



United Technologies

PRODUCT SELECTION



- Compact footprint
- Double-wall construction
- Built-in variable frequency drive
 - PLC control

Precision cabinet

50CJ

Use

Precision air conditioning cabinet specially designed for the air handling requirements (filtration, temperature and humidity control) of computer rooms, telecommunications rooms and specific purpose rooms (electronics, sensitive storage, medical, controlled atmosphere rooms, etc.).

Double-skin construction. Fan with frequency inverter flow rate adjustment, to ensure the flow rate complies with the on-site pressure.

This unit is quick and easy to install, and particularly simple to use.

50CJ W

Cabinet supplied with chilled water.

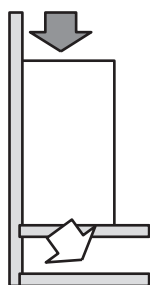
50CJ X

Stand-alone cabinet with separate air condensing unit (R410A).

Installation

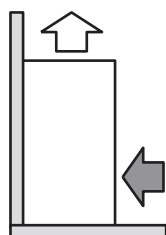
UNDER installation: reversed air supply

Installation 1



Air supply via raised floor

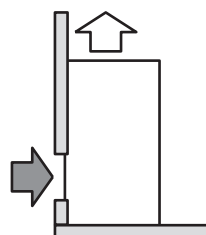
Installation 3



Front return

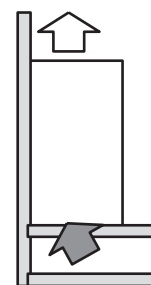
OVER installation: top air supply

Installation 4



Rear return

Installation 5



Return air below

Range

| Units | W | 5 | 8 | 12 | 16 | | 27 | | 39 | | 59 | |
|-----------------------------------|---|------|------|------|------|------|------|------|------|------|-------|-------|
| | X | 5 | 8 | 10 | 12 | 15 | 19 | 24 | 31 | 36 | 38 | 48 |
| Nominal air flow rate (1) | | 1300 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 10000 | 12000 |
| Associated CL condensing unit (2) | | 28 | 28 | 35 | 35 | 50 | 65 | 75 | 2x50 | 2x65 | 2x65 | 2x75 |

(1) Air flow rate adjustable by built-in frequency inverter.

(2) Two condensing units per air handling cabinet for 31 and 48 models.

Quick selection

50CJ W

| Units | W5 | W8 | W 12 | W16 | | W27 | | W39 | | W59 | |
|------------------------|------|------|------|------|------|------|------|------|------|-------|-------|
| Air flow rate (m³/h) | 1300 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 10000 | 12000 |
| Cooling capacity (kW) | 5 | 8 | 10,5 | 14,7 | 18,5 | 23,5 | 27 | 34 | 38 | 48 | 55 |
| Water flow rate (m³/h) | 0,86 | 1,4 | 1,8 | 2,5 | 3,2 | 4 | 4,6 | 5,8 | 6,5 | 8,2 | 9,4 |
| Pressure drop (mCE) | 4,3 | 4,9 | 5,1 | 4,7 | 7 | 4,1 | 5,2 | 7,3 | 8,9 | 5,5 | 6,9 |

Specifications: total cooling capacity, pure water 7°C/12°C, air 24°C 45%. Pressure drop with control valve.

Cooling capacity for a maximum ΔT in air of 12°C.

| Correction factors | 7 / 12°C | 8 / 13°C |
|--------------------|----------|----------|
| 22 °C / 45 % | 0,84 | 0,79 |
| 24 °C / 45 % | 1 | 0,9 |

50CJ X

| Units | X 5 | X 8 | X 10 | X 12 | X 15 | X 19 | X 24 | X 31 | X 36 | X 38 | X 48 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| External units, quantity and type | 1xCL 28 | 1xCL 28 | 1xCL 35 | 1xCL 35 | 1xCL 50 | 1xCL 65 | 1xCL 75 | 2xCL 50 | 2xCL 65 | 2xCL 65 | 2xCL 75 |
| Air flow rate (m³/h) | 1300 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 10000 | 12000 |
| Cooling capacity (kW) | 5 | 8 | 10,6 | 11 | 15 | 19 | 23,2 | 30,1 | 35 | 38 | 47 |

Characteristics: total cooling capacity, air at 24°C, 45 % RH, 32°C external temperature.

Quick selection

Hot water coil

| Units | W | 5 | 8 | 12 | 16 | | 27 | | 39 | | 59 | |
|-------------------------------------|---|------|------|------|------|------|------|------|------|------|-------|-------|
| | X | 5 | 8 | 10 | 12 | 15 | 19 | 24 | 31 | 36 | 38 | 48 |
| Air flow rate (m ³ /h) | | 1300 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 10000 | 12000 |
| Heating capacity (kW) | | 4,5 | 6,2 | 7,5 | 11,9 | 13,7 | 17,8 | 19,5 | 25,8 | 27,6 | 37,5 | 40,9 |
| Water flow rate (m ³ /h) | | 0,21 | 0,27 | 0,33 | 0,5 | 0,6 | 0,8 | 0,9 | 1,1 | 1,2 | 1,65 | 1,8 |
| Pressure drop (mCE) | | 1,3 | 2,6 | 4,3 | 2,1 | 2,8 | 1 | 1,2 | 1,7 | 1,9 | 2,8 | 3,3 |

Characteristics: heating capacity, air at 20°C, pure water at 80°C/60°C, pressure drop with control valve.
Correction factors to be applied to the heating capacity for water temperatures of 90°C/70°C: 1.23 and 45°C/35°C: 0.37.

