

AIRSYS



UNICOOL

Intelligent Cooling Solution for
Telecoms Environments

Cooling Capacity: 3.6kW-33.1kW

www.air-sys.uk



The UNICOOL unit is a packaged system providing fresh air free cooling, combined with variable speed mechanical cooling.

UNICOOL has been designed to withstand harsh telecom base station environments, whilst providing free cooling during low ambient conditions; delivering an energy efficient, low OPEX cooling solution.

Unit Identification

01	02	03	04	05	06	07	08	09	10	11	12	13	14
UNI	.	DL	11	V1	B3	S	R410	.		.	AC	.	XXX

01	UNI	Product series name: UNICOOL: Packaged telecom air conditioner with fresh air free cooling, it can be abbreviated as "UNI."
02	.	Separator Character ""
03	DL	Air supply:DL:Bottom supply O:Top supply
04	11	Unit nominal cooling capacity by kW 7,11,15,28
05	V1	Compressor type & number V1: 1 Variable speed compressor
06	B3	Cabinet type and size code: 7 cabinet sizes: B2,B3,B4 and B5&T2,T3,T4
07	S	Control configuration: S: Single control *M: Multiple control (optional)
08	R410	Refrigerant: R410=R410A
09	.	Separator Character ""
10	230/1/50	Power source:Voltage/Phase/Frequency 230/1/50, 415/3/50
11	.	Separator Character ""
12	AC	Supply fan type: AC: AC powered EC Centrifugal fan/DC:DC powered EC Centrifugal fan
13	.	Separator Character ""

For example:

UNI.DL.11V1B3SR410.230/1/50.AC Stands for UNICOOL unit with bottom air supply, 11kW nominal cooling capacity, equipped with 1 variable speed compressor, cabinet size is B3, single control, R410A refrigerant, the power supply is 230V/1Ph/50Hz, and supply fan is EC centrifugal fan.

Note: *If Multi control units are ordered, one Multi-unit control box is required.

Engineered features

1 Integrated Free Cooling Economizer

Standard on all units, the highly configurable economizer features seamless transitions and a variable capacity up to 100% rated supply fan air volume.

2 EC Supply Fan

Quiet, energy-efficient, variable speed EC fans are standard on all models.

3 Extreme Temperature Range

Designed for operation between -35°C (-31°F) and 55°C (127.4°F) ambient temperature.

4 Dual Layer Exterior Protection

The galvanized steel exterior, coated with an additional layer of thermoset polymer, provides two layers of protection against harsh environments.

5 Air Filter Protection Device (optional)

The AFPD (Air Filter Protection Device) is designed to protect the UNICOOL primary air filter from airborne particulates, to prevent the premature clogging of the air filter. The AFPD extends the filter life by closing the outside air damper, when airborne contaminants exceed the density limit.

6 Multi-Unit Controller (optional)

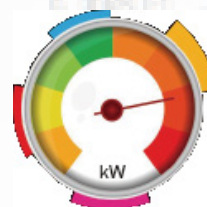
The microprocessor-based Multi-Unit Controller (ASMUC), can manage up to 6 UNICOOL units at a time.

7 Standalone Mode

The system can operate in fully functional Standalone Mode if communication is lost between UNICOOL and the multi-unit controller. This includes free cooling, mechanical cooling, dehumidification, and heating.

8 Power monitoring

All variable-capacity systems come with power monitoring tools that are displayed locally, in addition to being available via remote access. Power monitoring can be used to measure efficiencies across systems, regions and networks. This feature can be used for predictive maintenance.



9 Condenser Monitor

The ability to remove heat via the condenser coil is a critical element. Monitoring heat exchange efficiency from the condenser coil facilitates intelligent maintenance decisions. Instead of cleaning coils on a schedule, coils can be cleaned when they need it.

