

**NRL**  
0800/1800  
free-cooling

**R410A**

**Air/Water chillers for outdoor installation with free cooling**  
Scroll compressors, plate exchangers and axial fans  
Cooling capacity from 196÷452kW



- **HIGH EFFICIENCY VERSION**
- **HIGH EFFICIENCY ALSO AT PARTIAL LOADS**
- **SYSTEM SIDE INTEGRATED HYDRONIC KIT OPTION**

## Characteristics

The NRL free cooling are chillers, designed and manufactured to meet air conditioning requirements in residential/commercial buildings or to meet refrigeration requirements in industrial facilities.

They are outdoor units with scroll compressors, axial fans, external copper coils with aluminium fins and plate exchanger.

These chillers are also equipped with a Free cooling coil and are used when the refrigerant load request persists even during the winter months, or when the outdoor air temperature is below the temperature of the return liquid from the system. In Free cooling operation (mixed Free cooling and compressors, or Free cooling only), the fluid is cooled directly by the outdoor air, allowing even the complete shutdown of compressors with a significant energy saving. It is also possible to have the Glycol free version for all those applications where the use of glycol is not allowed

### Versions

**NRL\_FA** High efficiency  
**NRL\_FE** Silenced

**NRL\_BA** High efficiency without the use of glycol  
**NRL\_BE** Silenced without the use of glycol  
**Operating range:** Work up to 44°C of outdoor air temperature at full load. For further details refer to the selection software/technical documentation.

- Unit with two refrigerant circuits designed to provide maximum efficiency at full load, ensuring high efficiency at partial loads also and ensuring continuity in case one of the two circuits stop.
- Flow switch, water filter and standard high and low pressure transducers
- Possibility of integrated hydronic kit that encloses the main hydraulic components; it is available in different configurations with or without storage, one or two high static pressure pumps
- Three-way valve located on the water side for water switching on the Free-Cooling coils
- Device for electronically controlling the series condensation, for operation even at low temperatures or in free cooling, which allows

adjusting the air flow rate to actual system demand with resulting advantages in terms of consumption reduction.

- Microprocessor adjustment, that allows isolating the condenser coils to maximise the free cooling efficiency, even in mixed Free cooling and compressor operation
- Complete, with keyboard and LCD display, for easy consultation and intervention on the unit via a menu available in several languages.
- 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.

## Accessories

- **AER485P1:** RS-485 interface for supervising systems with MODBUS protocol.
- **PGD1:** Simplified remote panel. Allows performing the basic controls of the unit with alarm signals.
- **MULTICHILLER\_PCO:** Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel, always ensuring constant flow rate to the exchangers.
- **AERWEB300:** the AERWEB device allows the remote control of a chiller by means of a common PC through Ethernet connection, via a common browser; 4 models available:

**AERWEB300-6:** Web server for monitoring and controlling maximum 6 RS485 network devices;  
**AERWEB300-18:** Web server for monitoring and controlling maximum 18 RS485 network devices;  
**AERWEB300-6G:** Web server for monitoring and controlling maximum 6 RS485 network devices with integrated GPRS modem;  
**AERWEB300-18G:** Web server for monitoring and controlling maximum 18 RS485 network devices with integrated GPRS modem;

- **GP:** Protection grids for coils and cooling circuit.
- **VT:** Group of anti-vibration mounts.

### Accessories mounted in the factory;

- **DRE:** Peak current reduction electronic device. **Only available with 400V power supply.**
- **RIF:** power factor correction, connected in parallel to the motor, it allows a reduction of the input current (approx. 10%).
- **PRM1:** Manually-rearmed pressure switch, wired in series to the high pressure switch on the flow pipe of the compressor.

Mod. NRL	Vers.	0800	0900	1000	1250	1404	1504	1655	1800
AER485P1	Alls	.	.	.	.	.	.	.	.
PGD1	Alls	.	.	.	.	.	.	.	.
AERWEB300	Alls	.	.	.	.	.	.	.	.
MULTICHILLER_PCO	Alls	.	.	.	.	.	.	.	.
GP	Alls	260	260	260	350	350	350	500	500
	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
<b>Accessories mounted in the factory;</b>									
DRE	Alls	801	901	1001	1251	1404	1504	1655	1801
RIF	Alls	88	90	92	92	92	92	93	94
PRM1	Alls	.	.	.	.	.	.	.	.

