

# EBF-SHE/HHE

## EBF-SHE/HHE-ECM

High efficiency heat recovery unit



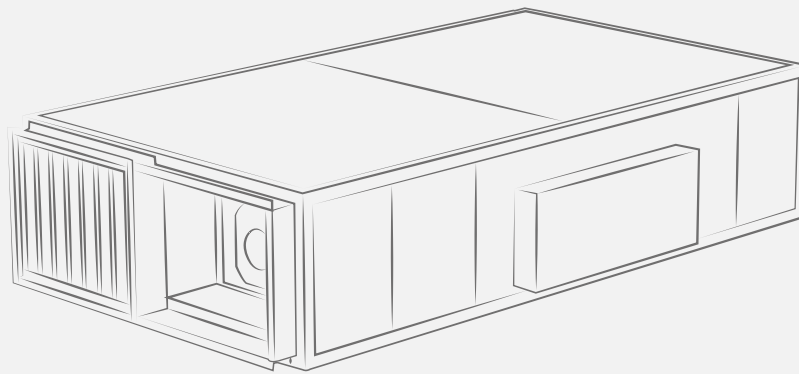
Product Catalog

Rel. 09\_24\_01\_04\_EN

# EBF-SHE/HHE

EBF-SHE/HHE-ECM


High efficiency heat recovery unit



EBF-SHE/HHE  
EBF-SHE/HHE-ECM


# High efficiency and energy savings


## EBF-SHE

 **400 - 4700** m<sup>3</sup>/h  
air flow

 **75 - 86** %  
thermal efficiency

## EBF-HHE

 **320 - 4300** m<sup>3</sup>/h  
air flow

 **78 - 90** %  
thermal efficiency

EBF-SHE/HHE  
EBF-SHE/HHE-ECM



### Structure:

structure made of pre-painted sheet metal with sandwich-type removable panels of average thickness 23mm, with thermo-acoustic insulation in injected polyurethane with a density of 45 kg/m<sup>3</sup>.



### Heat exchanger:

Air-to-air heat recovery unit in aluminum, static type with countercurrent flows with a close pitch with achievable performances up to over 90%.

The recuperator is removable from below for the model size 1, and laterally for all other sizes.



### Air filter:

Standard air filters with efficiency ISO 16890 and PM1 55% (F7 EN 779) in supply and PM10 55% (M5 EN 779) in recovery, laterally removable. These filters use a composite polypropylene medium designed for use in systems with high air volumes, reduced installation spaces and limited load losses.



### Fan section:

Fresh air inlet and exhaust fans of centrifugal type with double intake with forward blades with directly coupled motor, designed to optimize the air flow through the internal components minimizing noise.

The ECM versions are equipped with innovative high-efficiency brushless motors.



### Condensate drain pan:

Made of galvanized steel plate with water drain connection downwards.



### Differential pressure switches:

Fresh air filter pressure switch with visual warning of dirty filter alarm supplied, also available on request an additional pressure switch on the expulsion side.



### By-pass free cooling:

The unit is equipped with a partial by-pass of the recuperator for defrosting or free cooling, with a manual opening system (supplied with standard) or an automatic servo control (optional). The automatic version can be controlled by an external consent or even by an integrated electronic management.



### Installation:

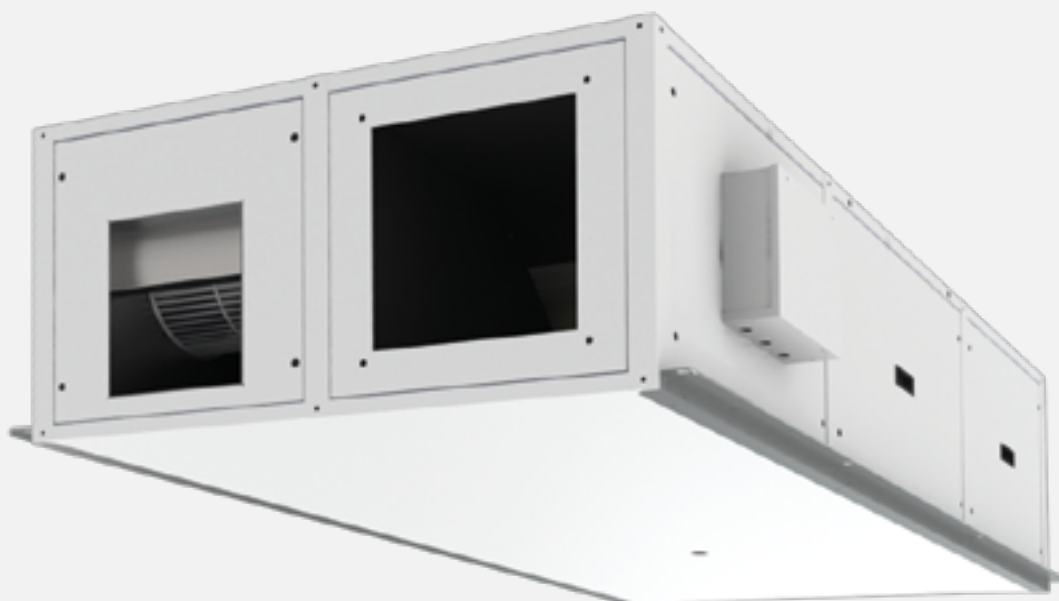
The range is suitable for horizontal installation with application in false ceilings or similar. Depending on the configuration of the distribution network and the space available, it will be possible to choose between two possible orientations named A or B.

