

# NRL

Chillers, air-cooled with axial flow fans  
Cooling capacity from 174 kW to 469 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**
- **COMPACT VERSION**
- **SILENCED COMPACT VERSION**
- **2 COOLING CIRCUITS**
- **CIRCULATION PUMP**
- **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
- Operating limits with cooling mode up to 46°C
  - Max. processed water temperature 18° C
- Versions available
  - ° Cooling only compact version
  - L Cooling only compact silenced version
  - A Cooling only, high efficiency
- E Cooling only, high efficiency, silenced version
- C - Condenser unit
  - Electronic thermostatic valve also for low water temperature (down to -6°C)
  - (°) standard mechanical thermostatic valve
  - (Y) Mechanical thermostatic valve (low water temperature - down to -6°C).
    - Enlarged fans
- Versions with pumping assembly and tank complete with water filter, flow switch, expansion tank, a charging unit and antifreeze electric heater
- Microprocessor control system
  - Control of the inlet water temperature, with the possibility of selecting the control of the outlet water
- Summer condensation control with 0-10V modulating signal depending on pressure, compensated according to the outside air temperature (with DCPX accessory).
- Rotation of compressors and pumps according to operating hours (manual rotation from 1400 to 1800)
- Safety capacity control
- Low pressure transducers and high pressure trasducer (standard on all the versions)
- Automatic reset of alarms before total block
- Messages in 4 languages.
- Alarm Log

### Accessories

- **AER485:** RS-485 interface for supervision systems with MODBUS protocol.
- **AVX:** Sprung anti-vibration supports. Select the AVX model from the compatibility table.
- **DCPX:** This accessory allows correct operation with outside temperatures below 10°C and down to -10°C. It is made up of an electronic regulation card that varies the fan rpm on the basis of the condensation pressure, once the high pressure transducer is read for the purposes of keeping it sufficiently high FOR the proper functioning of the unit. It also allows correct heating operation with outside temperatures greater than 30°C and up to 42°C.
- **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.
- **TRX1:** Metal cap that replaces the plastic cap, mounted for protection in the accumulators with holes and supplementary electric heaters.
- **VT:** Anti-vibration support, to be fitted below the unit base.
- **PRM1 e 2:** FACTORY FITTED ACCESSORY. It is a manual pressure switch electrically wired in series with the existing automatic high pressure switch on the compressor discharge pipe.

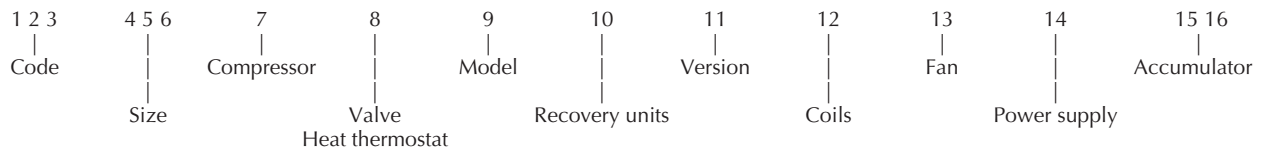
### Compatibility of accessories

Mod. NRL	Vers.	750	800	900	1000	1250	1400	1500	1650	1800
AER485	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
DUALCHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
MULTICHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
PGS	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
AERWEB30	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
TRX1	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
AVX	All	-	✓	✓	✓	✓	✓	✓	✓	✓
VT	All	23	-	-	-	-	-	-	-	-
	°	64	64	64	65	65	66	66	67	67
DCPX	L	standard	standard	standard	standard	standard	standard	standard	standard	standard
	A	64	66	66	66	67	67	67	68	68
	E	standard	standard	standard	standard	standard	standard	standard	standard	standard
	°	65	65	65	65	65	66	66	68	68
DCPX "M" vers. with enlarged fans	L	standard	standard	standard	standard	standard	standard	standard	standard	standard
	A	65	66	66	66	68	68	68	68	68
	E	standard	standard	standard	standard	standard	standard	standard	standard	standard
DRE	All	751	801	901	1001	1251	1401	1501	1651	1801
GP	° - L	10 (x3)	10 (x3)	10 (x3)	10 (x4)	10 (x4)	350	350	350	350
	A - E	10 (x3)	260	260	260	350	350	350	500	500
TP2	All	(x2)	(x 2)	(x 2)	(x 2)	(x 2)	(x 2)	(x 2)	(x 2)	(x 2)
RIF	° - L	53	87	89	91	91	93	94	94	94
	A - E	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 up to +4°C
- Y - Low water temperature mechanical thermostatic valve down to -6°C
- X - Electronic thermostatic valve also for low water temperature (down to -6°C)

