

NRL Free-Cooling Chillers, air-cooled with axial flow fans Cooling capacity from 177 kW to 452 kW

R410A



Aermec adheres to the EUROVENT Certification Programme. The products concerned appear in the EUROVENT Certified Products Guide.



- **HIGH EFFICIENCY VERSION**
- **SILENCED HIGH EFFICIENCY VERSION**
- **VERSION WITH CIRCULATION PUMP**
- **2 COOLING CIRCUITS**
- **VERSION WITH CIRCULATION PUMP AND ACCUMULATOR TANK**

Characteristics

- Available in 9 different sizes
- Refrigerant R410A.
- 2 cooling circuits
- High efficiency even with partial loads
- Heat exchangers optimised to exploit the excellent heat transfer characteristics of the R410A
- High-efficiency scroll compressors
- Axial flow fans with reduced noise level
- Solid construction with polyester anticorrosion painted finish
- Cooling mode up to 44° C
- Operation modes:
 - Free-Cooling only: is the most economical way to use the unit. Only the fans operate in modulation of speed, the cooling power is fully recovered from the external air
 - mixed Free-Cooling and compressors: the cooling power recovered from the external air is integrated with the total or partial operation of the compressors
- compressors only: the cooling capacity is provided entirely by the compressors (standard operation of a chiller)
- Versions available:
 - High efficiency
 - Silenced high efficiency
 - Glycole-free
 - With pumping assembly (high-head, with/without reserve pump)
 - Versions with pumping assembly and 700 litre tank (500 litres for the 750 size), complete with water filter, flow switch, expansion tank, charging unit and antifreeze electric heater
 - Electronic thermostatic valve
 - Inverter fans
- Microprocessor control system of the compressors and fans for the management of the three operating modes (Free-Cooling only, mixed Free-Cooling and compressors and compressors only)
- Display of all operating parameters in 4 languages.
- Simplified remote control panel with shielded cable up to 50 m. Performs the basic checks of the unit with alarm warnings.
- High efficiency air-water exchanger (Free-Cooling) with smooth tubes and corrugated fins
- Three-way valve located on the water side for water switch-over on the Free-Cooling coils
- High and low pressure transducers (standard for all versions)
- Fan speed adjustment device for low air temperature operation. Manages the cooling capacity in the Free-Cooling mode

Accessories

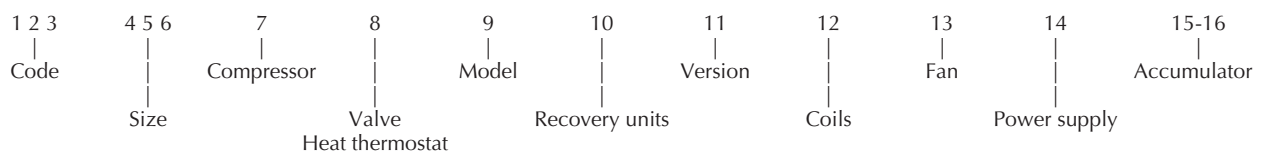
- **AER485:** RS-485 interface for supervision systems with MODBUS protocol.
- **VT:** anti-vibration support, to be fitted below the sheet metal base of the unit.
- **AVX:** sprung anti-vibration supports. Select the AVX model from the compatibility table.
- **DRE:** Electronic starting current reduction device. **Can only be installed in the factory.**
- **GP:** Protection grille, protects the external coil from accidental knocks.
- **PGS:** Daily/Weekly Programmer. Allows you to programme two time bands per day (two switch on/off cycles) and to have differentiated programming for each day of the week.
- **RIF:** Current rephaser. Parallel connection with the motor makes the reduction of input current possible. **This can only be installed when the machine is being made and must therefore be specified when the order is placed.**
- **AERWEB30:** The AERWEB device allows remote control of a chiller via a serial link from a standard PC. Using additional modules, the device allows to control the chiller via the telephone network, using the **AER-MODEM** accessory; or via the GSM network, using the **AERMODEMGSM** accessory. AERWEB can pilot up to 9 chillers, but each of these **must** be equipped with the AER485 or AER485P2 accessory.
- **DUALCHILLER:** Simplified control system to switch on and off, and command, two chillers (using Aermec GR3 command) in a single system, as if they were a single unit.
- **MULTICHILLER:** 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.
- **PRM1 e PRM2:** ACTORY FITTED ACCESSORY. It is a manual pressure switch electrically wired in series with the existing automatic high pressure switch on the compressor discharge pipe.

