



PRODUCT SELECTION DATA

WATER-COOLED AND CONDENSERLESS LIQUID CHILLERS WATER-SOURCED HEAT PUMPS



30WG optimized for cooling
61WG optimized for heating
Compact design
Plug and play approach
High efficiency

61WG/30WG/30WGA-A

AQUASNAP

AQUASNAP
Heating

Nominal cooling capacity 25-190 kW
Nominal heating capacity 29-230 kW

The 30WG/30WGA and 61WG units are new Carrier chillers and heat pumps designed for commercial (offices, small hotels, leisure facilities), residential and industrial applications. All units offer a unique combination of high performance and functionality in an exceptionally compact chassis.

61WG units are designed for high-temperature heating applications with hot water production possible up to 65 °C.

The 30WG, also available as a condenserless version (30WGA), is designed for air-conditioning applications with a high SEER value. As they can produce chilled water down to -12 °C they are also suitable for process applications.

A large number of options is available for the whole range:

- hydraulic modules with or without variable water flow rate,
- reinforced sound insulation,
- stacking and connection of two units
- low-temperature applications down to -12 °C (30WG only).



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CUSTOMER BENEFITS

Features

- Reduced footprint
- Scroll compressors and R-410A refrigerant
- Variable-flow pump
- Low-noise option (-3 dB(A))
- Stacking of two units for increased capacity (up to size 090)
- Several communication protocols available: JBus, BacNet, MS/TP, LON
- Water connection at the top or rear (30WG/61WG only)

Available versions

61WG - optimised for heating

- High temperature up to +65 °C
- Evaporator temperature down to -5 °C
- Control of the three-way diverter valve for domestic hot water and space heating requirements
- System approach - the Heating System Manager maximises the global efficiency of complex systems where the 61WG units are combined with an auxiliary heating source to serve multi-zone space heating and domestic hot water production.

30WG - optimised for air conditioning and process Heating & Cooling

- Evaporator temperature down to -12 °C
- Condenser temperature up to +60 °C
- Condensing pressure control devices available

30WGA - optimised for air conditioning

- Continuous operation up to 62 °C saturated condensing temperature
- Compatible remote condensers available
- Optimised remote condenser fan control

The right unit for any application

- The high temperature of the 61WG units makes them compatible with most heating systems, both in new and refurbished buildings and permits domestic hot water production (with a dedicated temperature setpoint).
- Option 153 "Built-in DHW and space heating control" allows control of both domestic hot water and space heating requirements:
 - Domestic hot water production: a built-in three-way valve is directed to divert the heat flow from the space heating loop to the domestic hot water loop and vice versa.
 - Space heating control: the setpoint is adjustable, based on the daily schedule or the outside air temperature (weather compensation function).
 - Control of auxiliary systems: if an alarm is detected at the 61WG/30WG or if there is insufficient heating capacity, a digital signal starts an auxiliary electric heater (1 to 4 stages) or boiler.
 - Pump control: allows control of the built-in pump as well as the pump in the secondary loop (to terminals).
- In 30WG units the pressure control signal ensures safe unit operation and maximised performance at low source-side water temperatures.

- The condenserless 30WGA units are ideal for refurbishment projects where a remote condenser exists on site, and for all projects without geothermal/natural sinks for heat rejection.
- In 61WG/30WG units the Heating System Manager (HSM) accessory allows control of systems with several heat sources and different additional systems: electric heat, boiler or for the most complex systems district heating (see pages 9 to 11).

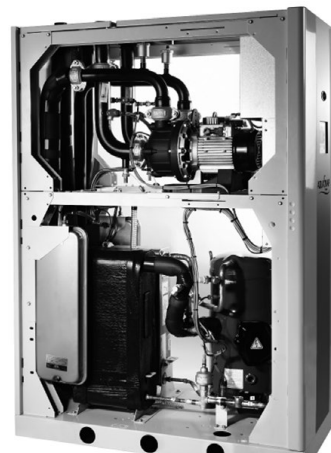
Adaptability and simple installation

- The 30WG and 61WG units can be provided with several hydraulic module options, both on the evaporator and/or condenser side, with different levels of available pressure and variable or fixed-speed pumps (see page 7).
- If option 153 is selected domestic hot water production is controlled via a built-in three-way diverter valve (not supplied).
- 61WG and 30WG units offer water-side cooling/heating reversibility.
- Remote condenser fan control possible for 30WGA units.

Water connections at the rear of the unit



Internal view of 61WG unit with hydraulic module



CUSTOMER BENEFITS

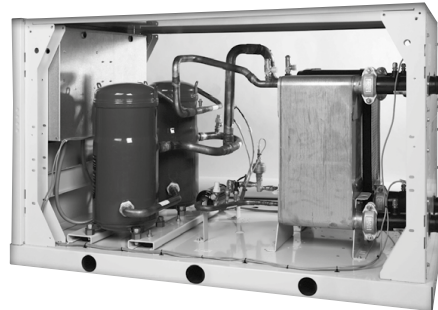
Internal view of 30WG 170



Component accessibility

See photos below.

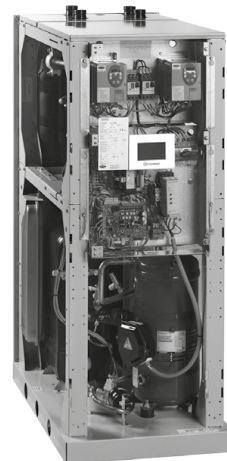
Access to scroll compressors



Water connections at the top of the unit



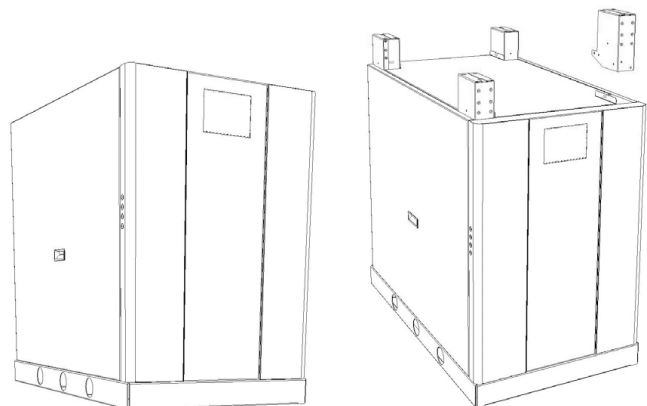
Access to control panel



A compact high-performance product range

- Small footprint, ideal for refurbished buildings, allows access in very tight plant rooms.
- 61WG: High SCOP satisfies even the most stringent standards, with a leaving water temperature of up to 65 °C without supplementary system.
- 30WG: High SEER and SEPR
- Units optimized for process and comfort applications.
- The 30WGA is based on the 30WG design to ensure efficient operation for applications with remote air-cooled condensers.
- Variable-flow pumps reduce system energy consumption.
- The entire range offers low sound levels, allowing installation in any building type. The low-noise option ensures enhanced acoustic comfort (-3 dB(A)).
- 61WG/30WG/30WGA units are equipped with the latest generation R410A scroll compressor, optimised for typical operating conditions for water-sourced units.

Two-unit stacking option for reduced footprint size 020-090



CUSTOMER BENEFITS

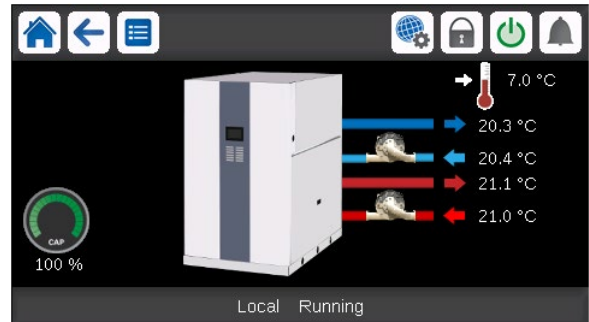
SmartVu™ control

The SmartVu™ control combines intelligence with operating simplicity. The control constantly monitors all machine parameters and precisely manages the operation of compressors, expansion devices, fans and the evaporator water pump for optimum energy efficiency.

The SmartVu™ control features advanced communication technology over Ethernet (IP) and a user-friendly and intuitive user interface with 4.3-inch colour touch screen.

- Energy management configuration
 - Internal timer: controls chiller on/off times and operation at a second setpoint
 - Setpoint offset based on the outdoor air temperature
 - Master/slave control of two chillers operating in parallel with runtime balancing and automatic changeover in case of a unit fault.
 - Innovative smart energy monitoring, providing users with smart data such as real-time electrical energy consumption and cooling capacity, and instantaneous and average energy efficiency values.
 - For further energy savings, the AquaSnap® can be monitored remotely by Carrier experts for energy consumption diagnosis and optimisation.
- Integrated features
 - Night mode: Capacity and fan speed limitation for reduced noise level
 - With hydraulic module: Water pressure display and water flow rate calculation.
- Advanced communication features
 - Easy and high-speed communication technology over Ethernet (IP) to a centralised building management system
 - Access to multiple unit parameters.
- Maintenance functions
 - F-Gas regulation leak check reminder alert
 - Maintenance alert can be configured to days, months or hours of operation
 - Display of trend curves for the main values
 - Management of a fault memory allowing a log of the last 50 incidents to be accessed, with operating readings taken when the fault occurs
 - Blackbox memory

■ 4"3 SmartVu™ user interface



- Intuitive and user-friendly 4"3 inch touch screen interface
- Concise and clear information is available in local languages
- Complete menu, customised for different users (end user, service personnel or Carrier engineers).

Remote management (standard)

Units with SmartVu™ control can be easily accessed from the internet, using a PC with an Ethernet connection. This makes remote control quick and easy and offers significant advantages for service operations.

The AquaSnap® is equipped with an RS485 serial port that offers multiple remote control, monitoring and diagnostic possibilities. Carrier offers a vast choice of control products, specially designed to control, manage and supervise the operation of an air conditioning system. Please consult your Carrier representative for more information.

The AquaSnap® also communicates with other centralised building management systems via optional communication gateways.

A connection terminal allows the AquaSnap® unit to be remotely controlled by wire:

- Start/stop: Opening of this contact will shut down the unit
- Dual setpoint: closing of this contact activates a second setpoint (e.g.: unoccupied mode).
- Demand limit: Closing of this contact limits the maximum chiller capacity to a predefined value.
- Operation indication: This volt-free contact indicates that the chiller is operating (cooling load).
- Alarm indication: this volt-free contact indicates the presence of a major fault that has led to the shut-down of one or several refrigerant circuits.

CUSTOMER BENEFITS

30WG/30WGA units compatible the Carrier 09 series drycoolers/remote condensers

The Carrier 09 series drycoolers and remote condensers are compatible with the 30WG and 30WGA units.

The chiller 30WG/30WGA can control the fans of the dry cooler / remote condenser via digital or analogue outputs (according to AC or EC motors) with following options :

- For chiller 30WG/30WGA : option 154
- For dry cooler / remote condenser : dedicated control cabinet with an auxiliary board.

A simple communication bus is required between the chiller and the dry cooler/ remote condenser.

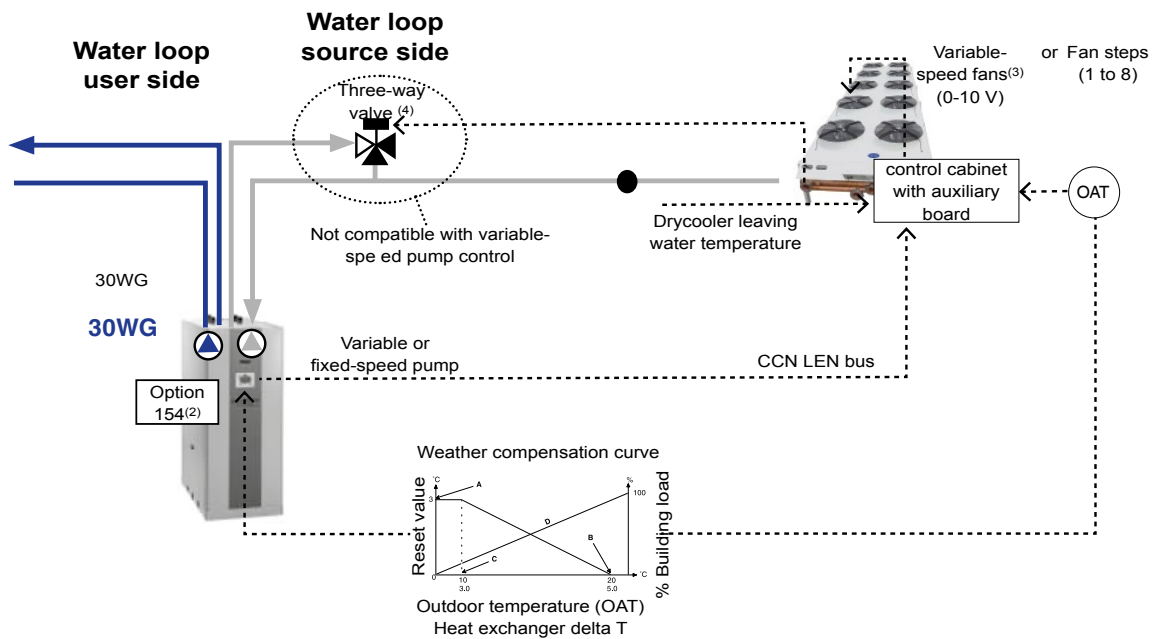
As all control components are installed and tested in the factory, installation and start-up of the unit and its associated drycooler/ remote condenser are simplified.

Control board algorithms optimise energy consumption based on:

- the chilled-water temperature and chilled-water temperature read for drycoolers
- the outside temperature and saturated refrigerant discharge temperature read for remote condensers.

A simple communication bus is required downstream to connect the control board to the unit control.

30WG system concept

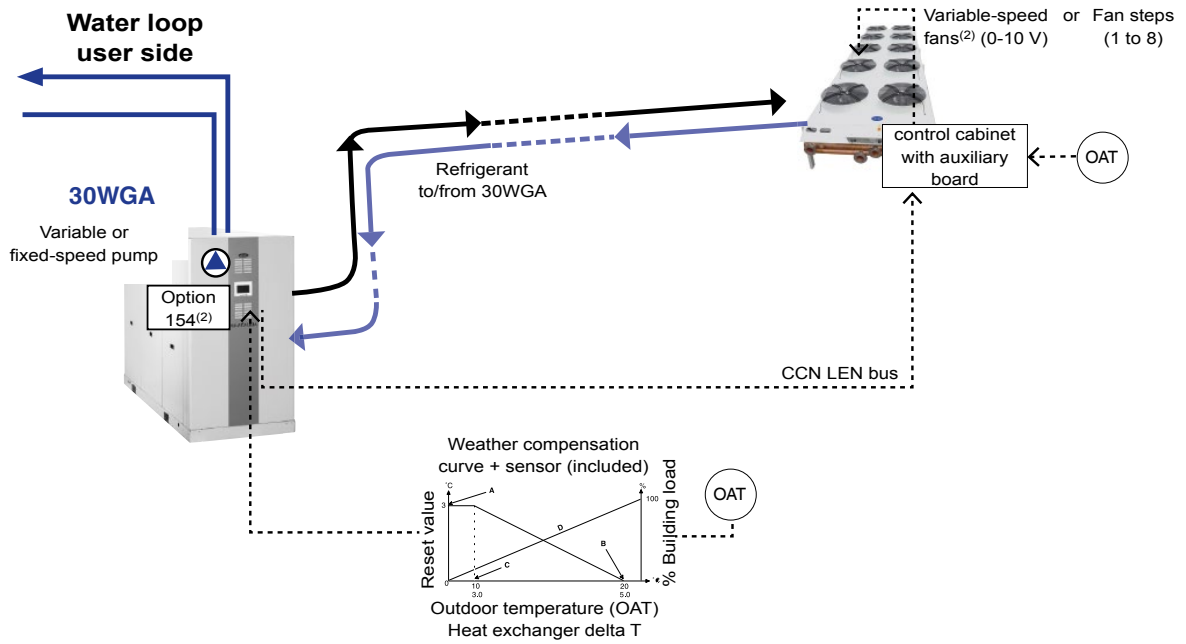


Legend

- CCN** Carrier Comfort Network
- LEN** Local equipment network
- OAT** Outside air temperature
- (1) Control board option on 09PE dedicated to 30WG
- (2) Option 154 for connection and communication with 09PE Drycooler
- (3) For correct operation of the unit below 0 °C variable speed fans are required.
- (4) Three-Way valve or two two-way valves optional on 09PE

CUSTOMER BENEFITS

30WGA system concept



Legend

- CCN** Carrier Comfort Network
- LEN** Local equipment network
- OAT** Outside air temperature
- (1) Control board option on 09PE dedicated to 30WG
- (2) Option 154 for connection and communication with 09PE Drycooler
- (3) For correct operation of the unit below 0 °C variable-speed fans are required.

OPTIONS

Options	No.	Description	Advantages	Use
Medium-temperature brine solution	5B	Low temperature chilled water production down to 0°C with ethylene glycol and propylene glycol.	Covers specific applications such as ice storage and industrial processes	30WGA 020-190
Low-temperature brine solution	6B	Low temperature glycol solution production down to -12 °C with ethylene glycol	Covers specific applications such as ice storage and industrial processes	30WG 020-190
Soft Starter	25	Electronic starter on each compressor	Reduced start-up current	30WG 020-190 61WG 020-190 30WGA 020-190
Master/slave operation	58	Unit equipped with supplementary water outlet temperature sensor kit to be field-installed allowing master/slave operation of two units connected in parallel	Optimised operation of two units connected in parrallele operation with operating time equalisation	30WG 020-190 61WG 020-190 30WGA 020-190
External disconnect handle	70F	The handle of the electrical disconnect switch is on the outside of the unit	Quick access to the unit disconnect switch	30WG 020-190 61WG 020-190 30WGA 020-190
Evap. single pump power/control circuit	84	Unit equipped with an electrical power and control circuit for one pump evaporator side	Quick and easy installation: the control of fixed speed pumps is embedded in the unit control	30WG 110-190 61WG 110-190
Cond. single pump power/control circuit	84R	Unit equipped with an electrical power and control circuit for one pump condenser side	Quick and easy installation: the control of fixed speed pumps is embedded in the unit control	30WG 110-190 61WG 110-190
Condenser insulation	86	Thermal condenser insulation	Minimizes thermal dispersions condenser side (key option for heat pump or heat recovery applications) and allows compliancy with special installation criteria (hot parts insulated)	30WG 020-190 61WG 020-190
HP single-pump hydraulic module	116R	Single high-pressure water pump, water filter, electronic water flow control, pressure transducers. For more details, refer to the dedicated chapter (expansion tank not included.Option with built-in safety hydraulic components available.)	Easy and fast installation (plug & play)	30WG 110-190 61WG 110-190 30WGA 110-190
LP evap. single-pump	116T	Evaporator hydraulic module equipped with low pressure fixed-speed pump, drain valve, air vent and pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included.Option with built-in safety hydraulic components available.)	Easy and fast installation (plug & play)	30WG 020-190 61WG 020-190 30WGA 020-190
HP evap. variable-speed single-pump	116V	Evaporator hydraulic module equipped with high-pressure variable-speed pump, drain valve, air vent and pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included.Option with built-in safety hydraulic components available.)	Easy and fast installation (plug & play), significant pumping energy cost savings (more than two-thirds), tighter water flow control, improved sytem reliability	30WG 020-190 61WG 020-190 30WGA 020-190
HP VSD dual-pump hydraulic mod.	116W	Dual high-pressure water pump with variable speed drive (VSD), pressure transducers. Multiple possibilities of water flow control. For more details, refer to the dedicated chapter (expansion tank not included Option with built-in safety hydraulic components available)	Easy and fast installation (plug & play), significant pumping energy cost savings (more than two-thirds), tighter water flow control, improved sytem reliability	30WG 110-190 61WG 110-190 30WGA 110-190
LP VSD single-pump	116Y	Evaporator hydraulic module equipped with low -pressure variable-speed pump, drain valve, air vent and pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included.Option with built-in safety hydraulic components available.)	Easy and fast installation (plug & play), significant pumping energy cost savings (more than two-thirds), tighter water flow control, improved sytem reliability	30WG 110-190 61WG 110-190 30WGA 110-190
Lon gateway	148D	Two-directional communication board complying with Lon Talk protocol	Connects the unit by communication bus to a building management system	30WG 020-190 61WG 020-190 30WGA 020-190
Bacnet over IP	149	Two-directional high-speed communication using BACnet protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	30WG 20-190 61WG 020-190 30WGA 020-190
Modbus over IP and RS485	149B	Bi-directional high-speed communication using Modbus protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	30WG 020-190 61WG 020-190 30WGA 020-190

OPTIONS

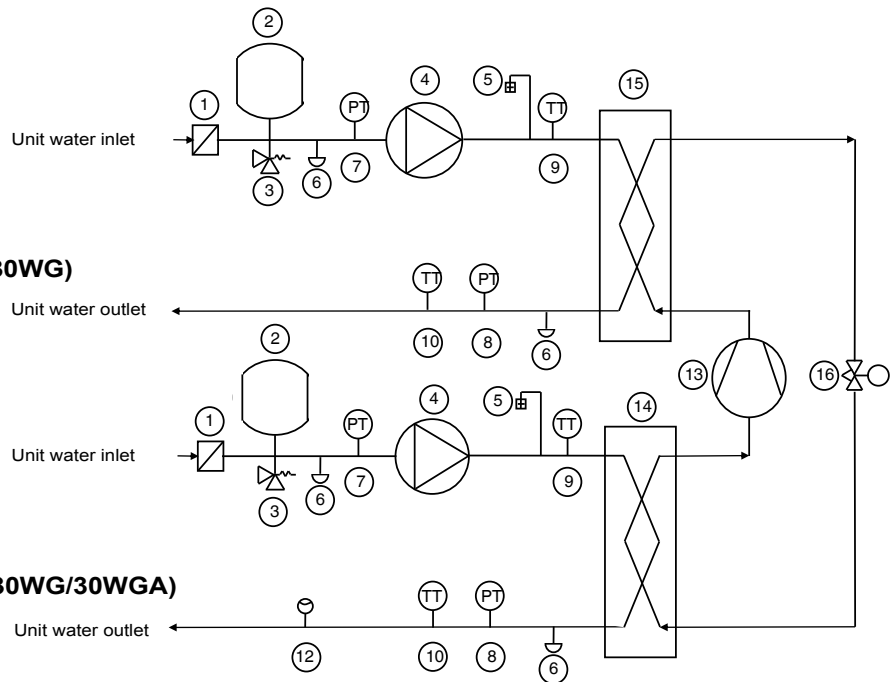
Options	No.	Description	Advantages	Use
Built-in DHW & space heating control	153	Control board factory-installed on the unit, control using weather compensation, control of supplementary electric heater (4 stages) or boiler, needle valve for domestic hot-water production with programmable time schedule.	Permits easy control of a basic heating system	30WG 020-190 61WG 020-090
Specific dry cooler control	154	Dedicated connection and software for 09PE drycooler management. For 09PE drycooler need to select the option control cabinet manage by the chiller	Permits the use of an energy-efficient plug-and-play system	30WG 020-190
Condenser control	154	Control box for communication with the condenser via a bus. For OPERA condenser need to select the cabinet with option control cabinet manage by the chiller Connect' Touch control	Permits the use of an energy-efficient plug-and-play system	30WGA 020-190
Compliance with Russian regulations	199	EAC certification	Conformance with Russian regulations	30WG 020-190 61WG 020-190 30WGA 020-190
Insulation of the evap. in/out ref.lines	256	Thermal insulation of the evaporator entering/leaving refrigerant lines with flexible, anti-UV insulant	Prevents condensation on the evaporator entering/leaving refrigerant lines	30WG 020-190 61WG 020-190 30WGA 020-190
Low noise level	257	Compressor sound enclosure	Reduced sound emissions	30WG 020-190 61WG 020-190 30WGA 020-190
Very low sound level	258	Enhanced sound insulation of main noise sources (Material classified CD0S2 fire class according to Euroclass 13-501).	6 dB(A) quieter than standard . Refer to the physical data table for detailed values	30WG 020-090 61WG 020-090 30WGA 020-090
Evaporator screw connection sleeves kit	264	Evaporator inlet/outlet screw connection sleeves	Allows unit connection to a screw connector	30WG 020-140 61WG 020-140 30WGA 020-140
Condenser screw connection sleeves kit	265	Condenser inlet/outlet screw connection sleeves	Allows unit connection to a screw connector	30WG 020-140 61WG 020-140
Welded evaporator connection kit	266	Victaulic piping connections with welded joints	Easy installation	30WG 020-190 61WG 020-190 30WGA 020-190
Welded condenser water connection kit	267	Victaulic piping connections with welded joints	Easy installation	30WG 020-190 61WG 020-190
HP single-pump, cond. side	270R	Condenser hydraulic module equipped with high pressure fixed-speed pump, drain valve, air vent and pressure sensors. Built-in safety hydraulic components available in option.	Easy and fast installation (plug & play)	30WG 110-190 61WG 110-190
LP single-pump, cond. side	270T	Condenser hydraulic module equipped with low pressure fixed-speed pump, drain valve, air vent and pressure sensors. Built-in safety hydraulic components available in option.	Easy and fast installation (plug & play)	30WG 020-190 61WG 020-190
HP cond. variable-speed single-pump	270V	Condenser hydraulic module equipped with high-pressure variable-speed pump, drain valve, air vent and pressure sensors. (expansion tank not included) Built-in safety hydraulic components available in option.	Easy and fast installation (plug & play), reduced power consumption of the water circulation pump	30WG 020-190 61WG 020-190
HP cond. variable-speed dual-pump	270W	Condenser hydraulic module equipped with dual high-pressure variable-speed pump, drain valve, air vent and pressure sensors. (expansion tank not included) Built-in safety hydraulic components available in option.	Easy and fast installation (plug & play), reduced power consumption of the water circulation pump	30WG 110-190 61WG 110-190
LP cond. variable-speed single-pump	270Y	Condenser hydraulic module equipped with low-pressure variable-speed pump, drain valve, air vent and pressure sensors. (expansion tank not included) Built-in safety hydraulic components available in option.	Easy and fast installation (plug & play), reduced power consumption of the water circulation pump	30WG 110-190 61WG 110-190
High-temp. water prod. with glycol solution on the evap.	272	Condenser side water production up to 65 °C, with glycol solution on the evaporator side to -5 °C	Geothermal application and domestic hot-water production	61WG 020-190
Unit stackable for operation	273	Unit stackable for operation	Reduced footprint size	30WG 020-090 61WG 020-090 30WGA 020-090

OPTIONS

Options	No.	Description	Advantages	Use
water connection at the top	274	Customer water connection at the top of the unit	Reduced footprint size	30WG 020-190 61WG 020-190 30WGA 020-190
Replaceable filter drier	277	Filter drier with cartridge to replace hermetic filter	Easy filter replacement without emptying the refrigerant circuit	30WGA 020-190
Safety hydraulic components, evap. side	293	Screen filter, expansion tank and relief valve integrated in the evaporator hydraulic module	Easy and fast installation (plug & play), operating safety	30WG 020-190 61WG 020-190 30WGA 020-190
Safety hydraulic components, cond. side	293A	Screen filter, expansion tank and relief valve integrated in the condenser hydraulic module	Easy and fast installation (plug & play), operating safety	30WG 020-190 61WG 020-190
Set point adjustment by 4-20mA signal	311	Connections to allow a 4-20mA signal input	Easy energy management, allow to adjust set point by a 4-20mA external signal	30WG 020-190 61WG 020-190 30WGA 020-190
External temperature sensor	312	External temperature sensor control for using weather compensation	Allow to adjust set point using weather compensation and define autorisation operation mode to external temperature	30WG 020-190 61WG 020-190 30WGA 020-190
Free Cooling dry cooler management	313	Control & connections to a Free Cooling Drycooler 09PE or 09VE fitted with option FC control box	Easy system management, Extended control capabilities to a drycooler used in Free Cooling mode	30WG 020-190 30WGA 020-190

HYDRAULIC MODULE (OPTIONS 116T, 270T)

Typical water piping diagram



Condenser water loop (61WG/30WG)

Evaporator water loop (61WG/30WG/30WGA)

Components of unit and hydraulic module

- | | |
|---|---|
| 1 Victaulic screen filter (option 293 or 293A only) | 9/10 Entering/leaving temperature probe |
| 2 Expansion tank (option 293 or 293A only) | 12 Flow switch 61WG option 272 (sizes 020-045 only) |
| 3 Relief valve (option 293 or 293A only) | 13 Compressor |
| 4 Water pump | 14 Evaporator |
| 5 Air vent | 15 Condenser |
| 6 Water drain valve | 16 Expansion device |
| 7/8 Entering/leaving pressure sensor | |

NOTE: Units without hydraulic module include a flow switch.