Electric heater

| Units | W | 5 | 8 | 12 | 16 | 27 | 39 | 59 |
|-----------------------|---|---|---|----|-------|-------|-------|-------|
| | X | 5 | 8 | 10 | 12/15 | 19/24 | 31/36 | 38/48 |
| Heating capacity (kW) | | 3 | 3 | 6 | 9 | 12 | 18 | 24 |

Ventilation

| Units | W | 5 | 8 | 12 | 16 | 27 | 39 | 59 |
|---|---|------|------|------|-------|-------|-------|-------|
| | X | 5 | 8 | 10 | 12/15 | 19/24 | 31/36 | 38/48 |
| Air flow rate (m ³ /h) | | 1300 | 2000 | 2500 | 4000 | 6000 | 8000 | 12000 |
| Maximum available pressure with G4 or F7 filtration | | 240 | 98 | 113 | 125 | 160 | 65 | 57 |

Maximum available pressure depending on air flow rate. Subtract approx. 20 Pa if hot water coil present on EXAIR.
The operating point may be adjusted directly using the built-in voltage generator.
All combinations of air flow rate and available pressure are therefore possible up to the maximum values shown in the table above

Description

■ Casing

- Double-wall construction.
- Pre-lacquered removable grey RAL 7035 panel:
 - External pre-lacquered sheet, thickness 1.0 mm,
 - Class M0 glass wool, thickness 25 mm,
 - Internal galvanised sheet, thickness 0.8 mm.

■ Filtration

- F2SI filter cells, 90% efficiency according to ASHRAE gravimetric test (G4).
- Optional F7 opacimetric filter.
- Optional dual filtration (G4 + F7)*
- Filter cells held in compression on a counter-frame with a seal to prevent all leaks.
- Blockage level monitored by an analogue pressure sensor.

■ Cold coil section

- Coil copper pipes and aluminium fins.
- Condensates drain pan.
- CW model with 2- or 4-way control valve fitted and connected. Heat-insulated connection hoses available as an option.
- Model X with thermostatic expansion valve.

■ Ventilation section

- Direct drive centrifugal fan.
- Electric motor (3-Ph / 400 V / 4 poles / class F).
- Variable frequency drive fitted for air flow control.
- Air flow detected by an analogue pressure sensor.

■ Internal unit electrical cabinet

Power, control and regulation cabinet including:

- Supply: 400 V / 3-Ph / 50 Hz + N + E
- Main cut-off (emergency stop type) on front panel.
- 400 V / 3-Ph / 24 V transformer with protection.
- Protection and control for fan motor, and depending on options for humidifier and electric heater.
- Carrier CCU Controller.
- Dry temperature of return air tested.
- Return humidity control:
 - Humidity control during auxiliary operation (optional)
 - Humidity control during dehumidification (optional)
- Optional features include water leak detection, fire thermostat and supply air low limit.
- Remote control and fault summary contact.
- Optional condensate pump.

* not available on W 5/8/12 and X 5/8/12

■ Accessories

- Support base for air supply via raised floor:
 - Bottom version (225 to 320 mm),
 - Top version (320 to 525 mm).
- Air supply plenum.
- Acoustic plenum with sound trap.
- Motorised damper on intake section.
- Water leak detection.
- Fire thermostat.
- Hydraulic connection kit (chilled water and hot water coils).
- LON gateway.
- C/O sensor (only on the W model).

Description of external unit (X model)

- CL type air condensing unit.
- Supply: 400 V / 3-Ph / 50 Hz + N + E.
- SCROLL hermetic compressor.
- HP and LP safety pressostats.
- Isolating and adjustment valves.
- 1 cooling circuit.
- Refrigerant: R410A.
- Condensation pressure adjusted by electronic circuit board and pressure sensor. Speed variation on condenser fan.
- Faults signalled to internal unit.

Options

■ Electric heater

- Fan-controlled operation.
- 2-stage control (3 kW electric heater excepted).
- 2-stage or TRIAC control.
- Two high-limit safety thermostats with automatic and manual reset.

■ Hot water coil

- 1-row coil made of copper tubes with aluminium fins.
- 2- or 4-way control valve, fitted and connected.
- Optional flexible connections.

■ Humidifier

- Immersed electrode humidifier with humidifier information available directly on the Carrier CCU Controller:
 - Stainless steel large surface area electrodes,
 - 3 kg steam per hour, nominal flow rate < 3000 m3/h,
 - 8 kg steam per hour, nominal flow rate > 3000 m3/h,
 - Steam cylinder in a single easy to remove component,
 - Filling solenoid valves,
 - Drain pump,
 - Electronics board for operation management,
 - Diffusion jet,
 - Water supply connection kit.
- Operates on municipal water supply only (water conductivity of between 350 and 1250 μ S and hardness 15 to 30°F). Do not use deionised or softened water.

Control

Unit control and monitoring

Carrier CCU Controller



- 160-character display showing the operating instructions, operating states, faults and solutions. Configurable controller.
- Two fault levels.
- Monitoring of operating times.
- RS 485 output with Jbus/ModBus protocol.
- Can manage rotations, backups and top-ups between units.
- LON gateway.
- C/O sensor (only on the W model).

