.6	113.1
	0.60	5	14.1	21.2	28.3	35.4	42.4	49.5	56.6	63.6	70.7	77.8	84.8	91.9	99.0	106.1
	0.70	7	13.4	20.1	26.8	33.5	40.1	46.8	53.5	60.2	66.9	73.6	80.3	87.0	93.7	100.4
	0.80	9	12.8	19.1	25.5	31.9	38.3	44.7	51.0	57.4	63.8	70.2	76.6	82.9	89.3	95.7
	0.90	11	12.3	18.4	24.6	30.7	36.8	43.0	49.1	55.3	61.4	67.5	73.7	79.8	86.0	92.1
	1.00	13	11.9	17.9	23.8	29.8	35.7	41.7	47.6	53.6	59.5	65.5	71.4	77.4	83.3	89.3
	1.10	16	11.6	17.4	23.2	29.1	34.9	40.7	46.5	52.3	58.1	63.9	69.7	75.5	81.3	87.2
	1.20	19	11.4	17.1	22.8	28.5	34.2	39.9	45.6	51.3	57.0	62.7	68.4	74.1	79.8	85.5
	1.30	21	11.2	16.8	22.4	28.1	33.7	39.3	44.9	50.5	56.1	61.7	67.3	72.9	78.5	84.2
	1.40	24	11.1	16.6	22.1	27.7	33.2	38.7	44.2	49.8	55.3	60.8	66.4	71.9	77.4	83.0
1.50	28	10.9	16.4	21.8	27.3	32.7	38.2	43.6	49.1	54.5	60.0	65.4	70.9	76.3	81.8	

* ARV performance figures are for 58Pa counterpressure.

ARN/ARV* performance with glycol–water mixture percentage (in weight): 30%

MODEL	mixture flow (l/s)	pressure drop (kPa)	Rad cooler heat rejection (kW) at various values of $T_1 - T_{max}$ design ambient (°C)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ARN/ ARV 109	0.30	2	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.40	4	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.50	6	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.60	8	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.70	11	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.80	14	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	0.90	17	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	1.00	20	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	1.10	24	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	1.20	28	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	1.30	32	2.9	4.4	5.8	7.3	8.8	10.2	11.7	13.1	14.6	16.1	17.5	19.0	20.4	21.9
	1.40	37	2.9	4.4	5.9	7.4	8.8	10.3	11.8	13.2	14.7	16.2	17.6	19.1	20.6	22.1
1.50	42	2.9	4.4	5.9	7.4	8.8	10.3	11.8	13.2	14.7	16.2	17.6	19.1	20.6	22.1	
ARN/ ARV 118	0.30	3	8.4	12.7	16.9	21.1	25.3	29.5	33.8	38.0	42.2	46.4	50.6	54.9	59.1	63.3
	0.40	5	7.8	11.6	15.5	19.4	23.3	27.2	31.0	34.9	38.8	42.7	46.6	50.4	54.3	58.2
	0.50	7	7.4	11.1	14.8	18.5	22.2	25.9	29.6	33.3	37.0	40.7	44.4	48.1	51.8	55.5
	0.60	9	7.2	10.7	14.3	17.9	21.5	25.1	28.6	32.2	35.8	39.4	43.0	46.5	50.1	53.7
	0.70	12	7.0	10.5	14.0	17.5	21.0	24.5	28.0	31.5	35.0	38.5	42.0	45.5	49.0	52.5
	0.80	16	6.9	10.3	13.7	17.2	20.6	24.0	27.4	30.9	34.3	37.7	41.2	44.6	48.0	51.5
	0.90	20	6.8	10.1	13.5	16.9	20.3	23.7	27.0	30.4	33.8	37.2	40.6	43.9	47.3	50.7
	1.00	24	6.7	10.0	13.4	16.7	20.0	23.4	26.7	30.1	33.4	36.7	40.1	43.4	46.8	50.1
	1.10	28	6.6	9.9	13.2	16.5	19.8	23.1	26.4	29.7	33.0	36.3	39.6	42.9	46.2	49.5
	1.20	33	6.6	9.8	13.1	16.4	19.7	23.0	26.2	29.5	32.8	36.1	39.4	42.6	45.9	49.2
	1.30	38	6.5	9.8	13.0	16.3	19.6	22.8	26.1	29.3	32.6	35.9	39.1	42.4	45.6	48.9
	1.40	43	6.5	9.7	13.0	16.2	19.4	22.7	25.9	29.2	32.4	35.6	38.9	42.1	45.4	48.6
1.50	49	6.4	9.7	12.9	16.1	19.3	22.5	25.8	29.0	32.2	35.4	38.6	41.9	45.1	48.3	
ARN/ ARV 127	0.30	2	15.7	23.6	31.4	39.3	47.2	55.0	62.9	70.7	78.6	86.5	94.3	102.2	110.0	117.9
	0.40	3	14.7	22.1	29.4	36.8	44.1	51.5	58.8	66.2	73.5	80.9	88.2	95.6	102.9	110.3
	0.50	4	13.8	20.8	27.7	34.6	41.5	48.4	55.4	62.3	69.2	76.1	83.0	90.0	96.9	103.8
	0.60	6	13.1	19.7	26.2	32.8	39.4	45.9	52.5	59.0	65.6	72.2	78.7	85.3	91.8	98.4
	0.70	8	12.5	18.8	25.1	31.4	37.6	43.9	50.2	56.4	62.7	69.0	75.2	81.5	87.8	94.1
	0.80	10	12.1	18.1	24.1	30.2	36.2	42.2	48.2	54.3	60.3	66.3	72.4	78.4	84.4	90.5
	0.90	12	11.7	17.5	23.4	29.2	35.0	40.9	46.7	52.6	58.4	64.2	70.1	75.9	81.8	87.6
	1.00	14	11.4	17.1	22.8	28.5	34.2	39.9	45.6	51.3	57.0	62.7	68.4	74.1	79.8	85.5
	1.10	17	11.2	16.7	22.3	27.9	33.5	39.1	44.6	50.2	55.8	61.4	67.0	72.5	78.1	83.7
	1.20	20	11.0	16.5	22.0	27.5	32.9	38.4	43.9	49.4	54.9	60.4	65.9	71.4	76.9	82.4
	1.30	23	10.8	16.3	21.7	27.1	32.5	37.9	43.4	48.8	54.2	59.6	65.0	70.5	75.9	81.3
	1.40	26	10.7	16.1	21.4	26.8	32.1	37.5	42.8	48.2	53.5	58.9	64.2	69.6	74.9	80.3
1.50	30	10.6	15.9	21.2	26.5	31.7	37.0	42.3	47.6	52.9	58.2	63.5	68.8	74.1	79.4	

* ARV performance figures are for 58Pa counterpressure.

ARN/ARV* performance with glycol–water mixture percentage (in weight): 40%

MODEL	mixture flow (l/s)	pressure drop (kPa)	Rad cooler heat rejection (kW) at various values of $T_1 - T_{max}$ design ambient (°C)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ARN/ ARV 109	0.30	2	2.7	4.0	5.3	6.7	8.0	9.3	10.6	12.0	13.3	14.6	16.0	17.3	18.6	20.0
	0.40	4	2.7	4.1	5.4	6.8	8.1	9.5	10.8	12.2	13.5	14.9	16.2	17.6	18.9	20.3
	0.50	6	2.7	4.1	5.5	6.9	8.2	9.6	11.0	12.3	13.7	15.1	16.4	17.8	19.2	20.6
	0.60	9	2.8	4.1	5.5	6.9	8.3	9.7	11.0	12.4	13.8	15.2	16.6	17.9	19.3	20.7
	0.70	11	2.8	4.2	5.6	7.0	8.3	9.7	11.1	12.5	13.9	15.3	16.7	18.1	19.5	20.9
	0.80	14	2.8	4.2	5.6	7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6	21.0
	0.90	18	2.8	4.2	5.6	7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6	21.0
	1.00	21	2.8	4.2	5.6	7.1	8.5	9.9	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.2
	1.10	25	2.8	4.2	5.6	7.1	8.5	9.9	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.2
	1.20	30	2.8	4.3	5.7	7.1	8.5	9.9	11.4	12.8	14.2	15.6	17.0	18.5	19.9	21.3
	1.30	34	2.8	4.3	5.7	7.1	8.5	9.9	11.4	12.8	14.2	15.6	17.0	18.5	19.9	21.3
1.40	39	2.8	4.3	5.7	7.1	8.5	9.9	11.4	12.8	14.2	15.6	17.0	18.5	19.9	21.3	
1.50	44	2.9	4.3	5.7	7.2	8.6	10.0	11.4	12.9	14.3	15.7	17.2	18.6	20.0	21.5	
ARN/ ARV 118	0.30	3	7.3	10.9	14.6	18.2	21.8	25.5	29.1	32.8	36.4	40.0	43.7	47.3	51.0	54.6
	0.40	5	7.0	10.5	14.0	17.5	21.0	24.5	28.0	31.5	35.0	38.5	42.0	45.5	49.0	52.5
	0.50	7	6.8	10.2	13.6	17.0	20.4	23.8	27.2	30.6	34.0	37.4	40.8	44.2	47.6	51.0
	0.60	10	6.7	10.0	13.3	16.7	20.0	23.3	26.6	30.0	33.3	36.6	40.0	43.3	46.6	50.0
	0.70	13	6.6	9.8	13.1	16.4	19.7	23.0	26.2	29.5	32.8	36.1	39.4	42.6	45.9	49.2
	0.80	17	6.5	9.7	13.0	16.2	19.4	22.7	25.9	29.2	32.4	35.6	38.9	42.1	45.4	48.6
	0.90	21	6.4	9.6	12.8	16.1	19.3	22.5	25.7	28.9	32.1	35.3	38.5	41.7	44.9	48.2
	1.00	25	6.4	9.6	12.8	16.0	19.1	22.3	25.5	28.7	31.9	35.1	38.3	41.5	44.7	47.9
	1.10	30	6.3	9.5	12.6	15.8	19.0	22.1	25.3	28.4	31.6	34.8	37.9	41.1	44.2	47.4
	1.20	35	6.3	9.5	12.6	15.8	18.9	22.1	25.2	28.4	31.5	34.7	37.8	41.0	44.1	47.3
	1.30	40	6.3	9.4	12.6	15.7	18.8	22.0	25.1	28.3	31.4	34.5	37.7	40.8	44.0	47.1
1.40	46	6.2	9.4	12.5	15.6	18.7	21.8	25.0	28.1	31.2	34.3	37.4	40.6	43.7	46.8	
1.50	52	6.2	9.3	12.4	15.6	18.7	21.8	24.9	28.0	31.1	34.2	37.3	40.4	43.5	46.7	
ARN/ ARV 127	0.30	2	13.7	20.6	27.4	34.3	41.1	48.0	54.8	61.7	68.5	75.4	82.2	89.1	95.9	102.8
	0.40	3	13.0	19.5	26.0	32.6	39.1	45.6	52.1	58.6	65.1	71.6	78.1	84.6	91.1	97.7
	0.50	4	12.4	18.7	24.9	31.1	37.3	43.5	49.8	56.0	62.2	68.4	74.6	80.9	87.1	93.3
	0.60	6	12.0	17.9	23.9	29.9	35.9	41.9	47.8	53.8	59.8	65.8	71.8	77.7	83.7	89.7
	0.70	8	11.6	17.3	23.1	28.9	34.7	40.5	46.2	52.0	57.8	63.6	69.4	75.1	80.9	86.7
	0.80	10	11.2	16.9	22.5	28.1	33.7	39.3	45.0	50.6	56.2	61.8	67.4	73.1	78.7	84.3
	0.90	12	11.0	16.4	21.9	27.4	32.9	38.4	43.8	49.3	54.8	60.3	65.8	71.2	76.7	82.2
	1.00	15	10.8	16.1	21.5	26.9	32.3	37.7	43.0	48.4	53.8	59.2	64.6	69.9	75.3	80.7
	1.10	18	10.6	15.9	21.2	26.5	31.8	37.1	42.4	47.7	53.0	58.3	63.6	68.9	74.2	79.5
	1.20	21	10.5	15.7	20.9	26.2	31.4	36.6	41.8	47.1	52.3	57.5	62.8	68.0	73.2	78.5
	1.30	24	10.4	15.5	20.7	25.9	31.1	36.3	41.4	46.6	51.8	57.0	62.2	67.3	72.5	77.7
1.40	28	10.3	15.4	20.5	25.7	30.8	35.9	41.0	46.2	51.3	56.4	61.6	66.7	71.8	77.0	
1.50	31	10.2	15.2	20.3	25.4	30.5	35.6	40.6	45.7	50.8	55.9	61.0	66.0	71.1	76.2	

