

NRL

0800/1800
heat pump

HFC
Refrigerant
R410A



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Air/Water Reversible heat pumps for external installation
Scroll compressors, plate heat exchangers and axial fans
Cooling capacity 183,7÷471,5 kW
Heating capacity 227,4÷523,6 kW



- **HIGH EFFICIENCIES ALSO AT PARTIAL LOADS**
- **FAST AND EASY INSTALLATION**
- **NIGHT MODE**

Characteristics

Reversible heat pumps for external installation for the production of chilled/ heated water with high performance and low electric absorption scroll compressors, axial fans, external copper coils with aluminium fins, system-side plate heat exchanger. In the units with desuperheater, but in cooling-only operation, it is possible to produce free hot water. The basement, the structure and the panelling are in steel treated with polyester anti-corrosion paint.

Version

- NRL_H** Standard heat pumps
- NRL_HL** Standard heat pumps Low noise version
- NRL_HA** High efficiency version
- NRL_HE** High efficiency version Low noise version

Operating limits: Work at full load down to -15°C external air temperature in winter season, up to 46°C in summer season. Hot water production up to 55°C (for more details please refer to the technical docu-

mentation)

- Units with two refrigerant circuits designed to reach the maximum performance at full load, granting high efficiencies also at partial loads and assuring continuity in case of stop of one of the two circuits.
- Water filter and high and low pressure transducers are standard supplied. The flow switch is standard in all the configurations for compact versions (0800-1200 H/HL), for the other sizes and configurations it is provided only with the hydronic-kit.
- Possibility of integrated hydronic kit which includes the main hydraulic components; it is available in different configurations with or without buffer tank, one or two pumps high and low head.
- Microprocessor adjustment, with keyboard and LCD display, for easy consultation and intervention on the unit via a menu available in several

languages.

Adjustment includes complete management of the alarms and their log.

- The presence of a programmable timer allows setting time bands of operation and a possible second set-point
 - The temperature control takes place with the integral proportional logic, based on the water output temperature.
 - Night Mode: it is possible to set a silenced operation profile.
- Perfect for night operation, since it guarantees greater acoustic comfort in the evenings, and a high efficiency in the time of greater load.

Night Mode is standard on all low noise versions. For all other versions either the DCPX accessory or "J" inverter fan must be specified to allow Night Mode to operate.

Accessories

- **AER485P1:** RS-485 interface for supervising systems with MODBUS protocol.
- **PGD1:** Simplified remote panel. Allows control of basic unit functions and alarm notification.
- **C-TOUCH:** Microprocessor adjustment, complete with a 7" touch screen keyboard, which allows to navigate intuitively among the various screens, allowing to modify the operating parameters and graphically view the progress of some variables in real time.
- **MULTICHILLER_EVO:** Control system to switch the individual chillers on and off, and command them, in a system in which several units are installed in parallel, always ensuring a constant delivery to the evaporators.
- **AERNET:** The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.
- **DCPX:** Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.
- **GP:** Protective grille. Condenser coil external protection against accidental or hail damage.
- **AVX:** anti-vibration support, to be fitted below the sheet metal base of the unit.

Accessories factory fitted only

- **DRE:** Current soft starter device, **Available only with power supply 400V/3N.**
- **RIF:** Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current
- **PRM1:** It is a manual pressure switch electrically wired in series with the existing automatic high pressure switch on the compressor discharge pipe.

COMPATIBILITY with the VMF SYSTEM

For more information on the system refer to the manual.

Accessory Compatibility

Mod. NRL	Vers.	0800	0900	1000	1250	1404	1504	1655	1800
AER485P1	Alls	•	•	•	•	•	•	•	•
PGD1	Alls	•	•	•	•	•	•	•	•
C-TOUCH	Alls	•	•	•	•	•	•	•	•
AERNET	Alls	•	•	•	•	•	•	•	•
MULTICHILLER_EVO	Alls	•	•	•	•	•	•	•	•
DCPX	(1) H	65	65	65	65	66	66	68	68
	(1) HL	standard	standard	standard	standard	standard	standard	standard	standard
	(1) HA	66	66	66	68	68	68	68	68
GP	(1) HE	standard	standard	standard	standard	standard	standard	standard	standard
	(2) H/HL	10 (x3)	10 (x3)	10 (x4)	10 (x4)	350	350	350	350
AVX "00"	HA/HE	260	260	260	350	350	350	500	500
	H/HL	701	707	713	713	722	722	733	730
	HA/HE	704	710	716	719	725	730	734	737
AVX "01...04"	H/HL	702	708	714	717	723	728	728	728
	HA/HE	705	711	711	720	726	731	735	738
AVX (P1-P2-P3-P4)	H/HL	703	709	715	718	724	729	729	732
	HA/HE	706	712	712	721	727	732	736	736
Accessories factory fitted only									
DRE	Alls	801	901	1001	1251	1404	1504	1655	1801
RIF	H/HL	87	89	91	91	92	92	93	94
	HA/HE	88	90	92	92	92	92	93	94
PRM1	Alls	•	•	•	•	•	•	•	•

(1) DCPX Standard in the models with desuperheater; In the low noise versions; Not necessary fields with ventilatori inverter

(2) (x3)(x4) the number in brackets indicates the quantity to order

Unit Configurator

By suitably combining the numerous options available it is possible to configure each model in such a way as to meet even the most demanding of system requirements.

