

**NRL**  
**0280/0750**  
**heat pumps**

**R410A**



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**Air/Water Reversible heat pumps for external installation**  
**Scroll compressors, plate heat exchangers and axial fans**  
**Cooling capacity 51÷179kW**  
**Heating capacity 58÷205kW**



- **EUROVENT EFFICIENCY'S CLASS "A" IN HEATING OPERATION**
- **HIGH EFFICIENCIES ALSO AT PARTIAL LOADS**
- **FAST AND EASY INSTALLATION**

## 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)

- 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.
- Flow switch, water filter and high and low pressure transducer are standard supplied.
- 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
- **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.
- **VT:** 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.

## Compatibility of accessories

Mod. NRL	Vers.	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750	
AER485P1	all	•	•	•	•	•	•	•	•	•	•	
PGD1	all	•	•	•	•	•	•	•	•	•	•	
MULTICHILLER_PCO		•	•	•	•	•	•	•	•	•	•	
AERWEB300	all	•	•	•	•	•	•	•	•	•	•	
DCPX	(1) H	-	-	-	-	64	64	64	64	64	64	
	(1) HL		inverter fans				standard	standard	standard	standard	standard	standard
	(1) HA	-	-	-	-	64	64	64	64	65	65	
	(1) HE		inverter fans				standard	standard	standard	standard	standard	standard
DCPX Increased fans (M)	(1) H	-	-	-	-	-	-	-	-	-	-	
	(1) HL	63	63	63	63	-	-	-	-	-	-	
	(1) HA	-	-	-	-	-	-	-	-	-	-	
GP	(1) HE	63	63	63	63	-	-	-	-	-	-	
	(2) H-HL	3	3	3	3	2 (x2)	2 (x2)	2 (x2)	2 (x2)	2 (x2)	10 (x3)	
VT (00-P1-P2-P3-P4)	(2) HA-HE	3	4	4	4	2 (x2)	2 (x2)	2 (x2)	2 (x2)	2 (x3)	10 (x3)	
	H-HL	17	17	17	17	13	13	13	13	13	23	
VT (01...10)	HA-HE	17	17	17	17	13	13	13	13	22	23	
	H-HL	13	13	13	13	10	10	10	10	10	23	
HA-HE	13	13	13	13	10	10	10	10	22	23		
<b>Accessories factory fitted only</b>												
DRE	400V/3N	281	301	331	351	501	551	601	651	701	751	
RIF	all	50	50	50	51	52	52	53	53	53	53	
PRM1	all	•	•	•	•	•	•	•	•	•	•	

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

(2) (x2)(x3) 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 the most demanding of system requirements.

<b>Field</b>	<b>Code</b>	<b>14</b>	<b>Power supply</b>
<b>1,2,3</b>	<b>NRL</b>	°	400V/3N/50Hz with circuit breakers
<b>4,5,6,7</b>	<b>Size</b>	<b>1</b>	220V/3/50Hz with circuit breakers
	0280-0300-0330-0350-0500-0550-0600-0650-0700-750 (3)	<b>15-16</b>	<b>Hydronic kit (7)</b>
<b>8</b>	<b>Expansion valve</b>	<b>00</b>	Without hydronic kit
	° Standard (leaving water temperature down to 4°C)	<b>01</b>	n°1 low head pump and buffer tank
	<b>X</b> Electronic expansion valve (leaving water temperature down to 4°C) contact head office for lower temperatures (4)	<b>02</b>	n°2 low head pump and buffer tank
<b>9</b>	<b>Model</b>	<b>03</b>	n°1 high head pump and buffer tank
	<b>H</b> Heat pumps	<b>04</b>	n°2 high head pump and buffer tank
<b>10</b>	<b>Heat recovery</b>	<b>05</b>	n°1 low head pump and buffer tank (with holes for immersion heaters)
	° Without recovery	<b>06</b>	n°2 low head pump and buffer tank (with holes for immersion heaters)
	<b>D</b> With Desuperheater (5)	<b>07</b>	n°1 low high pump and buffer tank (with holes for immersion heaters)
<b>11</b>	<b>Version</b>	<b>08</b>	n°2 low high pump and buffer tank (with holes for immersion heaters)
	° Compact	<b>09</b>	double hydraulic circuit
	<b>L</b> Compact low noise	<b>10</b>	double hydraulic circuit with holes for immersion heaters
	<b>A</b> High efficiency	<b>P1</b>	n°1 low head pump
	<b>E</b> High efficiency in low noise operation	<b>P2</b>	n°2 low head pump
<b>12</b>	<b>Coil</b>	<b>P3</b>	n°1 high head pump
	° In aluminium	<b>P4</b>	n°2 high head pump
	<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 (6)</b>		
	° Standard		
	<b>M</b> Increased		
	<b>J</b> Inverter		

(3) The size 0280-0300-0330-0350 only available in low noise version "HL/HE" with inverter fans

(4) Options D are not compatible with option X

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

(6) **On / off fan Standard**, standard sizes up 0500 to 0750

**On / off fan Increased**, option for size up 0280 to 0350

**Fans Inverter**, standard sizes from 0280 to 0350, with no static pressure

**Fans Inverter**, option for sizes from 0500 to 0750 with static pressure

(7) Buffer tanks with holes for additional heaters are supplied from factory with plastics caps of protection, before system's loading, where the installation of one or all the heaters is not provided, it is mandatory to replace plastic caps with special caps, which are commonly available in the market.

