Modular air handling units

Flexomix®

060–950 Air flow 0,2 - 10,0 m³/s

Product catalogue

IV PRODUKT

Air handling with the focus on LCC

IV Produkt

IV Produkt develops, produces and markets environmentally compatible and energy-efficient air handling products. We've been doing so since 1969.

IV Produkt's head office and production facilities are situated in Växjö, Sweden. The company is owned by IV Produkt Holding AB.

Product development

We make strict demands on design ingenuity as we develop new products and production methods. Our aim is to save you time and the resources needed for installing, operating and maintaining our products.

We are constantly involved in making our products energy efficient. The life cycle cost, i.e. the collective cost for procurement, operation, maintenance and minimal environmental impact, is always incorporated into our calculations when we develop new products and product selection software. Our goal is to offer you products with minimal life cycle cost.

IV PRODUKT DESIGNER

IV Produkt Designer

Our product selection program is there to make your job easier – selecting the right air handling units for your application. The software can be downloaded from www.ivprodukt.com or you can alternatively get in touch with our sales organisation.

Quality and environmental awareness

Our quality management system is certified to ISO 9001:2000. This guarantees both client and user with prime quality and reliable performance throughout the life of our products.

We develop and manufacture our products according to the guidelines of our environmental management system, certified to ISO 14001:2004.

The environmental compatibility of our products is rated on the basis of the materials they contain and the propensity of these materials for recycling.

Eurovent

Our Envistar and Flexomix air handling units are certified by Eurovent and they always comply with Energy Class A in accordance with the classification of 2009. Our product's are tested by Eurovent in accordance with EN 1886 and EN 13053. All data presented in our documentation is verified by independent laboratories.

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.07.300 and AHU N°: 00.09.027
Range: Envistar and Flexomix
www.eurovent-certification.com

www.eurovent-certification.com
www.certiflash.com

Contents

! ■ This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

General technical description

Design

The Flexomix is designed to meet demands upon quiet air handling units with high-efficiency systems for recovering heat and cooling energy.

The Flexomix is composed of a number of complete functional sections and 15 Modules in standard lengths.

The Modules are fitted with the selected air handling functions – with your measurements for transport within the building site as the limiting factor.

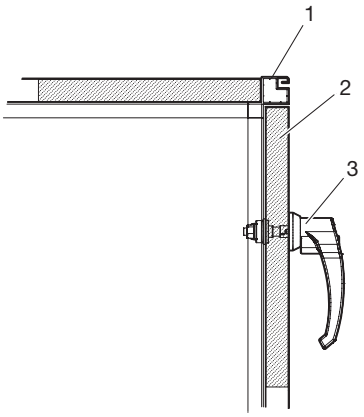
Casing

The unit sections are composed of extruded anodized aluminium frame members. The doors, covers and panels are fabricated in a double-skin sheet metal design and are made aluminium/zinc-plated sheet steel with ALC protective coating that meets the provisions of corrosion class C4 to SS-EN ISO 12944-2.

The intervening insulation is as standard fire retardant mineral wool (code 00) with a thickness of 25 mm for the size 060-600 units and 45 mm for the size 740-950 units. As an option insulation to fire resistance class EI30 (code E3) is available.

The casing meets the provisions of casing tightness class B (L2) for negative pressure and A (L3) for positive pressure as well as coefficient of heat transfer T4 to EN 1886:2007.

Inspection doors and locks



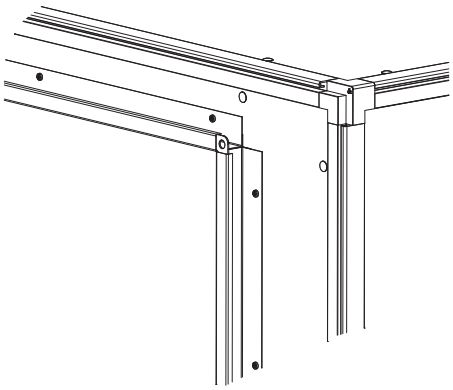
1. Anodized aluminium frame member

2. Door of double-skin sheet metal design

3. Lock with cam latch

All the inspection doors are hung on adjustable hinges. The standard door lock has a cam latch. In front of moving parts, the door locks are lockable with a key.

Duct connections



The connections are designed for slip-clamp jointing or for bolted joints in the corners, so-called METU connection.

Installation

The Flexomix should be placed in a space in which the temperature range of ±0 to +30 ˚C is maintained and in the wintertime the ambient humidity should be < 3.5 g/kg air in the fan room. The unit can also be equipped for outdoor installation.

Arrangement

The Flexomix can be supplied with a fan room base. As an alternative the size 060–600 units can be supplied mounted on a support frame (code EMMT-05).

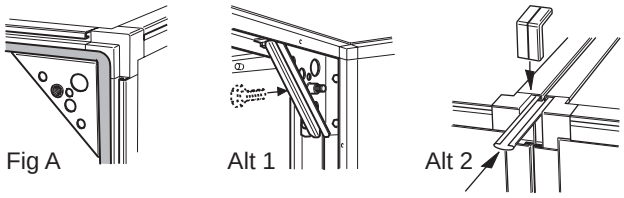
Sizing

This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program.

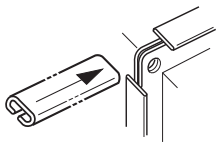
Always carry out sizing in the latest version of the IV Produkt Designer product selection program before placing orders for products.

Jointing and lifting

To joint the unit sections together

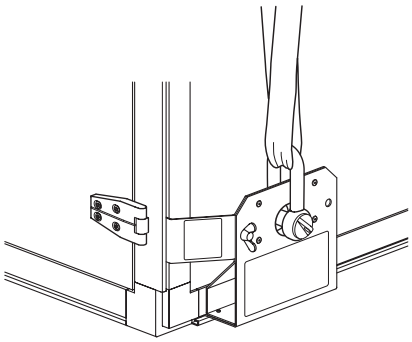


Fit the sealing strip between the unit sections (Fig. A) and joint the sections together with angle brackets and bolts (Alt 1) or slip clamps (Alt 2).

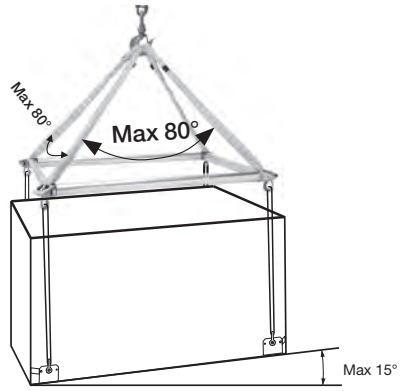


The connection frames have four 10 mm dia. holes and are also designed for flange connection with slip clamps.

To lift the units without support frame

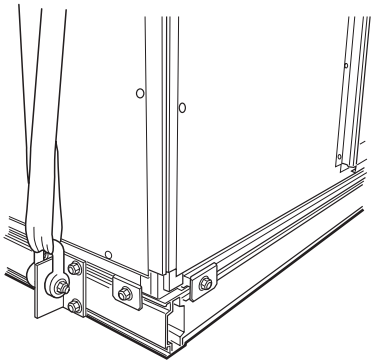


Use lifting brackets for lifting an AHU/Module without suport frame (code EMMT-08).

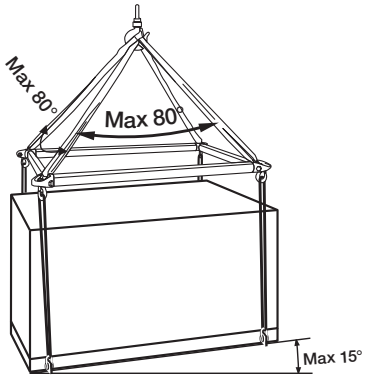


Lifting spreaders should be used for lifting the units.

To lift the units mounted on a support frame

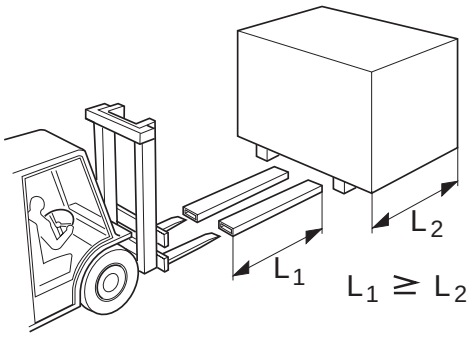


If the AHU is mounted on a support frame it can be lifted using lifting lugs. On an aluminium support frame, the lifting lugs are to be secured with bolts in the grooves provided in the support frame.



On a welded support frame, the lifting lugs are welded to the base beams.

Lifting spreaders must be used with lifting. Spreader size = AHU dimension + 100-400 mm.



Lifting an AHU with a forklift truck. Make sure that the lifting forks are long enough.

For particulars on lifting, see the separate Assembly instructions as well.

Norms and standards

The AHUs in the Flexomix series supplied with factory-fitted control equipment and ready to be commissioned, are CE labelled. The other AHUs are supplied with a Declaration by the manufacturer.

This is your assurance that the air handling units on delivery meet the applicable requirements specified in EU Machinery Directive 2006/42/EG.

The air handling units also comply with among others the following norms and standards:

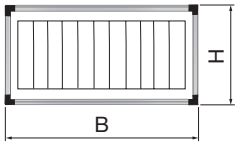
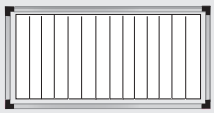
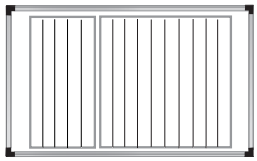
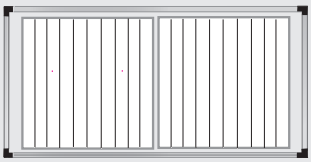
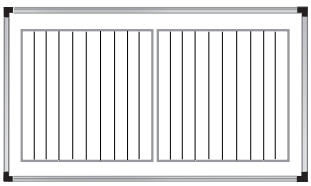
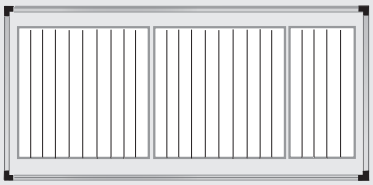
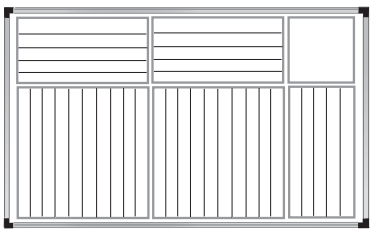
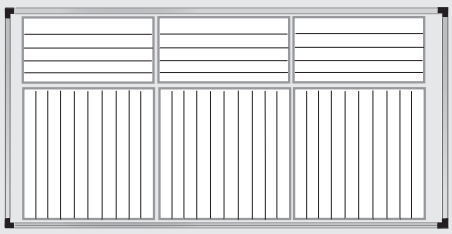
SS-EN 1886
SS-EN ISO 12100
SS-EN 13053

