

# ECOEVO 2 PLUS

INDEX



Be.On



Plug &amp; Play


 EC  
Tecnology

 Unit with  
control

 High-efficiency  
heat recovery  
unit

 50 mm  
panel

## STANDARDS AND CERTIFICATIONS



## ADVANTAGES

- Plug & Play monoblock unit
- High-efficiency heat exchanger with Eurovent certification
- Panels with 50 mm insulation
- Corrosion class C5
- Multiple configurations
- Option to integrate the Be On module with direct cloud connection and Be Smart monitoring

## ACCESSORIES

- Filter
- Duckbill nozzle
- Weatherproof roof
- Constant airflow
- CO2 control

## COMPONENTS

### FAN

Centrifugal fans with directly coupled motor and high-efficiency single-inlet backward-curved impeller, statically and dynamically balanced in accordance with ISO 1940 and AMCA 204-G2.5 standards. The PLUG FAN centrifugal fan is directly driven by an EC motor with electronically commutated external rotor, high efficiency, class F insulation, IE4 and IE5 efficiency class, and IP54 and IP55 mechanical protection.

### FILTER

Filters of class ePM10 50% / M5, ePM1 50% / F7 or ePM1 80% / F9, in accordance with EN 779 / ISO 16890. The filters are mounted in parallel and fitted in rails designed to keep by-pass leakage values within F9 class, in compliance with EN 1886.

## DESCRIPTION

Industrial heat recovery unit, ECOEVO 2 PLUS model, soundproofed equipment suitable for indoor or outdoor installation, with removable side panels for easy access to the interior, and available with different accessories and configurations. Supplied as standard with Smart Evolution control, including an electrical control panel fitted with a main isolator switch.

Modular structure made of extruded aluminium profile (6060) in accordance with DIN 17615, 70 mm thick, with reinforced nylon corners. Double-skin panels with a thickness of 50 mm, featuring an external magnelis sheet with corrosion class C5 and an internal galvanised steel sheet in accordance with EN 10192. The intermediate insulation of the panels is made of 50 mm self-extinguishing polystyrene boards, with a density of 30 kg/m<sup>3</sup>, providing high resistance to different mechanical stresses.

Available in 5 sizes, in horizontal or vertical configuration, with modules for air conditioning and Smart Evolution or Smart Pro 2 control.

**HEAT RECOVERY UNIT**

The heat recovery units are high-efficiency parallel-flow type with by-pass, allowing the recovery of sensible heat from exhaust air to supply air, with efficiencies of up to 96% (Eurovent certified).

They are constructed with stamped aluminium plates with a thickness of 0.3 mm, featuring double flanges at the plate junction areas, ensuring airtightness up to 1500 Pa.

**COMPLEMENTARY MODULES**

To complement the heat recovery range, in addition to the specific accessories of the range, a series of optional modules is available. These modules are externally connected to the unit by means of ductwork.

**HOT WATER HEATING MODULE**

The hot water heating coil is made of copper tubes with aluminium fins mechanically expanded, steel or copper headers, and a galvanised steel frame. All coils are subjected to rigorous testing, with tightness and structural integrity tested at 32 bar in the factory.

**WATER COOLING MODULE**

The water cooling coil is made of copper tubes with aluminium fins mechanically expanded, steel or copper headers, and a galvanised steel frame. All coils are subjected to rigorous testing, with tightness and structural integrity tested at 32 bar in the factory. The module is equipped with a stainless steel condensate drain pan.

**ACOUSTIC ATTENUATION MODULE**

Baffles made of mineral wool, with the air-contact surface in non-friable material, protected by mesh or micro-perforated sheet, and fitted in a galvanised steel frame.

**DIRECT EXPANSION REFRIGERANT COOLING MODULE**

The direct expansion coil using R410A refrigerant is made of copper tubes with mechanically expanded aluminium fins, steel or copper headers, and a galvanised steel frame. All coils are subjected to rigorous testing, with tightness and structural integrity tested at 60 bar in the factory. The module is equipped with a stainless steel condensate drain pan.

**ELECTRIC RESISTANCE HEATING MODULE**

The electric heating coil consists of sheathed electric resistances made of 8 mm diameter steel tube, with 25 x 50 mm fins of the same material, quick-fixing screw and M4 threaded terminals. The resistances are specially designed for air handling applications. They are mounted in a frame and placed on a rail system to facilitate possible removal.

**FEATURES**

ECOevo 2 PLUS	11	18	25	42	56
Power (kW)	0,44	1,1	1,1	2,7	2,9
Motor Power (kW)	2 x 0.17	2 x 0.50	2 x 0.50	2 x 1.30	2 x 1.4
Power Supply (V   Ph   Hz)	230   1   50				
Motor IMÁX (A)	2 x 1.4	2 x 2.5	2 x 2.2	2 x 6.6	2 x 6
IMÁX (A)	2,9	5,1	4,5	13,3	12,1
Sound Power Level (dB(A))*	29	39	36	40	41

\* Sound power level at 4 m, measured in free field conditions in accordance with ISO 3744

