

CHILLER

WATER-COOLED
WITH SCROLL COMPRESSOR

GLWC 2012 - 4120 CD2

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Fig. 1: Unit view (example version)

Type code

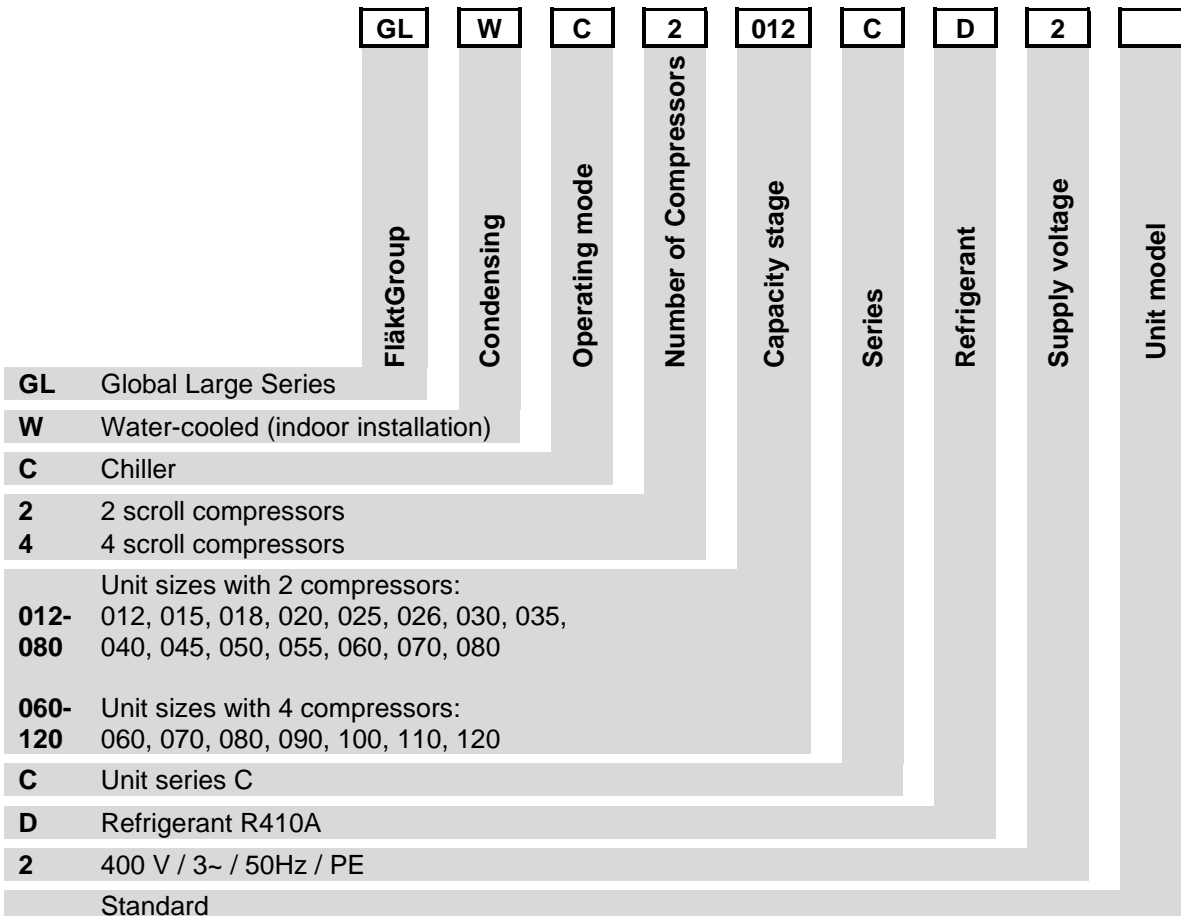


Fig. 2: Explanation of unit type code

Unit description

FläktGroup chiller with scroll compressors

- Water-cooled for indoor installation
- ErP 2021-compliant, comfort cooling application range
- • High energy efficiency
- Refrigerant R410A (GWP 2088)
- Capacity range approx. 38 kW to 398 kW cooling capacity
- 1 unit configuration:
 - Standard configuration (22 unit sizes)
- Built-in single pump or double pump (redundancy) options for the chilled-water circuit, model with standard delivery head as standard on/off pump
- Built-in single pump or double pump (redundancy) options for the chilled-water circuit, model with standard delivery head as highly efficient inverter pump (except for sizes 4110-4120)
- Inverter pumps are controlled at a constant speed, which is adapted to the actual demand during commissioning.
- Built-in single pump or double pump (redundancy) for the heat-rejection circuit optionally possible, version with standard delivery head, as standard on/off pump
- Built-in single pump or double pump (redundancy) for heat-rejection circuit optionally possible, version with standard head, highly efficient inverter pump (except model sizes 4110-4120)
- 1-2 refrigeration circuits with 2 compressors each
- 2-4 low-noise, low-vibration, fully hermetic scroll compressors as tandem apparatus
- Electronic expansion valve
- Stainless steel plate heat exchanger in copper brazed version as evaporator
- Stainless steel plate heat exchanger in copper brazed version as condenser
- For model sizes 4060-4120 with 2 refrigerant circuits, 2-circuit plate heat exchangers are used.
- Victaulic coupling with transition to threaded connection for evaporator / condenser if no integrated pump was selected
- Alternative flange connections for evaporator and condenser optional (option .I73)
- 3-way valve for controlling the inlet temperature of the heat-rejection circuit optional (option .I31)
- water-outlet temperature from +5 °C to +18 °C as standard
- Heat-rejection circuit outlet temperature +20 °C to +58 °C as standard
- Optionally extended application range for water-outlet temperatures below +5 °C to -10 °C, the maximum limit for the outlet temperature of the heat-rejection circuit decreases continuously to +45 °C, see operating limit chart, glycol required for chilled water (option .O29)
- Unit with housing panels as standard (only model sizes 2012-2080)
- Acoustic lining for the housing panels (approx. -4 dB(A)) optional for sizes 2012-2080 (option .I17)
- Standard unit without housing panels (only model sizes 4060-4120)
- Optional housing panels incl. acoustic lining (approx. -13dB(A)) for model sizes 4060-4120 (option .I74)
- Power supply 400V / 3 / 50 Hz / PE (without N)
- Numbered connecting terminals
- Built-in phase sequence protection relay
- Automatic circuit breaker for load and control circuit
- Demand limit as standard (only model sizes 2012-2080)
- Demand limit optional for model sizes 4060-4120 (option .E23)
- Pump relay for controlling an on-site chilled-water pump as standard if no integrated chilled-water pump was selected
- Pump relay for controlling an on-site condenser pump for the heat-rejection circuit as standard if no integrated condenser pump was selected
- Reactive current compensators for compressors optional (option .E46)
- FläktGroup controller with compact display, controller with LA software
- **Caution: Before directly entering the heat exchanger (evaporator and condenser), water filters must be installed on site to protect the heat exchanger from contamination and deposits of any kind. The water filters must have a mesh size of 0.9 mm or less.**
- All units of the series GLWC 2012-4120 CD2 are Eurovent certified.