The EBF-SHE/HHE series of heat exchanger has been developed in order to guarantee a comfortable and healthy environment aiming for maximum efficiency, ensuring a high energy saving and relative reduction in operating costs.

The range consists of 6 sizes for the SHE / HHE series equipped with asynchronous motors and 8 sizes for the SHE / HHE-ECM series equipped with innovative brushless motors. The units are suitable for horizontal installation, with an air flow range from 320 a 4700 m<sup>3</sup>/h and recovery efficiencies up to over 90%.

The wide range of capacities and configurations allows to satisfy multiple application requirements for different areas ranging from residential to industrial area.

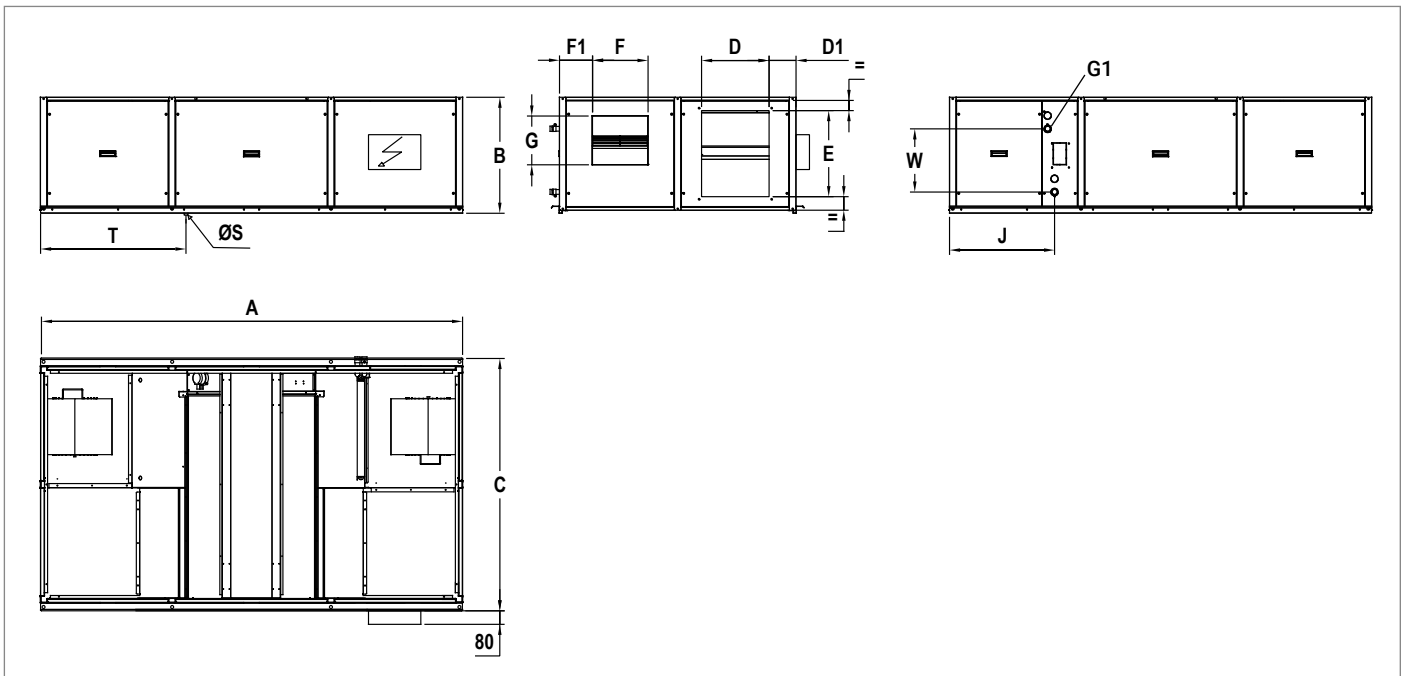
These series of heat exchanger have been suitably sized to comply with the requirements of the European Ecodesign Directive (EU Regulation 1253/14).