## COMPLEMENTARY MODULES

## HOT WATER HEATING MODULE

Model	Airflow (m <sup>3</sup> /h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)	Water flow rate (l/s)	Water pressure drop (kPa)
ECOevo 2 PLUS 11	1000	5	27,6	8,4	116	0,1	4,7
		10	30,6	7,7		0,094	4
		15	33,6	7		0,085	3,3
	900	5	29,6	7,5	79	0,091	3,8
		10	32,5	6,8		0,083	3,2
		15	35,3	6,2		0,076	2,7
	700	5	32,3	6,4	50	0,079	2,9
		10	34,9	5,9		0,072	2,5
		15	37,4	5,3		0,065	2,1
ECOevo 2 PLUS 18	1800	5	31,4	16	63	0,2	5,1
		10	34,1	14,7		0,18	4,4
		15	36,8	13,3		0,16	3,7
	1550	5	33	16,6	48	0,18	4,4
		10	35,6	13,4		0,16	3,7
		15	38,1	12,1		0,15	3,1
	1300	5	34,9	13,1	35	0,16	3,6
		10	37,3	12		0,15	3,1
		15	39,7	10,9		0,13	2,6
ECOevo 2 PLUS 25	2500	5	28	19,4	115	0,24	7,2
		10	31	17,8		0,22	6,2
		15	34	16,1		0,2	5,2
	2200	5	29,3	18	91	0,22	6,3
		10	32,2	16,5		0,2	5,4
		15	35,1	15		0,18	4,5
	1900	5	30,8	16,6	70	0,2	5,4
		10	33,6	15,2		0,18	4,6
		15	36,3	13,7		0,17	3,9
ECOevo 2 PLUS 42	4200	5	27,7	32,1	150	0,39	22,4
		10	30,7	29,5		0,36	19,2
		15	33,8	26,8		0,33	16,2
	3800	5	28,6	30,3	125	0,37	20,2
		10	31,7	27,9		0,34	17,3
		15	34,7	25,4		0,31	14,6
	3200	5	30,4	27,5	90	0,34	16,9
		10	33,3	25,2		0,31	14,5
		15	36,2	23		0,28	12,2
ECOevo 2 PLUS 56	5600	5	28	43,4	129	0,53	11,4
		10	31	29,8		0,49	9,7
		15	34,1	36,2		0,44	8,2
	4900	5	39,3	40,3	101	0,49	9,9
		10	32,3	36,9		0,45	8,5
		15	35,2	33,6		0,41	7,1
	4400	5	30,5	37,8	83	0,46	8,8
		10	33,3	34,7		0,42	7,6
		15	36,1	31,5		0,38	6,4

Water temperature 80 °C / 60 °C



## COMPLEMENTARY MODULES

## WATER COOLING MODULE

Heating Mode Model	Airflow (m <sup>3</sup> /h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)	Water flow rate (l/s)	Water pressure drop (kPa)
ECOEV0 2 PLUS 11	1000	5	31,4	9,8	34	0,47	7
		10	32,7	8,5		0,41	5,4
		15	34	7,1		0,34	3,9
	900	5	32,8	8,5	25	0,41	5,4
		10	33,9	7,3		0,35	4,1
		15	35	6,1		0,29	3
	700	5	34,5	7	17	0,34	3,8
		10	35,4	6		0,29	2,9
		15	36,2	5		0,24	2,1
ECOEV0 2 PLUS 18	1800	5	31,8	16,3	35	0,79	17,9
		10	33,1	14,1		0,68	13,8
		15	34,4	11,8		0,57	10,1
	1550	5	32,8	14,6	29	0,7	14,7
		10	34	12,6		0,61	11,3
		15	35,2	10,6		0,51	8,3
	1300	5	34,1	12,7	22	0,62	11,5
		10	35,1	11		0,53	8,9
		15	36,1	9,3		0,45	6,5
ECOEV0 2 PLUS 25	2500	5	32,3	23	33	1,11	7,2
		10	33,6	20		0,96	6,2
		15	34,8	16,8		0,81	5,2
	2200	5	33,2	20,9	28	1,01	6,3
		10	34,3	18,1		0,88	5,4
		15	35,5	15,3		0,74	4,5
	1900	5	34,2	18,7	22	0,9	5,4
		10	35,2	16,2		0,78	4,6
		15	26,2	13,7		0,66	3,9
ECOEV0 2 PLUS 42	4200	5	30,5	36,1	45	1,74	14,7
		10	31,9	31,2		1,51	11,3
		15	33,4	26,2		1,27	8,3
	3800	5	31,2	33,6	39	1,62	12,9
		10	32,6	29		1,4	9,9
		15	33,9	24,4		1,2	7,3
	3200	5	32,4	29,6	38	1,43	10,3
		10	33,6	25,6		1,24	7,9
		15	34,8	21,6		1,04	5,8
ECOEV0 2 PLUS 56	5600	5	31,5	50,1	38	2,42	21
		10	32,8	43,3		2,09	16,1
		15	34,2	36,5		1,76	11,8
	4900	5	32,4	45,4	32	2,19	17,6
		10	33,7	39,3		1,9	13,5
		15	34,9	33,1		1,6	9,9
	4400	5	33,2	41,9	27	2,02	15,2
		10	34,3	36,2		1,75	11,7
		15	35,5	30,6		1,48	8,6

Water temperature in heating mode 45 °C / 40 °C

## COMPLEMENTARY MODULES

## WATER COOLING MODULE

Cooling Mode Model	Airflow (m <sup>3</sup> /h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)	Water flow rate (l/s)	Water pressure drop (kPa)
ECOevo 2 PLUS 11	1100	31	20,8	6	48	0,28	3,4
		28	19,4	4,1		0,19	1,7
		25	18,1	2,6		0,12	0,8
	900	31	20,2	5,1	36	0,24	2,6
		28	19,5	3,1		0,15	1,1
		25	17,4	2,4		0,11	0,7
	700	31	19,6	4,2	24	0,2	1,8
		28	18,5	2,8		0,13	0,9
		25	16,6	2,1		0,1	0,6
ECOevo 2 PLUS 18	1800	31	20,1	11	53	0,53	10,3
		28	18,3	8,3		0,4	6,3
		25	16,8	5,8		0,28	3,3
	1550	31	19,6	10	42	0,48	8,6
		28	17,9	7,5		0,36	5,2
		25	16,6	5,1		0,24	2,6
	1300	31	19	8,8	33	0,42	0,9
		28	17,4	6,6		0,31	4,1
		25	16,4	4,4		0,21	2
ECOevo 2 PLUS 25	2500	31	19,7	16,2	50	0,77	13,2
		28	17,9	12,4		0,59	8,3
		25	16,3	8,9		0,42	4,6
	2200	31	19,2	14,8	42	0,71	11,4
		28	17,5	11,4		0,5	7,1
		25	16,1	8,1		0,38	3,9
	1900	31	18,7	13,4	34	0,64	9,5
		28	17,1	10,2		0,49	5,9
		25	15,7	7,2		0,34	3,2
ECOevo 2 PLUS 42	4200	5	20,8	23,9	68	1,14	8,1
		10	18,9	18		0,86	4,9
		15	17,3	12,4		0,59	2,5
	3800	5	20,5	22,4	58	1,07	7,2
		10	18,6	16,8		0,8	4,3
		15	19,2	11,4		0,55	2,2
	3200	5	19,9	19,9	45	0,95	5,9
		10	18,2	14,9		0,71	3,5
		15	16,9	9,9		0,47	1,7
ECOevo 2 PLUS 56	5600	31	20,3	33,8	58	1,61	10,1
		28	18,5	25,6		1,22	6,2
		25	16,9	17,9		0,85	3,3
	4900	31	19,8	30,9	47	1,47	8,6
		28	18,1	23,4		1,11	5,2
		25	16,6	16,1		0,77	2,7
	4400	31	19,4	28,8	40	1,37	7,6
		28	17,8	21,6		1,03	4,6
		25	16,5	14,8		0,7	2,3