Options and accessories

Accessories control system and electrics

- Option .E03* - **Operation message of compressor**
Floating contacts for status indication of each respective compressor.
- Option .E06* - **Soft starter for compressors (not combinable with option .E46)**
- Option .E19/.E20* - **Second control connection for remote monitoring and regulation**
Up to 10 units in the same controller family can be connected to an additional remote control.
Option .E19 for remote controls up to 200 meters away
Option .E20 for remote controls up to 500 meters away
- Option .E21* - **Sliding setpoint via a 4-20 mA signal provided on-site**
Shifting the chilled-water setpoint value in a fixed range via a 4-20 mA signal provided on-site. Changing the setpoint, e.g. during night mode operation, can realize significant savings potential.

Included as standard for sizes 4060-4120.
- Option .E22* - **2nd setpoint via on-site normally open contact.**
External changeover between two setpoint values set for unit by closing a field-provided dry contact. Raising the setpoint, e.g. during night mode operation, can realize significant savings potential.
- Option .E23* - **Demand limit / load limitation**
Reduction of electrical power consumption by deactivating compressors or their capacity stages (demand limit switch) by opening an on-site floating contact. This function is used if a full electrical power supply is unavailable.

Included as standard for sizes 2012-2080.
- Option .E46* - **Idle current compensators for the compressors (not combinable with .E06)**
Parallel to every compressor motor, individual compensation batteries / PFC capacitors are connected to reduce the idle current to a minimum and improve the unit cos phi to ~0.9.
- Option .E79* - **Variable setpoint temperature using outdoor temperature**
The setpoint temperature can be controlled in a variable manner depending on the outdoor temperature. In addition, an outdoor temperature sensor is supplied for on-site installation.
- Option .E37* - **0-10 volt output signal for on-site high-pressure control (cannot be combined with option .I31)**
In cooling mode, the operating limits of the heat-rejection circuit must be observed. The heat-rejection circuit serves to dissipate heat from the refrigeration process from the condenser. The lowest permissible water-outlet temperature from the condenser is 20 to 30°C depending on the chilled-water temperature (see application limit diagram). Depending on the heat sink used and the planned mode of operation, it is not always guaranteed that the water-outlet temperature from the condenser is sufficiently high. For example, if an on-site dry cooler is used as a heat sink and cooling operation is required even at low outside temperatures. The 0-10 V signal can be used, for example, to control an on-site 3-way valve, which mixes in the warm water escaping from the condenser shortly before it enters the condenser, so that the water temperature does not fall below the minimum permissible water-outlet temperature.
The 0-10 Volt signal can be used additionally or alternatively as follows to ensure the operating limits of the heat-rejection circuit:
- Regulation of a speed-controlled condenser pump provided by the customer
- Speed control of the fans of the on-site dry-cooler.

If neither option .E37 nor I.31 is selected, the release of the unit must be withdrawn by the building management system or a higher-level control if the

outdoor temperature is so low that the condensing water could fall below the minimum temperature. For example, if a dry cooler is used as a heat sink and chilled water was designed at 7 / 12°C, the release must be withdrawn at outside temperatures below 19°C; assuming a temperature increase of the heat-rejection water >1 K through operation of at least one compressor.

Serial card for connection to a building management system or for master/slave control

- **Unit connection to the building management system (BMS) using a serial card.**

The following protocols are used to transmit digital and analog values:

- Readout of error messages
- Retrieval of temperature and pressure values provided by the controller
- Operating status of individual compressors
- Enabling the unit
- Setpoint shift

Option .E14

- **Modbus (RS485),**
Built-in Modbus interface for connection to the building management system or to a sequencer.

Option .E15

- **LonWorks® ,**
Built-in LonWorks interface for connection to the building management system.

Option .E16

- **BACnet via IP,**
Built-in BACnet via IP interface for connection to the building management system.

Option .E17

- **BACnet via MS/TP RS485,**
Built-in BACnet via MS/TP RS485 interface for connection to the building management system.

Option .E18

- **Sequencer without connection to a BMS:**
Higher-ranking master/slave control. Up to max. 5 units can be used in a hydraulic circuit and connected to the sequencer. The sequencer is supplied in a separate switch cabinet with two temperature sensors that must be installed in a common water inlet and outlet. Depending on the water-inlet temperature, individual capacity stages or units are switched on or off. For communication with the sequencer, each unit requires a Modbus serial card (option .E14) and its own chilled-water pump, which must also be controlled by the chiller.

Option .E24

- **Sequencer with connection to a BMS via Modbus protocol**

Option .E25

- **Sequencer with integration to a BMS via LONWORKS® protocol.**

Option .E26

- **Sequencer with integration to a BMS via IP.**

Option .E27

- **Sequencer with integration to a BMS via BACnet protocol MS/TP RS485.**

Installation of accessories

Option .I02

- **Rubber isolator**
Anti-vibration isolators with rubber elements to minimize vibration transmission (supplied separately).
The on-site installation of suitable anti-vibration mounts is a prerequisite for warranty claims!

Option .I10 for sizes 4100-4120 or .I67 for all other sizes

- **Flow monitor for the chilled-water circuit**
With paddle for installation in the hydraulic circuit at the chilled-water outlet (supplied separately). The on-site installation and wiring of the flow switch is a prerequisite for warranty claims!

