

# NRCD - NRCV

## DIRECT EXPANSION AIR CONDITIONING UNITS

FOR RACKS  
WITH HIGH DENSITY AND  
WITH COMPRESSORS  
DC INVERTER



NRCD		0100			0260			0400			0450		
Capacity ratio	%	Min	50%	Max	Min	50%	Max	Min	50%	Max	Min	50%	Max
Inlet air conditions 30°C - 35% r.h.; Condensing temperature 45°C													
Total cooling capacity	kW	2.6	7.7	12.6	8.1	18.2	26.5	13.4	29.6	42.1	16.6	34.4	48.1
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EER of the refrigerating cycle	-	4.9	5.2	4.3	5.4	4.6	3.7	5.6	4.8	3.9	6.2	4.8	3.7
Inlet air conditions 35°C - 30% r.h.; Condensing temperature 45°C													
Total cooling capacity	kW	2.6	7.7	13.3	9.0	20.1	28.9	14.8	32.6	46.7	18.3	37.8	52.4
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EER of the refrigerating cycle	-	4.9	5.2	4.5	6.0	5.1	4.1	6.2	5.3	4.4	6.8	5.3	4.1
Evaporator air flow rate	m <sup>3</sup> /h	1350	2025	2700	2500	3750	5000	4500	6750	9000	4500	6750	9000
Total Power Input	kW	0.6	1.6	3.2	1.6	4.2	7.8	2.8	7.7	13.4	3.1	8.6	15.7
Total Input Current	A	2.9	8.0	15.4	2.5	6.7	12.5	4.4	12.4	21.5	4.9	13.9	25.1
Electrical power supply	V-/Hz	230 / 1 / 50			400 / 3+N / 50								
Dimensions (L x H x D)	mm	300 x 2000 x 1200			600 x 2002 x 1200								
NRCV		0140			0240			0330					
Capacity ratio	%	Min	50%	Max	Min	50%	Max	Min	50%	Max			
Inlet air conditions 30°C - 35% r.h.; Condensing temperature 45°C													
Total cooling capacity	kW	3.7	8.8	13.3	8	17.7	25.7	11.5	23.2	35.6			
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9			
EER of the refrigerating cycle	-	5.3	5.2	4.3	5.5	4.7	3.8	4.6	3.7	3.5			
Inlet air conditions 35°C - 30% r.h.; Condensing temperature 45°C													
Total cooling capacity	kW	3.7	9.2	14.9	8.8	19.6	28.3	12.7	26.7	38.6			
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9			
EER of the refrigerating cycle	-	5.3	5.5	4.8	6.1	5.2	4.2	5.6	4.5	3.8			
Evaporator air flow rate	m <sup>3</sup> /h	1550	2325	3100	2650	3975	5300	2650	3975	5300			
Total Power Input	kW	0.8	1.9	3.4	1.6	4.2	7.6	2.5	6.3	11.1			
Total Input Current	A	3.8	9.0	16.8	3.1	7.9	14.7	4.5	11.4	20.3			
Electrical power supply	V-/Hz	230 / 1 / 50											
Dimensions of indoor unit (L x H x D)	mm	300x2000x1200											
Dimensions of outdoor unit (L x H x D)	mm	1270x882x463			1565x1275x605			1965x1490x950					

Also available with 60 Hz power supply

## DIRECT EXPANSION AIR CONDITIONING UNITS FOR HIGH-DENSITY RACKS WITH DC INVERTER COMPRESSORS

# NRCD - NRCV



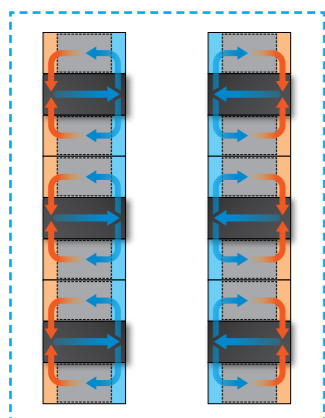
13 - 48 kW

# NRCD-NRCV

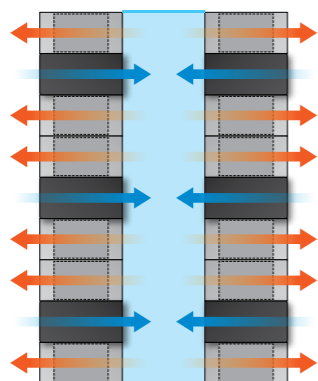
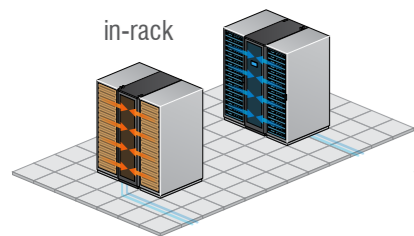
## DIRECT EXPANSION AIR CONDITIONING UNITS FOR HIGH-DENSITY RACKS WITH DC INVERTER COMPRESSORS