Electrical specifications

Indoor unit

| | | W5 | W8 | W12 | W16 | W27 | W39 | W59 |
|-------------------------------|------------------------|------|------|------|--------|--------|--------|--------|
| | | X5 | X8 | X10 | X12/15 | X19/24 | X31/36 | X38/48 |
| Fan motor assembly | Voltage (V) | 400V | | | | | | |
| | Power (kW) | 0,55 | | | 0,75 | 1,1 | 1,5 | 2,25 |
| | Current (A) | 2,6 | | | 3,3 | 5 | 6,6 | 9,9 |
| Control circuit | Voltage (V) | 24 | | | | | | |
| | Current (A) | 1 | | | | | | |
| Electric heater (option) | Voltage (V) | 400 | | | | | | |
| | Power (kW) | 3 | 6 | 9 | 12 | 18 | 24 | |
| | Current (A) | 4,3 | 8,7 | 13 | 17,3 | 26 | 34,6 | |
| Humidifier (option) max.value | Voltage (V) | 400 | | | | | | |
| | Power (kW) | 2,25 | | | 6 | | | |
| | Current (A) | 3,2 | | | 8,7 | | | |
| Total current without option | Current (A) | 3,6 | | | 4,3 | 6 | 7,6 | 10,9 |
| | Main switch rating (A) | 16 | | | | | | |
| Total current all options | Current (A) | 11,1 | 11,1 | 15,5 | 26 | 32,1 | 42,3 | 54,2 |
| | Main switch rating (A) | 16 | | | 40 | | | 63 |

External unit (X model)

| Units | 5 | 8 | 10 | 12 | 15 | 19 | 24 | 31 | 36 | 38 | 48 | |
|-------------------------------------|----------------------------|------|------|------|------|------|------|----------------------------|--------|--------|--------|--|
| No. and type of external units | 1x28 | 1x28 | 1x35 | 1x35 | 1x50 | 1x65 | 1x75 | 2x50 | 2x65 | 2x65 | 2x75 | |
| No./type of electrical power supply | 1 / 3ph 400V / 50Hz + N +E | | | | | | | 1 / 3ph 400V / 50Hz + N +E | | | | |
| Max. total current (A) | 5 | 7,5 | 8,5 | 8,3 | 11,3 | 12,6 | 15,7 | 2x11,3 | 2x12,6 | 2x12,6 | 2x15,7 | |

Sound pressure level

Indoor unit

| Units | W | 5 | 8 | 12 | 16 | | 27 | | 39 | | 59 | |
|----------------------------|---|------|------|------|------|------|------|------|------|------|-------|-------|
| | X | 5 | 8 | 10 | 12 | 15 | 19 | 24 | 31 | 36 | 38 | 48 |
| Air flow rate (m³/h) | | 1300 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 10000 | 12000 |
| Sound pressure level (dBA) | | 49 | 53 | 58 | 57 | 61 | 59 | 63 | 60 | 63 | 60 | 64 |

Sound pressure level of indoor unit at 2 m unrestricted space, air supply connected, +/-3dB.

External unit (X model)

| Unit X | 5 | 8 | 10 | 12 | 15 | 19 | 24 | 31 | 36 | 38 | 48 |
|---------------------------|----|----|----|----|----|----|----|------|------|------|------|
| Models | 28 | 28 | 35 | 35 | 50 | 65 | 75 | 2x50 | 2x65 | 2x65 | 2X75 |
| Sound pressure level(dBA) | 39 | 39 | 45 | 45 | 43 | 47 | 47 | 46 | 50 | 50 | 50 |

Sound pressure level of external unit at 5 m, 1.5 m four ground level, directivity 2 and ± 3 dB

Connections / Weights

Indoor unit

| | | | | | | | | |
|----------------------------|------------------|-----------|-----------|------------|---------------|---------------|---------------|---------------|
| Units | Chilled water | W5 | W8 | W12 | W16 | W27 | W39 | W59 |
| | Direct expansion | X5 | X8 | X10 | X12/15 | X19/24 | X31/36 | X38/48 |
| Weight of indoor unit (kg) | | 115 | 120 | 125 | 280 | 310 | 375 | 480 |

Chilled water coil

| | | | | | | | |
|--------------------------|--------|--------|--------|-------|--------|--------|----------|
| Inlet/outlet connections | G ½" M | G ¾" M | G ¾" M | G¾" M | G 1" M | G 1" M | G 1" ¼ M |
| Condensate draining* | Ø 32mm | | | | | | |

Direct expansion coil (X)

| | | | | | | | | | | | |
|----------------------|----------|----------|----------|----------|----------|----------|----------|------------|------------|-------------|-------------|
| Suction pipes | G 5/8" M | G 5/8" M | G 3/4" M | G 7/8" M | G 7/8" M | G1"1/8 M | G1"1/8 M | G 2X7/8" M | G 2X7/8" M | G 2X1"1/8 M | G 2X1"1/8 M |
| Liquid pipes | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 1/2" | 2x1/2" | 2x1/2" | 2x1/2" | 2x1/2" |
| Condensate draining* | Ø 32mm | | | | | | | | | | |

Hot water coil

| | | | | | | | | |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Inlet/outlet connections | G ½" M | G ½" M | G ½" M | G ½" M | G ½" M | G ¾" M | G ¾" M | G ¾" M |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|

