

NRL 0280-0750 F

Air-water chiller with free-cooling

Cooling capacity 59 ÷ 194,8 kW

- High efficiency also at partial loads
- Compact dimensions
- Quick & easy installation



DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential/commercial complexes or industrial applications.

Outdoor units with scroll compressors, axial fans and plate heat exchangers.

The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

VERSIONS

- A** High efficiency
- E** Silenced high efficiency

FEATURES

Operating field

Operation at full load up to 44°C external air temperature depending on size and version. For further details refer to the selection software/technical documentation.

Dual-circuit unit

Unit with 2 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 circuits stops.

Condensation control temperature

Fitted as standard with a device for electronic condensation control so that the unit can work even with low temperatures, adapting the air flow rate to the actual system request in order to reduce consumption.

Free-cooling water coils

These units also have a water coil dedicated to free-cooling mode. Free-cooling offers significant energy saving in applications that require cooling all year round.

As soon as the outside air temperature allows, a valve makes the water flow towards the free-cooling battery which is cooled directly by the air. The compressors are completely shut down, if possible, leading to considerable electrical savings.

Free-cooling circuit with glycol-water solution for glycol-free units

Intermediate plate heat exchanger that creates two circuits:

1. Glycol hydraulic circuit (glycol is added to protect the coil from freezing).
2. Primary hydraulic circuit for glycol-free systems.

Electronic expansion valve

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

Integrated hydronic kit

To obtain a solution that allows you to save money and to facilitate installation. These units can be configured with an integrated hydronic system.

The kit contains the main hydraulic components, and is available in various configurations with a single pump or a standby pump too, so the customer can choose the right useful head.

CONTROL

Microprocessor adjustment, with keyboard and LCD display, for easy access on the unit is a menu available in several languages.

- The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
- 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 supervision systems with MODBUS protocol.

AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP

AERLINK: Wifi Gateway with an RS485 serial port that can be installed on all machines or on all controllers having an RS485 serial port themselves. The module is capable of simultaneously activating the AP WIFI (Access point) and WIFI Station functions, the latter making it possible to connect to the home or business LAN both with VMF-E5 and E6. To facilitate certain management and control operations of the unit, the AERAPP application is available both for Android and iOS systems.

AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

MULTICHILLER_EVO: 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 evaporators.

PGD1: Allows you to control the unit at a distance.

GP: Anti-intrusion grid.

VT: Antivibration supports

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

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.

ACCESSORIES COMPATIBILITY

Model	Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
AER485P1	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*
AERBACP	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*
AERLINK	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*
AERNET	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*
MULTICHILLER_EVO	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*
PGD1	A					*	*	*	*	*	*
	E	*	*	*	*	*	*	*	*	*	*

Anti-intrusion grid

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
A	-	-	-	-	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP10 x 3 (1)
E	GP4	GP4	GP4	GP4	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP10 x 3 (1)

(1) x _ indicates the quantity to buy

Antivibration - model F

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Integrated hydronic kit: 00, P3, P4										
A	-	-	-	-	VT11	VT11	VT22	VT22	VT22	VT23
E	VT17	VT17	VT17	VT17	VT11	VT11	VT22	VT22	VT22	VT23
Integrated hydronic kit: 03, 04										
A	-	-	-	-	VT11	VT11	VT22	VT22	VT22	VT23
E	VT13	VT13	VT13	VT13	VT11	VT11	VT22	VT22	VT22	VT23

Antivibration - model K

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Integrated hydronic kit: 00, P3, P4										
A	-	-	-	-	VT11	VT11	VT22	VT22	VT22	VT23
E	VT17	VT17	VT17	VT17	VT11	VT11	VT22	VT22	VT22	VT23
Integrated hydronic kit: 03, 04										
A	-	-	-	-	VT11	VT11	VT22	VT22	VT22	VT23
E	VT13	VT13	VT13	VT13	VT11	VT11	VT22	VT22	VT22	VT23

Antivibration - model B

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Integrated hydronic kit: 00										
A	-	-	-	-	VT11	VT11	VT22	VT22	VT22	VT23
E	VT17	VT17	VT17	VT17	VT11	VT11	VT22	VT22	VT22	VT23

Heater exchangers

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
A	-	-	-	-	DRE501 (1)	DRE551 (1)	DRE601 (1)	DRE651 (1)	DRE701 (1)	DRE751 (1)
E	DRE281 (1)	DRE301 (1)	DRE331 (1)	DRE351 (1)	DRE501 (1)	DRE551 (1)	DRE601 (1)	DRE651 (1)	DRE701 (1)	DRE751 (1)

(1) Only for supplies of 400V 3N ~ 50Hz and 400V 3 ~ 50Hz. x 2 or x 3 (if present) indicates the quantity to be ordered.

