



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.

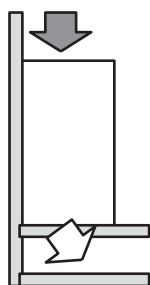
50CJ X

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

Installation

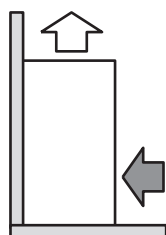
UNDER installation: reversed air supply

Installation 1



Air supply via raised floor

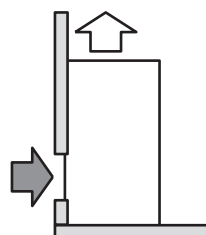
Installation 3



Front return

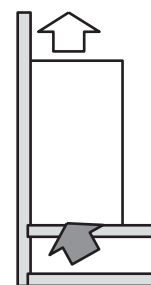
OVER installation: top air supply

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 1/2" M	G 3/4" M	G 3/4" M	G 3/4" M	G 1" M	G 1" M	G 1" 1/4 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	G 1" 1/8 M	G 1" 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 1/2" M	G 1/2" M	G 1/2" M	G 1/2" M	G 1/2" M	G 3/4" M	G 3/4" M	G 3/4" M
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* Drain connections if optional pump fitted: Diam. 6 mm

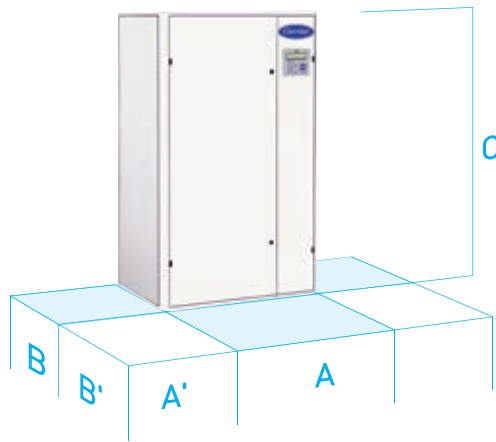
Outdoor unit

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

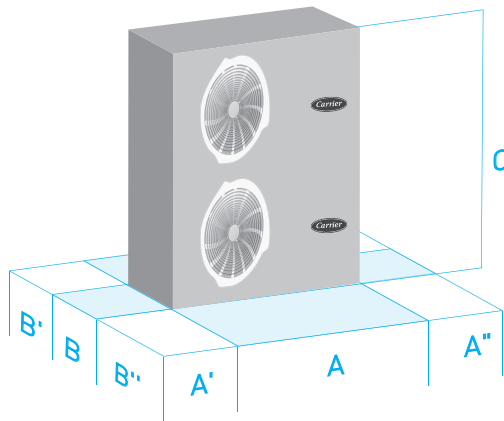
Suction pipes	5/8"	5/8"	3/4"	3/4"	3/4"	7/8"	7/8"	2x3/4"	2x7/8"	2x7/8"	2x7/8"
Liquid pipes	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"	2x3/8"	2x3/8"	2x3/8"	2x1/2"
Condensate draining	Ø 32mm										