* Drain connections if optional pump fitted: Diam. 6 mm

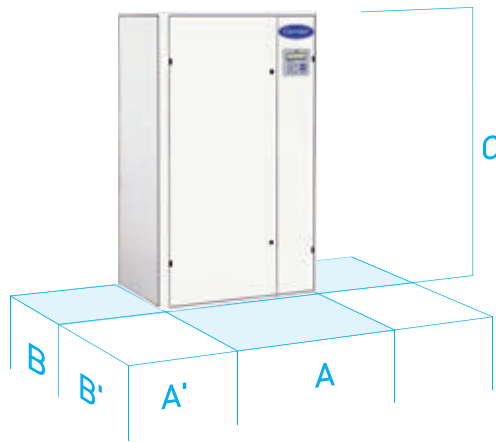
Outdoor unit

| | | | | | | | | | | | |
|-----------------------------|-----------|-----------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Direct expansion units | X5 | X8 | X 10 | X12 | X15 | X19 | X24 | X31 | X36 | X38 | X48 |
| Outdoor units (qty/type) | 1x28 | 1x28 | 1x35 | 1x35 | 1x50 | 1x65 | 1x75 | 2x50 | 2x65 | 2x65 | 2x75 |
| Weight of outdoor unit (kg) | 64 | 69 | 69 | 69 | 101 | 112 | 118 | 101 | 112 | 112 | 118 |

Refrigerant connections

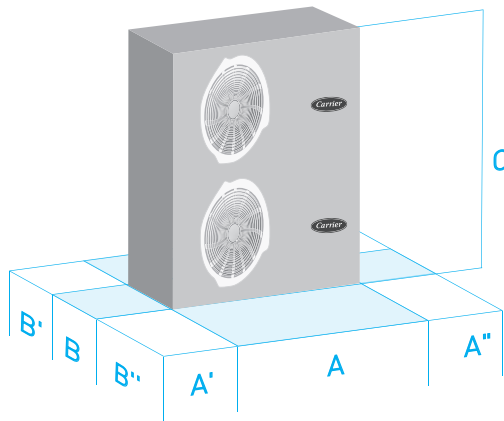
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|---------------------|--------|------|------|------|------|------|------|--------|--------|--------|--------|
| Suction pipes | 5/8" | 5/8" | 3/4" | 3/4" | 3/4" | 7/8" | 7/8" | 2x3/4" | 2x7/8" | 2x7/8" | 2x7/8" |
| Liquid pipes | 3/8" | 3/8" | 3/8" | 3/8" | 3/8" | 3/8" | 1/2" | 2x3/8" | 2x3/8" | 2x3/8" | 2x1/2" |
| Condensate draining | Ø 32mm | | | | | | | | | | |

Dimensions



Indoor unit

| Units | Dimensions (mm) | | | | | Weight (kg) |
|------------|-----------------|-----|-----|-----|------|-------------|
| | A | A' | B | B' | C | |
| W5 X5 | 675 | 125 | 500 | 183 | 1700 | 115 |
| W8 X8 | 675 | 125 | 500 | 183 | 1700 | 120 |
| W12 X10 | 675 | 125 | 500 | 183 | 1700 | 125 |
| W16 X12/15 | 850 | 125 | 780 | 183 | 1900 | 280 |
| W27 X19/24 | 1150 | 125 | 780 | 183 | 1900 | 310 |
| W39 X31/36 | 1490 | 120 | 780 | 183 | 1900 | 375 |
| W59 X38/48 | 1990 | 120 | 780 | 183 | 1900 | 480 |



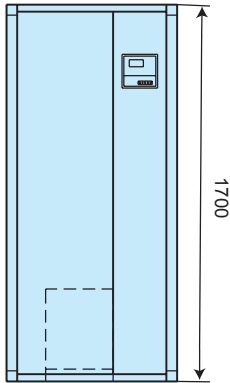
Unité extérieure

| Units | Dimensions (mm) | | | | | | | Weight (kg) |
|-------|-----------------|-----|-----|-----|-----|------|------|-------------|
| | A | A' | A'' | B | B' | B'' | C | |
| 28 | 1035 | 300 | 300 | 449 | 300 | 1500 | 658 | 69 |
| 35 | 1035 | 300 | 300 | 449 | 300 | 1500 | 658 | 69 |
| 50 | 1035 | 300 | 300 | 449 | 300 | 1500 | 1258 | 101 |
| 65 | 1035 | 300 | 300 | 449 | 300 | 1500 | 1258 | 112 |
| 75 | 1035 | 300 | 300 | 449 | 300 | 1500 | 1258 | 118 |

