



CLIMAVENETA TELECOM SOLUTIONS

Units for mobile telecommunication applications, with free cooling and full DC Inverter technology.
1,5 ÷ 20 kW.



Low operational and maintenance costs

Wide range of full inverter solutions

Reliability and extended operation

Advanced control

Reliability and extended operation

Reliability and extended operation

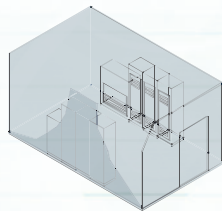
Constructional rationality plus the proven high quality of the components ensure that Climaveneta's units offer:

- ✓ Continuous operation
(24 hours a day, 365 days a year)
- ✓ Design life of over 10 years
- ✓ MTBF and MTTR values at the top of their category.



Unmanned premises with almost no latent heat value.
Required S.H.R. $\geq 95\%$

Manned premises with latent heat value.
Required S.H.R. $\geq 60\%$



High capacity sensitive cooling

No latent cooling required.

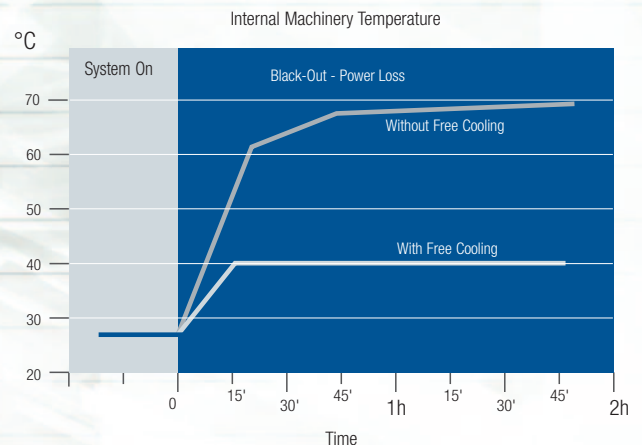
Since the technological rooms are unmanned, the latent heat values remain almost zero.

Thus, the requested S.H.R. values (Sensible and Total Cooling Capacity Ratio) are 95%, compared to typical S.H.R. values of around 60% in the manned premises.

Black-out management

UPS connections system (24/48V DC)

For the double power supply versions (UPS, 48V DC), the Free cooling function is instantly activated in the event of a blackout.



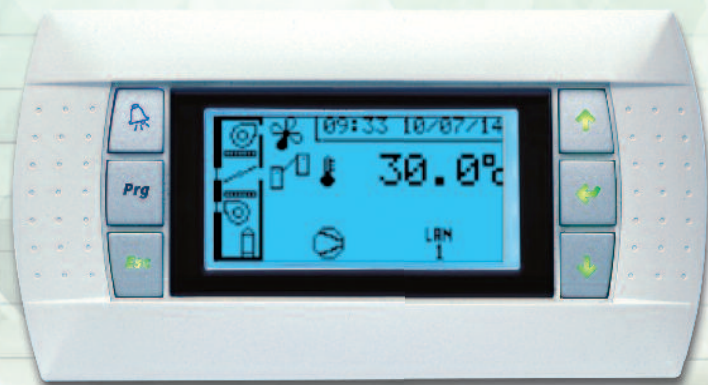
Advanced control

Microprocessor control

Stand-by and alarm management

The microprocessor allows:

- ✓ easy-to-use navigation
- ✓ advanced management of the stand-by unit
- ✓ automatic rotation on a time basis
- ✓ alarm rotation
- ✓ alarm management and transmission
- ✓ LAN management between connected units
- ✓ easy connection to supervisory systems
- ✓ double power supply management
- ✓ multi-language management
- ✓ emergency function
- ✓ manual function



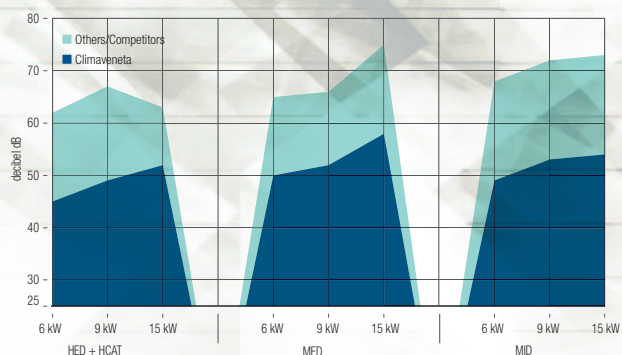
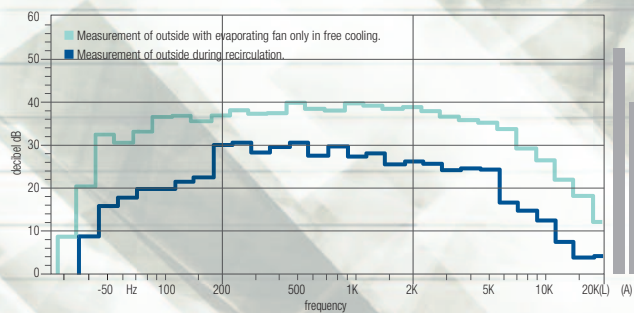
Extremely low noise

Minimum sound emissions

Reducing sound emissions is one of the greatest needs of air conditioning units located in urban areas.

Climaveneta has therefore made a new range of high efficiency air conditioners featuring a strong sound emission reduction:

- ▶ Sound proofing delivery plenum
- ▶ Anti-vibration feet for the unit and the fans fastening
- ▶ Compressor inside a sound proofing box with lead
- ▶ Sound proofing recirculating fans cap
- ▶ Condensing pressure check through the fan speed regulator
- ▶ Autotransformer to reduce vibration



Climaveneta for telecommunication applications

Mobile phone base stations, shelters and switch cabinets:
all these critical applications need technologically advanced
solutions tailored to the customer's needs.