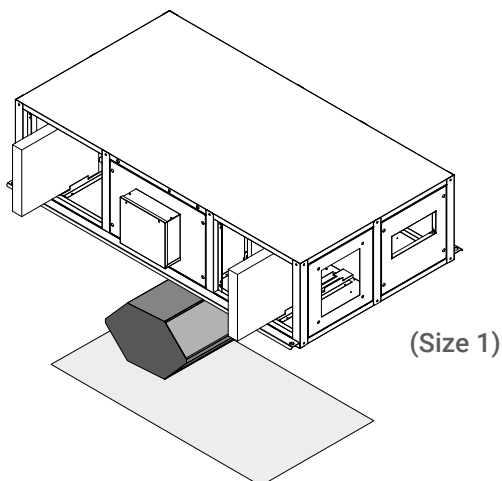
EBF-SHE/HHE  
EBF-SHE/HHE-ECM

## Dimensions

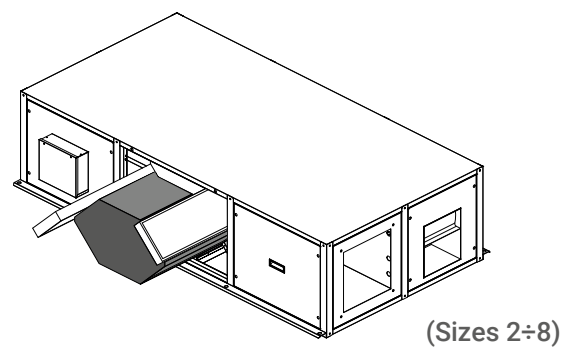
		1	2	3	4	5	6	7	8	
Lunghezza / Length / Longueur / Länge / Longitud	A	mm	1480	1940	1940	2200	2200	2500	2500	2500
Altezza / Height / Hauteur / Höhe / Altura	B	mm	380	480	480	550	550	680	680	680
Profondità / Depth / Profondeur / Tiefe / Profundidad	C	mm	800	990	990	1000	1400	1400	1400	1700
	D	mm	200	300	300	300	500	400	500	500
	D1	mm	110	100	100	100	100	150	100	185
	E	mm	210	310	310	410	410	510	510	510
	F	mm	230	230	230	230	300	330	405	405
	F1	mm	90	140	140	145	215	195	158	232
	G	mm	70	210	260	260	260	290	405	405
	G1	Ø inch	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"
	S	Ø inch	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
	T	mm	355	697	697	778	779	863	863	863
	J	mm	412	550	550	550	550	620	620	620
	W	mm	177	190	190	265	350	375	375	375
Peso / Weight / Poids / Gewicht / Peso		kg	90	140	150	170	200	230	260	300



## Accessibility (filters and heat recovery exchanger)

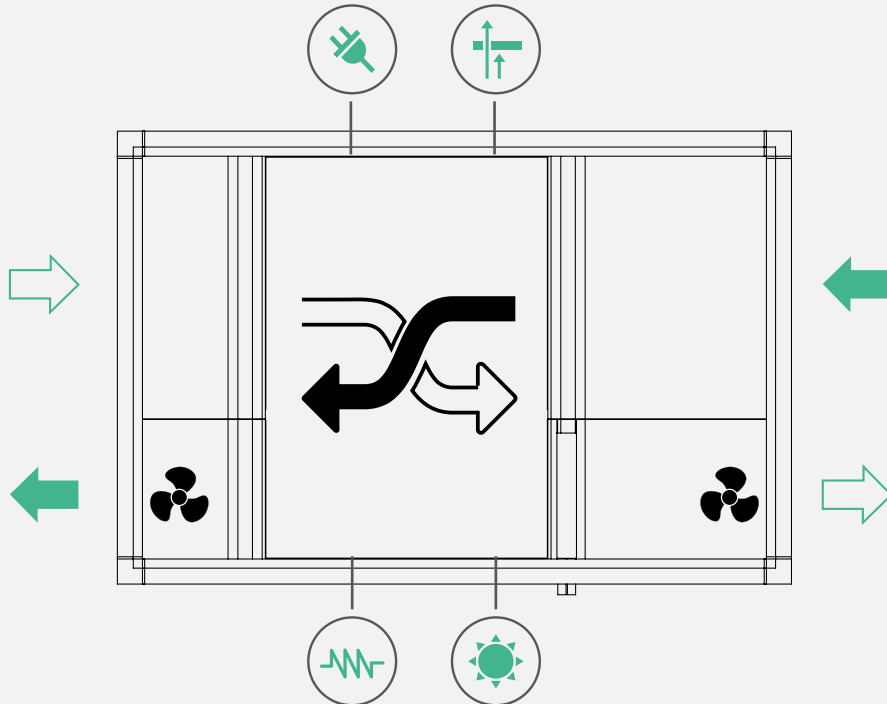


(Size 1)

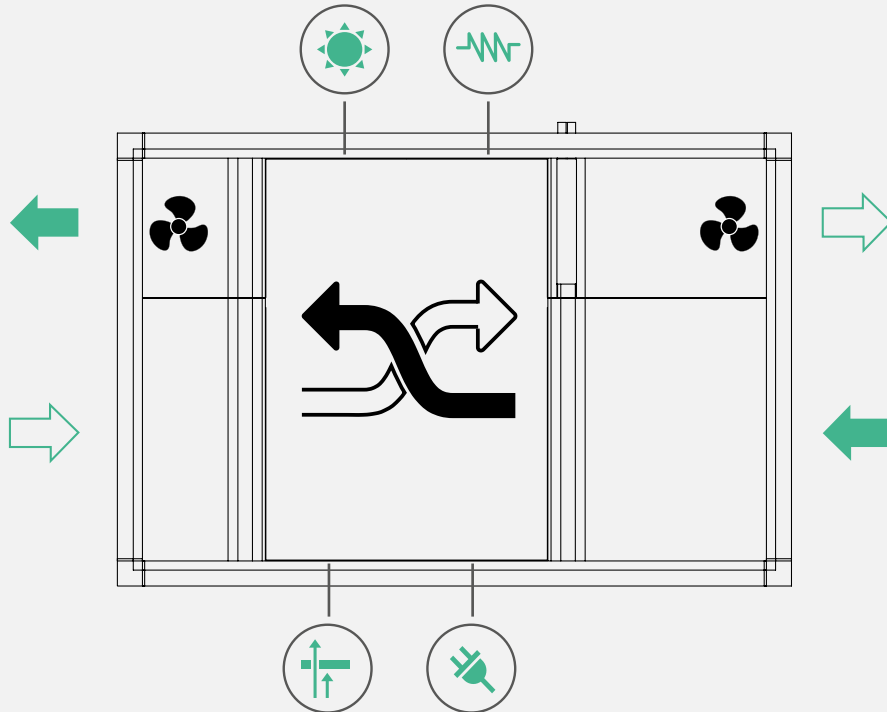


(Sizes 2÷8)