#### Model:

- ° - Cooling only
- C - Condensing unit

#### Heat recovery units

- ° - Without recovery units
- D - With partial recovery (desuperheater)
- T - With total heat recovery

#### Version:

- ° - Compact
- L - Compact, silenced version
- A - High efficiency
- E - High efficiency, silenced version

#### Batteries:

- ° - Aluminium
- R - Copper
- S - Tinned copper
- V - Varnished

#### Fans:

- ° - Standard
- M - Enlarged
- J - Inverter

#### Power supply:

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

#### Accumulator:

- 00 - without accumulator
- 01 - low-head accumulator and single pump
- 02 - low-head accumulator and reserve pump
- 03 - high-head accumulator and single pump
- 04 - high-head accumulator and reserve pump
- 05 - accumulator (with holes for supplementary electric heaters) low-head and single pump
- 06 - accumulator (with holes for supplementary electric heaters) low-head and reserve pump
- 07 - accumulator (with holes for supplementary electric heaters) high-head and single pump
- 08 - accumulator (with holes for supplementary electric heaters) high-head and reserve pump
- 09 - double hydraulic ring
- 10 - double hydraulic ring with supplementary electric heater
- P1 - without accumulator, with low-head pump
- P2 - without accumulator, with low-head pump and reserve pump
- P3 - without accumulator, with high-head pump
- P4 - without accumulator, with high-head pump and reserve pump

#### Warning:

- options D - T - C are not compatible with option Y
  - the standard options are shown by the symbol °;
- Example of the commercial code: **NRL0900°°°°°°°°00**

This is a size 090 NRL unit with standard mechanical thermostatic valve up to +4°C, cooling only model, compact, with aluminium condensing coils, standard fans, electrical panel for compressors with 400V 3~ 50Hz motors and without accumulator.