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



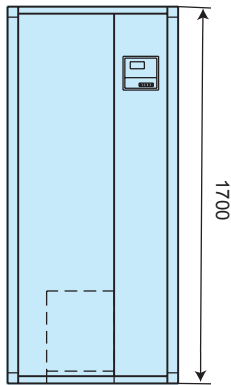
Unité extérieure

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

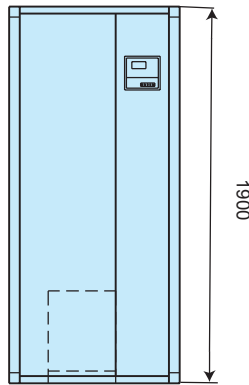
Dimensions

■ UNDER 1 installation

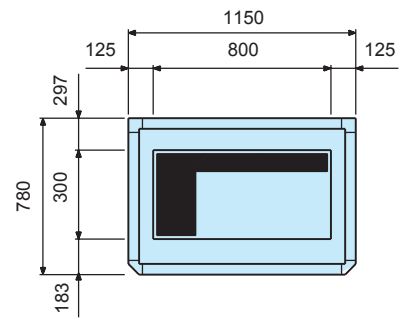
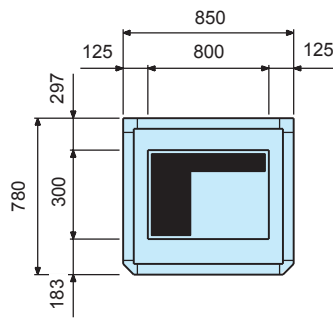
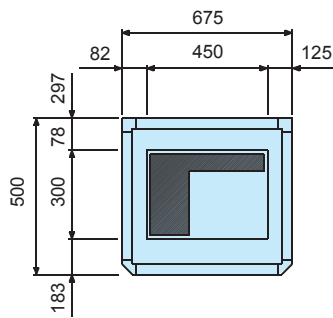
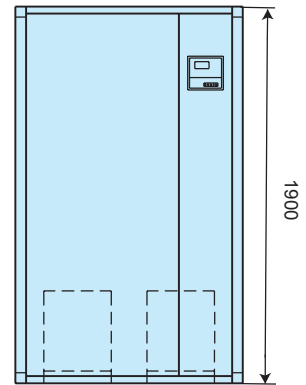
**W 5/8/12
X 5/8/10**



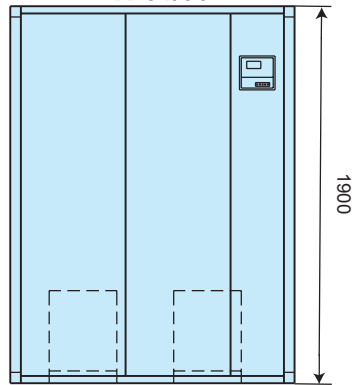
**W 16
X 12/15**



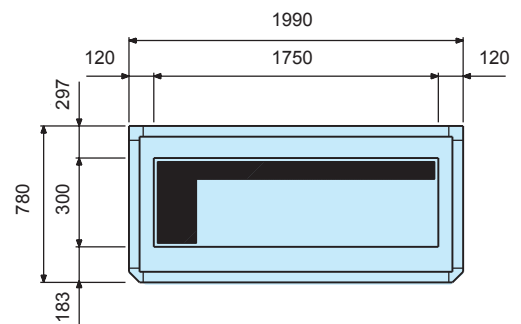
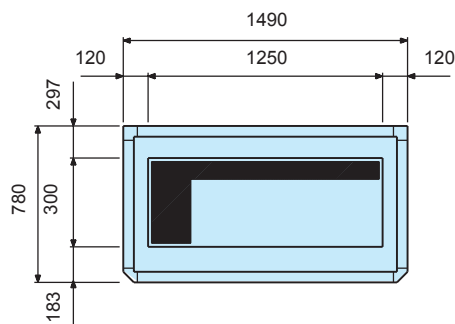
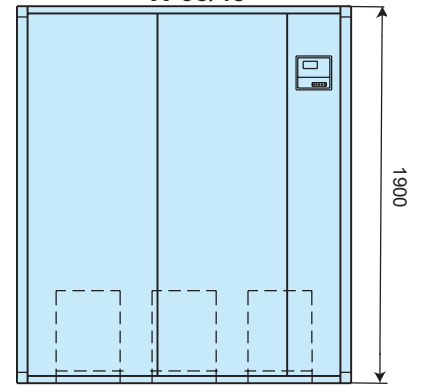
**W 27
X 19/24**



**W 39
X 31/36**



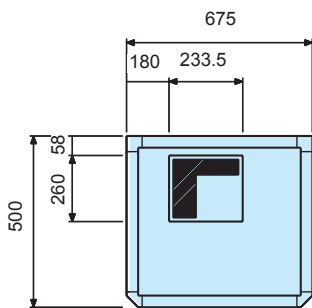
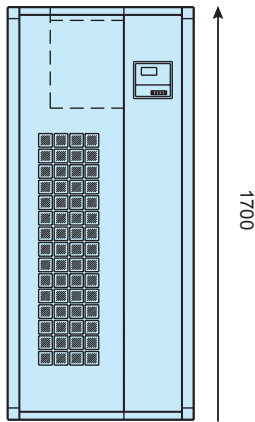
**W 59
X 38/48**