Configuration type A



Configuration type B



The configurations are referred to the top view



exhaust air



fresh air



power outlet






air filter




electric heater



heating

		SHE-ECM								HHE-ECM								
 <b>Motore ECM - ECM motor</b> <b>Moteur ECM - ECM-Motor - Motor ECM</b>		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
Portata aria nominale Nominal airflow Débit d'air nominal Nennluftstrom Caudal de aire nominal	m <sup>3</sup> /h	400	750	1000	1500	2050	3200	3800	4700	320	600	800	1200	1600	2500	3500	4300	
Pressione statica utile nominale Nominal external static pressure Pression statique utile nominale Nominaler externer statischer Druck Presión estática útil nominal	Pa	160	120	130	160	120	180	200	200	165	150	160	160	150	250	200	200	
Pressione statica utile massima Maximum external static pressure Pression statique utile maxi Maximaler externer statischer Druck Presión estática máxima útil	Pa	340	210	520	500	540	375	330	200	380	300	600	450	600	440	350	220	
<b>VENTILATORE / FAN</b> <b>VENTILATEUR / VENTILATOR / VENTILADOR</b>																		
Tipologia motore Motor typology Typologie du moteur Motorentyp Tipología de motor		ECM																
N° velocità Speed Number Numéro de vitesses Anzahl der Geschwindigkeitsstufen No. de velocidades	(1)	Multiple																
Controllo ventilazione Fan control Contrôle de la ventilation Ventilatorsteuerung Control de ventilación	(1)	0-10V																
Potenza assorbita nominale totale Total nominal power input Puissance absorbée totale nominale Gesamtnennleistung Potencia absorbida nominal total	kW	0.16	0.30	0.49	0.76	0.84	1.77	1.78	2.19	0.16	0.24	0.32	0.53	0.61	1.32	1.87	2.27	
Corrente assorbita nominale totale Total nominal load amperage Courant absorbé nominal total Gesamtnennstrom Corriente absorbida nominal total	A	0.7	1.3	2.1	3.2	3.6	7.5	7.6	9.3	0.7	1.0	1.4	2.2	2.6	5.6	8.0	9.6	
Efficienza statica dei ventilatori secondo (UE) n.327/2011 Static efficiency of fans (UE) n.327/2011 Efficacité statique des ventilateurs selon (EU) n.327 / 2011 Statischer Wirkungsgrad von Lüftern gemäß (EU) Nr. 327/2011 Eficiencia estática de los ventiladores según (UE) n. 327/2011	%	32.7	32.7	53.2	53.2	55.9	59.8	66.9	66.9	32.73	32.73	53.2	53.2	55.9	59.8	66.9	66.9	
Potenza assorbita massima totale Total full load power input Puissance absorbée totale maximale Gesamtleistungsaufnahme bei Vollast Potencia absorbida máxima total	kW	0.56	0.56	2.12	2.12	2.12	2.35	2.07	2.07	0.56	0.56	2.12	2.12	2.12	2.35	2.07	2.07	
Corrente assorbita massima totale Total full load amperage Courant absorbé maximal total Gesamstromaufnahme bei Vollast Corriente absorbida máxima total	A	2.4	2.4	9.0	9.0	9.0	10.0	8.8	8.8	2.4	2.4	9.0	9.0	9.0	10.0	8.8	8.8	
Alimentazione elettrica Power supply Alimentation électrique Stromversorgung Fuente de alimentación	V/ph/Hz	230/1/50			230/1/50-60					230/1/50			230/1/50-60					
<b>RECUPERATORE DI CALORE / HEAT RECOVERY UNITS</b> <b>RÉCUPÉRATEURS DE CHALEUR / WÄRMERÜCKGEWINNUNG / RECUPERADOR DE CALOR</b>																		
 Efficienza termica invernale Winter thermal efficiency Efficacité thermique hivernale Wärmewirkungsgrad im Winter Eficiencia térmica invernale	(2)	%	83.6	82.9	81.6	83.3	83.7	86.8	84.1	84.2	90.2	91.1	90.0	90.0	90.4	91.5	90.1	90.2
 Efficienza termica estiva Summer thermal efficiency Efficacité thermique d'été Termischer Wirkungsgrad im Sommer Eficiencia térmica de verano	(3)	%	75.5	75.9	74.5	75.1	75.6	78.0	75.0	75.1	79.6	80.1	78.7	79.2	79.8	80.0	78.4	78.5
Efficienza termica a secco Dry thermal efficiency Efficacité thermique sèche Trockener thermischer Wirkungsgrad Eficiencia térmica seca	(4)	%	75.9	76.4	75.0	75.6	76.0	76.3	75.5	75.6	83.1	83.7	82.2	82.7	83.3	83.5	81.8	81.9
(1)	Multiple = Multivelocità > 3 / Multispeed > 3 / Multi-vitesses > 3 / Mehrfache Geschwindigkeit > 3 / Multivelocidad > 3 0-10V = Da potenziometro o tastiera / By potentiometer or control panel / Par clavier ou potentiomètre / über Potentiometer oder Bediengerät / Desde potenciómetro o teclado																	
(2)	Aria esterna, aria ambiente / Outside air, ambient air / Air extérieur, air ambience / Aussenluft, umgebungsluft / Aire exterior, aire ambiente										-5°C 80% UR / 20°C 50% UR							
(3)	Aria esterna, aria ambiente / Outside air, ambient air / Air extérieur, air ambience / Aussenluft, umgebungsluft / Aire exterior, aire ambiente										32°C 50% UR / 26°C 50% UR							
(4)	Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308 / Refer to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard / Selon le règlement UE 1253/2014: à la pression nominale; conditions de température et d'humidité selon EN 308 / Gemäß EU-Verordnung 1253/2014: bei Nenndruck; Temperatur- und Feuchtigkeitsbedingungen gemäß EN 308 / Según el reglamento UE 1253/2014: a presión nominal; condiciones de temperatura y humedad referidas a EN 308.																	