* ARV performance figures are for 58Pa counterpressure.

ARL performance with glycol-water mixture percentage (in weight): 20%

MODEL	mixture flow (l/s)	pressure drop (kPa)	Rad cooler heat rejection (kW) at various values of $T_1 - T_{max}$ design ambient ($^{\circ}C$)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ARL 109	0.30	2	1.9	2.8	3.8	4.7	5.7	6.6	7.6	8.5	9.5	10.4	11.4	12.3	13.3	14.2
	0.40	4	1.9	2.8	3.7	4.7	5.6	6.5	7.5	8.4	9.3	10.3	11.2	12.1	13.1	14.0
	0.50	5	1.8	2.8	3.7	4.6	5.5	6.4	7.4	8.3	9.2	10.1	11.0	12.0	12.9	13.8
	0.60	8	1.8	2.7	3.6	4.6	5.5	6.4	7.3	8.2	9.1	10.0	10.9	11.8	12.7	13.7
	0.70	10	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5
	0.80	13	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5
	0.90	16	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5
	1.00	19	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	1.10	22	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	1.20	26	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	1.30	30	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	1.40	35	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
1.50	39	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4	
ARL 118	0.30	3	4.8	7.2	9.6	12.0	14.4	16.8	19.2	21.6	24.0	26.4	28.8	31.2	33.6	36.0
	0.40	4	4.6	6.9	9.2	11.5	13.8	16.1	18.4	20.7	23.0	25.3	27.6	29.9	32.2	34.5
	0.50	6	4.4	6.6	8.8	11.1	13.3	15.5	17.7	19.9	22.1	24.3	26.5	28.7	30.9	33.2
	0.60	9	4.3	6.4	8.6	10.7	12.8	15.0	17.1	19.3	21.4	23.5	25.7	27.8	30.0	32.1
	0.70	12	4.2	6.2	8.3	10.4	12.5	14.6	16.6	18.7	20.8	22.9	25.0	27.0	29.1	31.2
	0.80	15	4.1	6.1	8.1	10.2	12.2	14.2	16.2	18.3	20.3	22.3	24.4	26.4	28.4	30.5
	0.90	18	4.0	6.0	8.0	10.0	11.9	13.9	15.9	17.9	19.9	21.9	23.9	25.9	27.9	29.9
	1.00	22	3.9	5.9	7.8	9.8	11.8	13.7	15.7	17.6	19.6	21.6	23.5	25.5	27.4	29.4
	1.10	26	3.9	5.8	7.8	9.7	11.6	13.6	15.5	17.5	19.4	21.3	23.3	25.2	27.2	29.1
	1.20	31	3.8	5.8	7.7	9.6	11.5	13.4	15.4	17.3	19.2	21.1	23.0	25.0	26.9	28.8
	1.30	35	3.8	5.7	7.6	9.6	11.5	13.4	15.3	17.2	19.1	21.0	22.9	24.8	26.7	28.7
	1.40	41	3.8	5.7	7.6	9.5	11.4	13.3	15.2	17.1	19.0	20.9	22.8	24.7	26.6	28.5
1.50	46	3.8	5.7	7.6	9.5	11.3	13.2	15.1	17.0	18.9	20.8	22.7	24.6	26.5	28.4	
ARL 127	0.30	2	8.8	13.2	17.6	22.1	26.5	30.9	35.3	39.7	44.1	48.5	52.9	57.3	61.7	66.2
	0.40	3	8.3	12.4	16.5	20.7	24.8	28.9	33.0	37.2	41.3	45.4	49.6	53.7	57.8	62.0
	0.50	4	7.8	11.7	15.6	19.5	23.4	27.3	31.2	35.1	39.0	42.9	46.8	50.7	54.6	58.5
	0.60	5	7.4	11.1	14.8	18.6	22.3	26.0	29.7	33.4	37.1	40.8	44.5	48.2	51.9	55.7
	0.70	7	7.1	10.7	14.2	17.8	21.3	24.9	28.4	32.0	35.5	39.1	42.6	46.2	49.7	53.3
	0.80	9	6.8	10.3	13.7	17.1	20.5	23.9	27.4	30.8	34.2	37.6	41.0	44.5	47.9	51.3
	0.90	11	6.6	10.0	13.3	16.6	19.9	23.2	26.6	29.9	33.2	36.5	39.8	43.2	46.5	49.8
	1.00	13	6.5	9.7	13.0	16.2	19.4	22.7	25.9	29.2	32.4	35.6	38.9	42.1	45.4	48.6
	1.10	16	6.4	9.5	12.7	15.9	19.1	22.3	25.4	28.6	31.8	35.0	38.2	41.3	44.5	47.7
	1.20	19	6.3	9.4	12.6	15.7	18.8	22.0	25.1	28.3	31.4	34.5	37.7	40.8	44.0	47.1
	1.30	21	6.2	9.3	12.4	15.5	18.6	21.7	24.8	27.9	31.0	34.1	37.2	40.3	43.4	46.5
	1.40	24	6.1	9.2	12.3	15.4	18.4	21.5	24.6	27.6	30.7	33.8	36.8	39.9	43.0	46.1
1.50	28	6.1	9.1	12.2	15.2	18.2	21.3	24.3	27.4	30.4	33.4	36.5	39.5	42.6	45.6	
ARL 136	0.30	1	12.8	19.1	25.5	31.9	38.3	44.7	51.0	57.4	63.8	70.2	76.6	82.9	89.3	95.7
	0.40	1	11.9	17.9	23.8	29.8	35.7	41.7	47.6	53.6	59.5	65.5	71.4	77.4	83.3	89.3
	0.50	2	11.2	16.7	22.3	27.9	33.5	39.1	44.6	50.2	55.8	61.4	67.0	72.5	78.1	83.7
	0.60	3	10.5	15.8	21.1	26.4	31.6	36.9	42.2	47.4	52.7	58.0	63.2	68.5	73.8	79.1
	0.70	4	10.0	15.1	20.1	25.1	30.1	35.1	40.2	45.2	50.2	55.2	60.2	65.3	70.3	75.3
	0.80	4	9.6	14.4	19.2	24.1	28.9	33.7	38.5	43.3	48.1	52.9	57.7	62.5	67.3	72.2
	0.90	6	9.3	14.0	18.6	23.3	27.9	32.6	37.2	41.9	46.5	51.2	55.8	60.5	65.1	69.8
	1.00	7	9.0	13.6	18.1	22.6	27.1	31.6	36.2	40.7	45.2	49.7	54.2	58.8	63.3	67.8
	1.10	8	8.8	13.3	17.7	22.1	26.5	30.9	35.4	39.8	44.2	48.6	53.0	57.5	61.9	66.3
	1.20	9	8.7	13.0	17.4	21.7	26.0	30.4	34.7	39.1	43.4	47.7	52.1	56.4	60.8	65.1
	1.30	11	8.6	12.8	17.1	21.4	25.7	30.0	34.2	38.5	42.8	47.1	51.4	55.6	59.9	64.2
	1.40	12	8.5	12.7	16.9	21.2	25.4	29.6	33.8	38.1	42.3	46.5	50.8	55.0	59.2	63.5
1.50	14	8.4	12.5	16.7	20.9	25.1	29.3	33.4	37.6	41.8	46.0	50.2	54.3	58.5	62.7	