Options .I68/ .I69 / .I70 / .I71 / .I72

- **Water filter for installation in the hydraulic circuit at the unit inlet (supplied extra)**
Before the direct inlet into the heat exchanger a water filter must be installed that protects the heat exchanger from dirt and deposits. The water filter of "Y-type"

has a mesh width of 0.9 mm, the filter insert can be removed without difficulty and cleaned for maintenance purposes without dismantling the valve body.

.I.68 Filter 1 ½" (unit size 2012-2018)

I.69 Filter 2" (unit size 2020-2025)

I.70 Filter 2 ½" (unit size 2026-2030)

I.71 Filter 3" (unit size 2035-2050)

I.72 Filter 4" (unit size 2055-4120)

Each unit requires 2 pieces (for the evaporator and condenser).

Option .I73

- **Chilled-water and cooling-water connection with flanges**
Depending on the unit type either mounted flanges or separate flange adaptor kit.

Option .I31

- **3-way valve for cooling water control (not combinable with option .E37)**
3-way valve (supplied separately). The 3-way valve is used to ensure that the operating limits of the heat-rejection circuit are observed in cooling mode. The heat-rejection circuit serves to dissipate heat from the refrigeration process from the condenser. The lowest permissible water-outlet temperature from the condenser is 20 to 30°C depending on the chilled-water temperature (see application limit diagram). Depending on the heat sink used, it is not always guaranteed that the water-outlet temperature from the condenser is sufficiently high. In cooling mode, the valve mixes in the warm water leaving the condenser shortly before it enters the condenser, so that the water temperature does not fall below the minimum permissible water-outlet temperature. The unit controller is responsible for the electrical operation of the valve.

If neither option .E37 nor I.31 is selected, the release of the unit must be withdrawn by the building management system or a higher-level control if the outdoor temperature is so low that the condensing water could fall below the minimum temperature. For example, if a dry cooler is used as a heat sink and chilled water was designed at 7 / 12°C, the release must be withdrawn at outside temperatures below 19°C; assuming a temperature increase of the heat-rejection water >1 K through operation of at least one compressor.

Option .I17
(only for model size
2012-2080)

- **Acoustic lining for the housing panels (approx. -4 dB(A))**
Sound insulation is applied to the inside of the standard housing panels in the compressor area in order to reduce the sound pressure level level by approx. 4 dB(A). Depending on the version, the unit weights may change.

Option .I74
(only for model size
4060-4120)

- **Housing panels with acoustic lining (approx. -13 dB(A))**
Instead of an open housing design, the device is supplied with panels. Sound insulation is applied to the inside of the housing panels in order to reduce the sound pressure level level by approx. 13 dB(A). Depending on the model, unit weight can change.

Mechanics accessories

Option .M21

- **Setting constant pump speed**
on the unit controller for built-in pumps with variable speed. The speed is adjusted once during commissioning so that the required water-volume flow passes through the evaporator.

Option .M22

- **Enlarged unit frame construction (only with GLP option ...)**
Adaptation of the device frame structure to the use of one or more integrated pumps in conjunction with the GLP accessory. Device dimensions, weights and electrical data change. Please consider the order-related dimensional drawing.

Pumps

Refer to separate pump data information sheet

Refrigeration circuit accessories

- Option .R13* - **LP and HP Pressure Gauges**
Refrigerant gauge for high and low pressure side for reading off current operating pressures.
- Option .R26* - **Shut-off valves for compressor suction and pressure side**
Service shut-off valve assembled for fast and easy maintenance.

Other accessories

- Option .O29* - **Operation for chilled water below +5°C**
Option for operation with chilled-water outlet temperatures below +5°C to -10°C, whereby the maximum limit for the outlet temperature of the heat-rejection circuit drops gradually to +45°C, see application limit diagram. The use of glycol is prescribed on the chilled-water side. The operating conditions are to be noted in the order.
- Option .O01* - **Packaging with wooden crate and nylon foil**
The unit is supplied for transport in a wooden crate and is additionally shrink-wrapped in nylon foil to protect it from the weather and dirt.

Schematic diagram and hydraulic integration

Consider the following schematic diagram as an example of a planning aid. It does not replace a detailed and professional planning by the technical planner, who considers, among other things, regional regulations.

