



- Wall-mount Environmental Control Systems.
- Achieve PUE as low as 1.04.
- Up to 85% reduction in OPEX costs.
- Up to 80% reduction in CO2 emissions.
- Fully packaged "plug & play" solution.
- Independent fresh air free cooling with 100% mechanical cooling backup.
- Designed for R410A refrigerant.
- Integrated microprocessor control system.
- Fully BMS comms compatible.
- Remote monitor & logging



Precision Cooling System

Intelligent, Compact, Efficient

The EC System is a fully packaged, outdoor cooling unit which has been developed to cool high density modular data centres, telecoms shelters, re-locatable equipment buildings (REB), mobile base stations, etc.

Developed to avoid using indoor space, EC units are developed for seamless outdoor installation. The system offers an ideal solution for both new installation and retrofit.

The Akrivis system dual cooling mode has been developed to maximise energy efficient free cooling operation, while keeping mechanical cooling to an absolute minimum.



Mechanical Cooling

When ambient temperatures are above setpoint, the Akrivis EC systems intelligent controls deactivates free cooling and enables mechanical DX cooling. The DX systems utilizes a variable speed compressor, which ensures accurate temperature control while offering best in class efficiencies, reducing power consumption.



Independent Free Cooling

The Akrivis EC cooling system contains a fully independent 48VDC free cooling system that provides free cooling when ambient conditions allow, without the need for dampers. Our intelligent controls utilize EC fans which modulate depending on the IT load and the ambient temperature. This ensures mechanical cooling is kept to a minimum and energy savings are maximized.

Standard Features

- 3 base sizes
- Capacities ranging from 5-25kW
- Single & Dual circuits
- PUE as low as 1.04
- Dual cooling options for low energy costs
 - o Free cooling
 - o Mechanical cooling
- Inverter driven compressor giving low start current, and more precise temperature control
- Fully serviceable from the front, no side access required
- R410A Refrigerant
- Independent 48V Free Cooling fan offering optional backup during mains power failure
- EC fans allowing for precise air flow rates and over 70% more efficient than AC fans
- Wide operating range -20°C to +50°C
- G4 filtration with pressure monitoring
- High quality powder coat paint in customer specific RAL colours
- Multiple units on site are networked to optimise load sharing and duty/assist operations
- Remote monitoring and on-site controller access via Ethernet
- A single touch screen display can be used to manage the various controllers connected to the same local network

Optional Features

- Electric heating
- R513A Refrigerant
- Direct driven compressor
- User specific controls
- Sand trap louvres
- F7 filtration to meet ASHRAE TC9 & ISO 14644-1
- VOC sensors
- Ultra-Fine Particle Sensors
- Site supervision Boss System
- Centralized data collection
- Mobile ready local supervisor

Technical Specifications

Technical Data – 400VAC 50Hz

		EC12	EC18	EC25
Cooling Range ¹	kW	5-12	12-18	18-25
Free Cooling Capacity ²	kW	12	18	25
DX Cooling Capacity (Total) ³	kW	12	18	25
DX Cooling Capacity (Sensible) ³	kW	12	18	25
Max Free Cooling Airflow	m ³ /h	4300	7000	8600
DX Cooling Airflow	m ³ /h	5000	6500	7500
EER	-	10.9	11.4	11.7
SHR	-	1	1	1
Refrigerant	-	R410A	R410A	R410A
Sound Pressure Level ⁴	dB(A)	66	65	67
Dimensions (WxDxH)	mm	970x800x2470	1200x800x2470	1480x800x2470
Gross Weight	kg	400	450	500

1. Cooling range based on variable speed DX circuit and Variable speed Free Cooling Circuit

2. The nominal free cooling capacity is based upon a maximum airflow and 9°C ΔT between ambient and room air.

3. The nominal DX capacity is based upon gross total cooling capacity at 30°C room air conditions, 35°C ambient temperature.

4. Measured with 35°C outdoor temperature, at 2m from the unit, in free field conditions

Performance Data

		Ambient °C					
	Room Air °C	25°C	30°C	35°C	40°C	45°C	50°C
EC12	24°C	10.5	10	9	8	7	6
	27°C	12	11.5	10.5	9.5	8	7
	30°C	13.5	13	12	10.5	9	8
EC18	24°C	17	16.5	15.5	14	12.5	11
	27°C	18.5	18	17	15.5	14	12.5
	30°C	19.5	19	18	16	14.5	13
EC25	24°C	22	21	20	18	16.5	15.5
	27°C	25	24	23.5	22	20.5	18
	30°C	27	26	25	23	21.5	19

1. All data is nominal and is based on unit typical running conditions.

2. Specific regional data available on request.

Intelligent Controls

Tailor made software for each solution

Utilising the Carel family of controllers which use a Multitasking Operating System, makes local and remote connectivity key innovation of the EC System. Real time monitoring of operating conditions on installed units, recording of data in abnormal situations, maintenance management, setting desired temperature are just some of the features available at any time and from anywhere.