### IN RACK OR IN ROW CONFIGURATION

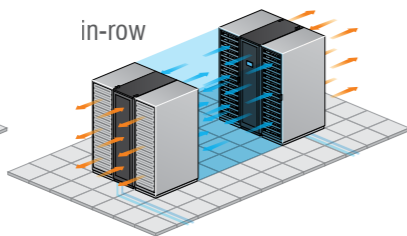
Depending on the rack units cooling mode, which can be made through a cold-aisle/hot-aisle compartment or directly inside the rack itself, the **NRC** range is available in two different configurations:



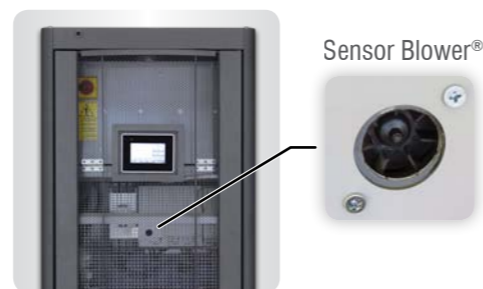
• the **"In Rack"** configuration, where a closed circuit is created between the rack cooler and the rack unit.



• the **"In Row"** configuration, where cold air is released in the «cold aisle» towards each rack unit and the hot air is extracted by the rack cooler in the "hot aisle".



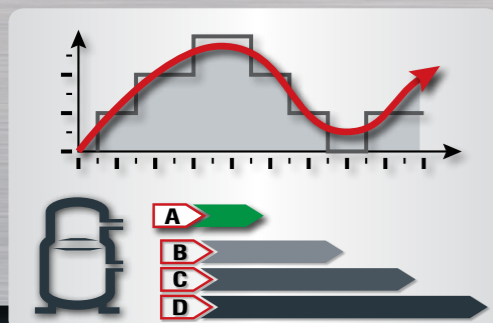
### SENSOR BLOWER



The Sensor Blower® device made by HiRef allows to measure the air temperature in the hot aisle (unit return) with the fans turned off, ensuring prompt restoration of the set-point and precision in temperature control, but most importantly avoiding any energy waste.



### EFFICIENCY AND PRECISION



The integrated microprocessor allows, as the thermal load changes, the combined modulation of the air flow rate through control of the EC fans (standard feature) and of the cooling capacity through the frequency management of the DC inverter compressors (standard feature). This allows not only a very accurate control of the ambient thermohygrometric parameters, but also the highest energy savings at partial loads.

The rack coolers of the **NRC** range by HiRef represent the ideal solution for the cooling of Rack units in small-and medium-sized Data Centers, where accurate control of the ambient thermohygrometric parameters is requested 24 hours a day. They are particularly suited for small installations where a chiller cannot be used or where the surrounding constraints do not allow water in the server room. The internal design and choice of components are exclusively aimed at obtaining high levels of energy efficiency, in order to minimise the operating costs of the entire system.

### SAFETY IN THE SERVER ROOM



All models of the **NRC** range are factory-fitted with DX coils with hydrophilic treatment of the fins. The particular coating, combined with proper design of the air flow passage velocity, encourages condensate collection during the dehumidification process, thus avoiding water drops being dragged outside of the unit.

### HIGH POWER DENSITY

**66.8**  
kW/m<sup>2</sup>

The internal design and the special way in which the components are arranged allow the use of an evaporating coil with large heat exchange surface. Nevertheless, the footprint of the unit stays small, taking full advantage of the space taken up in the server room.

- » Refrigerant R410A
- » EC fans as standard feature
- » Humidifying and dehumidifying function
- » Refrigerant connections from the top or bottom of the unit
- » Double stainless steel condensate drip tank
- » BLDC Twin Rotary high performance compressors as standard equipment