PED 97/23/EC

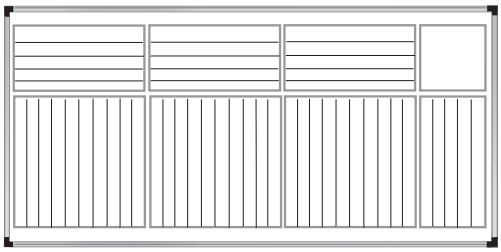
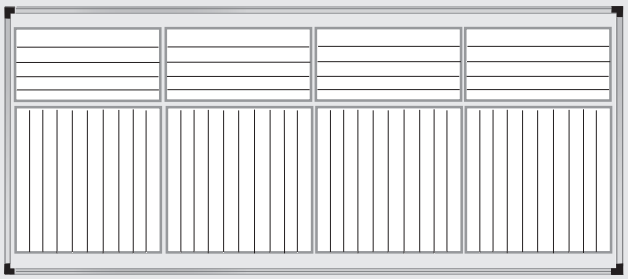
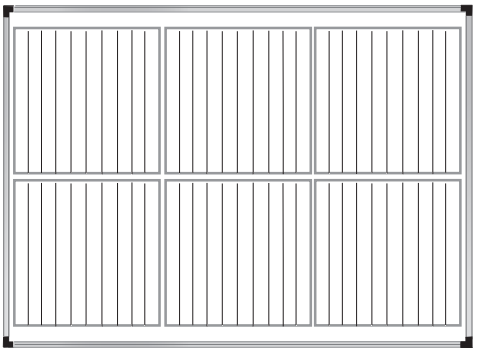
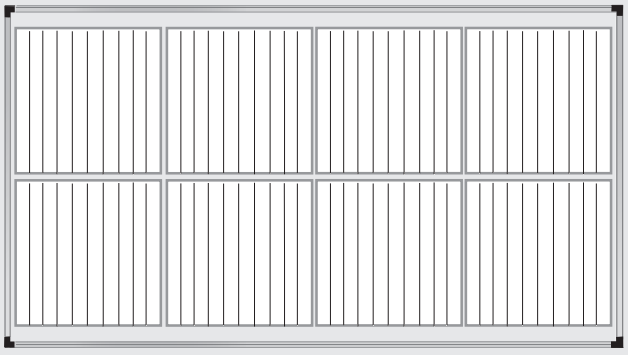
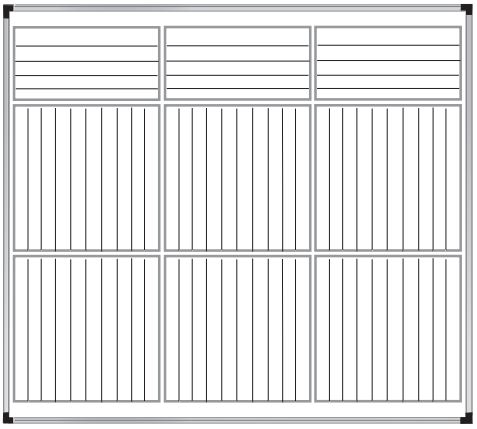
SS-EN 1751 (VVS AMA-98)

Low voltage directive 2006/95/EG
EMC directive 2004/108/EG
Electrical safety directive ELSÄK FS 2008:1
SS-EN 60204-1
SS-EN 61000-6-2
SS-EN 61000-6-3
SS-EN 60529
SS 4364000 + R1

Air handling unit sizes, cross-section

Size	External dim. (mm) B	External dim. (mm) H	Cross section
060	850	440	
100	980	505	
150	1080	695	
190	1360	695	
240	1360	805	
300	1580	805	
360	1580	990	
480	1950	990	

Contd. Air handling unit sizes, cross section

Size	External dim. (mm) B	External dim. (mm) H	Cross section
600	2160	1095	
740	2480	1240	
750	2020	1370	
850	2560	1370	
950	2020	1660	

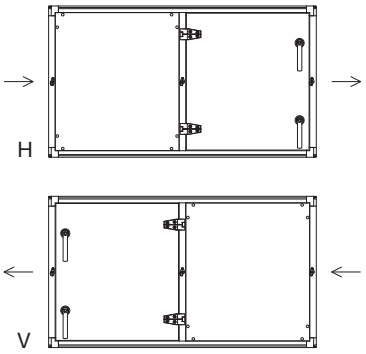
Functional fittings

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

Standard Module (code EMM)

The EMM standard Module is an insulated AHU casing, which together with the fitting you've selected, constitutes a complete functional section for e.g. heating, cooling or other required functions.

For further information about the casing, use the Overview tab.



Right-hand and left-hand arrangement.

Lengths and weights

Module	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
	Length (mm)														
	330	480	630	780	930	1080	1230	1380	1530	1680	1830	1980	2130	2280	2430
Size	Weight (kg)*														
060	20	25	30	35	40	50	55	60	65	70	75	80	85	90	95
100	20	30	35	40	45	55	60	65	70	80	85	90	100	105	110
150	25	35	40	50	55	65	70	80	85	95	100	110	115	125	135
190	30	35	45	55	65	70	80	90	100	105	115	125	135	140	150
240	30	40	50	60	65	75	85	95	105	115	125	130	140	150	160
300	35	45	55	65	75	85	95	105	115	125	125	145	155	165	175
360	35	45	55	65	75	90	100	110	120	130	145	155	165	175	185
480	40	50	65	75	85	100	110	125	140	150	165	175	185	200	210
600	40	55	70	85	95	110	125	140	150	165	180	198	205	220	235

Module	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
	Length (mm)														
	370	520	670	820	970	1120	1270	1420	1570	1720	1870	2020	2170	2320	2470
Size	Weight (kg)*														
740	55	70	85	100	115	135	150	165	180	195	210	225	240	255	275
750	50	65	75	90	100	125	135	150	160	175	190	200	215	230	245
850	60	75	90	105	120	145	160	175	190	205	220	235	250	270	290
950	55	70	80	95	105	130	175	155	170	185	200	210	225	240	260

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Example: To calculate the total weight

Given: Selected fitting: MIE-ID-300-25-00-ST weighing 45 kg. The total weight can be calculated by adding the weight of a unit size 300 standard Module 25 from the adjacent table. Total weight = 45 + 65 = 110 kg

Given: Selected fittings: MIE-ID-300-25-00-ST weighing 45 kg and MIE-CL-300-10-00 coil with ELEV air heater for hot water (cap. var 3) weighing 60 kg. The total weight can be calculated by adding the weight of standard Module 35 from the adjacent table. Total weight = 45 + 60 + 85 = 190 kg

Sound reduction, casing (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
00	4	8	15	28	31	32	35	39
EI30	6	11	16	28	34	35	39	43

Accessories

- End connection (code EMMT-01)
- Connection frame (code EMMT-02)
- Flexible connection (code EMMT-03)
- Outdoor version (code EMMT-04)
- Support frame (code EMMT-05)
- Lifting brackets (code EMMT-08)
- One-piece unit version (code EMMT-10)

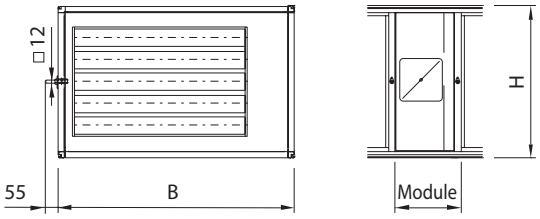
See also the section on Accessories.

Damper fitting (code MIE-KS)

The MIE-KS damper fitting is designed for use as a control or shut-off damper. The fitting consists of a damper and front casing panel for incorporation into a Standard Module (code EMM).

- The louvre damper is made of profiled sheet aluminium and meets the provisions of corrosion class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and tubular fixed silicon rubber gaskets provide a seal between the blades.
- Permissible temperature: -40 to +80 ˚C
  Permissible differential pressure: max. 1400 Pa
- Tightness class 3 to SS-EN1751 (VVS AMA-98).

Dimensions and weights



Size	Module (mm)	Dim. (mm)		Weight (kg)*	Torque req. (Nm)
	10	B	H		
060	300	850	440	5	2
100	300	980	505	10	2
150	300	1080	695	10	3
190	300	1360	695	15	4
240	300	1360	805	15	4
300	300	1580	805	20	4
360	300	1580	990	20	5
480	300	1950	990	25	9
600	300	2160	1095	30	9
740	300	2480	1240	45	10
750	300	2020	1370	45	11
850	300	2560	1370	50	13
950	300	2020	1660	55	13

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Accessories

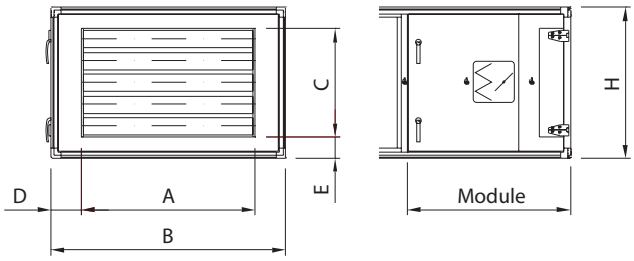
- Lever actuator (KJST-03)
- Damper motor, mounted (code KJST-04)

See also the section on Accessories.

Intake air fitting (code MIE-ID)

The MIE-ID intake air fitting is designed for the intake of outdoor air or extract air. The fitting consists of dampers, mounting rails for filter cassettes, end connection and front casing panel for incorporation into a Standard Module (code EMM).

Dimensions and weights



The MIE-ID can be outfitted with deep-pleated, disposable synthetic material filters to class G4, F6 or F7; deep-pleated, disposable glass fibre filters to class F8/F9, deep-pleated carbon filters with integrated pre-filter to class C7 or cleanable knitted aluminium filters. See also the information under the Filter overview tab.

- The damper is made of profiled sheet aluminium and meets the provisions of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and tubular fixed silicon rubber gaskets provide a seal between the blades.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.
- The filters are mounted in rails and can be easily withdrawn from the casing and replaced.
- The filter rails are available in acid-proof stainless steel.
- The filter rails are fitted with effective sealing strips.
- Type FB filter cartridges are locked in position with eccentric rails.
- Measurement tappings are provided for connection to a differential pressure gauge.
- The inlet is as standard equipped with an end connection.

Size	Dimensions (mm)							Weight (kg)*	Torque req. (Nm)
	Module	A	B	C	D	E	H		
060	600	500	850	300	175	70	440	15	2
100	600	700	980	300	140	105	505	20	2
150	750	800	1080	500	140	100	695	25	3
190	750	1000	1360	500	180	100	695	35	4
240	750	1000	1360	600	180	100	805	40	4
300	750	1200	1580	600	190	100	805	45	4
360	750	1200	1580	800	190	95	990	55	5
480	750	1400	1950	800	275	95	990	70	9
600	750	1600	2160	800	280	150	1095	80	9
740	750**	2000	2480	900	240	170	1240	105	10
750	750**	1600	2020	1000	210	185	1370	100	11
850	750**	2200	2560	1000	180	185	1370	115	13
950	750**	1600	2020	1200	210	230	1660	120	13

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** Add 20 mm due to its heavier framework.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
G4	–	–	1	2	3	3	5	6
F6	2	3	6	8	14	17	19	21
F7	3	3	6	8	14	17	19	21
F8	3	3	6	8	14	17	19	21
F9	3	3	6	8	14	17	19	21
Aluminium filter	1	1	1	2	3	3	5	6
C7	–	–	–	1	1	2	2	3

Accessories for the fitting

- Damper motor, mounted (code KJST-04)
- Set of filters (code ELEF)

Accessories for the set of filters

- U-tube manometer filter guard (code MIET-FB-01)
- Kytölä manometer filter guard (code MIET-FB-02)
- Magnehelic manometer filter guard (code MIET-FB-03)

See also the section on Accessories.

Filter fitting (code MIE-FB/FC)

The filter fitting consists of mounting rails for the filter and a front casing panel. The fitting is designed for incorporation into a Standard Module (code EMM).

The fitting is available in two versions for FB bag filters or AL filters and FC for panel filters:

The FB can be outfitted with the following:

- Synthetic filter, deep-pleated, class G4, F6, F7.
- Glass fibre filter, deep-pleated, class F8/F9.
- Carbon filter, class C7 with integrated pre-filter to class F7.
- Aluminium filter, knitted.

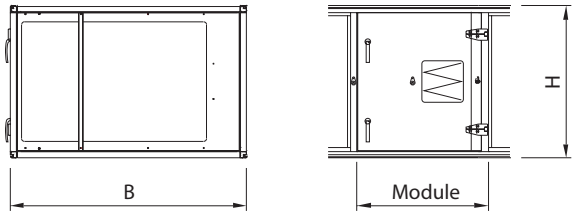
The FC can be outfitted with the following:

- Panel filter, class G4 (code P4).

