ECOAIR 2

Be.On

EC Technology

Flexible Coil Modules

Plug & Play

Double-panel

DESCRIPTION

ECOAIR 2 air handling unit. Designed for ventilation and air conditioning applications, it integrates EC Plug Fan fans, up to 2 filtration stages, and 3 types of heating and/or cooling coils.

Structure made of aluminum profiles with 25 mm double-skin panels, outer face in Magnelis with corrosion class C5 and inner face in galvanized steel sheet Z275. Intermediate insulation in high-density rock wool ensures high thermal and acoustic performance.

A high-capacity and high-performance solution available in 8 sizes, for airflow rates up to 15,000 m³/h. The main unit allows integration of 3 types of coils (water heating/cooling coil, refrigerant coil, or electric heating coil), with the option of additional coil modules (water or refrigerant) and a 2-way mixing box.

Equipped with Smart Evolution and Be.On control systems.

STANDARDS AND CERTIFICATIONS

EN 10327 | EN 10192 | CE | Mechanical Protection IP44

ADVANTAGES

- High-capacity unit, suitable for large airflow rates.
- 25 mm double-skin insulated panels.
- Corrosion class C5.
- Low energy consumption EC motor.
- Be.On module integration with cloud connection and Be.Smart monitoring.
- Flexible modular configurations: main coil module, additional coil modules, and additional 2-way mixing box.
- 3-way valve and actuator included.
- Integrated electrical panel.

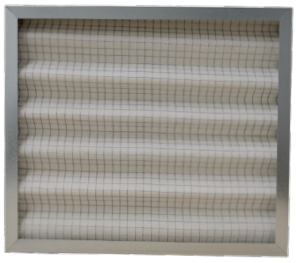
ACCESSORIES

- ePM10 50% / M5 filter
- ePM1 50% / F7 filter
- Additional coil modules
- 2-way mixing box
- Protection for rain (intake / exhaust)
- Rain roof
- Constant airflow control
- CO_2 Control

COMPONENTS

FILTERS

The filtration system consists of two stages, mounted in parallel on sliding rails designed to minimize bypass leakage, in accordance with EN 1886. It may include an ePM10 50% (M5) pre-filter for coarse particles and a standard ePM1 50% (F7) fine filter (EN 779), according to ISO 16890 classification.



FAN

Radial EC brushless Plug Fan centrifugal fan with backward-curved blades, compact design and high available pressure. The impeller aerodynamics, balanced according to ISO 1940 G2.5 and vibration compliant with AMCA 204, combined with an EC motor class B insulation and IP44 protection, ensures high capacity, efficiency, and performance even under high resistance conditions.

COMPLEMENTARY MODULES

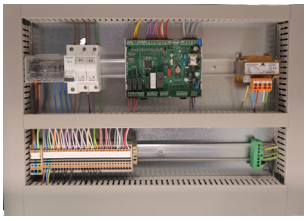
The additional modular configuration allows integration of a water coil module or refrigerant coil module, as well as a mixing box, providing thermal flexibility and adaptation to different HVAC requirements.

CHANGE OVER COIL

Water coil that allows switching between heating and cooling with the same coil. It consists of copper tubes, aluminum fins mechanically expanded onto tubes, copper headers, and galvanized steel structure. Tightness and integrity are factory tested at 32 bar. Module equipped with stainless steel condensate drain tray. 3-way valve and actuator included.

DIRECT EXPANSION COIL

Direct expansion coil using R32 refrigerant. It consists of copper tubes, aluminum fins mechanically expanded onto tubes, copper headers, and galvanized steel structure. Tightness and integrity are factory tested at 60 bar. Module equipped with stainless steel condensate drain tray.



ELECTRIC HEATING COIL

Electric resistance heating coil composed of armored heating elements in 8 mm steel tubes with 25 × 50 mm fins of the same material and quick fixing screws with M4 threaded terminals. The heating elements are specifically designed for air handling applications. They are mounted in a frame and installed on a sliding rail for easy removal.

CHARACTERISTICS

ECOAIR 2	1500	2500	3500	5000	7000	10 000	12 000	15 000
Airflow (m^3/h)	1575	2455	3620	4800	7125	9755	12 340	15 165
Static pressure (Pa)	760	827	655	975	870	672	655	752
Motor Power (kW)	0,7	1,1	1,4	2,5	2,5	2,77	2,7	2 x 2,5
Nominal Rotation Speed (rpm)	2950	3500	3300	3200	2650	1520	1250	2650
Power Supply (V | F | Hz)	230 | 1 | 50	400 | 3 | 50						
Motor IP Class	IP 44							
IMAX (A)	3,81	2,43	2,81	4,68	5,73	5,39	6,1	11,36
Sound Pressure (dB (A)) *	48	53	51	53	53	45	44	56

* Sound pressure level at 4 m, measured in open field in accordance with ISO 3744