## Technical data

Mod. NRL		Vers. 750	800	900	1000	1250	1400	1500	1650	1800	
Cooling capacity	(kW)	°	190	211	231	257	303	338	375	412	449
		L	174	190	210	235	271	302	336	366	393
		A	195	218	242	271	322	357	399	437	469
		E	180	203	224	250	298	329	367	409	436
Total power input	(kW)	°	69	78	92	104	121	142	161	175	187
		L	75	88	101	113	134	157	177	192	208
		A	62	69	81	93	106	124	142	154	167
		E	68	76	88	101	115	134	154	165	179
Water flow rate	(l/h)	°	32680	36290	39730	44200	52120	58140	64500	70860	77230
		L	29930	32680	36120	40420	46610	51940	57790	62950	67600
		A	33540	37500	41620	46610	55380	61400	68630	75160	80670
		E	30960	34920	38530	43000	51260	56590	63120	70350	74990
Pressure drop	(kPa)	°	86	66	68	73	80	73	79	59	59
		L	72	55	57	61	65	59	64	48	46
		A	88	66	70	70	73	78	61	61	62
		E	75	58	61	61	63	67	52	54	54
EER	(W/W)	°	2.75	2.71	2.51	2.47	2.50	2.38	2.33	2.35	2.40
		L	2.32	2.16	2.08	2.08	2.02	1.92	1.90	1.91	1.89
		A	3.15	3.16	2.99	2.91	3.04	2.88	2.81	2.84	2.81
		E	2.65	2.67	2.55	2.48	2.59	2.46	2.38	2.48	2.44
ESEER	(W/W)	°	3.87	4.19	3.97	3.98	3.96	3.76	3.68	3.72	3.79
		L	3.85	4.10	3.95	3.95	3.84	3.65	3.61	3.62	3.59
		A	4.19	4.39	4.27	4.17	4.34	4.12	4.02	4.06	4.02
		E	4.05	4.27	4.20	4.08	4.28	4.05	3.93	4.02	4.02
Power supply		400V-3-50Hz (*)									
Total input current	(A)	°	122	142	166	189	208	249	286	305	319
		L	113	153	177	200	226	269	308	328	348
		A	113	136	158	180	196	235	273	289	304
		E	109	145	169	192	211	251	292	306	324
Maximum current (FLA)	(A)	°-L	144	170	192	217	261	290	319	358	391
		A-E	144	173	195	217	267	296	325	365	398
Starting current (LRA)	(A)	°-L	320	345	401	426	529	499	528	626	659
		A-E	320	348	404	426	535	505	534	633	666
Type of compressors		All Scroll									
Compressors (no./circuit)		°-L	4/2	4/2	4/2	4/2	4/2	5/2	6/2	6/2	6/2
		A-E	4/2	4/2	4/2	4/2	5/2	6/2	6/2	6/2	6/2
Type of fans		All Axial									
Fan air flow rate	(m³/h)	°	51400	54900	54150	75800	73200	77000	76000	108300	106200
		L	42700	38430	40575	53060	51240	57700	60800	75810	74340
		A	49000	72800	71500	70200	106200	104100	102000	125800	122000
		E	35300	50960	51805	52650	74340	75420	76500	91110	91500
Number of fans	(no.)	°-L	3	3	3	4	4	4	4	6	6
		A-E	3	4	4	4	6	6	6	8	8
Evaporator		All Plates									
Plumbing connections		All Victaulic									
Dimension of plumbing connections (Ø)	All	2"1/2	4"	4"	4"	4"	4"	4"	4"	4"	
Input power low-head pump	(kW)	All	3.0	3.4	3.4	3.4	4.6	4.6	5.9	5.9	5.9
Input power high-head pump	(kW)	All	5.5	5.7	5.7	5.7	8.3	8.3	8.3	10.5	10.5
Input current low-head pump	(A)	All	6.2	5.8	5.8	5.8	7.8	7.8	10.0	10.0	10.0
Input current high-head pump	(A)	All	11.0	9.7	9.7	9.7	14.1	14.1	14.1	17.8	17.8
Pump useful head low-head	(kPa)	°	81	100	92	91	111	102	88	109	99
		L	92	120	112	111	139	133	116	134	130
		A	71	109	95	85	103	82	106	94	82
		E	82	122	111	104	125	108	125	111	102
Pump useful head high-head	(kPa)	°	201	219	211	208	256	246	220	246	237
		L	212	241	232	229	286	279	258	271	267
		A	191	227	213	200	247	222	226	233	221
		E	202	237	226	216	264	246	250	245	236
Tank capacity	(l)	All	700	700	700	700	700	700	700	700	

(\*) The power supply for the 075 size is: 400V-3N-50Hz.

Performance values refer to the following conditions:

- Cooling:
  - water outlet temperature 7 °C
  - outside air temp. 35 °C
  - Δt = 5 °C.

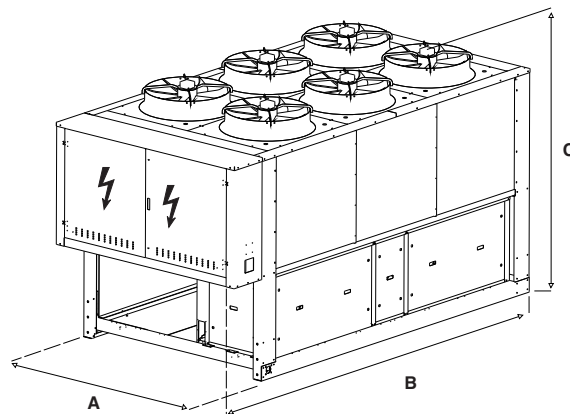
- ♪ Sound pressure measured in free field conditions, in cooling mode at distance of 10m and direction factor = 2. In accordance with the ISO 3744 standard
  - Power supply voltage: 400 V