Climaveneta has developed Telecom Solutions, a complete range of air conditioners from 1,5 to 20kW, divided into split and packaged versions, for outdoor or indoor installation.

The renovated range combines more than 40-years of experience in the air conditioning sector with high standards of quality and reliability resulting from the continuous improvement of manufacturing operations.

An extensive sales network and a number of after sales services ranging from technician training to the informative multimedia material add further value to the new Telecom Solutions offerings.

- ✓ End-of-line testing on all units
- ✓ Customised solutions according to specific customer requirements
- ✓ Accreditation service for direct orders
- ✓ Certification of the unit's technical features in the test chambers



HED HCAT/i-HED i-HCAT

0011÷0071 pg. 8

Split air conditioners.
Cooling capacity from 4,9 to 17 kW
FREE COOLING



FKO/FKI FREE COOLER

0021÷0051 pg. 14

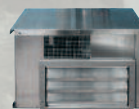
Free cooling unit for telecommunication shelters from 7,7 to 10,1kW. Indoor or outdoor installation.
FREE COOLING



MID/i-MID

0001÷0061 pg. 10

Indoor packaged air conditioners.
Cooling capacity from 1,5 to 15 kW
FREE COOLING



LED

0010E÷0015E pg. 16

Outdoor packaged air conditioners.
Cooling capacity from 2,5 to 5,7 kW
FREE COOLING

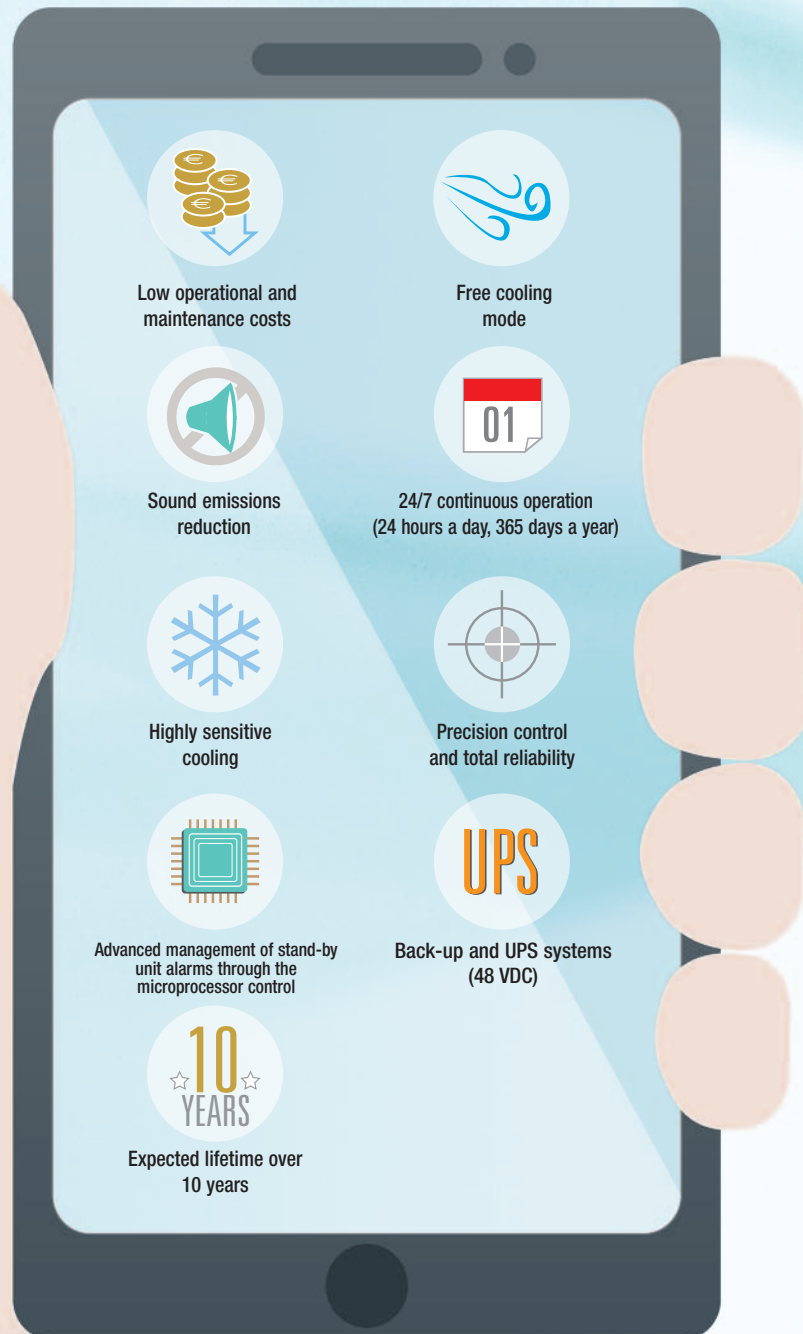


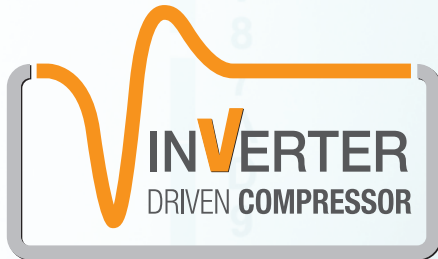
MED/i-MED

0001÷0091 pg. 12

Outdoor packaged air conditioners.
Cooling capacity from 1,95 to 20 kW
FREE COOLING

Climaveneta Telecom Solutions is the result of a research and development project among different telecommunications companies aimed at finding an innovative no-compromise solution for the modern telecommunication applications.





Inverter technology

The inverter driven compressor is a key component for Climaveneta's products: thanks to its extremely precise regulation of the power capacity through variable frequency, it can strongly increase the efficiency of partial loads.

Compared to a traditional on/off compressor, the inverter technology ensures a quick achievement of the desired set point and a precise control over temperature variations. Once the desired value has been reached, the compressor rotation decreases, reducing energy consumption and effectively maintaining the temperature conditions over time.

