AIRSYS

FREECOOL-HD

Intelligent Fresh Air Cooling

Air volume: 2400-21,600 m^3/h

www.air-sys.uk

The FREECOOL-HD unit is a vertical standing, intelligent fresh air free cooling system, that introduces lower temperature ambient air into the equipment space, thereby pressurising the room and displacing the warmer air away from the equipment. The FREECOOL-HD is suitable for both telecom and data centre environments.

The FREECOOL-HD utilises EC Fan technology to automatically adjust the air volume according to the temperature setpoint, providing the lowest power consumption possible.

Unit Identification

01	02	03	04	05	06	07	08	09	10	11	12	13
FREECOOL-HD	.	ID	.	SPL	.	O	48	F2	.	220/1/50	.	XXX

01	FREECOOL-HD	Product series name: FREECOOL-HD series fresh air free cooling unit
02	·	Separator Character "."
03	ID	Installation type: INDOOR: The unit is installed indoors, abbreviated as "ID" OUTDOOR: The unit is installed outdoors, abbreviated as "OD". If outdoor installed unit is required, please feel free to contact us.
04	.	Separator character "."
05	SPL	SPL: Split unit, the unit is manufactured as parts, one of which is the main unit with fan and the other is an air outlet.
06	.	Separator Character "."
07	O	Air scheme: O: upflow U: downflow
08	48	Nominal air volume with the unit 100m³/h, i.e. "48" stands for the air nominal air flow of 4,800m³/h or 1.3m³/s
11	F2	Fan quantity in the unit. F1 means the unit is equipped with one fan. F2 means the unit is equipped with two fans.
12	.	Separator Character "."
13	220/1/50	Unit power supply 230/1/50: 230V AC, single phase 50Hz 400/3/50: 400V AC, 3 phase 50Hz

Engineered features

1 Energy efficiency

By using the FREECOOL-HD unit, the need to operate existing air conditioning units within the equipment room is greatly reduced, thereby lowering their overall electrical demand.

2 Ease of maintenance

The main components such as: fan(s), motor(s), filters, controller and other related components can be accessed and maintained from the front of the unit.

3 Intelligent control

FREECOOL-HD unit is microprocessor-controlled, providing a fully automated intelligent system, maximising energy savings. Key features of the microprocessor and controller are:

- Working status display
- Control parameters
- Data log
- Maintenance and critical alarm readouts
- Power failure auto restart

4 EC Fan

The fan is the core component of the unit, utilising EC fan variable speed technology.

5 Third-party control (optional)

The FREECOOL-HD unit can provide output signals to disable other air conditioning systems, when it can meet the room cooling demand.

6 Remote control and monitoring (optional)

The unit can be installed with a RS232 or RS485 communication card to provide remote control capabilities and monitoring by a BMS system with open communication protocol.

7 PCOWEB internet communication (optional)

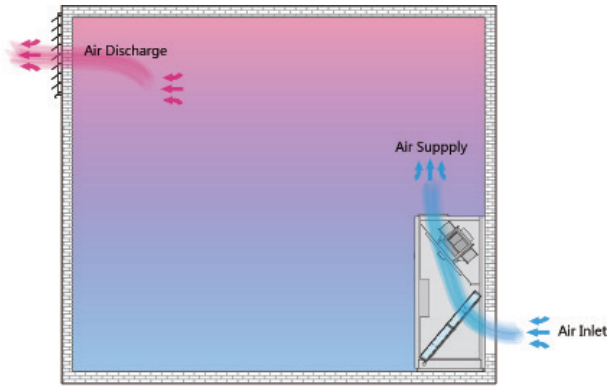
The unit can be equipped with a PCOWEB Ethernet communication card with TCP/IP protocol to provide remote control and monitoring.