## 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.

### Field Description

**1,2,3** **NRL**

**4,5,6,7** **Sizes**

0800-0900-1000-1250-1404-1504-1655-1800

**8** **Scope of application**

° Standard (temperature of water produced up to +4 °C)

**Y** Low temperature (temperature of water produced from +4°C to -8°C)

**X** Electronic thermostatic valve (temperature of water produced up to +4 °C) for different temperatures, contact the supplier

**9** **Model**

**F** Chiller with Free cooling

**K** Chiller with Free cooling and low pressure drops

**B** Chiller with Free cooling glycol free

**10** **Heat recovery**

° Without heat recovery

**11** **Version**

**A** High efficiency

**E** Silenced high efficiency

**12** **Coils**

° Aluminium

**R** Copper

**S** Tinned copper

**V** Painted

**13** **Fans**

° Standard

**J** Inverter

**14** **Power supply**

° 400V/3/50Hz with magnet circuit breakers

**15-16** **System side integrated hydronic kit (2)**

**00** Without hydronic kit

**03** Storage tank with 1 high static pressure pump

**04** Storage tank with 2 high static pressure pumps

**P3** 1 High static pressure pump

**P4** 2 High static pressure pumps

(2) In models glycol free "B" option kit hydronic system side is not available:

- In sizes 0800 to 1800 option 03/04

## Technical Data

Freecooling Models			0800	0900	1000	1250	1404	1504	1655	1800
Cooling capacity	FA	kW	210	229	247	310	337	364	430	452
	FE	kW	196	216	228	289	310	331	400	421
Input power	FA	kW	75	89	103	114	136	157	159	175
	FE	kW	80	93	109	120	145	169	169	186
EER	FA	W/W	2,81	2,58	2,41	2,72	2,48	2,31	2,70	2,58
	FE	W/W	2,46	2,33	2,09	2,40	2,14	1,95	2,37	2,26
Water flow rate	FA	l/h	36120	39390	42480	53320	57960	62610	73960	77740
	FE	l/h	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drops	FA	kPa	77	82	81	92	98	83	104	107
	FE	kPa	68	73	69	80	84	70	90	93
Cooling capacity	FA	kW	182	206	229	257	291	326	399	440
	FE	kW	178	201	223	263	288	314	396	443
Input power	FA/FE	kW	7,5	7,5	7,5	11,0	11,0	11,0	14,5	14,5
EER	FA	W/W	24,30	27,48	30,53	23,34	26,47	29,61	27,48	30,32
	FE	W/W	23,76	26,76	29,76	23,89	26,19	28,50	27,33	30,58
Water flow rate	FA	l/h	36120	39390	42840	53320	57960	62610	73960	77740
	FE	l/h	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drops	FA	kPa	105	110	110	123	131	117	140	145
	FE	kPa	93	99	94	106	110	94	117	120

### Cooling mode

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

### Cooling in freecooling (100%)

Evaporator water temperature (in) 15°C; Outdoor air temperature 2°C

Freecooling glycol free models			0800	0900	1000	1250	1404	1504	1655	1800	
Cooling capacity	(1)	BA	kW	153	170	186	217	242	266	328	361
	(1)	BE	kW	147	164	181	216	241	267	327	364
Input power		BA	kW	11,1	11,1	11,1	17,3	17,3	17,3	23,2	23,2
		BE	kW	7,50	7,50	7,50	11,0	11,0	11,0	14,50	14,50
EER		BA	W/W	13,78	15,32	16,76	12,54	13,99	15,38	14,14	15,56
		BE	W/W	19,60	21,87	24,13	19,64	21,91	24,27	22,55	25,10
Water flow rate		BA	l/h	36120	39390	42480	53320	57960	62610	73960	77740
		BE	l/h	33730	37110	39210	49670	53260	56850	68770	72330
Total pressure drops		BA	kPa	77	82	81	92	98	83	104	107
		BE	kPa	68	73	69	80	84	70	90	93

### Cooling in freecooling glycol free (100%)

Evaporator water temperature (in) 15°C; Outdoor air temperature 2°C

(1) Performance in cooling, operation as chiller, are the same

Freecooling with low pressure loads models			0800	0900	1000	1250	1404	1504	1655	1800	
Cooling capacity		KA	kW	214,2	233,6	251,9	316,2	343,7	371,3	438,6	461,0
		KE	kW	199,9	220,3	232,6	294,8	316,2	337,6	408,0	429,4
Input power		KA	kW	75,0	89,0	103,0	114,0	136,0	157,0	159,0	175,0
		KE	kW	80,0	93,0	109,0	120,0	145,0	169,0	169,0	186,0
EER		KA	W/W	2,86	2,62	2,45	2,77	2,53	2,36	2,76	2,63
		KE	W/W	2,50	2,37	2,13	2,46	2,18	2,00	2,41	2,31
Water flow rate		KA	l/h	36843	40176	43334	54387	59124	63861	75440	79300
		KE	l/h	34387	37895	40001	50703	54387	58071	70177	73861
Total pressure drops		KA	kPa	64,8	65,8	70,2	65,6	69,1	75,2	95,5	105,2
		KE	kPa	56,5	58,6	59,8	57,0	58,5	62,2	82,6	91,3
Cooling capacity		KA/KE	kW	174,6	199,1	223,7	242,2	275,0	307,9	378,5	420,2
Input power		KA/KE	kW	7,5	7,5	7,5	11	11	11	14,5	14,5
EER		KA/KE	W/W	23,3	26,6	29,8	22,0	25,0	28,0	26,1	29,0
Water flow rate		KA	l/h	35369	38569	41601	52212	56759	61306	72422	76128
		KE	l/h	33011	36380	38401	48675	52212	55748	67370	70907
Total pressure drops		KA	kPa	88	87	91	87	90	97	126	136
		KE	kPa	77	77	78	76	77	80	109	117