In this respect the new Climaveneta's Telecom Solutions range represents the ultimate solution in air conditioning in the telecommunications sector, thanks to the most updated DC Inverter Brushless compressors and the new generation EC fans combined with the electronic thermostatic valve.

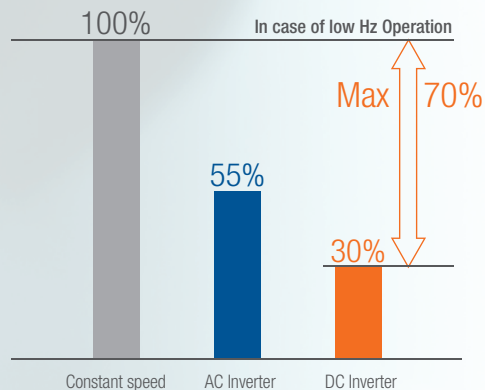
Both solutions allow for perfect adaptation of the unit's performance to the real requirements of the building even at partial load, which represents more than 75% of the operating time of the system. This ensures an energy savings of up to 50% more than solutions based on traditional ON/OFF compressors.

Low operational and maintenance costs

Key features of efficient and long-lasting air conditioning systems are reduced energy consumption combined with low operational and maintenance costs.

For this reason the modern FULL INVERTER units deliver the best cost and benefit ratios, with significant advantages in terms of TCO (Total Cost of Ownership). Consequently, the payback time is 2 years compared to NON FULL INVERTER solutions where payback per unit only comes after 10 years.

Annual Energy Consumption



DOUBLE ADVANTAGE: FREE COOLING + INVERTER

It is well known that energy savings are guaranteed with FREE COOLING systems. Climaveneta combines innovative FULL INVERTER compressors with the free cooling technology, thus resulting in 35% higher energy savings compared to traditional on/off solutions.

Split air conditioners for telecommunication shelters

Free Cooling



Unit description

HED-HCAT split air conditioners for telecommunication shelters combine a HCAT condenser (available in both the BASIC and LT low temperature versions) with the indoor HED unit.

Available for ceiling or wall installation, HED-HCAT units are available with product ranges from 4,9 to 17kW, both in the ON-OFF and Inverter technology. All the units are equipped with external panels in electrogalvanised powder coated steel sheets and, upon request, with a Free Cooling damper which ensures 30% annual energy savings compared to standard systems.

The evaporating section fan works on a direct current at 48 Volts for a reliable operation even in emergency situations (optional). Climaveneta units are made to ensure a standard level of operation even under extreme environmental conditions with temperatures of up to +48°C.

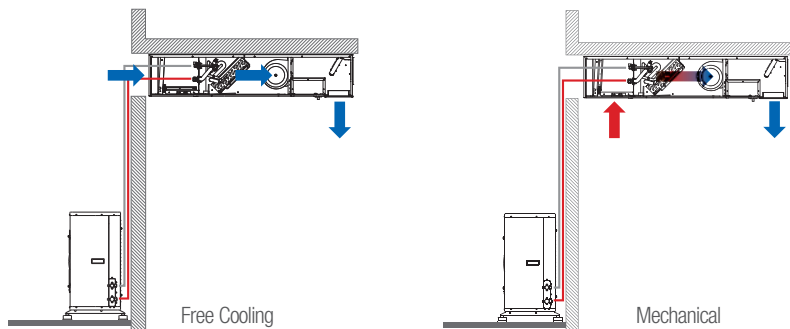
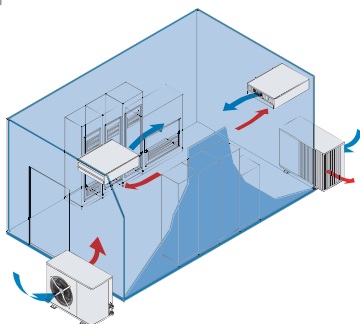
Features

- ✓ Structure and panelling in electrogalvanised powder coated steel for maximum resistance to rust.
- ✓ Total reliability and functionality of the compressor and all other components guaranteed by leading companies in the telecoms sector.
- ✓ Contacts for alarms and the machine's functioning state signals.
- ✓ Universal terminal board for complete outer control of the PLC unit.
- ✓ Condensing control for lower noise levels.
- ✓ Safety pressure switches.
- ✓ Condensing coil protection grills.
- ✓ User terminal supplied as standard.
- ✓ Wide range of accessories for easy and correct installation, and for an efficient air treatment system.
- ✓ Widespread after sales network

Main options

- ✓ Electric heating elements.
- ✓ Serial cards for BMS interconnection.
- ✓ 48V DC power supply for emergency situations.
- ✓ Free Cooling damper with opening from 0 to 100%.

Split





ON/OFF Version

HED HCAT			0011	0021	0021	0031	0031	0041	0051	0056	0061
N° Circuits / N°Compressors			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Refrigerant			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Power supply			V/Ph/Hz	230/1/50	230/1/50	400/3N/50	230/1/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50
COOLING CAPACITY											
Total cooling capacity	(1)	kW	4,94	6,36	6,36	8,43	8,41	9,71	10,6	14,3	15,8
Sensible cooling capacity	(1)	kW	4,94	5,65	5,65	6,77	6,75	9,17	9,53	12,5	13,8
SHR	(1)		1,00	0,89	0,89	0,80	0,80	0,94	0,90	0,87	0,87
Compressors power input	(1)	kW	1,18	1,62	1,62	2,27	2,26	2,37	2,72	3,64	4,10
Evaporator air flow		m³/h	1450	1450	1450	1600	1600	2450	2450	3200	3200
Free-cooling air flow (opt.)		m³/h	1450	1450	1450	1600	1600	2450	2450	3200	3200
Evaporator fan 48 V DC power input (opt.)		kW	0,29	0,29	0,29	0,31	0,31	0,45	0,45	0,49	0,49
Evaporator fan AC power input		kW	0,20	0,20	0,20	0,21	0,21	0,49	0,49	0,52	0,52
Condenser air flow		m³/h	2500	2500	2500	2500	2500	3600	3600	4900	4900
Condenser fan AC power input		kW	0,13	0,13	0,13	0,13	0,13	0,13	0,13	0,25	0,25
Electric heater capacity (opt.)		kW	1,70	1,70	1,70	1,70	1,70	3,40	3,40	3,40	3,40
Max. outdoor temperature (BASIC/LT)		°C	48	48	48	48	48	48	48	48	48
Min. outdoor temperature (BASIC)		°C	-20	-20	-20	-20	-20	-20	-20	-20	-20
Min. outdoor temperature (LT)		°C	-35	-35	-35	-35	-35	-35	-35	-35	-35
Outdoor sound pressure level	(2)	dB(A)	52	53	53	56	56	56	56	58	58