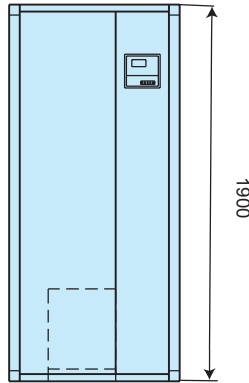
Dimensions

■ UNDER 1 installation

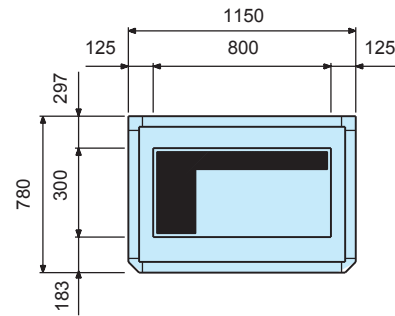
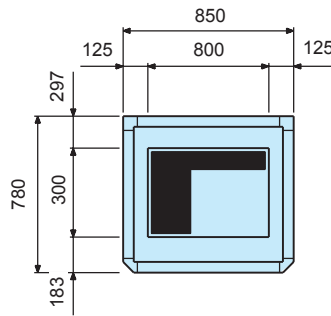
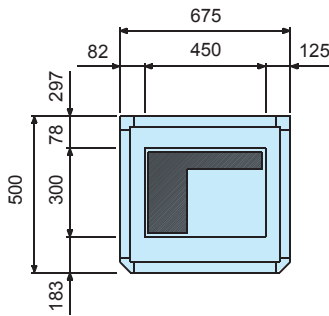
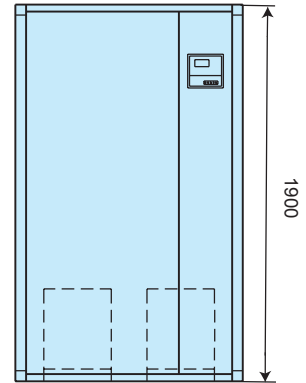
**W 5/8/12
X 5/8/10**



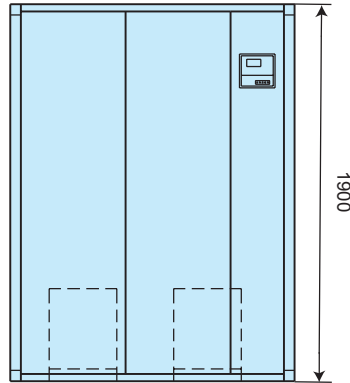
**W 16
X 12/15**



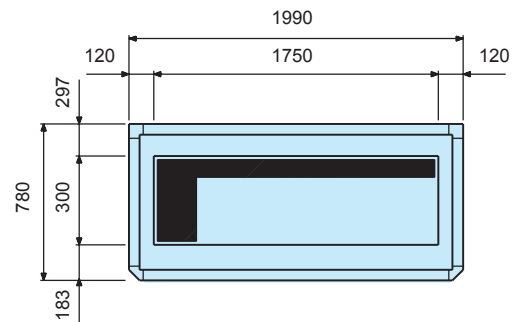
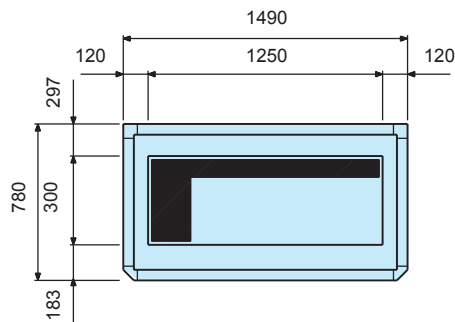
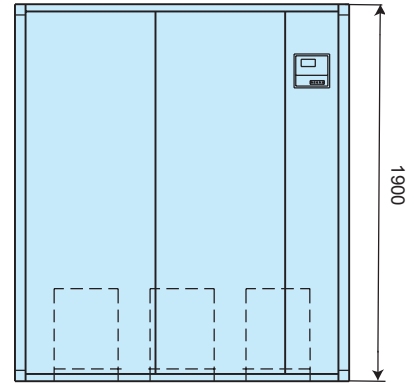
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X 19/24**



**W 39
X 31/36**



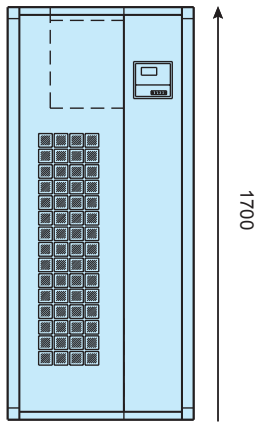
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X 38/48**



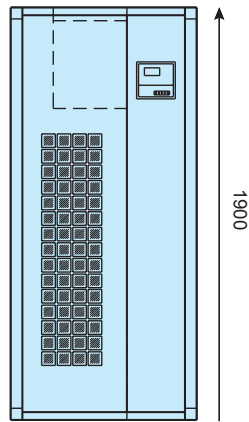
Dimensions

■ OVER 3 installation

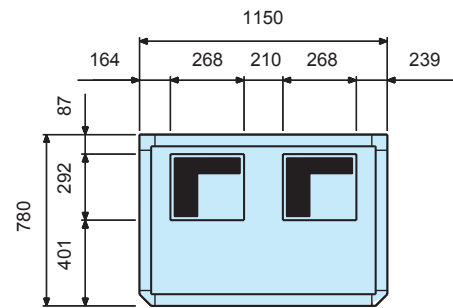
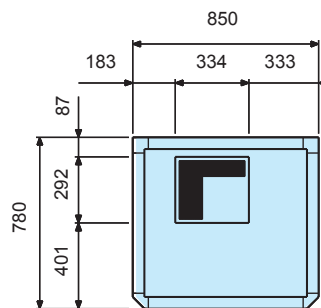
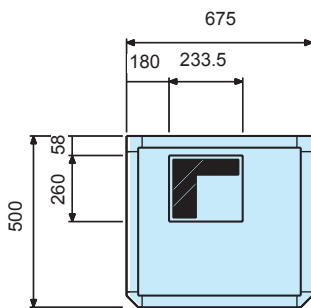
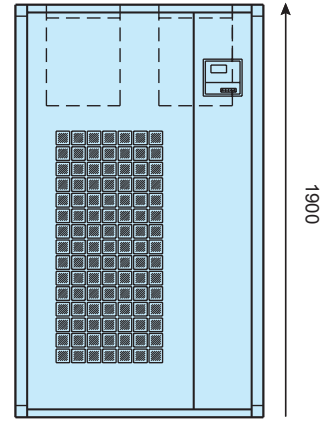
**W 5/8/12
X 5/8/10**



