

Platform **TRF Evolution**

NRG W/Z

DATA CENTER

INDUSTRIAL

WATER CONDENSED PERIMETER MOUNTED UNITS FOR DATA CENTERS WITH MODULATING COMPRESSORS

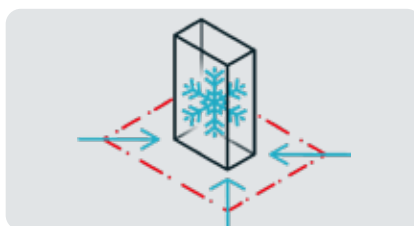
NRG W > 9-112 kW

NRG Z > 10-124 kW



The NRG W units are water-condensed perimeter cabinets. The W series uses Dry Cooler water, the Z series on the other hand uses low temperature mains water or groundwater (15°C). The NRG units of these series are monobloc units inside which the **entire cooling circuit is concentrated**, cooling is via a **brazed plate exchanger made from stainless steel AISI 304**.

The NRG Z units are water-condensed perimeter cabinets. The W series uses Dry Cooler water, the Z series on the other hand uses low temperature mains water or groundwater (15°C). The NRG units of these series are monobloc units inside which the **entire cooling circuit is concentrated**, cooling is via a **brazed plate exchanger made from stainless steel AISI 304**.



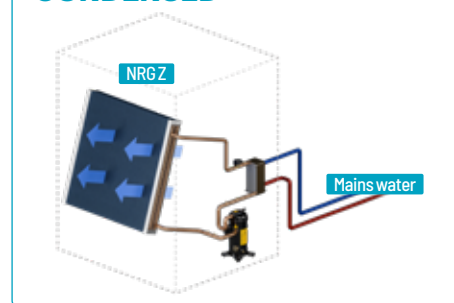
Maximised power density

The internal design and the special arrangement of the components of the TRF Evolution platform, used in the NRG units, have been designed **to maximise the exchange surface of the evaporating coil**. These characteristics, combined with the use of latest-generation electronic switching EC fans with high air flow rate, have allowed the **power density to be increased**. The space available in the server room is made the most of and this makes the NRG W units suitable for applications with **high thermal load density, typical of latest generation Data Centres**.

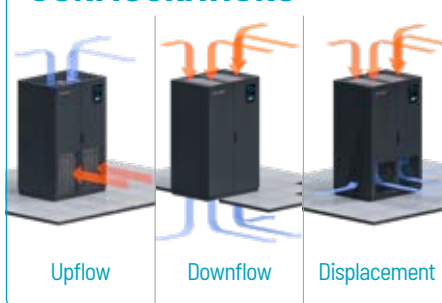
WATER CONDENSED



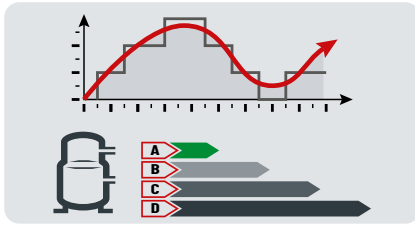
MAINS WATER CONDENSED



AIRFLOW CONFIGURATIONS



- Refrigerant R410A or R513A
- EC Fans
- Scroll inverter compressors
- Electronic expansion valves (optional)
- Advanced programmable microprocessor control with LCD display
- Temperature control through heating and post-heating systems with electric heating elements, hot water and hot gas (optional)
- Humidity control through dehumidification and humidification (optional)
- Broad choice of accessories, including base modules and plenums for ducting
- Air filter class G3 as standard. Air Filters G4, M5, F7 (optional)
- Double power supply with automatic switch (optional)
- Constant-flow (airflow control) or constant available overpressure (ΔP control) ventilation modulation (optional)
- Low temperature kits for optimal operation in the case of installation in particularly cold environments (on request)



Power modulation

The NRG W units adapt quickly to Data Center cooling requests. Thanks to the inverter-controlled compressor, performance can be modulated to **up to 25% of the rated value, thus reducing consumption**. This ensures **continuous operation of the unit even at low loads**, without switching cycles on and off.



Aiming at maximised system efficiency

Design choices include, in addition to the use of electronically controlled expansion valves, the management of variable-speed Scroll compressors and EC (electronically commutated) fans via Modbus. Thanks to these features it is possible to **acquire, manage and adjust operating parameters and therefore thermo-hygrometric values in the server room very accurately, with high levels of energy efficiency**.