Dimensions and Weight

Width	HED	With Free cooling	mm	1500	1500	1500	1500	1500	1523	1523	1523	1523
		Without Free cooling	mm	1060	1060	1060	1060	1060	1236	1236	1236	1236
	HCAT		mm	900	900	900	900	900	900	900	900	900
Depth	HED	With Free cooling	mm	990	990	990	990	990	1110	1110	1110	1110
		Without Free cooling	mm	990	990	990	990	990	1110	1110	1110	1110
	HCAT		mm	370	370	370	370	370	370	420	420	420
Height	HED	With Free cooling	mm	310	310	310	310	310	400	400	400	400
		Without Free cooling	mm	310	310	310	310	310	405	405	405	405
	HCAT		mm	740	740	740	740	740	990	990	1240	1240
Net weight	HED	With Free cooling	kg	85	85	85	85	85	123	121	128	130
		Without Free cooling	kg	74	74	74	74	74	107	98	109	111
			kg	67	93	93	87	93	109	102	125	130



Inverter Version

i-HED i-HCAT			0031		0051		0071	
N° Circuits / N°Compressors			1/1		1/1		1/1	
Refrigerant			R410A		R410A		R410A	
Power supply			V/Ph/Hz		230/1/50		400/3N/50	
COOLING CAPACITY			MAX	MIN	MAX	MIN	MAX	MIN
Total cooling capacity	(1)	kW	9,73	4,34	12,6	4,84	17,3	6,97
Sensible cooling capacity	(1)	kW	7,29	4,34	11,0	4,84	15,4	6,97
SHR	(1)		0,75	1,00	0,87	1,00	0,89	1,00
Compressors power input	(1)	kW	2,38	0,75	3,18	0,78	4,23	1,10
Evaporator air flow		m³/h	1600	800	3200	1600	3900	1950
Free-cooling air flow (opt.)		m³/h	1600	800	3200	1600	3900	1950
Evaporator fan 48 V DC power input (opt.)		kW	0,31	0,09	0,49	0,15	0,50	0,15
Evaporator fan AC power input		kW	0,21	0,16	0,52	0,39	0,54	0,41
Condenser air flow		m³/h	3200	3200	6400	6400	8640	8640
Condenser fan AC power input		kW	0,13	0,13	0,25	0,25	0,53	0,53
Electric heater capacity (opt.)		kW		1,7		3,4		3,4
Max. outdoor temperature (BASIC/LT)		°C		48		48		48
Min. outdoor temperature (BASIC)		°C		-20		-20		-20
Min. outdoor temperature (LT)		°C		-35		-35		-35
Outdoor sound pressure level	(2)	dB(A)		56		56		58

Dimensions and Weight

Width	i-HED	With Free cooling	mm	1500	1523	1618
		Without Free cooling	mm	1060	1236	1236
	i-HCAT		mm	900	900	1200
Depth	i-HED	With Free cooling	mm	990	1100	1340
		Without Free cooling	mm	990	1100	1340
	i-HCAT		mm	420	420	550
Height	i-HED	With Free cooling	mm	310	400	450
		Without Free cooling	mm	310	405	450
	i-HCAT		mm	990	1240	1200
Net weight	i-HED	With Free cooling	kg	85	120	155
		Without Free cooling	kg	74	109	125
			kg	100	108	175

Notes

(1) Ref. Conditions: Indoor=27°C, 45%UR Outdoor=35°C

(2) Measured at a height of 1 m and 1 m from the front of the unit in free field

Packaged air conditioners for telecommunication shelters

Free Cooling



Unit description

Available with cooling capacity from 1,9 to 15 kW. They are direct expansion packaged systems for indoor installation, which are fitted with external panels in powder coated steel sheets.

The units can be fitted with a Free Cooling damper (optional) that ensures 30% annual energy savings compared to standard systems, while the evaporating section fan works on a direct current at 48 Volts for a reliable operation even in an emergency situation. (optional)

Climaveneta units are made to ensure a standard level of operation even under extreme environmental conditions with temperatures of up to +48°C. MID/i-MID are available in two different versions: in the UNDER units, the outlet air flow is flush to the ground and pointed downwards, while in the OVER versions (for MID units only) the air flow inlet is from the front side and the air flow outlet is upwards or frontal.

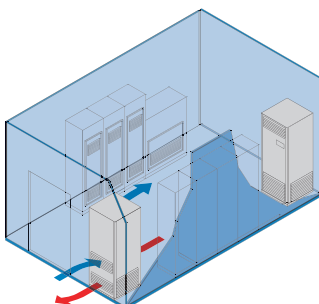
Features

- ✓ Structure and panelling in electrogalvanised powder coated steel for maximum resistance to rust.
- ✓ Total reliability and functionality of the compressor and all other components guaranteed by leading companies in the telecoms sector.
- ✓ Both horizontal (ceiling) and vertical (wall) installations of HED/i-HED available (universal installation).
- ✓ Contacts for alarms and the machine's functioning state signals.
- ✓ Universal terminal board for complete outer control of the PLC unit.
- ✓ Condensing control for lower noise levels.
- ✓ Safety pressure switches.
- ✓ Condensing coil protection grills.
- ✓ User terminal supplied as standard.
- ✓ Wide range of accessories for easy and correct installation, and for an efficient air treatment system.
- ✓ Widespread after sales network

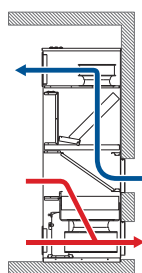
Main options

- ✓ Electric heating elements.
- ✓ Serial cards for BMS interconnection.
- ✓ 48V DC power supply for emergency situations.
- ✓ Free Cooling damper with opening from 0 to 100%.