		SHE-ECM								HHE-ECM							
 Motore ECM - ECM motor Moteur ECM - ECM-Motor - Motor ECM		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
<b>LIMITI DI FUNZIONAMENTO / OPERATING LIMITS</b>																	
<b>LIMITES DE FONCTIONNEMENT / EINSATZGRENZEN / LIMITES DE FUNCIONAMIENTO</b>																	
Condizioni di temperatura / umidità limite esterne Outdoor temperature / humidity working limits Conditions de température / humidité limite externe Aussentemperatur / Luftfeuchtigkeitseinsatzgrenzen Condiciones ambientales : humedad limite exterior	°C/%	-5 ... +45 °C / 5 ... 95%															
Condizioni di temperatura / umidità limite esterne con accessorio sezione 3 serrande di sbrinamento o resistenza elettrica di pre-riscaldamento Outdoor temperature / humidity working limits with 3 dampers defrosting section or electric pre-heating coil option Conditions de température / humidité limite externe with 3 dampers defrosting section or electric pre-heating coil option Aussentemperatur / Luftfeuchtigkeitseinsatzgrenzen mit Sektion 3 Abtauklappen Zubehör oder Elektroheizwiderstand für integrierte Vorheizung Condiciones ambientales: humedad límite exterior con accesorio Sección 3 compuertas de descongelación o Resistencia eléctrica de precalentamiento integrada	°C/%	-15 ... +45 °C / 5 ... 95%															
Condizioni di temperatura / umidità limite interne Indoor temperature / humidity working limits Conditions de température / humidité limite interne Innentemperatur / Luftfeuchtigkeitseinsatzgrenzen Condiciones ambientales / humedad limite interior	°C/%	+10 ... +35 °C / 10 ... 90%															
<b>DATI SPECIFICI ECODESIGN / ECODESIGN SPECIFIC DATA</b>																	
<b>DONNÉES SPÉCIFIQUES À L'ÉCODESIGN / SPEZIFISCHE ECODESIGNDATEN / DATOS ESPECÍFICOS DE ECODISEÑO</b>																	
Tipologia dichiarata Declared typology Typologie déclarée Deklarierter typ Tipología declarada		UVNR - UVB															
Potenza specifica interna dei componenti della ventilazione (SFPint) Internal specific fan power of ventilation components (SFPint) Puissance spécifique des composants internes de ventilation (SFPint) Interne spezifische Leistung von Lüftungskomponenten (SFPint) Potencia específica de los componentes de ventilación (SFPint)	(4) W/(m³/s)	705	742	1059	1048	898	1040	949	935	830	608	722	866	722	816	1157	1129
Potenza massima specifica interna dei componenti della ventilazione (SFPint_limit) Maximum internal specific fan power of ventilation components (SFPint_limit) Puissance spécifique maximale des composants internes de ventilation (SFPint_limit) Maximale spezifische Innenleistung der Lüftungskomponenten (SFPint_limit) Potencia específica interna mxima de componentes de ventilación (SFPint_limit)	W/(m³/s)	1170	1171	1118	1116	1105	1066	1017	982	1390	1396	1343	1341	1342	1311	1218	1188
Velocità frontale alla portata nominale Air speed at the air flow rate Vitesse frontale au débit nominal Luftgeschwindigkeit bei gewähltem Luftstrom Velocidad del aire en contraposición al caudal nominal del aire	m/s	0.93	1.36	1.81	2.00	1.83	2.06	2.44	2.42	0.74	1.08	1.45	1.60	1.42	1.61	2.25	2.21
Perdita di pressione dei componenti interni della ventilazione (Δps,int) Internal pressure drop of ventilation components (Δps,int) Perte de pression des composants internes de la ventilation (Δps,int) Druckverlust der internen Lüftungskomponenten (Δps, int) Pérdida de carga de los componentes internos de la ventilación (Δps, int)	Pa	140	119	179	202	177	194	252	248	135	105	154	184	157	183	294	287
Massimo trafilamento esterno dell'involucro Declared maximum external leakage rates of the casing of ventilation units Fuite externe maximale du boîtier Maximale externe Leakage des Gehäuses Fuga externa máxima del envolvente	%	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5
Massimo trafilamento interno o flusso residuo Declared maximum internal leakage rates for bidirectional ventilation units Fuite interne maximale ou débit résiduel Maximale Lecklufttrate des Gehäuses Fuga interna máxima o flujo residual	%	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Consumo annuo calcolato di energia dei filtri (8760 h di funzionamento) Calculated annual energy consumption of the F7 and M5 filter (8760 hours of operation) Consumation annuelle d'énergie des filtres calculée (8760 h de fonctionnement) Berechneter jährlicher Energieverbrauch der Filter (8760 Betriebsstunden) Consumo energético anual calculado de los filtros (8760 h en funcionamiento)	kWh/a	487	1448	1684	2862	3325	4036	5456	6649	297	884	1028	1747	1922	2229	4476	5368
Livello di potenza sonora irradiato dall'involucro (LWA) Sound power level (LWA) Niveaux de puissance acoustique rayonné (LWA) Schalleistungspegel, der vom Gehäuse abgestrahlt wird (LWA) Nivel de potencia acústica transmitida por el envolvente (LWA)	(5) dB (A)	57	60	59	61	59	64	66	68	56	57	60	60	60	66	68	67