Water temperature in cooling mode 7 °C / 12 °C; air humidity 50%



## COMPLEMENTARY MODULES

## REFRIGERANT COOLING MODULE

Heating Mode Model	Airflow (m <sup>3</sup> /h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)
ECOEVO 2 PLUS 11	1100	5	22,7	6,6	46
		10	24,9	5,6	
		15	27,2	4,6	
	900	5	24,1	5,8	32
		10	26,2	5	
		15	28,2	4,1	
	700	5	25,9	5	20
		10	27,7	4,2	
		15	29,5	3,5	
ECOEVO 2 PLUS 18	1800	5	25	12,3	45
		10	27,2	10,5	
		15	29,3	8,8	
	1550	5	26,2	11,2	35
		10	28,1	9,6	
		15	30,1	8	
	1300	5	27,6	10	25
		10	29,3	8,6	
		15	31,1	7,2	
ECOEVO 2 PLUS 25	2500	5	26,1	17,9	37
		10	28,1	15,4	
		15	30,1	12,9	
	2200	5	27,1	16,5	30
		10	29	14,2	
		15	30,8	11,9	
	1900	5	28,2	15	23
		10	30	12,9	
		15	31,7	10,8	
ECOEVO 2 PLUS 42	4200	5	22,9	25,5	53
		10	25,2	21,7	
		15	27,4	17,9	
	3800	5	23,7	24,1	44
		10	25,8	20,5	
		15	27,9	16,8	
	3200	5	24,9	21,7	33
		10	26,9	18,4	
		15	28,8	15,2	
ECOEVO 2 PLUS 56	5600	5	25,4	38,7	42
		10	27,4	33,3	
		15	29,5	27,8	
	4900	5	26,4	35,6	33
		10	28,3	30,6	
		15	30,3	25,6	
	4400	5	27,2	33,2	27
		10	29,1	28,6	
		15	30,9	23,9	

Condensing temperature 50 °C

## COMPLEMENTARY MODULES

## REFRIGERANT COOLING MODULE

Cooling Mode Model	Airflow (m <sup>3</sup> /h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)
ECOevo 2 PLUS 11	1000	31	19,4	5,8	96
		28	17,5	4,7	
		25	15,6	3,7	
	800	31	18,7	5	68
		28	16,9	4	
		25	15,1	3,2	
	600	31	17,8	4,1	43
		28	16,1	3,3	
		25	14,4	2,6	
ECOevo 2 PLUS 18	1300	31	18,4	8,4	66
		28	16,6	6,8	
		25	14,8	5,4	
	1050	31	17,7	7,3	47
		28	15,9	5,9	
		25	14,2	4,7	
	800	31	16,8	6,1	30
		28	15,2	4,9	
		25	13,6	3,9	
ECOevo 2 PLUS 25	2500	31	19,1	15	92
		28	17,2	12,2	
		25	15,4	9,4	
	2200	31	18,7	13,9	75
		28	16,8	11,2	
		25	15	8,8	
	1900	31	18,2	12,6	60
		28	16,4	10,2	
		25	14,6	8	
ECOevo 2 PLUS 42	3400	31	19,3	16	91
		28	17,4	12,3	
		25	15,6	18,9	
	3100	31	19	15,1	79
		28	17,1	11,8	
		25	15,3	17,7	
	2800	31	18,7	14,3	67
		28	16,8	11	
		25	15,1	-	
ECOevo 2 PLUS 56	5200	31	19,1	31,1	91
		28	17,3	24,8	
		25	14,5	16,3	
	4800	31	18,9	26,9	80
		28	17,1	23,7	
		25	15,3	18,4	
	4400	31	18,6	28	70
		28	16,8	22,6	
		25	17,4	17,4	

Evaporating temperature 5 °C; air humidity 50%



## COMPLEMENTARY MODULES

## ELECTRIC HEATING MODULE

Model	Airflow (m³/h)	Air inlet temperature (°C)	Air outlet temperature (°C)	Power (kW)	Air pressure drop (Pa)
ECOEVO 2 PLUS 11	1100	5	21,2	6	2
		10	26,2		
		15	31,2		
	900	5	24,8		
		10	29,8		
		15	34,8		
	700	5	30,4		
		10	35,4		
		15	40,4		
ECOEVO 2 PLUS 18	1800	5	24,8	12	2
		10	29,8		
		15	34,8		
	1550	5	28,0		
		10	33,0		
		15	38,0		
	1300	5	32,4		
		10	37,4		
		15	42,4		
ECOEVO 2 PLUS 25	2500	5	19,2	12	2
		10	24,2		
		15	29,2		
	2200	5	21,2		
		10	26,2		
		15	31,2		
	1900	5	23,7		
		10	28,7		
		15	33,7		
ECOEVO 2 PLUS 42	4200	5	17,7	0	2
		10	22,7		
		15	27,7		
	3800	5	19,1		
		10	24,1		
		15	29,1		
	3200	5	21,7		
		10	26,7		
		15	31,7		
ECOEVO 2 PLUS 56	5600	5	19,3	27	3
		10	24,3		
		15	29,3		
	4900	5	21,4		
		10	26,4		
		15	31,4		
	4400	5	23,2		
		10	28,2		
		15	33,2		