Physical data, units with hydraulic module

61WG/30WG/30WGA	020	025	030	035	040	045	050	060	070	
Operating weight, 30WG/61WG (options 116V and 270V)⁽¹⁾	kg	305	313	313	321	327	334	513	521	533
Operating weight, 30WGA (option 116V)⁽¹⁾	kg	250	258	258	263	266	271	431	435	442
Height⁽²⁾	mm	1463	1463	1463	1463	1463	1463	1463	1463	1463
Hydraulic module with option 293 or 293A										
Maximum operating pressure	kPa	300	300	300	300	300	300	300	300	300
Water filter (max. removed particle diameter)	mm	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
Expansion tank capacity ⁽³⁾	l	8	8	8	8	8	8	12	12	12
Water connections	in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2

61WG/30WG/30WGA	080	090	110	120	140	150	170	190
Operating weight, 30WG/61WG (options 116V and 270V)⁽¹⁾	kg	544	574	1056	1082	1108	1218	1301
Operating weight, 30WGA (option 116V)⁽¹⁾	kg	449	465	804	820	839	926	986
Height⁽²⁾	mm	1463	1463	1574	1574	1574	1574	1574
Hydraulic module with option 293 or 293A								
Maximum operating pressure	kPa	300	300	400	400	400	400	400
Water filter (max. removed particle diameter)	mm	1,2	1,2	1,2	1,2	1,2	1,2	1,2
Expansion tank capacity ⁽³⁾	l	12	12	25	25	25	35	35
Water connections	in	2	2	2,5	2,5	2,5	3	3

(1) Weight shown is a guideline only.

(2) The length and width dimensions are the same as for the standard unit.

(3) When delivered, the standard pre-inflation of the tanks is not necessary the optimal value for the system. To permit changing the water volume, change the inflation pressure to a pressure that is close to the static head of the system. Fill the system with water (purging the air) to a pressure value that is 10 to 20 kPa higher than the pressure in the tank.

Electrical data, options 116T, 270T

The pumps that are factory-installed in these units comply with the European Ecodesign directive ErP. The additional electrical data required by regulation 640/2009 are given in the installation, operation and maintenance instructions.

This regulation regards the application of directive 2009/125/EC on the eco-design requirements for electric motors.

PHYSICAL DATA, 61WG UNITS

61WG		020	025	030	035	040	045	050	060	070	080	090
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Heating

Standard unit Full load performances*	HW1	Nominal capacity	kW	29	34	38	44	50	57	69	78	88	100	117	
		COP	kW/kW	5,42	5,29	5,21	5,29	5,34	5,32	5,49	5,36	5,46	5,28	5,33	
	HW2	Nominal capacity	kW	28	33	37	43	49	55	66	76	84	95	109	
		COP	kW/kW	4,35	4,34	4,20	4,27	4,32	4,36	4,51	4,32	4,35	4,27	4,31	
	HW3	Nominal capacity	kW	27	32	35	41	47	52	64	74	80	90	103	
		COP	kW/kW	3,65	3,68	3,52	3,59	3,56	3,66	3,75	3,64	3,63	3,56	3,60	
	HW4	Nominal capacity	kW	26	31	34	40	43	49	61	71	76	85	97	
		COP	kW/kW	2,96	2,96	2,86	2,93	2,88	2,96	2,98	3,04	2,99	2,94	2,97	
	HB1	Nominal capacity	kW	22	26	29	34	38	42	50	57	67	75	87	
		COP	kW/kW	4,24	4,26	4,29	4,27	4,27	4,25	4,25	4,27	4,26	4,28	4,29	
	Standard unit Seasonal energy efficiency**	HW1	SCOP _{30/35°C}	kW/kW	5,36	5,20	5,11	5,19	5,23	5,19	5,84	5,93	5,93	5,83	5,82
			η_s heat _{30/35°C}	%	206	200	197	200	201	200	226	229	229	225	225
HW3		SCOP _{47/55°C}	kW/kW	4,37	4,32	4,20	4,28	4,32	4,35	4,86	4,88	4,80	4,89	4,80	
		η_s heat _{47/55°C}	%	167	165	160	163	165	166	186	187	184	188	184	
		P _{rated}	kW	32	38	42	49	56	63	76	88	97	109	124	
		Energy labelling		A++	A++	A++	A++	A++	A++	-	-	-	-	-	
Operating weight⁽¹⁾		kg	191	200	200	207	212	220	386	392	403	413	441		
Operating weight with option 258⁽¹⁾		kg	198	207	207	214	219	227	399	405	416	426	454		
Sound levels⁽²⁾															
Sound power level, standard unit		dB(A)	67	68	69	69	70	70	72	72	72	73	73		
Sound power level, option 257		dB(A)	65	66	66	67	68	68	68	69	69	69	70		
Sound power level, option 258		dB(A)	61	62	63	63	64	64	66	66	66	67	67		
Sound power level, option 257+258		dB(A)	60	62	62	62	64	63	65	65	65	66	66		
Dimensions, standard unit⁽³⁾															
Width		mm	600	600	600	600	600	600	880	880	880	880	880		
Length		mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474		
Height		mm	901	901	901	901	901	901	901	901	901	901	901		
Compressors															
Hermetic scroll 48.3 r/s															
Quantity			1	1	1	1	1	1	2	2	2	2	2		
Number of capacity stages			1	1	1	1	1	1	2	2	2	2	2		
Minimum capacity		%	100	100	100	100	100	100	50	50	50	50	50		

* In accordance with standard EN14511-3:2013

** In accordance with standard EN14825:2016, average climate

HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m². k/W

HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m². k/W

HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m². k/W

HW4 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 55°C/65°C, evaporator and condenser fouling factor 0 m². k/W

HB1 Heating mode conditions: Evaporator entering/leaving water temperature 0°C/-3°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m².K/W, evaporator fluid: 30% ethylene glycol.

η_s heat_{30/35°C}& SCOP_{30/35°C} Values calculated in accordance with EN14825:2016

η_s heat_{47/55°C}& SCOP_{47/55°C} **Bold values compliant to Ecodesign regulation: (EU) No 813/2013 for Heat Pump application**

- Not applicable

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10⁻¹² W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.

(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings



Eurovent certified values

PHYSICAL DATA, 61WG UNITS

61WG		020	025	030	035	040	045	050	060	070	080	090
Refrigerant⁽¹⁾		R410A (GWP=2088 Following AR14)										
Charge, standard unit	kg	3,5	3,5	3,6	3,7	4,0	4,6	7,6	7,8	7,9	8,7	11,5
	teqCO ₂	7,2	7,3	7,4	7,6	8,2	9,5	15,9	16,3	16,5	18,2	24
Charge, unit with option 272	kg	2,7	2,9	2,9	3,0	3,2	3,9	7,2	7,3	7,4	7,6	10,5
	teqCO ₂	5,6	6,0	6,1	6,3	6,7	8,1	14,9	15,2	15,5	15,9	21,9
Capacity control		SmartVu™										
Evaporator		Direct-expansion plate heat exchanger										
Water volume	l	3,3	3,6	3,6	4,2	4,6	5,0	8,4	9,2	9,6	10,4	12,5
Water connections		Raccordements Victaulic										
Inlet/outlet	in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Condenser		Plate heat exchanger										
Net water volume	l	3,3	3,6	3,6	4,2	4,6	5,0	8,4	9,2	9,6	10,4	12,5
Water connections		Victaulic										
Inlet/outlet	in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Chassis paint color		Color code: RAL7035										

(1) Weight shown is a guideline only. Please refer to the unit nameplate

PHYSICAL DATA, 61WG UNITS

61WG			110	120	140	150	170	190	
Heating									
Standard unit Full load performances*	HW1	Nominal capacity	kW	135	151	175	183	204	235
		COP	kW/kW	5,48	5,44	5,44	5,62	5,49	5,48
	HW2	Nominal capacity	kW	131	147	168	176	197	226
		COP	kW/kW	4,56	4,53	4,55	4,63	4,52	4,53
	HW3	Nominal capacity	kW	124,4	140,7	161,3	166,0	186,2	212,5
		COP	kW/kW	3,58	3,48	3,56	3,53	3,42	3,49
	HW4	Nominal capacity	kW	118	131	150	157	174	200
		COP	kW/kW	2,83	2,74	2,85	2,86	2,70	2,85
	HB1	Nominal capacity	kW	102	114	133	135	153	177
		COP	kW/kW	4,42	4,39	4,42	4,40	4,39	4,38
Standard unit Seasonal energy efficiency**	HW1	SCOP _{30/35°C}	kW/kW	6,20	6,32	6,24	6,18	6,19	6,03
		η _{s heat} _{30/35°C}	%	241	245	242	240	240	234
	HW3	SCOP_{47/55°C}	kW/kW	5,03	5,03	5,03	5,02	5,05	4,93
		η_{s heat}_{47/55°C}	%	194	193	193	194	194	190
		P _{rated}	kW	144	162	185	193	215	247
Operating weight (1)			kg	707	733	758	841	877	908
Sound levels (2)									
Sound power level, standard unit			dB(A)	76	77	78	76	77	78
Sound power level, option 257			dB(A)	73	74	75	73	74	75
Dimensions, standard unit (3)									
Width			mm	880	880	880	880	880	880
Length			mm	1583	1583	1583	1583	1583	1583
Height			mm	1574	1574	1574	1574	1574	1574
Compressors			Hermetic scroll 48.3 r/s						
Quantity				3	3	3	4	4	4
Number of capacity stages				3	3	3	4	4	4
Minimum capacity			%	33	33	33	25	25	25
Refrigerant(1)			R410A (GWP=2088 Following ARI4)						
Charge, standard unit			kg	13,3	14,5	15,6	21,0	23,0	24,2
			teqCO ₂	27,8	30,3	32,6	43,8	48,0	50,5
Capacity control			SmartVu™						

* In accordance with standard EN14511-3:2013

** In accordance with standard EN14825:2016, average climate

HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m². k/W

HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m². k/W

HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m². k/W

HW4 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 55°C/65°C, evaporator and condenser fouling factor 0 m². k/W

HB1 Heating mode conditions: Evaporator entering/leaving water temperature 0°C/-3°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m².K/W, evaporator fluid: 30% ethylene glycol.

η_{s heat}_{30/35°C} & SCOP_{30/35°C}
η_{s heat}_{47/55°C} & SCOP_{47/55°C}
Values calculated in accordance with EN14825:2016

Bold values compliant to Ecodesign regulation: (EU) No 813/2013 for Heat Pump application

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10⁻¹² W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.

(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings



Eurovent certified values

PHYSICAL DATA, 61WG UNITS

61WG		110	120	140	150	170	190
Evaporator		Direct-expansion plate heat exchanger					
Water volume	l	15,18	17,35	19,04	23,16	26,52	29,05
Water connections		Victaulic					
Inlet/outlet	in	2 1/2	2 1/2	2 1/2	3	3	3
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000
Condenser		Plate heat exchanger					
Net water volume	l	15,18	17,35	19,04	23,16	26,52	29,05
Water connections		Victaulic					
Inlet/outlet	in	2 1/2	2 1/2	2 1/2	3	3	3
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000
Chassis paint color		Color code: RAL7035					

PHYSICAL DATA, 30WG UNITS , SIZES 020 TO 090

30WG	020	025	030	035	040	045	050	060	070	080	090
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Heating

Standard unit Full load performances*	HW1	Nominal capacity	kW	30	35	38	44	50	56	70	77	89	101	114
		COP	kW/kW	5,53	5,53	5,49	5,52	5,49	5,51	5,58	5,48	5,53	5,46	5,50
	HW2	Nominal capacity	kW	29	33	36	43	49	54	68	74	85	97	108
		COP	kW/kW	4,34	4,37	4,35	4,36	4,40	4,35	4,39	4,35	4,32	4,40	4,32
	HW3	Nominal capacity	kW	28	33	35	41	47	52	65	73	81	93	103
		COP	kW/kW	3,59	3,63	3,61	3,60	3,67	3,61	3,58	3,62	3,54	3,70	3,56
Standard unit Seasonal energy efficiency**	HW1	SCOP _{30/35°C}	kW/kW	5,46	5,45	5,36	5,40	5,35	5,38	6,12	6,08	6,09	6,11	6,09
		η _{s heat} _{30/35°C}	%	211	210	206	208	206	207	237	235	235	236	235
	HW3	SCOP_{47/55°C}	kW/kW	4,36	4,37	4,34	4,37	4,40	4,34	4,91	4,96	4,85	5,08	4,91
		η_{s heat}_{47/55°C}	%	167	167	166	167	168	166	188	190	186	195	188
		P _{rated}	kW	32	37	40	47	54	59	75	83	93	106	118
		Energy labelling		A++	A++	A++	A++	A++	A++	-	-	-	-	-

Cooling

Standard unit Full load performances*	CW1	Nominal capacity	kW	25	29	32	37	42	47	58	63	74	84	95
		EER	kW/kW	4,72	4,72	4,69	4,73	4,69	4,72	4,72	4,65	4,69	4,65	4,68
		Eurovent class		B	B	B	B	B	B	B	B	B	B	B
	CW2	Nominal capacity	kW	34	39	43	50	57	66	79	86	102	113	129
		EER	kW/kW	6,42	6,10	6,03	6,04	5,90	6,06	6,12	5,95	6,19	5,93	6,13
		Eurovent class		A	A	A	A	A	A	A	A	A	A	A
Standard unit Seasonal energy efficiency**	SEER _{12/7°C} Comfort low temp.	kW/kW	4,94	4,94	4,83	4,87	4,85	4,88	5,70	5,62	5,58	5,72	5,68	
	SEPR _{12/7°C} Process high temp.	kW/kW	6,42	6,44	6,26	6,22	6,26	6,31	6,63	6,50	6,48	6,59	6,62	
Unit with option 6B Seasonal energy efficiency**	SEPR _{2/-8°C} Process medium temp.***	kWh/kWh	3,92	4,26	4,43	4,34	4,47	4,01	4,12	4,73	4,55	4,78	4,76	
Integrated part load value	IPLV.SI	kW/kW	5,840	5,850	5,760	5,780	5,770	5,820	6,580	6,680	6,560	6,810	6,720	
Operating weight⁽¹⁾		kg	191	200	200	207	212	220	386	392	403	413	441	
Operating weight with option 258⁽¹⁾		kg	198	207	207	214	219	227	399	405	416	426	454	
Sound levels⁽²⁾														
Sound power level, standard unit		dB(A)	67	68	69	69	70	70	72	72	72	73	73	
Sound power level, option 257		dB(A)	65	66	66	67	68	68	68	69	69	69	70	
Sound power level, option 258		dB(A)	61	62	63	63	64	64	66	66	66	67	67	
Sound power level, option 257 + 258		dB(A)	60	62	62	62	64	63	65	65	65	66	66	
Dimensions, standard unit⁽³⁾														
Width		mm	600	600	600	600	600	600	880	880	880	880	880	
Length		mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474	
Height		mm	901	901	901	901	901	901	901	901	901	901	901	

* In accordance with standard EN14511-3:2013

** In accordance with standard EN14825:2016, average climate

*** With EG 30%

HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2. kW

HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m2. kW

HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m2. kW

CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2.K/W

CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2.K/W

η_{s heat}_{30/35°C} & SCOP_{30/35°C} Values calculated in accordance with EN14825:2016

η_{s heat}_{47/55°C} & SCOP_{47/55°C} Bold values compliant to Ecodesign regulation: (EU) No 813/2013 for Heat Pump application

SEER_{12/7°C} & SEPR_{12/7°C} Values calculated in accordance with EN14825:2016

SEPR_{2/-8°C} Values calculated in accordance with EN14825:2016

- Not applicable

IPLV.SI Calculations according to standard performances AHRI 551-591 (SI)

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10⁻¹² W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.

(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.



Eurovent certified values

PHYSICAL DATA, 30WG UNITS , SIZES 020 TO 090

30WG	020	025	030	035	040	045	050	060	070	080	090	
Compressors	Hermetic scroll 48.3 r/s											
Quantity	1	1	1	1	1	1	2	2	2	2	2	
Number of capacity stages	1	1	1	1	1	1	2	2	2	2	2	
Minimum capacity	%	100	100	100	100	100	50	50	50	50	50	
Refrigerant⁽¹⁾	R410A (GWP=2088 Following ARI4)											
Charge, standard unit	kg	3,5	3,5	3,6	3,7	4,0	4,6	7,6	7,8	7,9	8,7	11,5
	teqCO ₂	7,2	7,3	7,4	7,6	8,2	9,5	15,9	16,3	16,5	18,2	24
Capacity control	SmartVu™											
Evaporator	Direct-expansion plate heat exchanger											
Water volume	l	3,3	3,6	3,6	4,2	4,6	5,0	8,4	9,2	9,6	10,4	12,5
Water connections	Victaulic											
Inlet/outlet	in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Condenser	Plate heat exchanger											
Net water volume	l	3,3	3,6	3,6	4,2	4,6	5,0	8,4	9,2	9,6	10,4	12,5
Water connections	Victaulic											
Inlet/outlet	in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Chassis paint color	Color code: RAL7035											

(1) Weight shown is a guideline only. Please refer to the unit nameplate

PHYSICAL DATA, 30WG UNITS, SIZES 110 TO 190

30WG		110	120	140	150	170	190
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Heating

Standard unit Full load performances*	HW1	Nominal capacity	kW	135	152	175	183	207	238
		COP	kW/kW	5,50	5,50	5,42	5,58	5,59	5,50
	HW2	Nominal capacity	kW	131	148	163	174	197	218
		COP	kW/kW	4,44	4,45	4,38	4,41	4,50	4,38
	HW3	Nominal capacity		125	140	160	166	187	214
		COP		3,56	3,45	3,54	3,55	3,44	3,53
Standard unit Seasonal energy efficiency**	HW1	SCOP _{30/35°C}	kW/kW	6,31	6,37	6,31	6,31	6,32	6,18
		η _{s heat} _{30/35°C}	%	244	247	244	244	245	239
	HW3	SCOP_{47/55°C}	kW/kW	5,05	5,09	5,05	5,02	5,17	4,96
		η_{s heat}_{47/55°C}	%	194	196	194	193	199	190
		P _{rated}	kW	143	161	178	191	216	239

Cooling

Standard unit Full load performances*	CW1	Nominal capacity	kW	115	130	144	153	172	192
		EER	kW/kW	4,79	4,77	4,70	4,83	4,78	4,79
		Eurovent class		B	B	B	B	B	B
	CW2	Nominal capacity	kW	155	176	196	207	231	262
		EER	kW/kW	6,20	6,10	6,01	6,23	5,97	6,14
		Eurovent class		A	A	A	A	A	A
Standard unit Seasonal energy efficiency**	SEER _{12/7°C} Comfort low temp.	kW/kW	6,12	6,24	6,17	5,97	6,06	5,96	
	SEPR _{12/7°C} Process high temp.	kWh/kWh	6,98	7,13	6,90	6,54	6,62	6,41	
Unit with option 6B Seasonal energy efficiency**	SEPR _{2/-8°C} Process medium temp.***	kWh/kWh	4,01	4,40	4,35	4,52	4,65	4,45	
Integrated part load value	IPLV.SI	kW/kW	6,860	6,980	6,900	6,820	6,890	6,820	
Operating weight (1)		kg	707	733	758	841	877	908	
Sound levels (2)									
Sound power level, standard unit		dB(A)	76	77	78	76	77	78	
Sound power level, option 257		dB(A)	73	74	75	73	74	75	
Dimensions, standard unit (3)									
Width		mm	880	880	880	880	880	880	
Length		mm	1583	1583	1583	1583	1583	1583	
Height		mm	1574	1574	1574	1574	1574	1574	
Compressors			Hermetic scroll 48.3 r/s						
Quantity			3	3	3	4	4	4	
Number of capacity stages			3	3	3	4	4	4	
Minimum capacity		%	33	33	33	25	25	25	

* In accordance with standard EN14511-3:2013

** In accordance with standard EN14825:2016, average climate

*** With EG 30%

HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2. kW

HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m2. kW

HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m2. kW

CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2.K/W

CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m2.K/W

Values calculated in accordance with EN14825:2016

Values compliant to Ecodesign regulation: (EU) No 813/2013 for Heat Pump application

Values calculated in accordance with EN14825:2016

Values calculated in accordance with EN14825:2016

η_{s heat}_{30/35°C} & SCOP_{30/35°C}

η_{s heat}_{47/55°C} & SCOP_{47/55°C}

SEER_{12/7°C} & SEPR_{12/7°C}

SEPR_{2/-8°C}

IPLV.SI

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10⁻¹² W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.

(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.



Eurovent certified values

PHYSICAL DATA, 30WG UNITS, SIZES 110 TO 190

30WG		110	120	140	150	170	190
Refrigerant ⁽¹⁾		R410A (GWP=2088 Following ARI4)					
Charge, standard unit	kg	13,3	14,5	15,6	21,0	23,0	24,2
	teqCO ₂	27,8	30,3	32,6	43,8	48,0	50,5
Capacity control		SmartVu™					
Evaporator		Direct-expansion plate heat exchanger					
Water volume	l	15,18	17,35	19,04	23,16	26,52	29,05
Water connections	-	Victaulic					
Inlet/outlet	in	2 1/2	2 1/2	2 1/2	3	3	3
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000
Condenser		Plate heat exchanger					
Net water volume	l	15,18	17,35	19,04	23,16	26,52	29,05
Water connections	-	Victaulic					
Inlet/outlet	in	2 1/2	2 1/2	2 1/2	3	3	3
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000
Chassis paint color		Color code: RAL7035					

(1) Weight shown is a guideline only. Please refer to the unit nameplate

PHYSICAL DATA, 30WGA UNITS

30WGA			020	025	030	035	040	045	050	060	070	080	090	
Standard unit Full load performances*	CS1	Nominal capacity	kW	22,8	27	29,1	34	39,2	42,7	54,5	59,1	67,5	78,2	87,4
		EER	kW/kW	3,70	3,76	3,68	3,73	3,75	3,70	3,70	3,66	3,64	3,81	3,77
	CS2	Nominal capacity	kW	31,8	37,6	40,3	47	53,2	61,3	74,5	81,2	94,9	108	121
		EER	kW/kW	5,35	5,25	5,11	5,09	4,99	5,15	5,16	5,15	5,18	5,26	5,13
Operating weight⁽¹⁾		kg	164	171	171	177	180	185	321	324	332	339	354	
Operating weight with option 258⁽¹⁾		kg	171	178	178	184	187	192	334	337	345	352	367	
Sound levels⁽²⁾														
Sound power level, standard unit		dB(A)	67	68	69	69	70	70	72	72	72	73	73	
Sound power level, option 257		dB(A)	65	66	66	67	68	68	68	69	69	69	70	
Sound power level, option 258		dB(A)	61	62	63	63	64	64	66	66	66	67	67	
Sound power level, option 257 + 258		dB(A)	60	62	62	62	64	63	65	65	65	66	66	
Dimensions, standard unit⁽³⁾														
Width		mm	600	600	600	600	600	600	880	880	880	880	880	
Length		mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474	
Height		mm	901	901	901	901	901	901	901	901	901	901	901	
Compressors														
Hermetic scroll 48.3 r/s														
Circuit A			1	1	1	1	1	1	2	2	2	2	2	
Circuit B			-	-	-	-	-	-	-	-	-	-	-	
Number of capacity stages			1	1	1	1	1	1	2	2	2	2	2	
Minimum capacity		%	100	100	100	100	100	100	50	50	50	50	50	
Refrigerant														
R410A (GWP=2088 Following ARI4)														
Capacity control														
SmartVu™														
Evaporator														
Direct-expansion plate heat exchanger														
Water volume		l	3,3	3,6	3,6	4,2	4,6	5,0	8,4	9,2	9,6	10,4	12,5	
Water connections														
Victaulic														
Inlet/outlet		in	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2	2	2	
Max. water-side operating pressure without hydraulic module		kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Refrigerant connections														
Discharge line diameter		in	7/8	7/8	7/8	7/8	7/8	7/8	1-1/8	1-1/8	1-1/8	1-1/8	1-1/8	
Liquid line diameter		in	5/8	5/8	5/8	5/8	5/8	5/8	7/8	7/8	7/8	7/8	7/8	
Chassis paint color														
Color code: RAL7035														

* In accordance with standard EN14511-3:2013. Refrigerant piping equivalent length (without drier and valves) = 3 m.

CS1 Cooling mode conditions: evaporator entering/leaving water temperature 12 °C/7 °C, saturated condensing temperature 45 °C, subcooling 5 K, evaporator fouling factor 0 m²K/W.

CS2 Cooling mode conditions: evaporator entering/leaving water temperature 23 °C/18 °C, saturated condensing temperature 45 °C, subcooling 5 K, evaporator fouling factor 0 m²K/W.

(1) Weight shown is a guideline only. Please refer to the unit nameplate

(2) In dB ref=10⁻¹² W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A) Measured in accordance with ISO 9614-1.