NRG W		0091	0131	0201	0251	0301	0381	0441	0501	0551	0641	0701	0801	0852	0962
R410A - Indoor air 30°C - 35% / Water 40°C - 45°C															
Cooling capacity	kW	9.5	13.5	23.6	28.2	36.9	42.4	49.3	52.9	60.5	64.1	79.8	85.6	95	101.5
Total absorbed power	kW	3	4	5.7	6.7	8.7	11.1	13.5	14.1	17.2	17.6	23.6	24.7	24.2	28.1
EER		3.34	3.77	5.26	5.14	5.35	4.56	4.2	4.47	4.05	4.35	4.05	4.32	5.18	4.58
SHR		1	1	1	1	1	1	1	1	1	1	1	1	1	1
R410A - Indoor air 35°C - 30% / Water 40°C - 45°C															
Cooling capacity	kW	10.3	14.8	26.4	31.3	41.3	47.1	54.6	58.8	67	71.2	88.1	94.8	105.4	112.1
Total absorbed power	kW	3.1	4	5.6	6.6	8.5	11	13.6	14.1	17.1	17.5	23.8	25	24	28
EER		3.57	4.11	6.07	5.84	6.16	5.12	4.63	4.95	4.5	4.86	4.43	4.74	5.82	5.07
SHR		1	1	1	1	1	1	1	1	1	1	1	1	1	1
R513A - Indoor air 30°C - 35% / Water 40°C - 45°C															
Cooling capacity	kW	-	-	-	-	34.4	38.7	47.4	53.6	60.4	67.9	-	73.4	84.9	-
Total absorbed power	kW	-	-	-	-	11.3	12.9	17	17	20.7	20.8	-	23.1	26.6	-
EER		-	-	-	-	3.68	3.51	3.13	3.77	3.37	4.02	-	4.29	4.12	-
SHR		-	-	-	-	1	1	1	1	1	1	-	0.98	1	-
R513A - Indoor air 35°C - 30% / Water 40°C - 45°C															
Cooling capacity	kW	-	-	-	-	38.5	43.3	53	60	67.5	75.8	-	82.7	94.9	-
Total absorbed power	kW	-	-	-	-	11.3	13.1	17.2	17.3	21.1	21.2	-	23.5	27	-
EER		-	-	-	-	4.09	3.86	3.46	4.16	3.7	4.4	-	4.71	4.51	-
SHR		-	-	-	-	0.98	1	1	1	1	0.98	-	1	1	-
NRG Z		0091	0131	0201	0251	0301	0381	0441	0501	0551	0641	0701	0801	0852	0962
R410A - Indoor air 30°C - 35% / Water 15°C - 30°C															
Cooling capacity	kW	10.3	14.9	26	31	40.8	46.6	54.2	58.9	66.9	70.7	88	94.9	105.1	112.4
Total absorbed power	kW	2.3	2.8	4.2	4.9	6.4	8.4	10.5	10.8	13.4	13.7	18.9	20	18.5	21.7
EER		4.8	6.04	8.89	8.38	8.92	7.03	6.24	6.84	5.99	6.52	5.87	6.29	8.34	7.1
SHR		1	1	1	1	1	1	1	1	1	1	1	1	1	1
R410A - Indoor air 35°C - 30% / Water 15°C - 30°C															
Cooling capacity	kW	11.1	16.5	28.7	34.1	44.9	51.6	59.9	65	73.5	78.2	96.6	104.2	115.6	124
Total absorbed power	kW	2.3	2.8	3.9	4.7	6.1	8.2	10.4	10.7	13.2	13.5	19	20.1	17.9	21.3
EER		5.14	6.74	10.68	9.85	10.53	8.06	6.98	7.7	6.69	7.39	6.4	6.88	9.64	8.03
SHR		1	1	1	1	1	1	1	1	1	1	1	1	1	1
R513A - Indoor air 30°C - 35% / Water 15°C - 30°C															
Cooling capacity	kW	-	-	-	-	38.3	42.9	52.3	59.1	66.9	74.9	-	81.8	94.8	-
Total absorbed power	kW	-	-	-	-	9.3	10.6	13.8	14	17.1	17.5	-	19.8	22.2	-
EER		-	-	-	-	5.17	4.93	4.38	5.28	4.68	5.51	-	5.9	5.83	-
SHR		-	-	-	-	1	1	0.99	0.99	1	1	-	1	1	-
R513A - Indoor air 35°C - 30% / Water 15°C - 30°C															
Cooling capacity	kW	-	-	-	-	42.5	47.6	57.7	65.8	73.6	82.9	-	91.2	105.1	-
Total absorbed power	kW	-	-	-	-	9.4	10.8	14.1	14.3	17.5	18	-	20.4	22.8	-
EER		-	-	-	-	5.64	5.34	4.73	5.76	5.03	5.91	-	6.33	6.26	-
SHR		-	-	-	-	1	1	0.99	1	0.98	0.99	-	1	0.99	-
Rated air flow	m³/h	2150	3700	8800		11720				14300		17500	19900	23700	25300
Power supply	V/ph/Hz	400/3+N/50													
Number of circuits		1	1	1	1	1	1	1	1	1	1	1	1	2	2
Number of inverter compressors		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of on/off compressors		-	-	-	-	-	-	-	-	-	-	-	-	1	1
Lp @ nominal rpm; dist.=2m Q=2	db(A)	50	54	70	70	71	74	74	75	77	77	76	76	76	76
Dimensions [LxHxD]	mm	600 x1875 x600	900 x1875 x600	1010x2000x890		1270x2000x890				1760x2000x890		2020x2000x890		2510x2000x890	

Performance data relating to Downflow versions. | Also available with 60 Hz power supply. | Model height Displacement 2125 mm for sizes 0091-0131.