

NRL
0750/1800
free-cooling

R410A

Air cooled chillers with axial fans
Cooling capacity from 177 kW to 452 kW



- **HIGH EFFICIENCY VERSION**
- **LOW NOISE HIGH EFFICIENCY VERSION**
- **PUMP ASSEMBLY OPTION**
- **2 REFRIGERANT CIRCUITS**
- **PUMP ASSEMBLY AND BUFFER TANK OPTION**

Characteristics

- Available in 9 sizes
- Refrigerant R410A
- 2 refrigerant circuits
- High efficiency even at part load
- Heat exchangers optimised to benefit from the excellent heat transfer characteristics of R410A
- High efficiency scroll compressors
- Axial fans with low sound level
- Solid construction with polyester anti-corrosion painted finish
- Operation up to 44° C ambient in cooling mode
- Operation modes:
 - Free-Cooling only: is the most economical way to use the unit. Only the fans operate by speed control. Cooling is achieved completely from the external air temperature
 - combined Free-Cooling and compressors: the cooling capacity is achieved from the external air temperature combined with compressor operation at full or partial load
- compressors only: the cooling capacity is provided entirely by the compressors (stand-by operation of a chiller)
- Versions available:
 - High efficiency
 - High efficiency low noise
 - Glycol free
 - With pump assembly (high head, with/without standby pump)
 - With pump assembly and 700 litre buffer tank (500 litres for size 750), complete with water filter, flow switch, expansion tank, charging point and antifreeze electric heater
 - Electronic expansion valve
 - Inverter fans
- Microprocessor control system of the compressors and fans for the control of the three operating modes (Free-Cooling only, combined Free-Cooling and compressors, and compressors only)
- Display of all operating parameters in 4 languages.
- Simplified remote control panel located up to 50 m distance away with shielded cable. Permits basic control and alarm notifications of the unit
- High efficiency air-water coil (Free-Cooling) with smooth tubes and wavy fins
- Three-way valve installed on the hydraulic circuit to modulate flow to the Free-Cooling coils
- High and low pressure transducers (standard for all versions)
- Fan speed controller for low ambient operation. In Free-Cooling mode controls capacity

Accessories

- **AERSET:** The AERSET accessory allows the automatic compensation of the operating set-point of the unit to which it is connected, based on a 0-10V MODBUS input signal. Mandatory accessory: AER485 or MODU-485A
- **AER485:** RS-485 interface for supervision systems with MODBUS protocol.
- **AVX:** spring anti-vibration mounts Select the AVX model from the compatibility table.
- **DRE:** Soft starter (current reduction of about 30% for single circuit units, 26% for two circuit units, 22% for three circuit units). Only available for 400V-3-phase power supply. Factory fitted only.
- **GP:** Protection grille protects the external coil from accidental damage.
- **PGS:** Daily/Weekly Programmer. Allows two daily time-clock programmes (two switch on/off cycles) and different programmes for each day of the week.
- **RIF:** Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current. Must be requested at time of order and is available factory fitted only.
- **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;
- work with integrated GPRS modem; **AERWEB300-18G:** Web server to monitor and remote control max. 18 units in RS485 network with integrated GPRS modem;
- **DUALCHILLER:** Simplified control system to switch on/off and control two chillers in a single system (using Aermec GR3 command), as if they were a single unit.
- **MULTICHILLER:** Control system for multiple parallel installed constant flow chillers providing individual chiller on/off and control capability.
- **PRM1 and PRM2: FACTORY FITTED ACCESSORY. A manual reset pressure switch wired in series with the existing high pressure switch installed on the compressor discharge line.**

Accessory compatibility										
Mod. NRL	Vers.	0750	0800	0900	1000	1250	1404	1504	1655	1800
AERSET	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
AER485	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
DUALCHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
MULTICHILLER	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
PGS	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
AERWEB300	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
VT	00 - P3 - P4	23	-	-	-	-	-	-	-	-
	03 - 04	23	-	-	-	-	-	-	-	-
AVX	00	-	739	739	745	748	752	757	761	766
	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	1404	1504	1655	1801
GP	All	10 (x3)	260	260	260	350	350	350	500	500
RIF	All	53	88	90	92	92	92	92	93	94
PRM1-PRM2	All	✓	✓	✓	✓	✓	✓	✓	✓	✓

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.