(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

PHYSICAL DATA, 30WGA UNITS

30WGA			110	120	140	150	170	190	
Standard unit Full load performances*	CS1	Nominal capacity	kW	106	119	132	140	159	175
		EER	kW/kW	3,78	3,78	3,72	3,75	3,81	3,72
	CS2	Nominal capacity	kW	146	166	185	195	218	247
		EER	kW/kW	5,24	5,17	5,12	5,32	5,17	5,26
Operating weight⁽¹⁾			kg	762	787	814	909	944	975
Sound levels⁽²⁾									
Sound power level			dB(A)	76	77	78	76	77	78
Sound power level, option 257			dB(A)	73	74	75	73	74	75
Dimensions, standard unit⁽³⁾									
Width			mm	880	880	880	880	880	880
Length			mm	1583	1583	1583	1583	1583	1583
Height			mm	1574	1574	1574	1574	1574	1574
Compressors				Hermetic scroll 48.3 r/s					
Circuit A				3	3	3	4	4	4
Number of capacity stages				3	3	3	4	4	4
Minimum capacity			%	33	33	33	25	25	25
Refrigerant				R410A (GWP=2088 Following ARI4)					
Capacity control				SmartVu™					
Evaporator				Direct-expansion plate heat exchanger					
Water volume			l	15,18	17,35	19,04	23,16	26,52	29,05
Water connections				Victaulic					
Inlet/outlet			in	2 1/2	2 1/2	2 1/2	3	3	3
Max. water-side operating pressure without hydraulic module				1000	1000	1000	1000	1000	1000
Refrigerant connections									
Discharge line diameter			in	1"3/8	1"3/8	1"3/8	1"1/8	1"1/8	1"1/8
Liquid line diameter			in	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"
Chassis paint color				Color code: RAL7035					

- * In accordance with standard EN14511-3:2013. Refrigerant piping equivalent length (without drier and valves) = 3 m.
- CS1 Cooling mode conditions: evaporator entering/leaving water temperature 12 °C/7 °C, saturated condensing temperature 45 °C, subcooling 5 K, evaporator fouling factor 0 m²K/W.
- CS2 Cooling mode conditions: evaporator entering/leaving water temperature 23 °C/18 °C, saturated condensing temperature 45 °C, subcooling 5 K, evaporator fouling factor 0 m²K/W.
- (1) Weight shown is a guideline only. Please refer to the unit nameplate
- (2) In dB ref=10⁻¹² W, (A) weighting. Declared dual number noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/- 3dB(A)). Measured in accordance with ISO 9614-1.
- (3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

ELECTRICAL DATA

61WG without hydraulic module		020	025	030	035	040	045	050	060	070	080	090	
Power circuit													
Nominal voltage	V-ph-Hz	400-3-50											
Voltage range	V	360-440											
Control circuit supply		24 V, via internal transformer											
Maximum start-up current draw (Un)⁽¹⁾													
Standard unit	A	98	142	142	147	158	197	161,6	163	171,4	184,7	227,9	
Unit with electronic starter option	A	53,9	78,1	78,1	80,9	86,9	108,4	97,7	99,2	105,2	113,6	139,2	
Unit power factor at maximum capacity⁽²⁾		0,9	0,8	0,9	0,9	0,9	0,9	0,8	0,9	0,9	0,9	0,9	
Maximum operating power input⁽²⁾		kW	9,5	11,3	12,4	14,4	15,9	18,2	22,5	24,9	28,7	31,8	36,4
Nominal unit operating current draw⁽³⁾		A	10,6	12,9	13,3	15,2	16,5	19,7	25,8	26,6	30,4	33,0	39,4
Maximum operating current draw (Un)⁽⁴⁾		A	16,1	19,6	21,1	24,4	26,7	30,9	39,2	42,2	48,8	53,4	61,8
Maximum operating current draw (Un-10%)*		A	17,9	21,8	23,4	27,1	29,7	34,3	43,6	46,9	54,2	59,3	68,7
Customer-side unit power reserve		Customer reserve at the 24 V control power circuit											
Short-circuit stability and protection		See table below "Short-circuit stability current"											

61WG without hydraulic module		110	120	140	150	170	190
Power circuit							
Nominal voltage	V-ph-Hz	400-3-50					
Voltage range	V	360-440					
Control circuit supply		24 V, via internal transformer					
Maximum start-up current draw (Un)⁽¹⁾							
Standard unit	A	195,8	211,4	258,8	220,2	238,1	289,7
Unit with electronic starter option	A	129,7	140,3	170,2	154,1	167	201,1
Unit power factor at maximum capacity⁽²⁾		0,87	0,85	0,85	0,87	0,85	0,85
Maximum operating power input⁽²⁾		kW	44	47	55	59	73
Nominal unit operating current draw⁽³⁾		A	45,6	49,5	59,1	60,8	78,8
Maximum operating current draw (Un)⁽⁴⁾		A	73,2	80,1	92,7	97,6	123,6
Maximum operating current draw (Un-10%)*		A	81,3	89	103	108,4	137,3
Customer-side unit power reserve		Customer reserve at the 24 V control power circuit					
Short-circuit stability and protection		See table below "Short-circuit stability current"					

- (1) Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + locked rotor current or limited start-up current of the largest compressor).
- (2) Maximum power input at the unit operating limits.
- (3) Values obtained at standardised Eurovent conditions: evaporator entering/leaving water temperature 10 °C/7 °C, condenser entering/leaving water temperature 30 °C/35 °C.
- (4) Maximum unit operating current at maximum unit power input and 400 V.
- * Maximum unit operating current at maximum unit power input and 360 V.

30WG without hydraulic module		020	025	030	035	040	045	050	060	070	080	090	
Power circuit													
Nominal voltage	V-ph-Hz	400-3-50											
Voltage range	V	360-440											
Control circuit supply		24 V, via internal transformer											
Maximum start-up current draw (Un)⁽¹⁾													
Standard unit	A	98	142	142	147	158	197	161	162	170	183	226	
Unit with electronic starter option	A	53,9	78,1	78,1	80,9	86,9	108,4	96,8	97,9	104,1	112,3	137,4	
Unit power factor at maximum capacity⁽²⁾		0,9	0,8	0,9	0,9	0,9	0,9	0,8	0,9	0,9	0,9	0,9	
Maximum operating power input⁽²⁾		kW	9,2	10,8	11,7	13,7	15,1	17,1	21,5	23,3	27,3	30,3	34,2
Nominal unit operating current draw⁽³⁾		A	10,5	13,2	13,8	15,6	16,2	20,2	26,4	27,6	31,2	32,4	40,4
Maximum operating current draw (Un)⁽⁴⁾		A	15,6	18,7	19,8	23,2	25,4	29	37,4	39,6	46,4	50,8	58
Maximum operating current draw (Un-10%)*		A	17,3	20,8	22	25,8	28,2	32,2	41,6	44	51,6	56,4	64,4
Customer-side unit power reserve		Customer reserve at the 24 V control power circuit											
Short-circuit stability and protection		See table below "Short-circuit stability current"											

- (1) Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + locked rotor current or limited start-up current of the largest compressor).
- (2) Maximum power input at the unit operating limits.
- (3) Values obtained at standardised Eurovent conditions: evaporator entering/leaving water temperature 12 °C/7 °C, condenser entering/leaving water temperature 30 °C/ 35 °C.
- (4) Maximum unit operating current at maximum unit power input and 400 V.
- * Maximum unit operating current at maximum unit power input and 360 V.

ELECTRICAL DATA

30WG without hydraulic module		110	120	140	150	170	190	
Power circuit								
Nominal voltage	V-ph-Hz	400-3-50						
Voltage range	V	360-440						
Control circuit supply								
24 V, via internal transformer								
Maximum start-up current draw (Un)⁽¹⁾								
Standard unit	A	193,4	208,8	255	216,6	234,2	284	
Unit with electronic starter option	A	127,3	137,7	166,4	150,5	163,1	195,4	
Unit power factor at maximum capacity⁽²⁾								
		0,87	0,85	0,85	0,87	0,85	0,85	
Maximum operating power input⁽²⁾								
		kW	41	45	51	55	60	68
Nominal unit operating current draw⁽³⁾								
		A	46,8	48,6	60,6	62,4	64,8	80,8
Maximum operating current draw (Un)⁽⁴⁾								
		A	69,6	76,2	87	92,8	101,6	116
Maximum operating current draw (Un-10%)*								
		A	77,3	84,7	96,7	103,1	112,9	128,9
Customer-side unit power reserve								
Customer reserve at the 24 V control power circuit								
Short-circuit stability and protection								
See table below "Short-circuit stability current"								

- (1) Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + locked rotor current or limited start-up current of the largest compressor).
(2) Maximum power input at the unit operating limits.
(3) Values obtained at standardised Eurovent conditions: evaporator entering/leaving water temperature 12 °C/7 °C, condenser entering/leaving water temperature 30 °C/ 35 °C.
(4) Maximum unit operating current at maximum unit power input and 400 V.
* Maximum unit operating current at maximum unit power input and 360 V.

30WGA without hydraulic module		020	025	030	035	040	045	050	060	070	080	090
Power circuit												
Nominal voltage	V-ph-Hz	400-3-50										
Voltage range	V	360-440										
Control circuit supply												
24 V, via internal transformer												
Maximum start-up current draw (Un)⁽¹⁾												
Standard unit	A	98	142	142	147	158	197	161	162	170	183	226
Unit with electronic starter option	A	53,9	78,1	78,1	80,9	86,9	108,4	96,8	97,9	104,1	112,3	137,4
Unit power factor at maximum capacity⁽²⁾												
		0,9	0,8	0,9	0,9	0,9	0,9	0,8	0,9	0,9	0,9	0,9
Maximum operating power input⁽²⁾												
		kW	9,2	10,8	11,7	13,7	15,1	17,1	21,5	23,3	27,3	34,2
Nominal unit operating current draw⁽³⁾												
		A	11,4	13,8	14,7	16,5	18,1	21,2	27,6	29,4	33,1	42,5
Maximum operating current draw (Un)⁽⁴⁾												
		A	15,6	18,7	19,8	23,2	25,4	29	37,4	39,6	46,4	58
Maximum operating current draw (Un-10%)*												
		A	17,3	20,8	22	25,8	28,2	32,2	41,6	44	51,6	64,4
Customer-side unit power reserve												
Customer reserve at the 24 V control power circuit												
Short-circuit stability and protection												
See table below "Short-circuit stability current"												

30WGA without hydraulic module		110	120	140	150	170	190	
Power circuit								
Nominal voltage	V-ph-Hz	400-3-50						
Voltage range	V	360-440						
Control circuit supply								
24 V, via internal transformer								
Maximum start-up current draw (Un)⁽¹⁾								
Standard unit	A	193,4	208,8	255	216,6	234,2	284	
Unit with electronic starter option	A	127,3	137,7	166,4	150,5	163,1	195,4	
Unit power factor at maximum capacity⁽²⁾								
		0,87	0,85	0,85	0,87	0,85	0,85	
Maximum operating power input⁽²⁾								
		kW	41	45	51	55	60	68
Nominal unit operating current draw⁽³⁾								
		A	49,5	54,3	63,6	66	72,4	84,8
Maximum operating current draw (Un)⁽⁴⁾								
		A	69,6	76,2	87	92,8	101,6	116
Maximum operating current draw (Un-10%)*								
		A	77,3	84,7	96,7	103,1	112,9	128,9
Customer-side unit power reserve								
Customer reserve at the 24 V control power circuit								
Short-circuit stability and protection								
See table below "Short-circuit stability current"								

- (1) Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + locked rotor current or limited start-up current of the largest compressor).
(2) Maximum power input at the unit operating limits.
(3) Values obtained at the following conditions: evaporator entering/leaving water temperature 12 °C/7 °C, condenser entering/leaving water temperature 45 °C.
(4) Maximum unit operating current at maximum unit power input and 400 V.
* Maximum unit operating current at maximum unit power input and 360 V.

ELECTRICAL DATA

Short-circuit stability current (TN system⁽¹⁾) - standard unit (with main disconnect switch)

61WG/30WG/30WGA		020	025	030	035	040	045	050	060	070	080	090
Value with non-specified upstream protection												
Short-term current at 1 s - I _{cw}	kA rms	3	3	3	3	3	3	3	3	3	3	3
Admissible peak current - I _{pk}	kA pk	6	6	6	6	6	6	6	6	6	6	6
Maximum value with upstream protection (by circuit breaker)												
Conditional short-circuit current I _{cc}	kA rms	40	40	40	40	40	40	40	40	40	40	40
Schneider circuit breaker - Compact series		NSX 100N										
Reference number ⁽²⁾		LV429795										

(1) Earthing system type

(2) If another current limitation protection system is used, its time-current and thermal constraint (I^{2t}) trip characteristics must be at least equivalent to those of the recommended Schneider circuit breaker.
The short-circuit stability current values above are suitable with the TN system.

61WG/30WG/30WGA		110	120	140	150	170	190
Value with non-specified upstream protection							
Short-term current at 1 s - I _{cw}	kA rms	5,5	5,5	5,5	5,5	5,5	5,5
Admissible peak current - I _{pk}	kA pk	20	20	20	20	20	20
Maximum value with upstream protection (by circuit breaker)							
Conditional short-circuit current I _{cc}	kA rms	154	154	154	154	154	154
Schneider circuit breaker - Compact series		NSX 100N					
Reference number ⁽²⁾		LV429795					

(1) Earthing system type

(2) If another current limitation protection system is used, its time-current and thermal constraint (I^{2t}) trip characteristics must be at least equivalent to those of the recommended Schneider circuit breaker.
The short-circuit stability current values above are suitable with the TN system.

Electrical data notes and operating conditions:

- 61WG/30WG/30WGA units have a single power connection point, located immediately upstream of the main disconnect switch.
- The control box includes the following standard features:
 - a main disconnect switch,
 - the starter and motor protection devices for each compressor and the pumps
 - the control devices
- Field connections:
All connections to the system and the electrical installations must be in full accordance with all applicable local codes.
- The Carrier 61WG/30WG/30WGA units are designed and built to ensure conformance with these codes. The recommendations of European standard EN 60204-1 (machine safety - electrical machine components - part 1: general regulations - corresponds to IEC 60204-1) are specifically taken into account, when designing the electrical unit equipment.

Notes:

- Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204-1 is the best means of ensuring compliance with the Machines Directive § 1.5.1.
- Annex B of EN 60204-1 describes the electrical characteristics used for the operation of the machines.
- The operating conditions for the units are specified below:
 1. Environment⁽¹⁾ - Environment as classified in EN 60721 (equivalent to CEI60721):
 - Indoor installation,
 - ambient temperature range: +5 °C for the temperature minimum to +40 °C, class 4K4H,
 - humidity range (non-condensing)⁽¹⁾:
 - 50% relative humidity at 40 °C
 - 90% relative humidity at 20 °C

- altitude: ≤ 2000 m (see note for table 4.7 in the IOM) indoor installation⁽¹⁾
 - presence of water: class AD2 (possibility of water droplets)
 - presence of hard solids, class 4S2 (no significant dust present)
 - presence of corrosive and polluting substances, class 4C2 (negligible)
 - vibration and shock, class AG2, AH2
 - competence of personnel, class BA4⁽¹⁾ (trained personnel - IEC 60364)
2. Power supply frequency variation: ± 2 Hz.
 3. The neutral (N) conductor must not be connected directly to the unit (if necessary use a transformer).
 4. Over-current protection of the power supply conductors is not provided with the unit.
 5. The factory-installed disconnect switch(es)/circuit breaker(s) is (are) of a type suitable for power interruption in accordance with EN 60947.
 6. The units are designed for simplified connection on TN(s) networks (IEC 60364). For IT networks provide a local earth and consult competent local organisations to complete the electrical installation. Units delivered with speed drive are not compatible with IT network.
 7. Derived currents: If protection by monitoring of derived currents is necessary to ensure the safety of the installation, the control of the cut-out value must take the presence of leak currents into consideration that result from the use of frequency converters in the unit. A value of at least 150 mA is recommended to control differential protection devices.

NOTE: If particular aspects of an actual installation do not conform to the conditions described above, or if there are other conditions which should be considered, always contact your local Carrier representative.

(1) The protection level of the control boxes required to conform to this class is IPX1B (according to reference document IEC 60529). All 61WG/30WG/30WGA units fulfil this protection condition. Units equipped with front casing panel meet class IP23. If the casing panel has been removed, access to energised components is protected to level IPXXB.

SEASONAL PERFORMANCES

With the rapid increase in energy costs and the care about environmental impacts of electricity production, power consumption of air conditioning equipment has become an important topic. The energy efficiency of a unit at full load is rarely representative of the actual performance of the units, as on average a unit works less than 5% of the time at full load.

IPLV.SI (in accordance with AHRI 551-591)

The IPLV (integrated part load value) allows evaluation of the average energy efficiency based on four operating conditions defined by the AHRI (Air Conditioning, Heating and Refrigeration Institute). The IPLV.SI is the average weighted value of the cooling coefficient of performance (COP_R) at different operating conditions, weighted by the operating time.

IPLV (integrated part load value)

Load %	Condenser entering water temperature, °C	Energy efficiency	Operating time, %
100	30	A=COP _R at 100%	1
75	24.5	B=COP _R at 75%	42
50	19	C=COP _R at 50%	45
25	19	D=COP _R at 25%	12

$$IPLV.SI=A^{(1)}1\%+B^{(1)}42\%+C^{(1)}45\%+D^{(1)}12\%$$

Note: Constant leaving water temperature: 7 °C

SEER for comfort chillers (in accordance with EU ECODESIGN)

The **SEER** (Seasonal Energy Efficiency Ratio) measures the seasonal energy efficiency of comfort **chillers** by calculating the ratio between annual cooling demand of the building and annual energy demand of the chiller. It takes into account the energy efficiency achieved for each outdoor temperature weighted by the number of hours observed for each of these temperatures, using actual climate data.

SEER is a new way of measuring the true energy efficiency of chillers for **comfort cooling** over an entire year.

This new indicator gives a more realistic indication of the real energy efficiency and environmental impact of a cooling system (Ecodesign Regulation 2016/2281).

The heat load of a building depends on many factors, such as the outside air temperature, the exposure to the sun and its occupation.

Consequently it is preferable to use the average energy efficiency, calculated at several operating points that are representative for the unit utilisation.

SCOP (In accordance with EU ECODESIGN)

The **SCOP** (Seasonal Coefficient of Performance) permit evaluation of the average energy efficiency at part load, based on multipoint conditions (16°C to -10°C for average climate) and number of hours occurring at each air temperature (Bin hours).

To be able to compare the energy efficiency of boilers using a primary energy source (gas or fuel) with heat pumps using a final energy source (electricity), the seasonal efficiency criteria used by the Ecodesign regulations is known as η_s it is based on the use of primary energy sources and expressed in % (Ecodesign Regulation 813/2013)

SEPR for process chillers (in accordance with EU ECODESIGN)

The **SEPR** (Seasonal Energy Performance Ratio) measures the seasonal energy efficiency of **process chillers** by calculating the ratio between annual cooling demand of the process and annual energy demand of the chiller. It takes into account the energy efficiency achieved at each outdoor temperature of an average climate weighted by the number of hours observed for each of these temperatures.

SEPR is a new way of measuring the true energy efficiency of chillers for **process cooling** over an entire year. This new indicator gives a more realistic indication of the real energy efficiency and environmental impact of the cooling system (Ecodesign Regulation 2015/1095 or 2016/2281).

SOUND SPECTRUM

61WG/30WG/30WGA standard unit

61WG/30WG/30WGA - standard unit

		Octave bands, Hz						Sound power level	
		125	250	500	1k	2k	4k		
020	dB	60	53	52	63	61	57	dB(A)	67
025	dB	64	56	56	63	60	58	dB(A)	68
030	dB	61	59	58	64	63	60	dB(A)	69
035	dB	64	59	59	64	61	58	dB(A)	69
040	dB	59	60	58	67	64	59	dB(A)	70
045	dB	57	56	57	66	65	62	dB(A)	70
050	dB	47	60	65	68	66	56	dB(A)	71
060	dB	43	61	65	68	67	57	dB(A)	72
070	dB	46	61	67	67	66	55	dB(A)	72
080	dB	40	61	65	70	68	55	dB(A)	73
090	dB	51	64	64	69	69	58	dB(A)	73
110	dB	83	73	71	70	68	65	dB(A)	76
120	dB	84	74	72	71	69	66	dB(A)	77
140	dB	80	75	71	74	72	65	dB(A)	78
150	dB	78	74	71	70	71	65	dB(A)	76
170	dB	79	75	72	71	72	66	dB(A)	77
190	dB	82	76	75	74	71	66	dB(A)	78

61WG/30WG/30WGA - Unit with low-noise option (option 257)

		Octave bands, Hz						Sound power level	
		125	250	500	1k	2k	4k		
020	dB	59	58	50	60	57	51	dB(A)	65
025	dB	58	57	55	62	58	54	dB(A)	66
030	dB	58	57	56	61	59	54	dB(A)	66
035	dB	58	57	59	62	59	54	dB(A)	67
040	dB	64	58	56	64	60	53	dB(A)	68
045	dB	58	57	56	65	63	58	dB(A)	68
050	dB	48	57	61	65	62	51	dB(A)	68
060	dB	43	59	61	65	63	51	dB(A)	69
070	dB	47	59	63	65	62	49	dB(A)	69
080	dB	39	58	61	66	63	48	dB(A)	69
090	dB	50	62	60	66	65	52	dB(A)	70
110	dB	80	70	68	67	65	62	dB(A)	73
120	dB	81	71	69	68	66	63	dB(A)	74
140	dB	77	72	68	71	69	62	dB(A)	75
150	dB	75	71	68	67	68	62	dB(A)	73
170	dB	76	72	69	68	69	63	dB(A)	74
190	dB	79	73	72	71	68	63	dB(A)	75

61WG/30WG/30WGA units very low noise option (option 258⁽¹⁾)

61WG/30WG/30WGA - standard unit with Option 258⁽¹⁾

		Octave bands, Hz						Sound power level	
		125	250	500	1k	2k	4k		
020	dB	54	56	49	57	47	44	dB(A)	61
025	dB	57	59	53	55	46	46	dB(A)	62
030	dB	56	60	55	55	49	48	dB(A)	63
035	dB	57	59	56	55	47	46	dB(A)	63
040	dB	55	60	55	60	50	47	dB(A)	64
045	dB	53	59	54	60	51	50	dB(A)	64
050	dB	43	59	62	62	52	44	dB(A)	66
060	dB	39	60	62	61	53	45	dB(A)	66
070	dB	42	60	62	61	52	43	dB(A)	66
080	dB	36	60	62	64	54	43	dB(A)	67
090	dB	47	62	61	63	55	46	dB(A)	67

61WG/30WG/30WGA - Unit with very low-noise option (option 257 + 258⁽¹⁾)

		Octave bands, Hz						Sound power level	
		125	250	500	1k	2k	4k		
020	dB	54	55	47	56	46	45	dB(A)	60
025	dB	56	57	51	56	45	47	dB(A)	62
030	dB	55	59	53	54	48	49	dB(A)	62
035	dB	56	58	55	55	46	47	dB(A)	62
040	dB	53	59	53	60	49	48	dB(A)	64
045	dB	51	58	52	59	50	51	dB(A)	63
050	dB	41	58	60	61	51	45	dB(A)	65
060	dB	37	59	60	60	52	46	dB(A)	65
070	dB	40	59	61	60	51	44	dB(A)	65
080	dB	34	59	60	63	53	44	dB(A)	66
090	dB	45	61	59	62	54	47	dB(A)	66

(1) Option numbers

257 Low sound level (up to 3 dB(A) lower than standard unit)

258 Very low noise (up to 6 dB(A) lower than standard unit) (C-s2,d0 compliant to Fire certification EN 13-501)

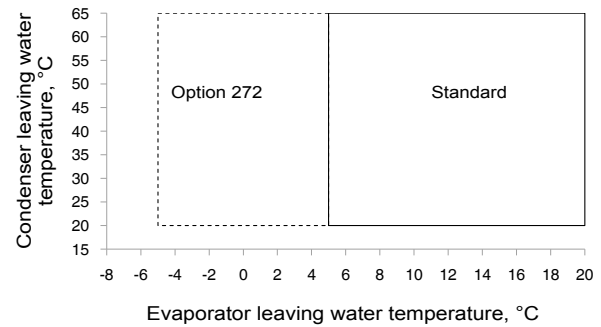
OPERATING LIMITS, 61WG

61WG	Minimum	Maximum
Evaporator		
Entering water temperature at start-up °C	7,5 ⁽¹⁾	27
Leaving water temperature during operation °C	5 ⁽²⁾	20
Entering/leaving water temperature difference K	2,5	7
Condenser		
Entering water temperature at start-up °C	15 ⁽³⁾	60 ⁽⁴⁾
Leaving water temperature during operation °C	20	65
Entering/leaving water temperature difference K	2,5	18

- (1) For entering water temperatures below 7.5 °C at start-up, contact Carrier.
- (2) If the leaving water temperature is below 5 °C, a frost protection solution must be used. Please refer to option 6 for evaporator leaving water low-temperature applications (< 5 °C).
- (3) For applications with a condenser entering temperature below 15 °C the use of a three-way valve is recommended. This three-way valve can be controlled by the 0-10 V analogue output of the SmartVu™ control.
- (4) For a water flow rate that corresponds to a maximum water-side temperature difference of 5 K.

61WG + option 272 (geothermal application)	Minimum	Maximum
Evaporator		
Entering water temperature at start-up °C	-2,5 ⁽¹⁾	25
Leaving water temperature during operation °C	-5 ⁽¹⁾	20
Entering/leaving water temperature difference K	2,5	5
Condenser		
Entering water temperature at start-up °C	15 ⁽²⁾	60 ⁽³⁾
Leaving water temperature during operation °C	20	65
Entering/leaving water temperature difference K	2,5	18

- (1) A frost protection solution must be used.
- (2) For applications with a condenser entering temperature below 15 °C the use of a three-way valve is recommended. This three-way valve can be controlled by the 0-10 V analogue output of the SmartVu™.
- (3) For a water flow rate that corresponds to a maximum water-side temperature difference of 5 K.



- 61WG standard unit
- - - 61WG unit with option 272 (brine to water)
Option 272: Condenser-side high-temperature water production, with glycol solution on the evaporator side

OPERATING LIMITS, 30WG

30WG		Minimum	Maximum
Evaporator			
Entering water temperature at start-up	°C	7,5 ⁽¹⁾	27
Leaving water temperature during operation	°C	5 ⁽²⁾	20
Entering/leaving water temperature difference	K	2,5	7
Condenser			
Entering water temperature at start-up	°C	15 ⁽³⁾	55 ⁽⁴⁾
Leaving water temperature during operation	°C	20	60
Entering/leaving water temperature difference	K	2,5	18

- (1) For entering water temperatures below 7.5 °C at start-up, contact Carrier.
- (2) If the leaving water temperature is below 5 °C, a frost protection solution must be used. Please refer to option 6 for evaporator leaving water low-temperature applications (< 5 °C).
- (3) For applications with a condenser entering temperature below 15 °C the use of a three-way valve is recommended. This three-way valve can be controlled by the 0-10 V analogue output of the SmartVu™ control.
- (4) For a water flow rate that corresponds to a maximum water-side temperature difference of 5 K.

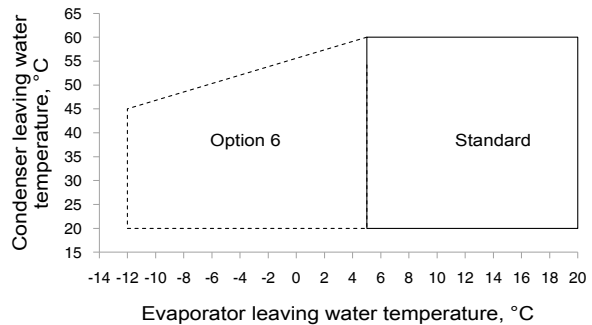
30WG + drycooler		Minimum	Maximum
Evaporator			
Entering water temperature at start-up	°C	7,5 ⁽¹⁾	27
Leaving water temperature during operation	°C	5 ⁽²⁾	20
Entering/leaving water temperature difference	K	2,5	7
Condenser without hydraulic module			
Entering air temperature at start-up + during operation	°C	10-15 ⁽³⁾	40-45 ⁽⁴⁾
Condenser with option 270V (kit with variable-speed pump)			
Entering air temperature at start-up+ during operation	°C	-10 ⁽⁵⁾	40-45 ⁽⁴⁾

- (1) For entering water temperatures below 7.5 °C at start-up, contact Carrier.
- (2) If the leaving water temperature is below 5 °C, a frost protection solution must be used. Please refer to option 6 for evaporator leaving water low-temperature applications (< 5 °C).
- (3) The minimum entering air temperature is based on the drycooler selection.
- (4) The maximum entering air temperature is based on the drycooler selection.
- (5) For applications with a low condenser entering air temperature the use of a three-way valve is recommended. This three-way valve can be controlled by the 0-10 V analogue output of the SmartVu™ control.

30WG + option 6		Minimum	Maximum
Evaporator			
Entering water temperature at start-up	°C	-9,5 ⁽¹⁾	27
Leaving water temperature during operation	°C	-12 ⁽¹⁾	20
Entering/leaving water temperature difference	K	2,5	5
Condenser			
Entering water temperature at start-up	°C	15 ⁽²⁾	55 ⁽³⁾
Leaving water temperature during operation	°C	20	60
Entering/leaving water temperature difference	K	2,5	18

Note: Do not exceed the maximum operating temperature.

- (1) A frost protection solution must be used.
- (2) For applications with a condenser entering temperature below 15 °C the use of a three-way valve is recommended. This three-way valve can be controlled by the 0-10 V analogue output of the SmartVu™ control.
- (3) For a water flow rate that corresponds to a maximum water-side temperature difference of 5 K.