EBF-SHE/HHE  
EBF-SHE/HHE-ECM

(4) Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308 / Referred to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard / Selon le règlement UE 1253/2014: à la pression nominale; conditions de température et d'humidité selon EN 308 / Gemäß EU-Verordnung 1253/2014: bei Nenndruck; Temperatur- und Feuchtigkeitsbedingungen gemäß EN 308 / Según el reglamento UE 1253/2014: a presión nominal; condiciones de temperatura y humedad referidas a EN 308.

(5) Livello di potenza sonora alle condizioni di funzionamento nominali / Sound power level at nominal working conditions / Niveaux de puissance acoustique à les conditions nominales de fonctionnement / Schalleistungspegel bei Nennbetriebsbedingungen / Nivel de potencia acústica en condiciones nominales de funcionamiento

		SHE						HHE						
Motore asincrono - Asynchronous motor Moteur asynchrone - Asynchronmotor - Motor asincrono		1	2	3	4	5	6	1	2	3	4	5	6	
Portata aria nominale Nominal airflow Débit d'air nominal Nennluftstrom Caudal de aire nominal	m <sup>3</sup> /h	400	750	1000	1500	2050	3200	320	600	800	1200	1600	2500	
Pressione statica utile nominale Nominal external static pressure Pression statique utile nominale Nominaler externer statischer Druck Presión estática útil nominal	Pa	160	120	130	160	120	180	165	150	160	160	150	250	
Pressione statica utile massima Maximum external static pressure Pression statique utile maxi Maximaler externer statischer Druck Presión estática máxima útil	Pa	160	120	130	160	120	180	165	150	160	160	150	250	
<b>VENTILATORE / FAN VENTILATEUR / VENTILATOR / VENTILADOR</b>														
Tipologia motore Motor typology Typologie du moteur Motorentyp Tipología de motor		AC												
N° velocità Speed Number Numéro de vitesse Anzahl der Geschwindigkeitsstufen No. de velocidades		3												
Controllo ventilazione Fan control Contrôle de la ventilation Ventilatorsteuerung Control de ventilación	(1)	Manuale - Manual												
Potenza assorbita nominale totale Total nominal power input Puissance absorbée totale nominale Gesamtnennleistung Potencia absorbida nominal total	kW	0.17	0.38	0.52	0.80	1.00	1.79	0.22	0.32	0.35	0.59	0.70	1.60	
Corrente assorbita nominale totale Total nominal load amperage Courant absorbé nominal total Gesamtnennstrom Corriente absorbida nominal total	A	0.7	1.6	2.2	3.4	4.3	7.6	0.9	1.4	1.5	2.5	3.0	6.8	
Efficienza statica dei ventilatori secondo (UE) n.327/2011 Static efficiency of fans (UE) n.327/2011 Efficacité statique des ventilateurs selon (EU) n.327 / 2011 Statischer Wirkungsgrad von Lüftern gemäß (EU) Nr. 327/2011 Eficiencia estática de los ventiladores según (UE) n. 327/2011	%	N.A.	38.6	38.6	38.6	40.4	43.4	N.A.	38.6	38.6	38.6	40.4	43.4	
Potenza assorbita massima totale Total full load power input Puissance absorbée maximale Gesamtleistungsaufnahme bei Vollast Potencia absorbida máxima total	kW	0.35	0.68	1.41	1.41	1.41	3.29	0.35	0.68	1.41	1.41	1.41	3.29	
Corrente assorbita massima totale Total full load amperage Courant absorbé maximal total Gesamtstromaufnahme bei Vollast Corriente absorbida máxima total	A	1.5	2.9	6.0	6.0	6.0	14.0	1.5	2.9	6.0	6.0	6.0	14.0	
Alimentazione elettrica Power supply Alimentation électrique Stromversorgung Fuente de alimentación	V/ph/Hz	230/1/50			230/1/50-60			230/1/50			230/1/50-60			
<b>RECUPERATORE DI CALORE / HEAT RECOVERY UNITS RÉCUPÉRATEURS DE CHALEUR / WÄRMERÜCKGEWINNUNG / RECUPERADOR DE CALOR</b>														
Efficienza termica invernale Winter thermal efficiency Efficacité thermique hivernale Wärmewirkungsgrad im Winter Eficiencia térmica invernal	(2) %	83.6	82.9	81.6	83.3	83.7	86.8	90.2	91.1	90.0	90.0	90.4	91.5	
Efficienza termica estiva Summer thermal efficiency Efficacité thermique d'été Thermischer Wirkungsgrad im Sommer Eficiencia térmica de verano	(3) %	75.5	75.9	74.5	75.1	75.6	78.0	79.6	80.1	78.7	79.2	79.8	80.0	
Efficienza termica a secco Dry thermal efficiency Efficacité thermique sèche Trockener thermischer Wirkungsgrad Eficiencia térmica seca	(4) %	75.9	76.4	75.0	75.6	76.0	76.3	83.1	83.7	82.2	82.7	83.3	83.5	
(1)	Manuale da selettore o tastiera / Manual by selector switch or control panel / Manuel par le sélecteur ou le clavier / Manuell über Drehschalter oder Bediengerät / Manual desde selector o teclado													
(2)	Aria esterna, aria ambiente / Outside air, ambient air / Air extérieur, air ambiance / Aussenluft, umgebungsluft / Aire exterior, aire ambiente								-5°C 80% UR / 20°C 50% UR					
(3)	Aria esterna, aria ambiente / Outside air, ambient air / Air extérieur, air ambiance / Aussenluft, umgebungsluft / Aire exterior, aire ambiente								32°C 50% UR / 26°C 50% UR					
(4)	Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308 / Refer to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard / Selon le règlement UE 1253/2014: à la pression nominale; conditions de température et d'humidité selon EN 308 / Gemäß EU-Verordnung 1253/2014: bei Nenndruck; Temperatur- und Feuchtigkeitsbedingungen gemäß EN 308 / Según el reglamento UE 1253/2014: a presión nominal; condiciones de temperatura y humedad referidas a EN 308.													