A grey background indicates the accessory must be assembled in the factory

Power factor correction

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
A	-	-	-	-	RIF52	RIF52	RIF53	RIF53	RIF53	RIF53
E	RIF50	RIF50	RIF50	RIF51	RIF52	RIF52	RIF53	RIF53	RIF53	RIF53

A grey background indicates the accessory must be assembled in the factory

Manually reset pressure switch

Ver	0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
A	-	-	-	-	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1
E	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1	PRM1

A grey background indicates the accessory must be assembled in the factory

CONFIGURATOR

Field	Description
1,2,3	NRL
4,5,6,7	Size 0280, 0300, 0330, 0350, 0500, 0550, 0600, 0650, 0700, 0750
8	Operating field
°	Standard mechanic thermostatic valve
X	Electronic thermostatic expansion valve
Y	Low temperature mechanic thermostatic valve
9	Model
B	Free-cooling glycol free (1)
F	Free-cooling
K	Free-cooling with low pressure drops
10	Heat recovery
°	Without heat recovery
11	Version
A	High efficiency
E	Silenced high efficiency
12	Coils / free-cooling coils
°	Copper-aluminium / Copper-aluminium
R	Copper-copper/Copper-copper
S	Copper-Tinned copper / Copper -Tinned copper
V	Copper-painted aluminium / Copper-painted aluminium
13	Fans
J	Inverter (2)
M	Oversized
14	Power supply
°	400V ~ 3N 50Hz with magnet circuit breakers
1	220V~ 3 50Hz with magnet circuit breakers
15,16	Integrated hydronic kit
00	Without hydronic kit
03	Storage tank with high head pump
04	Storage tank with high head pump + stand-by pump
P3	Single pump high head
P4	Pump high head + stand-by pump

(1) The system side hydronic kit option is not available for the freecooling glycol free "B" models

(2) Standard for size 0280 ÷ 0350, without useful static pressure, option for other size with useful static pressure.

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PERFORMANCE SPECIFICATIONS

NRL - FA/FE

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Cooling performance chiller operation (1)												
Cooling capacity	A	kW	-	-	-	-	99,0	104,0	132,0	144,0	159,0	191,0
	E	kW	59,0	65,0	74,0	82,0	91,0	95,0	119,0	130,0	147,0	177,0
Input power	A	kW	-	-	-	-	33,7	37,3	44,5	51,7	60,8	69,6
	E	kW	18,1	21,8	24,0	28,3	37,0	40,0	49,2	59,8	65,8	76,4
Cooling total input current	A	A	-	-	-	-	61,0	65,0	79,0	84,0	101,0	123,0
	E	A	32,0	38,0	41,0	51,0	67,0	70,0	87,0	97,0	109,0	135,0
EER	A	W/W	-	-	-	-	2,94	2,79	2,97	2,79	2,62	2,74
	E	W/W	3,26	2,98	3,08	2,90	2,46	2,38	2,42	2,17	2,23	2,32
Water flow rate system side	A	l/h	-	-	-	-	17009	17868	22679	24741	27318	32816
	E	l/h	10137	11168	12714	14089	15635	16322	20446	22335	25256	30411
Pressure drop system side	A	kPa	-	-	-	-	60	69	78	73	87	103
	E	kPa	63	53	66	58	51	58	63	60	74	89

Cooling performances with free-cooling (2)

Cooling capacity	A	kW	-	-	-	-	78,4	79,2	104,3	121,0	132,5	142,4
	E	kW	44,2	51,8	63,2	64,7	78,4	79,2	104,3	121,1	132,5	142,4
Input power	A	kW	-	-	-	-	2,6	2,6	3,9	3,9	5,4	5,4
	E	kW	1,0	1,0	1,4	1,4	2,6	2,6	3,9	3,9	5,4	5,4
Free cooling total input current	A	A	-	-	-	-	4,8	4,6	6,9	6,3	9,0	9,5
	E	A	1,9	1,8	2,3	2,4	4,8	4,6	6,9	6,3	8,9	9,5
EER	A	W/W	-	-	-	-	29,59	29,88	26,74	31,04	24,53	26,36
	E	W/W	42,06	49,31	46,81	47,94	29,59	29,88	26,75	31,04	24,53	26,37
Water flow rate system side	A	l/h	-	-	-	-	15988	16795	21318	23256	25678	30847
	E	l/h	9528	10497	11951	13243	14696	15342	19219	20994	23740	28586
Pressure drop system side	A	kPa	-	-	-	-	70	79	95	95	110	138
	E	kPa	84	61	76	73	59	66	78	77	94	118