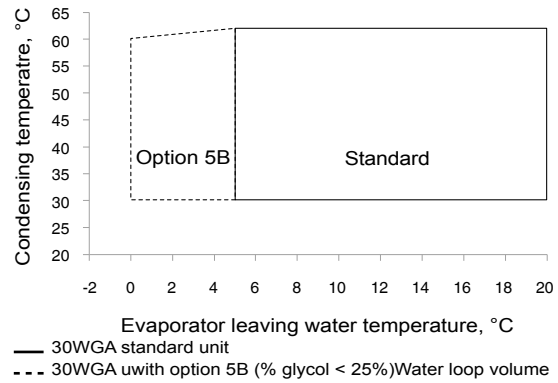


- 30WG standard unit
- - - 30WG unit with option 6 (brine)
- Option 6: Very low-temperature glycol solution

OPERATING LIMITS, 30WGA

30WGA	Minimum	Maximum
Evaporator		
Entering water temperature at start-up °C	7,5 ⁽¹⁾	27
Leaving water temperature during operation °C	5 ⁽²⁾	20
Entering/leaving water temperature difference K	2,5	7
Air entering temperature (at start-up and during operation)⁽³⁾		
Air entering temperature (fixed-speed fan) °C	0 ⁽³⁾	35 to 48 ⁽⁵⁾
Air entering temperature (variable-speed fan) °C	-10 to -20 ⁽⁴⁾	35 to 48 ⁽⁵⁾

- (1) For entering water temperatures below 7.5 °C at start-up, contact Carrier.
- (2) 30WGA unit can operate down to 0 °C if the configuration of the fluid type used is modified. If the leaving water temperature is below 5 °C, a frost protection solution must be used.
- (3) The minimum temperature range is based on the condenser selected. If the condenser only has a few fan stages, the use of variable-speed fans is recommended from 10 °C.
- (4) The minimum temperature range is based on the condenser selected.
- (5) The maximum temperature range is based on the condenser selected.



WATER LOOP VOLUME

Evaporator and condenser

■ Minimum volume

A minimum water volume is required for correct unit operation. The minimum water loop volume can be calculated in accordance with the following formula:

Volume = CAP(kW) x N⁽¹⁾ = litres, where CAP is the cooling capacity at nominal operating conditions.

Air conditioning application	N ⁽¹⁾
61WG/30WG/30WGA 020-090	2,5

Minimum water loop volume (evaporator and condenser side)

61WG/30WG/30WGA	size	110	120	140	150	170	190
Pure water	l	269	323	366	192	231	261

The water volume in the condenser loop has no impact on the operation of the unit.

Note: In the heat pump mode (unit control based on the hot-water temperature) the minimum volume of the condenser loop must be calculated the same way as for the evaporator loop, replacing the cooling capacity with the heating capacity.

■ Industrial process cooling

Certain industrial process applications may require high stability of the leaving water temperature levels. In this case the values above must be increased.

■ Maximum volume

Units with hydraulic module incorporate an expansion tank sized for the maximum water loop volume.

The table below gives the maximum water loop volume (in litres) for pure water or ethylene glycol with various concentrations.

61WG/30WG/30WGA		020-045			060-090		
Static pressure	kPa	100	200	300	100	200	300
	bar	1	2	3	1	2	3
Pure water	l	220	450	75	340	225	115
10% ethylene glycol	l	165	110	53	255	170	85
20% ethylene glycol	l	100	70	35	150	100	50
35% ethylene glycol	l	85	55	30	130	85	45

Maximum water loop volume (evaporator and condenser side)

61WG/30WG/30WGA		110-140			150-190		
Static pressure	kPa	150	200	150	200	200	300
	bar	1,5	2	1,5	2	2	3
Pure water	l	894	655	1376	918	225	115
10% ethylene glycol	l	678	498	1045	697	170	85
20% ethylene glycol	l	561	412	864	576	100	50
35% ethylene glycol	l	483	354	744	496	85	45

WATER FLOW RATES

Standard Unit

61WG/ 30WG/ 30WGA	Condenser water flow rate, l/s			
	Minimum ⁽¹⁾	Maximum ⁽²⁾		Maximum ⁽³⁾
		Low pressure	High pressure	
20	0,3	3,5	3,6	3,8
25	0,3	3,7	3,9	4,1
30	0,3	3,7	3,9	4,1
35	0,4	4	4,2	4,7
40	0,4	4,2	4,4	5,0
45	0,4	4,4	4,6	5,4
50	0,4	5,4	6,9	7,0
60	0,5	5,6	7,1	7,5
70	0,5	5,7	7,3	7,8
80	0,6	5,8	7,5	8,2
90	0,6	7,4	8	9,3
110	0,5	11,4	11,7	13,1
120	0,5	12,5	12,4	15,0
140	0,6	13,2	12,9	16,7
150	0,5	12,6	13,8	16,4
170	0,5	13,6	14,4	18,9
190	0,6	14,0	14,7	20,6

- (1) Units with or without hydraulic module
Minimum flow rate for a water temperature difference of 18 K-
Note: Operation permitted up to a value of 20 K.
- (2) Units without hydraulic module
Maximum flow rate for an available pressure of 20 kPa (unit with low-pressure hydraulic module) or 50 kPa (unit with high-pressure hydraulic module)
- (3) Units without hydraulic module
Maximum flow rate for a pressure drop of 100 kPa in the plate heat exchanger
Maximum flow rate for a pressure drop of 100 kPa in the plate heat exchanger.

30WG with option 272

30WG	Minimum evaporator glycol solution flow rate, l/s		
	Minimum ⁽²⁾		Minimum ^T
	Low pressure	High pressure	
20	1,4	1,3	0,5
25	1,5	1,3	0,5
30	1,5	1,3	0,5
35	1,6	1,5	0,6
40	1,7	1,5	0,6
45	1,8	1,5	0,8
50	2,5	2,2	0,8
60	2,2	2,3	1,0
70	2,2	2,4	1,1
80	2,3	2,4	1,3
90	2,5	2,5	1,5
110	2	1,4	1,5
120	2	1,4	1,5
140	2	1,4	1,5
150	2	1,4	1,5
170	2	1,4	1,5
190	2	1,4	1,5

- (1) Option 6: Glycol solution production, very low temperature
(2) Option 5B: Glycol solution down to 0°C
(3) Option 272: Glycol solution down to -5°C
(4) Units with hydraulic module
Minimum flow rate for a maximum permitted temperature difference at the minimum leaving water temperature
T Units without hydraulic module Minimum flow rate for a maximum permitted temperature difference at the minimum leaving water temperature

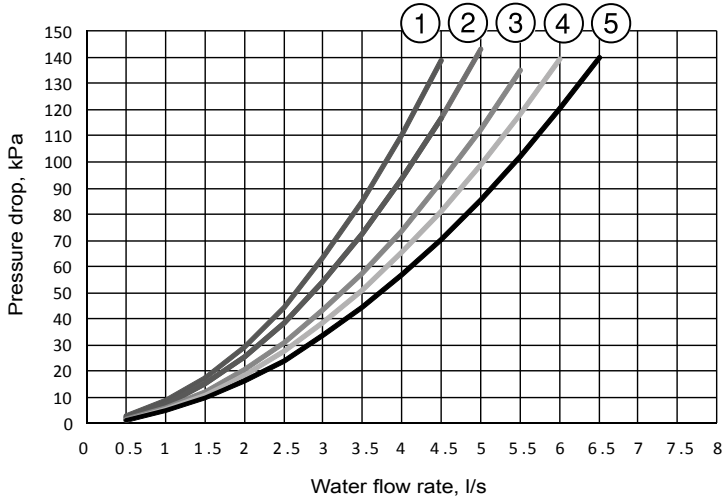
61WG/30WG/30WGA	Evaporator water flow rate, l/s					
	Minimum ⁽¹⁾		Minimum ⁽²⁾	Maximum ⁽³⁾		Maximum ⁽⁴⁾
	Low pressure	High pressure		Low pressure	High pressure	
20	1,0	0,9	0,5	3,5	3,7	3,8
25	1,0	1,0	0,5	3,8	3,9	4,1
30	1,0	1,0	0,5	3,8	3,9	4,1
35	1,1	1,1	0,6	4,1	4,3	4,7
40	1,2	1,1	0,6	4,3	4,5	5,0
45	1,2	1,1	0,8	4,5	4,8	5,4
50	1,6	1,4	0,8	6,1	7,9	9,2
60	1,5	1,6	1,0	6,2	8,1	9,9
70	1,6	1,5	1,1	6,3	8,3	10,3
80	1,6	1,5	1,3	6,4	8,4	10,9
90	2,0	1,6	1,5	8,1	8,8	12,5
110	2,0	1,3	0,8	7,5	11,8	14,4
120	2,0	1,3	0,9	7,6	12,5	16,7
140	2,0	1,3	1	8,6	12,8	18,3
150	2,0	1,3	0,8	8,6	12,5	16,1
170	2,0	1,3	0,9	13,6	13,1	18,3
190	2,0	1,3	1	14,0	13,3	20,3

- (1) Units with hydraulic module
Flow rate for a maximum permitted temperature difference at the minimum leaving water temperature
(2) Units without hydraulic module
Flow rate for a maximum permitted temperature difference at the minimum leaving water temperature
(3) Units with hydraulic module
Maximum flow rate for an available pressure of 20 kPa (unit with low-pressure hydraulic module) or 50 kPa (unit with high-pressure hydraulic module)
(4) Units without hydraulic module

PLATE HEAT EXCHANGER PRESSURE DROP (INCLUDES INTERNAL PIPING)

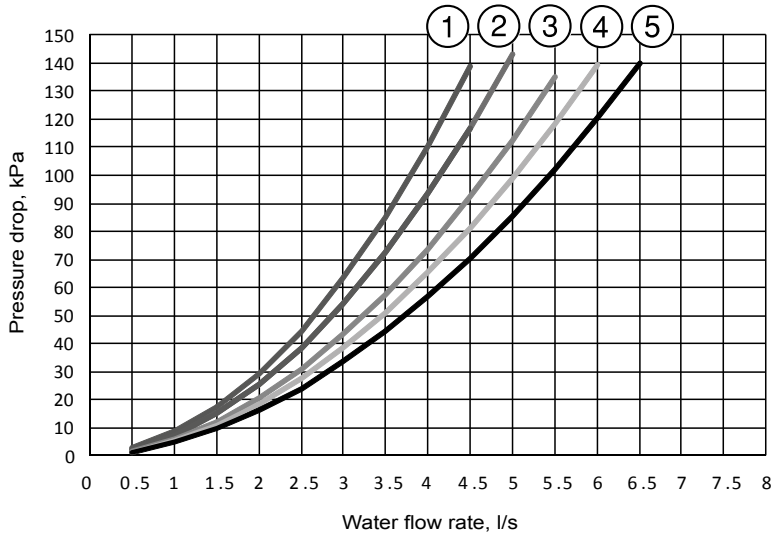
Evaporator - standard unit without hydraulic module - Water only

61WG/30WG/30WGA 020-045



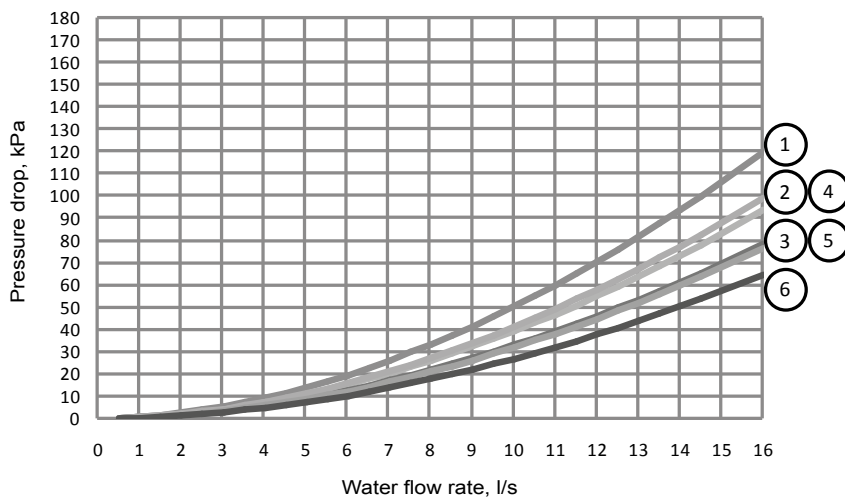
- 1 61WG/30WG/30WGA 020
- 2 61WG/30WG/30WGA 025 to 030
- 3 61WG/30WG/30WGA 035
- 4 61WG/30WG/30WGA 040
- 5 61WG/30WG/30WGA 045

61WG/30WG/30WGA 050-090



- 6 61WG/30WG/30WGA 050
- 7 61WG/30WG/30WGA 060
- 8 61WG/30WG/30WGA 070
- 9 61WG/30WG/30WGA 080
- 10 61WG/30WG/30WGA 090

61WG/30WG/30WGA 110-190

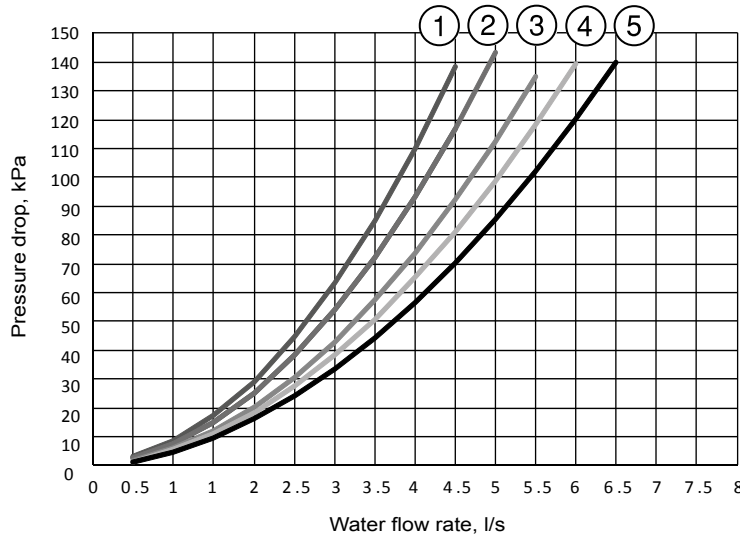


- 1 61WG/30WG/30WGA 110
- 2 61WG/30WG/30WGA 120
- 3 61WG/30WG/30WGA 140
- 4 61WG/30WG/30WGA 150
- 5 61WG/30WG/30WGA 170
- 6 61WG/30WG/30WGA 190

PLATE HEAT EXCHANGER PRESSURE DROP (INCLUDES INTERNAL PIPING)

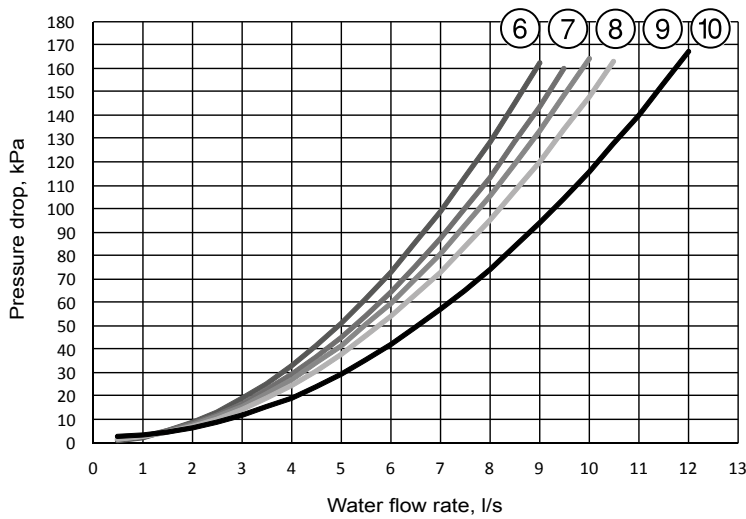
Condenser - standard unit without hydraulic module - Water only

61WG/30WG 020-045



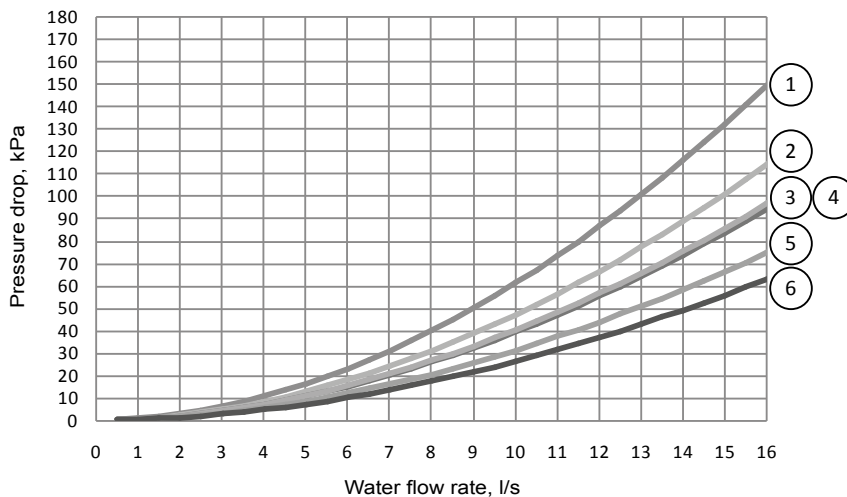
- 1 61WG/30WG 020
- 2 61WG/30WG 025 to 030
- 3 61WG/30WG 035
- 4 61WG/30WG 040
- 5 61WG/30WG 045

61WG/30WG 050-090



- 6 61WG/30WG 050
- 7 61WG/30WG 060
- 8 61WG/30WG 070
- 9 61WG/30WG 080
- 10 61WG/30WG 090

61WG/30WG 110-190



- 1 61WG/30WG 110
- 2 61WG/30WG 120
- 3 61WG/30WG 140
- 4 61WG/30WG 150
- 5 61WG/30WG 170
- 6 61WG/30WG 190

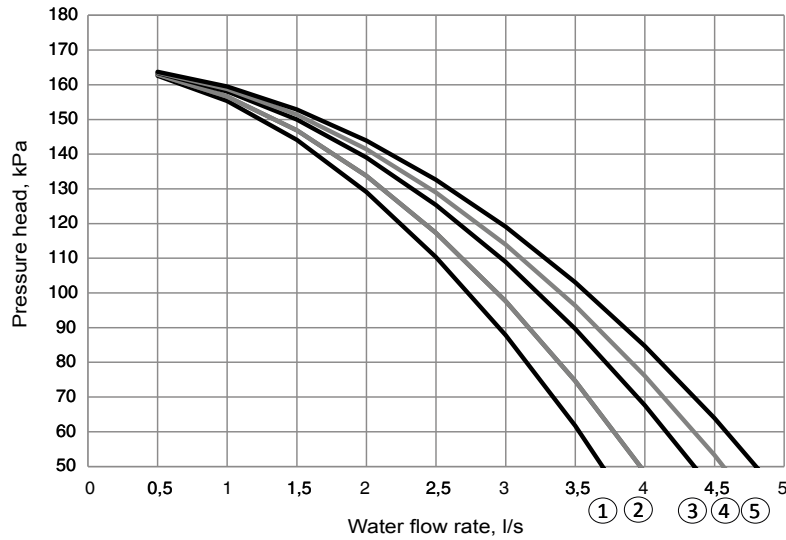
AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (VARIABLE-SPEED HIGH-PRESSURE PUMPS)

Data applicable for:

- Fresh water (without antifreeze) 20 °C
- In case of use of the glycol, the maximum water flow is reduced
- The curves represented below are in normal conditions: leaving water on the back side of the unit (without option 274).

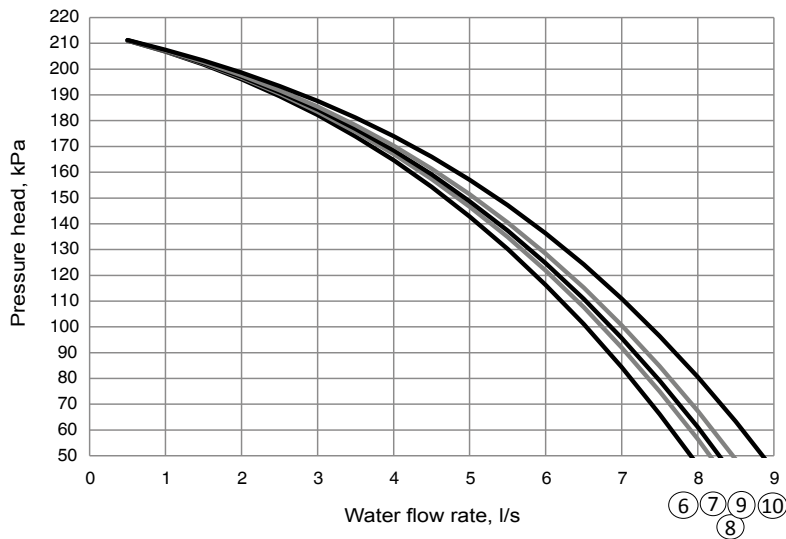
Evaporator

61WG/30WG/30WGA 020-045



- 1 61WG/30WG/30WGA 020
- 2 61WG/30WG/30WGA 025 to 030
- 3 61WG/30WG/30WGA 035
- 4 61WG/30WG/30WGA 040
- 5 61WG/30WG/30WGA 045

61WG/30WG/30WGA 050-090



- 6 61WG/30WG/30WGA 050
- 7 61WG/30WG/30WGA 060
- 8 61WG/30WG/30WGA 070
- 9 61WG/30WG/30WGA 080
- 10 61WG/30WG/30WGA 090

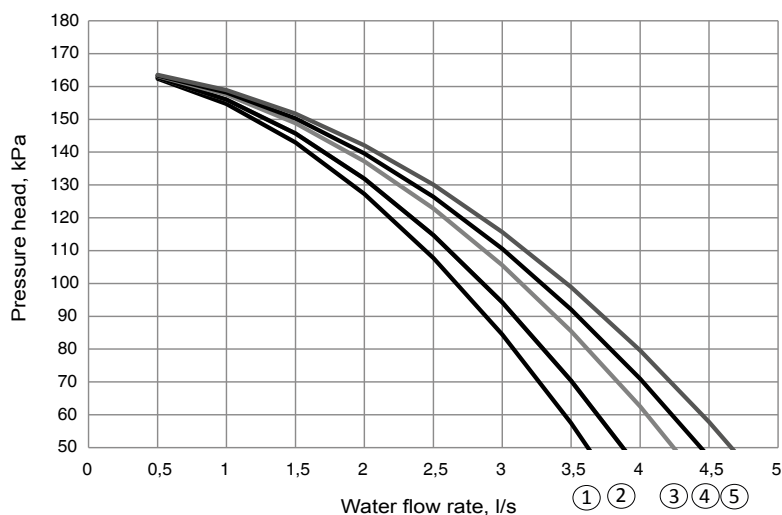
AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (VARIABLE-SPEED HIGH-PRESSURE PUMPS)

Data applicable for:

- Fresh water (without antifreeze) 20 °C
- In case of use of the glycol, the maximum water flow is reduced
- The curves represented below are in normal conditions: leaving water on the back side of the unit (without option 274).

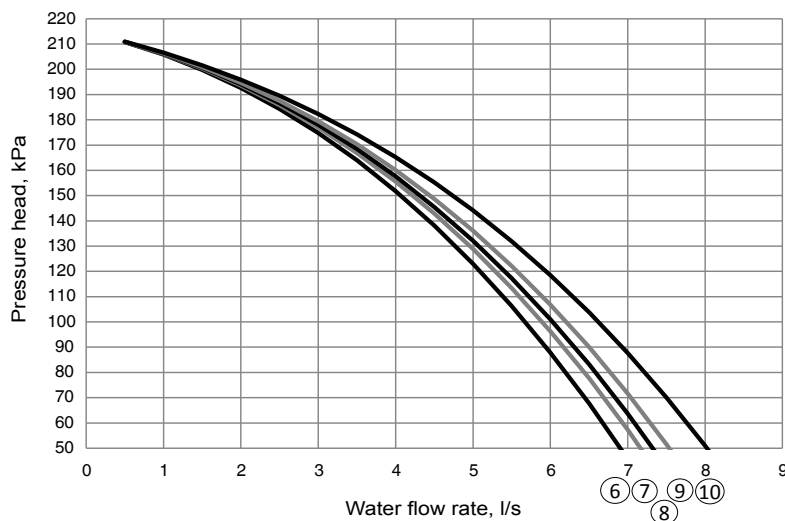
Condenser

61WG/30WG 020-045



- 1 61WG/30WG 020
- 2 61WG/30WG 025 to 030
- 3 61WG/30WG 035
- 4 61WG/30WG 040
- 5 61WG/30WG 045

61WG/30WG 050-090



- 6 61WG/30WG 050
- 7 61WG/30WG 060
- 8 61WG/30WG 070
- 9 61WG/30WG 080
- 10 61WG/30WG 090

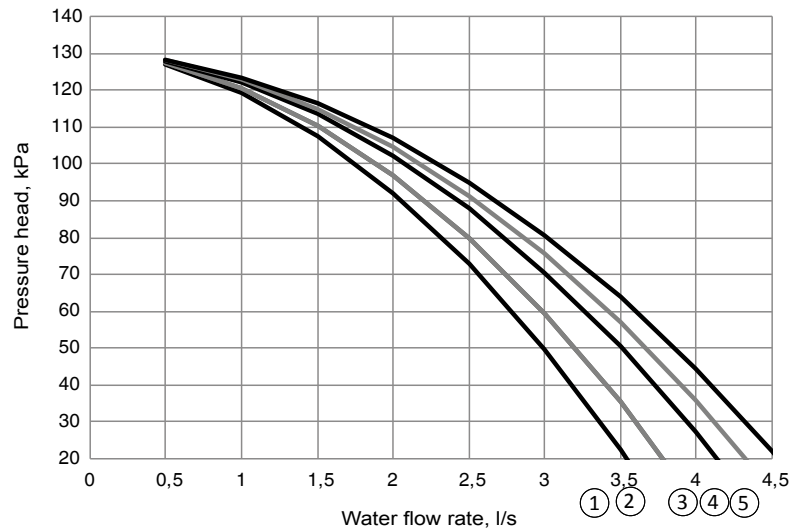
AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (FIXED-SPEED LOW-PRESSURE PUMPS)

Data applicable for:

- Fresh water 20 °C
- In case of use of the glycol, the maximum water flow is reduced
- The curves represented below are in normal conditions: leaving water on the back side of the unit (without option 274).