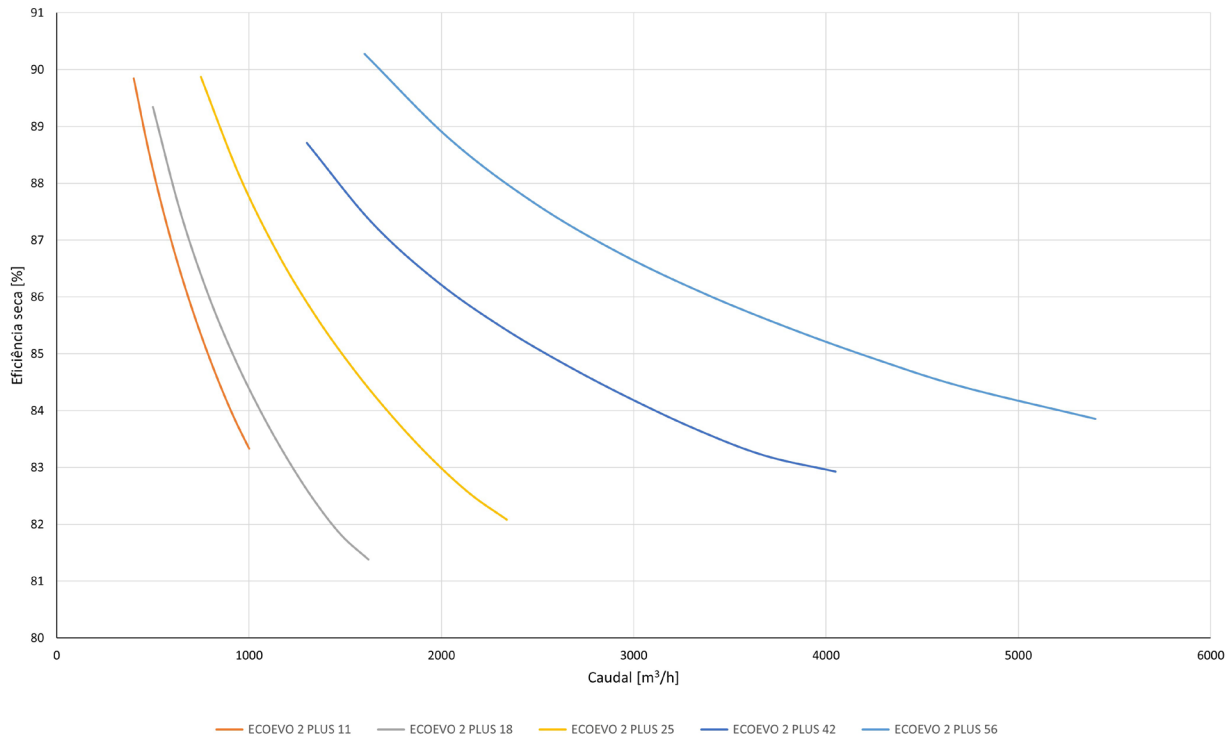
## COMPLEMENTARY MODULES

## ACOUSTIC ATTENUATION MODULE

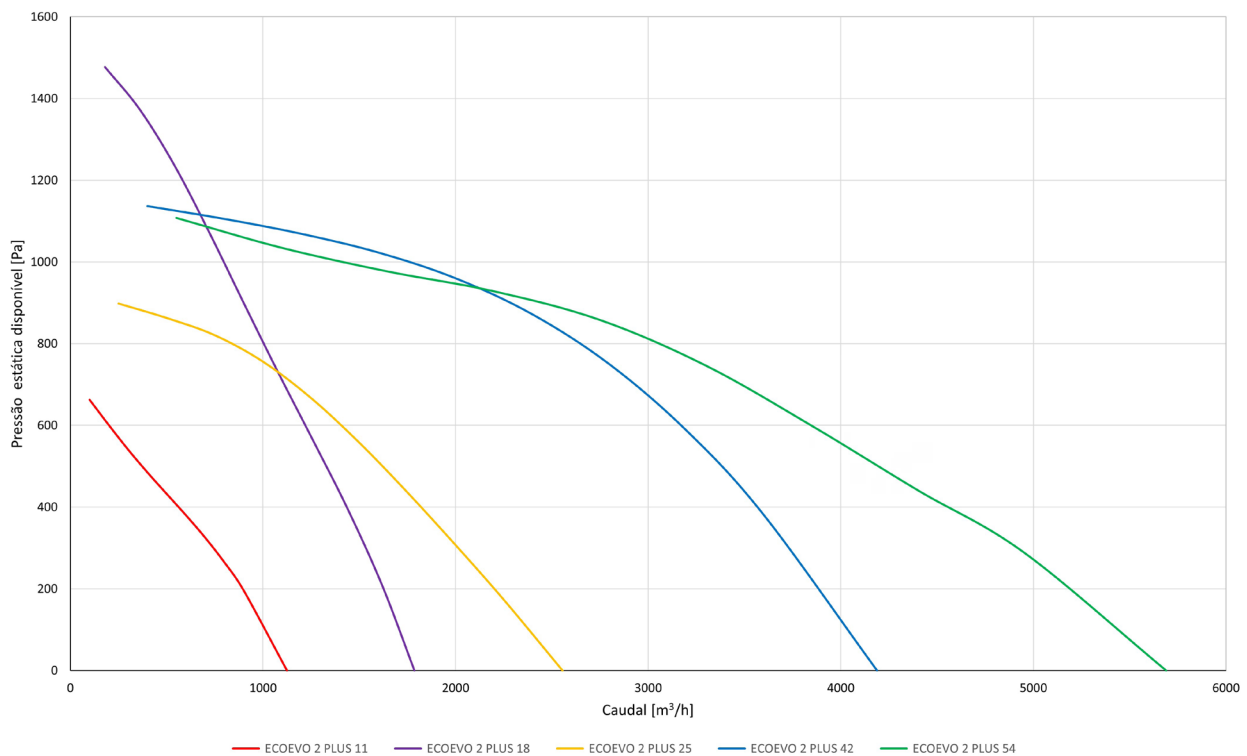
Model	Airflow	Air pressure drop (Pa)	Acoustic attenuation - Frequency (Hz)								Total db(A)
			63	125	250	500	1000	2000	4000	8000	
ECOEVO 2 PLUS 11	1100	13	3	8	13	19	28	29	22	20	22
	900	11									
	700	5									
ECOEVO 2 PLUS 18	1800	30	3	8	13	19	28	29	22	20	22
	1550	24									
	1300	14									
ECOEVO 2 PLUS 25	2500	25	2	7	12	17	25	25	19	6	21
	2200	19									
	1900	16									
ECOEVO 2 PLUS 42	4200	33	2	7	12	17	25	25	19	16	21
	3800	29									
	3200	24									
ECOEVO 2 PLUS 56	5600	40	2	7	12	17	25	25	19	16	21
	4900	33									
	4400	28									