8 Humidity control

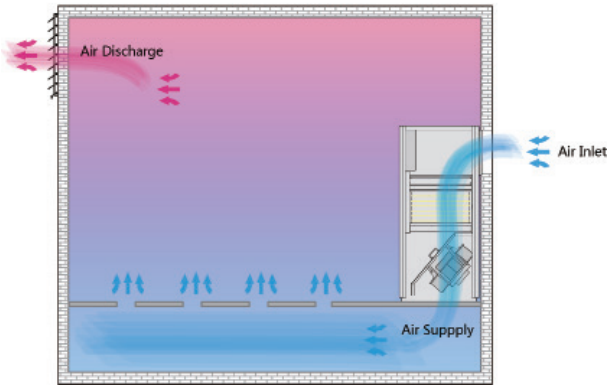
The humidity sensor can prevent the introduction of high humidity air into the equipment room. The FREECOOL-HD unit will turn off when the humidity of the outside air reaches the humidity setpoint.

Operating principle

The FREECOOL-HD unit is controlled via a remote temperature sensor positioned local to the room air discharge (see diagrams below) or equipment. The fan modulates based on the temperature difference between the setpoint and the actual room temperature. The FREECOOL-HD can be set up to turn off should the ambient air exceed predetermined setpoints.



Upflow (O air scheme)



Downflow (U air scheme)

