

# AERMEC

## NRL

0800/1800  
heat pump

## R410A



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**Air/Water Reversible heat pumps for external installation**  
**Scroll compressors, plate heat exchangers and axial fans**  
**Cooling capacity 183 - 470kW**  
**Heating capacity 228 - 526kW**

*Variable Multi Flow*

VMF



- **HIGH EFFICIENCIES ALSO AT PARTIAL LOADS**
- **FAST AND EASY INSTALLATION**
- **NIHT 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 documentation)

technical documentation)

- 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.
- **MULTICHILLER\_PCO:** 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.
- **AERWEB300:** Accessory AERWEB allows remote control of a chiller through a common PC and an ethernet connection over a common browser; 4 versions available:
  - AERWEB300-6:** Web server to monitor and remote control max. 6 units in RS485 network;
  - AERWEB300-18:** Web server to monitor and

remote control max. 18 units in RS485 network;

**AERWEB300-6G:** Web server to monitor and remote control max. 6 units in RS485 network with integrated GPRS modem;

**AERWEB300-18G:** Web server to monitor and remote control max. 18 units in RS485 network with integrated GPRS modem

- **GP:** Protective grille. Condenser coil external protection against accidental or hail damage.
- **DCPX:** Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.
- **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	•	•	•	•	•	•	•	•
AERWEB300	Alls	•	•	•	•	•	•	•	•
MULTICHILLER_PCO	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
	(1) HE	standard	standard	standard	standard	standard	standard	standard	standard
GP	(2) H/HL	10 (x3)	10 (x3)	10 (x4)	10 (x4)	350	350	350	350
	HA/HE	260	260	260	350	350	350	500	500
AVX "00"	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
<b>Accessories factory fitted only</b>									
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.

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

(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	221	261	299	332	366	421	452
	Total input power	(1) kW	82	95	102	121	141	160	168	181
	EER	(1)	2,44	2,33	2,55	2,46	2,35	2,28	2,51	2,50
	ESEER	(1)	3,85	3,66	3,67	3,63	3,50	3,44	3,45	3,53
	Cooling Energy Class Eurovent	(1)	E	E	D	E	E	F	D	D
	Water flow rate	(1) l/h	34519	38126	44995	51522	57189	63028	72645	77969
40°C / 45°C	Pressure drop	(1) kPa	46	45	50	57	40	40	47	46
	Heating capacity	(2) kW	228	257	295	342	386	429	470	505
	Total input power	(2) kW	76	86	98	113	128	143	157	168
	COP	(2)	2,99	2,98	3,02	3,03	3,02	3,00	2,99	3,00
	Heating Energy Class Eurovent	(2)	C	C	B	B	B	B	C	B
	Water flow rate	(2) l/h	39460	44501	50935	59103	66752	74226	81353	87438
Performance under average climatic conditions (Average)										
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	/

NRL - HL			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	183	199	236	264	301	331	372	396
	Total input power	(1) kW	91	106	113	137	155	175	188	205
	EER	(1)	2,02	1,88	2,09	1,93	1,94	1,89	1,98	1,93
	ESEER	(1)	3,79	3,66	3,66	3,56	3,42	3,39	3,39	3,37
	Cooling Energy Class Eurovent	(1)	G	G	G	G	G	G	G	G
	Water flow rate	(1) l/h	31600	34348	40702	45511	51865	57017	64058	68180
40°C / 45°C	Pressure drop	(1) kPa	39	37	41	45	33	34	37	36
	Heating capacity	(2) kW	228	257	295	342	386	429	470	505
	Total input power	(2) kW	76	86	98	113	128	143	157	168
	COP	(2)	2,99	2,98	3,02	3,03	3,02	3,00	2,99	3,00
	Heating Energy Class Eurovent	(2)	C	C	B	B	B	B	C	B
	Water flow rate	(2) l/h	39460	44501	50933	59103	66752	74226	81353	87438
Performance under average climatic conditions (Average)										
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	/

NRL - HA			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	210	238	260	313	350	386	435	470
	Total input power	(1) kW	74	83	95	110	127	144	152	164
	EER	(1)	2,84	2,86	2,73	2,85	2,76	2,68	2,86	2,87
	ESEER	(1)	4,01	3,90	3,82	3,96	3,80	3,72	3,74	3,71
	Cooling Energy Class Eurovent	(1)	C	C	C	C	C	D	C	C
	Water flow rate	(1) l/h	36292	41108	44892	54180	60372	66736	75164	81184
40°C / 45°C	Pressure drop	(1) kPa	54	56	54	61	48	48	54	54
	Heating capacity	(2) kW	234	264	295	346	390	435	486	526
	Total input power	(2) kW	75	85	95	112	126	141	155	166
	COP	(2)	3,12	3,12	3,12	3,09	3,10	3,09	3,14	3,17
	Heating Energy Class Eurovent	(2)	B	B	B	B	B	B	B	B
	Water flow rate	(2) l/h	40076	45236	50396	59168	66736	74476	83248	89956
Performance under average climatic conditions (Average)										
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	/