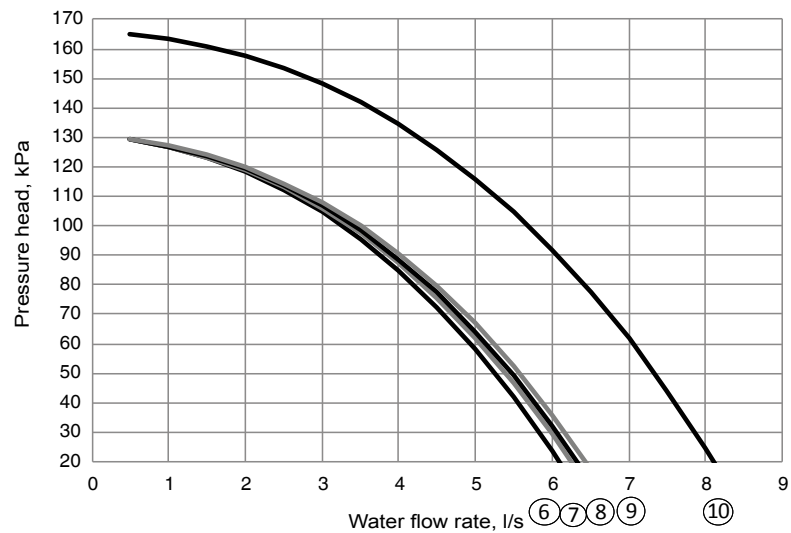
Evaporator

61WG/30WG/30WGA 020-045



- 1 61WG/30WG/30WGA 020
- 2 61WG/30WG/30WGA 025 to 030
- 3 61WG/30WG/30WGA 035
- 4 61WG/30WG/30WGA 040
- 5 61WG/30WG/30WGA 045

61WG/30WG/30WGA 050-090



- 6 61WG/30WG/30WGA 050
- 7 61WG/30WG/30WGA 060
- 8 61WG/30WG/30WGA 070
- 9 61WG/30WG/30WGA 080
- 10 61WG/30WG/30WGA 090

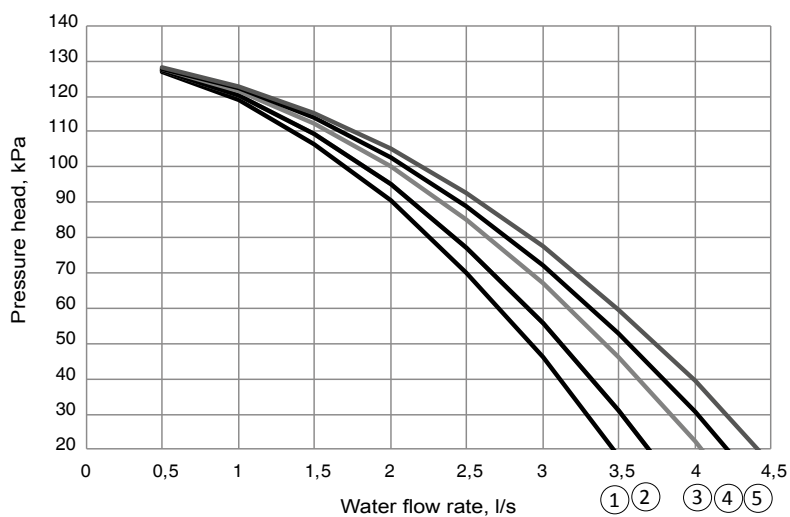
AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (FIXED-SPEED LOW-PRESSURE PUMPS)

Data applicable for:

- Fresh water 20 °C
- In case of use of the glycol, the maximum water flow is reduced
- The curves represented below are in normal conditions: leaving water on the back side of the unit (without option 274).

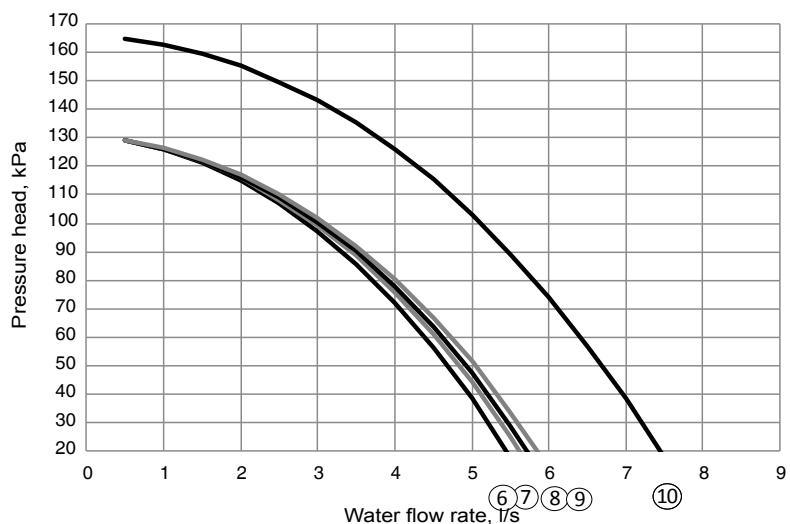
Condenser

61WG/30WG 020-045



- 1 61WG/30WG 020
- 2 61WG/30WG 025 to 030
- 3 61WG/30WG 035
- 4 61WG/30WG 040
- 5 61WG/30WG 045

61WG/30WG 050-090

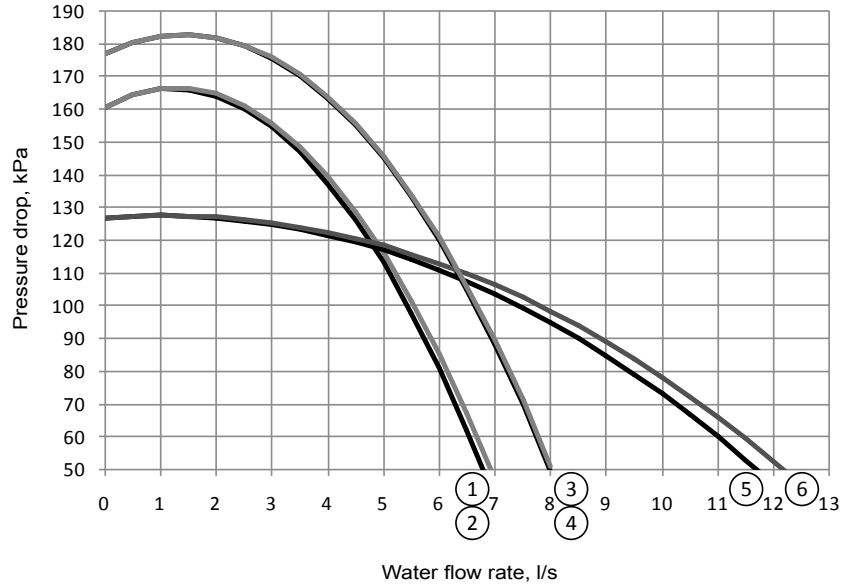


- 6 61WG/30WG 050
- 7 61WG/30WG 060
- 8 61WG/30WG 070
- 9 61WG/30WG 080
- 10 61WG/30WG 090

AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (VARIABLE / FIXED-SPEED LOW-PRESSURE SINGLE PUMPS)

Evaporator 61WG/30WG/30WGA

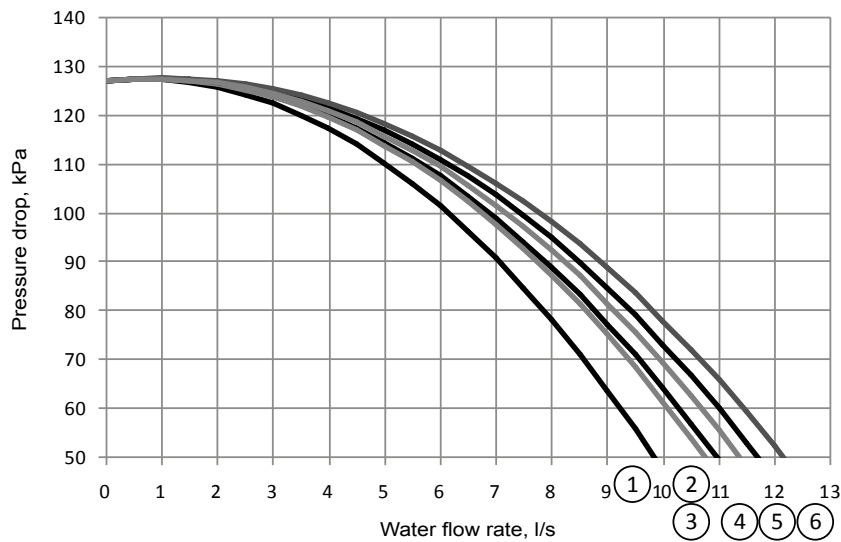
Sizes 110-190



- 1 61WG/30WG/30WGA 110
- 2 61WG/30WG/30WGA 120
- 3 61WG/30WG/30WGA 140
- 4 61WG/30WG/30WGA 150
- 5 61WG/30WG/30WGA 170
- 6 61WG/30WG/30WGA 190

Condenser 61WG/30WG

Sizes 110-190

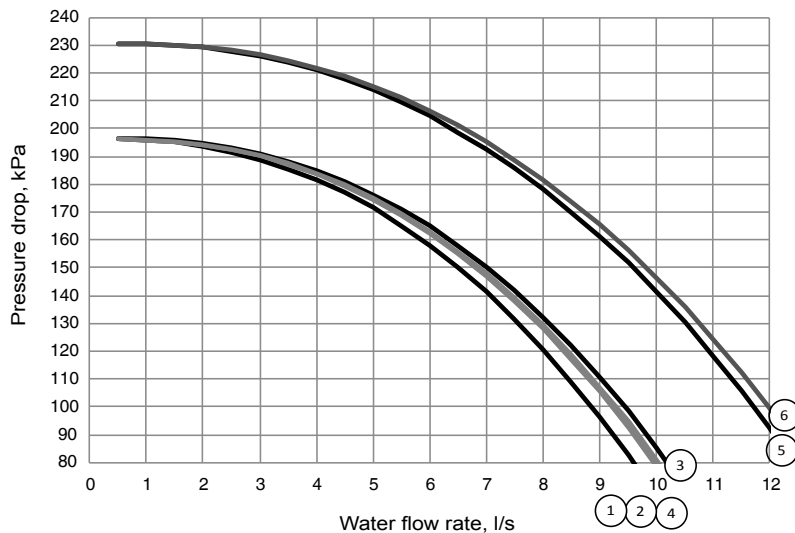


- 1 61WG/30WG 110
- 2 61WG/30WG 120
- 3 61WG/30WG 140
- 4 61WG/30WG 150
- 5 61WG/30WG 170
- 6 61WG/30WG 190

AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (VARIABLE-SPEED HIGH-PRESSURE DOUBLE PUMPS)

Evaporator 61WG/30WG/30WGA

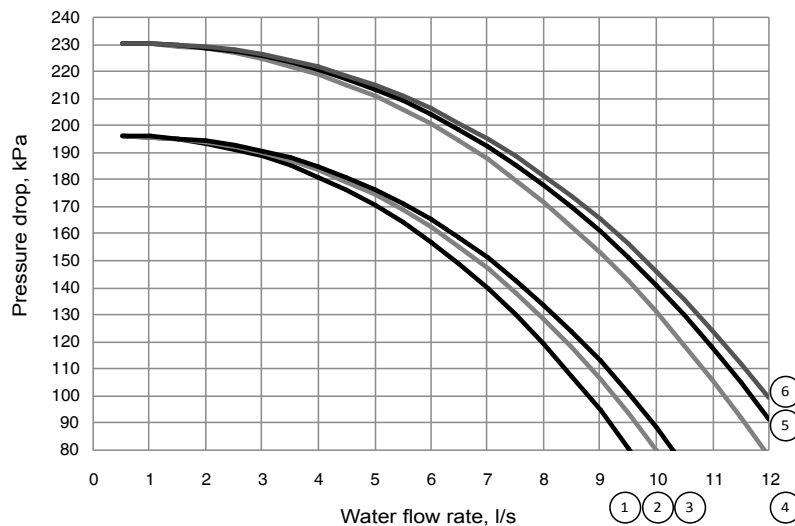
Sizes 110-190



- 1 61WG/30WG/30WGA 110
- 2 61WG/30WG/30WGA 120
- 3 61WG/30WG/30WGA 140
- 4 61WG/30WG/30WGA 150
- 5 61WG/30WG/30WGA 170
- 6 61WG/30WG/30WGA 190

Condenser 61WG/30WG

Sizes 110-190

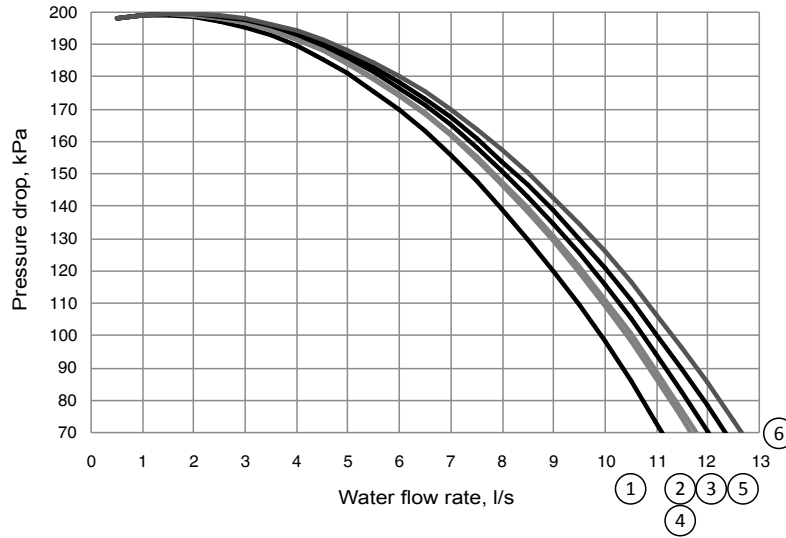


- 1 61WG/30WG 110
- 2 61WG/30WG 120
- 3 61WG/30WG 140
- 4 61WG/30WG 150
- 5 61WG/30WG 170
- 6 61WG/30WG 190

AVAILABLE EXTERNAL STATIC PRESSURE, UNITS WITH HYDRAULIC MODULE (VARIABLE / FIXED-SPEED HIGH-PRESSURE SINGLE PUMPS)

Evaporator 61WG/30WG/30WGA

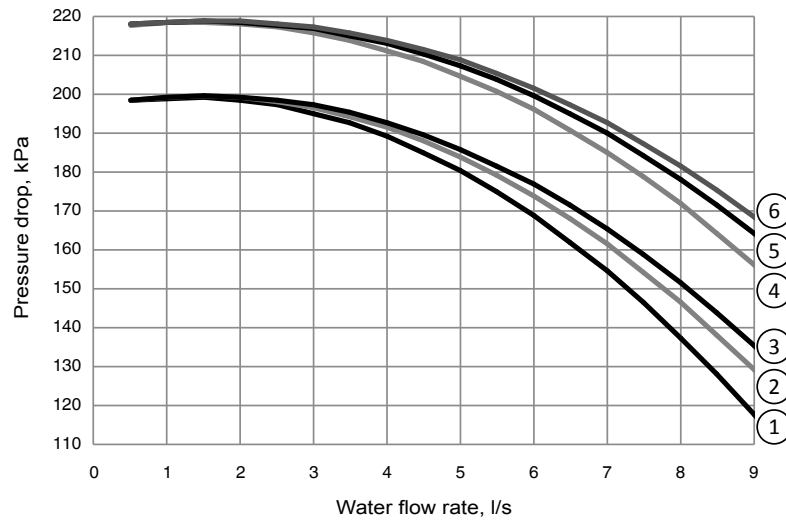
Sizes 110-190



- 1 61WG/30WG/30WGA 110
- 2 61WG/30WG/30WGA 120
- 3 61WG/30WG/30WGA 140
- 4 61WG/30WG/30WGA 150
- 5 61WG/30WG/30WGA 170
- 6 61WG/30WG/30WGA 190

Condenser 61WG/30WG

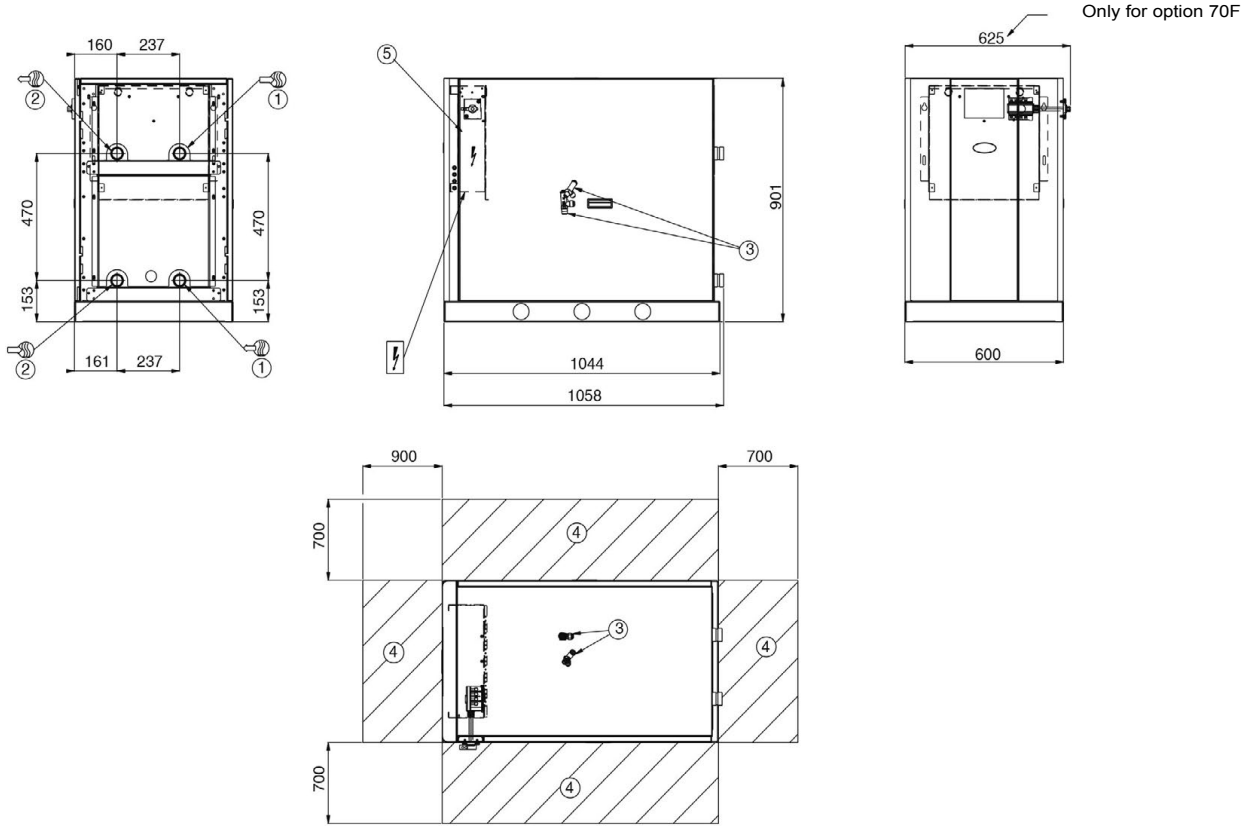
Sizes 110-190



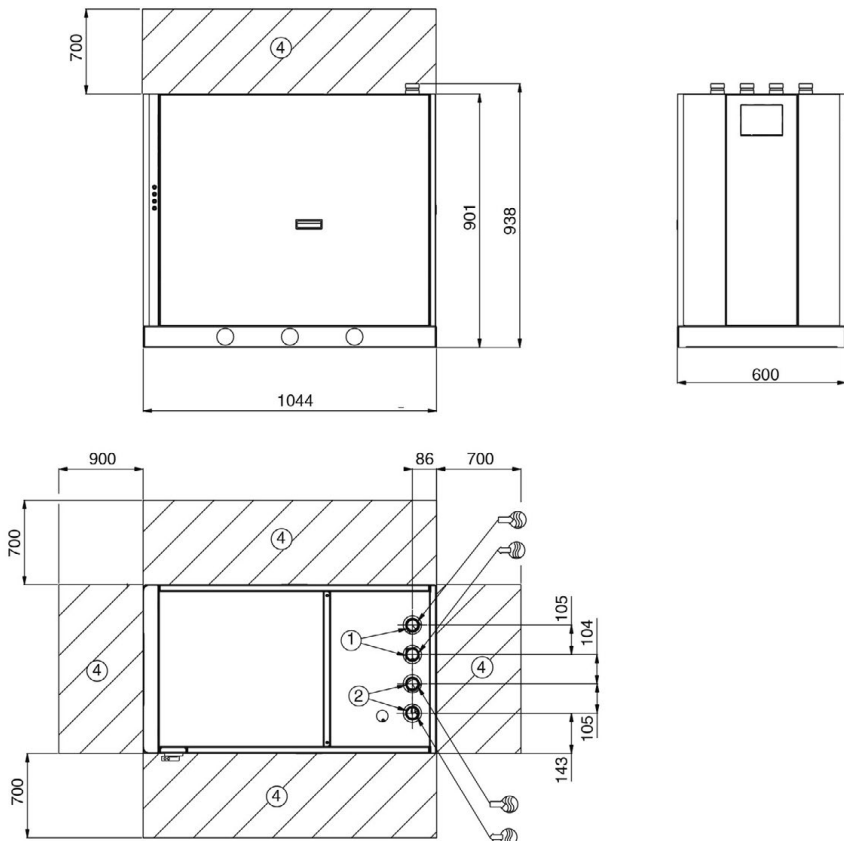
- 1 61WG/30WG 110
- 2 61WG/30WG 120
- 3 61WG/30WG 140
- 4 61WG/30WG 150
- 5 61WG/30WG 170
- 6 61WG/30WG 190

DIMENSIONS/CLEARANCES

61WG/30WG 020-045 - standard unit



61WG/30WG 020-045 - unit with top connections (option 274)



Legend

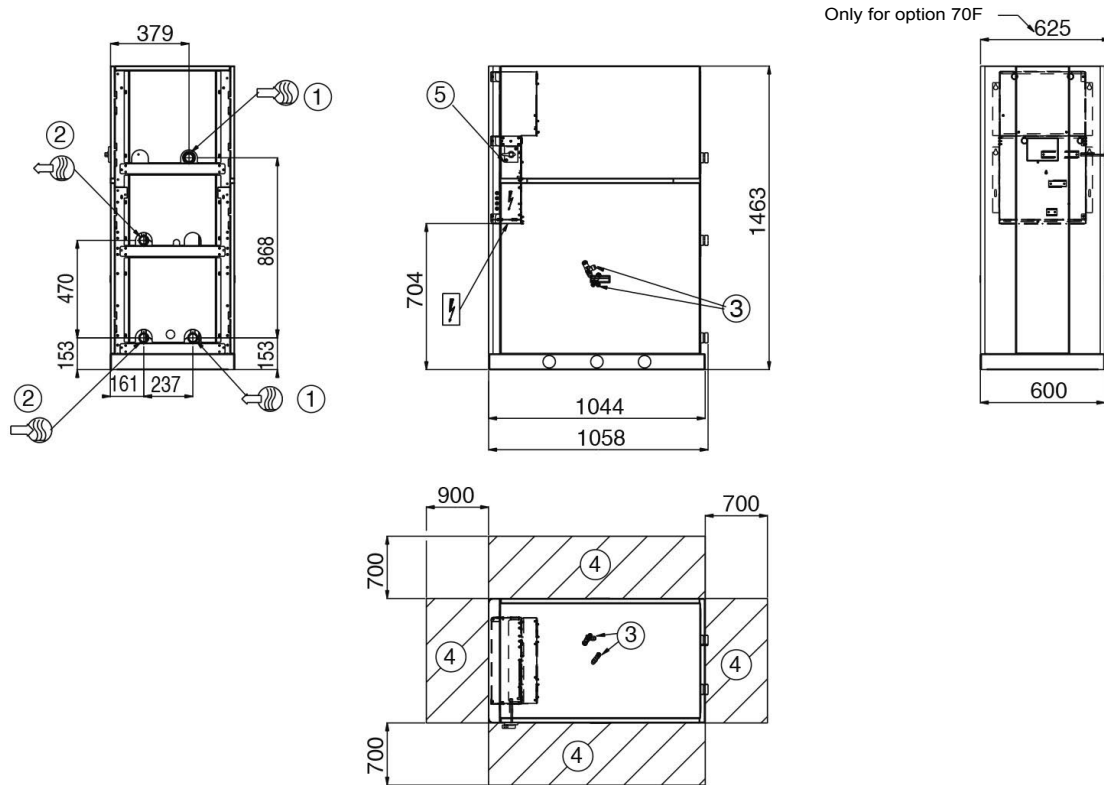
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- Water inlet.
- Water outlet
- Power wiring connection

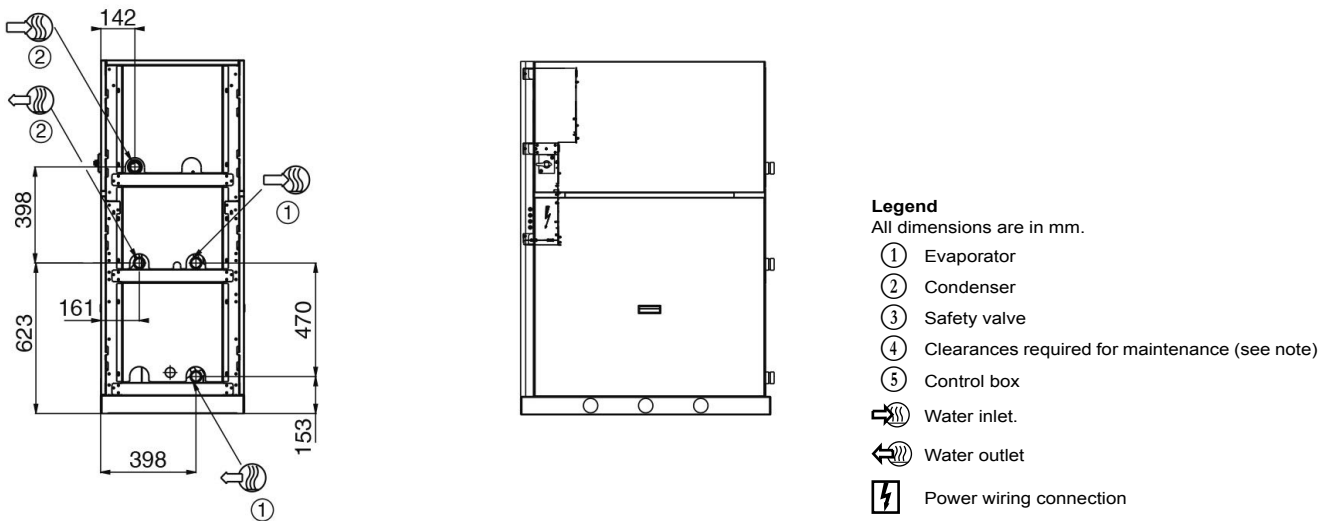
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

61WG/30WG 020-045 - unit with evaporator hydraulic module (option 116)



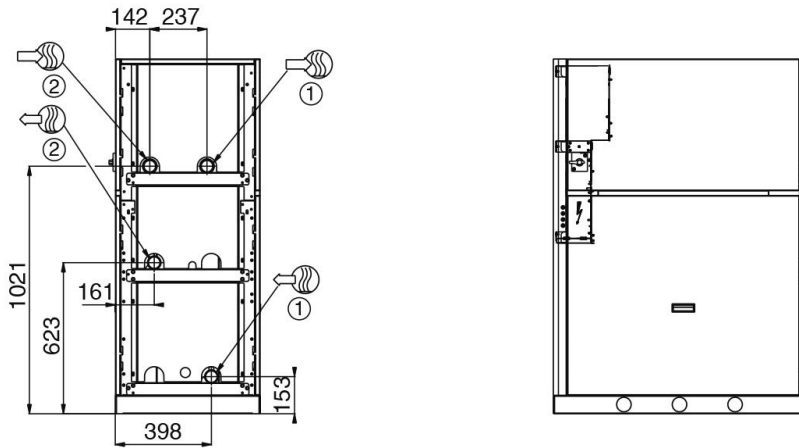
61WG/30WG 020-045 - unit with condenser hydraulic module (option 270)



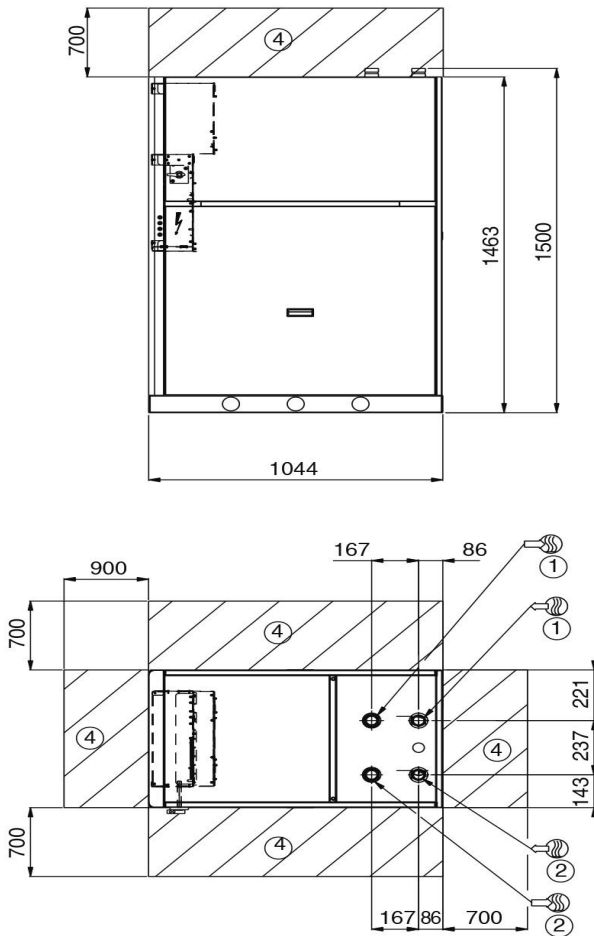
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

61WG/30WG 020-045 - unit with evaporator/condenser hydraulic modules (options 116 + 270)



61WG/30WG 020-045 - unit with hydraulic module and top connections (options 116 + 274 or 270 + 274 or 116 + 270 + 274)



Legend

All dimensions are in mm.