Indoor

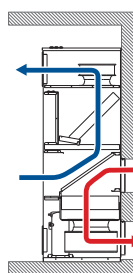


Free Cooling

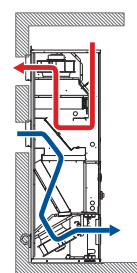


Over

Mechanical

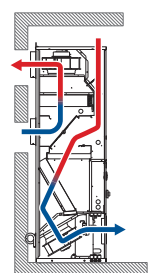


Free Cooling



Under

Mechanical





ON/OFF Version

MID			0001	0003	0004	0011	0021	0021	0031	0031	0041	0051	0056	0061
N° Circuits / N°Compressors			1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Refrigerant			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Power supply			V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3N/50	230/1/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50
COOLING CAPACITY														
Total cooling capacity	(1)	kW	1,95	2,91	3,45	4,94	6,09	6,09	8,14	8,01	9,52	10,6	13,8	14,8
Sensible cooling capacity	(1)	kW	1,42	2,67	2,88	4,94	5,49	5,49	6,72	6,66	8,64	9,07	12,5	12,9
SHR	(1)		0,73	0,92	0,83	1,00	0,90	0,90	0,83	0,83	0,91	0,85	0,90	0,87
Compressors power input	(1)	kW	0,60	0,81	0,98	1,18	1,69	1,62	2,33	2,26	2,35	2,78	3,51	4,09
Evaporator air flow		m³/h	300	990	990	1450	1450	1450	1450	1450	2200	2200	3200	3200
Free-cooling air flow (opt.)		m³/h	300	990	990	1450	1450	1450	1450	1450	2200	2200	3200	3200
Evaporator fan 48 V DC power input (opt.)		kW	0,04	0,18	0,18	0,24	0,24	0,24	0,25	0,25	0,45	0,45	0,49	0,49
Evaporator fan AC power input		kW	0,06	0,15	0,15	0,26	0,26	0,26	0,26	0,26	0,48	0,48	0,52	0,98
Condenser air flow		m³/h	500	1210	1210	2600	2600	2600	2600	2600	3700	3700	4500	4500
Condenser fan AC power input		kW	0,14	0,23	0,23	0,73	0,73	0,73	0,73	0,73	0,79	0,79	0,83	0,83
Electric heater capacity (opt.)		kW	1,00	1,00	1,00	1,70	1,70	1,70	1,70	1,70	3,40	3,40	3,40	3,40
Max. outdoor temperature (BASIC/LT)		°C	48	48	48	48	48	48	48	48	48	48	48	48
Min. outdoor temperature (BASIC)		°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
Min. outdoor temperature (LT)		°C	n.a.	n.a.	n.a.	-35	-35	-35	-35	-35	-35	-35	-35	-35
Outdoor sound pressure level	(2)	dB(A)	49	52	52	53	53	53	54	54	56	56	60	61

Dimensions and Weight

Width	OVER	mm	394	n.a.	n.a.	650	650	650	650	650	895	895	895	895
	UNDER	mm	n.a.	505	505	650	650	650	650	650	895	895	895	895
Depth	OVER	mm	250	n.a.	n.a.	650	650	650	650	650	750	750	750	750
	UNDER	mm	n.a.	395	395	650	650	650	650	650	750	750	750	750
Height	OVER	mm	900	n.a.	n.a.	2075	2075	2075	2075	2075	2050	2050	2050	2050
	UNDER	mm	n.a.	1265	1265	2000	2000	2000	2000	2000	2050	2050	2050	2050
Net weight	OVER	kg	43,5	n.a.	n.a.	163	176	176	172	185	262	270	275	290
	UNDER	kg	n.a.	85	85	180	193	193	189	202	252	260	265	280

Inverter Version



i-MID			0031		0051		0061	
N° Circuits / N°Compressors			1/1		1/1		1/1	
Refrigerant			R410A		R410A		R410A	
Power supply			V/Ph/Hz		230/1/50		400/3N/50	
COOLING CAPACITY			MAX	MIN	MAX	MIN	MAX	MIN
Total cooling capacity	(1)	kW	9,53	4,34	12,3	4,84	15,1	6,58
Sensible cooling capacity	(1)	kW	7,09	4,34	10,7	4,84	12,8	6,16
SHR	(1)		0,74	1,00	0,87	1,00	0,85	0,94
Compressors power input	(1)	kW	2,37	0,75	3,18	0,78	4,66	1,10
Evaporator air flow		m³/h	1600	800	3200	1600	3200	1600
Free-cooling air flow (opt.)		m³/h	1600	800	3200	1600	3200	1600
Evaporator fan 48 V DC power input (opt.)		kW	0,25	0,08	0,48	0,14	0,49	0,15
Evaporator fan AC power input		kW	0,26	0,20	0,48	0,14	0,98	0,29
Condenser air flow		m³/h	2600	2600	4500	4500	4500	4500
Condenser fan AC power input		kW	0,73	0,73	0,75	0,75	0,83	0,83
Electric heater capacity (opt.)		kW		1,7		3,4		3,4
Max. outdoor temperature (BASIC)		°C		48		48		48
Min. outdoor temperature (BASIC)		°C		-20		-20		-20
Outdoor sound pressure level	(2)	dB(A)		54		56		61

Dimensions and Weight

Width	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	650	895	895
Depth	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	650	750	750
Height	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	2000	2050	2050
Net weight	OVER	kg	n.a.	n.a.	n.a.
	UNDER	kg	205	246	284

Notes

(1) Ref. Conditions: Indoor=27°C, 45%UR Outdoor=35°C

(2) Measured at a height of 1 m and 1 m from the front of the unit in free field

Packaged air conditioners for telecommunication shelters

Free Cooling



Unit description

The MED/i-MED air conditioners for telecommunication shelters are direct expansion packaged systems for outdoor installation.