## PERFORMANCE CURVES

## HEAT RECOVERY EFFICIENCY CURVE



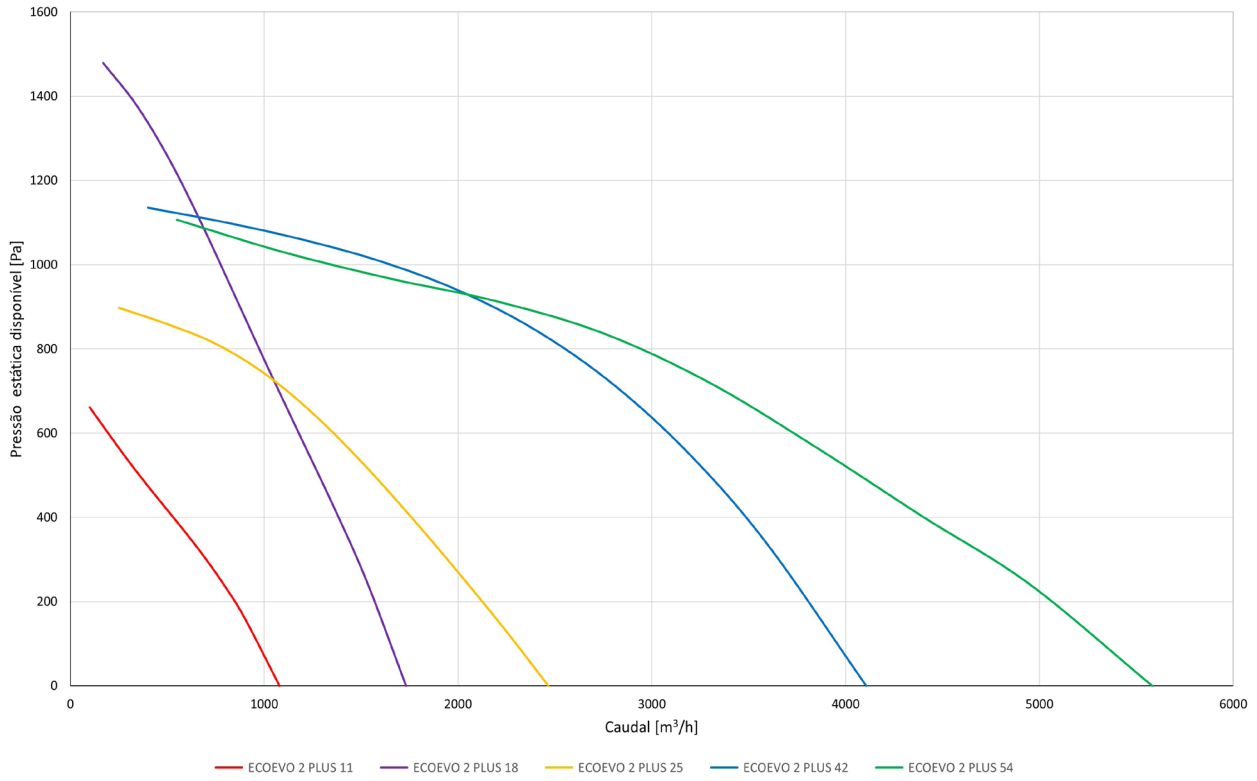
## ECOEVO 2 PLUS e PM10 50% /M5



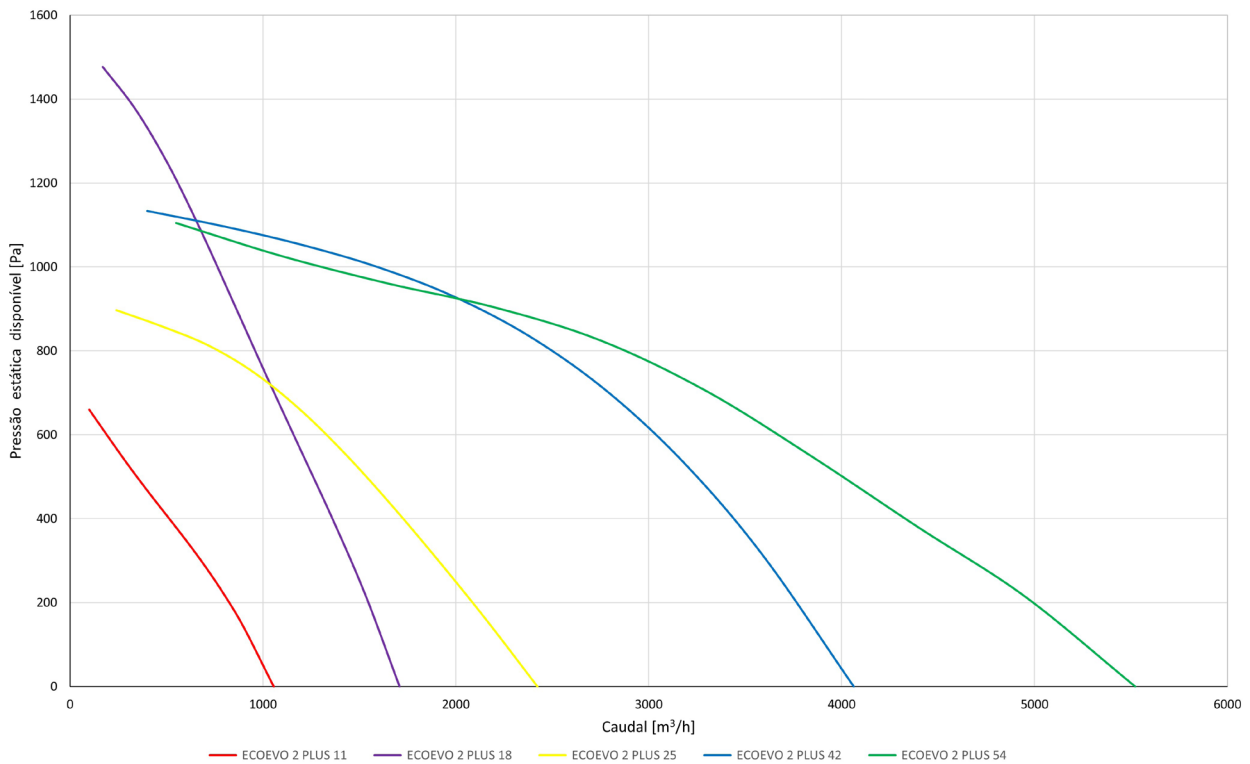


PERFORMANCE CURVES

ECOEOVO 2 PLUS F7/e PM1 50%

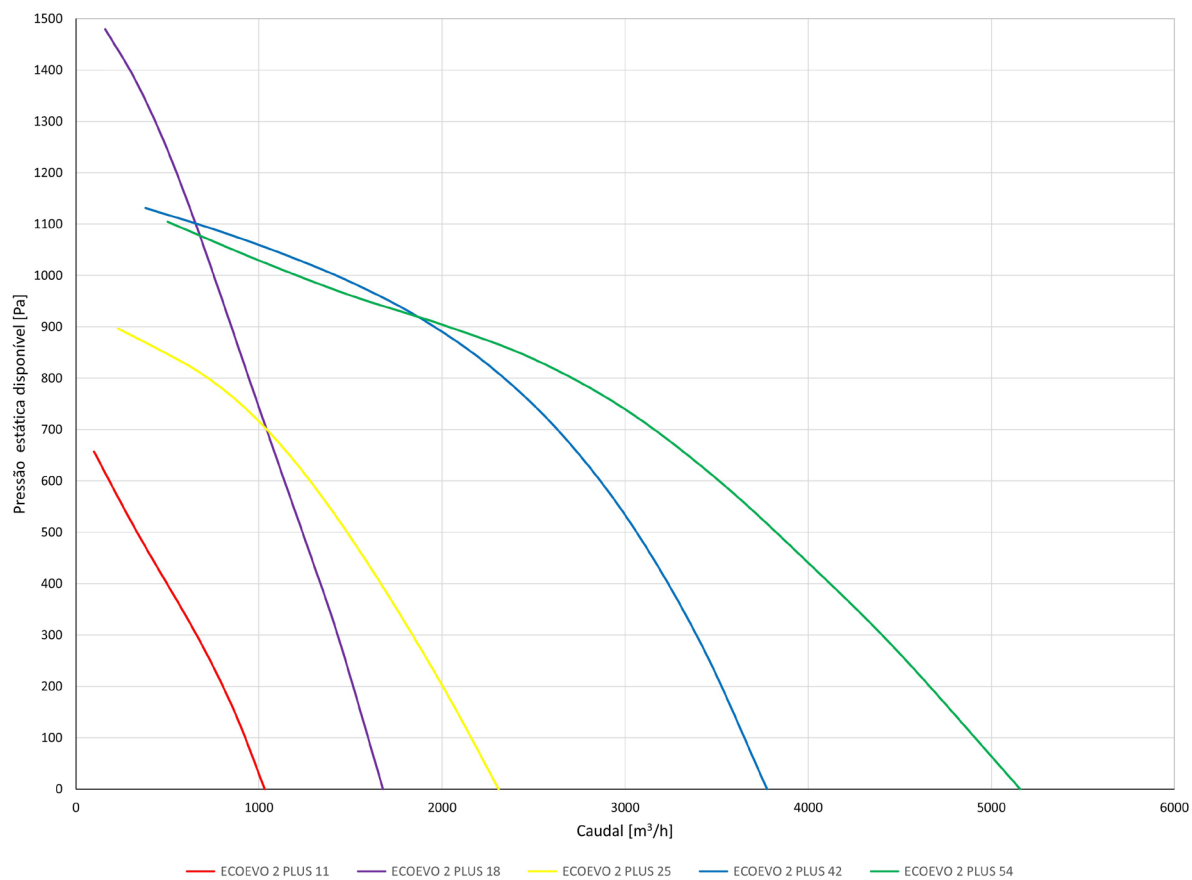


ECOEOVO 2 PLUS M5 + F7

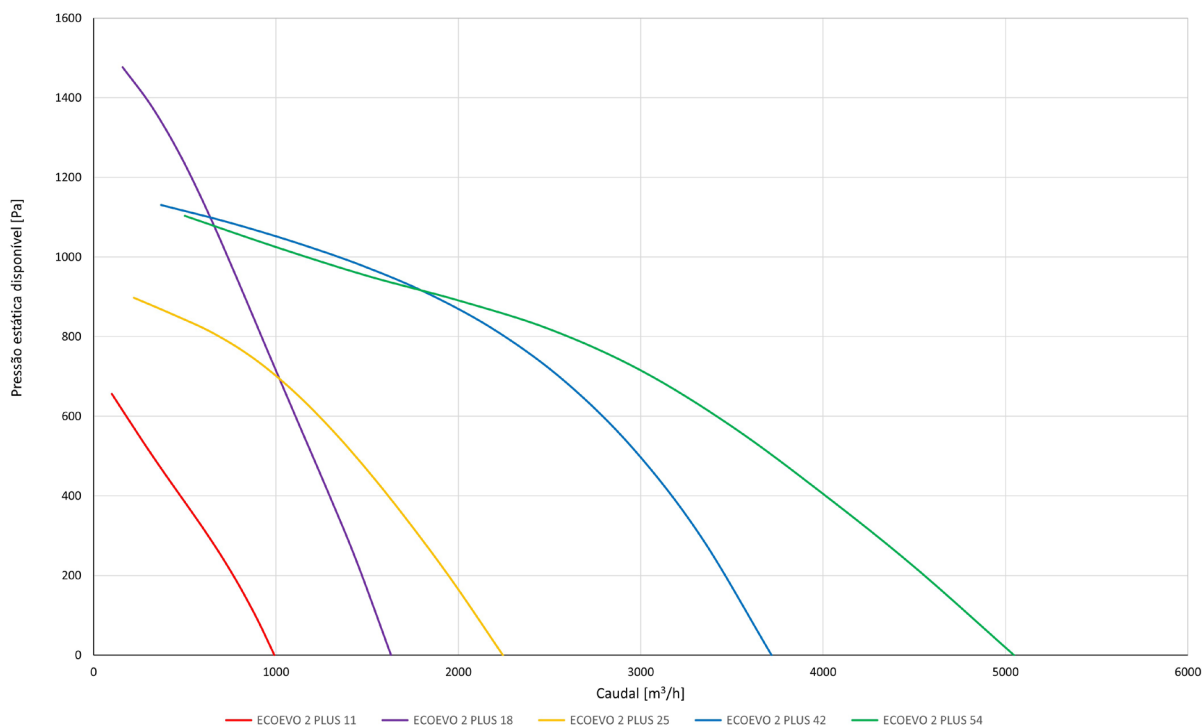


## PERFORMANCE CURVES

## ECOEVO 2 PLUS M5 + F9



## ECOEVO 2 PLUS F7 + F9

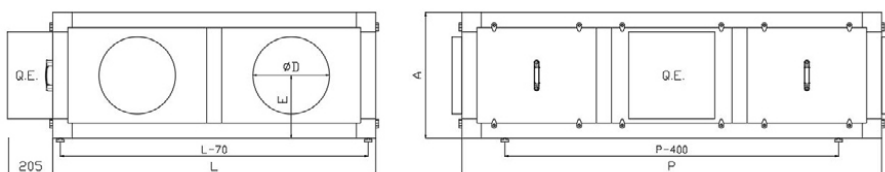




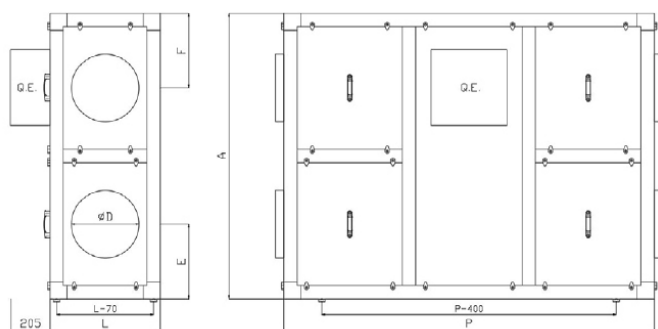
## DIMENSIONS

ECOevo 2 PLUS H	11	18	25	42	56
A (mm)	545	580	580	730	865
L (mm)	910	1050	1500	1650	1790
P (mm)	1550	1750	1950	2250	2650
ØD (mm)	315	355	355	450	450
E (mm)	273	290	290	365	433
Weight (kg)	92	156	217	268	296
ECOevo 2 PLUS V	11	18	25	42	56
A (mm)	910	1050	1500	1650	1790