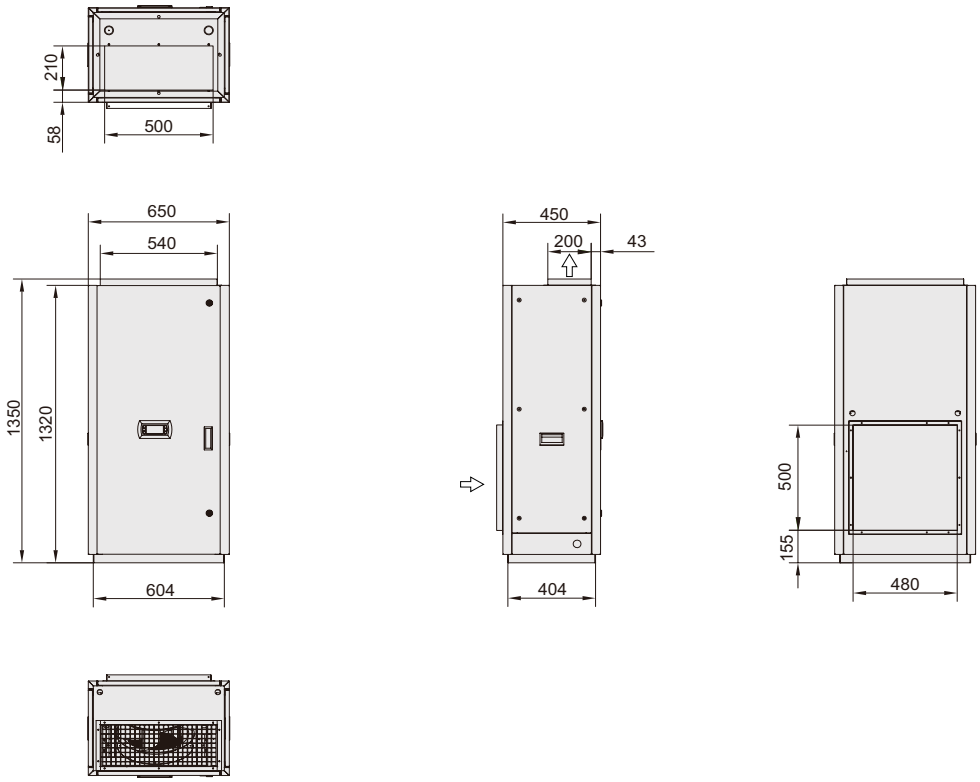
Technical Parameters

Unit model		24F1 ID	48F2 ID	72F1 ID	144F2 ID	216F3 ID
Supply air scheme				O/U		
Air flow	m^3/h	2400	4750	7200	14400	21600
Air flow	m^3/s	0.67	1.3	2.0	4.0	6.0
Cooling capacity						
△t=5℃	kW	4.0	7.9	12.0	24.0	36.0
△t=10℃	kW	8.0	15.8	24.0	48.0	72.0
△t=12℃		9.6	19	28.8	57.6	86.4
Power supply		230V/1Ph/(50/60Hz)		400V/3Ph/(50/60Hz)		
Fan		Single inlet backward curved centrifugal fan				
Qty.	n.	1	2	1	2	3
Power input	kW	0.5	1.0	2.1	4.2	6.3
Current	A	3.1	6.1	3.2	6.4	9.4
Noise(*)	dB(A)	55	59	61	63	65
Dimensions						
Width	mm	700	1150	850	1650	2450
Depth	mm	450	450	800	800	800
Height	mm	1320	1320	1770	1770	1770
Weight	kg	65	89	150	260	350