Available with cooling capacities from 2 to 20kW, all the units are fitted with external panelling in electrogalvanised powder coated steel sheets. The units can be fitted with a Free Cooling damper (optional) that ensures 30% annual energy savings compared to a traditional solution. The evaporating fan works on a constant current of 48 Volts to ensure reliable operation even in an emergency situation.

MED and i-MED units are available in two different versions: with air flow outlet from the upper side (OVER) or from the bottom (UNDER).

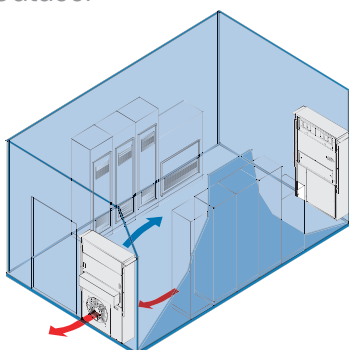
Features

- ✓ Structure and panelling in electrogalvanised powder coated steel sheets for maximum resistance to rust. (Peraluman panelling available upon request)
- ✓ Total reliability and functionality of the compressor and all other components guaranteed by leading companies in the telecoms sector.
- ✓ Contacts for alarms and the machine's functioning state signals.
- ✓ Universal terminal board for complete outer control of the PLC unit.
- ✓ Condensing control for lower noise levels.
- ✓ Safety pressure switches.
- ✓ Condensing coil protection grills.
- ✓ User terminal supplied as standard.
- ✓ Wide range of accessories for easy and correct installation, and for an efficient air treatment system.
- ✓ Widespread after sales network

Main options

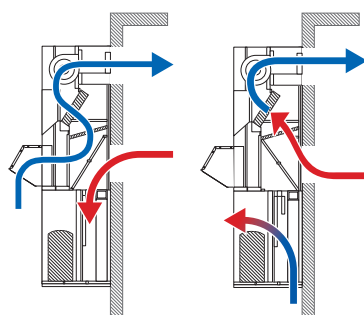
- ✓ Electric heating elements.
- ✓ Serial cards for BMS interconnection.
- ✓ 48V DC power supply for emergency situations.
- ✓ Free Cooling damper with opening from 0 to 100%.

Outdoor



Free Cooling

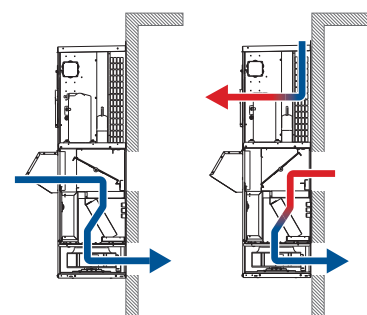
Mechanical



Over

Free Cooling

Mechanical



Under



ON/OFF Version

MED		0001	0003	0004	0011	0021	0021	0031	0031	0041	0051	0056	0061	0071	0091
N° Circuits / N°Compressors		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Power supply		V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3N/50	230/1/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50	400/3N/50
COOLING CAPACITY															
Total cooling capacity	(1) kW	1,95	2,91	3,45	4,94	6,36	6,36	8,43	8,34	9,72	10,6	14,3	16,8	18,4	20,6
Sensible cooling capacity	(1) kW	1,42	2,67	2,88	4,94	5,65	5,65	6,77	6,73	9,18	9,53	12,5	14,2	14,8	16,6
SHR	(1)	0,73	0,92	0,83	1,00	0,89	0,89	0,80	0,81	0,94	0,90	0,88	0,85	0,81	0,81
Compressors power input	(1) kW	0,60	0,81	0,98	1,18	1,62	1,62	2,27	2,26	2,38	2,74	3,41	3,90	4,85	5,61
Evaporator air flow	m³/h	300	700	700	1450	1450	1450	1600	1600	2450	2450	3200	3500	3500	3900
Free-cooling air flow (opt.)	(2) m³/h	300	700	700	1450	1450	1450	1600	1600	2450	2450	3200	3500	3500	3900
Evaporator fan 48 V DC power input (opt.)	kW	0,04	0,18	0,18	0,24	0,24	0,24	0,25	0,25	0,50	0,50	0,48	0,94	0,94	0,99
Evaporator fan AC power input	kW	n.a.	0,15	0,15	0,26	0,26	0,26	0,26	0,26	0,48	0,48	0,48	0,93	0,93	0,91
Condenser air flow	m³/h	500	1100	1100	2500	2500	2500	2500	2500	4000	4000	4900	5900	5900	5900
Condenser fan AC power input	kW	0,10	0,14	0,14	0,13	0,13	0,13	0,13	0,13	0,22	0,22	0,68	0,38	0,38	0,38
Electric heater capacity (opt.)	kW	1,00	1,00	1,00	1,70	1,70	1,70	1,70	1,70	3,40	3,40	3,40	3,40	3,40	3,40
Max. outdoor temperature (BASIC/LT)	°C	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Min. outdoor temperature (BASIC)	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
Min. outdoor temperature (LT)	°C	n.a.	n.a.	n.a.	-35	-35	-35	-35	-35	-35	-35	-35	-35	-35	-35
Outdoor sound pressure level	(3) dB(A)	49	52	52	52	52	52	52	52	54	54	58	62	62	62