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%

(2) System side water heat exchanger 12 °C / °C; External air 2 °C

NRL - KA/KE

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Cooling performance chiller operation (1)												
Cooling capacity	A	kW	-	-	-	-	101,0	106,1	134,6	146,9	162,2	194,8
	E	kW	60,2	66,3	75,5	83,6	92,8	96,9	121,4	132,6	149,9	180,5
Input power	A	kW	-	-	-	-	33,7	37,3	44,5	51,7	60,8	69,6
	E	kW	18,1	21,8	24,0	28,3	37,0	40,0	49,2	59,8	65,8	76,4
Cooling total input current	A	A	-	-	-	-	61,0	65,0	79,0	84,0	101,0	123,0
	E	A	32,0	38,0	41,0	51,0	67,0	70,0	87,0	97,0	109,0	135,0
EER	A	W/W	-	-	-	-	3,00	2,84	3,02	2,84	2,67	2,80
	E	W/W	3,33	3,04	3,15	2,95	2,51	2,42	2,47	2,22	2,28	2,36
Water flow rate system side	A	l/h	-	-	-	-	17353	18229	23126	25239	27868	33469
	E	l/h	10343	11391	12972	14363	15944	16649	20858	22782	25755	31012
Pressure drop system side	A	kPa	-	-	-	-	44	37	42	40	49	35
	E	kPa	34	41	36	43	38	31	34	33	42	30

Cooling performances with free-cooling (2)

Cooling capacity	A	kW	-	-	-	-	74,6	75,4	92,2	106,1	116,1	125,8
	E	kW	42,9	50,3	61,3	62,8	74,6	75,4	92,2	106,1	116,1	125,9
Input power	A	kW	-	-	-	-	2,6	2,6	3,9	3,9	5,4	5,4
	E	kW	1,0	1,0	1,4	1,4	2,6	2,6	3,9	3,9	5,4	5,4
Free cooling total input current	A	A	-	-	-	-	4,8	4,6	6,9	6,3	9,0	9,5
	E	A	1,9	1,8	2,3	2,4	4,8	4,6	6,9	6,3	8,9	9,5
EER	A	W/W	-	-	-	-	28,15	28,44	23,64	27,19	21,50	23,30
	E	W/W	40,82	47,86	45,40	46,53	28,16	28,44	23,64	27,20	21,50	23,31
Water flow rate system side	A	l/h	-	-	-	-	16311	17135	21738	23724	26195	31460
	E	l/h	9722	10707	12193	13501	14987	15650	19602	21415	24209	29151
Pressure drop system side	A	kPa	-	-	-	-	50	44	51	51	63	56
	E	kPa	43	45	44	53	42	37	42	42	53	48

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%

(2) System side water heat exchanger 12 °C / °C; External air 2 °C

NRL - BA/BE

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Cooling performance chiller operation (1)												
Cooling capacity	A	kW	-	-	-	-	99,0	104,0	132,0	144,0	159,0	191,0
	E	kW	59,0	65,0	74,0	82,0	91,0	95,0	119,0	130,0	147,0	177,0
Input power	A	kW	-	-	-	-	33,7	37,3	44,5	51,7	60,8	69,6
	E	kW	18,1	21,8	24,0	28,3	37,0	40,0	49,2	59,8	65,8	76,4
Cooling total input current	A	A	-	-	-	-	61,0	65,0	79,0	84,0	101,0	123,0
	E	A	32,0	38,0	41,0	51,0	67,0	70,0	87,0	97,0	109,0	135,0
EER	A	W/W	-	-	-	-	2,94	2,79	2,97	2,79	2,62	2,74
	E	W/W	3,26	2,98	3,08	2,90	2,46	2,38	2,42	2,17	2,23	2,32
Water flow rate system side	A	l/h	-	-	-	-	17009	17868	22679	24741	27318	32816
	E	l/h	10137	11168	12714	14089	15635	16322	20446	22335	25256	30411
Pressure drop system side	A	kPa	-	-	-	-	92	101	101	104	120	156
	E	kPa	94	88	90	82	78	84	82	85	103	134