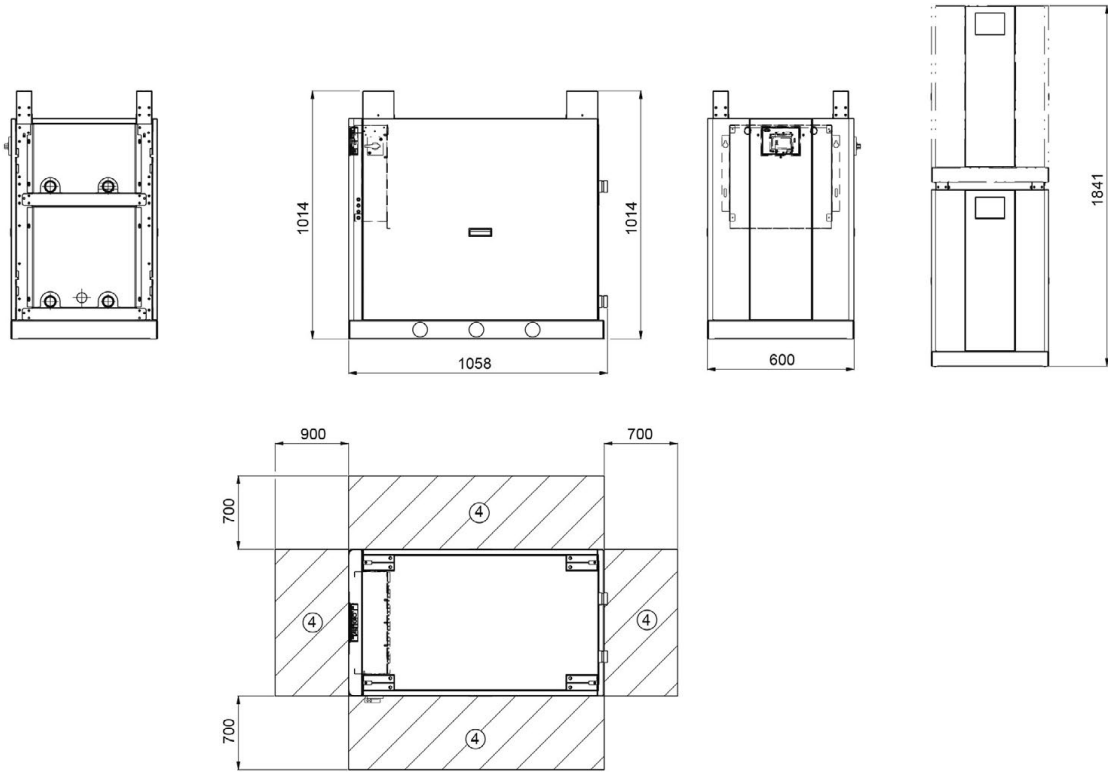
- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- Water inlet.
- Water outlet
- Power wiring connection

NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

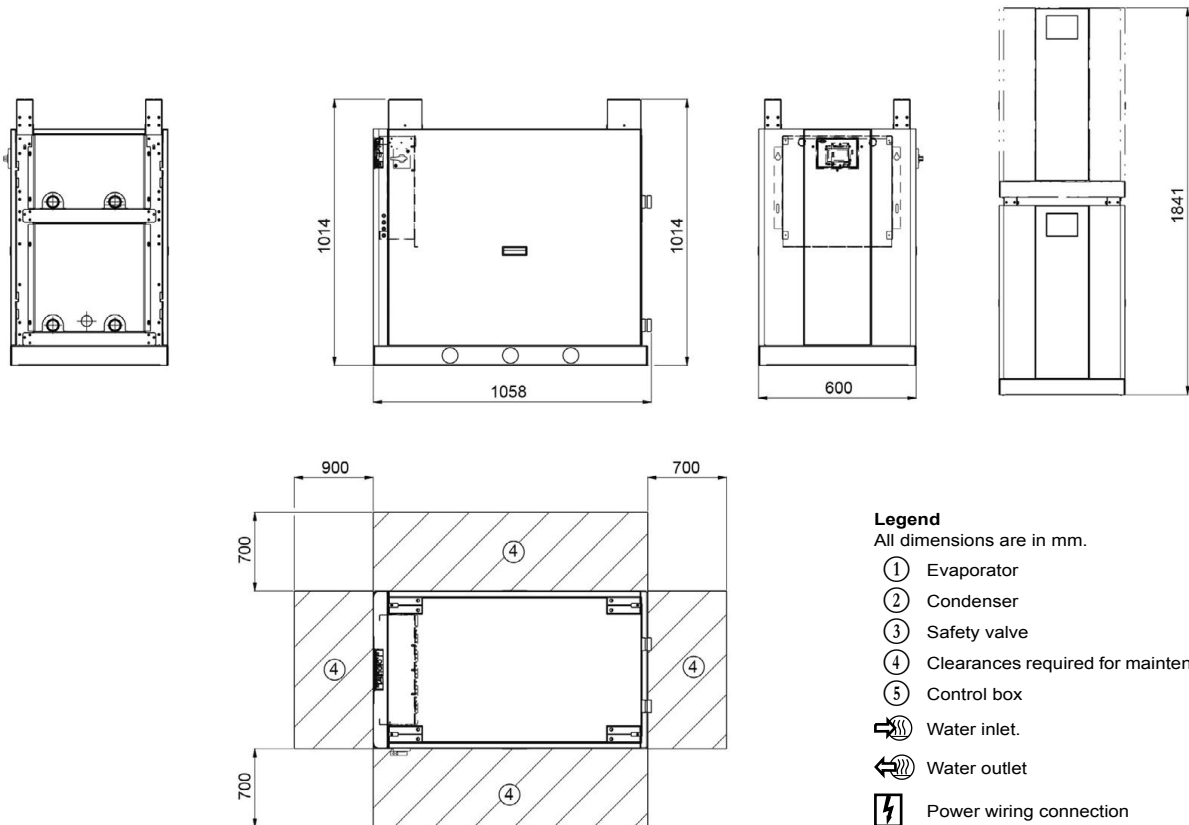
DIMENSIONS/CLEARANCES

61WG/30WG 020-045 - stackable unit (option 273)

NOTE: The water and electrical connections are identical to those of the standard unit.



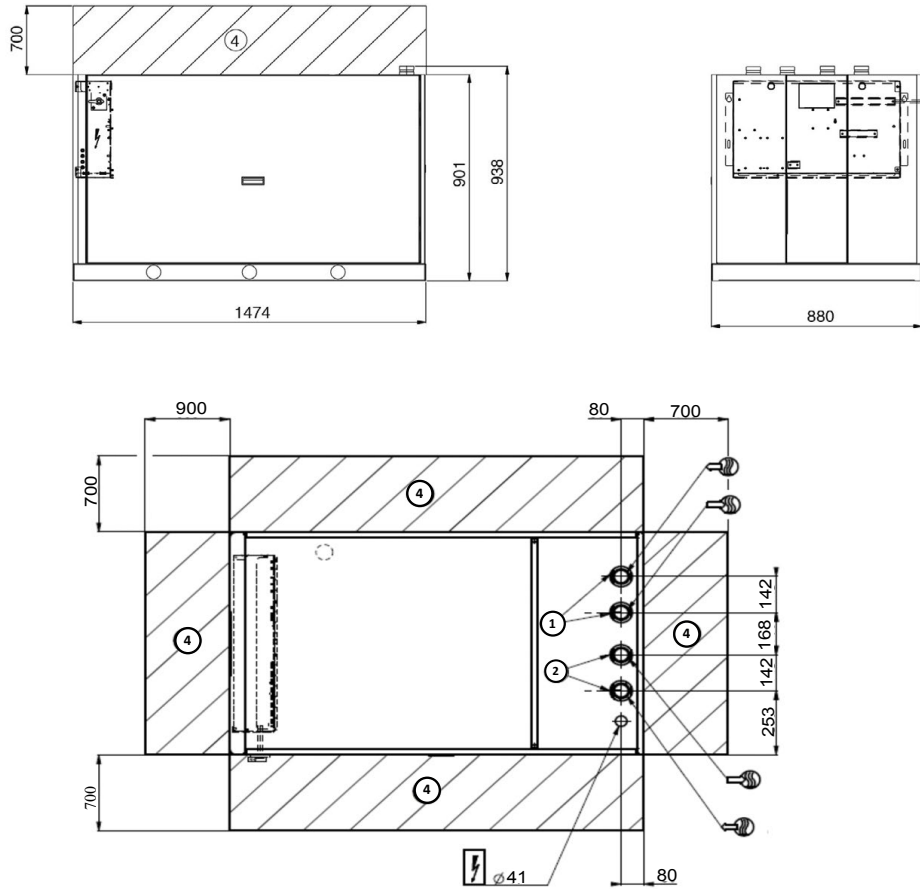
61WG/30WG 050-090 - standard unit



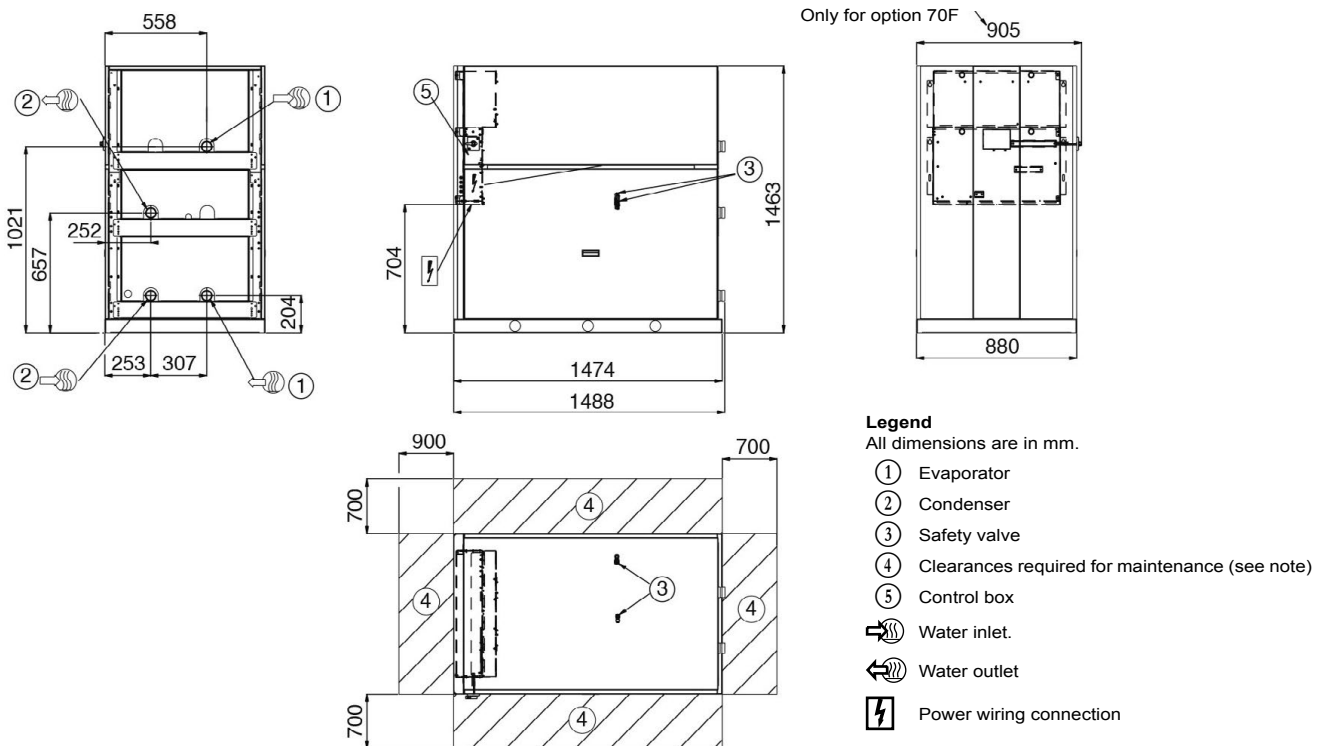
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

61WG/30WG 050-090 - unit with top connections (option 274)



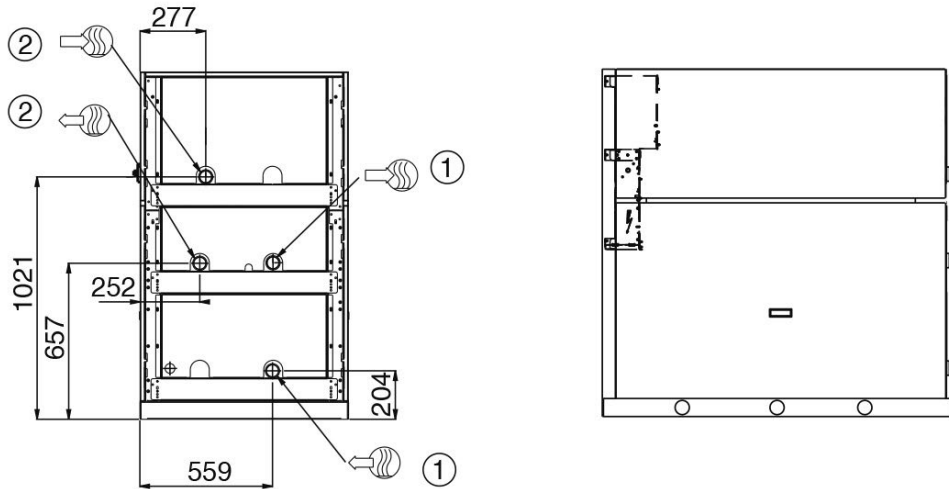
61WG/30WG 050-090 - unit with evaporator hydraulic module (option 116)



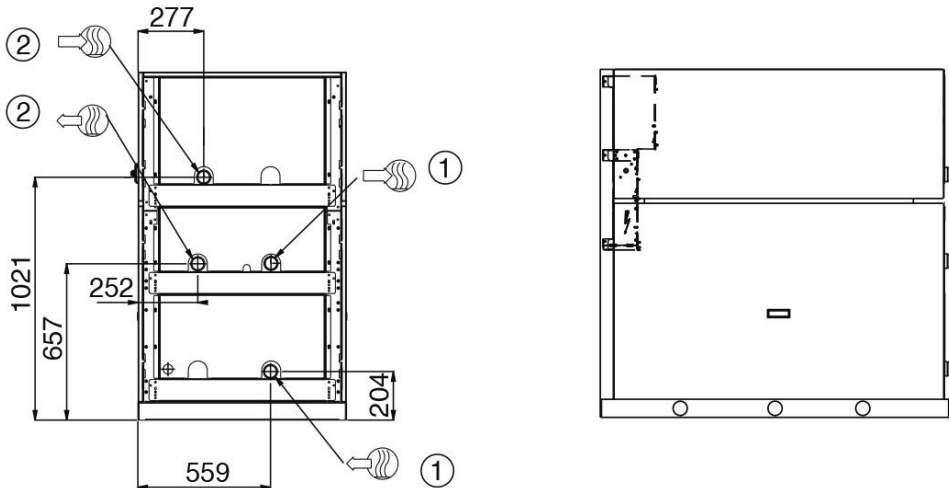
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

61WG/30WG 050-090 - unit with condenser hydraulic module (option 270)






61WG/30WG 050-090 - unit with evaporator/condenser hydraulic modules (options 116 + 270)



Legend

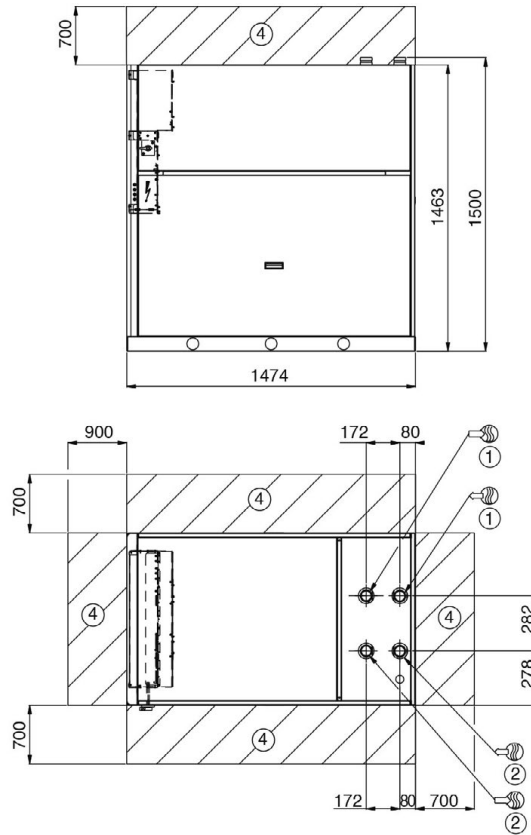
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
-  Water inlet.
-  Water outlet
-  Power wiring connection

NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

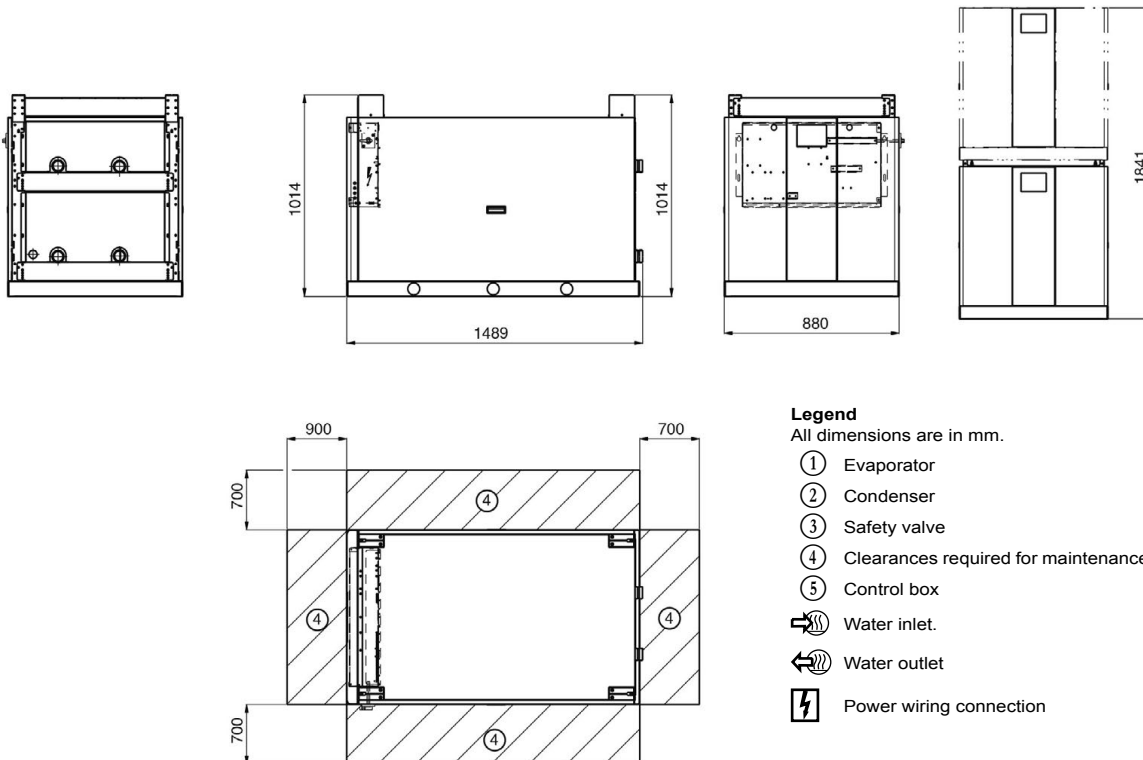
DIMENSIONS/CLEARANCES

61WG/30WG 050-090 - unit with hydraulic module and top connections (options 116 + 274 or 270 + 274 or 116 + 270 + 274)



61WG/30WG 050-090 - stackable unit (option 273)

NOTE: The water and electrical connections are identical to those of the standard unit.



Legend

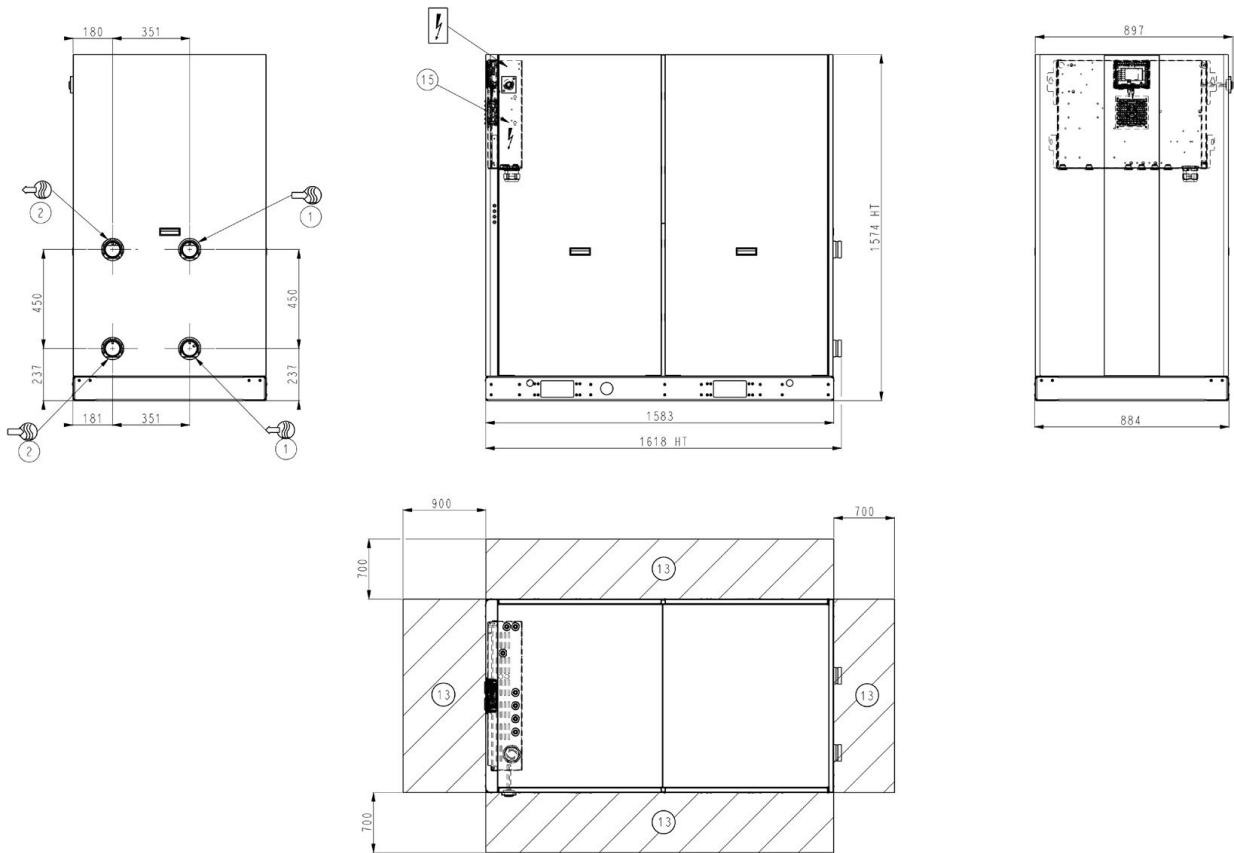
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- ⊕ Water inlet.
- ⊖ Water outlet
- ⚡ Power wiring connection

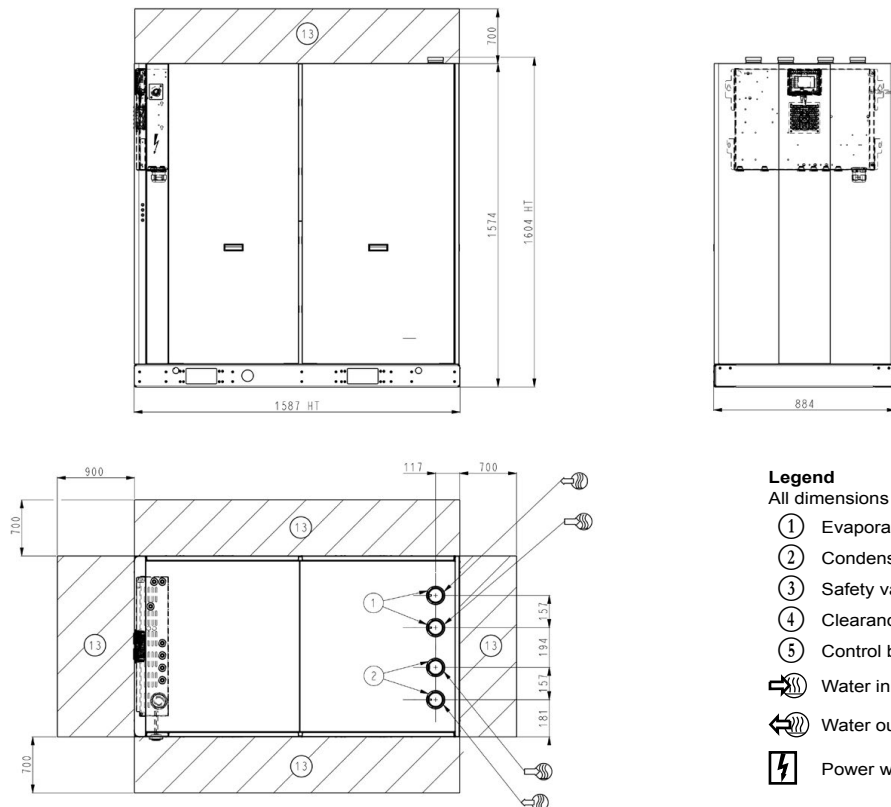
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WG 110-140 - standard unit



30WG 110-140 - unit with top connections (option 274)