CHARACTERISTICS

CHANGE OVER COIL

BCA ECOAIR 2	Airflow (m³/h)	Heating			Cooling		
		Heating capacity (kW)	Water flow rate (l/s)	Water pressure drop (kPa)	Cooling capacity (kW)	Water flow rate (l/s)	Water pressure drop (kPa)
1500	972	8	0,38	10,0	6	0,30	8,3
	1188	9	0,43	12,8	7	0,34	9,7
	1350	10	0,47	15,0	8	0,36	11,0
2500	1539	12	0,59	9,2	10	0,47	7,7
	1881	14	0,68	11,5	11	0,53	9,0
	2137	15	0,74	13,5	12	0,57	9,9
3500	2228	18	0,86	9,4	14	0,69	7,9
	2723	20	0,99	12,0	16	0,77	9,2
	3093	22	1,08	14,0	17	0,83	10,2
5000	2991	24	1,15	8,0	19	0,91	6,8
	3655	27	1,32	9,6	21	1,02	7,8
	4153	30	1,44	11,0	23	1,10	8,5
7000	4406	35	1,70	9,6	28	1,35	8,1
	5386	40	1,96	12,1	32	1,52	9,4
	6120	44	2,13	14,2	34	1,63	10,5
10 000	6114	49	2,35	6,9	38	1,83	5,9
	7473	56	2,69	8,2	43	2,06	6,6
	8491	61	2,94	9,1	47	2,22	7,2
12 000	7629	61	2,96	9,5	50	2,37	8,2
	9324	70	3,40	12,1	56	2,66	9,5
	10595	77	3,71	14,2	60	2,87	10,7
15 000	9424	76	3,66	9,7	61	2,92	8,3
	11518	87	4,20	12,4	69	3,28	9,6
	13088	95	4,58	14,5	74	3,53	10,9

Airflow at velocities: 1.8; 2.2; 2.5 m/s
Heating - Air temperature: 0°C / 80%. Water temperature: 45°C–40°C
Cooling - Air temperature: 35°C / 50%. Water temperature: 7°C–12°C

DIRECT EXPANSION COIL

BCR ECOAIR 2	Airflow (m³/h)	Heating capacity (kW)	Cooling capacity (kW)
1500	842	5	8
	1030	6	9
	1170	7	9
2500	1377	8	12
	1683	10	14
	1912	10	15
3500	2049	11	18
	2505	12	21
	2846	13	22
5000	2759	15	25
	3372	17	28
	3831	18	30
7000	4121	22	37
	5037	25	42
	5724	27	45
10 000	5838	29	53
	7136	33	60
	8109	36	64
12 000	7436	39	67
	9088	45	76
	10327	48	82
15 000	8734	46	78
	10675	52	88
	12130	56	95

Airflow at velocities: 1.8; 2.2; 2.5 m/s
Heating - Air inlet temperature: 10°C / 55%. R32 condensation temperature: 50°C
Cooling - Air inlet temperature: 35°C / 50%. R32 evaporation temperature: -4°C

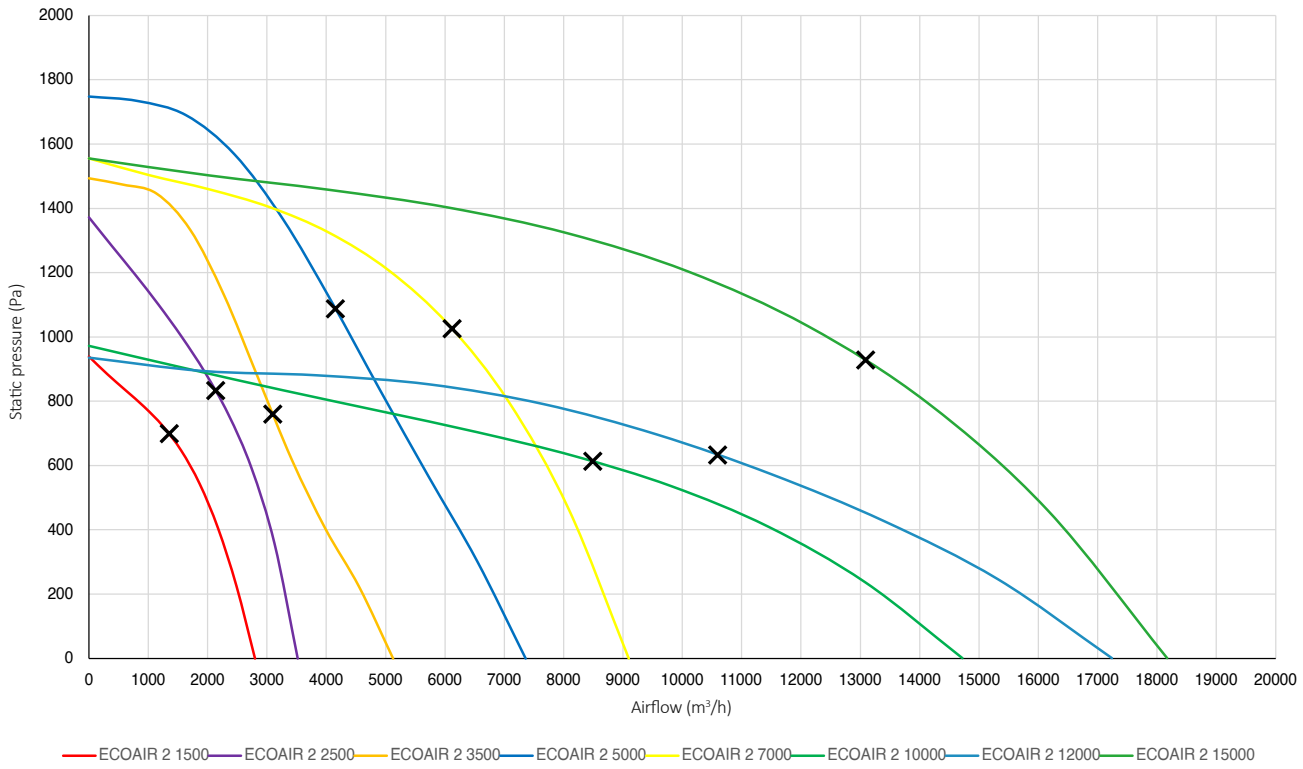
CHARACTERISTICS

ELECTRIC HEATING COIL

BRE ECOAIR 2	Airflow (m³/h)	Heating capacity (kW)
1500	1575	12
2500	2455	18
3500	3620	27
5000	4800	36
7000	7125	54
10 000	9755	72
12 000	12 340	90
15 000	15 165	108