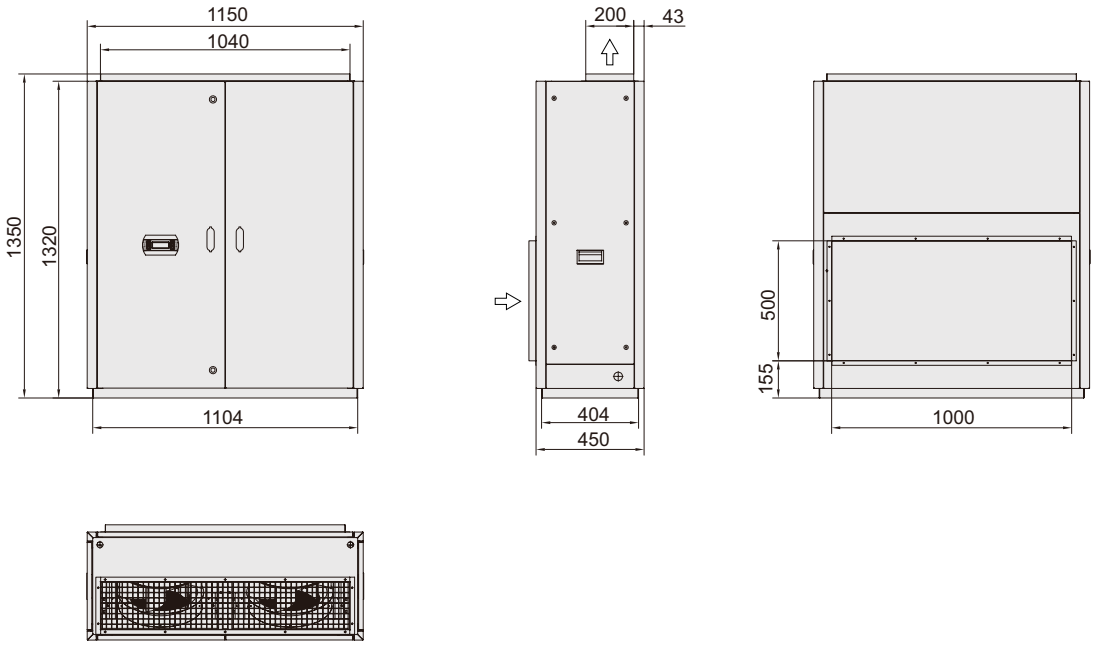
* The noise of 1 meter away from unit

Unit Dimension Drawing

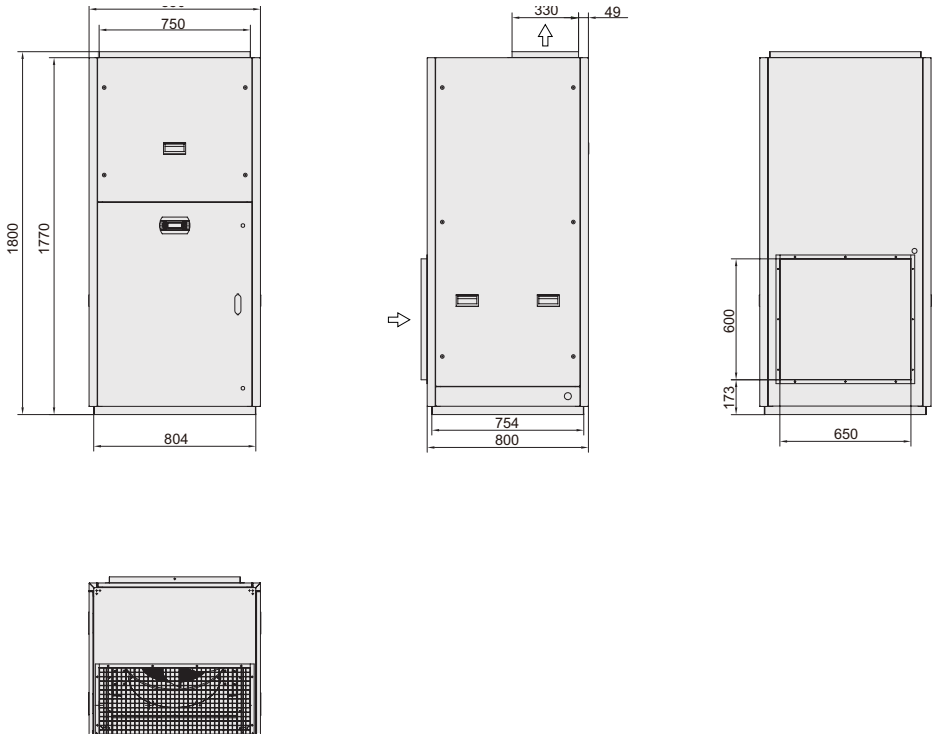
Indoor installed up flow units (FCU.ID.SPL.O24F1)



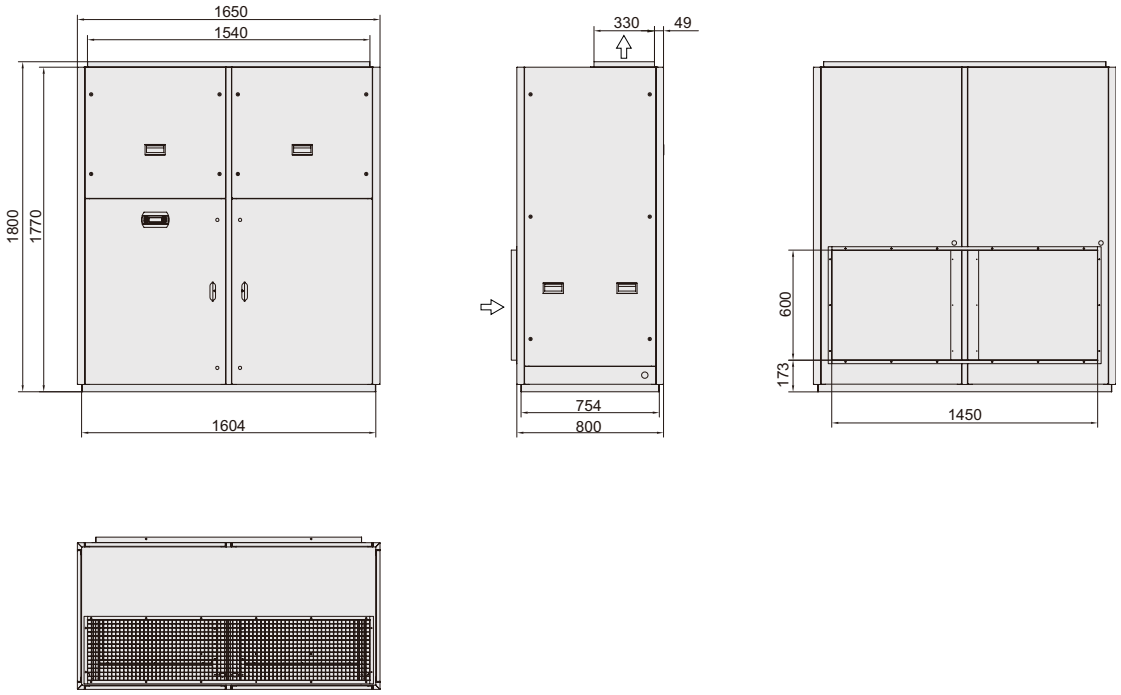
Indoor installed up flow units (FCU.ID.SPL.O48F2)