The fitting in both versions has the following features:

- The filters are mounted in rails and can simply be withdrawn from the casing and replaced.
- Filter rails made of acid-proof stainless steel are available.
- The filter rails are fitted with effective sealing strips.
- The filter cartridges are locked in position with eccentric rails.
- Measurement tappings are provided for connection to a differential pressure gauge.

Dimensions and weights



Size	Module (mm)*			Dim. (mm)		Wgt. (kg)**
	10	15	20	B	H	
060	300	450	600	850	440	5
100	300	450	600	980	505	10
150	300	450	600	1080	695	10
190	300	450	600	1360	695	15
240	300	450	600	1360	805	15
300	300	450	600	1580	805	20
360	300	450	600	1580	990	25
480	300	450	600	1950	990	35
600	300	450	600	2160	1095	40
740	300	450	600	2480	1240	50
750	300	450	600	2020	1370	50
850	300	450	600	2560	1370	55
950	300	450	600	2020	1660	55

* Module 10 for panel filter P4, Module 15 for filter class G4 and AL as well as F6-F9 sizes 060–100, Module 20 for other types of filter.

** The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Types of filter

Basic filters, fine filters and panel filters
The class G4, F6 and F7 filters consist of deep-pleated filter bags mounted in a metal frame. The filter material is synthetic fibres.

The class F8 and F9 filters consist of deep-pleated filter bags with metal frame. The filter material is glass fibre.

The class G4 panel filters (code P4) are made of synthetic fibre with wax-coated cardboard frame (pre-filter).

Carbon filters with pre-filter
The class C7 filters consist of deep-pleated filter bags containing activated carbon and an integrated class F7 pre-filter. The filters are suitable for minimizing the effect of e.g. cooking odours and automobile exhaust fumes in comfort ventilation systems.

Aluminium filters
The cleanable knitted aluminium filters are 25 mm thick flat filters and are intended for use in air containing greasy impurities.

Technical data

For technical data see under the Filter overview tab.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
G4	–	–	1	2	3	3	5	6
F6	2	3	6	8	14	17	19	21
F7	3	3	6	8	14	17	19	21
F8	3	3	6	8	14	17	19	21
F9	3	3	6	8	14	17	19	21
Aluminium filter	1	1	1	2	3	3	5	6
C7	–	–	–	1	1	2	2	3

Accessories for the set of filters

- U-tube manometer filter guard (code MIET-FB-01)
- Kytölä manometer filter guard (code MIET-FB-02)
- Magnehelic manometer filter guard (code MIET-FB-03)

See also the section on Accessories.

Air cooler/air heater fitting (code MIE-CL)

The fitting is designed for use as follows:

- Air heater, water (code ELEV)
- Air cooler, water type Thermoguard (code ELTV)
- Air heater, steam (code ELES)
- Air cooler, water (code ELBC)
- Air cooler DX direktexpansion (code ELBD)
- Recovery coil in supply air (code ELXT)
- Recovery coil in extract air (code ELXF)

The fitting consists of mounting rails and a front casing panel for incorporation into a Standard Module (code EMM).

- The coil body consists of copper tubes and aluminium fins with the following spacing:

ELEV capacity variant 00	6 mm
ELEV capacity variant 01, 04	2 mm
ELEV capacity variant 02, 03	2.5 mm
ELBC, ELXT, ELXF	2 alt. 3 mm
ELXF	2, 3 alt. 4 mm
ELTV	1.6–3 mm

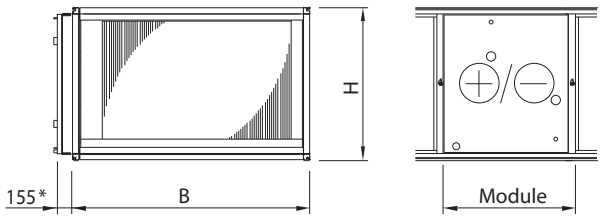
- The headers with up to and including 25 mm connections are made of copper; larger connections are made of steel. The connections are male threaded and have tappings for venting and drainage. The ELEV also has a connection for an insertion temp. sensor.
- The ELBC, ELBD and ELXF have a stainless drip tray with 32 mm dia. drain conn. Droplet separators are required if the air velocity exceeds 2.8 m/s.
- ELBC, ELXT and ELXF can be selected with long or short loop length (water path), which enables you to optimise the coil on the water side.
- The ELTV air heater has Thermoguard anti-frost protection. If the air heater is located in a cold space, it should always be possible to unburden the pressure to its return line. If a 2-way valve for regulating the flow is used it must be fitted to the supply water pipe.
- Max. permissible operating pressure:

ELEV, ELBC, ELXT, ELXF	1.6 MPa (16 atö)
ELBD	2.2 MPa (22 atö)
ELES	1.0 MPa (10 atö)
ELTV	0.6 MPa (6 atö)

- Max. permissible operating temperature:

ELEV	150 °C
ELXT/ -F	100 °C
ELES	185 °C
ELTV	100 °C

Dimensions



For the type of module see next page.

Size	Module (mm)			Dimensions (mm)	
	10	15	20	B	H
060	300	450	600	850	440
100	300	450	600	980	505
150	300	450	600	1080	695
190	300	450	600	1360	695
240	300	450	600	1360	805
300	300	450	600	1580	805
360	300	450	600	1580	990
480	300	450	600	1950	990
600	300	450	600	2160	1095
740	300	450	600	2480*	1240
750	300	450	600	2020*	1370
850	300	450	600	2560*	1370
950	300	450	600	2020*	1660

* For ELBC, ELXT and ELXF in sizes 740-950 add 155 mm for full-size casing.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
ELEV, ELTV, ELES	1	1	1	1	2	2	3	3
ELBC, ELBD, ELXT, ELXF	4	2	2	3	3	6	6	9

Accessories

- Air purging valve (code MIET-CL-01)
- Drain valve (code MIET-CL-02)
- T-pipe for frost prot. and venting/drainage (code MIET-CL-03)
- Water trap (code MIET-CL-04)
- Coil casing (code MIET-CL-05-a)

See also the section on Accessories.

Module type

Size	ELEV, ELTV, ELES, ELXT capacity variant									ELBC, ELBD, ELXF capacity variant						
	00	01	02	03	04	06	08	10	12	02	03	04	06	08	10	12
060	10	10	10	10	10	10	15	15	20	10	10	10	15	15	20	20
100	10	10	10	10	10	10	15	15	20	10	10	10	15	15	20	20
150	10	10	10	10	10	10	15	15	20	10	10	10	15	15	20	20
190	10	10	10	10	10	10	15	15	20	10	10	10	15	15	20	20
240	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
300	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
360	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
480	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
600	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
740	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
750	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
850	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20
950	10	10	10	10	10	15	15	20	20	15	15	15	15	20	20	20

Module dimensions (mm)

Module	Length
10	300
15	450
20	600

Weight (kg)

Size	ELEV, ELES, ELXT capacity variant									ELTV capacity variant				ELBC, ELBD, ELXF capacity variant						
	00	01	02	03	04	06	08	10	12	00	01	02	03	02	03	04	06	08	10	12
060	10	15	15	20	20	30	35	40	46	10	10	10	15	15	20	20	30	35	40	46
100	15	15	20	25	30	35	40	50	57	10	10	15	20	20	25	30	35	45	50	57
150	20	25	30	40	45	60	70	82	95	10	15	20	25	30	40	45	60	60	82	95
190	25	30	35	45	50	70	85	103	121	15	20	25	30	35	45	50	70	85	103	121
240	25	30	40	50	55	85	105	125	147	15	20	30	35	50	60	65	95	115	125	147
300	30	35	45	60	60	95	120	139	162	20	25	35	45	55	70	70	105	130	139	162
360	30	40	55	70	75	115	140	167	195	25	30	45	55	65	80	85	125	150	167	195
480	35	45	65	80	80	135	170	205	242	25	35	55	65	80	95	95	150	165	205	242
600	45	55	80	105	115	170	210	249	291	30	45	65	90	95	120	130	185	225	249	291
740	55	60	80	105	145	200	250	297	347	40	60	85	110	95	120	145	200	250	297	347
750	55	60	85	110	140	190	245	296	348	50	50	65	90	90	115	140	190	245	296	348
850	75	75	110	145	185	250	320	387	454	45	60	85	100	115	150	185	250	320	387	454
950	65	70	100	140	170	235	300	361	425	55	65	85	115	105	145	170	235	300	361	425

The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program

Pipe connections, ELEV, ELTV and ELBC

	ELEV					ELTV				ELBC									
										Short loop length					Long loop length				
	Capacity variant					Capacity variant				Capacity variant					Capacity variant				
Size	00	01	02	03	04	00	01	02	03	02	03	04	06	08	02	03	04	06	08
060	15	15	25	25	25	20	20	20	20	25	25	25	25	32	15	25	25	25	25
100	15	15	25	25	25	20	20	20	20	25	25	25	25	32	25	25	25	25	25
150	25	25	25	32	32	20	20	20	25	25	25	32	32	32	25	25	25	32	32
190	25	25	25	32	32	20	20	20	32	32	32	32	50	50	25	32	32	32	32
240	25	25	25	32	32	20	20	25	32	25	32	32	50	50	25	25	32	32	32
300	25	25	32	50	32	20	20	25	40	32	50	50	50	50	25	32	32	50	50
360	25	25	32	50	50	32	20	32	50	32	50	50	80	80	32	32	50	50	50
480	25	32	32	50	50	32	25	40	50	32	50	50	80	80	32	32	50	50	50
600	25	25	50	50	50	32	25	40	65	80	80	80	80	80	50	50	80	80	80
740	32	32	50	50	80	32	50	65	80	80	80	80	2×80	80	50	50	80	80	80
750	25	32	50	50	80	65	32	40	65	80	80	80	80	2×80	50	50	50	80	80
850	32	32	50	50	80	40	40	50	65	80	80	2×80	2×80	2×80	50	50	80	80	80
950	25	32	50	80		50	40	50	65	80	80	80	80	2×80	50	80	80	80	80

Pipe connections, ELXT, ELXF, ELBD and ELES

	ELXT, ELXF										ELBD			ELES	
	Short loop length					Long loop length					Capacity variant			Capacity variant	
	Capacity variant					Capacity variant									
Size	04	06	08	10	12	04	06	08	10	12	02 in:out	03 in:out	04 in:out	01 in:out	02 in:out
060	25	25	25	25	25	25	25	25	25	25	5/8":28	5/8":28	5/8":28	25/25	2×(25/25)
100	25	25	25	25	25	25	25	25	25	25	5/8":28	5/8":28	5/8":28	25/25	2×(25/25)
150	25	25	25	32	25	25	25	25	25	25	5/8":28	7/8":28	7/8":34	32/25	2×(32/25)
190	32	32	32	32	32	25	25	25	25	25	5/8":28	7/8":34	7/8":41	32/25	2×(32/25)
240	25	32	32	32	32	25	25	25	25	25	7/8":34	7/8":34	7/8":41	32/25	2×(32/25)
300	25	32	32	50	32	25	32	32	32	25	7/8":34	7/8":34	7/8":41	50/25	2×(50/25)
360	32	50	50	50	50	32	32	32	32	32	7/8":41	7/8":41	7/8":54	50/25	2×(50/25)
480	32	50	50	50	50	32	32	32	32	32	7/8":41	1 1/8:54	7/8":54	80/32	2×(80/32)
600	50	50	50	50	50	50	50	50	50	50	7/8":41	1 1/8:54	1 1/8:54	80/32	2×(80/32)
740	50	50	50	80	80	50	50	50	80	50	7/8":41	7/8":54	7/8":54	80/32	2×(80/32)
750	50	50	50	80	50	32	50	50	50	50	7/8":54	7/8":54	7/8":54	80/32	2×(80/32)
850	50	50	80	80	80	50	50	50	50	50	2×(7/8":54)	7/8":54	7/8":54	80/32	2×(80/32)
950	50	50	80	80	80	50	50	50	50	50	7/8":54	7/8":54	2×(7/8":41)	80/32	2×(80/32)

