

PRECISION • EFFICIENCY • CREATIVITY

# PRODUCT CATALOGUE

*“Because the best way to predict  
the future is to invent it.”*

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Citec CNR units are developed specially for high heat density cooling application. They are designed to be located close to the heat source for effective heat removal. The units are available for both Direct Expansion and Chilled Water systems and can be an alternative or complement to CITEC room cooling units as complete cooling solution for high heat density data center.

## BENEFITS

### HOT SPOT MANAGEMENT

- Provides extra cooling where needed
- DC Inverter technology for Direct Expansion system
- Airflow modulation to adapt to actual thermal load
- Compatible with most racks

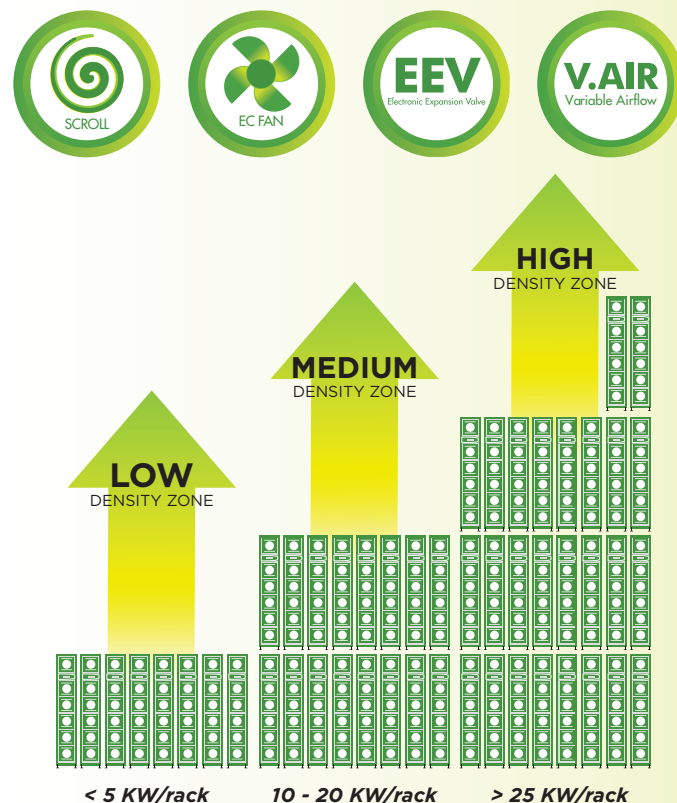
### SCALABILITY

- CITEC In-Row is suitable for 42U and 48U racks
- Units can adapt to the thermal load of the server
- Modular design; easy to upgrade as data center capacity grows



## FEATURES

- Highly efficient EC fans reduce noise levels and energy consumption:
  - Further noise level reduction of 4-5 dB
  - Further absorbed power reduction by 15%
- Chilled Water units with equal percentage characteristic modulating ball valve ensures excellent water flow control.
- Direct Expansion units with DC inverter compressor and electric expansion valve for wider modulating range of capacity control
- CITEC's in-house control algorithm prevents stratification of the air temperature inside the rack through the use of 2 sensors, contributing to ventilation efficiency



# TECHNICAL SPECIFICATION

## CITEC CNR

UNIT MODEL		CHILLED WATER		DIRECT EXPANSION	
		28C	55C	20A	42A
Gross Total Capacity	kW	27.8	54.1	20.1	41.8
Gross Sensible Capacity	kW	27.8	54.1	20.1	41.8
S.H.R.		1.00	1.00	1.00	1.00

### GENERAL DATA

Nominal Air Flow	m <sup>3</sup> /s	1.30	2.65	0.90	2.08
No. of Fan(s)		6	2	4	2
Nominal Condenser	HEC	N/A	N/A	274	574
Sound Level	dBA	82	84	80	83
Waterflow Rate	l/s	1.33	2.58	N/A	N/A
Waterside Pressure Drop	kPa	113.8	96.5	N/A	N/A
Power Supply		400V/3ph/50Hz	400V/3ph/50Hz	400V/3ph/50Hz	400V/3ph/50Hz
Piping & Electrical Connections*		Top or Bottom	Top or Bottom	Top or Bottom	Top or Bottom

### STANDARD AIR FILTER

Type		Washable	Washable	Washable	Washable
Rating		G2 (EU2)	G2 (EU2)	G2 (EU2)	G2 (EU2)
Thickness	mm	25	25	25	25

### UNIT DIMENSION & WEIGHT

Width	mm	300	600	300	600
Depth	mm	1094	1094	1094	1094
Height (note 3)	mm	2011	2011	2011	2011
Gross Weight	kg	190	275	210	310
Minimum Service Allowance	mm	725	725	725	725

### Notes:

- 1) For chilled water unit, cooling capacity is based on 35°C, 23.8%RH, 10/15°C water temperature, 20Pa ESP.
- 2) For direct expansion unit, cooling capacity is based on 35°C, 23.8%RH, 45°C condensing temperature, R410A refrigerant, 20Pa ESP. Variable speed compressor is operating at 80% of maximum speed.
- 3) Height shown is inclusive of caster wheels.
- 4) Sound level is based on 1.5m in free field conditions.
- 5) Service allowance is for front & rear of unit.
- 6) \* Need to specify upon ordering.

Due to our policy of continuous development and improvement, the specifications and data herein are subjected to change without notice. We must therefore reserve the right to supply equipment that may differ from that described and illustrated herein. All information, including illustrations, contained in this brochure, is believed to be accurate and reliable. Users, however, should independently evaluate the suitability of each product for their own application. CITEC makes no warranties as to accuracy or completeness of the information, and disclaims any liability regarding its use.