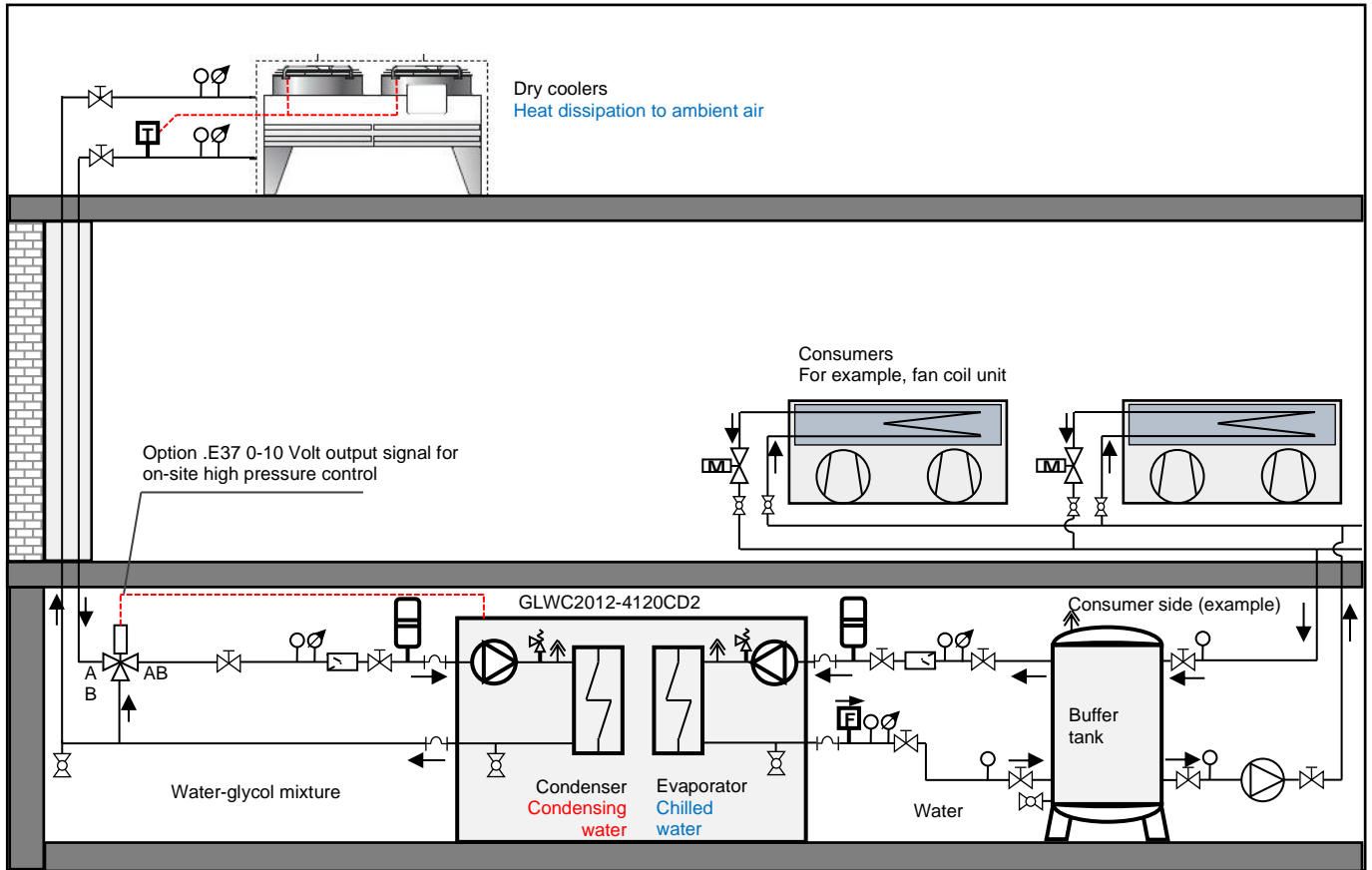


Fig. 3: Schematic diagram

Operating limits

On the chilled-water side and on the heat-rejection water side, the operating limits according to Table 1 and the following operating limit diagrams must be observed.

Tab. 1: Operating limits of water (glycol) circuit

		Chilled-water circuit		Heat-rejection circuit	
		Min	Max	Min	Max
Water inlet	[°C]	-7	25	10	55
Water outlet	[°C]	Standard +5 or -10 with option .O29		20	58
dT at the chilled-water outlet. > 5 °C	[K]	4	8	3	15
dT at chilled-water outlet ≤ 5 °C	[K]	2.5	5		

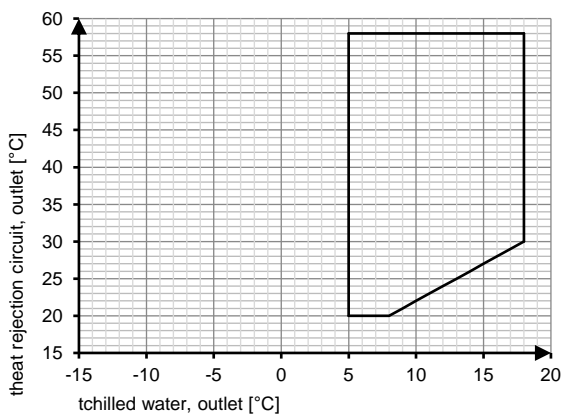


Fig. 4: Standard operating range

Standard configuration. Applies to all model sizes
Water-glycol mixture or water can be used as the medium for the chilled-water circuit (provided that there is no danger of frost due to the on-site hydraulics and the installation room).

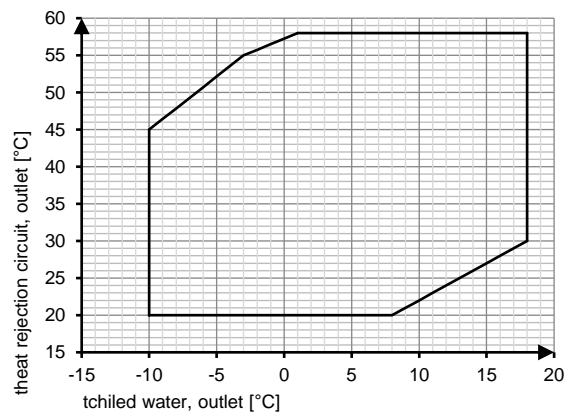


Fig. 5: Ext. application range for chilled-water outlet temperatures below +5°C

Extended operating range applies to sizes 2015-4120 with option .O29. Water-glycol mixture must be used as the medium for the chilled-water circuit.

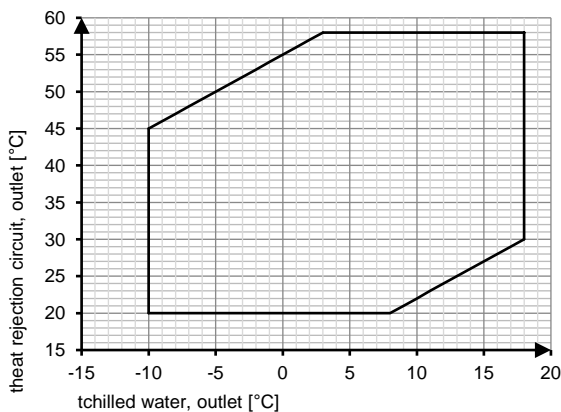


Fig. 6: Ext. application range for chilled-water outlet temperatures below +5°C

Extended operating range only valid for size 2012 with option .O29.
Water-glycol mixture must be used as the medium for the chilled-water circuit.

Notices for all diagrams

The unit is prepared for the selected operating range during the end-of-line test. Please attach the technical order information to the order.
For operational reasons, water at evaporator outlet temperatures below 5°C must be protected from freezing by adding glycol.
FläktGroup recommends the use of at least 30% ethylene glycol.