Field	Code	14	Power supply
1,2,3	NRL		◦ 400V/3/50Hz with circuit breakers
4,5,6,7	Size	15-16	Hydronic kit (4)
	0800-0900-1000-1250-1404-1504-1655-1800	00	Without hydronic kit
8	Expansion valve:	01	n°1 low head pump and buffer tank
	◦ Standard (leaving water temperature down to 4°C)	02	n°2 low head pump and buffer tank
	X Electronic expansion valve (leaving water temperature down to 4°C) contact head office for lower temperatures	03	n°1 high head pump and buffer tank
9	Model	04	n°2 high head pump and buffer tank
	H Heat pumps	05	n°1 low head pump and buffer tank (with holes for immersion heaters)
10	Heat recovery	06	n°2 low head pump and buffer tank (with holes for immersion heaters)
	◦ Without recovery	07	n°1 low high pump and buffer tank (with holes for immersion heaters)
	D With desuperheater (3)	08	n°2 low high pump and buffer tank (with holes for immersion heaters)
11	Version	09	double hydraulic circuit
	◦ Standard	10	double hydraulic circuit with immersion heater
	L Standard in low noise operation	P1	n°1 low head pump
	A High efficiency	P2	n°2 low head pump
	E High efficiency in low noise operation	P3	n°1 high head pump
12	Coil	P4	n°2 high head pump
	◦ In aluminium		
	R In copper		
	S In tinned copper		
	V In painted aluminium-copper (epoxy paint)		
13	Fans		
	◦ Standard		
	J Inverter		

(3) The desuperheater can be used exclusively in the cold operation

(4) The buffer tank with holes and supplementary electric heaters leave the factory with plastic protection caps. Before loading the system, if the installation of an electric heater is not envisaged it is compulsory to replace the plastic caps.

Technical data

NRL - H			0800	0900	1000	1250	1404	1504	1655	1800
V/ph/Hz			400V/3/50Hz							
12°C / 7°C	Cooling capacity	(1) kW	200,7	221,7	261,6	299,6	332,6	366,6	422,5	453,5
	Total input power	(1) kW	81,9	94,9	102,1	121,4	141,1	160,2	167,6	180,7
	EER	(1)	2,45	2,34	2,56	2,47	2,36	2,29	2,52	2,51
	Water flow rate	(1) l/h	34534	38142	45014	51543	57213	63054	72676	78002
	Pressure drop	(1) kPa	46	45	50	57	40	40	47	46
40°C / 45°C	Heating capacity	(2) kW	227,4	256,4	293,5	340,5	384,5	427,5	468,6	503,6
	Total input power	(2) kW	76,2	86,3	97,6	113,1	127,7	142,9	157,1	168,2
	COP	(2)	2,98	2,97	3,01	3,01	3,01	2,99	2,98	2,99
	Water flow rate	(2) l/h	39452	44492	50923	59091	66738	74212	81338	87421
	Pressure drop	(2) kPa	61	62	65	78	54	55	59	58
Performance under average climatic conditions (Average) UE n°813/2013 Pdesignh ≤ 400kW										
Pdesignh			(3)	192	217	248	288	325	361	/
SCOP			(3)	3,40	3,38	3,43	3,43	3,45	3,43	/
ηs			(3)	133	132	134	134	135	134	/
Cooling mode for low temperature										
ηsc			%	146,4	139,7	140,9	137,0	135,7	133,6	134,5
SEER				3,74	3,57	3,60	3,50	3,47	3,42	3,44