NRL - HE			0800	0900	1000	1250	1404	1504	1655	1800
12°C / 7°C	Cooling capacity	(1) kW	193	212	230	283	318	354	397	424
	Total input power	(1) kW	82	95	108	123	141	159	169	184
	EER	(1)	2,36	2,23	2,13	2,29	2,25	2,22	2,34	2,31
	ESEER	(1)	3,92	3,87	3,78	3,93	3,77	3,66	3,72	3,74
	Cooling Energy Class Eurovent	(1)	E	F	F	F	F	F	E	E
	Water flow rate	(1) l/h	33317	36580	39672	48774	54785	60967	68352	73161
40°C / 45°C	Pressure drop	(1) kPa	47	45	43	51	40	41	45	44
	Heating capacity	(2) kW	234	265	295	346	390	435	486	526
	Total input power	(2) kW	75	85	95	112	126	141	155	166
	COP	(2)	3,11	3,13	3,11	3,09	3,10	3,08	3,13	3,17
	Heating Energy Class Eurovent	(2)	B	B	B	B	B	B	B	B
	Water flow rate	(2) l/h	40503	45718	50933	59798	67447	75269	84135	90914
Performance under average climatic conditions (Average)										
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	/

### Date (14511:2013)

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

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

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

Efficiency Energy Class in according to regulation n°811/2013 Pdesignh ≤ 70kW

## Technical data

				0800	0900	1000	1250	1404	1504	1655	1800
Electrical data											
Total input current (cooling)	H	(5)	A	142	166	189	208	249	286	305	319
	HL	(5)	A	153	177	200	226	269	308	328	348
	HA	(5)	A	136	158	180	196	235	273	286	304
	HE	(5)	A	145	169	192	211	251	292	306	324
Total input current (heating)	H	(5)	A	136	156	179	193	227	261	279	290
	HL	(5)	A	136	156	179	193	227	261	279	290
	HA	(5)	A	138	157	177	197	231	265	282	293
	HE	(5)	A	138	157	177	197	231	282	282	293
Maximum current (FLA)	H/HL	(5)	A	173	195	221	265	282	312	349	398
	HA/HE	(5)	A	177	199	221	274	290	320	357	406
Starting current (LRA)	H/HL	(5)	A	348	404	430	533	616	646	683	666
	HA/HE	(5)	A	352	408	430	542	624	654	691	674
Scroll Compressor											
Compressors / Circuit			n°	4/2	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"	4"
Axial fans											
Fans	H/HL	n°	3	3	4	4	4	4	4	6	6
	HA/HE	n°	4	4	4	6	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)											
Sound power level		H	dB(A)	88.5	88.5	90.5	93.5	91.0	90.5	92.0	94.0
Sound pressure level		H	dB(A)	56.5	56.5	58.5	61.5	59.0	58.5	60.0	62.0
Sound power level		HL	dB(A)	85.5	85.5	87.5	90.5	88.0	87.5	89.0	91.0
Sound pressure level		HL	dB(A)	53.5	53.5	55.5	58.5	56.0	55.5	57.0	59.0
Sound power level		HA	dB(A)	88.5	88.5	88.5	91.5	91.0	91.5	92.0	94.0
Sound pressure level		HA	dB(A)	56.5	56.5	56.5	59.5	59.0	58.5	60.0	62.0
Sound power level		HE	dB(A)	83.0	83.0	83.5	86.0	85.5	85.0	86.5	88.5
Sound pressure level		HE	dB(A)	51.0	51.0	51.0	54.0	53.5	53.0	54.5	56.5

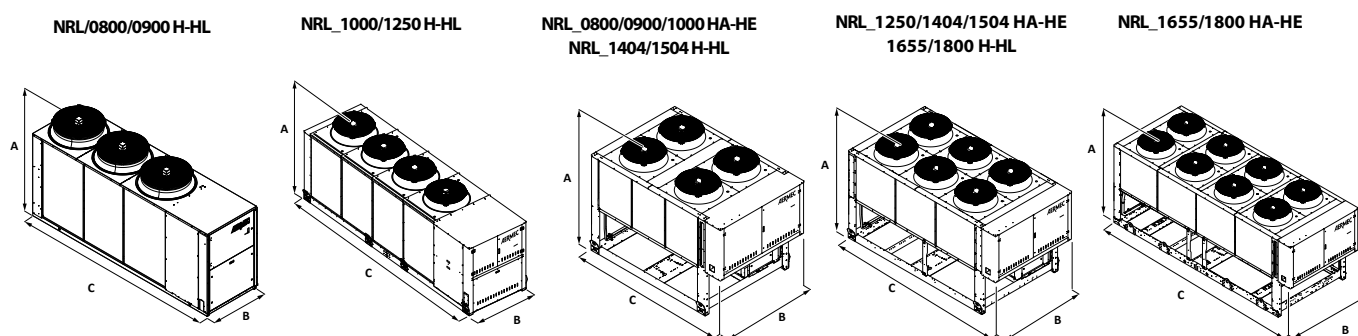
(5) Unit standar configuration without hydronic kit

**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](http://www.aermec.com)

## Dimensions (mm)



Mod. NRL	U.M.	Vers.	800	900	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