Mod. NRL		Vers.	750	800	900	1000	1250	1400	1500	1650	1800
♪ Sound power	dB(A)	°	85.0	86.0	86.0	90.0	91.0	90.5	90.5	92.0	92.0
		L	80.0	83.0	83.0	87.0	88.0	87.5	87.5	89.0	89.0
		A	85.0	88.0	88.0	88.0	91.0	90.5	90.5	91.5	93.5
		E	77.0	83.0	83.0	83.0	86.0	85.5	85.0	86.5	88.5
♪ Sound pressure	dB(A)	°	53.0	54.0	54.0	58.0	59.0	58.5	58.5	60.0	60.0
		L	48.0	51.0	51.0	55.0	56.0	55.5	55.5	57.0	57.0
		A	53.0	56.0	56.0	56.0	59.0	58.5	58.5	59.5	61.5
		E	45.0	51.0	51.0	51.0	54.0	53.5	53.0	54.5	56.5

### Technical data version "C"

Mod. NRL C		Vers.	750	800	900	1000	1250	1400	1500	1650	1800
Cooling capacity	(kW)	°	196	220	241	269	316	352	391	430	469
		L	179	198	219	245	283	315	351	383	410
		A	201	227	252	282	335	372	415	463	497
		E	185	211	233	260	311	343	382	426	454
Total power input	(kW)	°	70	81	95	108	125	147	166	182	194
		L	76	91	105	117	139	163	183	199	216
		A	62	71	83	95	109	127	145	152	165
		E	69	78	91	103	118	138	158	169	184
EER	(W/W)	°	2.80	2.71	2.53	2.48	2.52	2.39	2.35	2.37	2.42
		L	2.37	2.19	2.09	2.09	2.03	1.94	1.91	1.92	1.90
		A	3.22	3.19	3.03	2.97	3.08	2.92	2.86	3.05	3.02
		E	2.70	2.71	2.57	2.52	2.64	2.48	2.42	2.52	2.47
Maximum current (FLA)	(A)	°-L	144	170	192	217	261	290	319	358	391
		A-E	144	173	195	217	267	296	325	365	398
Starting current (LRA)	(A)	°-L	320	345	401	426	529	499	528	626	659
		A-E	320	348	404	426	535	505	534	633	666
Input current	(A)	°	123	147	172	196	215	258	297	316	331
		L	134	158	183	207	234	279	319	340	361
		A	110	140	163	185	202	241	281	289	302
		E	121	149	173	197	216	258	299	315	333
♪ Sound power	dB(A)	°	85.0	86.0	86.0	90.0	91.0	90.5	90.5	92.0	92.0
		L	80.0	83.0	83.0	87.0	88.0	87.5	87.5	89.0	89.0
		A	85.0	88.0	88.0	88.0	91.0	90.5	90.5	91.5	93.5
		E	77.0	83.0	83.0	83.0	86.0	85.5	85.0	86.5	88.5
♪ Sound pressure	dB(A)	°	53.0	54.0	54.0	58.0	59.0	58.5	58.5	60.0	60.0
		L	48.0	51.0	51.0	55.0	56.0	55.5	55.5	57.0	57.0
		A	53.0	56.0	56.0	56.0	59.0	58.5	58.5	59.5	61.5
		E	45.0	51.0	51.0	51.0	54.0	53.5	53.0	54.5	56.5

### Dimensions (mm)



Mod. NRL		Vers.	750	800	900	1000	1250	1400	1500	1650	1800	
Height	(mm)	C	° - L	1975	1975	1975	1975	2450	2450	2450	2450	
			A - E	1975	2450	2450	2450	2450	2450	2450	2450	
Width	(mm)	A	° - L	1500	1500	1500	1500	2200	2200	2200	2200	
			A - E	1500	2200	2200	2200	2200	2200	2200	2200	
Depth	(mm)	B	° - L	4350	4355	4355	5355	5355	4250	4250	4250	
			A - E	4350	3400	3400	3400	4250	4250	4250	5750	5750
Weight when empty (kg)			°	1382	1730	1860	2015	2135	2765	2960	3055	3160
			L	1382	1740	1870	2025	2145	2775	2970	3065	3170
			A	1663	2120	2265	2410	2710	2910	3125	3620	3735
			E	1663	2135	2280	2425	2725	2925	3140	3635	3750

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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