10 Performance Parameter Readout

The system provides real-time performance parameter readings to the controller display, as well as remote monitoring. When coupled with remote monitoring this feature can further enable predictive maintenance, to save maintenance costs and improve system reliability. Parameter readouts include:

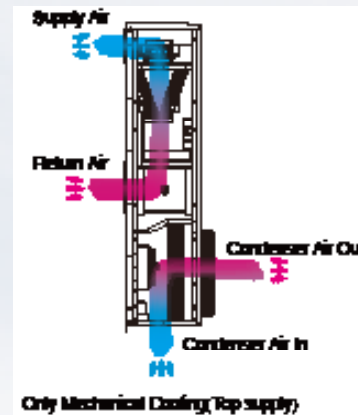
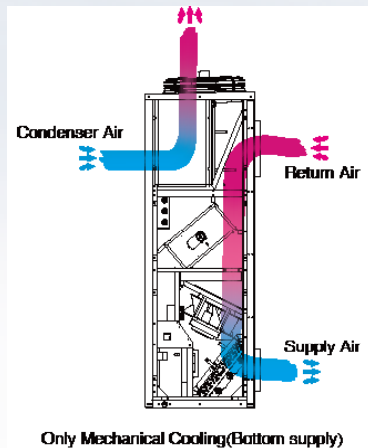
- Superheat
- Sub cooling
- EEV Status
- Variable Compressor Capacity
- Discharge Pressure (High Pressure)
- Discharge Temperature
- Suction Pressure (Low Pressure)
- Suction Temperature



Working Flow Schematic Diagram

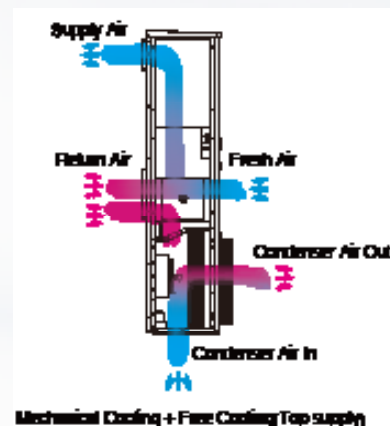
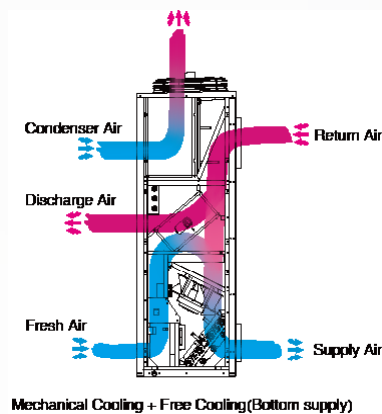
Only Mechanical Cooling

When the ambient temperature is higher than the indoor temperature, DX mechanical cooling provides 100% of the cooling capacity.



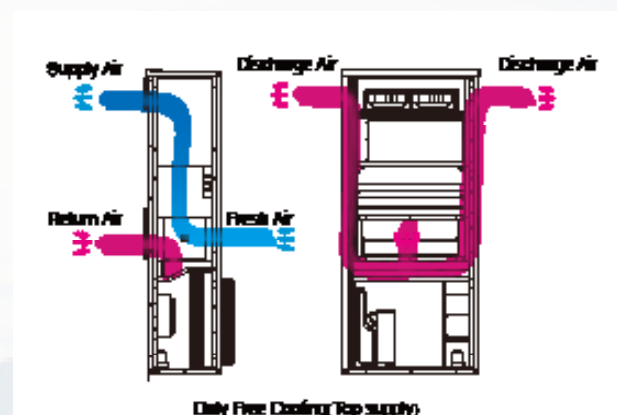
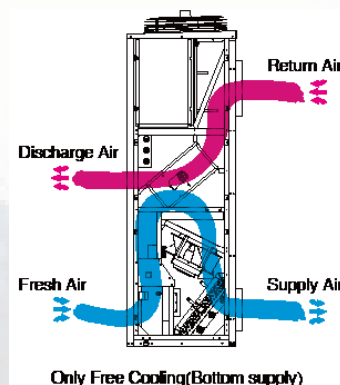
Mechanical Cooling + Free Cooling

When the ambient temperature is below the indoor temperature but $<10^{\circ}\text{C}$, the UNICOOL will bring fresh air into the room to provide partial free cooling, reducing the compressor power input.



Only Free Cooling

When the ambient temperature is 10°C or more below the indoor temperature, fresh air free cooling will supply 100% of the cooling capacity.