		SHE					HHE						
Motore asincrono - Asynchronous motor Moteur asynchrone - Asynchronmotor - Motor asíncrono		1	2	3	4	5	6	1	2	3	4	5	6
<b>LIMITI DI FUNZIONAMENTO / OPERATING LIMITS</b>													
<b>LIMITES DE FONCTIONNEMENT / EINSATZGRENZEN / LIMITES DE FUNCIONAMIENTO</b>													
Condizioni di temperatura / umidità limite esterne Outdoor temperature / humidity working limits Conditions de température / humidité limite externe Aussentemperatur / Luftfeuchtigkeitseinsatzgrenzen Condiciones ambientales : humedad limite exterior	°C/%	-5 ... +45 °C / 5 ... 95%											
Condizioni di temperatura / umidità limite esterne con accessorio sezione 3 serrande di sbrinamento o resistenza elettrica di pre-riscaldamento Outdoor temperature / humidity working limits with 3 dampers defrosting section or electric pre-heating coil option Conditions de température / humidité limite externe with 3 dampers defrosting section or electric pre-heating coil option Aussentemperatur / Luftfeuchtigkeitseinsatzgrenzen mit Sektion 3 Abtauklappen Zubehör oder Elektroheizwiderstand für integrierte Vorheizung Condiciones ambientales: humedad límite exterior con accesorio Sección 3 compuertas de descongelación o Resistencia eléctrica de precalentamiento integrada	°C/%	-15 ... +45 °C / 5 ... 95%											
Condizioni di temperatura / umidità limite interne Indoor temperature / humidity working limits Conditions de température / humidité limite interne Innentemperatur / Luftfeuchtigkeitseinsatzgrenzen Condiciones ambientales / humedad limite interior	°C/%	+10 ... +35 °C / 10 ... 90%											
<b>DATI SPECIFICI ECODESIGN / ECODESIGN SPECIFIC DATA</b>													
<b>DONNÉES SPÉCIFIQUES À L'ÉCODESIGN / SPEZIFISCHE ECODESIGNDATEN / DATOS ESPECÍFICOS DE ECODISEÑO</b>													
Tipologia dichiarata Declared typology Typologie déclarée Deklarierter typ Tipología declarada		UVNR - UVB											
Potenza specifica interna dei componenti della ventilazione (SFPint) Internal specific fan power of ventilation components (SFPint) Puissance spécifique des composants internes de ventilation (SFPint) Interne spezifische Leistung von Lüftungskomponenten (SFPint) Potencia interna específica de los componentes de ventilación (SFPint)	(4) W/(m³/s)	740	934	1105	1102	1078	1054	1153	821	793	974	830	988
Potenza massima specifica interna dei componenti della ventilazione (SFPint_limit) Maximum internal specific fan power of ventilation components (SFPint_limit) Puissance spécifique maximale des composants internes de ventilation (SFPint_limit) Maximale spezifische Innenleistung der Lüftungskomponenten (SFPint_limit) Potencia específica interna mxima de componentes de ventilación (SFPint_limit)	W/(m³/s)	1170	1171	1118	1116	1105	1066	1390	1396	1343	1341	1342	1311
Velocità frontale alla portata nominale Air speed at the air flow rate Vitesse frontale au débit nominal Luftgeschwindigkeit bei gewähltem Luftstrom Velocidad del aire en contraposición al caudal nominal del aire	m/s	0.93	1.36	1.81	2.00	1.83	2.06	0.74	1.08	1.45	1.60	1.42	1.61
Perdita di pressione dei componenti interni della ventilazione (Δps,int) Internal pressure drop of ventilation components (Δps,int) Perte de pression des composants internes de la ventilation (Δps,int) Druckverlust der internen Lüftungskomponenten (Δps, int) Pérdida de carga de los componentes internos de la ventilación (Δps, int)	Pa	140	119	179	202	177	194	135	105	154	184	157	183
Massimo trafilamento esterno dell'involucro Declared maximum external leakage rates of the casing of ventilation units Fuite externe maximale du boîtier Maximale externe Leckage des Gehäuses Fuga externa máxima del envolvente	%	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5	< 3,5
Massimo trafilamento interno o flusso residuo Declared maximum internal leakage rates for bidirectional ventilation units Fuite interne maximale ou débit résiduel Maximale Leckluftrate des Gehäuses Fuga interna máxima o flujo residual	%	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Consumo annuo calcolato di energia dei filtri (8760 h di funzionamento) Calculated annual energy consumption of the F7 and M5 filter (8760 hours of operation) Consumation annuelle d'énergie des filtres calculée (8760 h de fonctionnement) Berechneter jährlicher Energieverbrauch der Filter (8760 Betriebsstunden) Consumo energético anual calculado de los filtros (8760 h en funcionamiento)	kWh/a	613	1228	2320	3945	4601	5562	374	749	1416	2408	2659	3071
Livello di potenza sonora irradiato dall'involucro (LWA) Sound power level (LWA) Niveaux de puissance acoustique rayonné (LWA) Schalleistungspegel, der vom Gehäuse abgestrahlt wird (LWA) Nivel de potencia acústica transmitida por el envolvente (LWA)	(5) dB (A)	58	61	61	64	64	68	57	57	60	62	63	68