ARL performance with glycol–water mixture percentage (in weight): 30%

MODEL	mixture flow (l/s)	pressure drop (kPa)	Rad cooler heat rejection (kW) at various values of $T_1 - T_{max}$ design ambient ($^{\circ}C$)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
ARL 109	0.30	2	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.8	12.7	13.6
	0.40	4	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5
	0.50	6	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	0.60	8	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	0.70	11	1.8	2.7	3.6	4.5	5.3	6.2	7.1	8.0	8.9	9.8	10.7	11.6	12.5	13.4
	0.80	14	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
	0.90	17	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
	1.00	20	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
	1.10	24	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
	1.20	28	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
	1.30	32	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2
1.40	37	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2	
1.50	42	1.8	2.6	3.5	4.4	5.3	6.2	7.0	7.9	8.8	9.7	10.6	11.4	12.3	13.2	
ARL 118	0.30	3	4.5	6.8	9.1	11.4	13.6	15.9	18.2	20.5	22.7	25.0	27.3	29.5	31.8	34.1
	0.40	5	4.4	6.6	8.8	11.0	13.1	15.3	17.5	19.7	21.9	24.1	26.3	28.5	30.7	32.9
	0.50	7	4.2	6.4	8.5	10.6	12.7	14.8	17.0	19.1	21.2	23.3	25.4	27.6	29.7	31.8
	0.60	9	4.1	6.2	8.2	10.3	12.4	14.4	16.5	18.5	20.6	22.7	24.7	26.8	28.8	30.9
	0.70	12	4.0	6.1	8.1	10.1	12.1	14.1	16.2	18.2	20.2	22.2	24.2	26.3	28.3	30.3
	0.80	16	4.0	5.9	7.9	9.9	11.9	13.9	15.8	17.8	19.8	21.8	23.8	25.7	27.7	29.7
	0.90	20	3.9	5.9	7.8	9.8	11.7	13.7	15.6	17.6	19.5	21.5	23.4	25.4	27.3	29.3
	1.00	24	3.9	5.8	7.7	9.7	11.6	13.5	15.4	17.4	19.3	21.2	23.2	25.1	27.0	29.0
	1.10	28	3.8	5.7	7.6	9.6	11.5	13.4	15.3	17.2	19.1	21.0	22.9	24.8	26.7	28.7
	1.20	33	3.8	5.7	7.6	9.5	11.4	13.3	15.2	17.1	19.0	20.9	22.8	24.7	26.6	28.5
	1.30	38	3.8	5.7	7.6	9.5	11.3	13.2	15.1	17.0	18.9	20.8	22.7	24.6	26.5	28.4
1.40	43	3.8	5.6	7.5	9.4	11.3	13.2	15.0	16.9	18.8	20.7	22.6	24.4	26.3	28.2	
1.50	49	3.7	5.6	7.5	9.4	11.2	13.1	15.0	16.8	18.7	20.6	22.4	24.3	26.2	28.1	
ARL 127	0.30	2	8.3	12.5	16.6	20.8	24.9	29.1	33.2	37.4	41.5	45.7	49.8	54.0	58.1	62.3
	0.40	3	7.8	11.8	15.7	19.6	23.5	27.4	31.4	35.3	39.2	43.1	47.0	51.0	54.9	58.8
	0.50	4	7.8	11.7	15.6	19.5	23.4	27.3	31.2	35.1	39.0	42.9	46.8	50.7	54.6	58.5
	0.60	5	7.4	11.1	14.8	18.6	22.3	26.0	29.7	33.4	37.1	40.8	44.5	48.2	51.9	55.7
	0.70	7	7.1	10.7	14.2	17.8	21.3	24.9	28.4	32.0	35.5	39.1	42.6	46.2	49.7	53.3
	0.80	9	6.8	10.3	13.7	17.1	20.5	23.9	27.4	30.8	34.2	37.6	41.0	44.5	47.9	51.3
	0.90	11	6.6	10.0	13.3	16.6	19.9	23.2	26.6	29.9	33.2	36.5	39.8	43.2	46.5	49.8
	1.00	13	6.5	9.7	13.0	16.2	19.4	22.7	25.9	29.2	32.4	35.6	38.9	42.1	45.4	48.6
	1.10	16	6.4	9.5	12.7	15.9	19.1	22.3	25.4	28.6	31.8	35.0	38.2	41.3	44.5	47.7
	1.20	19	6.3	9.4	12.6	15.7	18.8	22.0	25.1	28.3	31.4	34.5	37.7	40.8	44.0	47.1
	1.30	21	6.2	9.3	12.4	15.5	18.6	21.7	24.8	27.9	31.0	34.1	37.2	40.3	43.4	46.5
1.40	24	6.1	9.2	12.3	15.4	18.4	21.5	24.6	27.6	30.7	33.8	36.8	39.9	43.0	46.1	
1.50	28	6.1	9.1	12.2	15.2	18.2	21.3	24.3	27.4	30.4	33.4	36.5	39.5	42.6	45.6	
ARL 136	0.30	1	11.6	17.4	23.2	29.1	34.9	40.7	46.5	52.3	58.1	63.9	69.7	75.5	81.3	87.2
	0.40	1	11.0	16.4	21.9	27.4	32.9	38.4	43.8	49.3	54.8	60.3	65.8	71.2	76.7	82.2
	0.50	2	10.4	15.6	20.8	26.0	31.2	36.4	41.6	46.8	52.0	57.2	62.4	67.6	72.8	78.0
	0.60	3	9.9	14.9	19.8	24.8	29.8	34.7	39.7	44.6	49.6	54.6	59.5	64.5	69.4	74.4
	0.70	4	9.5	14.3	19.0	23.8	28.6	33.3	38.1	42.8	47.6	52.4	57.1	61.9	66.6	71.4
	0.80	5	9.2	13.8	18.4	23.0	27.6	32.2	36.8	41.4	46.0	50.6	55.2	59.8	64.4	69.0
	0.90	6	8.9	13.4	17.9	22.4	26.8	31.3	35.8	40.2	44.7	49.2	53.6	58.1	62.6	67.1
	1.00	7	8.7	13.1	17.4	21.8	26.2	30.5	34.9	39.2	43.6	48.0	52.3	56.7	61.0	65.4
	1.10	8	8.6	12.8	17.1	21.4	25.7	30.0	34.2	38.5	42.8	47.1	51.4	55.6	59.9	64.2
	1.20	10	8.4	12.6	16.8	21.1	25.3	29.5	33.7	37.9	42.1	46.3	50.5	54.7	58.9	63.2
	1.30	11	8.3	12.5	16.6	20.8	25.0	29.1	33.3	37.4	41.6	45.8	49.9	54.1	58.2	62.4
1.40	13	8.2	12.4	16.5	20.6	24.7	28.8	33.0	37.1	41.2	45.3	49.4	53.6	57.7	61.8	
1.50	15	8.2	12.2	16.3	20.4	24.5	28.6	32.6	36.7	40.8	44.9	49.0	53.0	57.1	61.2	

2.3 – AVAILABLE STATIC PRESSURE

The HIRANGE UxxA or UxxW units are supplied as standard with direct driven fans, sized for a standard available static pressure of 20 Pa.

The variation in air flow obtained with differing counter-pressures, or additional devices placed in the air stream, is as follows.

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U24A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U34A/W unit U35A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U45A/W
1.458	281	1.750	293	2.917	249
1.500	273	1.800	312	3.000	240
1.600	253	1.900	307	3.100	228
1.700	231	2.000	296	3.200	216
1.800	207	2.100	283	3.300	203
1.900	180	2.200	269	3.400	190
2.000	151	2.300	252	3.500	176
2.100	118	2.400	233	3.600	161
2.200	82	2.500	211	3.700	145
2.300	42	2.600	187	3.800	129
<u>2.352</u>	<u>20</u>	2.700	160	3.900	112
2.398	0	2.800	130	4.000	94
		2.900	98	4.100	76
		3.000	64	4.200	56
		<u>3.017</u>	27	4.300	36
		3.071	<u>20</u>	<u>4.375</u>	<u>20</u>
			0	4.400	15
				4.466	0

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U55A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U65A/W unit U75A/W
2.917	318	3.500	303
3.000	313	3.600	297
3.100	306	3.700	291
3.200	299	3.800	285
3.300	291	3.900	279
3.400	283	4.000	272
3.500	275	4.100	264
3.600	266	4.200	256
3.700	257	4.300	248
3.800	246	4.400	239
3.900	236	4.500	229
4.000	224	4.600	219
4.100	212	4.700	208
4.200	199	4.800	196
4.300	186	4.900	184
4.400	172	5.000	171
4.500	157	5.100	157
4.600	141	5.200	143
4.700	124	5.300	128
4.800	107	5.400	112
4.900	89	5.500	96
5.000	70	5.600	79
5.100	50	5.700	62
5.200	30	5.800	43
<u>5.250</u>	<u>20</u>	5.900	25
5.300	9	<u>5.923</u>	<u>20</u>
5.341	0	6.000	6
		6.029	0

For a proper calculation of the requested static pressure the increase in static pressure to be considered when optional devices are provided, at various air flow values, must be taken into account, as for the tables which follow.

When higher available static pressures are required, the special VFANs (with V-belt transmission) may be required.