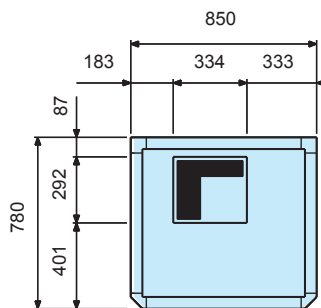
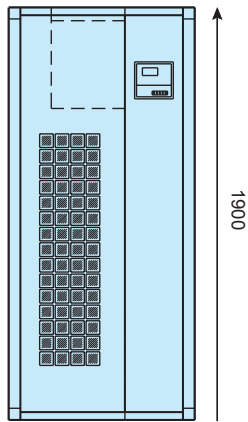
Dimensions

■ OVER 3 installation

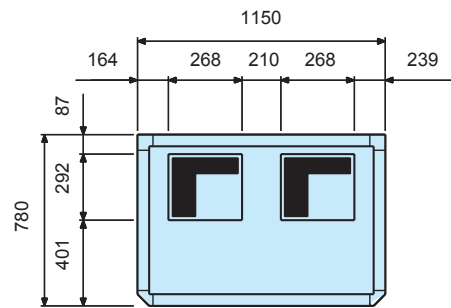
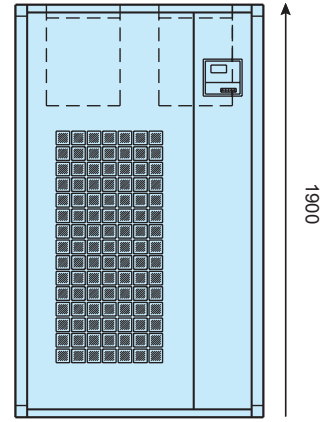
**W 5/8/12
X 5/8/10**



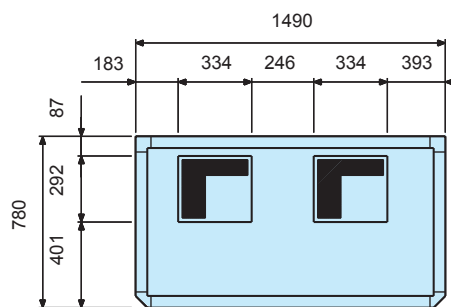
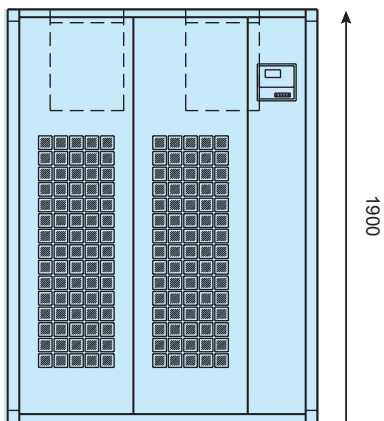
**W 16
X 12/15**



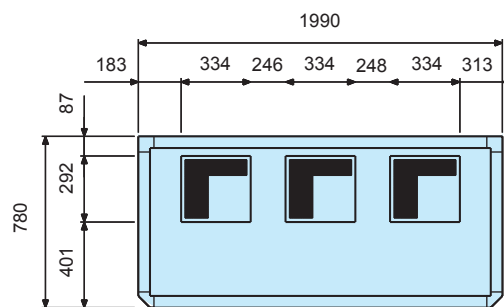
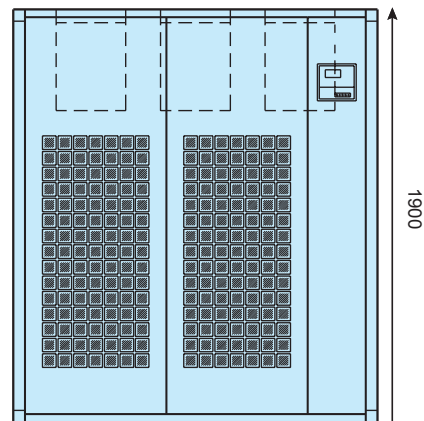
**W 27
X 19/24**