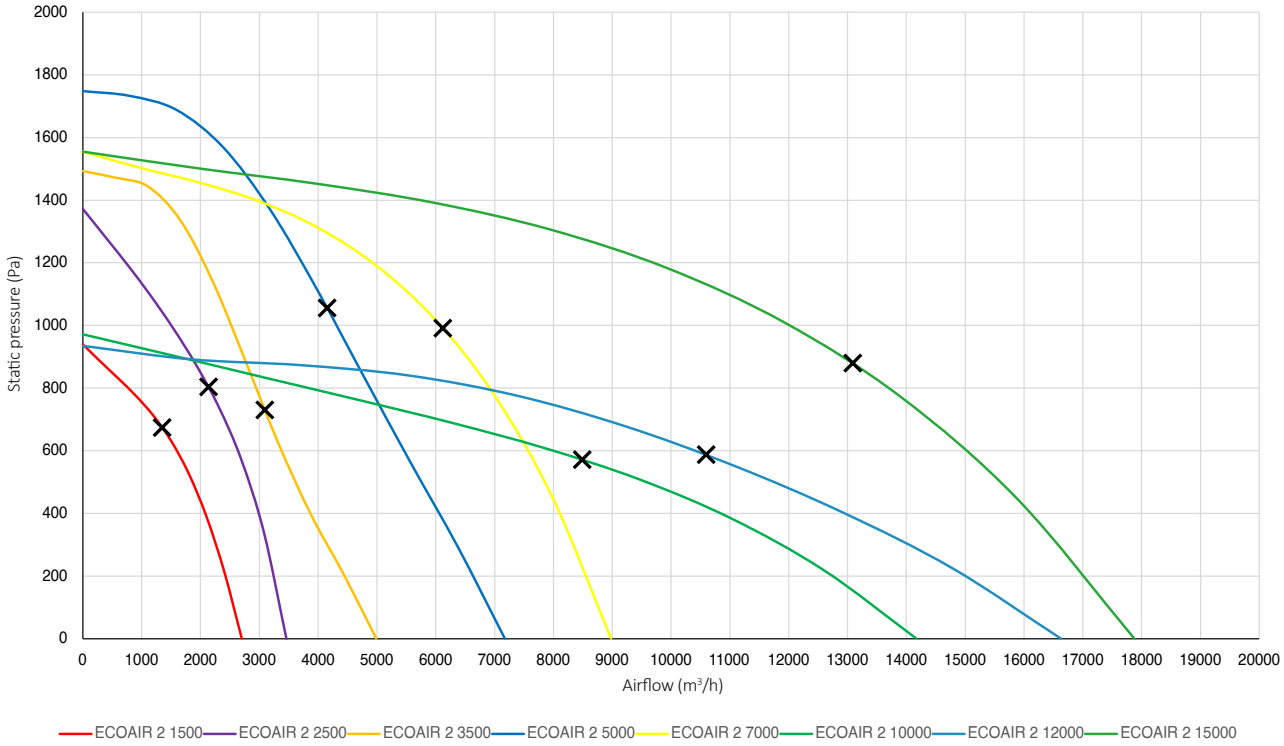
PERFORMANCE CURVES

ECOAIR 2 ePM10 50%/M5 + WATER COIL

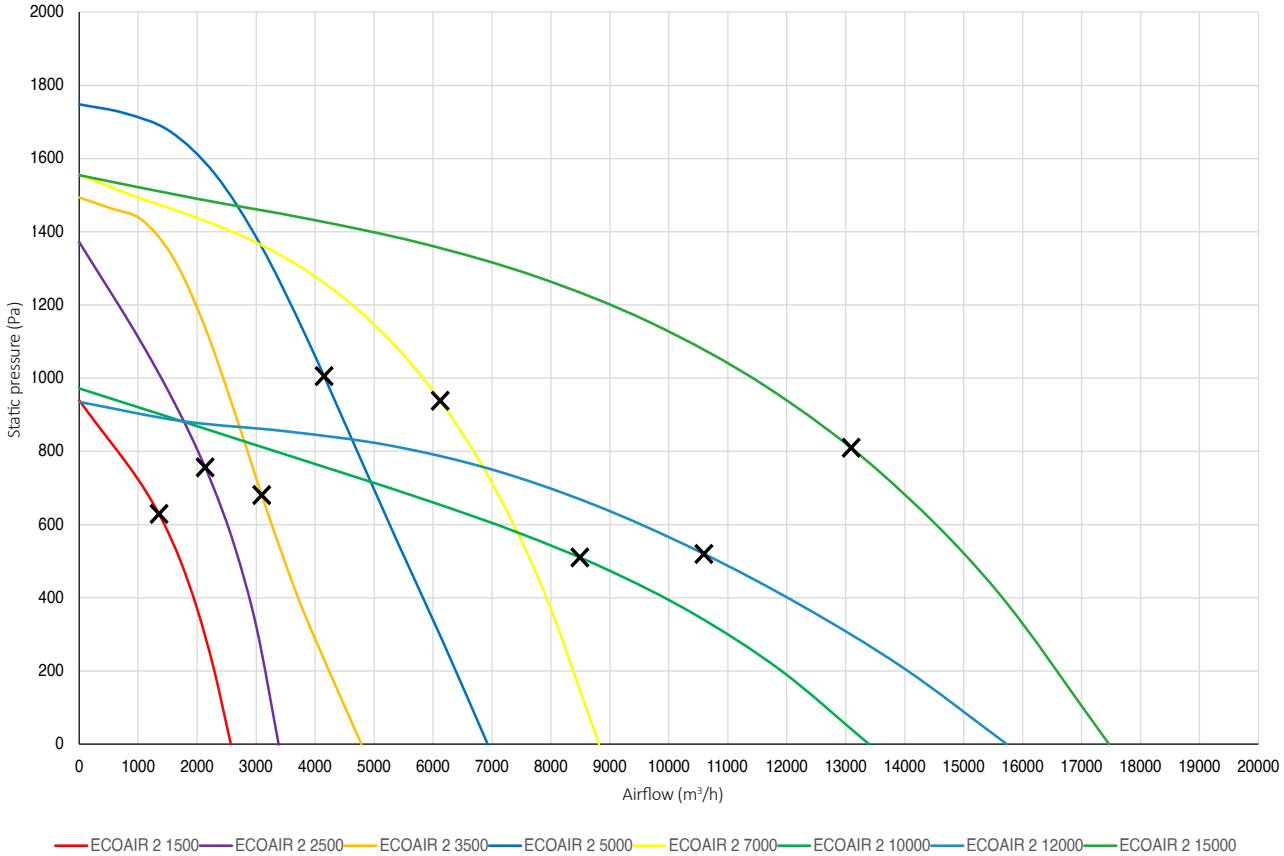


PERFORMANCE CURVES

ECOAIR 2 ePM1 50%/F7 + WATER COIL

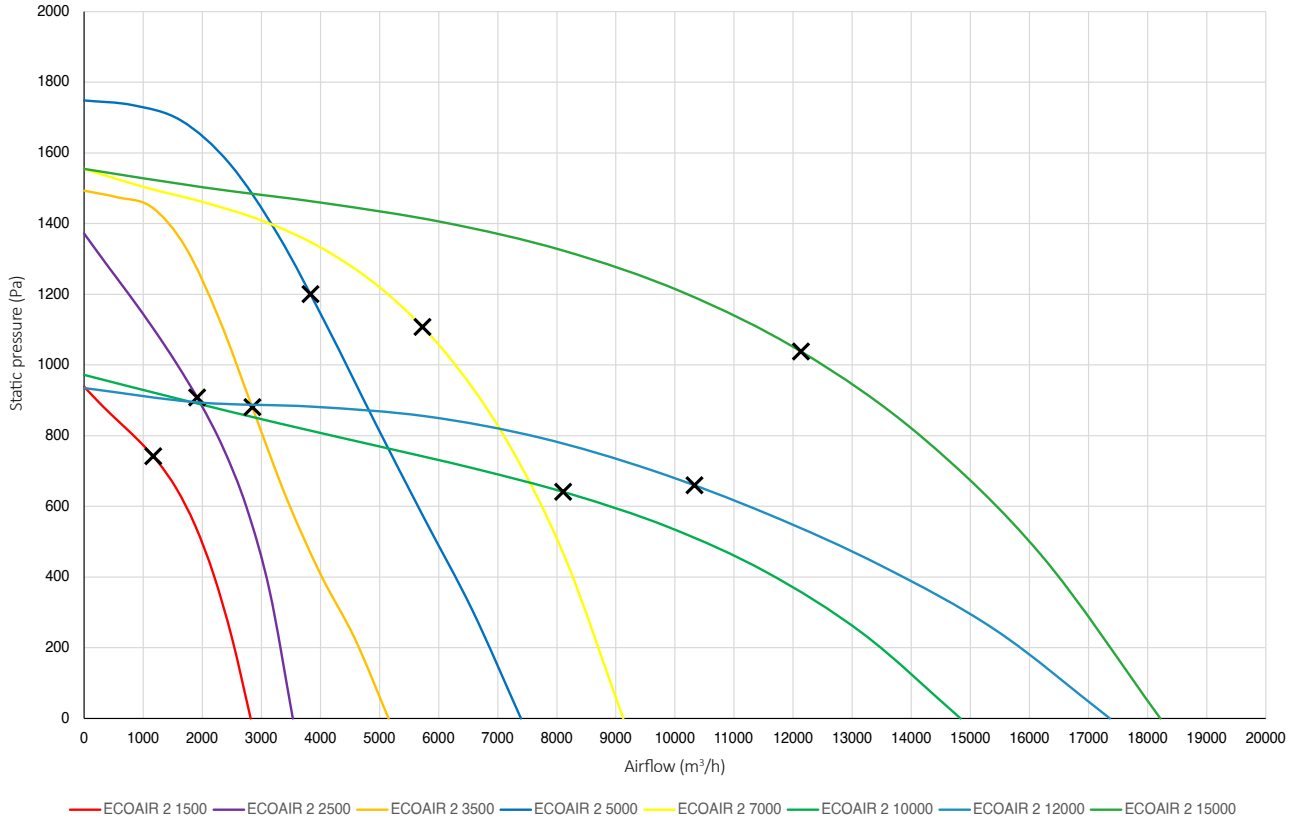


ECOAIR 2 ePM10 50%/M5 + ePM1 50%/F7 + WATER COIL

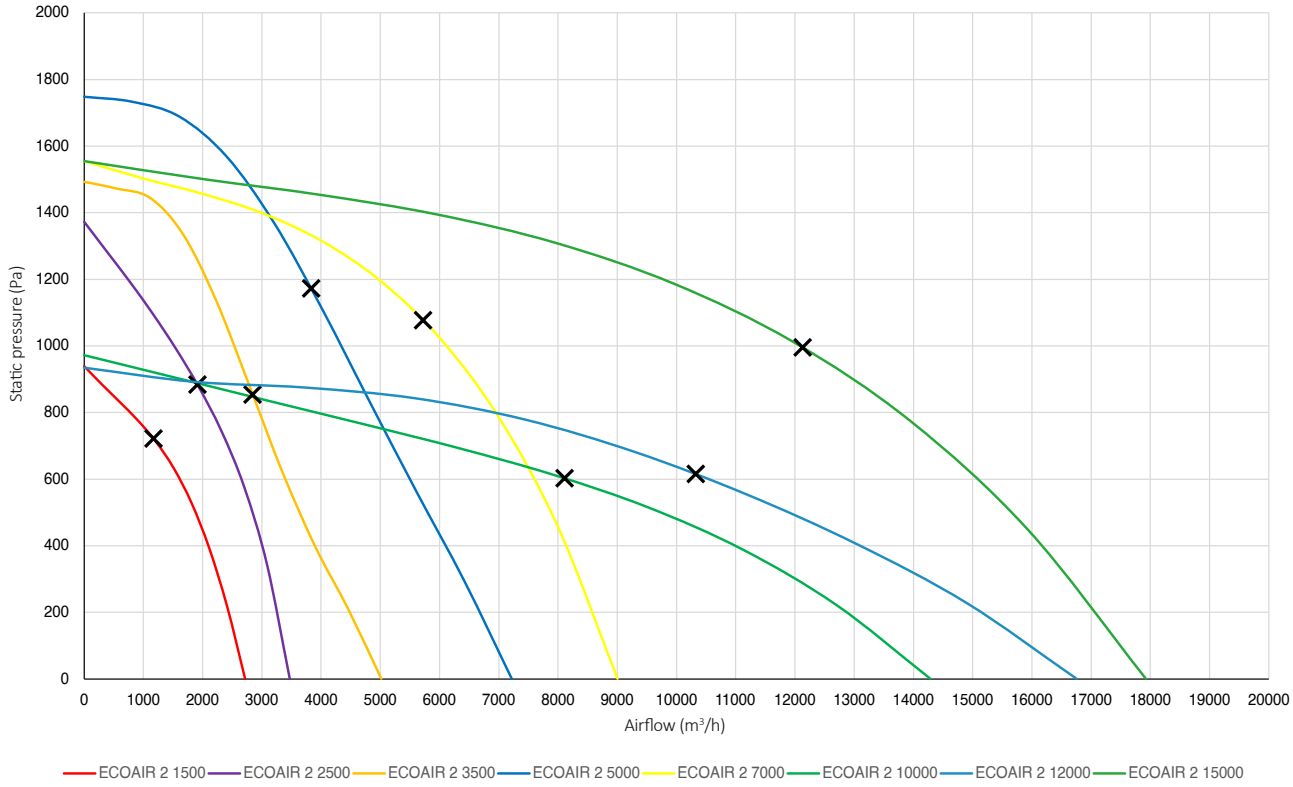


PERFORMANCE CURVES

ECOAIR 2 ePM10 50%/M5 + DX COIL

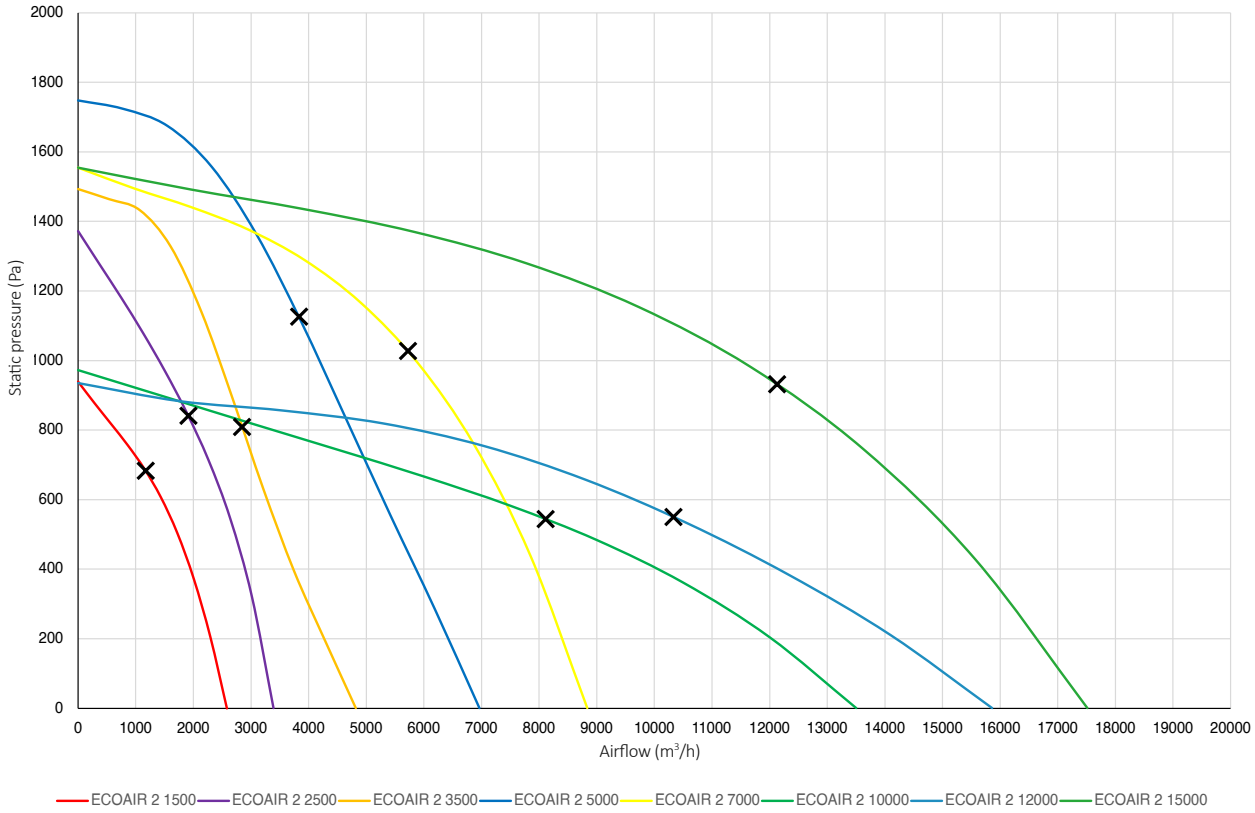