Dimensions and Weight

Width	OVER	mm	394	n.a.	n.a.	970	970	970	970	970	1011	1011	1011	1178	1178	1178
	UNDER	mm	n.a.	505	505	976	976	976	976	976	1016	1016	1016	1196	1196	1196
Depth (4)	OVER	mm	250	n.a.	n.a.	500(745)	500(745)	500(745)	500(745)	500(745)	600(850)	600(850)	600(850)	777(856)	777(856)	777(856)
	UNDER	mm	n.a.	394	394	500(745)	500(745)	500(745)	500(745)	500(745)	600(840)	600(840)	600(840)	780(1025)	780(1025)	780(1025)
Height	OVER	mm	900	n.a.	n.a.	1814	1814	1814	1814	1814	2115	2115	2115	2240	2240	2240
	UNDER	mm	n.a.	1236	1236	1735	1735	1735	1735	1735	1935	1935	1935	2280	2280	2280
Net weight	OVER	kg	43,5	n.a.	n.a.	160	180	180	175	175	205	215	220	290	295	300
	UNDER	kg	n.a.	75	75	165	175	175	170	170	265	270	275	300	310	325



Inverter Version

i-MED		0031		0051		0071	
N° Circuits / N°Compressors		1/1		1/1		1/1	
Refrigerant		R410A		R410A		R410A	
Power supply		V/Ph/Hz		230/1/50		400/3N/50	
COOLING CAPACITY		MAX	MIN	MAX	MIN	MAX	MIN
Total cooling capacity	(1) kW	9,53	4,34	12,6	4,92	17,6	7,96
Sensible cooling capacity	(1) kW	7,22	4,34	11,0	4,92	15,5	7,96
SHR	(1)	0,76	1,00	0,87	1,00	0,88	1,00
Compressors power input	(1) kW	2,37	0,75	3,18	0,78	4,49	1,18
Evaporator air flow	m³/h	1600	800	3200	1600	3900	1950
Free-cooling air flow (opt.)	m³/h	1600	800	3200	1600	3900	1950
Evaporator fan 48 V DC power input (opt.)	kW	0,25	0,08	0,48	0,14	0,99	0,30
Evaporator fan AC power input	kW	0,26	0,20	0,48	0,36	0,91	0,68
Condenser air flow	m³/h	2500	2500	4000	4000	5900	5900
Condenser fan AC power input	kW	0,13	0,13	0,68	0,68	0,38	0,38
Electric heater capacity (opt.)	kW		1,70		3,40		3,40
Max. outdoor temperature (BASIC)	°C		48		48		48
Min. outdoor temperature (BASIC)	°C		-20		-20		-20
Outdoor sound pressure level	(3) dB(A)		52		54		62

Dimensions and Weight

Width	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	976	1016	1196
Depth (4)	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	500 (745)	600 (840)	780 (1025)
Height	OVER	mm	n.a.	n.a.	n.a.
	UNDER	mm	1735	1935	2280
Net weight	OVER	kg	n.a.	n.a.	n.a.
	UNDER	kg	175	230	310

Notes

- Ref. Conditions: Indoor=27°C, 45%UR Outdoor=35°C
- For MED 0001, 0003 and 0004 free cooling function is available through external extractor accessory
- Measured at a height of 1 m and 1 m from the front of the unit in free field
- The dimensions between () include rain proof cover

Free cooling unit for telecommunication shelters

Free Cooling



Unit description

Designed for the cooling of highly technological environments (telecommunication shelters and cabinets), FKO/FKI FREE COOLER units feature an advanced free cooling system that utilises the outdoor air to lower the indoor environment temperature. Outdoor air absorbed from the fan is filtered and then released to the indoor space.

The unit is available in indoor (FKI) or outdoor versions (FKO), in both cases provided with a waterproof jacket in order to avoid even a drop of water from entering the environment.

Directly managed by the PLC controller, the units can be coupled with a MED MID or HED air conditioner or with an inverter unit. This ensures getting the best advantage from the free cooling operation, whenever possible.

For the stand-alone operation an electrical board kit able to manage the unit and two further pre-existing air conditioners are also available. In pre-existing plants, this solution offers the opportunity to add the free cooling function at a later date.

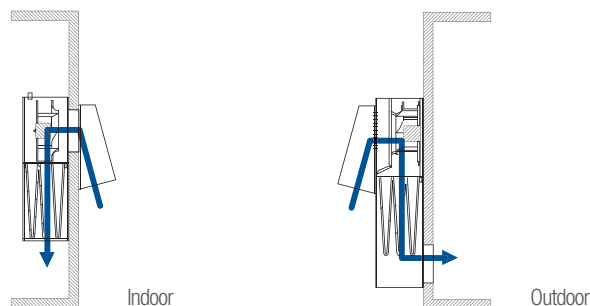
Features

- ✓ Structure and panelling in electrogalvanised powder coated steel sheets for maximum resistance to rust.
- ✓ Total reliability and functionality of the compressor and all other components guaranteed by leading companies in the telecoms sector.
- ✓ 48 VDC EC radial fan with continuous speed modulation.
- ✓ Class G3 air filter.

Main options

- ✓ Electrical panel for the unit's stand-alone management.
- ✓ Clogged filter sensor.
- ✓ Air prefilter in metal frame.

Indoor / Outdoor





FKI/FKO FREE COOLER			0021	0041	0051
VDC power supply	V		48	48	48
Max absorbed power	W		220	230	460
Max air flow	m ³ /h		2300	2450	3040
Cooling capacity	(1)	kW	7,67	8,17	10,13
EER		W/W	34,85	35,51	22,03
Max frontal sound pressure	(2)	dB(A)	62	65	66

Dimensions

Width	FKI	mm	646	646	646
	FKO	mm	646	646	646
Height	FKI	mm	955	955	955
	FKO	mm	1237	1237	1237
Depth	FKI (3)	mm	296	296	325
	FKO	mm	542	542	542

Notes

- (1) Ref. Conditions: 27°C indoor temperature -17°C outdoor temperature
(2) Measured at a height of 1 m and 1 m from the front of the unit in free field
(3) Waterproof jacket is included (LxHxP: 595x580x243)

Packaged air conditioners for telecommunication cabinets

Free Cooling



Unit description

LED packaged air conditioners for telecommunication shelters are direct expansion solutions for outdoor installation. With capacities from 2.5kW to 5,5kW, the units are fitted with external panels in electrogalvanised powder coated steel sheets or in peraluman panels upon request.