## Technical Data

Mod. NRL Heat pumps			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Cooling capacity	H	kW	-	-	-	-	89.4	94.4	114.3	133.2	144.1	174.8
	HL	kW	50.6	60.6	65.5	72.5	82.5	89.5	109.3	123.3	139.1	164.0
	HA	kW	-	-	-	-	93.5	99.5	121.4	137.3	149.2	178.9
	HE	kW	53	61.7	68.7	76.6	89.6	94.5	113.5	127.4	142.3	174.0
Total power input	H	kW	-	-	-	-	36.9	41.0	49.7	54.1	63.7	71.0
	HL	kW	20.4	22.8	26.6	31.2	40.0	43.4	52.3	59.0	66.2	78.4
	HA	kW	-	-	-	-	30.7	34.0	41.6	48.5	52.1	64.1
	HE	kW	18.10	20.3	23.3	26.9	33.4	36.8	45.4	53.3	58.5	69.9
EER	H	W/W	-	-	-	-	2.42	2.30	2.3	2.46	2.26	2.46
	HL	W/W	2.48	2.65	2.46	2.32	2.06	2.06	2.09	2.09	2.10	2.09
	HA	W/W	-	-	-	-	3.04	2.92	2.92	2.83	2.86	2.79
	HE	W/W	2.92	3.04	2.95	2.85	2.68	2.57	2.5	2.39	2.43	2.49
ESEER	H		-	-	-	-	3.30	3.19	3.69	3.42	3.50	3.66
	HL		3.02	3.23	3.02	3.31	3.28	3.18	3.66	3.42	3.48	3.67
	HA		-	-	-	-	3.71	3.48	4.13	4.09	3.98	3.98
	HE		3.85	3.77	3.85	3.73	3.67	3.45	4.03	3.99	3.87	3.87
Water flow rate	H	l/h	-	-	-	-	15480	16340	19780	23048	24940	30272
	HL	l/h	8772	10492	11352	12556	14276	15480	18920	21328	24080	28380
	HA	l/h	-	-	-	-	16168	17200	20984	23736	25800	30960
	HE	l/h	9116	10664	11868	13244	15480	16340	19608	22016	24596	30100
Total pressure drop	H	kPa	-	-	-	-	46	50	53	58	64	74.0
	HL	kPa	47	43	51	45	39	45	49	50	60	65.0
	HA	kPa	-	-	-	-	33	36	36	43	49	64.0
	HE	kPa	20	27	23	29	30	32	31	37	45	60.0
Heating capacity	H/HL	kW	58.4	68.4	75.5	82.5	99.6	107	129.8	150.9	166.1	202.3
	HA/HE	kW	59	69.3	76.2	86.4	103.5	110.5	135.6	152.7	171.9	205.3
Total power input	H/HL	kW	19.0	21.7	24.8	28.3	33.7	36.7	44.0	49.02	56.3	66.5
	HA/HE	kW	17.55	20.6	22.8	26.1	31.7	34.4	40.7	45.75	53.0	62.6
COP	H/HL	W/W	3.07	3.15	3.04	2.91	2.95	2.90	2.95	3.08	2.95	3.04
	HA/HE	W/W	3.38	3.36	3.34	3.30	3.26	3.21	3.33	3.34	3.24	3.28
Water flow rate	H/HL	l/h	9976	11696	12900	14104	17028	18232	22188	25800	28380	34572
	HA/HE	l/h	10148	11868	13072	14792	17716	18920	23220	26144	29412	35088
Total pressure drop	H/HL	kPa	61	54	66	56	55	62	67	73	83	82
	HA/HE	kPa	25	34	28	36	40	44	44	52	64	82

### Cooling (14511:2013)

Evaporator water temperature (in/out) 12°C/7°C; External air temperature 35°C

### Heating (14511:2013)

Condenser water temperature (in/out) 40°C/45°C; External air temperature 7°C b.s./6°C b.u.