Water volume (l)

Size	ELEV, ELBC, ELXT/ELXF capacity variant									ELTV capacity variant			
	00	01	02	03	04	06	08	10	12	00	01	02	03
060	1	1	2	3	4	6	8	10	11	1	2	2	4
100	2	2	3	5	6	9	11	13	15	2	3	5	6
150	3	3	5	8	10	15	20	23	25	2	4	6	8
190	4	4	7	10	13	20	26	32	33	3	5	7	10
240	4	4	8	12	16	24	32	36	40	4	6	9	12
300	5	5	10	14	18	28	37	41	45	5	7	11	15
360	6	6	12	17	23	35	46	52	57	7	10	15	21
480	8	8	15	22	29	44	58	65	71	8	12	19	26
600	10	10	18	28	37	55	74	81	88	9	15	23	35
740	12	12	25	35	53	72	92	107	122	11	22	34	46
750	11	11	23	31	43	63	81	96	111	18	17	25	39
850	14	14	29	40	59	82	105	123	141	13	23	34	39
950	14	14	27	38	56	78	99	117	135	16	23	35	49

Tube depth (quantity)

Size	ELEV, ELBC, ELXT/ELXF capacity variant									ELTV capacity variant			
	00	01	02	03	04	06	08	10	12	00	01	02	03
060	1	1	2	3	4	6	8	10	12	1	2	3	5
100	1	1	2	3	4	6	8	10	12	1	2	4	5
150	1	1	2	3	4	6	8	10	12	1	2	3	4
190	1	1	2	3	4	6	8	10	12	1	2	3	4
240	1	1	2	3	4	6	8	10	12	1	2	3	4
300	1	1	2	3	4	6	8	10	12	1	2	3	4
360	1	1	2	3	4	6	8	10	12	1	2	3	4
480	1	1	2	3	4	6	8	10	12	1	2	3	4
600	1	1	2	3	4	6	8	10	12	1	2	3	4
740	1	1	2	3	4	6	8	10	12	1	2	3	4
750	1	1	2	3	4	6	8	10	12	1	2	3	4
850	1	1	2	3	4	6	8	10	12	1	2	3	3
950	1	1	2	3	4	6	8	10	12	1	2	3	4

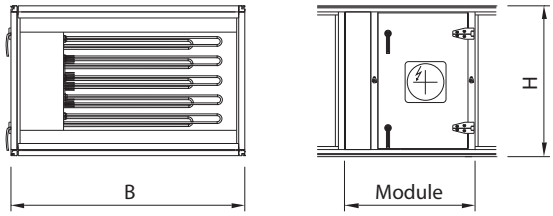
Electric air heater fitting (code MIE-EL)

The MIE-EL electric air heater fitting is designed for an electric air heater (code ELEE). The fitting consists of mounting rails, inspection cover and front casing panel for incorporation into a Standard Module (code EMM).

The electric air heater (code ELEE) is designed for high temperatures.

- The heating surfaces consist of stainless tubular heating elements to SS 2337 / AISI 321.
- The air heater has double excess temperature protection devices, of which one must be reset manually, that isolate the power if there is risk of overheating.
- Degree of protection IP43 to SS-EN 60529.
- Als available with integrated equipment for output step switching.
- Up to five output variants are available as standard for each unit size. However variants for other outputs are available to special order.

Dimensions



Size	Module (mm)					Dimensions (mm)	
	15	20	25	30	35	B	H
060	450	600	750	900	1050	850	440
100	450	600	750	900	1050	980	505
150	450	600	750	900	1050	1080	695
190	450	600	750	900	1050	1360	695
240	450	600	750	900	1050	1360	805
300	450	600	750	900	1050	1580	805
360	450	600	750	900	1050	1580	990
480	450	600	750	900	1050	1950	990
600	450	600	750	900	1050	2160	1095
740	450	600	750	900	1050	2480	1240
750	450	600	750	900	1050	2020	1370
850	450	600	750	900	1050	2560	1370
950	450	600	750	900	1050	2020	1660

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
ELEE	1	1	1	1	1	1	1	1

Module

	Module version							
	HT			HS				
	Output variant			Output variant				
Size	01, 02, 03	04	05	01	02	03	04	05
060	15	20	25	15	20	20	25	25
100	15	15	20	15	15	15	20	25
150	15	15	20	15	15	20	20	25
190	15	20	20	15	15	20	25	25
240	15	20	20	15	20	20	25	25
300	15	20	20	15	20	20	25	25
360	15	20	20	15	20	20	25	–
480	15	20	25	15	20	25	–	–
600	15	20	25	15	20	25	–	–
740	30	30	–	30	30	30	–	–
750	30	30	–	30	30	30	–	–
850	30	30	–	30	30	30	–	–
950	30	30	–	30	30	30	–	–

Weight, MIE-EL incl. ELEE (kg)

	Output variant									
	01		02		03		04		05	
Size	HT	HS	HT	HS	HT	HS	HT	HS	HT	HS
060	20	20	25	25	25	25	30	30	35	35
100	25	25	30	30	35	35	40	40	50	50
150	30	40	35	45	40	50	50	60	60	75
190	35	45	40	50	50	60	65	75	80	100
240	40	50	45	45	55	65	75	95	95	120
300	45	55	50	60	65	75	85	105	110	140
360	45	55	80	65	70	80	100	120	125	–
480	60	70	70	80	95	110	125	–	160	–
600	65	75	80	90	110	130	155	–	195	–
740	90	100	105	115	125	135	140	–	–	–
750	90	100	110	120	130	145	145	–	–	–
850	100	110	125	135	145	155	170	–	–	–
950	100	110	125	145	150	160	175	–	–	–

The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Electrical data

Size	Min. airflow (m³/s)	Output variant	Total output (kW)	Rated current (A) for 3×400V~50Hz	Output steps HT (kW)			
					1	2	3	4
060	0.2	01	3.0	–**	3.0	–	–	–
		02	6.0	8.7	6.0	–	–	–
		03	13.0	18.8	13.0	–	–	–
		04	24.0	34.6	24.0	–	–	–
		05	30.0	43.3	2.0	4.0	8.0	16.0
100	0.33	01	5.0	7.2	5.0	–	–	–
		02	9.0	13.0	9.0	–	–	–
		03	19.0	27.4	19.0	–	–	–
		04	34.0	49.1	2.3	4.5	9.0	18.2
		05	54.0	77.9	3.6	7.2	14.4	28.8
150	0.5	01	7.5	10.8	7.5	–	–	–
		02	15.0	21.7	15.0	–	–	–
		03	27.0	39.0	1.8	3.6	7.2	14.4
		04	47.0	67.8	3.2	6.3	12.5	25.0
		05	67.5	97.4	4.5	9.0	18.0	36.0
190	0.63	01	9.0	13.0	9.0	–	–	–
		02	17.0	24.5	17.0	–	–	–
		03	39.0	56.3	2.6	5.2	10.4	20.8
		04	67.5	97.4	4.5	9.0	18.0	36.0
		05	90.0	129.9	6.0	12.0	24.0	2 × 24.0
240	0.77	01	13.0	18.8	13.0	–	–	–
		02	24.0	34.6	24.0	–	–	–
		03	47.0	67.8	3.1	6.3	12.5	25.1
		04	81.0	117.0	5.4	10.8	21.6	2 × 21.6
		05	120.0	173.2	8.0	16.0	32.0	2 × 32.0
300	1.0	01	15.0	21.7	15.0	–	–	–
		02	27.0	39.0	1.8	3.6	7.2	14.4
		03	54.0	77.9	3.6	7.2	14.4	28.8
		04	98.0	141.5	6.5	13.1	26.1	2 × 26.1
		05	135.0	196.0	9.0	18.0	36.0	2 × 36.0
360	1.2	01	17.0	24.5	17.0	–	–	–
		02	34.0	49.1	2.3	4.5	9.1	18.1
		03	67.5	97.4	4.5	9.0	18.0	36.0
		04	120.0	173.2	8.0	16.0	32.0	2 × 32.0
		05*	170.0	245.4	11.3	22.7	2 × 22.7	4 × 22.7
480	1.6	01	24.0	34.6	24.0	–	–	–
		02	47.0	67.8	3.1	6.3	12.5	25.1
		03	92.0	132.8	6.1	12.3	24.5	2 × 24.5
		04*	161.0	232.4	10.7	21.5	42.9	2 × 42.9
		05*	230.0	332.0	15.3	30.7	2 × 30.7	4 × 30.7
600	2.0	01	27.0	39.0	1.8	3.6	7.2	14.4
		02	54.0	77.9	3.6	7.2	14.4	28.8
		03	116.0	167.4	7.7	15.5	30.9	2 × 30.9
		04*	203.0	293.0	13.5	27.1	2 × 27.1	4 × 27.1
		05*	290.0	418.6	19.3	38.7	2 × 38.7	4 × 38.7
740	3.3	01	48.0	69.3	3.2	6.4	12.8	25.6
		02	86.0	124.1	5.7	11.5	22.9	2 × 22.9
		03	135.0	196.0	9.0	18.0	36.0	2 × 36.0
		04*	162.0	233.8	11.0	22.0	43.0	2 × 43.0
750	2.9	01	48.0	69.3	3.2	6.4	12.8	25.6
		02	86.0	124.1	5.7	11.5	22.9	2 × 22.9
		03	135.0	196.0	9.0	18.0	36.0	2 × 36.0
		04*	162.0	233.8	11.0	22.0	43.0	2 × 43.0
850	3.9	01	54.0	77.8	3.6	7.2	14.4	28.8
		02	96.0	138.2	6.4	12.8	25.6	2 × 25.6
		03	135.0	196.0	9.0	18.0	36.0	2 × 36.0
		04*	187.5	270.0	12.5	25.0	2 × 25.0	4 × 25.0
950	3.6	01	60.0	86.6	4.0	8.0	16.0	32.0
		02	108.0	155.9	7.2	14.4	28.8	2 × 28.8
		03	135.0	196.0	9.0	18.0	36.0	2 × 36.0
		04*	204.0	294.4	13.6	27.2	2 × 27.2	4 × 27.2

* Not available in variant HS.

** Groups up to and including 3.5 kW are 2×400V~ 50Hz and require 10 A fuse protection.
Groups in excess of 3.5 kW are 3×400V~ 50Hz.

Humidifier fitting (code MIE-EF)

The fitting is selected together with an evaporative humidifier (code EFEF) with cold humidifier fill surfaces which can also be used for evaporative cooling. The fitting consists of humidifier fills, water tray, water distribution system and front casing panel for incorporation into a Standard Module (code EMM).

- Water tray made of stainless steel. Spray tubes and tube fittings made of PVC plastic.
- The humidifier fills are made of specially impregnated composite material.
- Sizes 060–100 are designed for once-through water and have a max. humidification rate of 85 %.
- Sizes 150–950 are available in two versions and have a max. humidification rate of 85 % or 95 %, circulating or once-through water can be used and a droplet separators are available.
- The pump is included as standard for humidifiers for circulating water.

Electrical data, pump motor

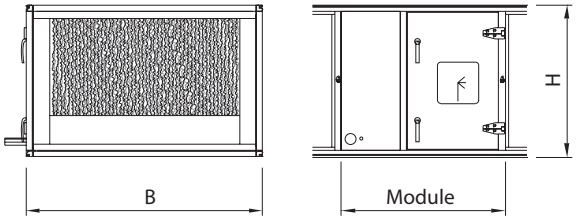
Degree of protection IP44, insulation class B.