Legend

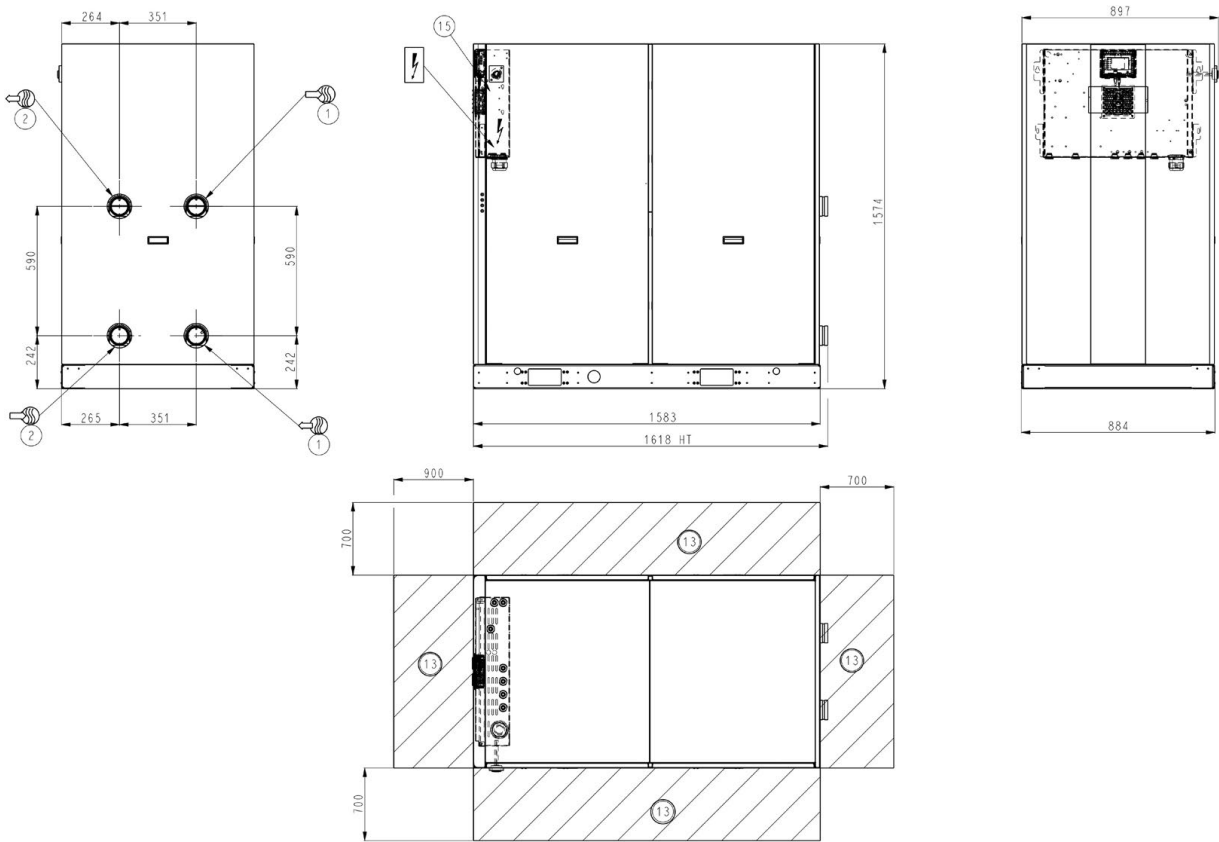
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- Water inlet.
- Water outlet
- Power wiring connection

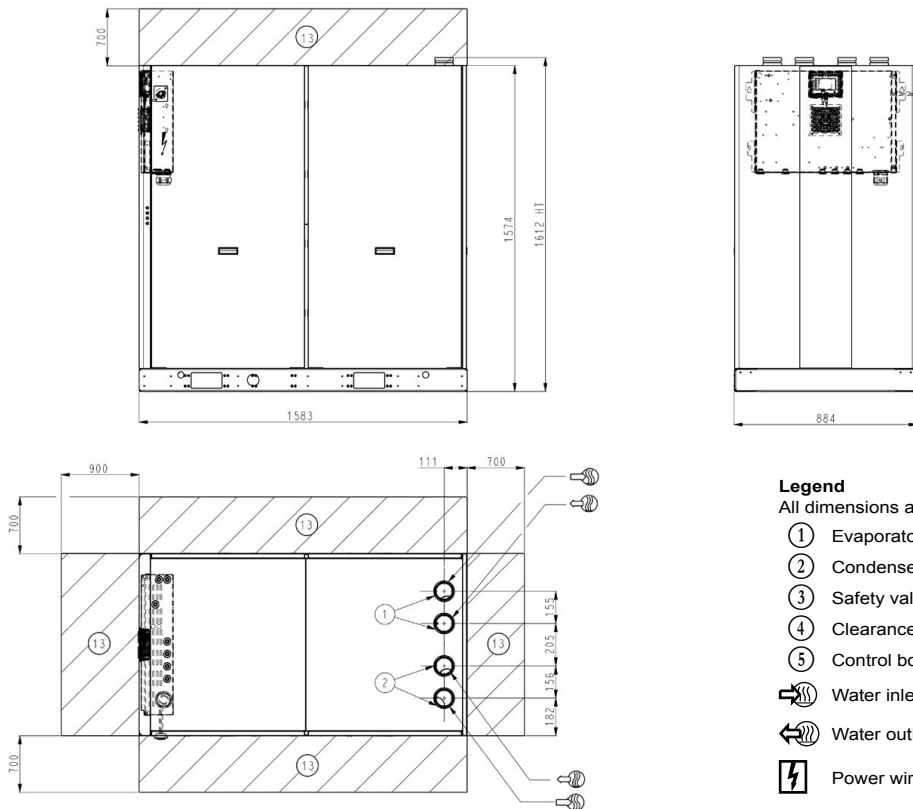
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WG 150-190 - standard unit



30WG 150-190 - unit with top connections (option 274)



Legend

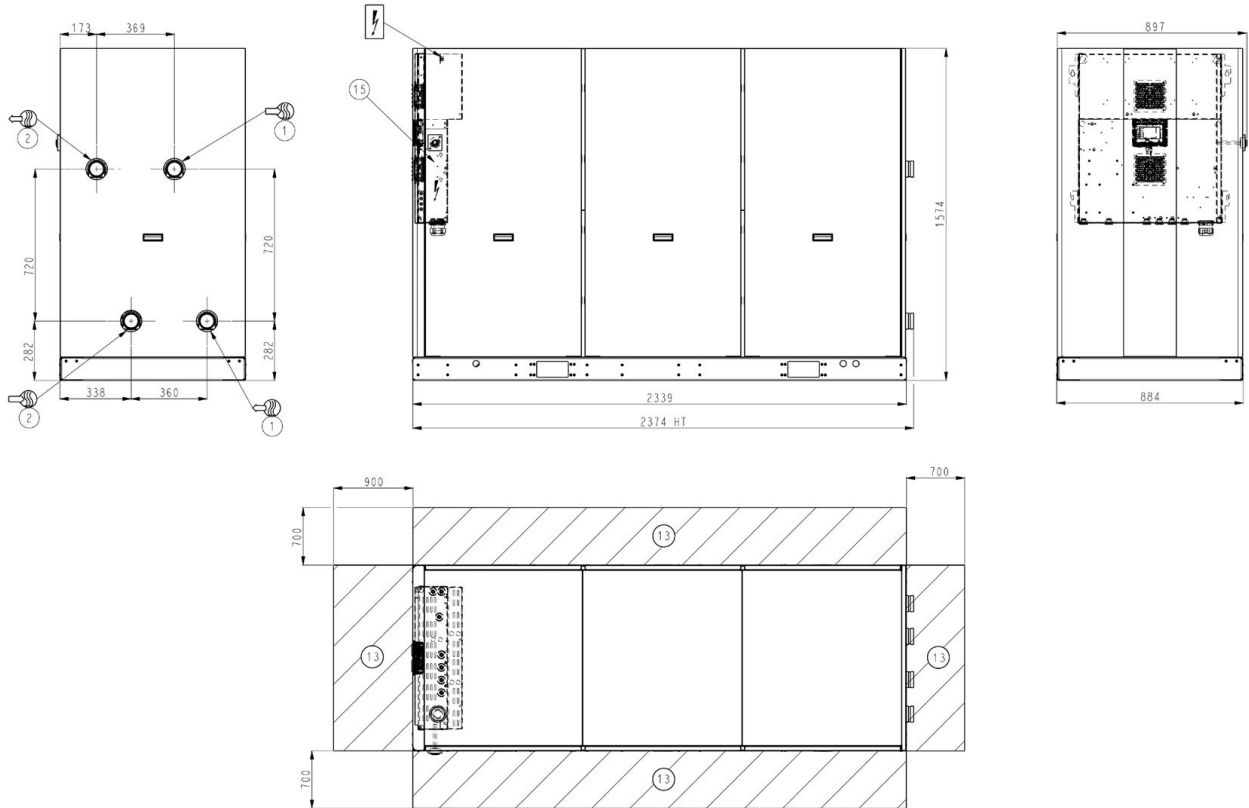
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- ↙ Water inlet.
- ↘ Water outlet
- ⚡ Power wiring connection

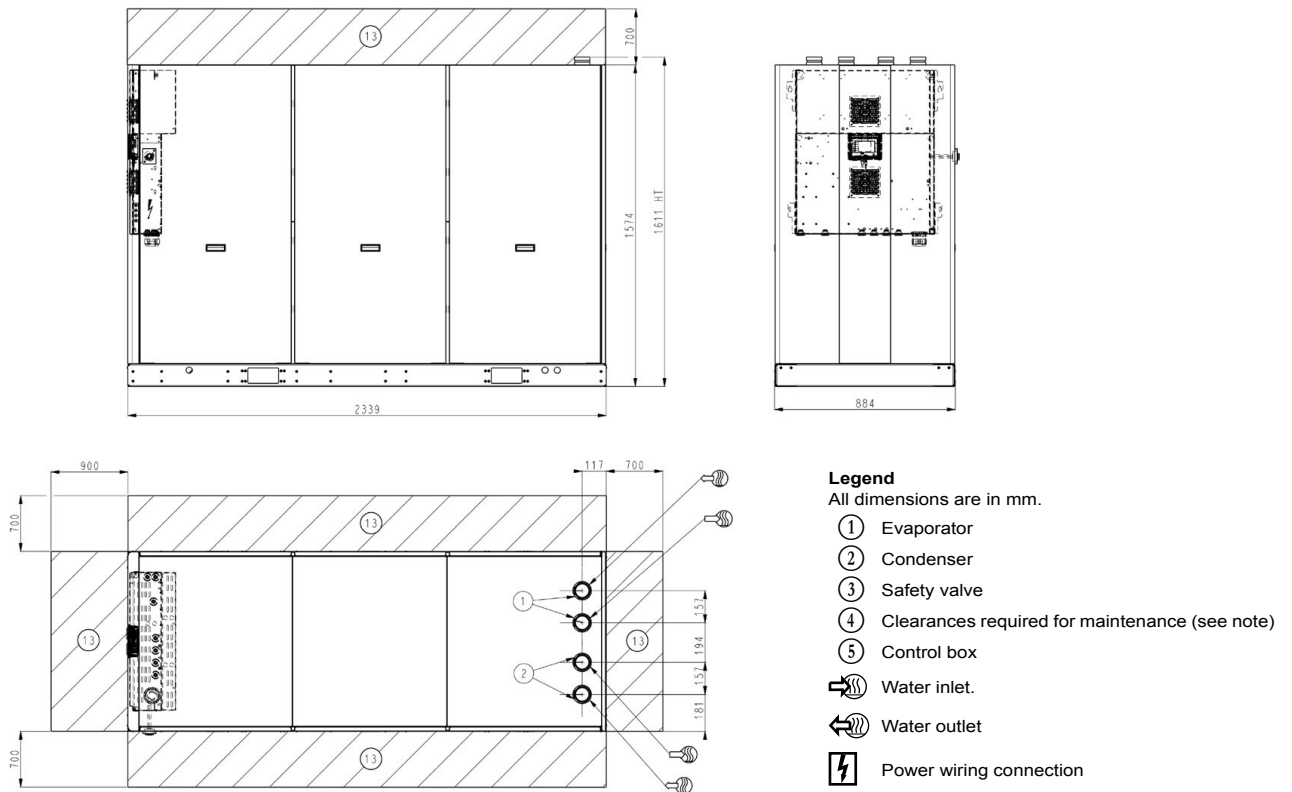
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WG 110-140 - unit with hydraulic module (option 116-270)



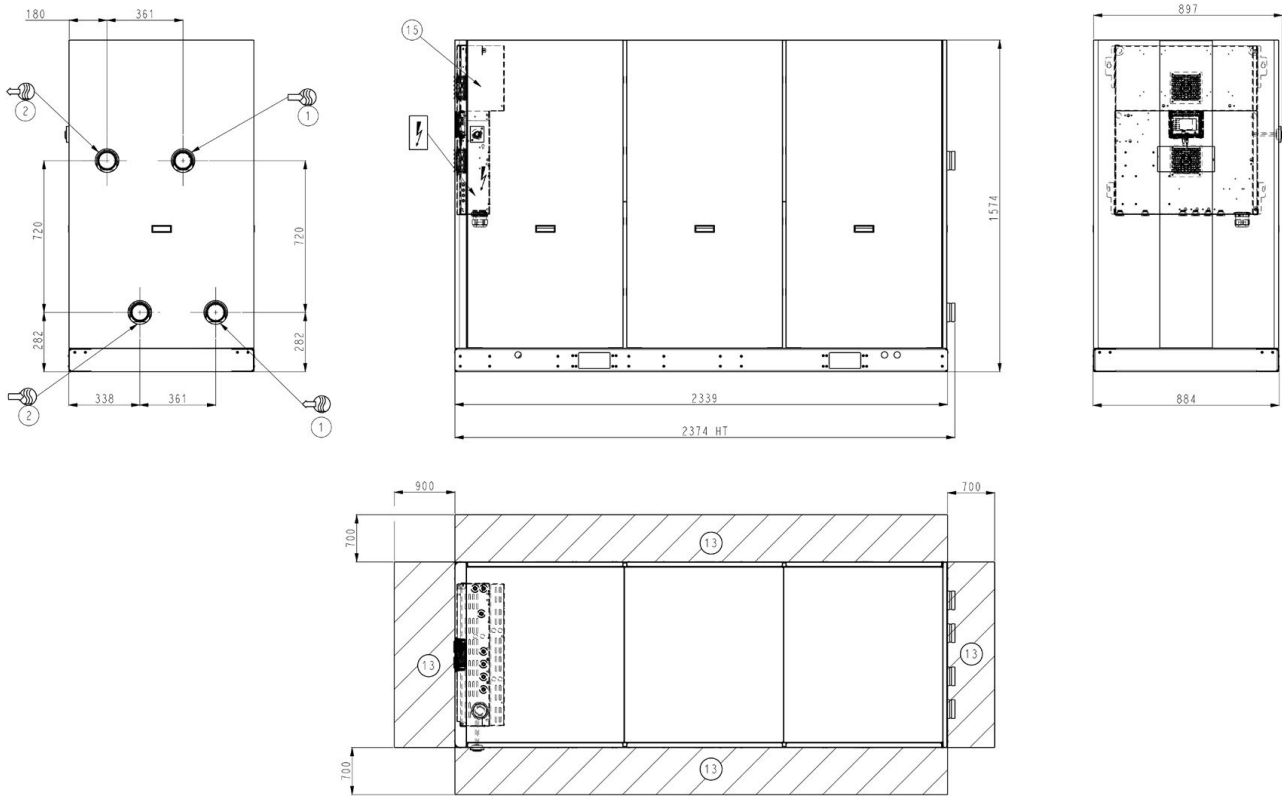
30WG 110-140 - unit with hydraulic module and top connections (option 116-270 and 274)



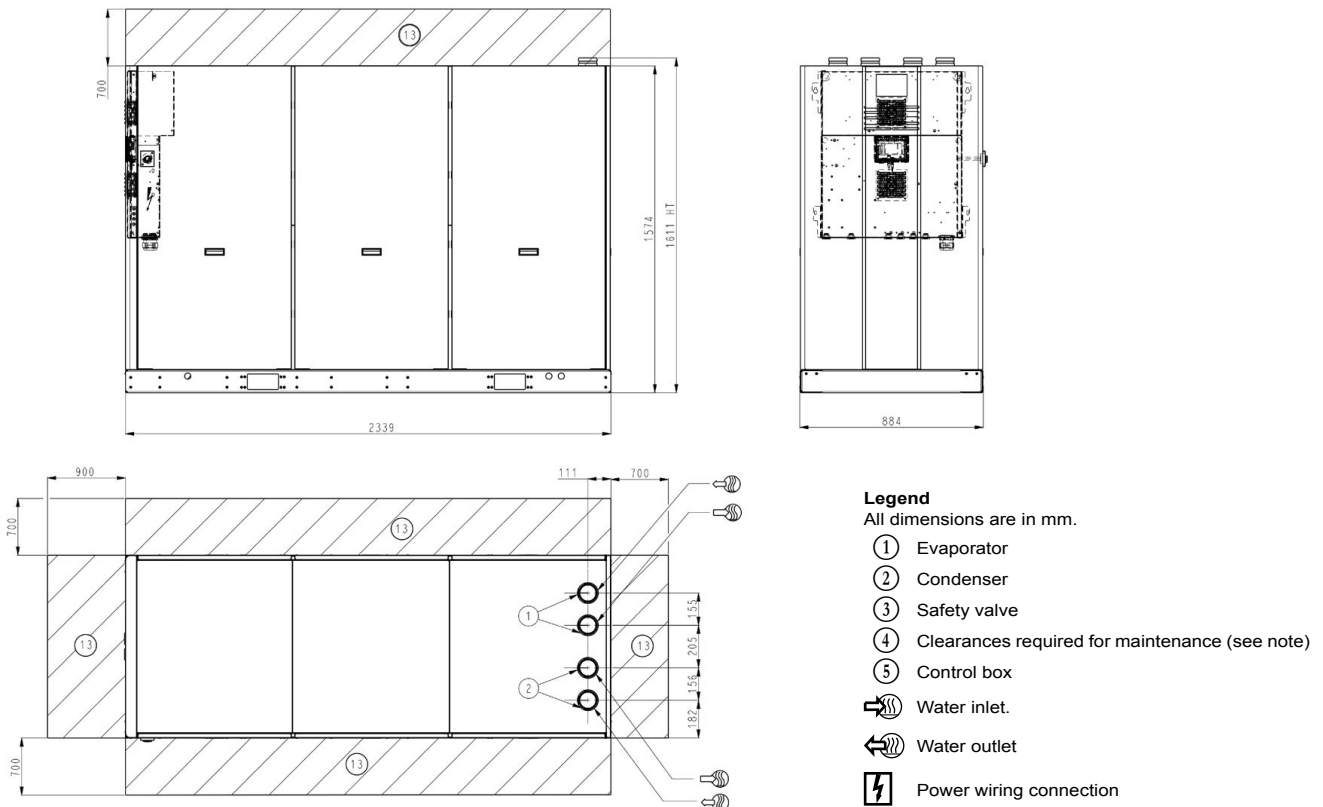
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WG 150-190 - unit with hydraulic module (option 116-270)



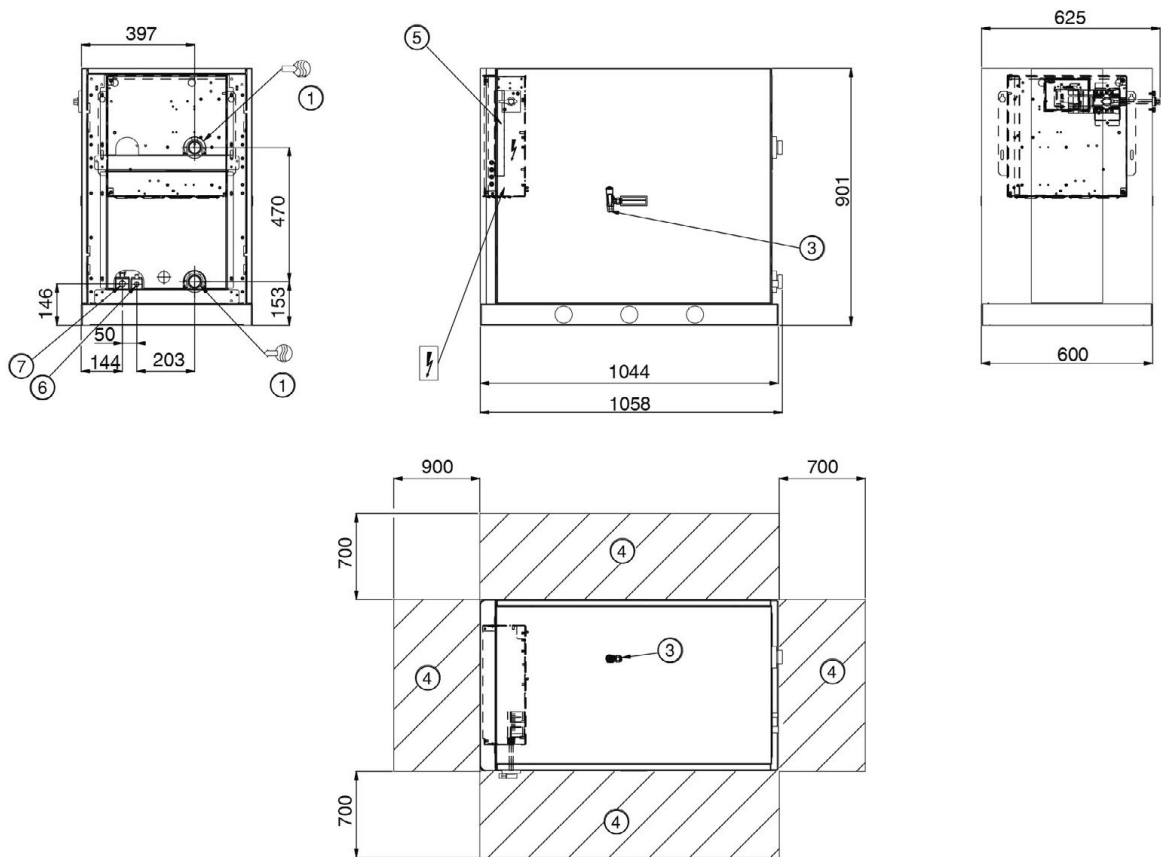
30WG 150-190 - unit with hydraulic module and top connections (option 116-270 and 274)



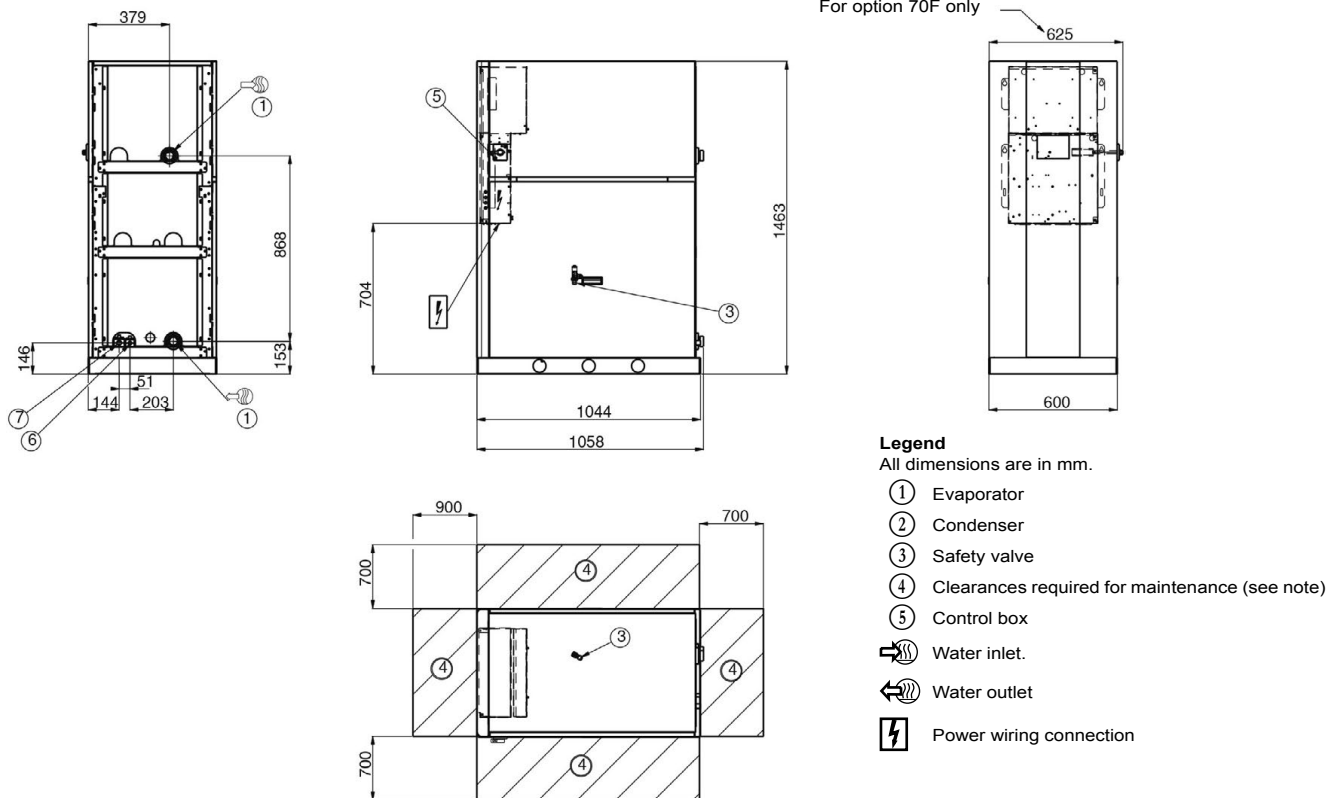
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WGA 020-045 - standard unit



30WGA 020-045 - unit with evaporator hydraulic module (option 116)

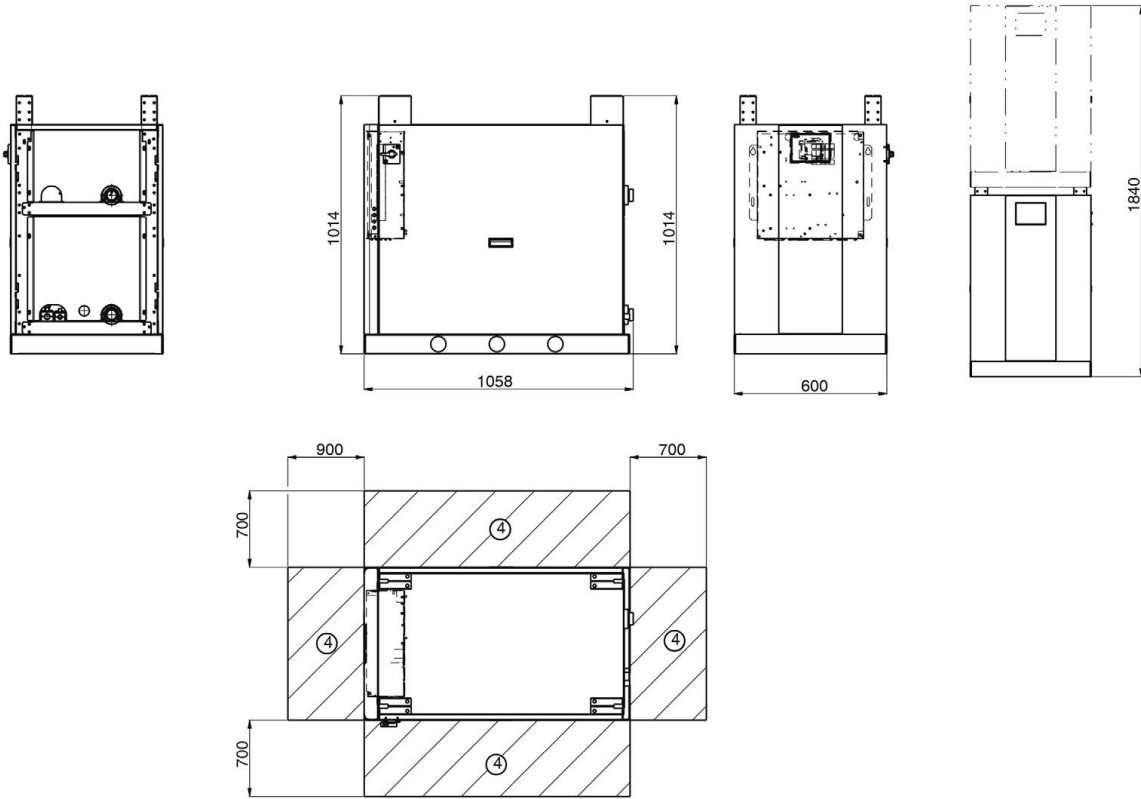


NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

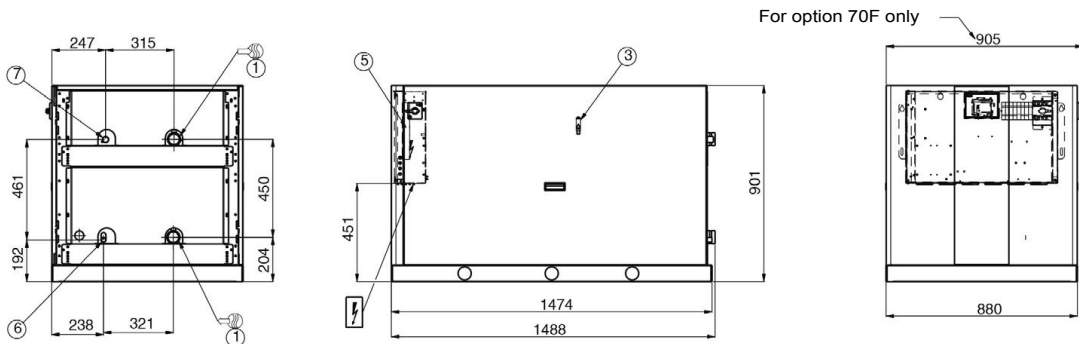
DIMENSIONS/CLEARANCES

30WGA 020-045 - stackable unit (option 273)

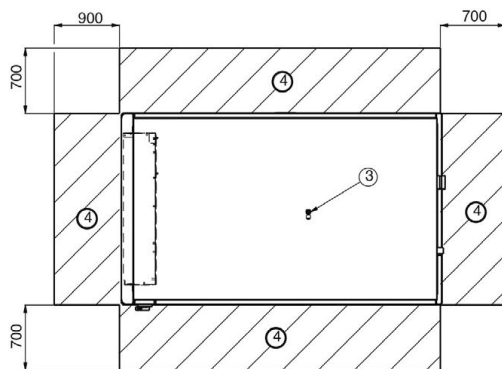
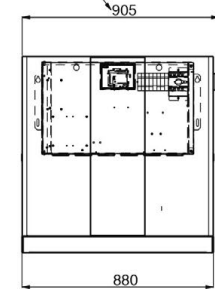
NOTE: The water and electrical connections are identical to those of the standard unit.