### Cooling mode

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

### Cooling in freecooling (100%)

Evaporator water temperature (in) 15°C; Outdoor air temperature 2°C

## Technical data

GENERAL DATA				0800	0900	1000	1250	1404	1504	1655	1800
<b>Electrical data</b>											
Total input current (Chiller)	(2)	FA	A	144	169	195	208	252	296	298	317
	(2)	FE	A	149	174	203	217	265	312	310	332
Total input current (freecooling)	(2)	FA/FE	A	15	15	15	22	22	22	30	30
	(2)	BA/BE	A	21	21	21	33	34	34	45	45
	(2)	KA/KE	A	15	15	15	22	22	22	30	30
Maximum current (FLA)			A	177	199	221	274	290	320	357	406
Peak current (LRA)			A	352	408	430	542	624	654	691	674
<b>Compressors</b>											
Compressors			type	scroll							
			n°	4	4	4	4	4	4	5	6
Circuits			n°	2	2	2	2	2	2	2	2
Refrigerant gas			type	R410A							
<b>System side heat exchanger</b>											
Heat exchanger			type	plate							
			n°	1	1	1	1	1	1	1	1
Hydraulic connections		(in/out)	Ø	3"	3"	3"	4"	4"	4"	4"	4"
<b>Standard Fans</b>											
Fans			type	axial							
		A/E	n°	4	4	4	6	6	6	8	8
Air flow rate		A	m³/h	79600	78800	78000	115200	114000	112800	155200	153600
		E	m³/h	55700	55200	55800	80600	79800	80700	108600	109800
<b>System side integrated hydronic kit</b>											
Storage tank	(3)		l	700	700	700	700	700	700	700	700
Useful static pressure			kPa	refer to the selection program or to the technical documentation							
<b>Sound data</b>											
Sound power			dB(A)	88,5	88,5	88,5	91,5	91	90,5	92	94
			dB(A)	82,5	82,5	82,5	85,5	85	84,5	86	88
Sound Pressure			dB(A)	56,5	56,5	56,5	59,5	59,0	58,5	60,0	62,0
			dB(A)	50,5	50,5	50,5	53,5	53,0	52,5	54,00	56,0
Electric power supply			V/ph/Hz	400V/3/50Hz							

(2) The electric data is of the versions without integrated hydronic kit

(3) In models glycol free "B" option storage tank system side is not available

### Sound power

Aermec determines sound power values in agreement with the Standard UNI EN ISO 9614-2, in compliance with that requested by Eurovent certification.

### Sound Pressure

Sound pressure measured in free field, 10 m away from the unit external surface (in compliance with UNI EN ISO 3744).

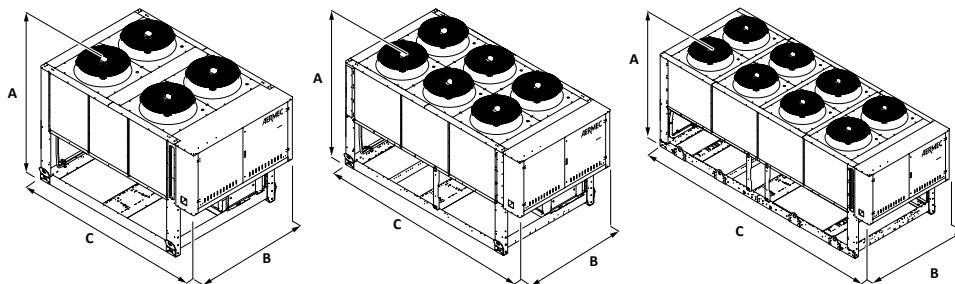
**Note:** For further information, refer to the selection program or to the technical documentation on [www.aermec.com](http://www.aermec.com)

## Dimension and weight data

NRL\_0800/0900/1000 A-E

NRL\_1250/1404/1504 A-E

NRL\_1655/1800 A-E



Mod. NRL	Vers.	0800	0900	1000	1250	1404	1504	1655	1800
Height	(mm) A	All	2450	2450	2450	2450	2450	2450	2450
Width	(mm) B	All	2200	2200	2200	2200	2200	2200	2200
Length	(mm) C	All	3400	3400	3400	4250	4250	4250	5750
Weight	(kg)		2470	2650	2840	3120	3380	3660	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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