Size	Voltage (V)	Rated output (W)	Current (A)
150–480	230/400	50	0.26/0.15
600–740 (85%)	230/400	125	0.38/0.22
740 (95%)	230/400	170	0.75/0.43
750–950 (85%)	230/400	50	0.26/0.15
750–950 (95%)	230/400	125	0.38/0.22

Integral attenuation (dB)

Octave band Mid-frequency (Hz)		63	125	250	500	1000	2000	4000	8000
EFEF	85%	3	2	2	3	5	6	12	15
	95%	3	2	3	3	5	7	13	16

Dimensions and weights



Size	Dimensions (mm)			Dry weight (kg)*	
	Module 25	B	H	85 %	95 %
060	750	850	440	35	–
100	750	980	505	35	–
150	750	1080	695	40	45
190	750	1360	695	50	60
240	750	1360	805	55	65
300	750	1580	805	60	70
360	750	1580	990	70	80
480	750	1950	990	75	90
600	750	2160	1095	95	115
740	750	2480	1240	100	120
750	750	2020	1370	95	110
850	750	2560	1370	110	130
950	750	2020	1660	110	130

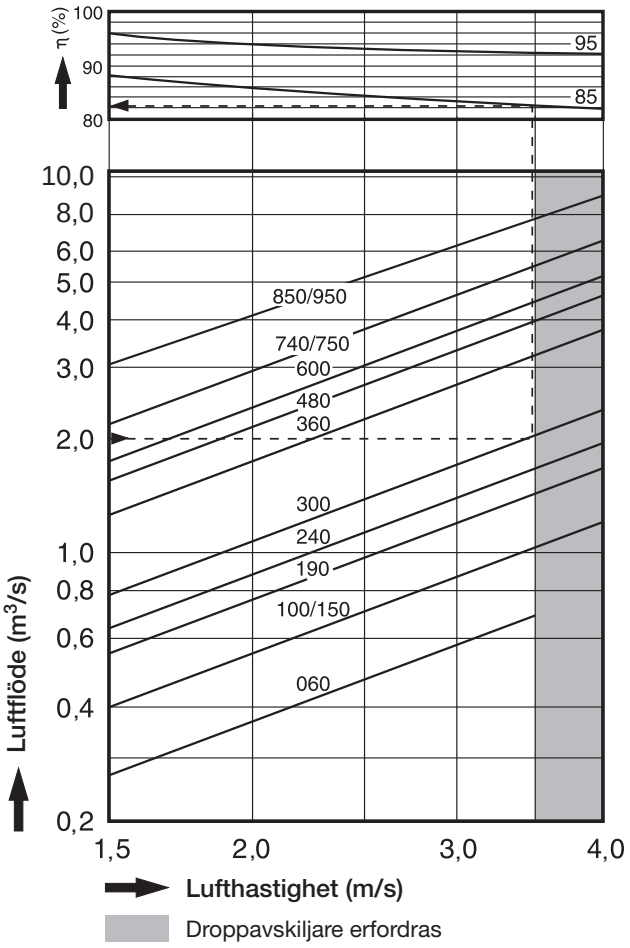
* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program

Accessories

- Solenoid valve (code MIET-EF-01)
- Water trap (code MIET-CL-04)

See also the section on Accessories.

Humidification rate



Example: Humidification rate calculation

Given:

Airflow q = 2.0 m^3/s

$X_2 - X_1 = 0.82\ (0.010 - 0.006) = 0.003$ kg/kg

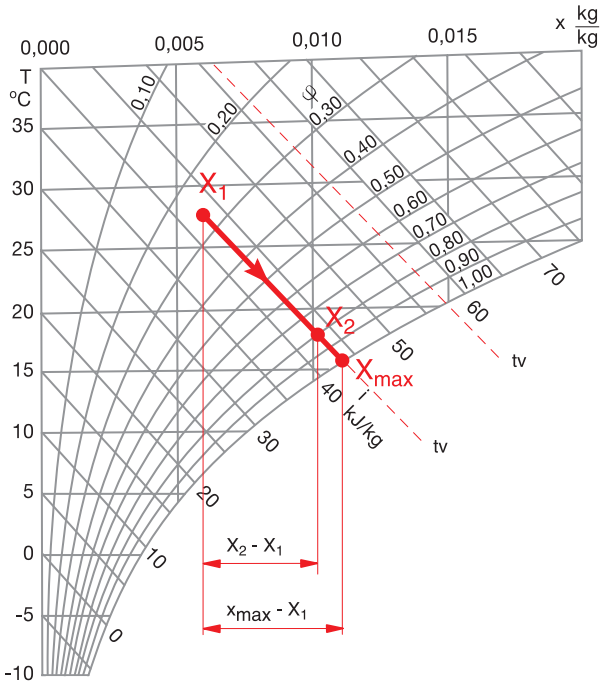
When determining $X_2 - X_1$ you can disregard high values with short duration.

From the diagram:

E = evaporated water volume kg/s

$E = q \cdot 1.2(X_2 - X_1)$ kg/s

$E = 2.0 \cdot 1.2 \cdot 0.003 = 0.007$ kg/s



Symbols used

X_1 = moisture content, inlet air kg/kg

X_2 = moisture content, outlet air kg/kg

X_{max} = moisture content on saturation kg/kg

φ = relative humidity x 100, %

T = dry-bulb thermometer temperature, °C

t_v = wet-bulb thermometer temperature, °C

$\Delta_x = X_2 - X_1$ (water evaporated) kg/kg

Humidification rate, $\eta = \dfrac{X_2 - X_1}{X_{max} - X_1}$

Circulating water bleed-off

The mineral concentration in the water increases as the circulating water evaporates. Continuous bleed-off and make-up with fresh water is therefore necessary. For achieving this, the humidifier is equipped with a bleed-off valve that conveys a portion of the circulating water away to the humidifier drain pipe.

The bleed-off required is determined by the rate at which the water evaporates, the pH of the water and the concentration of calcium and bicarbonate. The PH of the water should not be lower than 5 and not higher than 10.

The system can give rise to calcium precipitation, which has a detrimental effect on the performance and useful life of the humidifier. The risk of lime precipitation increases at high pH and high concentrates of calcium and bicarbonate. At a specific bleed-off flow it will be profitable to pretreat the water as a means of decreasing the bleed-off flow.

Water consumption

Circulating water

The total water consumption of the humidifier is the sum of the volume of water evaporated and that which has been bled off. The bleed-off required can be calculated according to the sizing instructions. The bleed-off flow should be adjusted at the site in accordance with the instructions that are supplied with the unit.

Once-through water, water consumption (l/min)

Size	Humidification rate	
	85 %	95 %
060	2.0	–
100	2.8	–
150	5.7	7.0
190	8.0	11.4
240	8.5	11.4
300	9.0	11.4
360	9.0	11.4
480	11.4	16.0
600	11.4	16.0
740	16.0	18.0
750	11.4	16.0
850	16.0	18.0
950	13.3	16.0

Installation, connection to the water system

Circulating water supply pipe

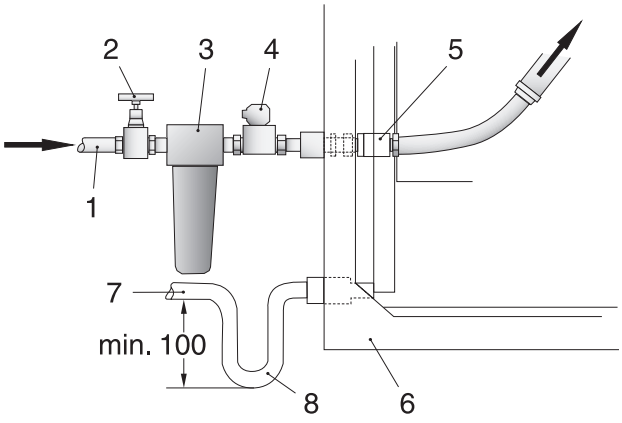
Fit a shut-off valve, 2, in the fresh water supply pipe. If the water contains coarse particles, fit a water filter, 3, with a mesh of 500 µm.

Once-through water supply pipe

Besides the shut-off valve, 2, and filter, 3, also fit a solenoid valve, 4, and a constant flow valve, 5, in the water supply pipe if once-through water is used.

Discharge

The drain pipe, 7, should be fitted with a cleanable water trap, 8, and should be run without reduction in diameter to a floor gulley.



1. Water supply connection: no. 15
*2. Shut-off valve**
3. Water filter (if polluted water is used)*
4. External solenoid valve (required for once-through water)*
5. Constant flow valve (for once-through water)
6. Unit casing
7. Plastic drain pipe, conn. no. 32*
*8. Water trap**

** Not included as standard in the supply of the EFEF humidifier.*

If the air is dust-laden

The system should be fitted with a fine filter if the air is heavily polluted. In systems where the air contains cellulose dust or similar substances, avoid recirculated air if the water is circulated. Otherwise, we recommend once-through water.

Fan fitting (code MIE-FD/FR)

The MIE-FD/FR fan fitting consists of fasteners and a front casing panel. Together with optional ELFD/ELFR fan and other functional sections in the Flexomix series the unit is included as a supply air or extract air fan in air treatment systems.

- **MIE-FD** with direct-driven fan (code **ELFD**). The direct-driven fan is supplied with one of the following types of motor:
  - EC motor with built-in electronic speed control
  - Type F1 motor with mounted frequency inverter
  - Motor to efficiency class eff1/IE2, for connec tion to external frequency inverter. Motors for impeller size 025-071 have thermo-contact, motors for impeller size 080-090 have a thermistor.
- **MIE-FR** with belt-driven fan (code **ELFR**). Belt-driven fans are available in two versions:
  - **ELFR-FB** belt-driven centrifugal fan with casing, forward-curved blades.
  - **ELFR-BB** belt-driven centrifugal fan with casing, backward-curved blades (sizes 150-950).
- The fan and motor are mounted on slide rails to facilitate servicing.
- For adequate motor cooling, the ambient air temperature should not exceed 50 ˚C.
- The fan and motor are effectively isolated from the casing by an anti-vibration outlet connection and rubber mountings sized to meet the operating conditions of the fan.
  The normal resonant frequency is 7–10 Hz.
- The fan section with belt transmission is as standard equipped with an end connection on the outlet side.
- The design of some of the components in the fan system does not conform to corrosion resistance class C4.

Other information can be read under Direct-driven fans (code ELFD) and Belt-driven fans (code ELFR).

Accessories, MIE-FD

- Connection frame, large (code EMMT-02-a-1)
- Connection frame, maximum (code EMMT-02-a-2)
- Flexible connection, large (code EMMT-03-a-1)
- Flexible connection, maximum (code EMMT-03-a-2)
- Steel-spring anti-vibration mountings (sizes 360–950)
  (code MIET-FD-03-a-d)
- Manometer type airflow meter
  (code MIET-AF-09-d-DD)
- Electronic airflow meter (code MIET-AF-10)

See also the section on Accessories.

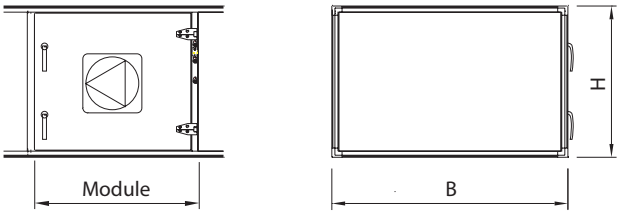
Accessories, MIE-FR

- Connection frame, small (code MIET-AF-01-a)
- Connection frame, large (code EMMT-02-a-1)
- Connection frame, maximum (code EMMT-02-a-2)
- Flexible connection, small (code MIET-AF-02-a)
- Flexible connection, large (code EMMT-03-a-1)
- Flexible connection, maximum (code EMMT-03-a-2)
- Steel-spring anti-vibration mountings (for ELFR-FB/BB sizes 150–600), (code MIET-AF-03-a)
- Measurement tapping for flow meter excl. meter (for ELFR-FB), (code MIET-AF-08-d-FB)
- Manometer type airflow meter (for ELFR-FB), (code MIET-AF-09-d-FB)
- Manometer type airflow meter (for ELFR-BB), (code MIET-AF-09-d-BB)
- Electronic airflow meter (code MIET-AF-10)

See also the section on Accessories.