**EBF-SHE/HHE  
EBF-SHE/HHE-ECM**

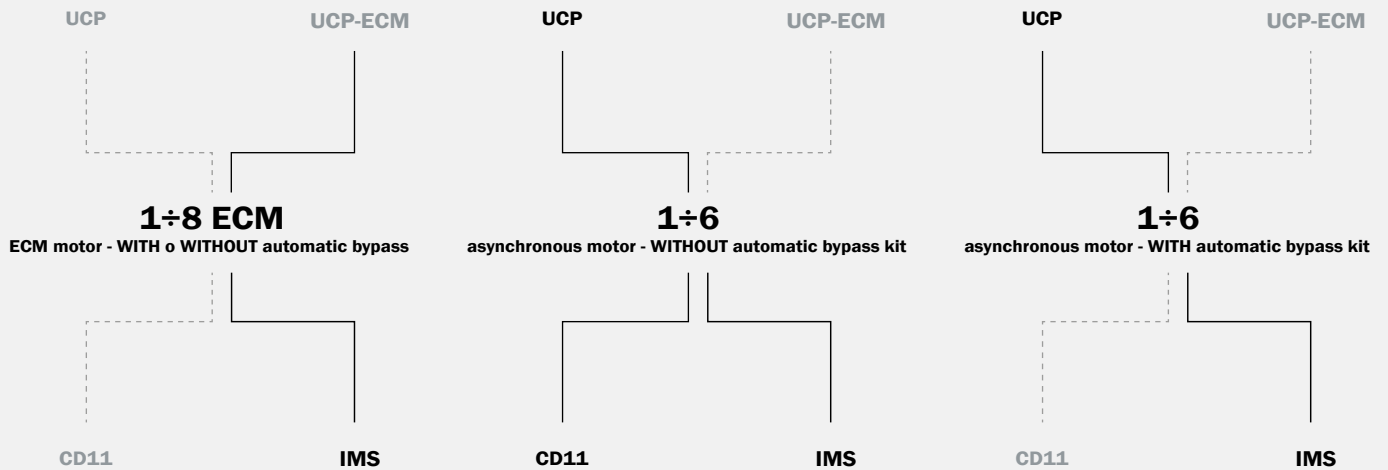
(4) Secondo regolamento UE 1253/2014: alla pressione nominale; condizioni di temperatura e umidità riferite a EN 308 / Referred to EU 1253/2014 regulation: at nominal pressure; air conditions refer to EN 308 standard / Selon le règlement UE 1253/2014: à la pression nominale; conditions de température et d'humidité selon EN 308 / Gemäß EU-Verordnung 1253/2014: bei Nenndruck; Temperatur- und Feuchtigkeitsbedingungen gemäß EN 308 / Según el reglamento UE 1253/2014: a presión nominal; condiciones de temperatura y humedad referidas a EN 308.

(5) Livello di potenza sonora alle condizioni di funzionamento nominali / Sound power level at nominal working conditions / Niveaux de puissance acoustique à les conditions nominales de fonctionnement / Schalleistungspegel bei Nennbetriebsbedingungen / Nivel de potencia acústica en condiciones nominales de funcionamiento

# Compatibility of controls

For the complete specifications of the controls, please refer to the part relating to the controls, available from page 164.

<b>CD11</b>	Comando senza regolazione di temperatura Control without temperature control Commande sans réglage de température Steuerung ohne Temperaturregelung Funcionamiento sin regulación de temperatura
<b>IMS</b>	Sistema di gestione integrale Integrated management system Système de gestion intégrale Integriertes Verwaltungssystem Sistema de gestión integral
<b>UCP</b>	Pannello di controllo unità (motore asincrono) Unit control panel (asynchronous motor) Panneau de contrôle unité (moteur asynchrone) Steuertafel der Einheit (Asynchronmotor) Panel de control de la unidad (motor asíncrono)
<b>UCP-ECM</b>	Pannello di controllo unità (motore ECM) Unit control panel (ECM motor) Panneau de contrôle unité (moteur ECM) Steuertafel der Einheit (Motorsteuerung) Panel de control de la unidad (motor ECM)



———— Compatible  
Compatible  
Compatible  
Kompatibel  
Compatible

----- Non compatible  
Not compatible  
Non compatible  
Nicht kompatibel  
NO compatible



The diagrams, the descriptions and the pictures shown herein are merely indicative and in no way binding. In order to continuously improve and in view of constant research and development, A GROUP S.p.A. reserves the right to modify, also without prior notice, technical data and all the contents included in this document.

Concept and design: Aliseo Group

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