L (mm)	545	580	580	730	865
P (mm)	1550	1750	1950	2250	2650
ØD (mm)	315	355	355	450	450
E (mm)	245	280	393	430	465
F (mm)	245	280	393	430	465
Weight (kg)	92	156	217	268	296

## ECOevo 2 PLUS H



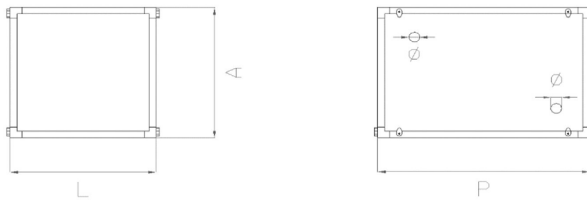
## ECOevo 2 PLUS V



NOTE: MAINTENANCE AND MODULE ACCESS CLEARANCE UP TO SIZE 18 | 750 MM; FROM SIZE 18 ONWARDS | 1000 MM

**DIMENSIONS**
**REFRIGERANT / WATER COOLING MODULE**

MBCR/A	11	18	25	42	56
A (mm)	545	580	580	730	865
L (mm)	600	700	850	950	1100
P (mm)	700	800	850	900	1000
∅ Vapour (mm)	16	16	28	35	35
∅ Liquid (mm)	22	28	35	35	42
∅ Water (pol)	3/4"	1"	1 1/4"	1 1/2"	2"
Weight (kg)	58	71	85	105	137



**NOTE: MAINTENANCE AND MODULE ACCESS CLEARANCE UP TO SIZE 18 | 750 MM; FROM SIZE 18 ONWARDS | 1000 MM**

**HOT WATER HEATING MODULE**

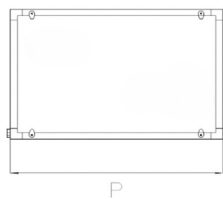