Dimensions and weights

The fitting for a direct-driven fan (code ELFD)

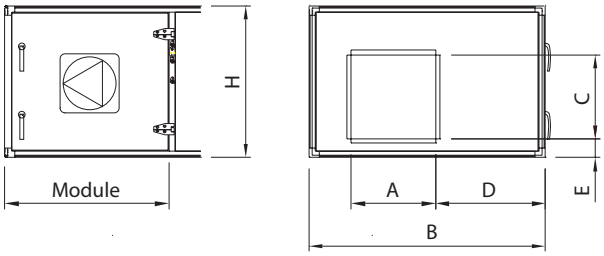


MIE-FD size -aaa-	Impeller size -ddd-	Module (mm)								Dimensions (mm)		MIE-FD wgt. (kg)*	Max. motor size, IEC
		20	25	30	35	40	45	50	60	B	H		
060	025	600	–	–	–	–	–	–	–	850	440	35	71
100	028	600	–	–	–	–	–	–	–	980	505	45	80
150	035	–	750	–	–	–	–	–	–	1080	695	75	90
190	040	–	–	900	–	–	–	–	–	1360	695	90	100
240	050	–	–	900	–	–	–	–	–	1360	805	115	100
300	050	–	–	900	–	–	–	–	–	1580	805	120	100
360	050	–	–	–	1050	–	–	–	–	1580	990	125	100
360	056	–	–	–	1050	–	–	–	–	1580	990	140	112
480	056	–	–	–	–	1200	–	–	–	1950	990	145	100
480	063	–	–	–	–	1200	–	–	–	1950	990	230	132
600	063	–	–	–	–	1200	–	–	–	2160	1095	225	132
600	071	–	–	–	–	–	1350	–	–	2160	1095	250	132
740	071	–	–	–	–	–	1350	–	–	2480	1240	265	132
740	080	–	–	–	–	–	–	1500	–	2480	1240	335	160
750	071	–	–	–	–	–	1350	–	–	2020	1370	365	132
750	080	–	–	–	–	–	–	1500	–	2020	1370	335	160
850	071	–	–	–	–	–	1350	–	–	2560	1370	375	132
850	080	–	–	–	–	–	–	1500	–	2560	1370	345	160
950	080	–	–	–	–	–	–	1500	–	2020	1660	355	160
950	090	–	–	–	–	–	–	–	1800	2020	1660	540	200

* Includes fan/motor with the highest weight and casing with standard insulation. For a casing with insulation conforming to fire resistance class EI30, calculate the weight in the IV Produkt Designer product selection program.

Dimensions and weights

Fitting for belt-driven fans (code ELFR-FB/BB)

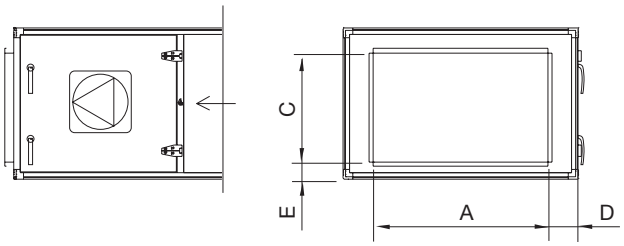


MIE-FR size -aaa-	Impel-ler size -ddd-	Module (mm)									Dimensions (mm)						MIE-FR wgt. (kg)*		Max. motor size IEC
		20	25	30	35	40	45	50	60	65	A	B	C	D	E	H	ELFR -FB	ELFR -BB	
060	016	600	–	–	–	–	–	–	–	–	230	850	230	380	85	440	40	–	80
100	020	600	–	–	–	–	–	–	–	–	280	980	280	480	80	505	70	–	100
150	028	–	750	–	–	–	–	–	–	–	385	1080	385	490	85	695	90	95	112
190	028	–	–	900	–	–	–	–	–	–	385	1360	385	700	85	695	95	100	112
240	035	–	–	900	–	–	–	–	–	–	475	1360	475	550	85	805	160	165	132
300	035	–	–	900	–	–	–	–	–	–	475	1580	475	730	85	805	165	170	132
360	040	–	–	–	–	1200	–	–	–	–	530	1580	530	730	85	990	185	190	132
480	045	–	–	–	–	1200	–	–	–	–	570	1950	570	780	95	990	285	290	160
600	050	–	–	–	–	1200	–	–	–	–	640	2160	640	780	95	1095	325	330	160
740	050	–	–	–	–	–	1370	–	–	–	640	2480	640	920	120	1240	365	375	180
740	056	–	–	–	–	–	1370	–	–	–	720	2480	720	880	130	1240	365	375	180M
750	056	–	–	–	–	–	1370	–	–	–	720	2020	720	900	130	1370	405	405	180M
750	063	–	–	–	–	–	–	–	1820	–	810	2020	810	610	145	1370	405	405	180
850	056	–	–	–	–	–	1370	–	–	–	720	2560	720	920	130	1370	410	410	180M
850	063	–	–	–	–	–	–	1520	–	–	810	2560	810	880	130	1370	410	410	180M
950	063	–	–	–	–	–	–	–	1820	–	810	2020	810	610	145	1660	465	475	180
950	071	–	–	–	–	–	–	–	–	1970	905	2020	905	560	235	1660	465	475	180

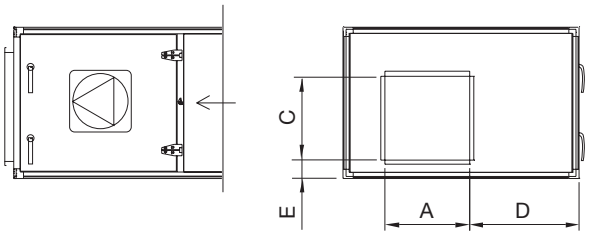
* Includes fan/motor with the highest weight and casing with standard insulation. For a casing with insulation conforming to fire resistance class EI30, calculate the weight in the IV Produkt Designer product selection program.

Connection frames for MIE-FD, Dimensions

MIE-FD size	Large frame: EMMT-02 (mm)				Maximum frame: EMMT-02 (mm)			
	A	C	D	E	A	C	D	E
060	500	300	175	70	790	380	30	30
100	700	300	140	100	920	445	30	30
150	800	500	140	100	1020	635	30	30
190	1000	500	180	100	1300	635	30	30
240	1000	600	180	100	1300	740	30	30
300	1200	600	190	100	1520	740	30	30
360	1200	800	190	95	1520	930	30	30
480	1400	800	275	95	1890	930	30	30
600	1600	800	280	150	2100	1035	30	30
740	2000	900	240	170	2380	1140	50	50
750	1600	1000	210	185	1920	1270	50	50
850	2200	1000	180	185	2460	1270	50	50
950	1600	1200	210	230	1920	1560	50	50



Connection frame for MIE-FD



Connection frame for MIE-FR

Connection frames for MIE-FR, Dimensions

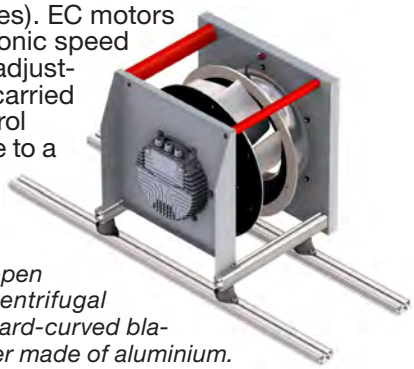
MIE-FR size	Small frame: MIET-AF-01 (mm)					Large frame: EMMT-02 (mm)				Maximum frame: EMMT-02 (mm)			
	Impeller size	A	C	D	E	A	C	D	E	A	C	D	E
060	016	300	300	345	80	500	300	175	80	790	380	30	30
100	020	300	300	470	80	700	300	140	80	920	445	30	30
150	028	500	500	430	80	800	500	140	80	1020	635	30	30
190	028	500	500	640	80	1000	500	180	80	1300	635	30	30
240	035	600	600	485	80	1000	600	180	80	1300	740	30	30
300	035	600	600	665	80	1200	600	190	80	1520	740	30	30
360	040	800	800	595	80	1200	800	190	80	1520	930	30	30
480	045	800	800	665	90	1400	800	275	90	1890	930	30	30
600	050	800	800	665	90	1600	800	280	90	2100	1035	30	30
740	050	900	900	790	115	2000	900	240	115	2380	1140	50	50
740	056	900	900	790	130	2000	900	240	130	2380	1140	50	50
750	056	1000	1000	760	130	1600	1000	210	130	1920	1270	50	50
750	063	1000	1000	510	140	1600	1000	210	140	1920	1270	50	50
850	056	1000	1000	780	130	2200	1000	180	130	2460	1270	50	50
850	063	1000	1000	780	130	2200	1000	180	130	2460	1270	50	50
950	063	1200	1200	410	140	1600	1200	210	140	1920	1560	50	50
950	071	1200	1200	410	230	1600	1200	210	230	1920	1560	50	50

Direct-driven fan (code ELFD)

Direct-driven, open-discharge, centrifugal fans with backward-curved blades and rotating diffuser. The impeller is mounted directly on the motor shaft. For fan capacities see the IV Produkt Designer program.

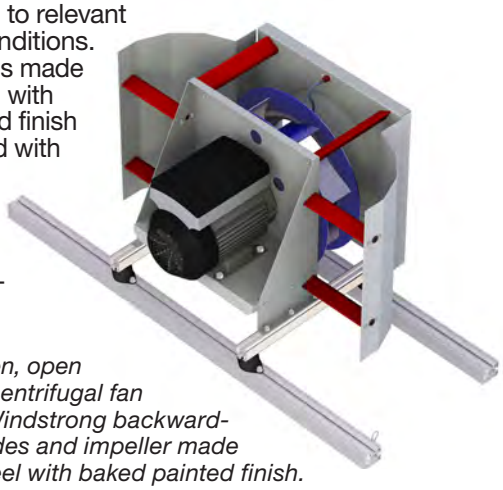
- Designed for fan fittings (code MIE-FD) and fan sections (code EFA-FD).
- Supplied with one of the following motor types:
  - EC motor with built-in electronic speed control
  - Type F1 motor with mounted frequency inverter
  - Motor to efficiency class eff1/IE2, for connection to external frequency inverter. Motors for impeller sizes 025-071 have thermo-contacts, motors for impeller sizes 080-090 are equipped with a thermistor.
- Tappings for flow measurement are standard.
- To facilitate servicing, the fan unit is simple to withdraw from the casing.
- The fans are effectively isolated from the casing by an anti-vibration outlet and rubber mountings. Resonant frequency: approx. 8 Hz.

Sizes 100–360 have direct-driven vibration-isolated plenum fans with backward-curved blades). EC motors with built-in electronic speed control. Stepless adjustment of the air is carried out by a main control system in response to a 0–10 V signal.