ECOAIR 2 ePM1 50%/F7 + DX COIL

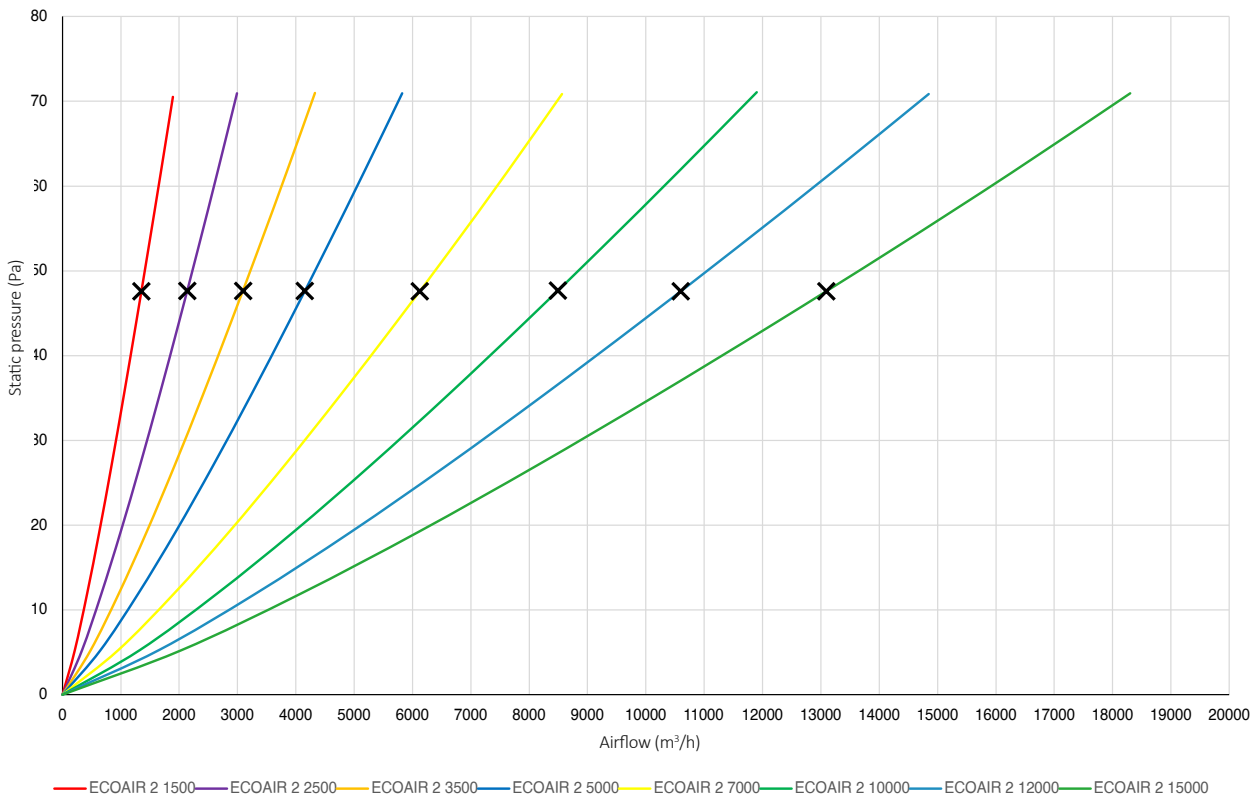


PERFORMANCE CURVES

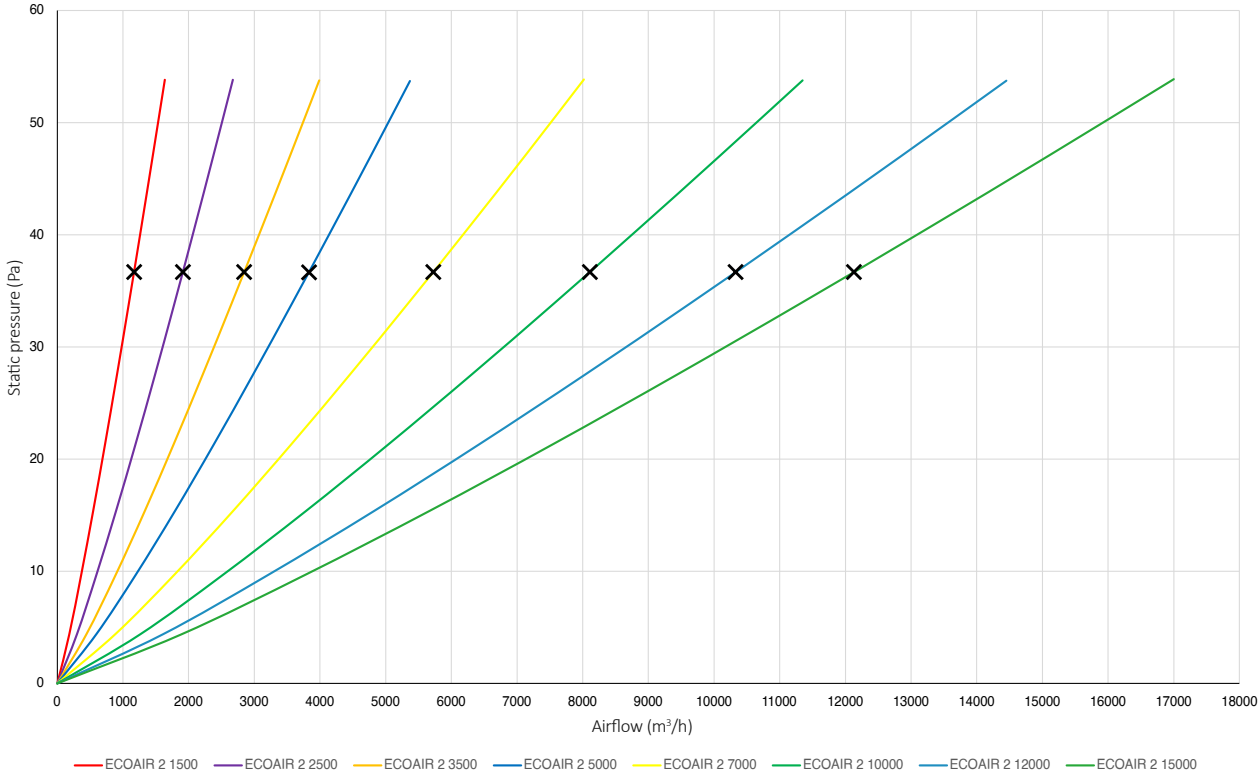
ECOAIR 2 ePM10 50%/M5 + ePM1 50%/F7 + DX COIL



ECOAIR 2 WATER COIL MOD



ECOAIR 2 DX COIL MOD



WATER COIL – CHANGE OVER COIL
DX COIL – DIRECT EXPANSION COIL

DIMENSIONS

ECOAIR 2		1500	2500	3500	5000	7000	10 000	12 000	15 000
A (mm)		550	650	720	810	950	1000	1000	1200
L (mm)		550	650	800	900	1050	1310	1600	1600