Configuration fields:



Code:

NRL

Size:

0750, 0800, 0900, 1000, 1250, 1404, 1504, 1655, 1800

Expansion valve:

- ° - Standard thermostatic expansion valve
- Y - Thermostatic expansion valve with leaving liquid temperature from +4°C down to -6 °C
- X - Electronic thermostatic valve, max. temp. of water produced: +4°C (for lower temperatures please contact us)

Model:

- F - Free-cooling
- K - Free-cooling low pressure drop
- B - Free-cooling glycol free

Heat recovery

- ° - Without heat recovery

Version:

- A - High efficiency
- E - High efficiency low noise version

Coil:

- ° - Aluminium
- R - Copper
- S - Tinned copper
- V - Anti-corrosion coated aluminium (epoxy paint)

Fan:

- ° - Standard
- J - Inverter

Power supply:

- ° - 400V 3N~ 50Hz with circuit breakers (only NRL 0750 model)
- 400V 3~ 50Hz with circuit breakers

Integrated hydronic module:

- 00 - without pump or buffer tank
- 03 - single high head pump and buffer tank
- 04 - single and standby high head pump and buffer tank
- P3 - single high head pump without buffer tank
- P4 - single and standby high head pump without buffer tank

WARNING:

NRL "B" size 750 can not be provided with hydronic kit 03-04-P3-P4

NRL "B" size 800-1800 can not be provided with hydronic kit 03-04

Attention:

– the standard options are shown by the symbol °

Example of configuration code: NRL0750°F°A°°°00

This is an NRL unit of size 750, with standard thermostatic expansion valve, Free-cooling model, without heat recovery, high efficiency, with aluminium condenser coils, standard fans, and electrical panel for compressor motors 400V 3N~ 50Hz, and without pump or buffer tank.

Technical Data

Mod. NRL Free Cooling	U.M.	Vers.	0750	0800	0900	1000	1250	1404	1504	1655	1800
Cooling capacity	(kW)	FA	191	210	229	247	310	337	364	430	452
		FE	177	196	216	228	289	310	331	400	421
Total power input	(kW)	FA	69,6	75	89	103	114	136	157	159	175
		FE	76,4	80	93	109	120	145	169	169	186
Water flow rate	(l/h)	FA	32850	36120	39390	42480	53320	57960	62610	73960	77740
		FE	30440	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drop	(kPa)	FA	103	77	82	81	92	98	83	104	107
		FE	89	68	73	69	80	84	70	90	93
EER	(W/W)	FA	2,75	2,81	2,58	2,41	2,72	2,48	2,31	2,70	2,58
		FE	2,32	2,46	2,33	2,09	2,40	2,14	1,95	2,37	2,26
Input current	(A)	FA	123	144	169	195	208	252	296	298	317
		FE	135	149	174	203	217	265	312	310	332
Cooling capacity	(kW)	FA	187	182	206	229	257	291	326	399	440
		FE	187	178	201	223	263	288	314	396	443
Total power input	(kW)	Tutte	5,4	7,5	7,5	7,5	11,0	11,0	11,0	14,5	14,5
Water flow rate	(l/h)	FA	32850	36120	39390	42840	53320	57960	62610	73960	77740
		FE	30440	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drop	(kPa)	FA	156,3	105	110	110	123	131	117	140	145
		FE	134	93	99	94	106	110	94	117	120
EER	(W/W)	FA	34,63	24,30	27,48	30,53	23,34	26,47	29,61	27,48	30,32
		FE	34,63	23,76	26,76	29,76	23,89	26,19	28,50	27,33	30,58
Input current	(A)	FA/FE	11,6	15	15	15	22	22	22	30	30
Mod. NRL Free Cooling - "K" low pressure drop											
Cooling capacity	(kW)	FA	194,8	214,2	233,6	251,9	316,2	343,7	371,3	438,6	461,0
		FE	180,5	199,9	220,3	232,6	294,8	316,2	337,6	408,0	429,4
Total power input	(kW)	FA	69,6	75,0	89,0	103,0	114,0	136,0	157,0	159,0	175,0
		FE	76,4	80,0	93,0	109,0	120,0	145,0	169,0	169,0	186,0
Water flow rate	(l/h)	FA	33509	36843	40176	43334	54387	59124	63861	75440	79300
		FE	31053	34387	37895	40001	50703	54387	58071	70177	73861
Total pressure drop	(kPa)	FA	34,6	64,8	65,8	70,2	65,6	69,1	75,2	95,5	105,2
		FE	29,7	56,5	58,6	59,8	57,0	58,5	62,2	82,6	91,3
EER	(W/W)	FA	2,80	2,86	2,62	2,45	2,77	2,53	2,36	2,76	2,63
		FE	2,36	2,50	2,37	2,13	2,46	2,18	2,00	2,41	2,31
Input current	(A)	FA	123	144	169	195	208	252	296	298	317
		FE	135	149	174	203	217	265	312	312	332
Cooling capacity	(kW)	FA/FE	165,3	174,6	199,1	223,7	242,2	275,0	307,9	378,5	420,2
Total power input	(kW)	FA/FE	5,4	7,5	7,5	7,5	11	11	11	14,5	14,5
Water flow rate	(l/h)	FA	32169	35369	38569	41601	52212	56759	61306	72422	76128
		FE	29811	33011	36380	38401	48675	52212	55748	67370	70907
Total pressure drop	(kPa)	FA	63,9	88,3	86,9	91,2	87,1	90,9	97,3	125,6	135,6
		FE	54,9	76,9	77,3	77,7	75,7	76,9	80,4	108,7	117,6
EER	(W/W)	FA/FE	30,6	23,3	26,6	29,8	22,0	25,0	28,0	26,1	29,0
Input current	(A)	FA/FE	11,6	15	15	15	22	22	22	30	30
Mod. NRL Free Cooling Glycol free											
Cooling capacity	kW	Tutte	143	153	170	186	217	242	266	328	361
Total power input	kW	Tutte	7.7	11.1	11.1	11.1	17.3	17.3	17.3	23.2	23.2
Water flow rate	(l/h)	BA	32850	36111	39334	42557	53345	57936	62526	73935	77730
		BE	30440	33734	37106	39206	49665	53259	56853	68770	72329
Total pressure drop	(kPa)	BA	130	94	102	103	108	117	104	108	112
		BE	112	87	94	94	99	105	94	99	102
Input current glycol free	A	BA BE	16.5	21	21	21	33	34	34	45	45