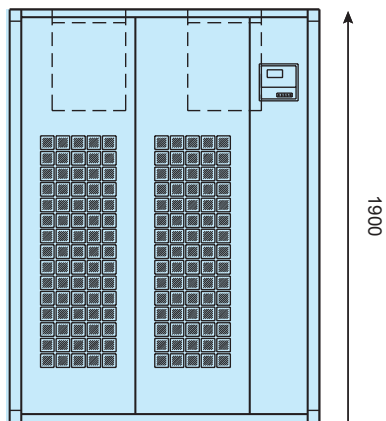
**W 16
X 12/15**



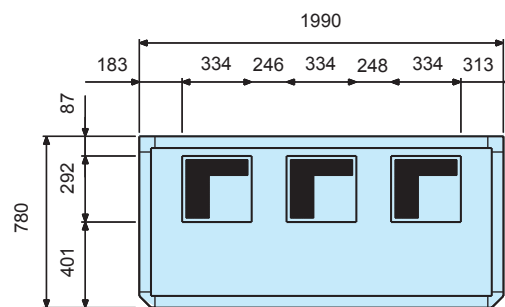
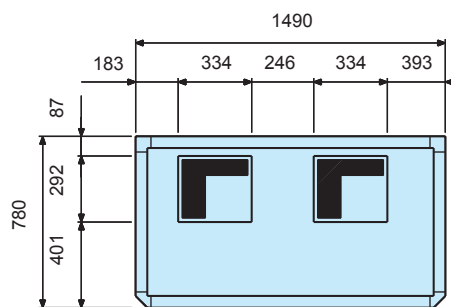
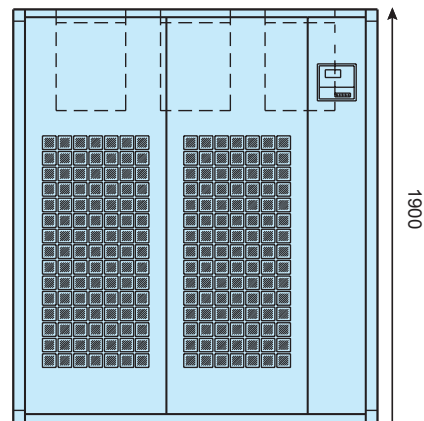
**W 27
X 19/24**