P (mm)		1230	1280	1350	1450	1540	1820	1915	1915
Circular cross-section (ØD) (mm)		400	500	560	-	-	-	-	-
Rectangular Cross-Section (CxB) (mm)		-	-	-	750 x 840	890 x 990	940 x 1250	940 x 1540	1140 x 1540
Weight (kg)	Water heater	110	128	157	187	229	298	364	412
	DX water heater	110	127	156	183	223	300	353	394
	Electric heater	106	123	154	181	224	292	349	396

COIL MODULE

ECOAIR 2 - COIL MOD		1500	2500	3500	5000	7000	10 000	12 000	15 000
A (mm)		550	650	720	810	950	1000	1000	1200
L (mm)		550	650	800	900	1050	1310	1600	1600
P (mm)		350	350	350	350	400	400	400	450
Circular cross-section (ØD) (mm)		400	500	560	-	-	-	-	-
Rectangular Cross-Section (CxB) (mm)		-	-	-	750 x 840	890 x 990	940 x 1250	940 x 1540	1140 x 1540
Weight (kg)	Water heater	44	56	68	71	90	109	135	151
	DX water heater	44	55	67	67	84	104	124	133

DIMENSIONS

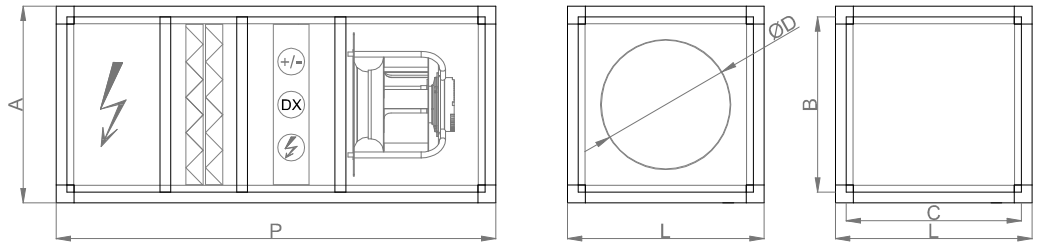
MIXING BOX MODULE

ECOAIR 2 - MÓD CAIXA	1500	2500	3500	5000	7000	10 000	12 000	15 000
A (mm)	550	650	720	810	950	1000	1000	1200
L (mm)	550	650	800	900	1050	1310	1600	1600
P (mm)	550	650	720	810	950	1000	1000	1200
C/D (mm)	490	590	660	750	890	940	940	1140
E (mm)	490	590	740	840	990	1250	1540	1540
Ak (m²)	0,39	0,62	0,77	0,63	0,88	1,18	1,45	1,76
v (m/s)	1,11	1,11	1,30	2,12	2,25	2,31	2,37	2,40
Weight (kg)	28	37	45	56	73	86	101	130