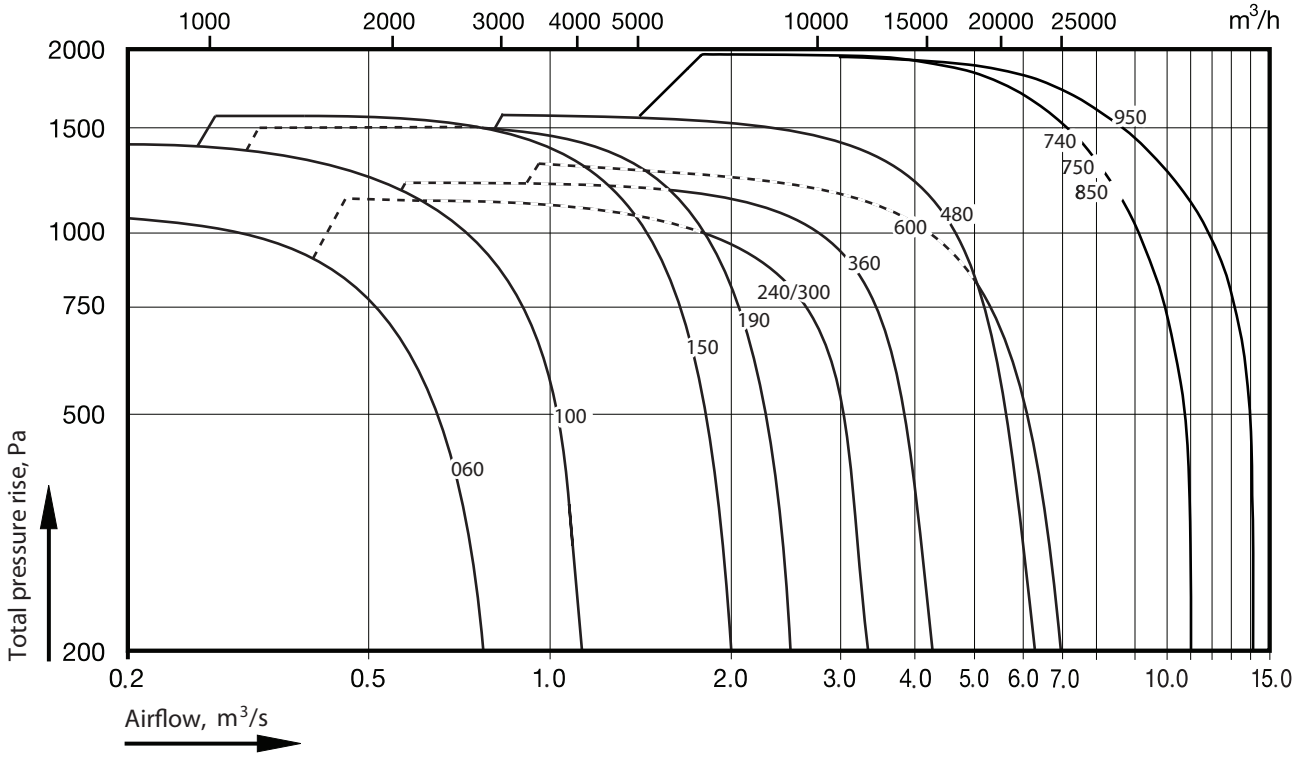
Direct-driven, open discharge EC centrifugal fan with backward-curved blades and impeller made of aluminium.

Sizes 480–950 have integral motors, eff1, i.e. the frequency inverter is mounted on the motor and is fully adapted to relevant operating conditions. The impeller is made of sheet steel with baked painted finish and equipped with a patented energy spoiler that provides high total efficiency.



Direct-driven, open discharge centrifugal fan with type Windstrong backward-curved blades and impeller made of sheet steel with baked painted finish.

Fan capacity



Electrical data

Size	Impeller size	Motor type	Output (kW) *				Power supply (voltage)	Rated current (A) for 230 V	Rated current (A) for 400 V
060	025	EC	0.42	0.70			1×230V~ 50Hz	2.8 / 3.0	–
100	028	EC EC E1	0.72 1.00	 1.1			1×230V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	3.5 – 3.95	– 1.6 2.28
100	310	EC	1.48				1×230V~ 50Hz	6.4	–
150	035	EC E1	1.00 1.1	1.5 1.5	2.2		3×400V~ 50Hz 3×230/400V~ 50Hz	– 4.21 / 5.72 / 7.5	1.75 2.43 / 3.3 / 4.3
150	040	EC EC	1.85 3.00				3×400V~ 50Hz 3×400V~ 50Hz	– –	2.9 4.6
190	035	EC	1.00				3×400V~ 50Hz	–	1.75
190	040	EC EC E1	1.85 3.00 1.1	 1.5	 2.2	 3.0	3×400V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	– – 4.21 / 5.72 / 7.8 / 10.4	2.9 4.6 2.43 / 3.3 / 4.5 / 6.0
240, 300	045	EC	1.62				3×400V~ 50Hz	–	2.5
240, 300	050	EC EC E1	2.82 5.50 1.5	 2.2	 3.0		3×400V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	– – 5.72 / 7.8 / 10.4	4.3 8.0 3.3 / 4.5 / 6.0
360	050	EC E1	2.82 2.2				3×400V~ 50Hz 3×230/400V~ 50Hz	– 7.8	4.3 4.5
360	056	EC E1	4.70	 3.0	 4.0		3×400V~ 50Hz 3×230/400V~ 50Hz	– 10.4 / 13.7	7.7 6.0 / 7.9
480	056	F1 E1	3.0 3.0				3×400V~ 50Hz 3×230/400V~ 50Hz	– 10.4	6.4 6.0
480	063	F1 E1		4.0 4.0	5.5 5.5	7.5 7.5	3×400V~ 50Hz 3×230/400V~ 50Hz	– 13.7 / 18.4 / 25.1	8.4 / 11.1 / 15.1 7.9 / 10.6 / 14.5
600	063	F1 E1	4.0 4.0	5.5 5.5			3×400V~ 50Hz 3×230/400V~ 50Hz	– 13.7 / 18.4	8.4 / 11.1 7.9 / 10.6
600	071	F1 E1			7.5 7.5		3×400V~ 50Hz 3×230/400V~ 50Hz	– 25.1	15.1 14.5
740, 750, 850	071	F1 E1		7.5 7.5			3×400V~ 50Hz 3×230/400V~ 50Hz	– 25.1	15.1 14.5
740, 750, 850, 950	080	HE	5.5	7.5	11.0	15.0	3×230/400V~ 50Hz	–/–/–/–	12.8/17.0/24.5/28.5
950	090	HE	7.5	11.0	15.0	18.5	3×230/400V~ 50Hz	–/–/–/–	17.0/24.5/29.5/36.5

EC = EC motor with built-in electronic speed control

E1 = motor conforming to efficiency class 1, eff1/IE2

F1 = motor with mounted frequency inverter

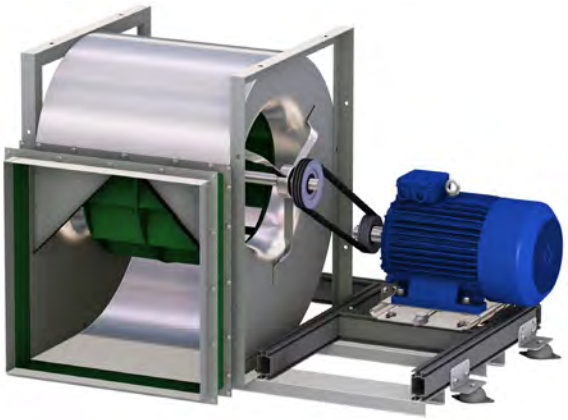
HE = 4 or 6-pole motor to IE2, 8-pole motor with enhanced efficiency

* Denotes power consumption for EC sizes 060–360; denotes shaft power for other sizes.

See also the section entitled Wiring instructions and fuse protection.

Belt-driven fans (code ELFR-FB/BB)

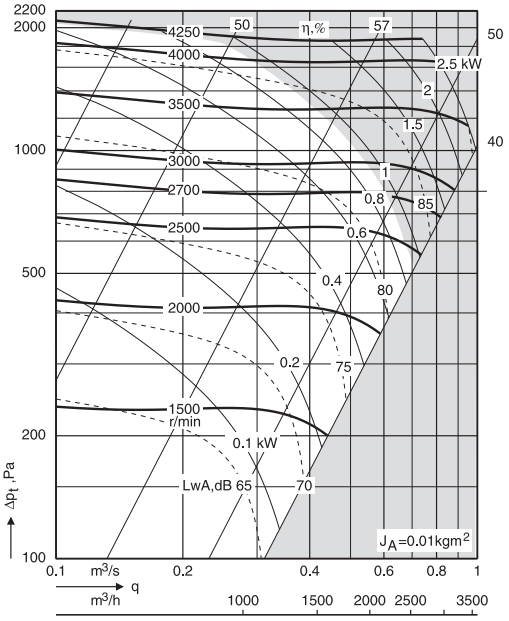
Belt-driven centrifugal fans equipped with either forward-curved (FB), or backward-curved (BB) blades. All the component parts of the fan system are noise suppressed to EMC-regulations in force for public networks.



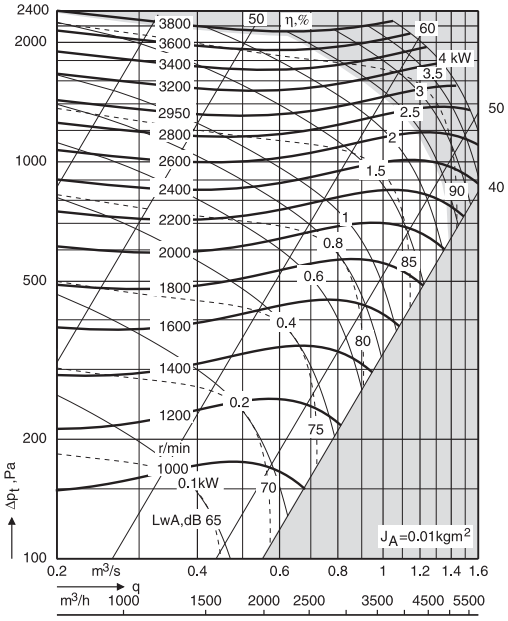
- Version FB is available in all sizes.
- Version BB is available in sizes 150–950.
- Included in fan fitting (code MIE-FR) and fan section (code EFA-FR).
- The FB impeller and casing are made of galvanized sheet steel. The BB impeller has a baked painted finish.
- The bearings are permanently lubricated deep-grooved ball bearings.
- On version BB, the fan casing is equipped with a V-shaped tongue which minimizes outlet losses.
- V-belt, or poly-V belt transmissions can be selected.

Fan capacity – Belt-driven ELFR centrifugal fan with forward-curved blades

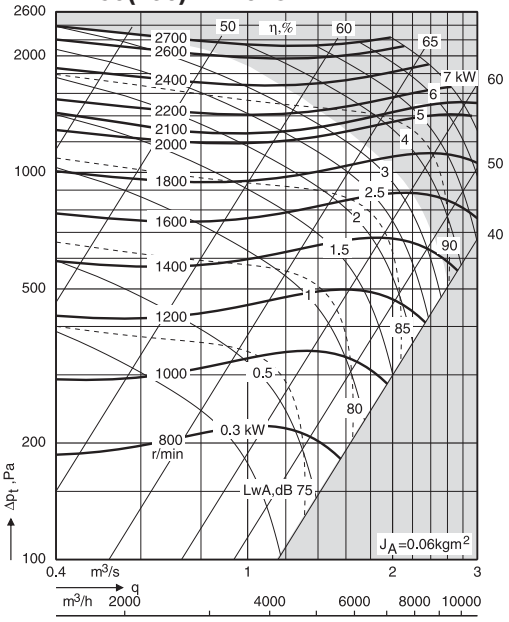
ELFR-060-FB-016



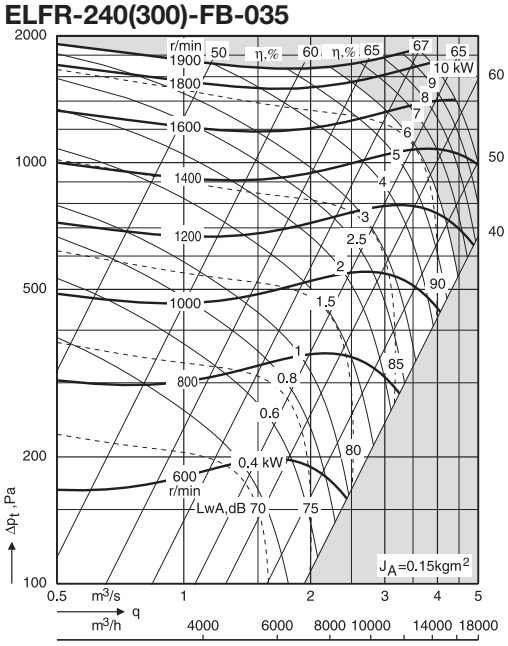
ELFR-100-FB-020



ELFR-150(190)-FB-028



ELFR-240(300)-FB-035



= *inaccessible working range*

Δp_t=Total pressure rise, kW=Power required excl. transmission losses, q=Airflow, LwA=Total sound power level (A-weighted)

Sound level (data to ISO 5136). To break down the sound into octave bands add the appropriate correction Kok tabulated below to the LwA value read from the chart. The result will be a sound power level that is not A-weighted.