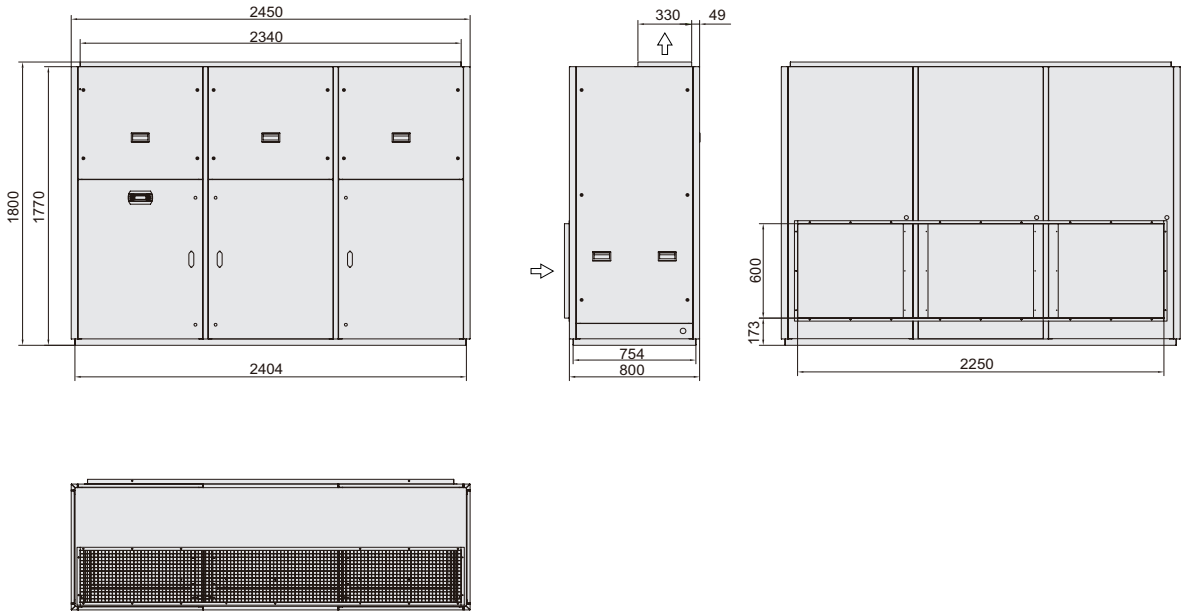
Indoor installed up flow units (FCU.ID.SPL.O72F1)