General Specifications

Tab.2: General data

Unit type GLWC ### CD2			2012	2015	2018	2020	2025	2026	2030	2035	2040	2045	2050
Performance data (catalog) ⁵⁾													
Refrigeration capacity ¹⁾	Qe	[kW]	38.1	47.7	56.2	65.3	72.3	82.3	96.7	111.4	126.1	142	157
Power consumption ⁴⁾	P	[kW]	7.53	9.31	10.8	12.6	13.8	16.0	18.9	21.7	24.5	27.7	30.9
EER			5.06	5.12	5.20	5.18	5.24	5.14	5.12	5.13	5.15	5.12	5.10
ESEER			6.46	6.76	6.42	6.47	6.72	6.41	6.49	6.63	6.34	6.47	6.32
Chilled-water volume flow	Ve	[m³/h]	6.6	8.2	9.7	11.2	12.5	14.2	16.6	19.2	21.7	24.4	27.1
Pressure drop Chilled water	Δpe	[kPa]	21.6	26.6	26.7	21.8	21.6	21.8	22.7	22.9	23.1	23.8	24.4
Volume flow of heat-rejection circuit	Vc	[m³/h]	7.8	9.8	11.5	13.4	14.8	16.8	19.8	22.8	25.8	29.1	32.3
Pressure drop heat-rejection circuit	Δpc	[kPa]	11.8	15.7	18.1	20.6	23.1	13.5	14.2	14.6	15.4	15.9	18.5
ERP conformity													
SEER (ERP EU2016/2281) ⁶⁾			5.33	5.65	5.41	5.53	5.72	5.66	5.80	5.92	5.72	5.81	5.69
η _s (ERP EU2016/2281) ⁶⁾		[%]	205	218	208	213	221	218	224	229	221	224	220
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort										
Performance values according to EN14511-3:2011													
Refrigeration capacity ¹⁾	Qe	[kW]	37.9	47.5	55.9	65.1	72.0	82.0	96.4	111	126	141	157
EER			4.85	4.89	4.96	4.96	5.01	4.96	4.94	4.96	4.98	4.96	4.93
ESEER			5.89	6.10	5.81	5.93	6.12	5.95	6.04	6.13	5.95	6.04	5.92
Eurovent Class			B	B	B	B	B	B	B	B	B	B	w
Controls			Compact display / controller with LA Software										
Compressor													
Scroll compressors													
Number of compressors			2	2	2	2	2	2	2	2	2	2	2
Number of refrigeration circuits			1	1	1	1	1	1	1	1	1	1	1
Minimum part-load speed		[%]	50	50	50	50	50	50	50	50	50	50	50
Evaporator (chilled-water side)													
Min. water mass flow	V _{e,min}	[l/s]	1.11	1.39	1.64	1.92	2.14	2.44	2.86	3.31	3.75	4.22	4.67
Max. water mass flow	V _{e,max}	[l/s]	3.08	3.83	4.50	5.22	5.81	6.61	7.72	8.92	10.08	11.33	12.58
Max. operating pressure ⁶⁾	p _{max}	[bar]	10	10	10	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	130	170	200	230	250	290	340	390	440	500	550
Water charge of heat exchanger		[l]	3.20	3.60	4.20	5.50	5.90	6.70	7.70	8.90	10.1	11.3	12.5
Evaporator connection	VICTAULIC ^{2,6)}		1 ½"	1 ½"	1 ½"	2"	2"	2"	2"	2"	2 ½"	2 ½"	2 ½"
Condenser (heat-rejection side)													
Min. water mass flow	V _{e,min}	[m³/h]	4.0	5.0	5.9	6.9	7.7	8.8	10.3	11.9	13.5	15.2	16.8
Max. water mass flow	V _{e,max}	[m³/h]	10.7	13.3	15.6	17.4	17.4	22.9	26.9	30.9	35.0	39.4	43.7
Max. operating pressure ⁶⁾	p _{max}	[bar]	10	10	10	10	10	10	10	10	10	10	10
Water charge of heat exchanger		[l]	4.10	4.50	5.20	6.20	6.70	10.1	11.7	13.6	15.2	17.2	17.8
Connection to condenser	VICTAULIC ^{2,6)}		1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	2"	2"	2 ½"	2 ½"	2 ½"	2 ½"
Refrigeration circuit charge													
Refrigerant R410A ^{3,4)}		[kg]	3.80	4.20	5.00	5.50	6.10	8.60	10.0	11.6	13.1	14.8	15.7
Oil charge		[kg]	3.50	3.50	5.00	5.00	6.50	6.50	6.80	8.10	9.30	11.5	13.6
Dimensions and weight													
A (length)		[mm]	1225	1225	1225	1225	1225	1225	1225	1570	1570	1570	1570
B (width)		[mm]	885	885	885	885	885	885	885	885	885	885	885
H (height)		[mm]	1495	1495	1495	1495	1495	1495	1495	1805	1805	1805	1805
Weight ⁶⁾		[kg]	360	360	390	410	440	480	520	660	740	790	820

- 1) Performance data for input parameters: chilled-water temperature (inlet/outlet) 12/7°C; heat-rejection circuit temperature (inlet/outlet) 30/35°C; values partly rounded off
- 2) Victaulic coupling supplied separately with transition to thread (units without pumps)
- 3) For exact refrigerant charge volume, refer to the unit identification plate.
- 4) Relating to the entire unit (without pumps)
- 5) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol
- 6) Applies to units in standard configuration without pumps

Tab.3: General data (continued)