Cooling performances with free-cooling glycol-free (2)

Cooling capacity	A	kW	-	-	-	-	60,1	60,9	79,2	92,9	101,3	108,9
	E	kW	34,3	39,6	48,7	50,3	60,2	60,9	79,2	92,9	101,3	108,9
Input power	A	kW	-	-	-	-	3,6	3,6	5,2	5,7	7,7	7,7
	E	kW	1,8	1,8	2,4	2,4	3,6	3,6	5,2	5,7	7,7	7,7
Free cooling total input current	A	A	-	-	-	-	6,6	6,4	9,2	9,3	13,0	14,0
	E	A	3,3	3,2	4,0	4,2	6,6	6,4	9,2	9,2	13,0	14,0
EER	A	W/W	-	-	-	-	16,48	16,69	15,23	16,29	13,15	14,14
	E	W/W	18,52	21,40	20,74	21,38	16,48	16,69	15,23	16,30	13,15	14,14
Water flow rate system side	A	l/h	-	-	-	-	17009	17868	22679	24741	27318	32816
	E	l/h	10137	11168	12714	14089	15635	16322	20446	22335	25256	30411
Pressure drop system side	A	kPa	-	-	-	-	92	101	101	104	120	156
	E	kPa	94	88	90	82	78	84	82	85	103	134

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%

(2) System side water heat exchanger 12 °C / 8,7 °C ; External air 2 °C; glycol hydraulic circuit 30%; primary hydraulic circuit glycol 0%.

ENERGY INDICES (REG. 2016/2281 EU)**Model F**

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
SEPR - (EN14825: 2018) High temperature with standard fans (1)												
SEPR	A	W/W	-	-	-	-	6,44	6,18	7,06	6,75	6,29	6,40
	E	W/W	6,44	6,16	6,20	5,82	6,06	5,86	6,50	6,23	5,95	6,06

(1) Calculation performed with FIXED water flow rate.

Model K

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
SEER - 23/18 (EN14825: 2018) with standard fans (1)												
Seasonal efficiency	A	%	-	-	-	-	161.3%	161.2%	174.8%	168.3%	162.3%	168.3%
	E	%	-	-	-	-	161.6%	161.4%	169.0%	162.8%	153.9%	163.1%
SEER	A	W/W	-	-	-	-	4,11	4,11	4,45	4,28	4,13	4,28
	E	W/W	-	-	-	-	4,12	4,11	4,30	4,15	3,92	4,15
SEER - 23/18 (EN14825: 2018) with inverter fans												
Seasonal efficiency	A	%	-	-	-	-	161.3%	161.2%	174.8%	168.3%	162.3%	168.3%
	E	%	173.4%	167.1%	167.7%	161.3%	161.6%	161.4%	169.0%	162.8%	153.9%	163.1%
SEER	A	W/W	-	-	-	-	4,11	4,11	4,45	4,28	4,13	4,28
	E	W/W	4,41	4,25	4,27	4,11	4,12	4,11	4,30	4,15	3,92	4,15
SEPR - (EN14825: 2018) High temperature with standard fans (1)												
SEPR	A	W/W	-	-	-	-	6,70	6,49	7,35	6,99	6,53	6,77
	E	W/W	-	-	-	-	6,29	6,16	6,77	6,48	6,15	6,38
SEPR - (EN14825: 2018) High temperature with inverter fans (1)												
SEPR	A	W/W	-	-	-	-	6,70	6,49	7,35	6,99	6,53	6,77
	E	W/W	6,73	6,34	6,48	6,00	6,29	6,16	6,77	6,48	6,15	6,38

(1) Calculation performed with FIXED water flow rate.

Model B

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
SEPR - (EN14825: 2018) High temperature with standard fans (1)												
SEPR	A	W/W	-	-	-	-	6,22	5,88	6,37	6,21	5,64	5,72
	E	W/W	6,02	5,80	5,80	5,49	5,82	5,60	5,90	5,75	5,40	5,49

(1) Calculation performed with FIXED water flow rate.