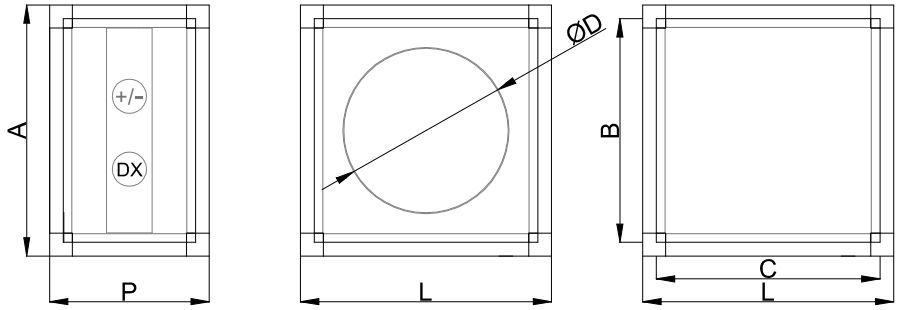
A - Height (mm)
C - Length (mm)
Ak - Throat area (m²)
v - Throat velocity (m/s)

DIMENSIONS

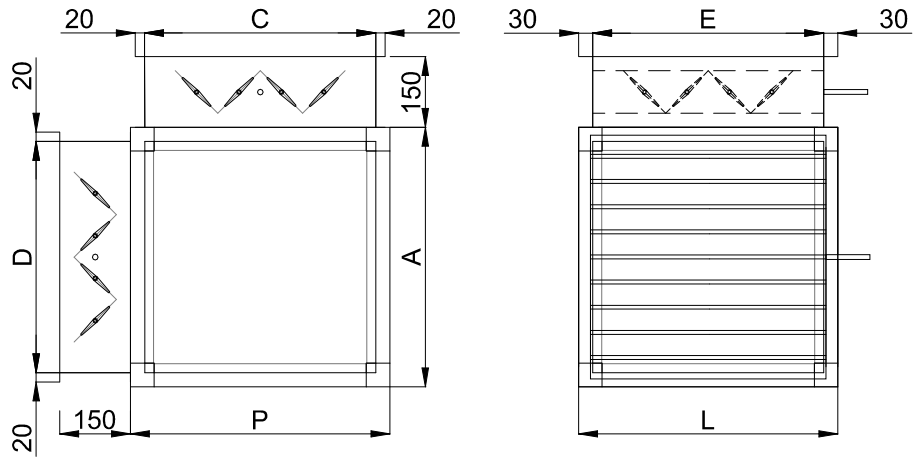
NOTE: MAINTENANCE CLEARANCE AND UNIT ACCESS DISTANCE | 750 MM



ECOAIR 2
Main Unit



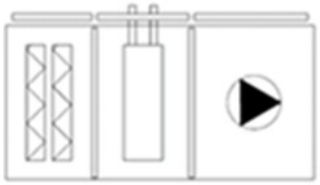
ECOAIR 2
Coil Module



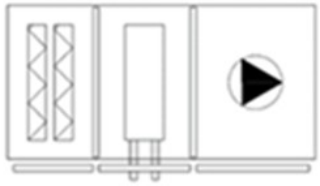
ECOAIR 2
Mixing Box Module

CONFIGURATIONS

A



B



ERP VERIFICATION DOCUMENT

MANUFACTURER		ARFIT AIR CONDITIONING, S.A.							
Model		1500	2500	3500	5000	7000	10000	12000	15000
Type		UVNR UVU							
Transmission Type		Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed
Heat Recovery System Type		-							
Heat Recovery Thermal Efficiency	%	-	-	-	-	-	-	-	-
Nominal Airflow	m^3/s	0.4375	0.6667	1.0056	1.3333	1.9792	2.7090	3.4278	3.8889
Input Power	kW	0.712	1.326	1.435	2.583	3.335	3.105	3.637	6.63
SPFint	$W/m^3/s$	184.2	203.7	215.7	198.6	207.1	210.9	229.9	228.7
Frontal Velocity	m/s	1.11	1.08	1.30	2.12	2.25	2.31	2.37	2.40
Nominal External Pressure	Pa	674	789	556	884	778	554	506	794
Reduction in Internal Pressure (Ventilation)	Pa	86	90	99	101	109	125	140	123
Static Efficiency of Fans	%	46.7%	44.2%	45.9%	50.9%	52.6%	59.3%	60.9%	53.8%
Maximum Declared Internal/External Leakage Rate	%	-	-	-	-	-	-	-	-
Filter Classification		F7							
Description: Visual notice regarding filters		The filters warning is displayed on the unit's control system, either via a warning light or on-screen message, depending on the control system used. It is of the utmost importance to replace the filters regularly to improve the unit's performance and energy efficiency.							
Sound Power Level (Lwa)	dB(A)	45	49	51	52	54	51	49	59
Website		www.arfit.pt							