		Compatibility of accessories								
Mod. NRL	Vers.	750	800	900	1000	1250	1400	1500	1650	1800
AER485	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
DUALCHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
MULTICHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
PGS	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
AERWEB30	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
VT	00 - P3 - P4	23								
	03 - 04	23								
	00		739	739	745	748	752	757	761	766
AVX	P3 - P4		741	744	747	750	754	758	763	763
	03 - 04		740	743	746	749	753	753	762	762
DRE	All	751	801	901	1001	1251	1401	1501	1651	1801
GP	All	10 (x3)	260	260	260	350	350	350	500	500
RIF	All	53	88	90	92	92	93	94	94	94
PRM1-PRM2	All	✓	✓	✓	✓	✓	✓	✓	✓	✓

Choice of Unit

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

Field configurator:



Code:

NRL

Size:

075, 080, 090, 100, 125, 140, 150, 165, 180

Compressors:

0 - R410A standard compressors

Thermostatic valve:

- ° - Standard mechanical thermostatic valve
- Y - Mechanical thermostatic valve with processed water from +4°C down to -6 °C
- X - Electronic thermostatic valve also with processed water down to -6°C

Model:

- F - Free-cooling
- B - Free-cooling glycol free

Heat recovery units

- ° - Without recovery units
- D - Desuperheater

Version:

- A - High efficiency
- E - High efficiency, silenced version

Batteries:

- ° - Aluminium
- R - Copper
- S - Tinned copper
- V - In painted copper and aluminium (epoxy paint)

Fans:

- ° - Standard
- J - Inverter

Power supply:

- ° - 400V 3N~ 50Hz with thermomagnetic switches
- 2 - 500V 3~ 50Hz with thermomagnetic switches (contact the company head office for versions with DCPX)

Accumulator:

- 00 - without accumulator
- 03 - high-head accumulator and single pump
- 04 - high-head accumulator and reserve pump
- P3 - without accumulator, with high-head pump
- P4 - without accumulator, with high-head pump and reserve pump

Warning:

– the standard options are shown by the symbol °;

Example of the commercial code: **NRL075°FA°°00**

This is a size 075 NRL unit with standard mechanical thermostatic valve, Free-cooling model, high efficiency, with aluminium condensing coils, standard fans, electrical panel for compressors with 400V 3N~ 50Hz motors and without accumulator.

Technical data

Mod. NRL Free Cooling		Vers.	750	800	900	1000	1250	1400	1500	1650	1800
Cooling capacity	(kW)	A	191	210	229	247	310	337	364	430	452
		E	177	196	216	228	289	310	331	400	421
Total power input	(kW)	A	69.6	75	89	103	114	136	157	159	175
		E	76.4	80	93	109	120	145	169	169	186
Water flow rate	(l/h)	A	32850	36120	39390	42480	53320	57960	62610	73960	77740
		E	30440	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drop	(kPa)	A	103	77	82	81	92	98	83	104	107
		E	89	68	73	69	80	84	70	90	93
EER	(W/W)	A	2.75	2.81	2.58	2.41	2.72	2.48	2.31	2.70	2.58
		E	2.32	2.46	2.33	2.09	2.40	2.14	1.95	2.37	2.26
Input current	(A)	A	123	144	169	195	208	252	296	298	317
		E	135	149	174	203	217	265	312	310	332
Cooling capacity	(kW)	A	187	182	206	229	257	291	326	399	440
		E	178	178	201	223	263	288	314	396	443
Total power input	(kW)	A	5.4	7.5	7.5	7.5	11.0	11.0	11.0	14.5	14.5
		E	5.4	7.5	7.5	7.5	11.0	11.0	11.0	14.5	14.5
Water flow rate	(l/h)	A	32850	36120	39390	42840	53320	57960	62610	73960	77740
		E	30440	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drop	(kPa)	A	156.3	105	110	110	123	131	117	140	145
		E	134	93	99	94	106	110	94	117	120
EER	(W/W)	A	34.63	24.30	27.48	30.53	23.34	26.47	29.61	27.48	30.32
		E	34.63	23.76	26.76	29.76	23.89	26.19	28.50	27.33	30.58
Input current	(A)	A/E	11.6	15	15	15	22	22	22	30	30
Maximum current (FLA)	(A)	A/E	144	177	199	221	274	303	332	373	406
Starting current (LRA)	(A)	A/E	320	352	408	430	542	512	541	641	674
Compressors	(no./no.)	A/E	4 / 2	4 / 2	4 / 2	4 / 2	4/2	5/2	6/2	6/2	6/2
♪ Sound pressure	db(A)	A	55	56.5	56.5	56.5	59.5	59.0	58.5	60.0	62.0
		E	50	50.5	50.5	50.5	53.5	53.0	52.5	54.00	56.0
Plumbing connections	(Ø)	(00)	2"1/2	3"	3"	3"	4"	4"	4"	4"	4"
Air flow rate	(m3/h)	A	56000	79600	78800	78000	115200	114000	112800	155200	153600
		E	46500	55700	55200	55800	80600	79800	80700	108600	109800
Hydronic kit											
Tank capacity	(l)	A/E	500	700	700	700	700	700	700	700	700
Input power pump motor	(kW)	A/E	5.5	6.5	6.5	6.5	8.6	8.6	8.6	12.3	12.3
Input current pump motor	(A)	A/E	11	11.0	11.0	11.0	14.6	14.6	14.6	21.2	21.2
Useful head chiller	(kPa)	A	177	220	210	204	242	223	224	192	182
		E	200	233	222	223	262	250	255	214	206
Useful head free-cooling	(kPa)	A	119	194	184	177	214	195	195	165	155
		E	150	211	202	203	245	234	242	197	189