2.3.1 – Additional pressure drops (Pa)

(The values between brackets cannot be obtained with standard fans)

UNIT U24A/W

Flow rate m ³ /s	EU4 air filters	EU5 (h 100) air filters	EU5 (h 300) air filters	Hot gas or hot water heating coil
1.20	3	63	25	13
1.30	4	70	29	15
1.40	5	77	32	17
1.50	5	84	36	19
1.60	6	92	39	21
1.70	7	99	43	24
1.80	8	107	47	26
1.90	9	115	51	29
2.00	10	123	55	31
2.10	11	(131)	59	34
2.20	13	(139)	63	37
2.30	14	(147)	(68)	39
2.40	(15)	(155)	(72)	(42)
2.50	(16)	(163)	(77)	(45)
2.60	(18)	(172)	(81)	(48)

UNIT U34A/W, U35A/W

Flow rate m ³ /s	EU4 air filters	EU5 (h 100) air filters	EU5 (h 300) air filters	Hot gas or hot water heating coil
1.20	3	63	25	13
1.30	4	70	29	15
1.40	5	77	32	17
1.50	5	84	36	19
1.60	6	92	39	21
1.70	7	99	43	24
1.80	8	107	47	26
1.90	9	115	51	29
2.00	10	123	55	31
2.10	11	131	59	34
2.20	13	139	63	37
2.30	14	147	68	39
2.40	15	155	72	42
2.50	16	163	77	45
2.60	18	(172)	81	48
2.70	19	(180)	86	52
2.80	21	(189)	91	55
2.90	22	(198)	(96)	58
3.00	24	(206)	(101)	(61)
3.10	(26)	(215)	(106)	(65)
3.20	(28)	(224)	(111)	(68)
3.30	(29)	(233)	(116)	(72)
3.40	(31)	(242)	(122)	(76)
3.50	(33)	(251)	(127)	(79)
3.60	(35)	(260)	(132)	(83)

UNIT U45A/W

Flow rate m ³ /s	EU4 air filters	EU5 (h 100) air filters	EU5 (h 300) air filters	Hot gas or hot water heating coil
2.40	6	92	39	15
2.50	7	97	42	16
2.60	7	102	44	17
2.70	8	107	47	18
2.80	9	112	49	19
2.90	9	117	52	20
3.00	10	123	55	21
3.10	11	128	58	22
3.20	12	133	60	23
3.30	13	139	63	24
3.40	13	144	66	25
3.50	14	150	69	26
3.60	15	155	72	27
3.70	16	(161)	75	28
3.80	17	(166)	78	30
3.90	18	(172)	81	31
4.00	19	(178)	85	32
4.10	20	(183)	(88)	33
4.20	21	(189)	(91)	34
4.30	22	(195)	(94)	36
4.40	(23)	(201)	(98)	(37)
4.50	(24)	(206)	(101)	(38)
4.60	(25)	(212)	(104)	(39)
4.70	(26)	(218)	(108)	(41)
4.80	(28)	(224)	(111)	(42)
4.90	(29)	(230)	(115)	(43)
5.00	(30)	(236)	(118)	(45)
5.10	(31)	(242)	(122)	(46)
5.20	(33)	(248)	(125)	(47)
5.30	(34)	(254)	(129)	(49)

UNIT U55A/W

Flow rate m ³ /s	EU4 air filters	EU5 (h 100) air filters	EU5 (h 300) air filters	Hot gas or hot water heating coil
2.40	6	92	39	15
2.50	7	97	42	16
2.60	7	102	44	17
2.70	8	107	47	18
2.80	9	112	49	19
2.90	9	117	52	20
3.00	10	123	55	21
3.10	11	128	58	22
3.20	12	133	60	23
3.30	13	139	63	24
3.40	13	144	66	25
3.50	14	150	69	26
3.60	15	155	72	27
3.70	16	161	75	28
3.80	17	166	78	30
3.90	18	172	81	31
4.00	19	178	85	32
4.10	20	183	88	33
4.20	21	189	91	34
4.30	22	(195)	94	36
4.40	23	(201)	98	37
4.50	24	(206)	101	38
4.60	25	(212)	104	39
4.70	26	(218)	108	41
4.80	28	(224)	(111)	42
4.90	29	(230)	(115)	43
5.00	30	(236)	(118)	45
5.10	31	(242)	(122)	46
5.20	(33)	(248)	(125)	(47)
5.30	(34)	(254)	(129)	(49)
5.40	(35)	(260)	(132)	(50)
5.50	(37)	(266)	(136)	(51)
5.60	(38)	(272)	(140)	(53)
5.70	(40)	(278)	(144)	(54)
5.80	(41)	(284)	(147)	(55)
5.90	(42)	(291)	(151)	(57)

UNIT U65A/W, U75A/W

Flow rate m ³ /s	EU4 air filters	EU5 (h 100) air filters	EU5 (h 300) air filters	Hot gas or hot water heating coil
2.70	6	87	37	18
2.80	6	91	39	19
2.90	7	95	41	20
3.00	7	99	43	21
3.10	8	104	45	22
3.20	8	108	47	23
3.30	9	112	50	24
3.40	9	117	52	25
3.50	10	121	54	26
3.60	11	126	57	27
3.70	11	130	59	28
3.80	12	135	61	30
3.90	13	140	64	31
4.00	13	144	66	32
4.10	14	149	69	33
4.20	15	154	71	34
4.30	16	158	74	36
4.40	16	163	76	37
4.50	17	168	79	38
4.60	18	173	82	39
4.70	19	177	84	41
4.80	20	182	87	42
4.90	21	(187)	90	43
5.00	21	(192)	93	45
5.10	22	(197)	95	46
5.20	23	(202)	98	47
5.30	24	(207)	101	49
5.40	25	(212)	104	50
5.50	26	(217)	(107)	51
5.60	27	(222)	(110)	53
5.70	28	(227)	(113)	54
5.80	29	(232)	(116)	(55)
5.90	(30)	(237)	(119)	(57)
6.00	(31)	(242)	(122)	(58)
6.10	(32)	(247)	(125)	(60)
6.20	(34)	(252)	(128)	(61)
6.30	(35)	(257)	(131)	(63)
6.40	(36)	(263)	(134)	(64)
6.50	(37)	(268)	(137)	(66)
6.60	(38)	(273)	(140)	(67)
6.70	(39)	(278)	(143)	(69)
6.80	(41)	(283)	(147)	(70)
6.90	(42)	(289)	(150)	(72)
7.00	(43)	(294)	(153)	(73)

3 – ACCESSORIES AND SPECIAL FEATURES

3.1 – ACCESSORIES INSTALLED ON BOARD ON REQUEST

3.1.1 – Electric reheat

This consists of an electric reheat coil with ample capacity to maintain the correct dry bulb temperature. The high capacity aluminium fins are designed with a low watt density. Ionization effects are eliminated thanks to the low surface temperature of the elements.

The electric reheat coil stages are 3-phase, to avoid phase balancing problems. There are three stages, two contactors, an on-off electronic temperature control, a safety thermostat with manual reset, a magnetothermic switch against short circuits and electric wiring protection against possible casual contacts.

When electric reheat is installed, the dehumidification system will also be operative and the relative humidity sensor and indication will be provided (see "Humidification and dehumidification systems" for dehumidification operation).

It is also possible to install electric reheat together with the "hot gas reheat" option, or with the "hot water reheat" option. In these cases, for the operation and characteristics, see "hot gas reheat" and "hot water reheat".

HEATING CAPACITIES (380/3/50)		unit			
		U24 U35	U34 U45	U55 U75	U65
3rd step, total capacity	(kW)	9.0		20.7	
2nd step capacity	(kW)	6.0		13.8	
1st step capacity	(kW)	3.0		6.9	

NOTE: with operation at 415V, multiply all capacities by 1.193.

3.1.2 – Hot gas reheat (and dehumidification system)

The HIRANGE features, as an option, an energy saving reheat system utilizing the heat normally rejected in the condenser. When hot gas reheat is installed, dehumidification with the relative humidity sensor and indication, are also provided. During dehumidification, when the temperature decreases below the set value, this system of reheat is activated: in this way no additional energy is required for reheating.

A 3-way valve allows superheated gas, taken from the compressor outlet, to enter the finned reheat coil located downstream of the cooling coil, to re-heat the air.

A check valve prevents refrigerant from flowing into the reheat coil when it is not required; an oversized liquid receiver is also provided.

Hot gas reheat can only be installed if the hot water heating coil is not fitted.

When electric reheat is installed together with hot gas reheat there are four (two on U34) heating steps, inserted according to the air intake temperature

ELECTRIC+ HOT GAS REHEAT WAY OF WORKING

dehumidification function	1st step		2nd step		3rd step		4th step	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF
units: U34A/W	hot gas reheat	electric reheat 3.0 kW	hot gas+ electric reheat 6.0 kW	electric reheat 9.0 kW				
units: U24A/W U35A/W U45A/W	hot gas reheat	electric reheat 3.0 kW	hot gas+ electric reheat 3.0 kW	electric reheat 6.0 kW	hot gas+ electric reheat 6.0 kW	electric reheat 9.0 kW	hot gas+ electric reheat 9.0 kW	hot gas+ electric reheat 9.0 kW
units: U55A/W U65A/W U75A/W	hot gas reheat	electric reheat 6.9 kW	hot gas+ electric reheat 6.9 kW	electric reheat 13.8 kW	hot gas+ electric reheat 13.8 kW	electric reheat 20.7 kW	hot gas+ electric reheat 20.7 kW	hot gas+ electric reheat 20.7 kW

HOT GAS SYSTEM CHARACTERISTICS		unit						
		U24A/W	U34A/W	U35A/W	U45A/W	U55A/W	U65A/W	U75A/W
rows	(no.)	2	2	2	1	1	1	1
face area	(m ²)	0.5	0.5	0.5	0.8	0.8	0.8	0.8
fins/tubes		Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu	Al/Cu
FPI		8	8	8	6	6	6	6
heating capacity with indoor air temperature 24°C, rel. humidity 50% condensing temp. 45°C	(kW)	8.0	10.6	11.0	14.1	16.7	21.5	24.4

Heating capacities do not include the heat removed from the fan, which can be added to it.