The units can be fitted with a Free Cooling damper, which offers 30% annual energy savings compared to standard systems. The evaporating section fan can optionally work on direct current at 48V to ensure operation even during emergency situations.

LED air conditioners are made to ensure a reliable operation even under extreme environmental conditions with temperatures of up to +46°C.

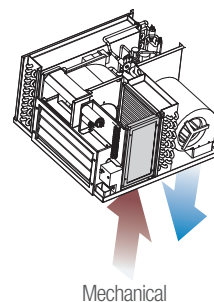
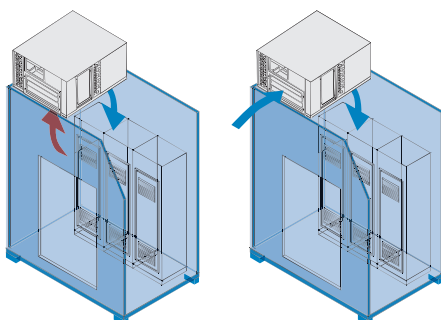
Features

- ✓ Structure and panelling in electrogalvanised powder coated steel sheets for maximum resistance to rust. (Peraluman panelling available upon request)
- ✓ Total reliability and functionality of the compressor and all other components guaranteed by leading companies in the telecoms sector.
- ✓ Contacts for alarms and the machine's functioning state signals.
- ✓ Universal terminal board for complete outer control of the PLC unity.
- ✓ Condensing control for lower noise levels.
- ✓ Safety pressure switches.
- ✓ Condensing coil protection grills.
- ✓ Wide range of accessories for easy and correct installation, and for a complete and efficient air treatment system.
- ✓ Both Mechanical and free cooling versions available
- ✓ Widespread after sales network
- ✓ Double filter (a pre-filter for external air and one for internal air).

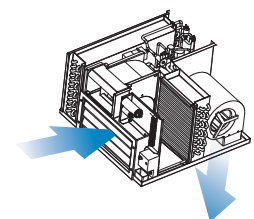
Main options

- ✓ Electric heating elements.
- ✓ Serial cards for BMS interconnection.
- ✓ 48V DC power supply for emergency situations.
- ✓ Modulating Free Cooling damper with opening from 0 to 100% .

Outdoor



Mechanical



Free Cooling



LED	0010-0010E		0015-0015E	
Power supply	V/Ph/Hz	220/1/50		
Total cooling capacity	(1) kW	2,5	5,7	
Sensible cooling capacity	(1) kW	2,2	5,2	
Compressor AC power input	(1) kW	0,84	1,6	
Condenser AC power input	kW	0,10	0,40	
Evaporator AC power input	kW	0,18	0,9	
Evaporator fan DC power input (48VDC) (opz.)	kW	0,1	0,14	
Free cooling air flow (opz.)	m ³ /h	470	1500	
Evaporator air flow	m ³ /h	500	1600	
Condenser max air flow	m ³ /h	750	2000	
Outdoor sound pressure level at 1mt	dB(A)	50	53	
Outdoor sound pressure level at 5mt	dB(A)	36	39	
Max outdoor temperature	°C	46	46	
Electric heating (opz.)	kW	1	1,5	

Dimensions

LED	0010	0010E	0015-0015E	
Width	mm	600	750	1000
Depth	mm	600	750	800
Height	mm	353	353	410

Notes

(1) Ref. Conditions: 27°C indoor temperature, 45%UR, 35°C outdoor temperature

“Experience is by far the best proof”

Sir Francis Bacon
British Philosopher (1561 - 1626)

Climaveneta solutions for telecommunication applications, with their unbeatable advantages in terms of efficiency, quality and reliability, are already the preferred choice in the most challenging and prestigious projects, all around the world and with many major brands.

TELECOM ITALIA

2015

Various application in Italy



Application:
Telecommunications

Cooling capacity:
28000 kW

Installed machines:
Over 3500 MED, MID,
HED+HCAT, FKI FKO units

Minera Spence

2012

Sierra Gorda - Chile



Application:
Industrial process

Cooling capacity:
3094 kW

Installed machines:
130 x HED+HCAT 0041
+ 42 x HED+HCAT 0056
+ 78 x HED +HCAT 0061

Kyivstar

Ukraine



Application:
Telecommunications

Cooling capacity:
10176 kW

Installed machines:
1600 x MED 0021

Reggefiber

2013

The Netherlands



Application:
Telecommunications

Cooling capacity:
7295 kW

Installed machines:
77 x MID 0031/S
+ 485 x MID 0056/S

Mobilis

2013

Various applications
in Algeria



Application:
Telecommunications

Cooling capacity:
3650 kW

Installed machines:
433 x MED 0031/S

BH Telecom

2014

Various applications in
Bosnia and Herzegovina



Application:
Telecommunications

Cooling capacity:
1000 kW

Installed machines:
Over 100 units
MED, MID, HED + HCAT

Telefónica

2015

Various applications
in Spain



Application:
Telecommunications

Cooling capacity:
1680 kW

Installed machines:
Over 200 units
MED, MID, HED + HCAT

Guardia di Finanza

2015

Lamezia Terme (CZ) - Italy



Application:
Data center

Cooling capacity:
135 kW

Installed machines:
8 x MID 0061
+ 2 x MID 0031



A Group Company of **MITSUBISHI ELECTRIC**

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