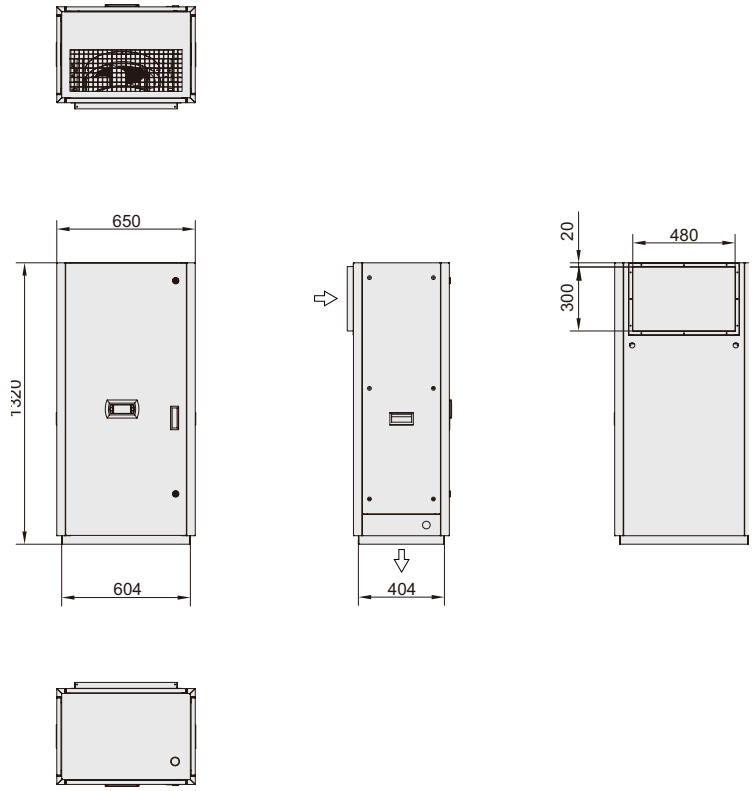
Indoor installed up flow units (FCU.ID.SPL.O144F2)



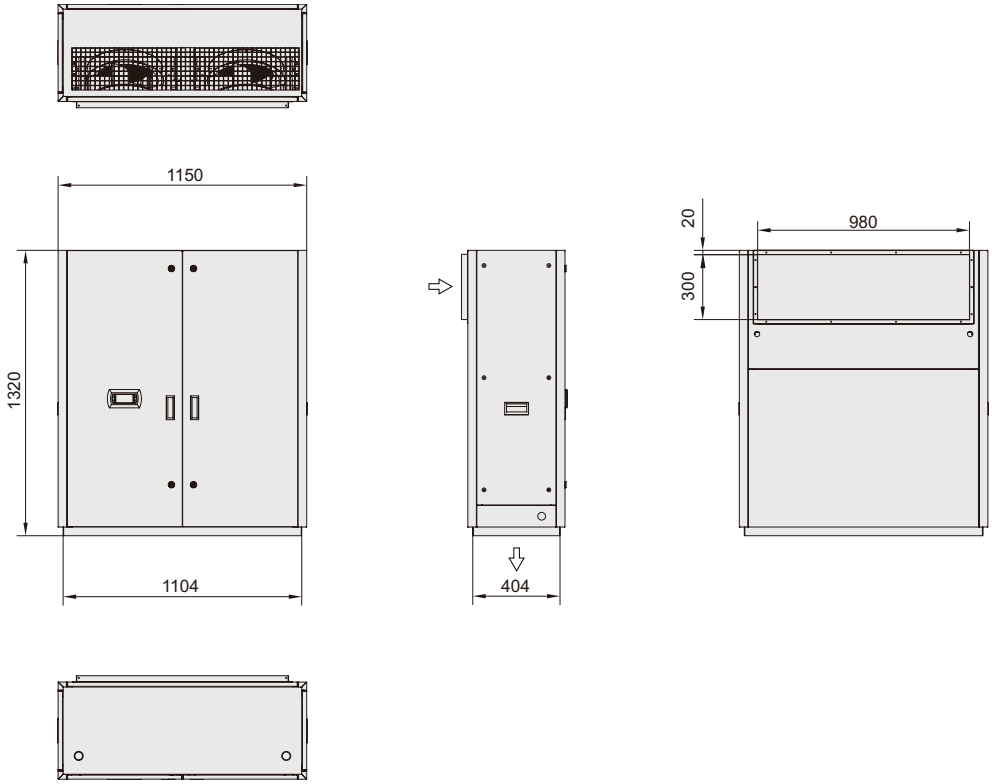
Indoor installed up flow units (FCU.ID.SPL.O216F3)