3.1.3 – Hot water reheat (and dehumidification system)

This consists of a 30 bar pressure tested hot water reheat coil, constructed from copper tubes with aluminium fins, including an air vent valve. A 3-way valve is directly controlled (on-off) by the microprocessor control, depending upon the air intake temperature and a consensus signal (from a possible thermostat, supplied by the customer, on the piping) concerning the hot water temperature.

When hot water reheat is installed, the dehumidification system will also be operative and the relative humidity sensor and indication will be provided (see "Humidification and dehumidification system" for dehumidification operation).

Heating capacities do not include the heat removed from the fan, which can be added to it.

When electric reheat is installed together with hot water reheat there are four (two on U34) heating steps, inserted according to the air intake temperature.

UNIT		U24	U34	U35	U45	U55	U65	U75
CHARACTERISTICS								
rows	no.	2	2	2	1	1	1	1
face area	m ²	0.50	0.50	0.50	0.80	0.80	0.80	0.80
FPI		8	8	8	6	6	6	6
PERFORMANCES								
24°C, 50% r.h., room air conditions 80–65°C inlet and outlet water temperature								
capacity	kW	20.1	23.1	23.1	27.7	30.4	32.0	32.0
water flow	l/s	0.328	0.377	0.377	0.451	0.496	0.520	0.520
pressure drop, coil	kPa	6	8	8	8	10	11	11
pressure drop, total	kPa	8	9	9	11	13	14	14
20°C, 50% r.h., room air conditions 80–65°C inlet and outlet water temperature								
capacity	kW	22.1	25.4	25.4	30.3	30.3	35.0	35.0
water flow	l/s	0.361	0.414	0.414	0.494	0.542	0.569	0.569
pressure drop, coil	kPa	7	9	9	10	11	12	12
pressure drop, total	kPa	9	11	11	13	15	16	16

ELECTRIC + HOT WATER REHEAT WAY OF WORKING

hot water temperature condensus	1st step		2nd step		3rd step		4th step	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF
units: U34A/W	hot water reheat	electric reheat 3.0 kW	hot water+ electric reheat 6.0 kW	electric reheat 9.0 kW				
units: U24A/W U35A/W U45A/W	hot water reheat	electric reheat 3.0 kW	hot water+ electric reheat 3.0 kW	electric reheat 6.0 kW	hot water+ electric reheat 6.0 kW	electric reheat 9.0 kW	hot water+ electric reheat 9.0 kW	hot water+ electric reheat 9.0 kW
units: U55A/W U65A/W U75A/W	hot water reheat	electric reheat 6.9 kW	hot water+ electric reheat 6.9 kW	electric reheat 13.8 kW	hot water+ electric reheat 13.8 kW	electric reheat 20.7 kW	hot water+ electric reheat 20.7 kW	hot water+ electric reheat 20.7 kW

3.1.4 – Humidification and dehumidification system

The humidification function requires the installation of the humidity control board ("HUMIFACE"), fitted into the control, and the temperature + humidity sensor ("HUMITEMP").

The dehumidification function is obtained by reducing the heat exchange surface. In one of the refrigeration circuits a solenoid valve stops the refrigerant passage in a part of the finned coil, so reducing the evaporating temperature and increasing the dehumidification effect.

There is no air flow reduction in the dehumidification mode.

Electronic humidity control card HUMIFACE

The HUMIFACE controls the humidifier and provides the dehumidification function; Humidifier control can be switched to modulating or on-off, depending upon each individual installation: on-off is factory set as default.

A special control algorithm is provided to avoid the temperature decreasing below desired values, also when in dehumidification; when the temperature returns to the correct value dehumidification will automatically be re-activated.

The HIROMATIC includes the algorithm driving the electronic humidifier.

Electronic steam humidifier HUMIDAIR

The HUMIDAIR provides an electrode boiler which generates the useful steam quantity.

It can use virtually any type of hard or soft water, provided it is not treated or demineralized. It produces clean, particle-free steam almost instantaneously by passing an electric current through water in a disposable plastic cylinder, without the energy losses typical of other systems.

The HUMIDAIR is provided with the steam cylinder, inlet and outlet water valves and a max level sensor: the operation algorithm is included in the microprocessor control software. The steam production capacity is manually selectable and is factory set to 70% of the max capacity (see relevant characteristics).

Electronic steam humidifier characteristics

The steam cylinder is located outside of the air stream, avoiding heat losses, and the steam is added to the air downstream of the cooling coil.

The Hiromatic control advises when the cylinder must be replaced. Replacement is fast and easy.

A standard autoadaptive drain control system regulates the conductivity of the water in the cylinder.

The HUMIDAIR HAK93H is used for 380/415 V applications; the HAK93L model is adopted for the 220/240V option.

HUMIDAIR	STEAM CYLINDER MODEL	MAINS VOLTAGE	FACTORY SET STEAM PRODUCTION (Kg/h)	MANUALLY ADJUSTABLE RANGE (Kg/h)	NOMINAL CURRENT (A)	NOMINAL POWER (kW)
HAK93H	93H	380/3/50	6.3	2.7-9.0	10.3	6.7
HAK93H	93H	415/3/50	6.9	2.9-9.8	10.3	7.3
HAK93L *	93L	220/3/50	5.7	2.5-8.2	16.2	6.1
HAK93L *	93L	240/3/50	6.3	2.7-9.0	16.2	6.7

* Special feature on request (see "Special features section")

3.1.5 – Water regulating valve (UxxW units)

A modulating water valve controls the condensing pressure by regulation of the condenser cooling water flow. It is installed on the condenser outlet, with its probe on the refrigerant discharge line. It is automatically closed when the compressor is not operating. This valve provides cost savings by reducing water consumption. It is sized for flow rates referred to water entering at temperatures below 17°C (city water), ensuring a small pressure drop.

For the definition of the appropriate water flow rate, depending on the specific operating conditions, consult the performance tables for UxxW units. For higher water inlet temperatures (cooling tower water), larger water flows are required; for this application see "Special water regulating valves for large water flows" in the "Special features" section.

WATER REGULATING VALVE CHARACTERISTICS	units						
	U24W	U34W	U35W	U45W	U55W	U65W	U75W
outlet connections, inch BSP int	1/2	1	3/4	3/4	3/4	1	1
valve pressure drop at 0.1 l/s kPa	1						
valve pressure drop at 0.2 l/s kPa	4	2					
valve pressure drop at 0.3 l/s kPa	8	5		3			
valve pressure drop at 0.4 l/s kPa	14	9	5	5	5		
valve pressure drop at 0.5 l/s kPa	22	14	8	8	8		
valve pressure drop at 0.6 l/s kPa		19	12	12	12	5	
valve pressure drop at 0.7 l/s kPa			17	17	17	7	7
valve pressure drop at 0.8 l/s kPa					22	9	9
valve pressure drop at 0.9 l/s kPa						11	11
valve pressure drop at 1.0 l/s kPa						14	14
valve pressure drop at 1.1 l/s kPa							16

3.2 – ACCESSORIES SUPPLIED ON REQUEST AS SEPARATE KITS (NOT INSTALLED)

3.2.1 – EU4 and EU5 efficiency h 100 air filters

Optional pleated high efficiency filters can be provided: filter class EU4 or EU5 based on Eurovent 4/5 European Standard, are available.

These filters provide an increased filtration efficiency with a small reduction in static pressure (or, alternatively, in air flow; see Additional Pressure Drops tables). The thickness is 100 mm (as for the standard filters).

High efficiency filter characteristics

quantity for U24/34/35	no.	2	
quantity for U45/55	no.	3	
quantity for U65/75	no.	3+1	
fold high	mm	100	
filtration class Eurovent 4/5		EU4	EU5
spare parts	no.	210126	210015
spare parts only for U65/75	no.	210127	210017

3.2.2 – EU5 efficiency h 300 air filters

Optional pleated high efficiency filters can be provided: the filter class is EU5, based on Eurovent 4/5 European Standards. The 300 mm thickness minimizes the pressure drop; the filters are held in a metal hood (See "FILTER EXTENSION HOOD").

High efficiency h300 air filter characteristics

filtration class Eurovent 4/5		EU5
quantity for U24/34/35	no.	2
quantity for U45/55	no.	3
quantity for U65/75	no.	3+1
fold high	mm	300
spare parts	no.	210016
spare parts only for U65/75	no.	210018

3.2.3 – Liquistat sensors

Up to 5 "Liquistat" sensors can be separately ordered and connected to the control to sense the presence of water (or any other conductive liquid) in different points under the raised floor. The solid state sensor has no moving parts and on the service menu it is possible to see which (if more sensors are fitted) sensor is immersed in water.

Each kit contains one sensor plus a series of different resistors; the resistor used depends upon the number of sensors fitted.

3.2.4 – Filter extension hood

This extension hood must be provided when 300 mm high filters are requested. The metal hood, to be fitted on top of the unit, is realized and painted (pearl white RAL 7032) as for the unit's cabinet.

Filters extension hood characteristics

UNIT		U24/34/35	U45/55	U65/75
length	mm	1450	2200	2500
depth	mm	750	750	750
height	mm	450	450	450

3.2.5 – Clogged filter alarm

A differential pressure switch can be fitted to operate a visual and audible alarm when the air pressure drop across the filters reaches the maximum value, before changing the filters. The maximum acceptable value can be adjusted on the pressure switch.

3.2.6 – Smokestat

A "Smokestat" can be fitted to shut down the air conditioning system upon sensing the presence of smoke in the return air.

This is an optical type (Tyndall effect) smoke detector, with a very low current absorption (100 μ A), and is not influenced by light or wind.