Technical Parameters

Unit model		UNI.7V1B2	UNI.11V1T3	UNI.11V1B3	UNI.15V1T4	UNI.15V1B4	UNI.28V2B5
Air flow Scheme		DL	O	DL	O	DL	DL
Power Supply							
Power Source		230V/1PH/50Hz					
Max Input Power	kW	5.6	5.6	5.6	7.9	7.6	15.7
Rated Power	kW	2.17	3.09	3.06	4.60	4.55	4.73 4.64
Rated Current	A	9.4	13.4	13.3	20.0	19.8	20.5 20.2
Performance							
Total Capacity (1)	kW	7.2	10.2	10.3	14.8	15.1	28.1
Sensible Capacity (1)	kW	6.0	8.5	8.5	12.5	13.2	23.7
EER (1)		11.3	11.3	11.5	11.0	11.3	10.3
Max cooling capacity(2)	kW	8.9	14.1	14.1	17.7	17.7	33.1
Max Sensible Capacity (2)	kW	7.4	10.4	10.3	13.9	14.5	26.7
Min cooling capacity(3)	kW	3.6	7.0	7.5	11.1	12.5	9.5
Min Sensible Capacity (3)	kW	2.6	6.7	6.4	9.7	10.2	9.0
Free Cooling Capacity (4)	kW	9.1	12.1	10.8	19.0	16.9	32.4
EER (4)		110.7	105.6	108.2	104.5	84.6	73.3
Electric Heater							
Heating Capacity	kW	5.0	5.0	5.0	5.0	5.0	5.0
Current	A	21.7	21.7	21.7	21.7	21.7	21.7
Compressor							
Type		Rotary			Scroll		
QTY	n.	1	1	1	1	1	2
Power Input (1)	kW	1.78	2.31	2.21	3.36	3.51	4.00 3.91
Current Input (1)	A	7.7	10.0	9.6	14.6	15.3	17.4 17.00
Power Input (2)	kW	2.15	4.31	4.35	5.0	5.73	5.15 /
Current Input (2)	A	9.3	18.7	18.9	21.7	24.9	22.4 /
Evaporator Fan							
Type		EC Centrifugal Fan					
QTY	n.	1	1	1	1	1	2
Power Input(1)	kW	0.18	0.39	0.34	0.57	0.68	0.74
Current Input(1)	A	0.8	1.7	1.5	2.5	3.0	3.2
Air Volume(1)	m³/h	1844	2,800	2,500	4,100	3,900	5,900
Power Input(2)	kW	0.28	0.39	0.34	0.62	0.68	1.50
Current Input(2)	A	1.2	1.7	1.5	2.7	3.0	6.5
Air Volume(2)	m³/h	2104	2,800	2,500	4,400	3,900	7,500
Condenser Fan							
Type		Axial Fan					
Qty	n.	1	1	1	1	1	2
Power Input(1)	kW	0.21	0.39	0.51	0.67	0.36	0.71
Current Input(1)	A	0.9	1.7	2.2	2.9	1.6	3.1
Air Volume(1)	m³/h	3200	5,900	5,500	8,300	6,500	13,500
Power Input(2)	kW	0.21	0.39	0.51	0.67	0.36	1.50
Current Input(2)	A	0.9	1.7	2.2	2.9	1.6	6.5
Air Volume(2)	m³/h	3200	5,900	5,500	8,300	6,500	17,000
Refrigerant							
Type		R410A					
Control		Electronic Expansion Valve					
Qty	kg	3.1	5.3	3.7	5.6	4.6	5.7 5.9
Air Filter							
Preliminary Air Filter (G2)	n.	1	1	1	1	1	2
Main Air Filter (G4)	n.	1	2	2	2	2	2
Dimensions							
Width*Depth*Height	mm	1010	1141	1159	1355	1359	1460
Depth	mm	698	680	698	912	794	1075
Height	mm	2148	2360	2148	2360	2110	2448
Width(Package)	mm	1036	1200	1186	1384	1384	1642
Depth(Package)	mm	718	740	720	940	818	1262
Height(Package)	mm	2280	2490	2280	2490	2280	2555
Weight							
Weight	kg	229	293	287	390	380	632
Weight (With Packaging)	kg	253	313	311	420	410	662

(1)— Cooling rated at 35℃ outdoor and 26.6/19.4℃ indoor Rated Capacity.