**W 39
X 31/36**

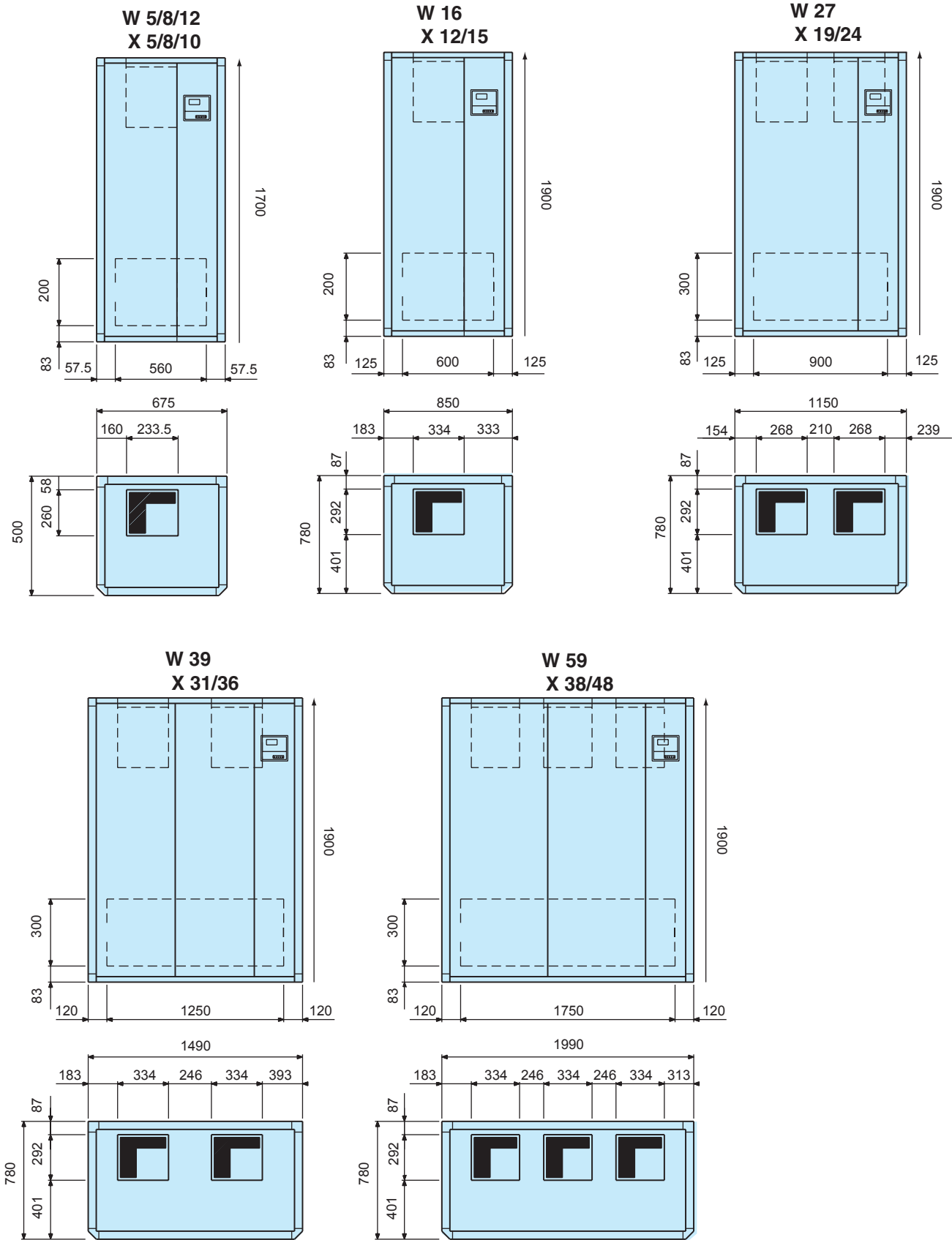


**W 59
X 38/48**



Dimensions

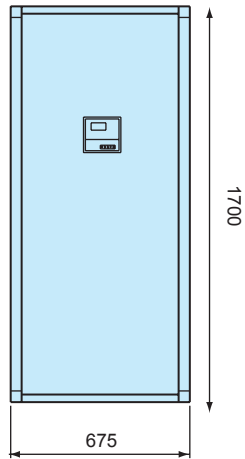
■ OVER 4 installation



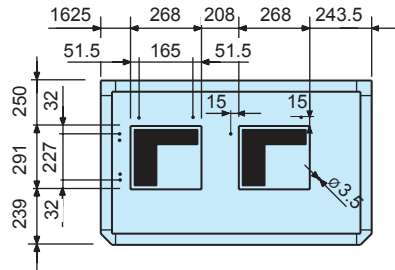
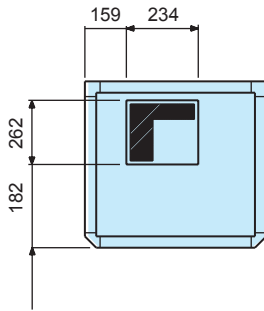
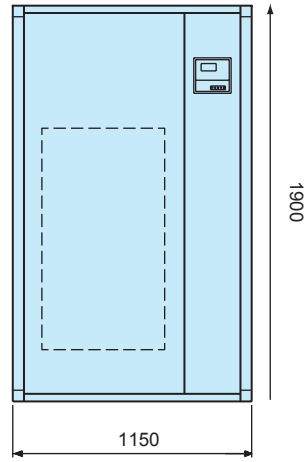
Dimensions

■ OVER 5 installation

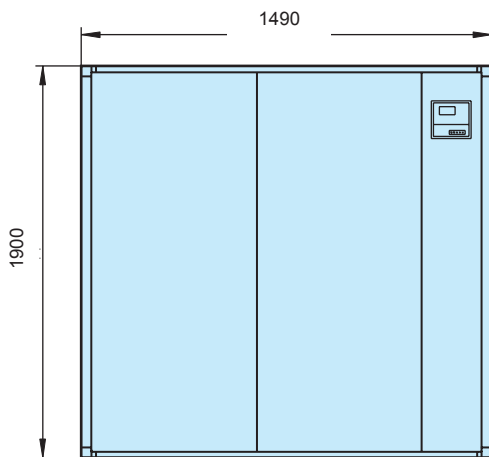
**W 5/8/12
X 5/8/10**



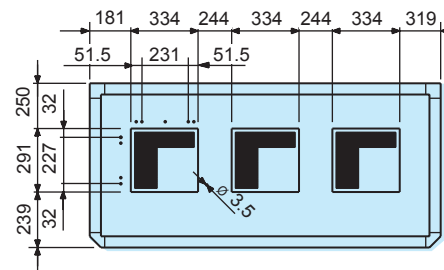
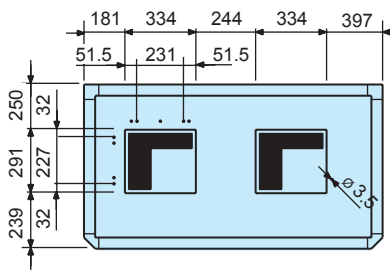
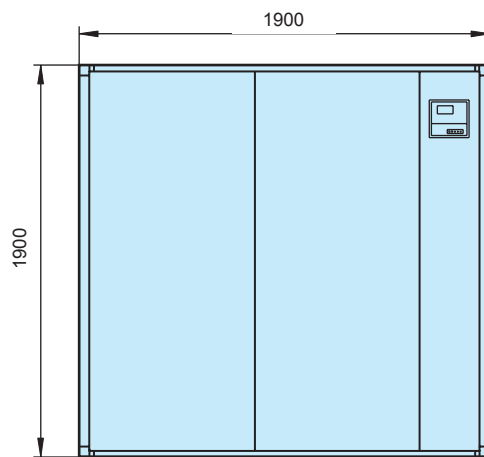
**W 27
X 19/24**