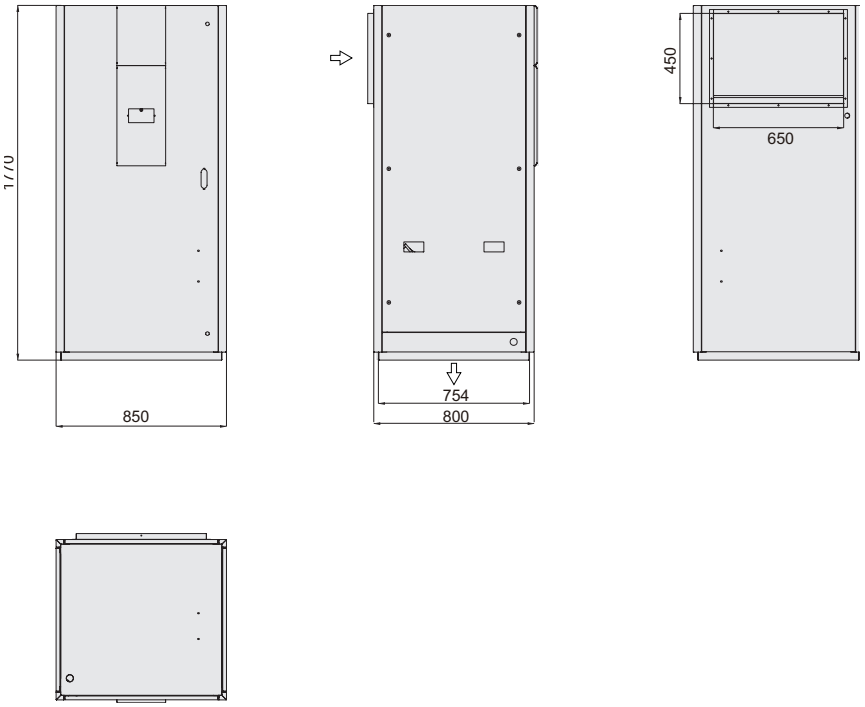
Indoor installed down flow units (FCU.ID.SPL.U24F3)



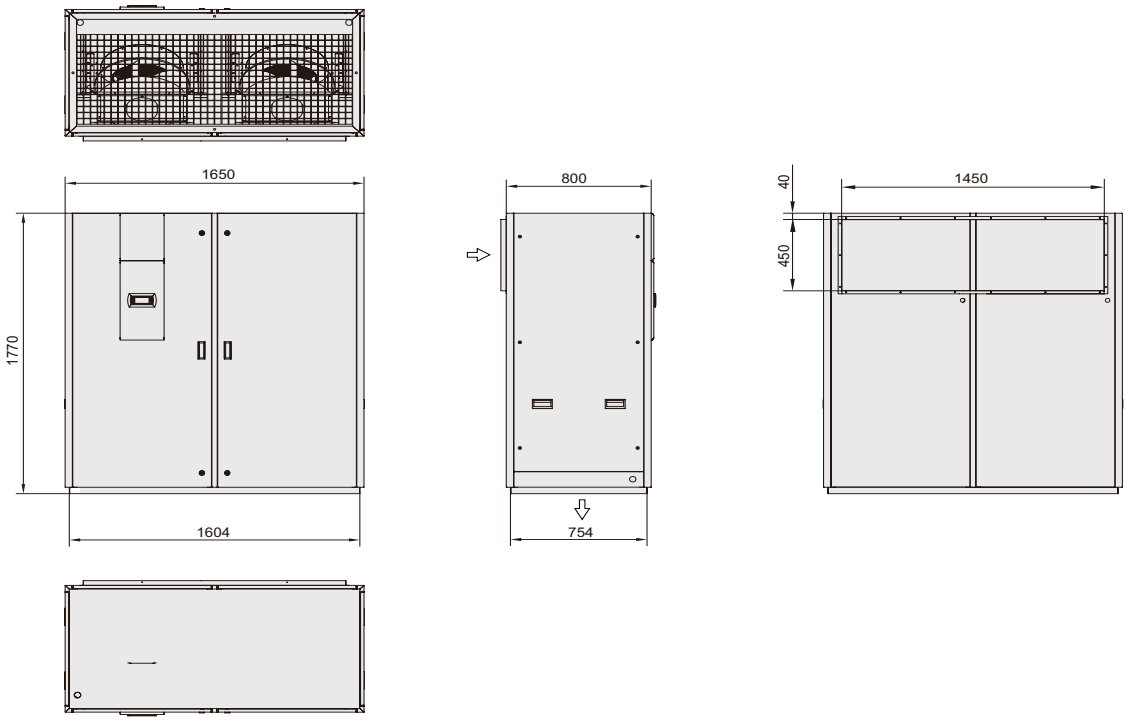
Indoor installed down flow units (FCU.ID.SPL.U48F2)