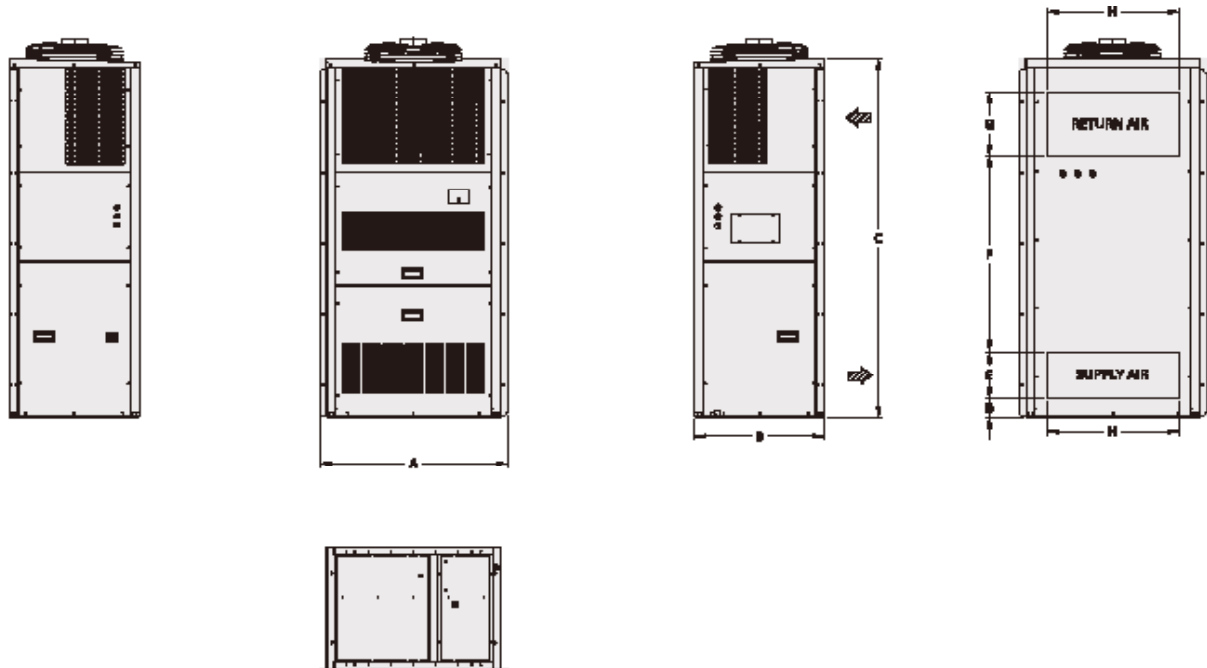
(2)— Cooling rated at 35℃ outdoor and 26.6/19.4℃ indoor Max Capacity.

(3)— Cooling rated at 35℃ outdoor and 26.6/19.4℃ indoor Min Capacity.

(4)— Optional function. Measured at DT (Tinside-Toutside) = 5.77℃.