**W 39
X 31/36**

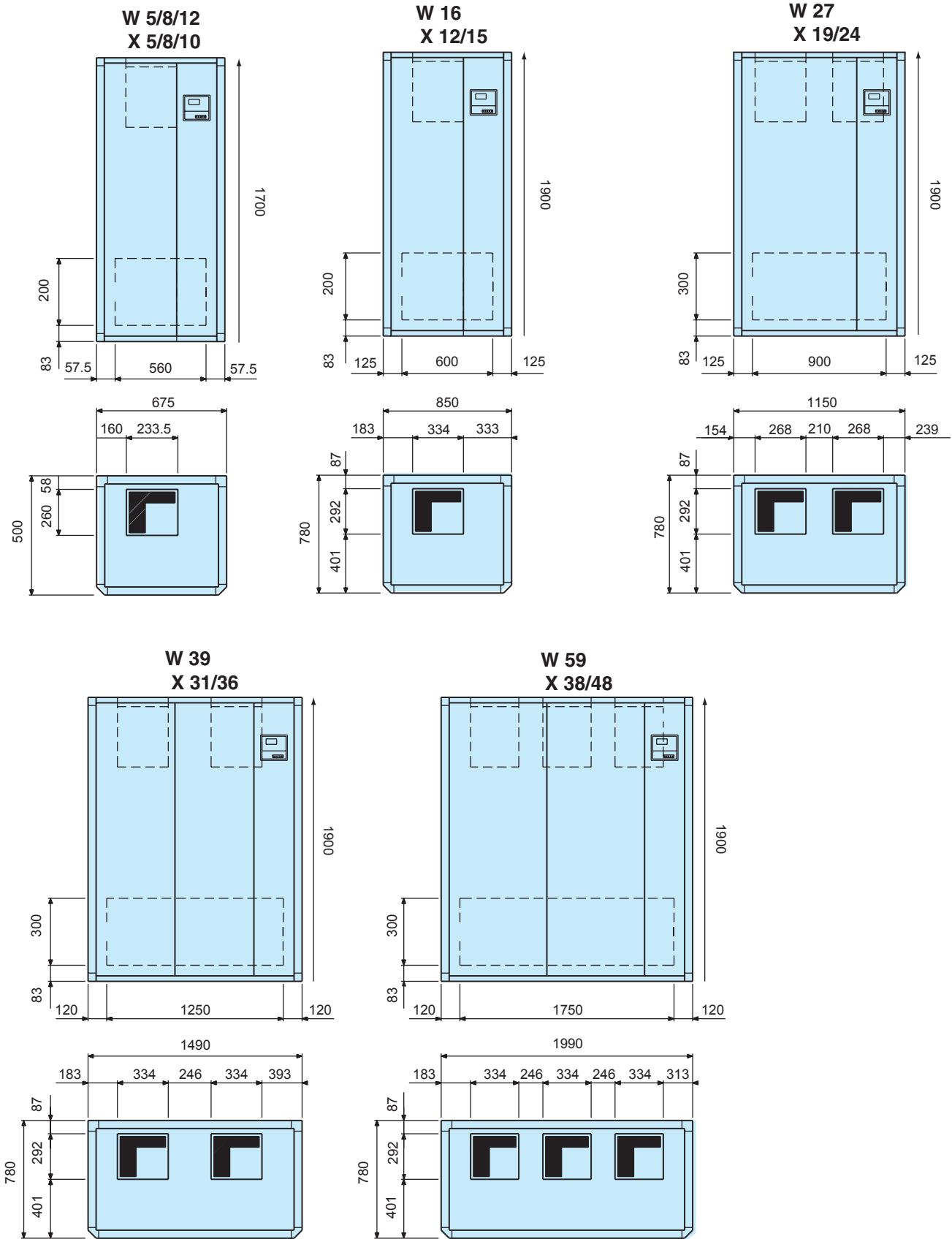


**W 59
X 38/48**



Dimensions

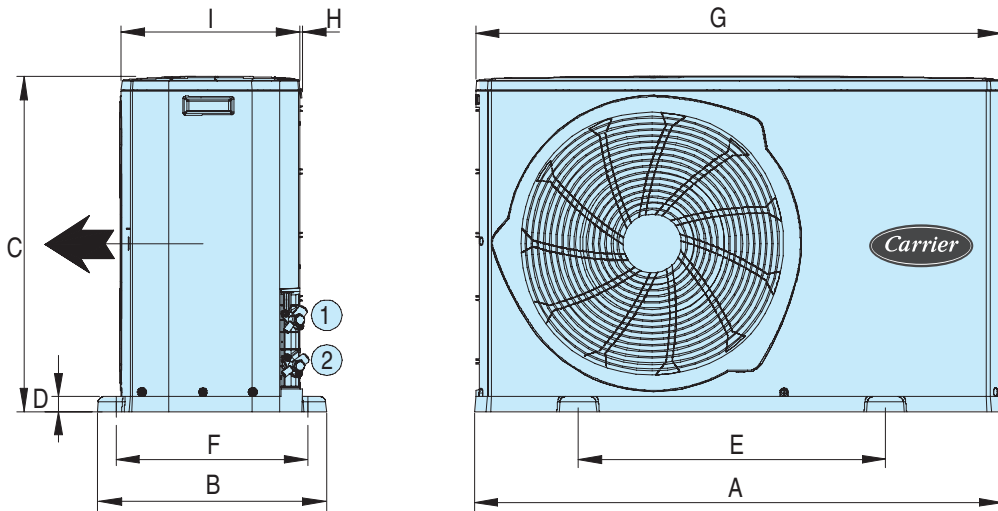
■ OVER 4 installation