ELECTRIC DATA

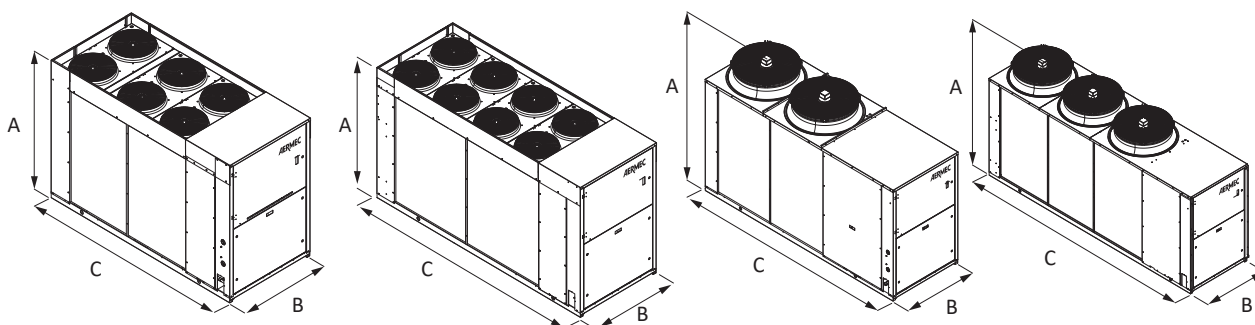
Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Electric data												
Maximum current (FLA)	A	A	-	-	-	-	76,0	81,0	100,0	112,0	122,0	144,0
	E	A	46,0	53,0	58,0	63,0	76,0	81,0	100,0	122,0	122,0	320,0
Peak current (LRA)	A	A	-	-	-	-	214,0	220,0	232,0	243,0	261,0	320,0
	E	A	155,0	184,0	190,0	200,0	214,0	220,0	232,0	243,0	261,0	144,0

GENERAL TECHNICAL DATA

Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Compressor												
Type	A,E	type	Scroll									
Compressor regulation	A,E	Type	On-Off									
Number	A	no.	-	-	-	-	3	3	4	4	4	4
	E	no.	2	2	2	2	3	3	4	4	4	4
Circuits	A	no.	-	-	-	-	2	2	2	2	2	2
	E	no.	2	2	2	2	2	2	2	2	2	2
Refrigerant	A,E	type	R410A									
System side heat exchanger												
Type	A,E	type	Brazed plate									
Number	A	no.	-	-	-	-	1	1	1	1	1	1
	E	no.	1	1	1	1	1	1	1	1	1	1
System side hydraulic connections												
Connections (in/out)	A,E	Type	Grooved joints									
Sizes (in/out)	A,E	Ø	2" 1/2	2" 1/2	2" 1/2	2" 1/2	2" 1/2	2" 1/2	2" 1/2	2" 1/2	2" 1/2	3"
Fan												
Type	A,E	type	Axial									
Fan motor	A	type	-	-	-	-	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous
	E	type	Inverter	Inverter	Inverter	Inverter	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous
Number	A	no.	-	-	-	-	2	2	3	3	3	3
	E	no.	6	6	8	8	2	2	3	3	3	3
Air flow rate	A	m³/h	-	-	-	-	32500	32500	50000	49000	56000	56000
	E	m³/h	20000	19000	25000	25000	23400	24100	33500	35300	47600	46500
Sound data calculated in cooling mode (1)												
Sound power level	A	dB(A)	-	-	-	-	82,0	82,0	82,0	83,0	85,0	87,0
	E	dB(A)	74,0	74,0	75,0	76,0	76,0	76,0	76,0	77,0	77,0	82,0
Sound pressure level (10 m)	A	dB(A)	-	-	-	-	50,1	50,1	50,0	51,0	53,0	54,9
	E	dB(A)	42,0	42,2	43,2	44,2	44,0	44,0	44,0	45,0	45,0	50,0

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size			0280	0300	0330	0350	0500	0550	0600	0650	0700	0750
Dimensions and weights												
A	A	mm	-	-	-	-	1875	1875	1875	1875	1875	1975
	E	mm	1606	1606	1606	1606	1875	1875	1875	1875	1875	1975
B	A	mm	-	-	-	-	1100	1100	1100	1100	1100	1500
	E	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1500
C	A	mm	-	-	-	-	3260	3260	4010	4010	4010	4350
	E	mm	2950	2950	2950	2950	3260	3260	4010	4010	4010	4350
Empty weight	A	kg	-	-	-	-	1079	1083	1386	1460	1540	1889
	E	kg	838	908	913	922	1079	1083	1386	1460	1540	1889

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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