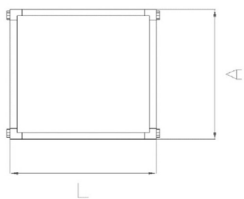
MBAA	11	18	25	42	56
A (mm)	545	580	580	730	865
L (mm)	455	520	750	825	895
P (mm)	400	400	400	400	400
∅ Water (pol)	1/2"	1/2"	1/2"	1/2"	3/4"
Weight (kg)	33	38	45	51	59



## DIMENSIONS

## ELECTRIC HEATING MODULE

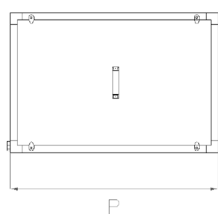
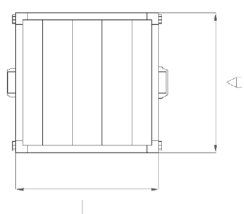
MBRE	11	18	25	42	56
A (mm)	545	580	580	730	865
L (mm)	455	525	750	825	895
P (mm)	400	400	400	400	400
Weight (kg)	32	38	45	51	59



NOTE: MAINTENANCE AND EQUIPMENT ACCESS CLEARANCE UP TO SIZE 18 | 750 MM; FROM SIZE 18 ONWARDS | 1000 MM

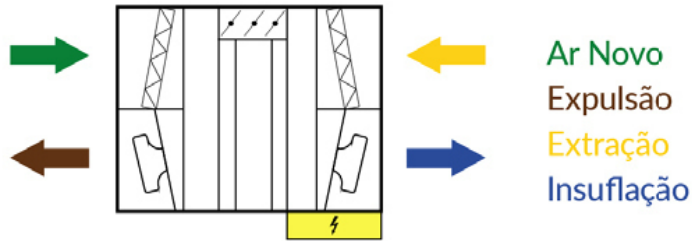
## ACOUSTIC ATTENUATION MODULE

MAA	11	18	25	42	56
A (mm)	545	580	580	730	865
L (mm)	475	570	650	750	750
P (mm)	750	750	750	750	750
Weight (kg)	47	53	55	66	74