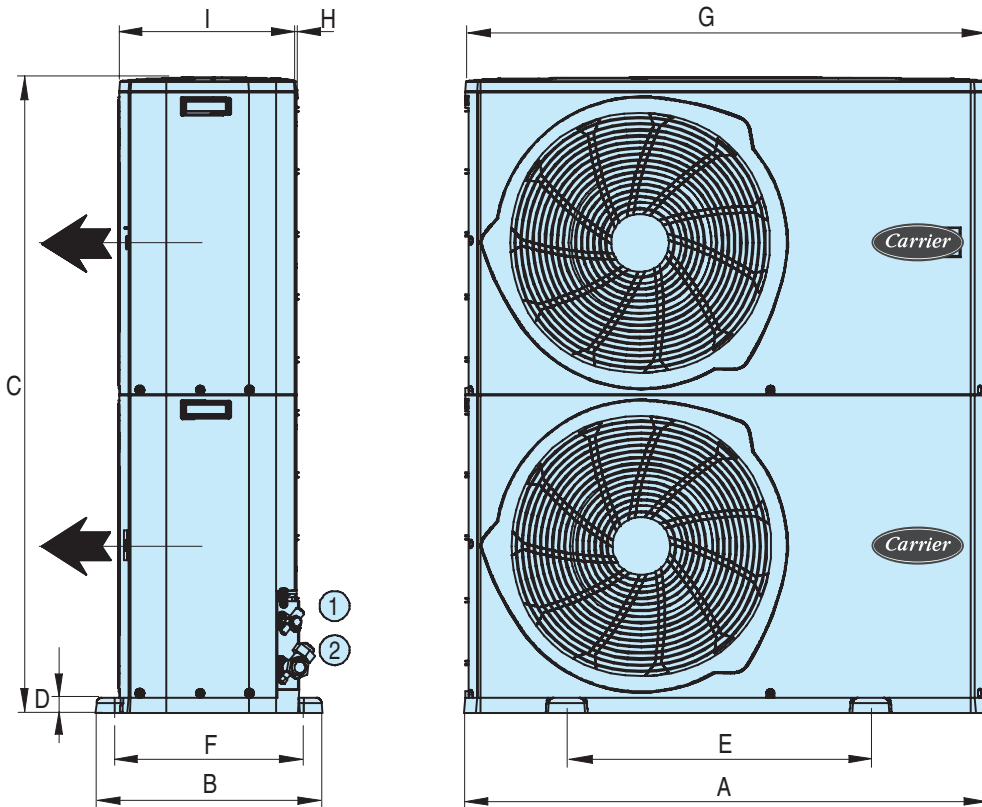
Dimensions

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

Fabriqué pour Carrier en France.
Imprimé dans l'Union Européenne.