NRL - HL			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	183,7	199,7	236,7	264,6	301,7	331,7	372,6	396,6
	Total input power	(1) kW	90,7	105,8	112,9	137,0	154,9	175,0	188,2	205,2
	EER	(1)	2,02	1,89	2,10	1,93	1,95	1,90	1,98	1,93
	Water flow rate	(1) l/h	31613	34362	40719	45530	51887	57041	64085	68209
	Pressure drop	(1) kPa	39	37	41	45	33	34	37	36
40°C / 45°C	Heating capacity	(2) kW	227,4	256,4	293,5	340,5	384,5	427,5	468,6	503,6
	Total input power	(2) kW	76,2	86,3	97,6	113,1	127,7	142,9	157,1	168,2
	COP	(2)	2,98	2,97	3,01	3,01	3,01	2,99	2,98	2,99
	Water flow rate	(2) l/h	39452	44492	50923	59091	66738	74212	81338	87421
	Pressure drop	(2) kPa	61	62	65	78	54	55	59	58
Performance under average climatic conditions (Average) UE n°813/2013 Pdesignh ≤ 400kW										
Pdesignh			(3)	192	217	248	288	325	361	/
SCOP			(3)	3,40	3,38	3,43	3,43	3,45	3,43	/
ηs			(3)	133	132	134	134	135	134	/
Cooling mode for low temperature										
ηsc			%	142,9	138,2	139,2	134,5	131,5	130,7	129,4
SEER				3,65	3,53	3,56	3,44	3,36	3,34	3,31

NRL - HA			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	210,7	238,6	260,6	314,5	350,6	387,5	436,5	471,5
	Total input power	(1) kW	74,0	83,2	95,2	110,6	127,4	144,5	152,9	164,0
	EER	(1)	2,85	2,87	2,74	2,84	2,75	2,68	2,86	2,88
	Water flow rate	(1) l/h	36252	41062	44842	54120	60305	66662	75081	81094
	Pressure drop	(1) kPa	55	56	53	61	48	49	54	53
40°C / 45°C	Heating capacity	(2) kW	233,4	263,4	293,5	344,5	388,5	433,5	484,6	523,6
	Total input power	(2) kW	75,3	84,5	94,6	112,0	125,8	141,0	155,4	165,6
	COP	(2)	3,10	3,12	3,10	3,07	3,09	3,07	3,12	3,16
	Water flow rate	(2) l/h	40495	45709	50923	59786	67434	75255	84118	90897
	Pressure drop	(2) kPa	68	69	69	76	58	60	66	66
Performance under average climatic conditions (Average) UE n°813/2013 Pdesignh ≤ 400kW										
Pdesignh			(3)	198	223	248	292	328	367	/
SCOP			(3)	3,53	3,53	3,53	3,50	3,53	3,50	/
ηs			(3)	138	138	138	137	138	137	/
Cooling mode for low temperature										
ηsc			%	153,1	149,6	146,7	148,9	147,7	144,9	145,2
SEER				3,90	3,82	3,74	3,80	3,77	3,70	3,71

NRL - HE			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	193,7	212,7	230,7	283,6	318,6	354,6	397,6	425,5
	Total input power	(1) kW	81,9	94,9	107,9	123,2	141,1	159,2	169,5	183,5
	EER	(1)	2,37	2,24	2,14	2,30	2,26	2,23	2,35	2,32
	Water flow rate	(1) l/h	33331	36595	39688	48794	54807	60993	68380	73191
	Pressure drop	(1) kPa	47	45	43	51	40	41	45	44
40°C / 45°C	Heating capacity	(2) kW	233,4	263,4	293,5	344,5	388,5	433,5	484,6	523,6
	Total input power	(2) kW	75,3	84,5	94,6	112,0	125,8	141,0	155,4	165,6
	COP	(2)	3,10	3,12	3,10	3,07	3,09	3,07	3,12	3,16
	Water flow rate	(2) l/h	40495	45709	50923	59786	67434	75255	84118	90897
	Pressure drop	(2) kPa	68	69	69	76	58	60	66	66
Performance under average climatic conditions (Average) UE n°813/2013 Pdesignh ≤ 400kW										
Pdesignh			(3)	198	223	248	292	328	367	/
SCOP			(3)	3,53	3,53	3,53	3,50	3,53	3,50	/
ηs			(3)	138	138	138	137	138	137	/
Cooling mode for low temperature										
ηsc			%	148,3	146,5	143,3	148,7	146,1	141,4	143,6
SEER				3,78	3,74	3,66	3,79	3,73	3,61	3,63

Date (14511:2018)

(1) Water system side 12°C/7°C, External air 35°C

(2) Water system side 40°C/45°C, External air 7°C b.s./6°C b.u.

(3) Efficiencies for low temperature Applications (35°C)