Performance values refer to the following conditions:

■ Cooling:

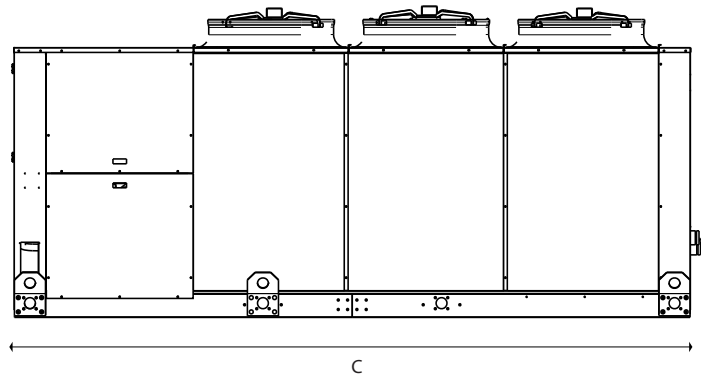
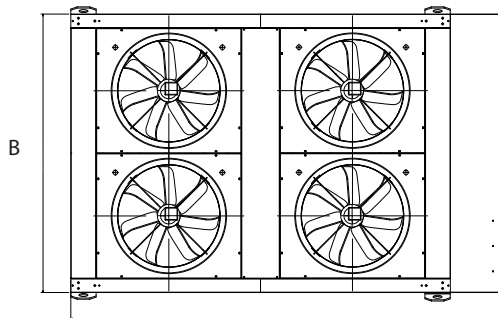
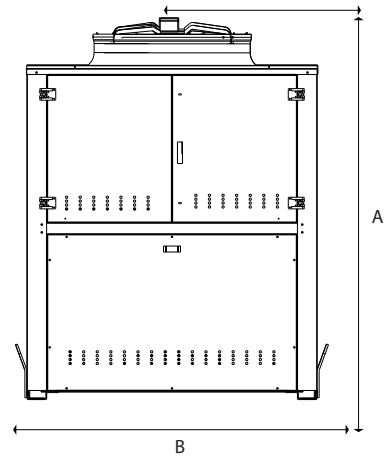
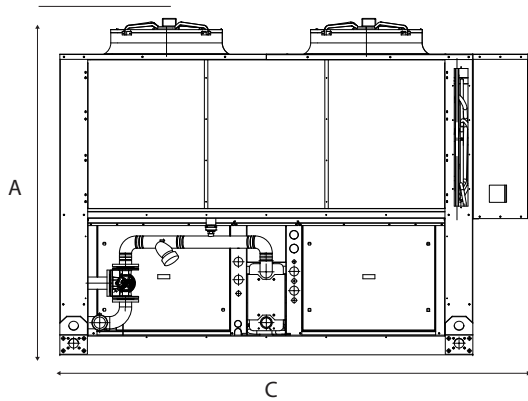
- water outlet temperature 7 °C
- outside air temp. 35 °C
- $\Delta t = 5$ °C.

■ Cooling in Free-Cooling mode:

- water inlet temperature 15°C;
- outside air temperature 2°C;
- nominal water flow rate;
- compressors off.

- ♪ Sound pressure measured in free field conditions, in cooling mode, at distance of 10m and direction factor = 2.
In accordance with the ISO 3744 standard
- Power supply voltage: 400 V

Dimensions (mm)



Mod.NRL Free Cooling	Vers.	750	800	900	1000	1250	1400	1500	1650	1800
Height (mm) A	A/E	1955	2450	2450	2450	2450	2450	2450	2450	2450
Width (mm) B	A/E	1500	2200	2200	2200	2200	2200	2200	2200	2200
Depth (mm) C	A/E	4350	3400	3400	3400	4250	4250	4250	5750	5750
Weight when empty (kg) A	A/E	1889	2470	2650	2840	3120	3380	3660	4220	4420

The technical data in this document are not binding. Aermec S.p.A. shall have the right to introduce at any time whatever modifications deemed necessary for the improvement of the product.

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