Unit type GLWC ##### CD2			2055	2060	2070	2080	4060	4070	4080	4090	4100	4110	4120
Performance data (catalog) ⁵⁾													
Refrigeration capacity ¹⁾	Qe	[kW]	181	204	231	254	192	221	250	281	313	359	398
Power consumption ⁴⁾	P	[kW]	35.2	39.6	45.2	51.2	38.3	43.9	49.6	56.1	62.5	71.3	80.0
EER			5.14	5.16	5.10	4.97	5.01	5.03	5.04	5.01	5.00	5.04	4.98
ESEER			6.42	6.42	6.50	6.06	6.60	6.64	6.58	6.64	6.53	6.61	6.57
Chilled-water volume flow	Ve	[m³/h]	31.2	35.2	39.7	43.8	33.0	38.1	43.1	48.4	53.8	61.8	68.6
Pressure drop Chilled water	Δpe	[kPa]	24.9	25.5	30.7	37.4	17.1	18.1	20.0	21.3	24.9	28.2	34.7
Volume flow of heat-rejection circuit	Vc	[m³/h]	37.1	41.9	47.3	52.4	39.5	45.4	51.4	57.9	64.3	73.8	82.0
Pressure drop heat-rejection circuit	Δpc	[kPa]	18.3	21.0	23.5	28.8	16.2	17.4	19.6	22.0	24.8	30.0	36.2
ERP conformity													
SEER (ERP 2016/2281) ⁶⁾			5.83	5.80	6.00	5.86	6.04	5.39	5.97	5.98	5.87	5.89	5.79
η _s (ERP 2016/2281) ⁶⁾		[%]	225	224	232	226	233	207	231	231	227	228	224
ERP-compliant 2021			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Application			Comfort										
Performance values according to EN14511-3:2011													
Refrigeration capacity ¹⁾	Qe	[kW]	181	204	230	253	191	220	249	281	312	358	397
EER			4.98	5.00	4.93	4.79	4.88	4.91	4.91	4.88	4.86	4.89	4.81
ESEER			6.00	6.01	6.03	5.63	6.14	6.16	6.12	6.13	6.02	6.03	5.96
Eurovent Class			B	B	B	B	B	B	B	B	B	B	w
Controls													
Compact display / controller with LA Software													
Compressor													
Scroll compressors													
Number of compressors			2	2	2	2	4	4	4	4	4	4	4
Number of refrigeration circuits			1	1	1	1	2	2	2	2	2	2	2
Minimum part-load speed		[%]	50	50	50	50	25	25	25	25	25	25	25
Evaporator (chilled-water side)													
Min. water mass flow	V _{e,min}	[m³/h]	19.4	21.9	24.7	27.3	20.5	23.7	26.8	30.2	33.5	38.6	42.8
Max. water mass flow	V _{e,max}	[m³/h]	52.1	58.8	65.0	65.0	55.1	63.4	71.0	71.0	89.8	103.3	114.4
Max. operating pressure ⁶⁾	p _{max}	[bar]	10	10	10	10	10	10	10	10	10	10	10
Minimum chilled-water system content		[l]	130	170	200	230	250	290	340	390	440	500	550
Water charge of heat exchanger		[l]	3.20	3.60	4.20	5.50	5.90	6.70	7.70	8.90	10.1	11.3	12.5
Evaporator connection	VICTAULIC ^{2,6)}		2 ½"	2 ½"	2 ½"	2 ½"	3"	3"	3"	3"	4"	4"	4"
Condenser (heat-rejection side)													
Min. water mass flow	V _{e,min}	[m³/h]	11.5	13.0	14.7	16.3	12.2	14.1	16.0	18.0	20.0	23.0	25.5
Max. water mass flow	V _{e,max}	[m³/h]	50.2	56.7	65.0	65.0	53.5	61.5	69.6	71.0	87.0	99.8	110.9
Max. operating pressure ⁶⁾	p _{max}	[bar]	10	10	10	10	10	10	10	10	10	10	10
Water charge of heat exchanger		[l]	21.6	24.5	25.9	25.9	24.7	28.7	32.2	36.3	51.5	58.8	66.0
Connection to condenser	VICTAULIC ^{2,6)}		2 ½"	2 ½"	2 ½"	2 ½"	3"	3"	3"	3"	4"	4"	4"
Refrigeration circuit charge													
Refrigerant R410A ^{3,4)}		[kg]	18.8	21.4	22.4	22.4	19.3	22.5	25.3	28.8	41.1	47.0	49.0
Oil charge		[kg]	13.1	12.6	12.6	12.6	13.5	16.1	18.7	22.9	27.2	26.2	25.2
Dimensions and weight													
A (length)		[mm]	1570	1570	1570	1570	2210	2210	2650	2650	2650	2650	2650
B (width)		[mm]	885	885	885	885	885	885	885	885	885	885	885
H (height)		[mm]	1805	1805	1805	1805	1805	1805	1805	1805	1805	1805	1805
Weight ⁶⁾		[kg]	870	920	940	960	870	1050	1240	1330	1530	1630	1710

3) Performance data for input parameters: chilled-water temperature (inlet/outlet) 12/7°C; heat-rejection circuit temperature (inlet/outlet) 30/35°C; values partly rounded off

4) Victaulic coupling supplied separately with transition to thread (units without pumps)

3) For exact refrigerant charge volume, refer to the unit identification plate.

4) Relating to the entire unit (without pumps)

5) Data apply to input parameters as described under 1) and without glycol; conversion required when using glycol

6) Applies to units in standard configuration without pumps

Noise levels

Tab.4: Noise levels

Unit type GLWC	Total sound level		Octave band [Hz]							
	Sound pressure level [dB(A)] ¹⁾	Sound pressure level [dB(A)] 10 m ²⁾	Sound pressure level level [dB]							
			63	125	250	500	1000	2000	4000	8000
Standard units										
2012 CD2	73	42	74	72	69	70	70	63	59	53
2015 CD2	73	42	74	72	69	70	70	63	59	53
2018 CD2	74	43	75	73	70	71	71	64	60	54
2020 CD2	74	43	75	73	70	71	71	64	60	54
2025 CD2	74	43	75	73	70	71	71	64	60	54
2026 CD2	75	44	76	74	71	72	72	65	61	55
2030 CD2	76	45	76	74	75	74	70	68	64	53
2035 CD2	77	45	77	75	76	75	71	69	65	54
2040 CD2	77	45	77	75	76	75	71	69	65	54
2045 CD2	78	46	78	76	77	76	72	70	66	55
2050 CD2	78	46	78	76	77	76	72	70	66	55
2055 CD2	79	47	79	77	78	77	73	71	67	56
2060 CD2	79	47	79	77	78	77	73	71	67	56
2070 CD2	82	50	82	80	81	80	76	74	70	59
2080 CD2	83	51	83	81	82	81	77	75	71	60
4060 CD2	86	54	75	77	81	80	82	80	74	68
4070 CD2	87	55	76	78	82	81	83	81	75	69
4080 CD2	88	56	77	79	83	82	84	82	76	70
4090 CD2	89	57	78	80	84	83	85	83	77	71
4100 CD2	90	58	79	81	85	84	86	84	78	72
4110 CD2	91	59	80	82	86	85	87	85	79	73
4120 CD2	91	59	80	82	86	85	87	85	79	73

Data on operating conditions

The data only apply to chilled-water (inlet/outlet) of 12°C/ 7°C and heat-rejection circuit (inlet/outlet) of 30°C/ 35°C. All specifications apply to units without pumps.

