

NRG

DIRECT EXPANSION CRAC UNITS

WITH INVERTER DRIVEN BLDC COMPRESSORS



Also available with 60 Hz power supply

		0091	0131	0241	0341	0462	0682	0902
Inlet air conditions 24°C - 50% r.h.; Condensing temperature 45°C								
Total cooling capacity	kW	9.3	12.6	25.2	37.1	48.5	75.2	90.3
SHR	-	0.9	0.9	0.9	0.8	1.0	0.9	0.9
EER of the refrigerating cycle	-	3.7	4.0	3.7	3.6	3.6	3.7	3.4
Inlet air conditions 30°C - 35% r.h.; Condensing temperature 45°C								
Total cooling capacity	kW	9.9	14.2	28.4	39.8	54.4	81.7	98.5
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EER of the refrigerating cycle	-	4.0	4.6	4.2	3.9	4.0	4.0	3.7
Air Flow Rate	m ³ /h	2150	3700	6800	7280	14150	19420	22500
Total Power Input	kW	2.7	3.6	7.8	11.5	16.1	23.4	29.7
Total Input Current	A	4.3	5.6	12.5	18.4	25.7	37.6	47.8
Dimensions [L x H x D]	mm	600 x	900 x	1010 x	1280 x	2030 x	2510 x	2510 x
		1875 x	1875 x	1998 x	1998 x	1998 x	1998 x	1998 x
		600	600	805	805	805	805	950

ITALIAN
COOLING
SOLUTIONS

HiRef

DIRECT EXPANSION CRAC UNITS WITH INVERTER DRIVEN BLDC COMPRESSORS

NRG



10 - 99 kW

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NRG

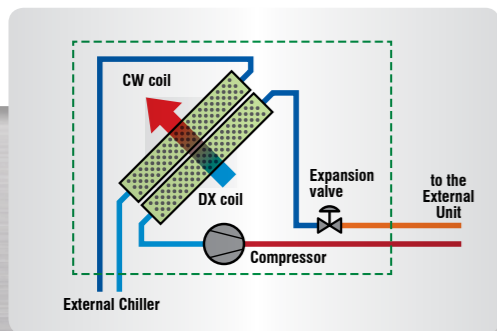
DIRECT EXPANSION CRAC UNITS WITH INVERTER DRIVEN BLDC COMPRESSORS

NRG: TOWARD THE MAXIMUM SYSTEM EFFICIENCY



The design choices of the **NRG** range are aimed to get very accurate adjustment of the thermohygrometric parameters in the server room, with high levels of energy efficiency. Especially during partial load operations, the variable-speed Scroll compressors, the electronically controlled expansion valve and the EC fans (standard feature) are managed in order to achieve contained PUE values of the system.

THE REDUNDANCE OF DUAL-COOLING



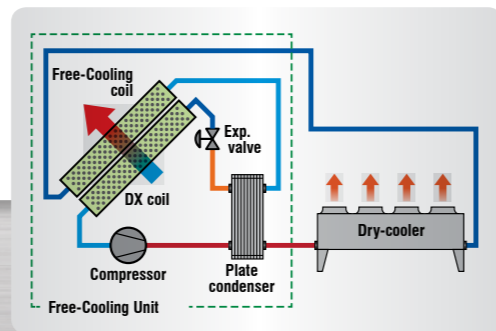
The “Dual Cooling” version is equipped, in addition to the DX evaporating coil, with a CW coil receiving chilled water by, for instance, a chiller. In this way, the requested cooling capacity can be delivered even in case of malfunction of the main refrigerating circuit, guaranteeing the system the maximum redundancy possible.

SAFETY IN THE SERVER ROOM



All models of the **NRG** 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.

THE EFFICIENCY OF FREE-COOLING



When the outdoor air temperature is lower than the hot air in the server room, the Dry-Cooler, sized for the condenser total heat rejection, is used to generate cooling capacity. A CW coil, installed next to the DX coil, is in fact supplied by the chilled water produced by the Dry-Cooler and provides a part or 100% of the requested cooling capacity. The work of the compressor is reduced and, under total Free-Cooling conditions, it is turned off, with significant impact on the reduction of the PUE of the system.

The **NRG** computer room air conditioning units made by HiRef are designed for technological environments with high thermal density for which precise control of the hygrometric parameters and continuous operation are requested. The strength of the **NRG** range is represented by the modulating compressors, which can follow the thermal load with extreme precision. The use of EC fans (standard feature), of the electronically-controlled expansion valve (standard feature) and the configurations with the Dual-Cooling or the Free-Cooling system make the **NRG** units achieve high levels of performance while limiting energy consumptions, to the benefit of the PUE of the Data Centers.

EASIER ROUTINE MAINTENANCE

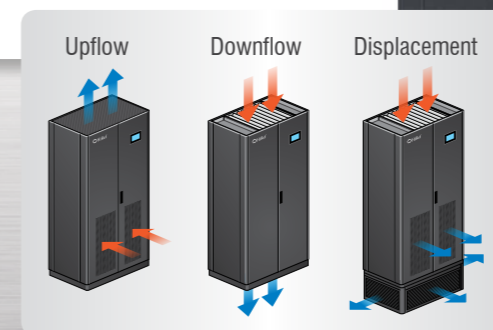


The unit was carefully designed to allow front access to the components even with the unit in operation. This aspect is advantageous for routine maintenance operations in full compliance with safety requirements.

Thanks to the different cooling configurations available, the **NRG** range is suited to a large number of applications for Data Center air conditioning:

- NRG A** Air condensed with remote condenser
- NRG Z** Water condensed with city water (15°C)
- NRG W** Water condensed with Cooling Tower or Dry Cooler
- NRG F** Water condensed and indirect Free-Cooling
- NRG D** Air condensed with remote condenser and Dual-Cooling
- NRG Q** Water condensed with city water (15°C) and Dual-Cooling
- NRG K** Water condensed with Cooling Tower or Dry Cooler and Dual-Cooling

CONFIGURATION OF THE AIR FLOW



- » R410A refrigerant
- » Re-heating systems:
 - with electrical heaters
 - with hot gas coil
 - with hot water coil
- » Electronically controlled electric expansion valve
- » Stainless steel drain pan
- » Onboard control by means of a programmable microprocessor with LCD display
- » Humidifying and dehumidifying function
- » Air flow sensor
- » G3 filter as standard feature
- » Supply and return air temperature sensors
- » Compressor compartment separate from the air flow
- » Automatic switches to protect the loads