Technical data

			0800	0900	1000	1250	1404	1504	1655	1800
Electrical data										
Total input current (cooling)	H	(4)	A	142	166	189	208	249	286	319
	HL	(4)	A	153	177	200	226	269	308	348
	HA	(4)	A	136	158	180	196	235	273	304
	HE	(4)	A	145	169	192	211	251	292	324
Total input current (heating)	H	(4)	A	136	156	179	193	227	261	290
	HL	(4)	A	136	156	179	193	227	261	290
	HA	(4)	A	138	157	177	197	231	265	282
	HE	(4)	A	138	157	177	197	231	265	282
Maximum current (FLA)	H/HL	(4)	A	173	195	221	265	282	312	349
	HA/HE	(4)	A	177	199	221	274	290	320	357
Starting current (LRA)	H/HL	(4)	A	348	404	430	533	616	646	666
	HA/HE	(4)	A	352	408	430	542	624	654	691
Scroll Compressor										
Compressors / Circuit			n°	4/2	4/2	4/2	4/2	4/2	5/2	6/2
Refrigerant			Type	R410A						
Heat exchanger system side										
Exchanger			Type/n°	Plate/1						
Hydraulic connections (In/Out)			Ø	3"	3"	3"	3"	4"	4"	4"
Axial fans										
Fans	H/HL	n°	3	3	4	4	4	4	6	6
	HA/HE	n°	4	4	4	6	6	6	8	8
Air flow rate (cooling)	H	m³/h	64500	63750	85600	80800	87400	86800	124200	122400
	HL	m³/h	45200	44600	59900	56600	65500	69400	86900	85700
	HA	m³/h	85600	84600	83600	126000	124200	122400	168000	165600
	HE	m³/h	59920	59220	60610	88200	90000	91800	117600	115920
Sound data (cooling mode)										
Sound power level		H	dB(A)	88,5	88,5	90,5	93,5	91,0	90,5	94,0
Sound pressure level		H	dB(A)	56,5	56,5	58,5	61,5	59,0	58,5	62,0
Sound power level		HL	dB(A)	85,5	85,5	87,5	90,5	88,0	87,5	89,0
Sound pressure level		HL	dB(A)	53,5	53,5	55,5	58,5	56,0	55,5	57,0
Sound power level		HA	dB(A)	88,5	88,5	88,5	91,5	91,0	91,5	92,0
Sound pressure level		HA	dB(A)	56,5	56,5	56,5	59,5	59,0	58,5	60,0
Sound power level		HE	dB(A)	83,0	83,0	83,5	86,0	85,5	85,0	86,5
Sound pressure level		HE	dB(A)	51,0	51,0	51,0	54,0	53,5	53,0	54,5

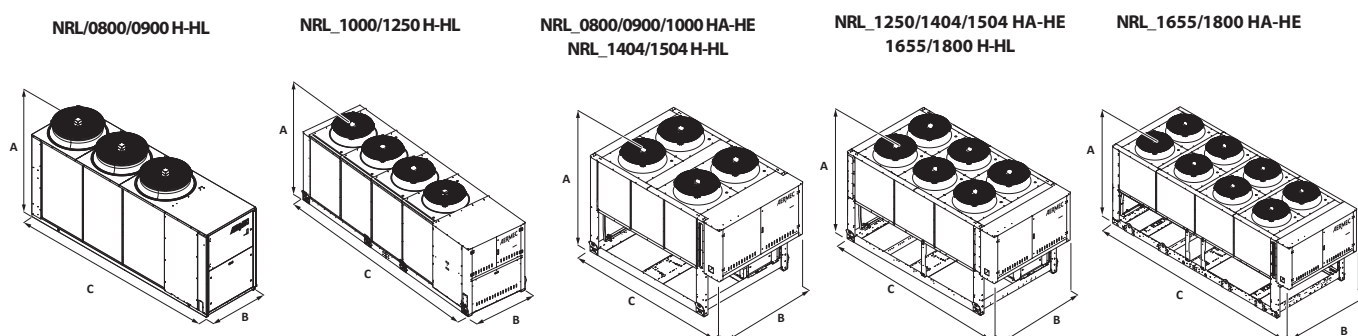
(4) Unit standar configuration without hydronic kit

Sound power Aermec determines sound power values on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification.

Sound pressure Sound pressure in free field, at 10 m distance from the external surface of the unit (in accordance with UNI EN ISO 3744).

Note: For more information, refer to the selection program or the technical documentation available on the website www.aermec.com

Dimensions (mm)



Mod. NRL	U.M.	Vers.	0800	0900	1000	1250	1404	1504	1655	1800
Height	(mm)	A	H/HL 1975	1975	1975	1975	2450	2450	2450	2450
			HA/HE 2450	2450	2450	2450	2450	2450	2450	2450
Width	(mm)	B	H/HL 1500	1500	1500	1500	2200	2200	2200	2200
			HA/HE 2200	2200	2200	2200	2200	2200	2200	2200
Depth	(mm)	C	H/HL 4355	4355	5355	5355	4250	4250	4250	4250
			HA/HE 3400	3400	3400	4250	4250	4250	5750	5750
Weight empty	(kg)		H 1800	1940	2170	2320	2930	3140	3220	3330
			HL 1800	1950	2180	2320	2940	3150	3230	3340
			HA 2150	2300	2460	2750	2990	3190	3680	3800
			HE 2160	2310	2470	2760	3000	3200	3690	3810

Warning: the weights refer to versions without hydronic module integrated