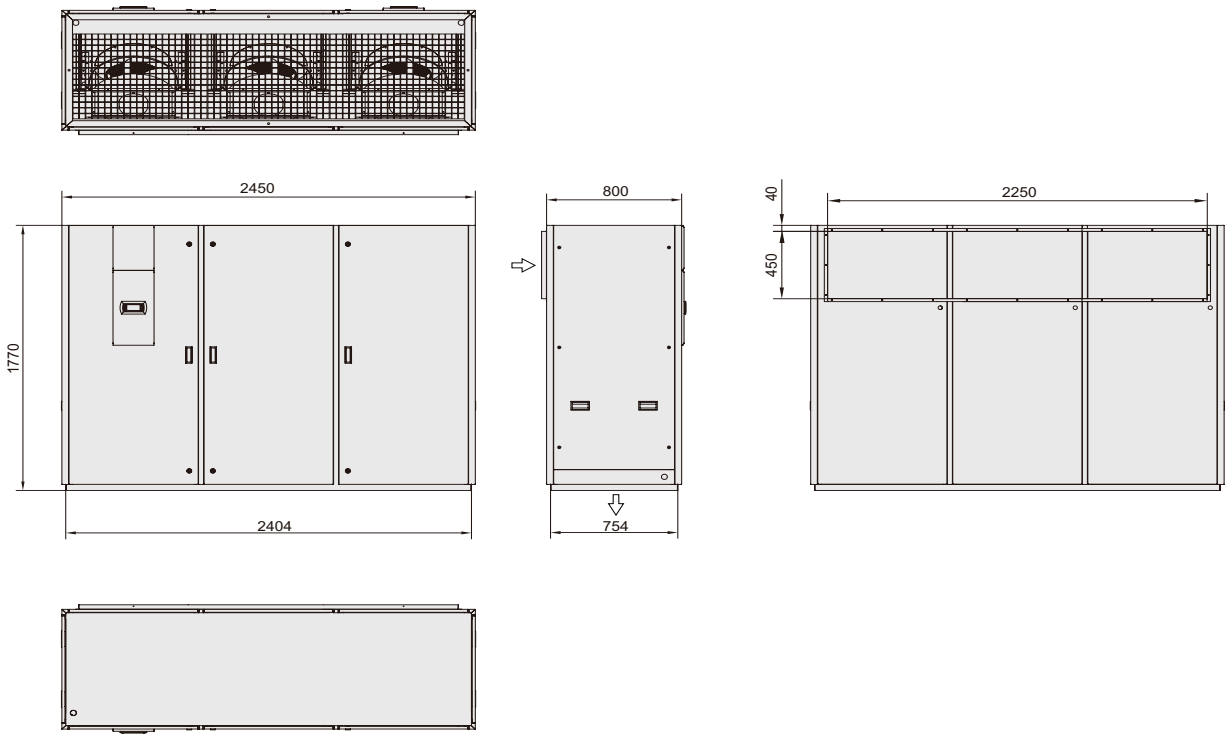
Indoor installed down flow units (FCU.ID.SPL.U72F1)



Indoor installed down flow units (FCU.ID.SPL.U144F2)



Indoor installed down flow units (FCU.ID.SPL.U216F3)



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