The Smokestat is connected to the Hiromatic via its own specific terminals.

3.2.7 – Firestat

In certain areas, fire regulations require a "Firestat" to be fitted to shut down the air conditioning system in the event of abnormally high return air temperatures.

This fire detector, with an NTC thermistor, has a very low current absorption (25–55 μ A).

The Firestat is connected to the Hiromatic via its own specific terminals.

3.2.8 – New air supply device

An external air intake, with its own EU3 air filter, is installed in the air suction side of the fan and is provided with a connection for a plastic \varnothing 100 mm air hose.

The new air is introduced into the recirculated air stream by using the negative pressure on the suction side of the fans.

Suction duct (Ø100 mm) equivalent length * (m)	New air flow with clean (dirty) filter (l/s)						
	U24C	U34C	U35C	U45C	U55C	U65C	U75C
12	33 (29)	39 (34)	39 (34)	38 (33)	41 (36)	45 (40)	45 (40)
24	25 (33)	30 (26)	30 (28)	29 (27)	31 (29)	35 (32)	35 (32)

* a 90°C bend equals approx 2 meters of linear duct.

3.2.9 – Extension hood

The HIRANGE can be supplied with an extension hood on the top for connection to a false ceiling. The hood features the same shape and colour as the unit; the height (minimum 600, maximum 1200 mm) must be defined when ordering the unit.

The extension hood is internally lined with sound absorbing material, to reduce the noise emitted through the air intake opening.

Extension hood characteristics

UNIT	U24/34/35	U45/55	U65/75
length mm	1450	2200	2500
depth mm	750	750	750
height, to be defined mm	600–1200	600–1200	600–1200

Noise reduction

UNIT	U24/34/35/45 U55/65/75
2m in front of the unit at 1.5m from the floor level	-1.5 dB
1m and 45°C from the top of the unit	-2.0 dB

with a 600mm height extension hood, free air intake.

3.2.10 – Base frame: models TBD

A base frame, adjustable by +/- 25 mm in height, can be supplied in heights from 200 mm up to 800 mm to support the units if required (see enclosed drawing).

UNIT	U24/34/35	U45/55	U65/75
base frame model	TBD50	TBD60	TBD75
length A mm	1140	2190	2490
depth B mm	745	745	745
height H mm to be defined	200–800	200–800	200–800

3.2.11 – Automatic condensate pump

The HIRANGE unit drain piping can be connected to a condensate pump. The pump comes complete with a float switch to start and stop it automatically.

Automatic condensate pump characteristics

water flow rate l/s	0.083	0.167	0.250	0.333
available static pressure kPa	20	19	18	14
nominal absorbed power W	95	95	95	95
dimension mm	385x245x200			

3.2.12 – Non return valves (UxxA units)

A set of non return valves for the UxxA units is supplied as a separated kit on request, to be inserted on both refrigerant connections to the external air condenser.

It is compulsory to insert these valves when the complete charge of refrigerant, resulting from the room unit, external air condenser and relevant connection piping, exceeds the recommended maximum refrigerant charge of the compressor. It is suggested to install one non-return valve on the liquid line, very close to the outlet of the air condenser, in a vertical position; the second non-return valve is to be installed on the discharge external piping, nearest to the room unit and in a vertical position

UNIT	U24	U34	U35	U45	U55 U65 U75
max refrigerant charge without non return-valves Kg	2x3.6	7.0	2x3.6	2x5.0	2x7.0

3.2.13 – Additional temperature and humidity sensor (EEAP)

The "EEAP" is an additional temperature and relative humidity sensor, with the same shape as the humitemp sensor. EEAP stands for Electronic Environmental Alarm Package.

The sensor can be installed in a representative ambient up to 20 meters from the conditioner, and generates an alarm if the temperature or relative humidity surpasses any of the four user selectable threshold levels:

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%)

3.2.14 – RS422 bus card for serial communication in 422 or 485 standard

The controller is predisposed for connection to supervisory system via on RS422 serial port, to be installed within the control itself. It is also possible to install an RS485 serial port, which differs only in the connections of the 9 PIN female socket.

3.2.15 – RS232 bus card for serial communication in 232 standard

The controller is predisposed for connection to supervisory system via on RS422 serial port, to be installed within the control itself. It is also possible to install an RS232 serial port, which differs only in the connections of the 9 PIN female socket.

3.2.16 – Communication device for external supervisory system (Hirolink)

The Hiromatic controls can communicate with external supervisory system, with up to a maximum of 32 units connected to one Hirolink box; Hirolink can respond to the supervisor's requests according to the standards of the most common BMS (Building Management System) manufactures, by means of a serial connection (also using Modem).

The data which the Hirolink offers is made up of the status and commands of each single Hiromatic, which can therefore be singularly visualized/commanded by the supervisor system.

3.3 – SPECIAL FEATURES

3.3.1 – Graphic display microprocessor control HIROMATIC G

This controller offers several additional features in comparison with the controller with a custom display. The graphic display is backlit and features a very good readability with all types of ambient light. Like the custom display, it offers a contrast ratio of 20 to 1 and wide viewing angles. All messages are extensive as each message can contain up to 48 characters.

The large dimensions (100x30 mm) of the display permit visualization of up to 8 lines of 40 characters, and thus the number of windows is greatly reduced from 61 to 18, grouping all similar parameters together in one window.

The windows give a clear survey, and operation of the controller is extremely simple.

The user can select one of the following languages:

- English
- French
- German
- Italian
- Spanish
- Portuguese
- Greek
- Swedish

Other additional features:

- **CLOCK CALENDAR:** date, time and day of the week are continuously visualized on the display.
- **GRAPHIC DATA RECORD:** gives a graphic representation of the behavior of the temperature and humidity level during the previous 24 hours, thus allowing the possibility to verify the correct operation of the conditioner.
- **WORKING HOURS COUNTER:** counts the number of conditioner working hours (and humidifier if installed). Threshold levels can be set to generate a warning for preventive maintenance.
- **STATUS REPORT:** contains the history of the unit, including unit ON/OFF, warnings, alarms and even power interruptions. Each message is memorized complete with date, time and alarm severity.
- **SLEEP MODE CONTROL:** permits the conditioner to work in an energy saving mode, or to switch itself OFF at programmable timer intervals.
- **MONITORING OF INPUTS AND OUTPUTS:** on the service menu all inputs and outputs, analogue or digital, are monitored.
- Restaurant card like organization of the menus:
 - WORKING HOURS
 - SETUP
 - CONTROL PARAMETERS
 - ALARM THRESHOLD LEVELS
 - INSTALLATION OF OPTIONAL DEVICES
 - SERVICE
- **USER INPUTS** are provided for user warning/alarm or to disable humidifier operations.

All the features below are the same as for the custom control:

- **HUMITEMP** temperature/humidity microprocessor controlled sensor.
- Continuous visualization of:
 - return air temperature (in degrees Celsius or Fahrenheit)
 - return air humidity (optional)
 - system status (e.g. UNIT ON, ALARM, MANUAL OPERATION etc.)
 - status (ON/OFF) of each single conditioner component, using graphic symbols
- Three LEDs
- Push buttons
- **ALARMS**

The controller is prearranged to allow it to be interfaced to BMS systems, done by installing the optional RS422 BUS CARD. A detailed description of the communication protocol can also be provided (optional). For a detailed description of the controller we suggest the "HIROMATIC SERVICE MANUAL" is consulted.

3.3.2 – V– Belt special transmission ratios: model VFAN02, VFAN10 and VFAN25

Three different choices of available transmission ratios are selectable to meet the different needs of the installations: VFAN02, VFAN10 and VFAN25.

The relevant electric motors are conveniently oversized, in order to cover the increased power absorption of the fans.

V– belt special transmission ratios characteristics

V–BELT TRANSMISSION RATIOS CHARACTERISTICS		unit				
		U24A/W	U34–U35A/W	U45A/W	U55A/W	U65–U75A/W
VFAN02						
std air flow rate	m ³ /s	2.352	3.017	4.375	5.250	5.923
motor	n. x kW	1x2.25	1x4.13	2x1.50	3x3.00	2x4.13
available static pressure	Pa	20	20	20	20	20
fan speed	RPM	750	947	741	870	955
VFAN10						
std air flow rate	m ³ /s	2.352	3.017	4.375	5.250	5.923
motor	n. x kW	1x2.25	1x4.13	2x2.25	2x3.00	2x4.13
available static pressure	Pa	100	101	100	100	100
fan speed	RPM	836	1016	831	946	1063
VFAN25						
std air flow rate	m ³ /s	2.352	3.017	4.375	5.250	5.923
motor	n. x kW	1x3.00	1x5.63	2x3.00	2x4.13	2x5.63
available static pressure	Pa	250	251	250	250	250
fan speed	RPM	986	1138	986	1080	1146

AVAILABLE STATIC PRESSURE

The variation in air flow obtained with different counter-pressures, or additional devices placed in the air stream, is as follows:

VFAN02

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U24A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U34A/W unit U35A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U45A/W
1.167	225	1.167	385	2.333	206
1.200	222	1.200	383	2.400	203
1.300	213	1.300	376	2.500	197
1.400	202	1.400	368	2.600	191
1.500	189	1.500	358	2.700	185
1.600	175	1.600	346	2.800	179
1.700	160	1.700	333	2.900	171
1.800	142	1.800	319	3.000	164
1.900	124	1.900	303	3.100	156
2.000	104	2.000	285	3.200	148
2.100	82	2.100	266	3.300	139
2.200	58	2.200	246	3.400	130
2.300	34	2.300	224	3.500	120
<u>2.352</u>	<u>20</u>	2.400	200	3.600	110
2.400	7	2.500	175	3.700	100
2.427	0	2.600	148	3.800	89
		2.700	120	3.900	78
		2.800	90	4.000	67
		2.900	58	4.100	55
		3.000	25	4.200	42
		<u>3.017</u>	<u>20</u>	4.300	30
		3.074	0	<u>4.375</u>	<u>20</u>
				4.400	16
				4.500	3
				4.521	0