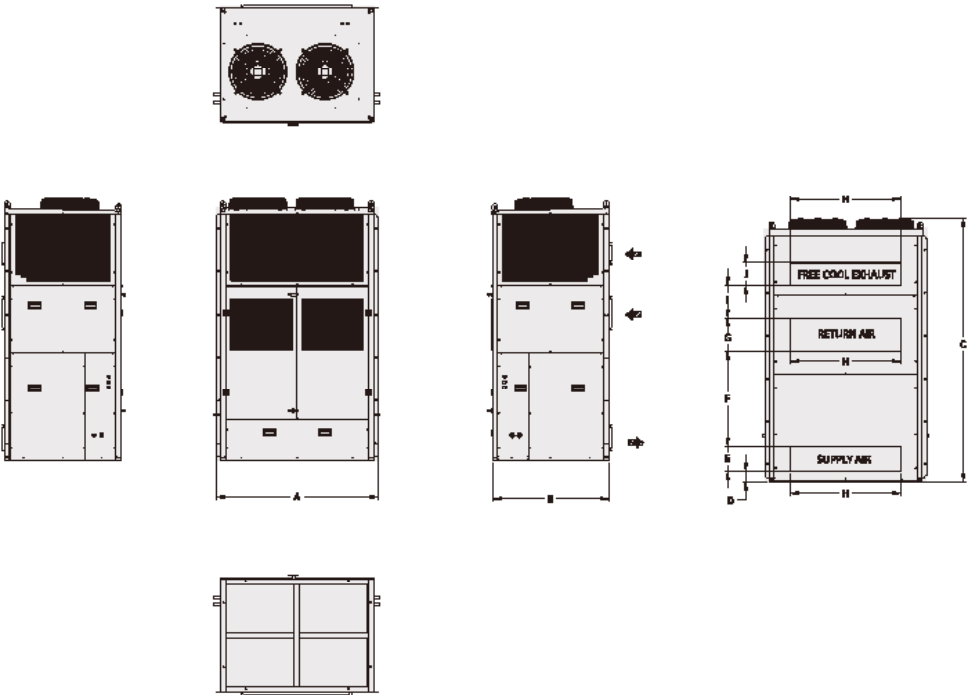
Unit Dimension Drawing

■ B(7kw,11kw,15kw)



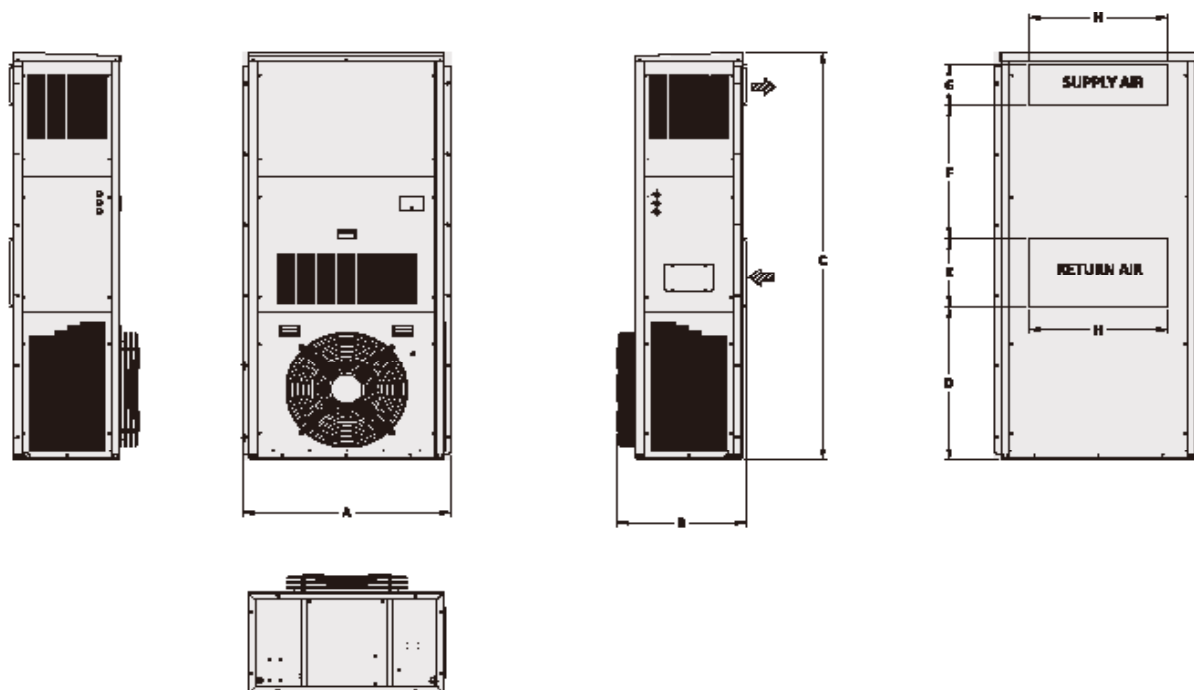
Model	UNI.7V1B2	UNI.11V1B3	UNI.15V1B4
	mm	mm	mm
A	1009	1159	1359
B	694	694	794
C	2018	2019	2020.3
D	101	101	101
E	268	268	268
F	1104	1104	1104
G	356	356	356
H	710	762	880

B5(28kw)



Model	UNI.28V1B5
	mm
A	1460
B	1075
C	2347.6
D	92.8
E	240
F	887.2
G	310
H	998
I	293
J	210

T(11kw,15kw)



Model	UNI.11V1T3	UNI.15V1T4
	mm	mm
A	1141	1355
B	681.5	911.5
C	2360	2360
D	882	885
E	398	398
F	768	768
G	246	246
H	756	756



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Product design and specification subject to change without prior notice.