30WGA 050-090 - standard unit



For option 70F only



Legend

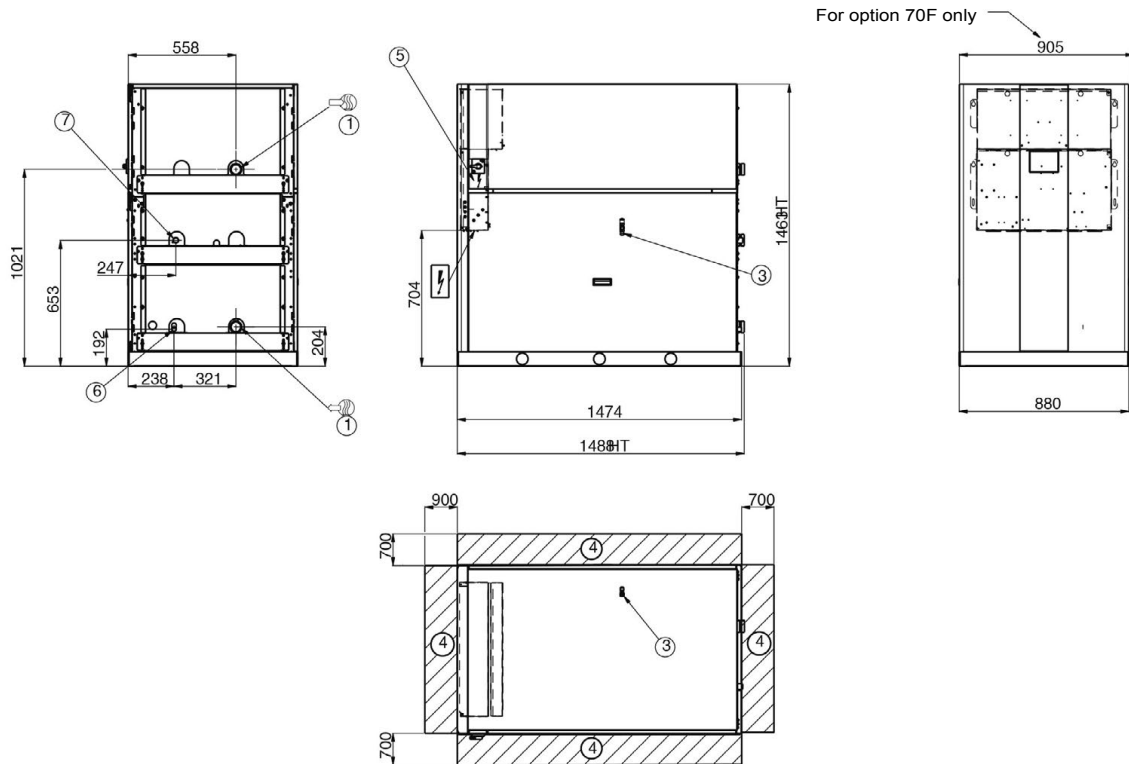
All dimensions are in mm.

- ① Evaporator
- ② Condenser
- ③ Safety valve
- ④ Clearances required for maintenance (see note)
- ⑤ Control box
- Water inlet.
- Water outlet
- Power wiring connection

NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

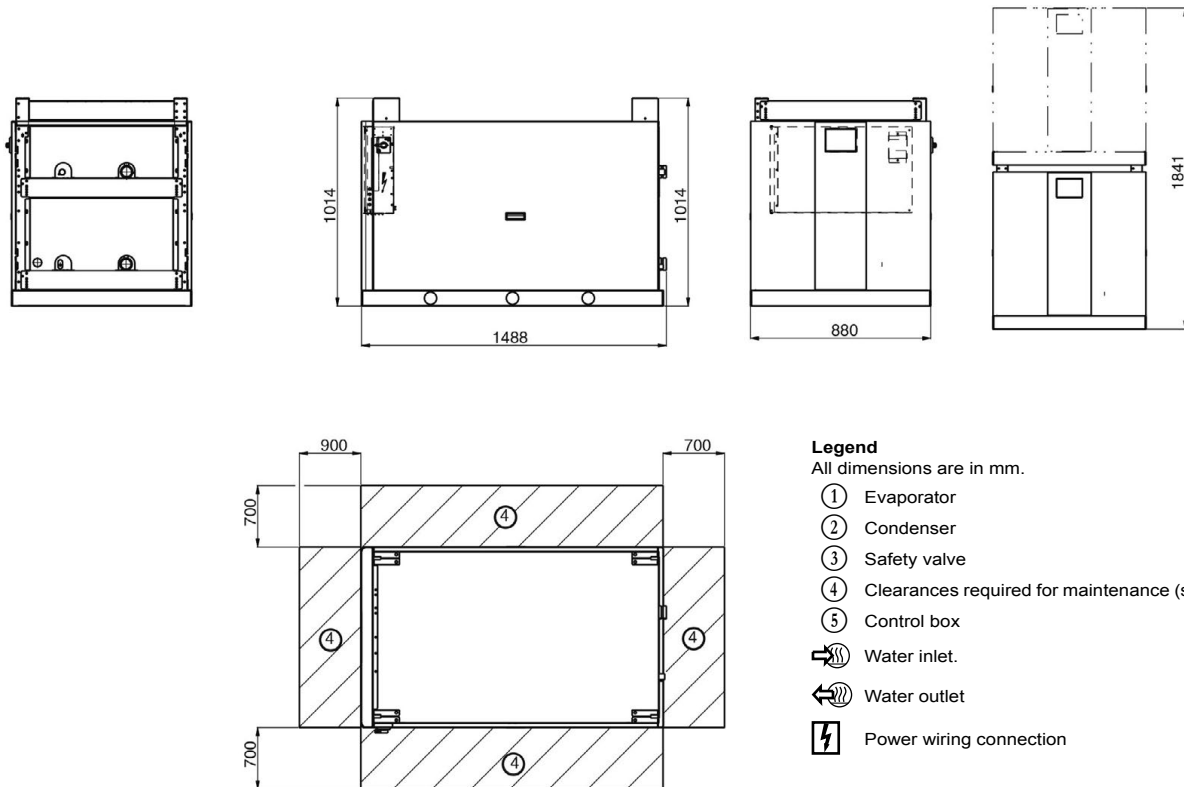
DIMENSIONS/CLEARANCES

30WGA 050-090 - unit with evaporator hydraulic module (option 116)



30WGA 050-090 - stackable unit (option 273)

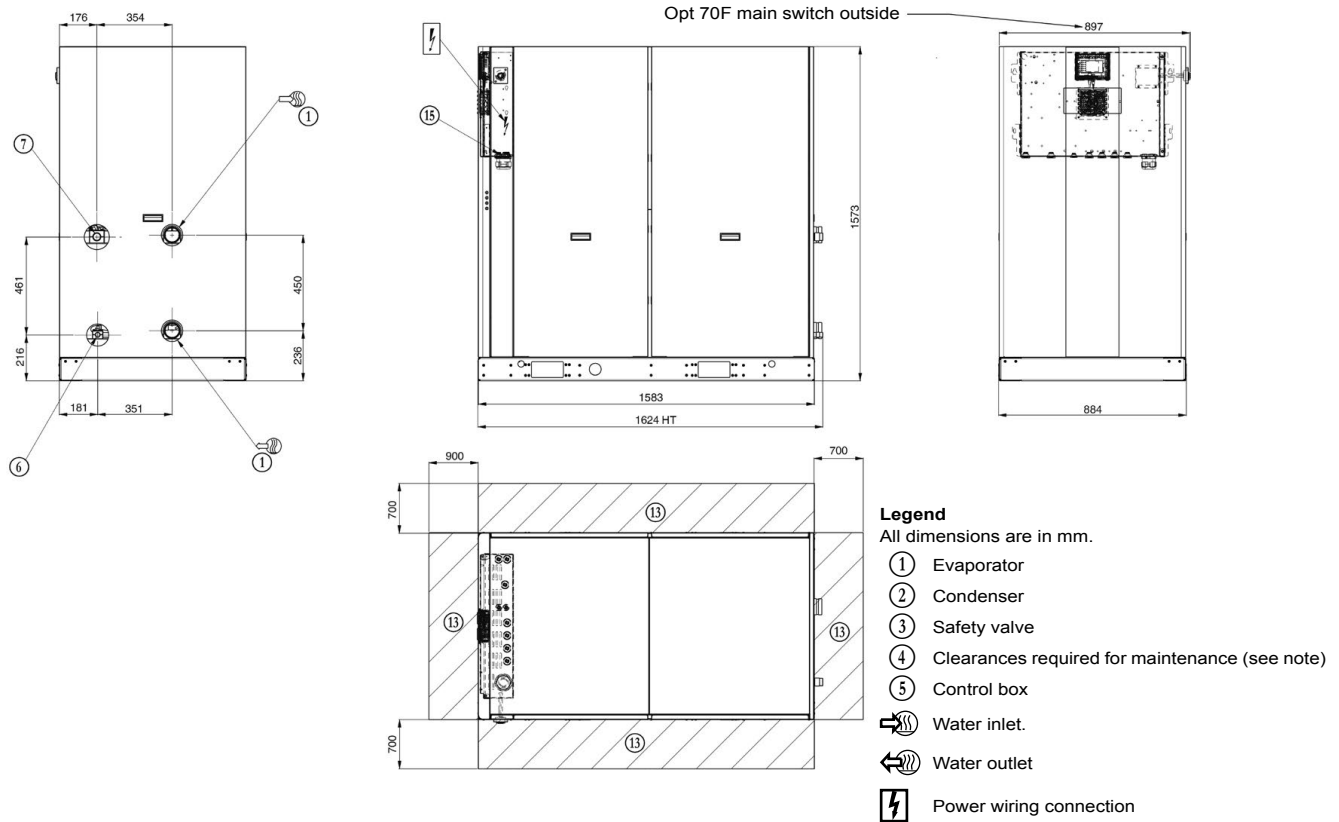
NOTE: The water and electrical connections are identical to those of the standard unit.



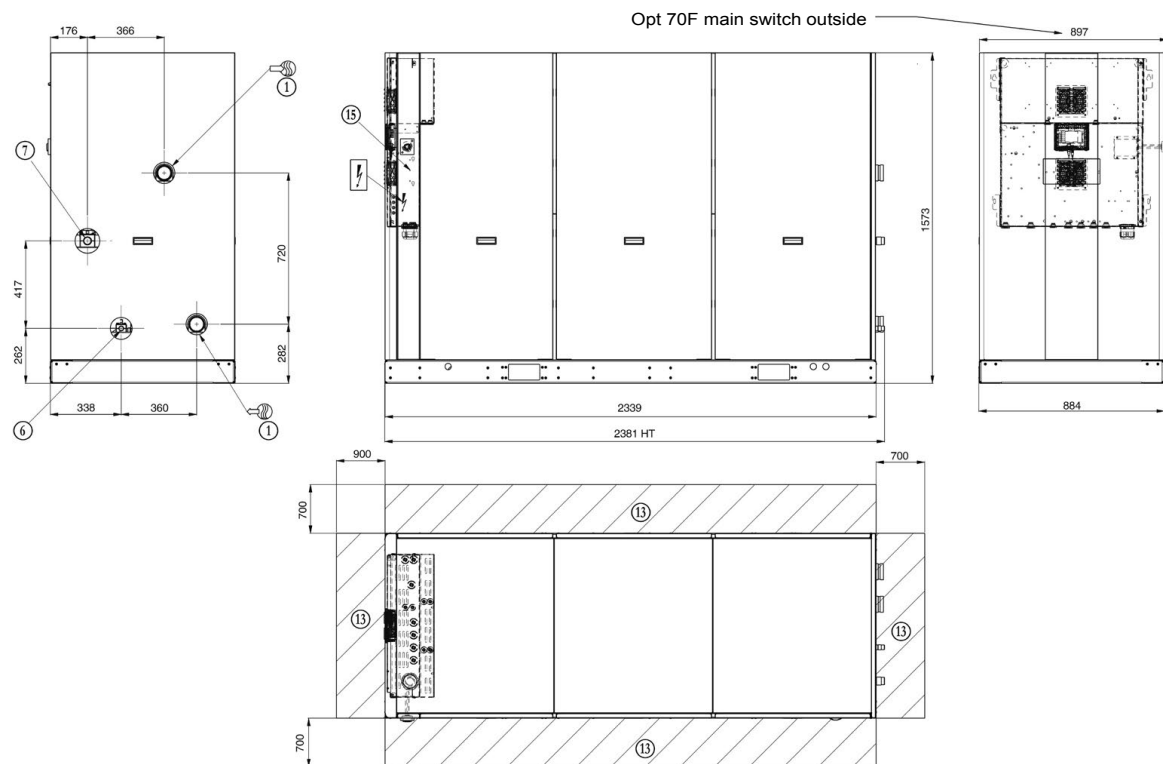
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WGA 110-140 - Standard unit



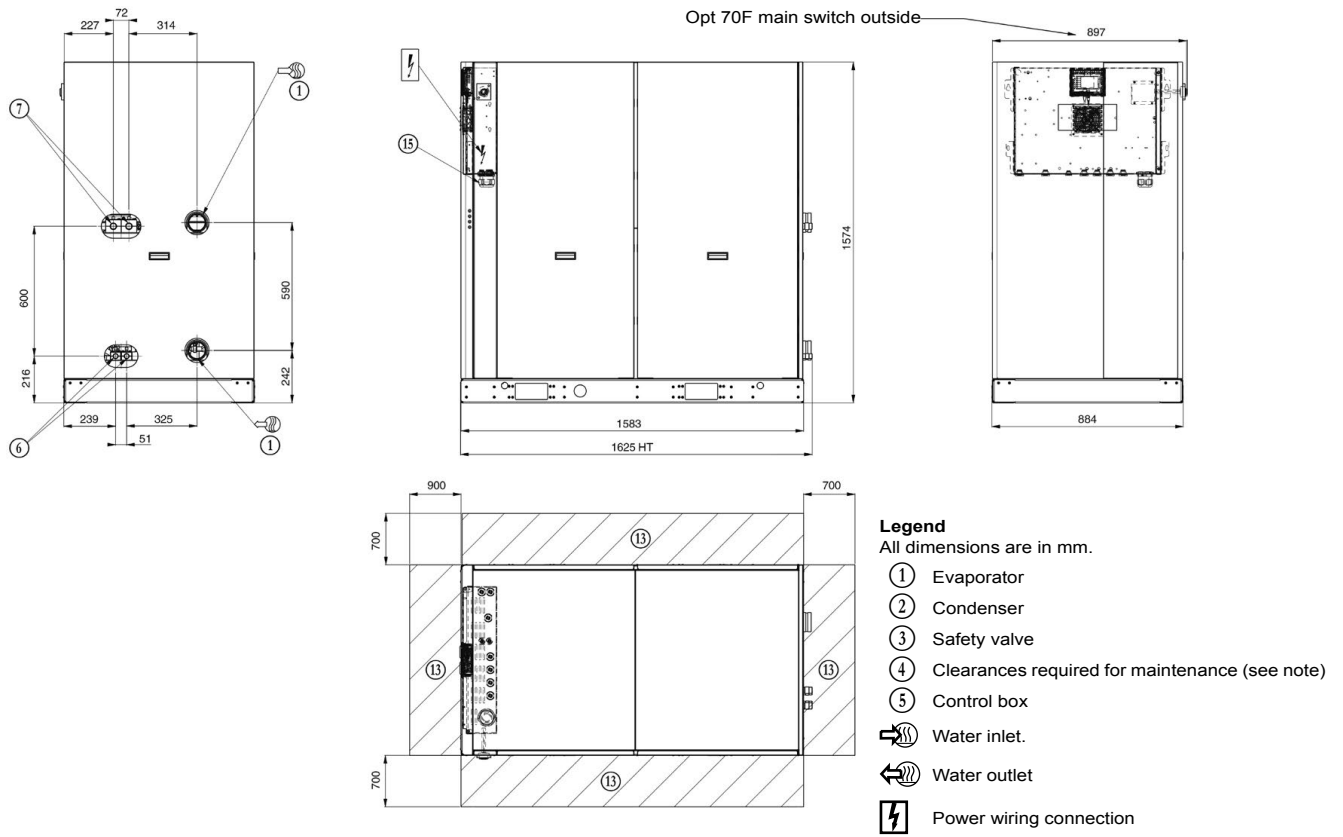
30WGA 110-140 - Unit with hydraulic module (option 116)



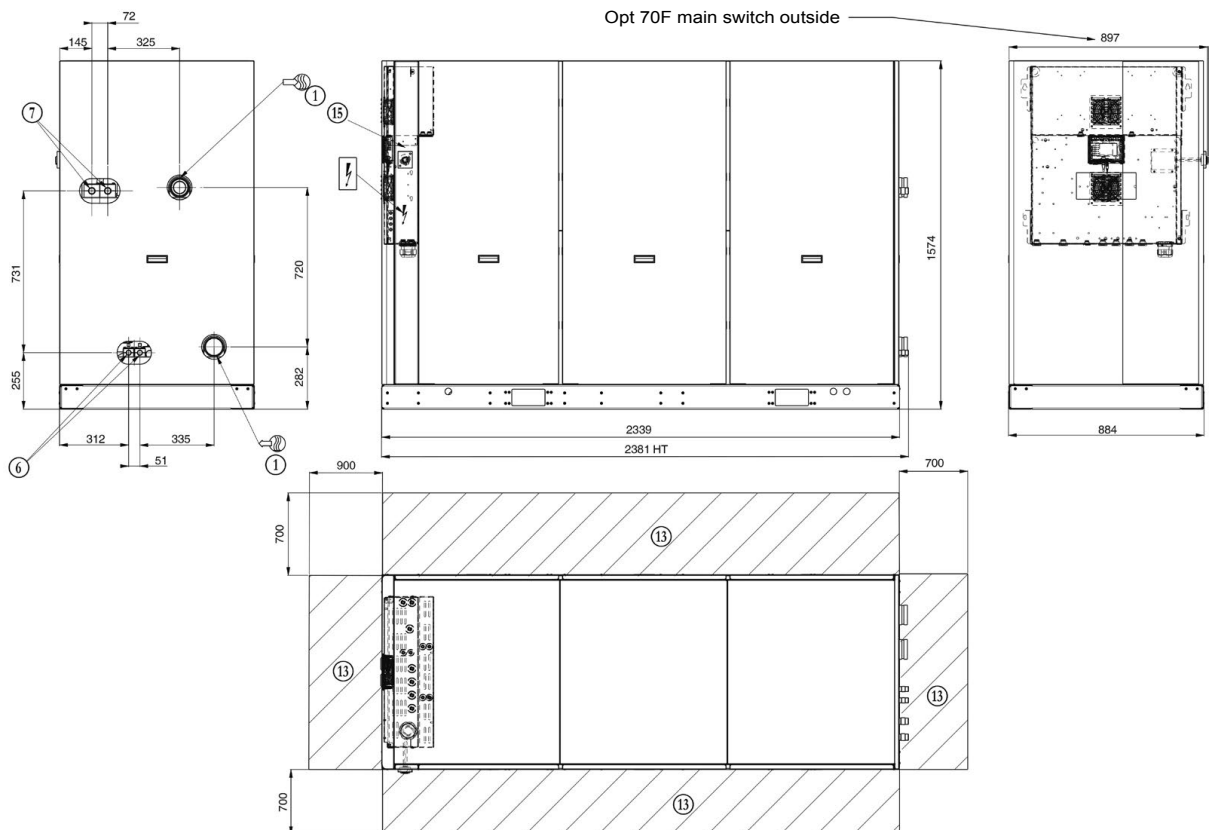
NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

DIMENSIONS/CLEARANCES

30WGA 150-190 - Standard unit



30WGA 150-190 - Unit with hydraulic module (option 116)



NOTE: Non-contractual drawings. Refer to the certified dimensional drawings available on request, when designing an installation.

VARIABLE WATER FLOW SYSTEM (VWF)

Variable water flow is a hydraulic control function package that permits control of the water flow rate.

The VWF not only ensures control at full load, a specific Carrier algorithm linked to an electronic frequency converter also continuously modulates the flow rate to minimise pump consumption at full load as well as part load.

The hydraulic module includes pressure transducers that permit intelligent measurement of the water flow rate and real-time display on the SmartVu™ interface. All adjustments can be made directly on the interface, speeding up start-up and maintenance.

As VWF acts directly on the pump, the system no longer requires the control valve at the unit outlet. However, for applications with two-way valves a bypass system must be kept to guarantee the minimum flow rate.

Operating logic

■ Full-load setpoint

The flow rate control at full load uses the SmartVu™ interface, reducing the pump speed. This first control saves energy that would normally be dissipated in the control valve. For example, if the pressure supplied by the pump is reduced by 20% the power consumption of the pump is reduced by the same ratio, compared to a traditional installation.

■ Operating mode at part load

SmartVu™ includes two part-load operating modes:

- Constant outlet pressure control
- Constant delta T control.

Constant unit outlet pressure control

The control continuously acts on the pump speed to ensure a constant outlet pressure.

This solution is suitable for installations with two-way valves. When these close, the water speed will accelerate in the system branches that are still open. For a fixed-speed pump this results in an unnecessary increase of the pressure at the pump outlet.

The outlet pressure control mode ensures that each circuit branch always has a uniform supply, without unnecessary energy waste.

In industrial processes such as plastic injection moulding, this solution ensures that each terminal unit has the correct pressure supply.

Constant delta T control

The VWF algorithm maintains a constant delta T no matter what the unit load, reducing the flow rate to the minimum.

This solution can be used for systems with two-way or three-way valves and achieves higher energy savings than the “Constant unit outlet pressure control” mode. It is suitable for the majority of comfort applications.

GUIDE SPECIFICATION, 61WG/30WG/30WGA

Quality assurance

- The water-sourced units shall be designed for indoor installation in a plant room.
- The water-sourced units shall use ozone-friendly refrigerant R410A and include scroll compressors.
- The design and manufacturing site of the units shall be certified in accordance with the quality management system ISO 9001.
- The development test site of the units shall be certified to the quality management system ISO 17025.
- The design and manufacturing site of the units shall be certified in accordance with the environmental management system ISO 14001.
- The manufacturing site is certified ISO 50001 (Energy management system).
- The published performances for the units shall be Eurovent-certified and all units are factory-tested before shipment.
- The units shall meet the following product quality standards: 2014/35/UE, 2014/30/UE, 2014/68/UE, 2011/65/UE "RoHS 2", 2012/19/EU "WEEE", 2009/125/EC "Ecodesign", EN14511.

61WG product features

- The hot-water production unit shall have a heating capacity of _____ kW, a maximum power input of _____ kW and a SCOP of _____ kW/kW.
- The evaporator leaving water temperature shall be _____ °C with a temperature difference of _____ K and a condenser leaving water temperature of _____ °C with a temperature difference of _____ K.
- The hot-water production unit shall be able to produce hot water up to 65 °C and cold water to class ____ in accordance with Eurovent.
- The hot-water production unit shall have weather compensation control, controlling a needle valve and permitting hot-water production at a second setpoint of _____ °C, controlled by a clock.
- It shall control a supplementary 4-stage electric heater and be able to manage a relief boiler (heat pump stopped).
- A second circulation pump shall be controlled by the hot-water production unit.

30WG product features

- The chilled-water production unit shall have a cooling capacity of _____ kW, a maximum power input of _____ kW and an SEER of _____ kW/kW.
- The evaporator leaving water temperature shall be _____ °C with a temperature difference of _____ K and a condenser leaving water temperature of _____ °C with a temperature difference of _____ K.
- The chilled-water production unit shall be able to produce hot water up to 60 °C and class ____ heating in accordance with Eurovent.
- The chilled-water production unit shall be connected by communication bus to a drycooler.

30WGA product features

- The refrigerant circuit of the condenserless unit shall include a check valve on the discharge line piping, a solenoid valve on the liquid line piping and a nitrogen holding charge.
- The unit shall be capable of delivering cooling capacity with a saturated condensing temperature of up to 62 °C.
- The chiller shall be connected to a remote condenser via communication bus.
- Fan control on the remote condenser shall be possible via a digital output (up to 8 steps possible) or via an analogue 0-10 V output signal for variable-speed fans.
- Fan operation shall be controlled remotely based on the outside temperature and the saturated refrigerant discharge temperature

Common 61WG/30WG/30WGA unit features

- The unit shall have water connections at the top/back and a footprint size of _____ m².
- The hydraulic module, located in the upper unit section shall include all required hydraulic components including an expansion tank of _____ litres.
- The circulation pumps have fixed speed/variable water flow with a minimum frequency of 25 Hz. The evaporator water pressure drop shall be _____ kPa and the condenser water pressure drop shall be _____ kPa.
- All hydraulic and refrigerant circuit components of the unit shall be compatible with a condenser leaving water temperature of 65°C (61WG) or 60°C (30WG).
- The unit shall be stackable in pairs, controlled in master/slave configuration for a total capacity of _____ kW(sizes 020 to 090).
- The unit shall operate with 400 V-3 ph-50 Hz (400 V ± 10%) without neutral and it shall only have one connection point.
- The main control panel shall be protected by panel and shall only be opened with a special tool.
- The unit control circuit voltage shall be 24 V maximum, supplied by a factory-installed transformer. The compressor shall offer quick keyed electrical connection.
- The unit shall include numerical control with an intuitive and userfriendly interface with 4.3" colour touch screen. It shall ensure the control of the compressors, evaporator and condenser water pumps and the fans (drycooler).
- The numerical control shall include a patented auto-adaptive Carrier algorithm that controls the operation of the compressors and permanently adjusts to the application characteristics including the water loop inertia.
- Dangerous compressor cycles are reduced to six per hour.
- The control menus shall permit direct access to all unit data including the history of possible faults.



Order No.: 16121, 11.2020. Supersedes order No.: 16121, 09.2018.
Manufacturer reserves the right to change any product specifications without notice.

Manufactured by: Carrier SCS, Montluel, France.

The illustrations in this document are for illustrative purposes only and not part of any offer for sale or contract. The manufacturer reserves the right to change the design at any time without notice.