VFAN02

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U55A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U65A/W unit U75A/W
2.333	307	2.625	375
2.400	304	2.700	371
2.500	300	2.800	366
2.600	295	2.900	361
2.700	290	3.000	356
2.800	284	3.100	350
2.900	278	3.200	343
3.000	271	3.300	336
3.100	264	3.400	329
3.200	257	3.500	322
3.300	249	3.600	314
3.400	241	3.700	306
3.500	233	3.800	297
3.600	224	3.900	288
3.700	215	4.000	278
3.800	205	4.100	268
3.900	195	4.200	258
4.000	185	4.300	248
4.100	174	4.400	237
4.200	162	4.500	225
4.300	151	4.600	213
4.400	139	4.700	201
4.500	126	4.800	189
4.600	113	4.900	176
4.700	100	5.000	162
4.800	86	5.100	149
4.900	72	5.200	134
5.000	58	5.300	120
5.100	43	5.400	105
5.200	27	5.500	89
<u>5.250</u>	<u>20</u>	5.600	74
5.300	12	5.700	57
5.373	0	5.800	41
		5.900	24
		<u>5.923</u>	<u>20</u>
		6.000	7
		6.038	0

VFAN10

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U24A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U34A/W unit U35A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U45A/W
1.167	289	1.167	446	2.333	272
1.200	287	1.200	445	2.400	269
1.300	279	1.300	439	2.500	264
1.400	269	1.400	431	2.600	259
1.500	258	1.500	422	2.700	253
1.600	245	1.600	412	2.800	247
1.700	231	1.700	400	2.900	241
1.800	215	1.800	386	3.000	234
1.900	198	1.900	371	3.100	227
2.000	179	2.000	355	3.200	219
2.100	158	2.100	337	3.300	211
2.200	136	2.200	317	3.400	203
2.300	113	2.300	296	3.500	194
2.352	100	2.400	274	3.600	185
2.400	88	2.500	250	3.700	175
2.500	62	2.600	224	3.800	165
2.600	33	2.700	197	3.900	155
2.683	9	2.800	168	4.000	144
		2.900	138	4.100	133
		3.000	106	4.200	121
		3.017	101	4.300	109
		3.100	73	4.375	100
		3.200	38	4.400	97
		3.296	3	4.500	84
				4.600	70
				4.746	57
				4.800	43
				4.900	28
				5.000	13
				5.087	0

VFAN10

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U55A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U65A/W unit U75A/W
2.222	374	2.625	437
2.300	371	2.700	434
2.400	368	2.800	430
2.500	364	2.900	425
2.600	359	3.000	420
2.700	355	3.100	415
2.800	349	3.200	409
2.900	344	3.300	402
3.000	338	3.400	396
3.100	332	3.500	389
3.200	325	3.600	381
3.300	318	3.700	374
3.400	310	3.800	365
3.500	302	3.900	357
3.600	294	4.000	348
3.700	285	4.100	339
3.800	276	4.200	329
3.900	267	4.300	319
4.000	259	4.400	308
4.100	247	4.500	298
4.200	236	4.600	286
4.300	225	4.700	275
4.400	213	4.800	263
4.500	201	4.900	250
4.600	189	5.000	237
4.700	177	5.100	224
4.800	163	5.200	211
4.900	150	5.300	197
5.000	136	5.400	182
5.100	122	5.500	167
5.200	107	5.600	152
<u>5.250</u>	<u>100</u>	5.700	137
5.300	92	5.800	121
5.400	77	5.900	104
5.500	61	<u>5.923</u>	<u>100</u>
5.600	44	6.000	88
		6.100	70
		6.183	56

VFAN25

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U24A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U34A/W unit U35A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U45A/W
1.167	413	1.313	556	2.333	399
1.200	411	1.400	551	2.400	397
1.300	405	1.500	544	2.500	393
1.400	397	1.600	535	2.600	389
1.500	388	1.700	524	2.700	384
1.600	377	1.800	513	2.800	380
1.700	365	1.900	499	2.900	374
1.800	352	2.000	485	3.000	368
1.900	337	2.100	469	3.100	362
2.000	320	2.200	451	3.200	356
2.100	302	2.300	432	3.300	349
2.200	283	2.400	411	3.400	342
2.300	262	2.500	389	3.500	334
<u>2.352</u>	<u>250</u>	2.600	366	3.600	326
2.400	239	2.700	340	3.700	318
2.500	215	2.800	314	3.800	309
2.600	190	2.900	286	3.900	299
2.683	167	3.000	256	4.000	290
		<u>3.017</u>	<u>251</u>	4.100	280
		3.100	225	4.200	269
		3.200	192	4.300	259
		3.300	157	<u>4.375</u>	<u>250</u>
		3.400	122	4.400	247
		3.500	84	4.500	236
		3.600	45	4.600	224
		3.646	27	4.746	211
				4.800	199
				4.900	185
				5.000	172
				5.100	158
				5.200	143
				5.300	129
				5.308	127

VFAN25

AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U55A/W	AIR FLOW RATE [m ³ /s]	available static pressure [Pa] unit U65A/W unit U75A/W
2.500	486	2.625	556
2.600	483	2.700	554
2.700	479	2.800	550
2.800	475	2.900	547
2.900	470	3.000	542
3.000	465	3.100	538
3.100	459	3.200	533
3.200	454	3.300	527
3.300	448	3.400	521
3.400	441	3.500	515
3.500	434	3.600	509
3.600	427	3.700	502
3.700	419	3.800	495
3.800	411	3.900	487
3.900	402	4.000	479
4.000	394	4.100	470
4.100	384	4.200	462
4.200	375	4.300	452
4.300	365	4.400	443
4.400	354	4.500	433
4.500	343	4.600	423
4.600	332	4.700	412
4.700	321	4.800	401
4.800	309	4.900	389
4.900	296	5.000	378
5.000	283	5.100	365
5.100	270	5.200	353
5.200	257	5.300	340
<u>5.250</u>	<u>250</u>	5.400	326
5.300	243	5.500	313
5.400	228	5.600	298
5.500	214	5.700	284
5.600	198	5.800	269
5.700	183	5.900	254
5.800	167	<u>5.923</u>	<u>250</u>
5.900	151	6.000	238
5.950	142	6.100	222
		6.200	205
		6.300	188
		6.400	171
		6.500	153
		6.600	135
		6.700	117
		6.800	98
		6.900	79
		7.000	59

3.3.3 – Special water regulating valves for large water flows (UxxW units)

In certain applications, it is necessary to install a water regulating valve in connection with high water inlet temperatures and consequent large water flows (i.e. cooling tower water).

In these cases special water regulating valves can be factory installed which have been oversized to minimize the pressure drop.

The following table summarizes the technical characteristics of the valves, sized for water inlet temperatures up to 30°C.

SPECIAL WATER REGULATING VALVES CHARACTERISTICS	units						
	U24W	U34W	U35W	U45W	U55W	U65W	U75W
outlets connections, inch BSP int	3/4	1 1/4	1	1	1	1 1/4	1 1/4
valve pressure drop at 0.4 l/s kPa	5						
valve pressure drop at 0.5 l/s kPa	8						
valve pressure drop at 0.6 l/s kPa	12	4					
valve pressure drop at 0.7 l/s kPa	17	5	7				
valve pressure drop at 0.8 l/s kPa	22	7	9				
valve pressure drop at 0.9 l/s kPa		9	11	11			
valve pressure drop at 1.0 l/s kPa		11	14	14	14		
valve pressure drop at 1.1 l/s kPa		13	16	16	16		
valve pressure drop at 1.2 l/s kPa			19	19	19		
valve pressure drop at 1.3 l/s kPa				23	23		
valve pressure drop at 1.4 l/s kPa				26	26	5	
valve pressure drop at 1.5 l/s kPa					30	6	6
valve pressure drop at 1.6 l/s kPa						7	7
valve pressure drop at 1.7 l/s kPa						8	8
valve pressure drop at 1.8 l/s kPa						9	9
valve pressure drop at 1.9 l/s kPa						10	10
valve pressure drop at 2.0 l/s kPa						11	11
valve pressure drop at 2.1 l/s kPa							12
valve pressure drop at 2.2 l/s kPa							13

3.3.4 – Non-combustible thermo-acoustic lining

On request, a fibreglass lining can be provided for thermal and acoustic protection: a surface glass film and special gaskets on the locks prevent the breaking away of the particles and provides mechanical resistance; plastic gaskets on the panel prevent any air leakages. The material, 1" thick, with a density of 25 kg/m³ and thermal conductivity of 0.034 W/mK, is fully non-combustible and meets the requirements of NFPA 90A and 90B standards for fire and smoke safety.

3.3.5 – Extension hood with non-combustible acoustic lining

A special version of the extension hood, with non-combustible acoustic lining and meeting NFPA 90A and 90B standards, can be provided on request. All other characteristics are as for the extension hood option.

3.3.6 – Filter Extension hood with non-combustible acoustic lining

A special version of the filter extension hood, with non-combustible acoustic lining and meeting NFPA 90A and 90B standards, can be provided on request. All other characteristics are as for the extension hood option.

3.3.7 – 220/3/50 Supply voltage

On request all units can be fitted for 220–240/3/50 power supply.

The cooling capacity characteristics for 220/3/50 units are the same as for the 380/3/50 units.

The humidifier capacity in this version ranges from 2.5 to 8.2 kg/h (220/3/50 supply) and 2.7 to 9.0 kg/h (240/3/50 supply).

The electrical characteristics are shown in the "Electrical characteristics resume" section.

3.3.8 – Special packing

On request, a cardboard box with an additional wooden crate or wooden case for sea transport can be supplied.