			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
<b>Electrical data</b>												
Total input current cooling mode	(1) H	A	-	-	-	-	63	67	81	88	100	122
	(1) HL	A	36	40	44	51	70	75	90	99	111	132
	(1) HA	A	-	-	-	-	55	60	71	77	90	113
	(1) HE	A	30	34	37	45	60	64	78	89	97	120
Total input current heating mode	(1) H	A	-	-	-	-	60	63	76	82	95	113
	(1) HL	A	33	38	41	50						113
	(1) HA	A	-	-	-	-	55	59	72	82	88	113
	(1) HE	A	35	39	43	49	60	64	79	91	99	113
Maximum current (FLA)	A	46	53	58	63	76	81	100	112	122	144	
Starting current (LRA)	A	155	184	190	200	214	220	232	243	261	320	
<b>Compressors</b>												
Compressors	type						scroll					
	n°		2	2	2	2	3	3	4	4	4	4
Circuits	n°		2	2	2	2	2	2	2	2	2	2
Refrigerant	type						R410A					
<b>System side exchanger</b>												
Exchanger	type						plate					
	n°		1	1	1	1	1	1	1	1	1	1
hydraulic connections	(1) (in/out)	Ø	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>
<b>Fans standard</b>												
Fans	type						axial					
	H	n°	-	-	-	-	2	2	2	2	2	3
	HL	n°	4	6	6	6	2	2	2	2	2	3
	HA	n°	-	-	-	-	2	2	2	2	3	3
Air flow rate cooling mode	HE	n°	6	8	8	8	2	2	2	2	3	3
	H	m <sup>3</sup> /h	-	-	-	-	39400	39400	39400	37500	37500	50200
	HL	m <sup>3</sup> /h	14000	20000	20000	20000	28400	28700	28700	27400	28100	41700
	HA	m <sup>3</sup> /h	-	-	-	-	37000	37000	36500	36500	58000	48000
Air flow rate heating mode	HE	m <sup>3</sup> /h	20000	26000	26000	26000	20200	21100	21400	22400	31900	34600
	H/HL	m <sup>3</sup> /h	14000	20000	20000	20000	39400	39400	39400	37500	37500	50200
	HA/HE	m <sup>3</sup> /h	20000	26000	26000	26000	37000	37000	36500	36500	58000	48000

(1) Data of the versions without hydronic module integrated

## Technical Data

		0280	0300	0330	0350	0500	0550	0600	0650	0700	0750	
<b>Hydronic kit</b>												
Buffer tank	l	300	300	300	300	500	500	500	500	500	700	
Useful static pressure	kPa	For more information, refer to the technical documentation										
<b>Sound data</b>												
Sound pressure	H	dB(A)	-	-	-	-	50	50	50	51	51	53
	HL	dB(A)	41	42	42	43	45	45	45	46	46	48
	HA	dB(A)	-	-	-	-	50	50	50	51	53	53
	HE	dB(A)	42	43	43	44	42	42	42	43	45	45
Sound power	H	dB(A)	-	-	-	-	82	82	82	83	83	85
	HL	dB(A)	73	74	74	75	77	77	77	78	78	80
	HA	dB(A)	-	-	-	-	82	82	82	83	85	85
	HE	dB(A)	74	75	75	76	74	74	74	75	77	77
Power supply	V/ph/Hz						400V/3N/50Hz					

### Sound power (cooling mode)

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

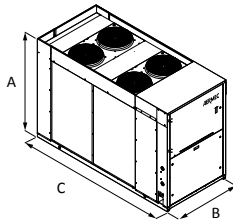
### Sound pressure (cooling mode)

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

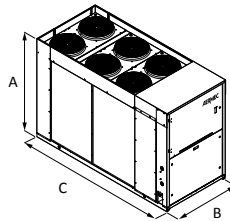
Note: For more information, refer to the selection program or the technical documentation available on the website [www.aermec.com](http://www.aermec.com)

## Dimensions (mm)

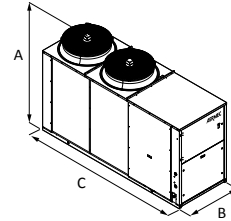
NRL 0280 HL



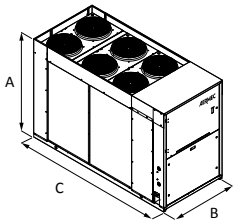
NRL 0300-0330-0350 HL



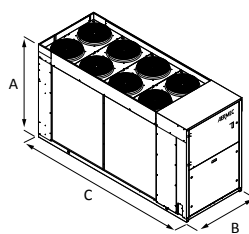
NRL 0500-0550-0600-0650-0700 H/HL



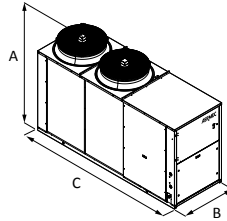
NRL 0280 HE



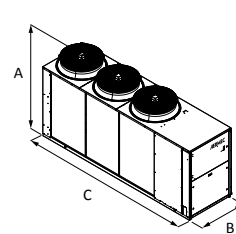
NRL 0300-0330-0350 HE



NRL 0500-0550-0600-0650 HA/HE



NRL 0700 HA/HE  
NRL 0750 H/HL/HA/HE



Mod. NRL	Vers.	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750	
Height	(mm) A	Alls	1606	1606	1606	1606	1875	1875	1875	1875	1975	
Width	(mm) B	Alls	1100	1100	1100	1100	1100	1100	1100	1100	1500	
Length	(mm) C	H/HL	2450	2450	2450	2450	3010	3010	3010	3010	4350	
		HA/HE	2450	2950	2950	2950	3010	3010	3010	3010	4010	4350
Weight empty	kg (1)	H/HL	713	724	731	740	913	917	1016	1130	1142	1487
		HA/HE	730	795	805	811	1099	1103	1204	1212	1390	1748