**W 39
X 31/36**



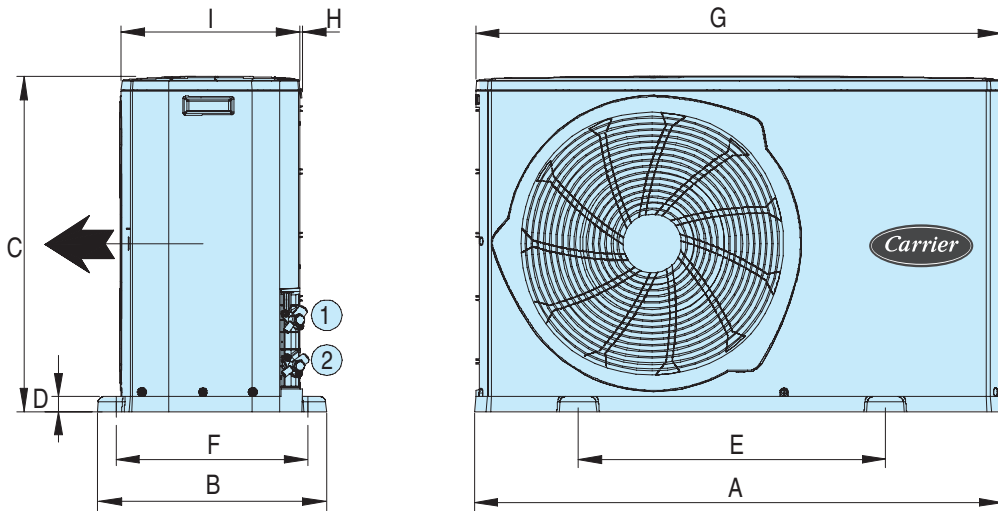
**W 59
X 38/48**



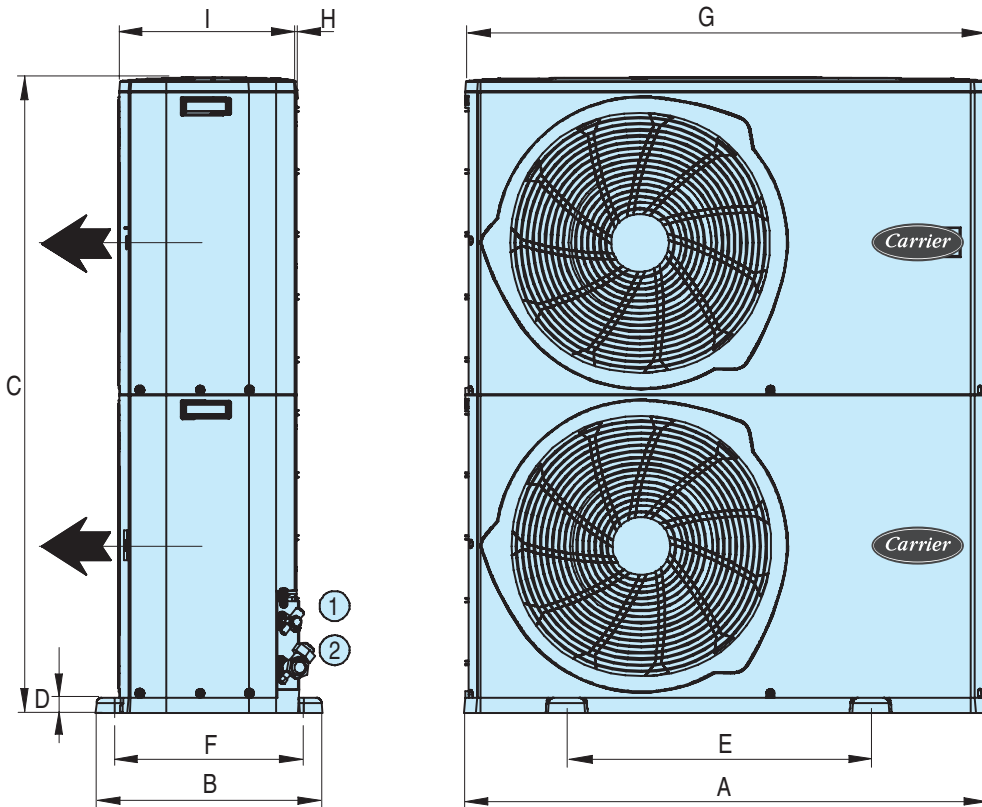
Dimensions

External unit

■ 28 and 35 models



■ 50, 65 and 75 models



| CL2 | A | B | C | D | E | F | G | H | I |
|---------------|-------|-----|-------|----|-----|-----|-------|---|-----|
| 28 and 35 | 1,035 | 449 | 658 | 30 | 602 | 375 | 1,030 | 5 | 350 |
| 50, 65 and 75 | 1,035 | 449 | 1,258 | 30 | 602 | 375 | 1,030 | 5 | 350 |

 EXTERNAL AIR FLOW

① LIQUID LINE

② SUCTION GAS LINE



Numéro de gestion : 10035, 03.2016 - remplace N° : 10035, 11.2015
Le fabricant se réserve le droit de procéder à toute modification sans préavis.



Quality and Environment
Management Systems
Approval

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Imprimé dans l'Union Européenne.