Cooling

- leaving water temperature 7°C;
- external air temperature 35°C;
- $\Delta t = 5$ °C;

Cooling in Free-Cooling mode:

- entering water temperature 15°C;
- external air temperature 2°C;
- nominal water flow rate;
- compressors off.

Cooling in Free-Cooling Glycol free

- entering water temperature 15°C;
- external air temperature 2°C;
- nominal water flow rate;
- compressors off.

Technical Data

Mod. NRL Free Cooling	U.M.	Vers.	0750	0800	0900	1000	1250	1404	1504	1655	1800
Maximum current (FLA)	(A)	FA/FE	144	177	199	221	274	290	320	357	406
Starting current (LRA)	(A)	FA/FE	320	352	408	430	542	624	654	691	674
Compressors/circuits	(n°/n°)	FA/FE	4/2	4/2	4/2	4/2	4/2	4/2	4/2	5/2	6/2
Sound power	dB(A)	FA	87	88,5	88,5	88,5	91,5	91	90,5	92	94
		FE	82	82,5	82,5	82,5	85,5	85	84,5	86	88
♪ Sound pressure	db(A)	FA	55	56,5	56,5	56,5	59,5	59,0	58,5	60,0	62,0
		FE	50	50,5	50,5	50,5	53,5	53,0	52,5	54,00	56,0
Hydraulic connections	(Ø)	(00)	2"1/2	3"	3"	3"	4"	4"	4"	4"	4"
Air flow rate	(m3/h)	FA	56000	79600	78800	78000	115200	114000	112800	155200	153600
		FE	46500	55700	55200	55800	80600	79800	80700	108600	109800
Pump assembly option											
Tank capacity	(l)	FA/FE	500	700	700	700	700	700	700	700	700
Input power pump motor	(kW)	FA/FE	5,5	6,5	6,5	6,5	8,6	8,6	8,6	12,3	12,3
Input current pump motor	(A)	FA/FE	11	11,0	11,0	11,0	14,6	14,6	14,6	21,2	21,2
Useful head (Chiller)	kPa	FA	177	220	210	204	242	223	224	192	182
		FE	200	233	222	223	262	250	255	214	206
Useful head (Free-cooling)	kPa	FA	119	194	184	177	214	195	195	165	155
		FE	150	211	202	203	245	234	242	197	189
Mod. NRL Free Cooling Glycol free											
Sound power	db(A)	BA BE	87	88.5	88.5	88.5	91.5	91	90.5	92	94
♪ Sound pressure	db(A)	BA BE	55	56.5	56.5	56.5	59.5	59.0	58.5	60.0	62.0
Air flow rate	(m3/h)	BA BE	56000	79600	78800	78000	115200	114000	112800	155200	153600