3.3.9 – Special features for Spanish and Swedish markets

On request, the UxxC can be provided with a special electrical panel and with all components which are in the air flow having a protection coefficient of no less than IP 23. This is in compliance with Swedish national standards. 6PFAN direct driven fans are not available for the Swedish market.

For all remaining countries, the standard version is normally employed.

2.4 – NOISE

The HIRANGE units have been conceived from the start with maximum care for the acoustic and vibrational aspects.

The complete anti-vibration of the fan section, also supplied with the V-belt driven fans, together with the careful design of the air stream, derived by an accurate research carried out in our thermodynamical laboratories, and the oversizing of components within the air stream, ensure the maximum ventilation and performance efficiency with the minimum noise emission.

2.4.1 – Test conditions

All the measurements have been carried out at steady conditions. The background noise level was at least 10 dB lower than that of the conditioner at any frequency. The instrument was positioned one meter above the ground and two metres in front of the unit. The noise data is referred to free field conditions.

The fans are operating at full speed. The discharge head pressure is 20 Pa. The air volume flow rate is standard, with clean EU3 filters. The room ambient temperature is 24°C, the relative humidity 50%. The condensing temperature is 45°C.

NOISE CHARACTERISTICS	unit							
	U24A/W	U34A/W	U35A/W	U45A/W	U55A/W	U65A/W	U75A/W	
ventilation only, SPL at 2m in front of the unit, free field	dB (A)	52.2	57.2	57.2	55.2	56.6	60.8	60.9
with the compressor running, SPL at 2m in front of the free field	dB (A)	54.5	57.4	58.0	56.4	57.1	61.3	61.6
with the compressor running, PWL	dB (A)	77.7	82.4	83.1	80.9	82.3	83.8	85.3

The following tables indicate the noise levels with relevant values for every frequency octave band.

Sound level table

UNIT	Mode	Level	Position	Reference	Unit and tolerance	frequency octave band (Hz)								GLOBAL [dB (A)]	
						31	63	125	250	500	1000	2000	4000		8000
U24A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	67.5	63.0	58.8	54.4	48.7	46.4	42.2	35.6	24.3	52.2
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	68.2	63.3	62.7	59.7	50.0	47.0	42.4	35.7	24.5	54.5
	compressor running	PWL	air discharge	-	dB (-0 +2)	71.3	72.3	73.9	75.5	73.7	73.1	69.8	67.8	62.6	77.7
U34A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	67.2	64.4	64.0	58.6	54.4	51.4	48.5	41.3	17.0	57.2
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	66.8	66.4	63.7	59.8	54.0	51.4	47.9	40.7	16.6	57.4
	compressor running	PWL	air discharge	-	dB (-0 +2)	76.4	77.9	79.4	80.5	79.5	77.7	74.0	71.0	66.2	82.4
U35A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	67.2	64.4	64.0	58.6	54.4	51.4	48.5	41.3	17.0	57.2
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	67.4	65.0	64.3	60.4	54.6	52.0	48.5	41.3	17.2	58.0
	compressor running	PWL	air discharge	-	dB (-0 +2)	76.5	78.0	79.5	81.3	79.6	78.5	76.0	70.0	65.0	83.1
U45A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	65.4	63.7	60.3	57.9	52.8	49.6	44.9	39.9	29.3	55.2
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	66.6	64.9	61.5	59.1	54.0	50.8	46.1	41.1	30.5	56.4
	compressor running	PWL	air discharge	-	dB (-0 +2)	73.9	74.9	76.3	78.7	76.3	75.3	73.2	72.9	67.8	80.9
U55A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	66.8	65.1	61.7	59.3	54.2	51.0	46.3	41.3	30.7	56.6
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	67.0	65.3	61.9	59.5	54.4	51.2	46.5	41.5	30.9	57.1
	compressor running	PWL	air discharge	-	dB (-0 +2)	75.2	76.3	77.8	79.2	77.8	78.4	74.4	71.9	66.7	82.3
U65A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	68.6	67.3	67.0	62.1	58.5	55.4	49.5	44.9	34.7	60.8
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	69.1	67.8	67.5	62.6	59.0	55.9	50.0	45.4	35.2	61.3
	compressor running	PWL	air discharge	-	dB (-0 +2)	79.4	80.4	81.9	83.1	67.9	80.3	76.7	73.8	69.0	83.8
U75A/W	ventilation only	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	68.7	67.4	67.1	62.2	58.6	55.5	49.6	45.0	34.8	60.9
	compressor running	SPL	2 m in front 1 m in height	free field	dB (-0 +2)	69.4	68.1	67.8	62.9	59.3	56.2	50.3	45.7	35.5	61.6
	compressor running	PWL	air discharge	-	dB (-0 +2)	79.5	80.5	82.0	83.4	82.1	80.7	77.1	74.2	70.6	85.3

3.4 – ELECTRICAL CHARACTERISTICS RESUME

OA: Operating Amperes
 FLA: Full Load Amperes
 LRA: Locked Rotor Amperes

Electrical characteristics are per compressor and per fan motor. Compressor OA is based on ARI standard conditions.

Fan motors are all single phase (220–240/1/50 for fans only). LRA, FLA, OA referred to max fan speed (high).

MODEL	COMPONENT (quantity)	std. supply voltage 380/3/50			opt. supply voltage 220/3/50		
		OA	FLA	LRA	OA	FLA	LRA
U24A/W	compressor (no.2)	5.9	7.9	38.0	10.2	13.7	79.0
	fan motor (no.1)	5.7	7.0	19.0	9.9	12.1	33.0
U34A/W	compressor (no.1)	15.5	19.8	94.0	26.8	34.2	190.0
	fan motor (no.2)	6.3	8.5	27.0	10.9	14.7	46.8
U35A/W	compressor (no.2)	8.0	10.1	45.0	13.9	17.5	105.0
	fan motor (no.2)	6.3	8.5	27.0	10.9	14.7	46.8
U45A/W	compressor (no.2)	10.9	13.2	69.0	18.9	22.9	135.0
	fan motor (no.2)	5.5	7.0	19.0	9.5	12.1	33.0
U55A/W	compressor (no.2)	11.9	14.9	82.0	20.6	25.8	168.0
	fan motor (no.2)	6.0	7.0	19.0	10.4	12.1	33.0
U65A/W	compressor (no.2)	15.6	19.8	94.0	27.0	34.2	190.0
	fan motor (no.2)	6.5	8.5	27.0	11.3	14.7	46.8
U75A/W	compressor (no.2)	19.3	24.7	122.0	33.4	42.7	245.0
	fan motor (no.2)	6.5	8.5	27.0	11.3	14.7	46.8

ACCESSORIES

MODEL	COMPONENT	std. supply voltage 380/3/50	opt. supply voltage 220/3/50
		FLA	FLA
U24A/W U34A/W U35A/W U45A/W	electric reheat	13.7	23.7
	humidifier	15.5	24.3
U55A/W U65A/W U75A/W	electric reheat	31.5	54.5
	humidifier	15.5	24.3

SPECIAL FEATURES

Electrical characteristics are per single motor in the VFAN feature.

MODEL	COMPONENT (quantity)	std. supply voltage 380/3/50			opt. supply voltage 220/3/50		
		OA	FLA	LRA	OA	FLA	LRA
U24A/W	VFAN 02 motor (no.1)	3.0	5.2	26.0	5.2	9.6	45.0
	VFAN 10 motor (no.1)	3.6	5.2	26.0	6.2	9.0	45.0
	VFAN 25 motor (no.1)	5.0	6.9	34.5	8.7	12.0	59.8
U34A/W U35A/W	VFAN 02 motor (no.1)	6.1	9.1	49.5	10.6	15.8	85.7
	VFAN 10 motor (no.1)	6.9	9.1	49.5	12.0	15.8	85.7
	VFAN 25 motor (no.1)	8.4	12.0	84.0	14.5	20.8	145.5
U45A/W	VFAN 02 motor (no.2)	2.7	3.7	18.5	4.7	6.4	32.0
	VFAN 10 motor (no.2)	3.2	5.2	26.0	5.5	9.0	45.0
	VFAN 25 motor (no.2)	4.6	6.9	34.5	8.0	12.0	59.8
U55A/W	VFAN 02 motor (no.2)	4.5	6.9	34.5	7.8	12.0	59.8
	VFAN 10 motor (no.2)	5.3	6.9	34.5	9.2	12.0	59.8
	VFAN 25 motor (no.2)	6.5	9.1	49.5	11.3	15.8	85.7
U65A/W U75A/W	VFAN 02 motor (no.1)	6.6	9.1	49.5	11.4	15.8	85.7
	VFAN 10 motor (no.1)	8.3	9.1	49.5	14.4	15.8	85.7
	VFAN 25 motor (no.2)	9.1	12.0	84.0	15.8	20.8	145.5

ENCLOSURES	
Overall dimensions	U24-34-35A/W U45-55A/W U65-75A/W
Refrigerant connections	U24-35-45-55-65-75A U34A
Water connections	U24-35A/W U34A/W U45-55A/W U65-75A/W
Electrical connections	U24-34-35-45-55-65-75A/W
Instruments installation	U24-34-35A/W U45-55A/W U65-75A/W
Overall dimensions for extension hoods	U24-34-35A/W U45-55A/W U65-75A/W
Overall dimensions with filter frame	U24-34-35A/W U45-55A/W U65-75A/W
Overall dimension with extension hood and filter frame	U24-34-35A/W U45-55A/W U65-75A/W
Refrigerant circuit	U24-35-45-55-65-75A U34A U24-35-45-55-65-75A U34A
Electrical diagram	U24-34-35-45-55-65-75A/W
Baseframe	U24-34-35-45-55-65-75A/W

HIROSS reserves the right to change technical data and construction features without notice.