Controls Features

- Integrated Ethernet & USB Interfaces
- BMS & Field Bus connectivity
- Open protocols: SNMP, Modbus®, BACnet™, HTTP, FTP
- Flexible I/O
- Remote connectivity
- Centralized data collection
- Wide range of HMI user interfaces
- Mobile ready local supervisor

Reduced Operational Cost

Minimised environmental impact

The EC System uses the latest technologies to reduce the impact on the environment. EBM Papst EC fans ensure maximum potential savings and ensure low noise levels for use in residential areas. Our inverter driven compressors are extremely energy efficient in partial load mode and guarantee a constant supply temperature compared to fixed speed systems.

Spend up to 100% of the year free cooling

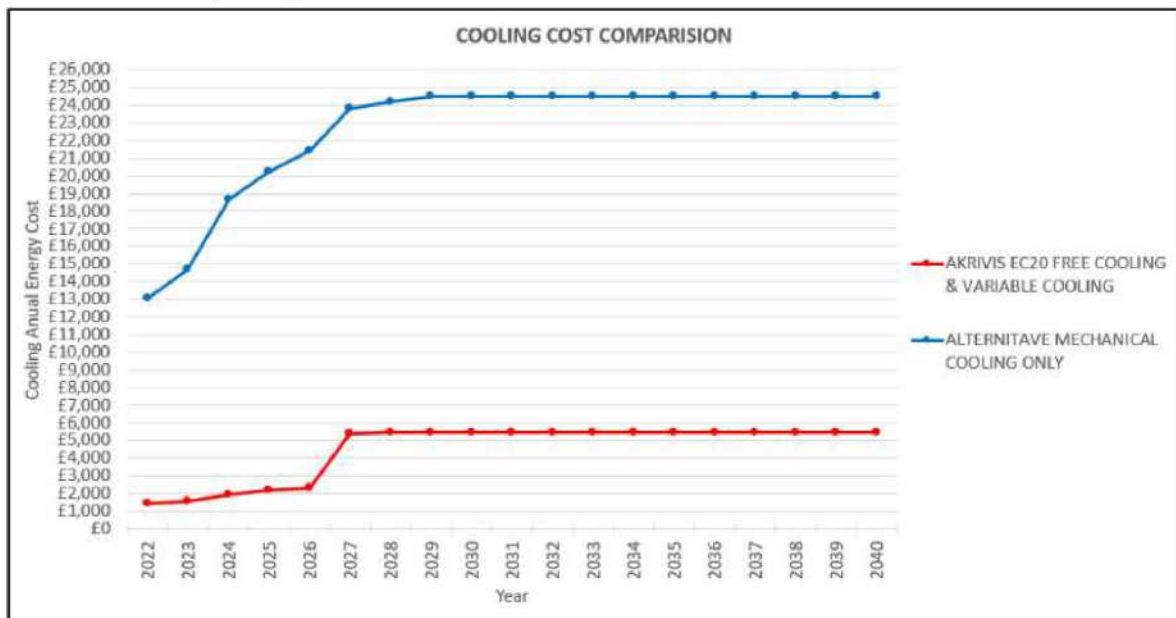
Specifically designed to reduce carbon footprint and minimise energy consumption, the EC System utilises free cooling as much as possible. As technologies develop and higher room set point temperatures are permitted, the savings can grow exponentially. The below table outlines the potential free cooling available across several cities based on an array of setpoints.

Setpoint	Free Cooling Available	LONDON	FRANKFURT	AMSTERDAM	MUSCAT	NARIOBI	VANCOUVER	NEW YORK
22°C	Up to 17°C	7250.98 83%	7643.88 87%	8473.46 97%	182.09 2%	3414.14 39%	7477.29 85%	6333.12 72%
25°C	Up to 20°C	8196.77 94%	8236.37 94%	8205.26 94%	822.92 9%	5615.35 64%	8273.97 94%	7099.61 81%
27°C	Up to 22°C	8493.64 97%	8466.81 97%	8473.46 97%	1551.22 18%	6693.44 76%	8572.45 98%	7642.14 87%
29°C	Up to 24°C	8641.23 99%	8608.35 98%	8615.40 98%	2436.68 28%	7650.79 87%	8700.97 99%	8096.16 92%
31°C	Up to 26°C	8716.82 99%	8690.49 99%	8691.66 99%	3349.80 38%	8367.77 96%	8744.00 99%	8340.80 95%
33°C	Up to 28°C	8748.15 99%	8731.60 99%	8732.65 99%	4314.91 49%	8688.53 99%	8756.96 99%	8575.76 98%
35°C	Up to 30°C	8756.60 99%	8751.09 100%	8751.75 100%	5485.58 63%	8755.82 100%	8759.20 100%	8675.66 99%

*BASED ON FREE COOL ΔT: 5°C

Reduce OPEX costs by up to 85%

By utilizing free cooling and state of the art variable speed mechanical cooling to ensure maximum efficiency, the EC Series AC unit can reduce Data Centre operational costs by up to 85% over the life of the system. This also leads to a reduction in carbon emissions by up to 80%, the equivalent of 50,000 trees per system. This leads to a PUE as low as 1.04, making the EC Series cooling system one of the most efficient on the market. The below table shows a comparison between an Akrivis 25kW system and a competitor system based on a varying IT load over an 18 year period.





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