1) Specification of sound power (EUROVENT certified value)

Manufacturer determines the sound power value for Eurovent-certified units in accordance with ISO 9614 standard. This certification expressly refers to sound power in dB(A), which thus constitutes obligatory data in this case.

2) Specification of sound pressure level

The sound pressure level is determined according to enveloping surface method with a reflecting plane (Q = 2) The distance of 10 m refers to the external dimensions of the unit. For sound pressure level the following corrections can be used:

Sound pressure level at 5 m: +5 dB as compared to sound pressure level at 10 meters distance.

Sound pressure level at 15 m: -3 dB as compared to sound pressure level at 10 meters distance.

Sound pressure level at 20 m: -6 dB as compared to sound pressure level at 10 meters distance.

Only an externally engaged acoustics engineer should carry out specific sound level calculations to be valid for your installation site.

Footprint

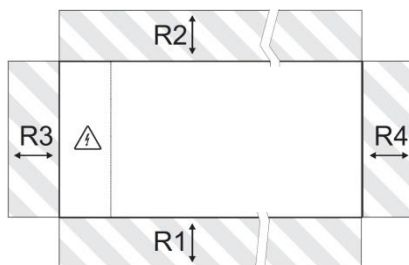


Fig. 7: Required clearances (example)

FREE SPACE FOR MAINTENANCE!

The free spaces next to the unit necessary for maintenance purposes must be dimensioned at least according to the listed dimensions. Depending on local conditions, significantly larger spaces may be required.

Tab.5: Space for maintenance access

Model size		R1	R2	R3	R4
2012-2080	[mm]	0	800	1000	600
4060-4120	[mm]	800	800	1000	600

Anti-vibration mounts

Tab.6: Required vibration mounts depending on unit version

Unit type GLWC...	FläktGroup sales number (complete as accessory)	FläktGroup Part designation for devices without pumps	FläktGroup part designation for devices with pumps
2012 CD2	GLZWC2012CD2.I02	4 x FZ-100-57 (M12)	4 x FZ-200-51 (M12)
2015 CD2	GLZWC2015CD2.I02	4 x FZ-100-57 (M12)	4 x FZ-200-51 (M12)
2018 CD2	GLZWC2018CD2.I02	4 x FZ-100-57 (M12)	4 x FZ-200-51 (M12)
2020 CD2	GLZWC2020CD2.I02	4 x FZ-100-57 (M12)	4 x FZ-200-51 (M12)
2025 CD2	GLZWC2025CD2.I02	4 x FZ-100-57 (M12)	4 x FZ 200-57 (M12)
2026 CD2	GLZWC2026CD2.I02	4 x FZ-100-57 (M12)	4 x FZ 200-57 (M12)
2030 CD2	GLZWC2030CD2.I02	4 x FZ-200-51 (M12)	4 x FZ 200-57 (M12)
2035 CD2	GLZWC2035CD2.I02	4 x FZ-200-51 (M12)	4 x FZ 200-57 (M12)
2040 CD2	GLZWC2040CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2045 CD2	GLZWC2045CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2050 CD2	GLZWC2050CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2055 CD2	GLZWC2055CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2060 CD2	GLZWC2060CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2070 CD2	GLZWC2070CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
2080 CD2	GLZWC2080CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 400-51 (M14)
4060 CD2	GLZWC4060CD2.I02	4 x FZ-200-57 (M12)	4 x FZ 200-57 (M12)
4070 CD2	GLZWC4070CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 200-57 (M12)
4080 CD2	GLZWC4080CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 400-51 (M14)
4090 CD2	GLZWC4090CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 400-51 (M14)
4100 CD2	GLZWC4100CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 400-51 (M14)
4110 CD2	GLZWC4110CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 400-51 (M14)
4120 CD2	GLZWC4120CD2.I02	4 x FZ 400-51 (M14)	4 x FZ 400-51 (M14)

NOTICE!

If the units are operated without the appropriate anti-vibration mounts, the warranty is void!

Electrical Data

Tab.7: Electrical data

Unit Type	Power supply	n	Compressors			Total ^{1) 2) 3)}			
			F.L.I. [kW]	F.L.A. [A]	L.R.A. [A]	F.L.I. [kW]	F.L.A. [A]	S.A.	S.A. with Soft-starter
2012 CD2	400/3/50	2	2x7.3	2x12	2x75	14.5	24	87	57
2015 CD2	400/3/50	2	2x8.6	2x13.9	2x101	17.2	28	115	75
2018 CD2	400/3/50	2	2x9.9	2x17.1	2x128	19.8	34	145	94
2020 CD2	400/3/50	2	2x11.6	2x20.1	2x139	23.2	40	159	104
2025 CD2	400/3/50	2	2x13.2	2x22.6	2x118	26.4	45	141	94
2026 CD2	400/3/50	2	2x14.4	2x25.5	2x140	28.8	51	166	110
2030 CD2	400/3/50	2	2x17	2x30.5	2x173	34.0	61	204	135
2035 CD2	400/3/50	2	1x17+1x22.3	1x30.5+1x36.1	1x173+1x225	39.3	67	256	166
2040 CD2	400/3/50	2	2x22.3	2x36.1	2x225	44.6	72	261	172
2045 CD2	400/3/50	2	1x22.3+1x27.4	1x36.1+1x45.8	1x225+1x272	49.7	82	308	200
2050 CD2	400/3/50	2	2x27.4	2x45.8	2x272	54.8	92	318	209
2055 CD2	400/3/50	2	1x27.4+1x35.8	1x45.8+1x58.9	1x272+1x310	63.2	105	356	223
2060 CD2	400/3/50	2	2x35.8	2x58.9	2x310	71.6	118	369	245
2070 CD2	400/3/50	2	1x35.8+1x44.7	1x58.9+1x73.3	1x310+1x394	80.5	132	453	296
2080 CD2	400/3/50	2	2x44.7	2x73.3	2x394	89.4	147	467	310
4060 CD2	400/3/50	4	4x17	4x30.5	4x173	68.0	122	265	196
4070 CD2	400/3/50	4	2x17+2x22.3	2x30.5+2x36.1	2x173+2x225	79.0	133	322	233
4080 CD2	400/3/50	4	4x22.3	4x36.1	4x225	89.0	144	333	244
4090 CD2	400/3/50	4	2x22.3+2x27.4	2x36.1+2x45.8	2x225+2x272	99.0	164	390	282
4100 CD2	400/3/50	4	4x27.4	4x45.8	4x272	110	183	409	301
4110 CD2	400/3/50	4	2x27.4+2x35.8	2x45.8+2x58.9	2x272+2x310	126	209	461	337
4120 CD2	400/3/50	4	4x35.8	4x58.9	4x310	143	236	487	363