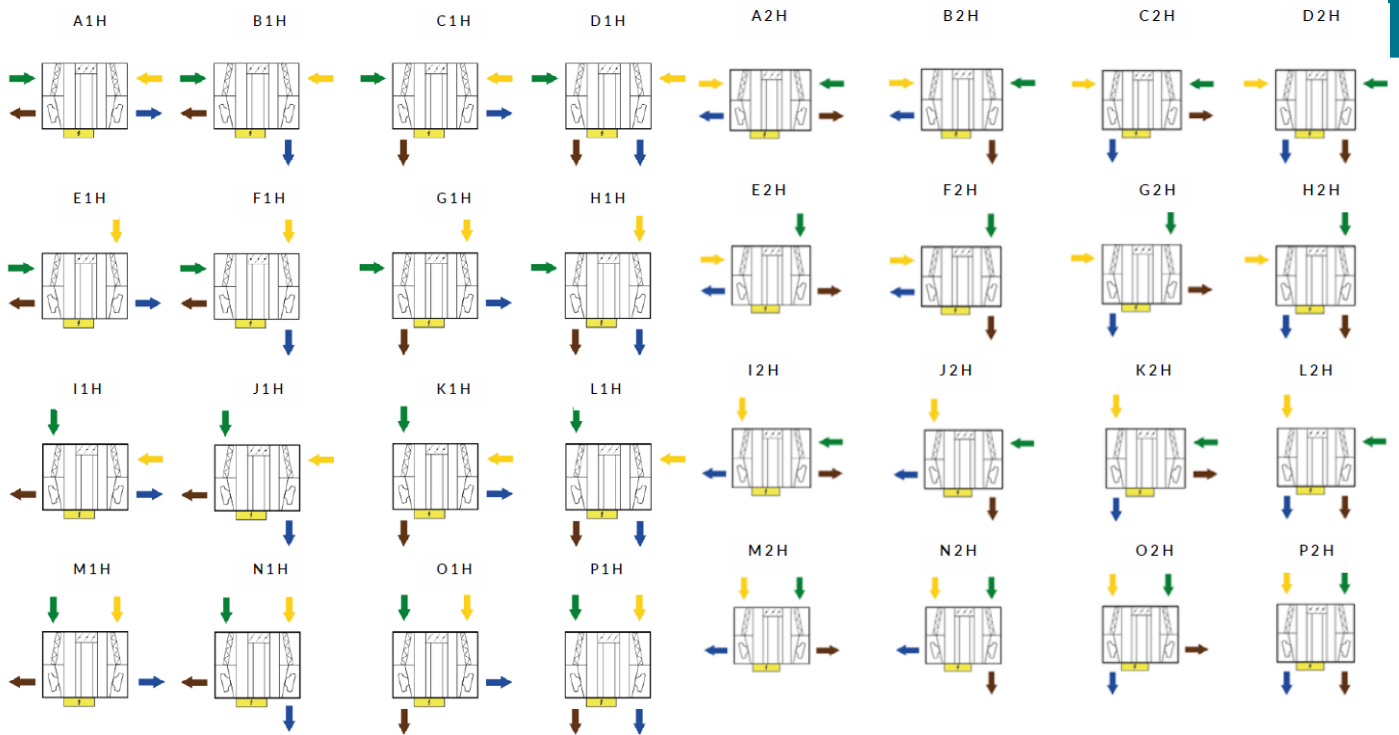


NOTE: MAINTENANCE AND EQUIPMENT ACCESS CLEARANCE UP TO SIZE 18 | 750 MM; FROM SIZE 18 ONWARDS | 1000 MM

## STOCK CONFIGURATIONS - HORIZONTAL MODEL

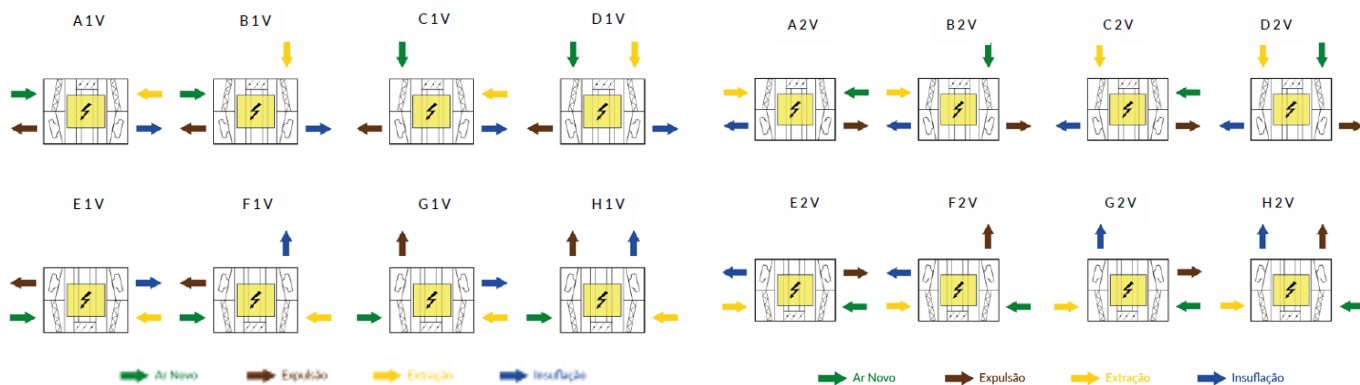


## HORIZONTAL MODEL CONFIGURATIONS





VERTICAL MODEL CONFIGURATIONS



RECOVERY

ERP VERIFICATION DOCUMENT

MANUFACTURER		ARFIT CLIMATIZAÇÃO, S.A.				
Model		11	18	25	42	56
Typology		UVNR UVB				
Type of transmission		Variable speed	Variable speed	Variable speed	Variable speed	Variable speed
Type of heat recovery system		OTHER				
Thermal heat recovery efficiency	%	78,3	78,1	79	79,6	81,1
Nominal airflow	m <sup>3</sup> /s	0,268	0,521	0,65	1,114	1,483
Input power	kW	0,189	0,489	0,522	1,199	1,467
SPFint	W/m <sup>3</sup> /s	785,7	1251,2	1023,7	1437,5	1597,8
Face velocity	m/S	1,86	2,71	2,38	2,65	2,60
Nominal external pressure	Pa	100	100	100	100	100
Decrease in internal pressure of ventilation components	Pa	214	444	323	399	363
Fan static efficiency	%	49,6	64,5	58,5	51,6	41,9
Declared maximum internal/external leakage rate	%	3,4/4,3	3,4/4,1	3,8/3,9	4,2/3,8	4,2/3,8
Filter classification		F7/M5				
Description of visual filter warning		"The filter warning is integrated into the unit control system, either through visual signalling or on-screen indication, depending on the control system used." "It is essential to carry out regular filter replacement to improve the unit's performance and energy efficiency."				
Sound power level (Lwa)	dB(A)	52	66	60	64	65
Website address		www.arfit.pt				