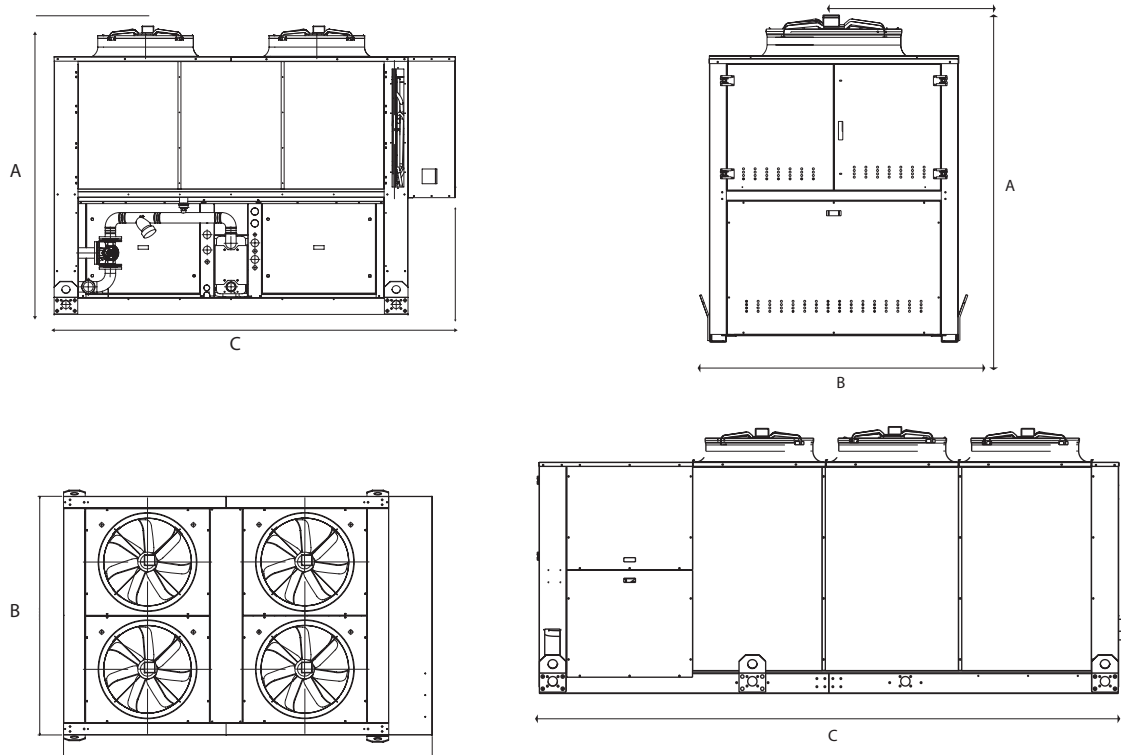
Sound power:

Aermec determines the value based on the measurements made in compliance with the standard ISO 9614 - 2, respecting Eurovent requirements.

♪ Sound pressure:

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

Dimensions (mm)



Mod. NRL-F / NRL-B	U.M.	Vers.	0750	0800	0900	1000	1250	1404	1504	1655	1800
Height	A (mm)	A/E	1955	2450	2450	2450	2450	2450	2450	2450	2450
Width	B (mm)	A/E	1500	2200	2200	2200	2200	2200	2200	2200	2200
Length	C (mm)	A/E	4350	3400	3400	3400	4250	4250	4250	5750	5750
Weight empty	A (kg)	A/E	1889	2470	2650	2840	3120	3380	3660	4220	4420

Aermec reserves the right to make all modification deemed necessary for improving the product at any time with any modification of technical data.

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