All values refer to units without built-in pumps. For units with built-in pumps, the pump data must be added.

n Number of compressors
F.L.I. EI. FULL LOAD INPUT
F.L.A. Operating current
L.R.A. Starting current of each compressor
S.A. Starting current of entire unit

- 1) Please observe the regionally applicable safety regulations and constructional conditions relevant to the dimensioning of the supply line.
- 2) Please observe the regionally applicable standards for cable cross-sections and backup fuses. Voltage tolerance: max. 10%, voltage imbalance between phases: max. 3%.
- 3) Values are based on the total number of fans operating at maximum speed.

Terminal scheme

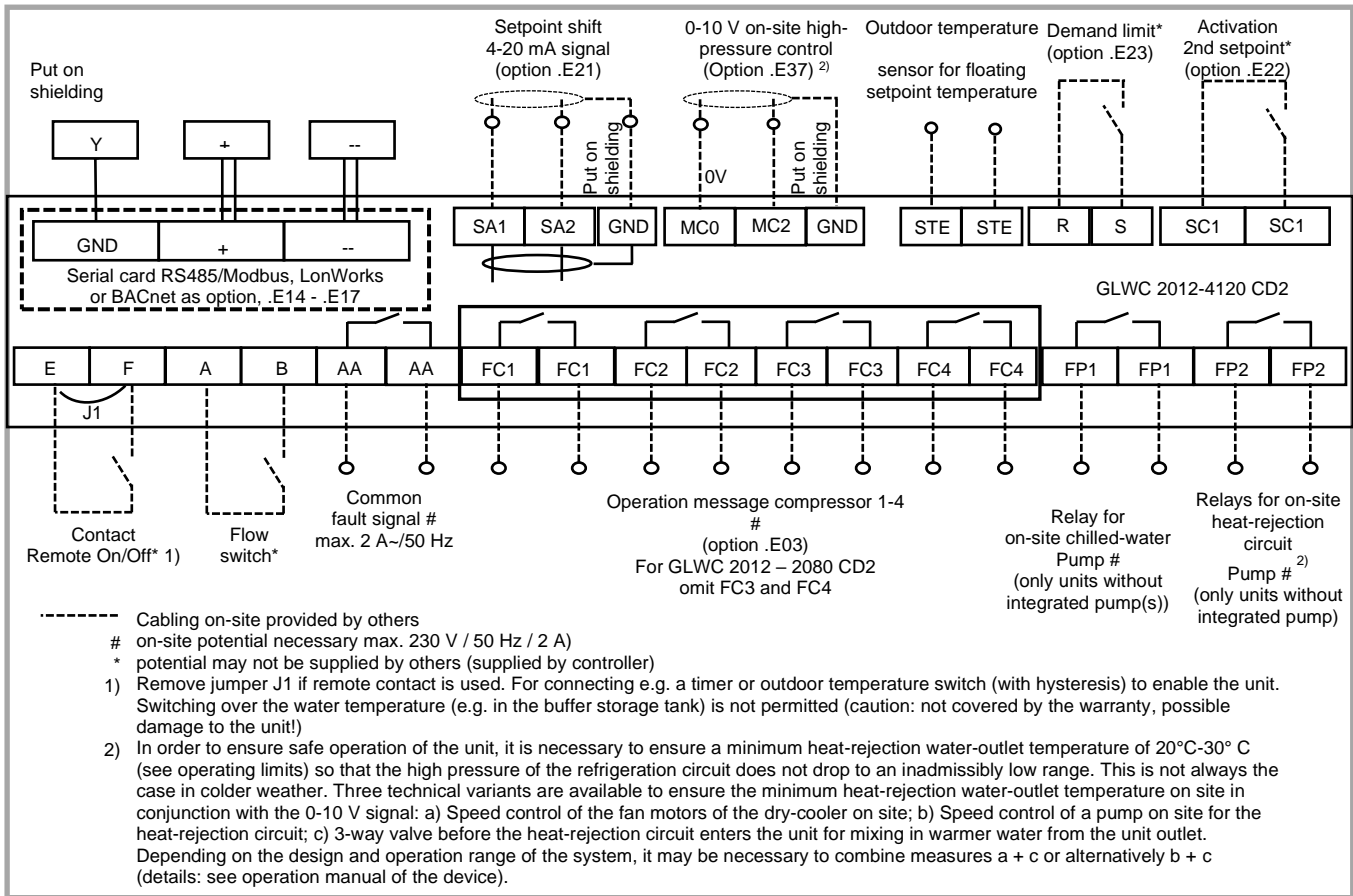


Fig. 8: Terminal scheme

Order-related documentation

NOTICE!

For detailed planning please only use the order-related e.g. documentation. Detailed dimensional drawings can be obtained on request from your responsible FläktGroup sales office. Specifications and technical data are subject to regular updates. The manufacturer reserves the right to make necessary changes to information without prior written notice.

FläktGroup