ELFR-060-FB-016

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-2	-4	-3	-5	-4	-12	-20	-26
to the outlet	+5	-4	-5	-7	-8	-14	-21	-28

ELFR-100-FB-020

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	0	-2	-1	-3	-2	-10	-18	-24
to the outlet	+7	-2	-3	-5	-6	-12	-19	-26

ELFR-150(190)-FB-028

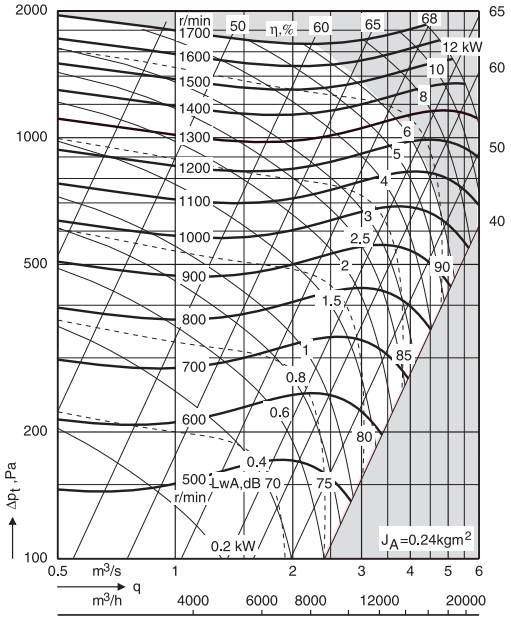
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+2	-1	0	-1	-2	-12	-18	-27
to the outlet	+8	-2	-2	-4	-5	-13	-20	-27

ELFR-240(300)-FB-035

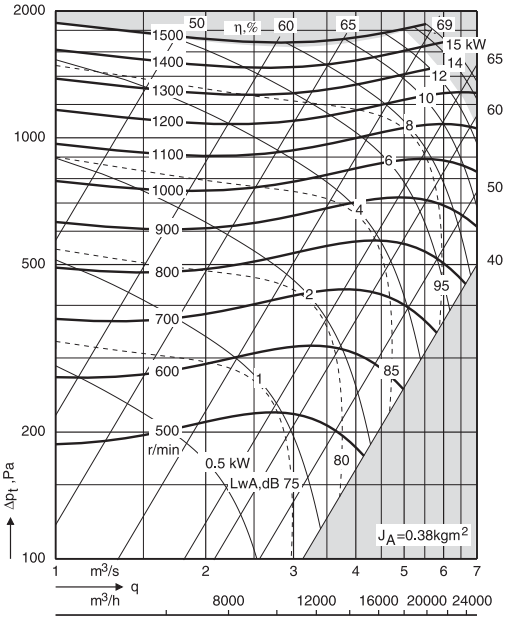
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+2	-1	0	-1	-2	-12	-18	-27
to the outlet	+8	-2	-2	-4	-5	-13	-20	-27

Contd. Fan capacity – Belt-driven ELFR centrifugal fan with forward-curved blades

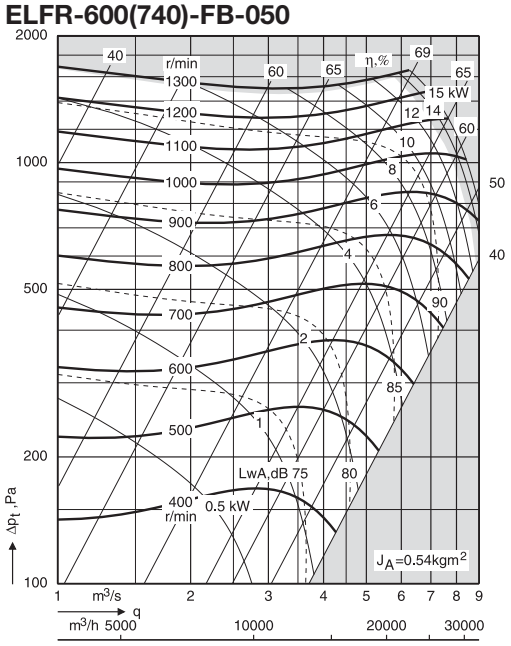
ELFR-360-FB-040



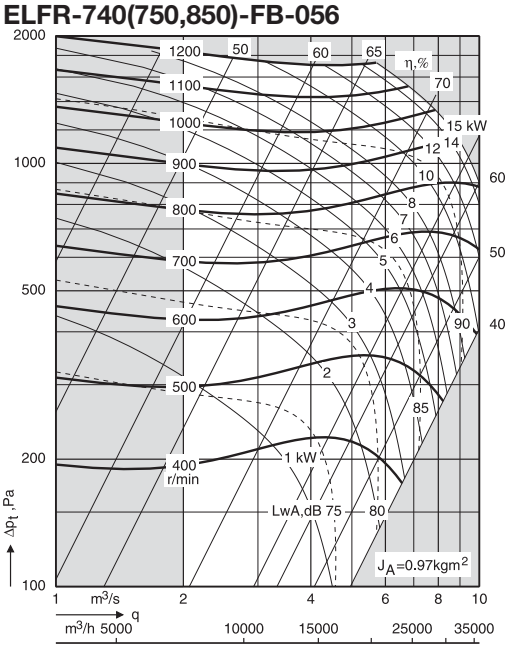
ELFR-480-FB-045



ELFR-600(740)-FB-050



ELFR-740(750,850)-FB-056



= *inaccessible working range*

Δp_t=Total pressure rise, kW=Power required excl. transmission losses, q=Airflow, LwA=Total sound power level (A-weighted)

Sound level (data to ISO 5136). To break down the sound into octave bands add the appropriate correction Kok tabulated below to the LwA value read from the chart. The result will be a sound power level that is not A-weighted.

ELFR-360-FB-040

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+2	-1	0	-1	-2	-12	-18	-27
to the outlet	+8	-2	-2	-4	-5	-13	-20	-27

ELFR-480-FB-045

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+1	-2	-1	-2	-2	-13	-19	-28
to the outlet	+7	-3	-3	-5	-6	-14	-21	-28

ELFR-600(740)-FB-050

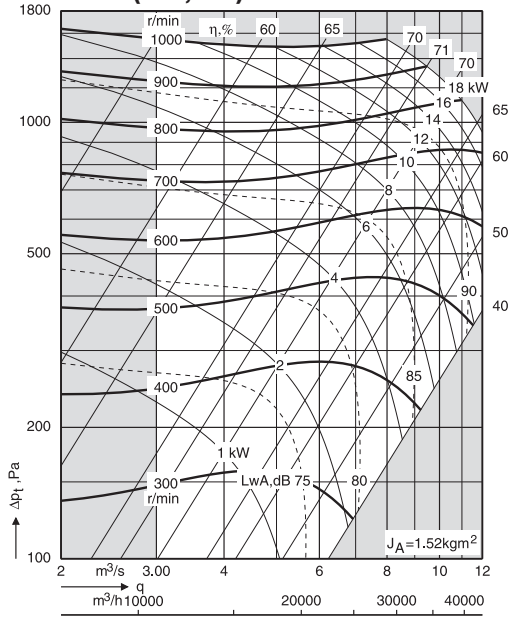
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+1	-2	-1	-2	-3	-13	-19	-28
to the outlet	+7	-3	-3	-5	-6	-14	-21	-28

ELFR-740(750,850)-FB-056

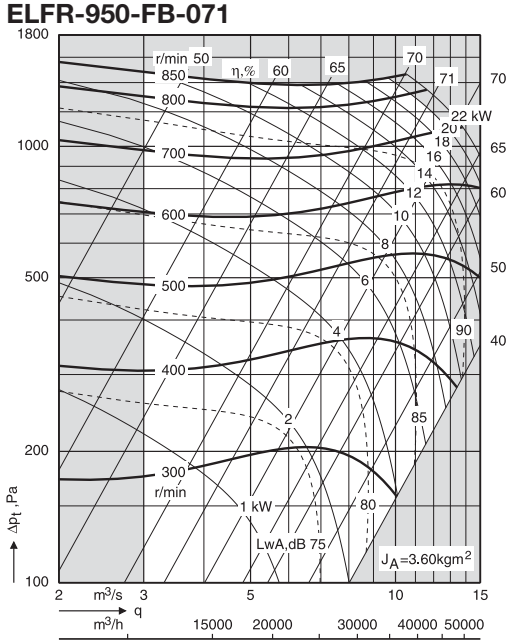
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	+2	+1	0	-1	-2	-12	-18	-27
to the outlet	+8	-2	-2	-4	-5	-13	-20	-27

Contd. Fan capacity – Belt-driven ELFR centrifugal fan with forward-curved blades

ELFR-750(850,950)-FB-063



ELFR-950-FB-071



= *inaccessible working range*

Δp_t=Total pressure rise, kW=Power required excl. transmission losses, q=Airflow, LwA=Total sound power level (A-weighted)

Sound level (data to ISO 5136). To break down the sound into octave bands add the appropriate correction Kok tabulated below to the LwA value read from the chart. The result will be a sound power level that is not A-weighted.

ELFR-750(850,950)-FB-063

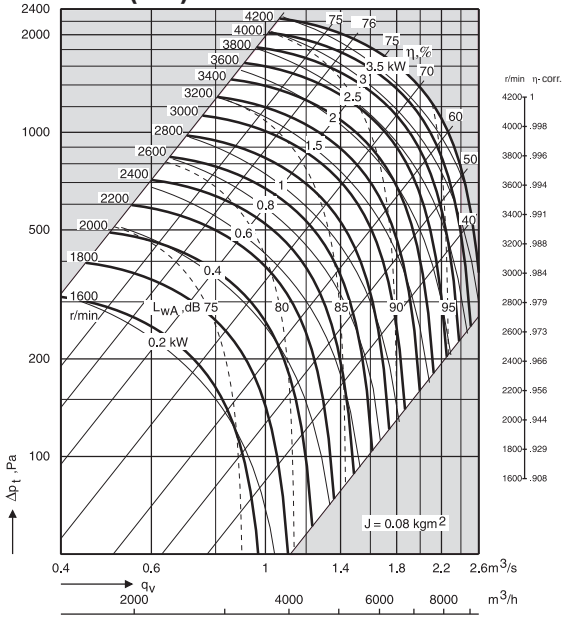
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-3	-2	-1	-1	-2	-6	-8	-15
to the outlet	+3	-3	-3	-5	-6	-8	-10	-15

ELFR-950-FB-071

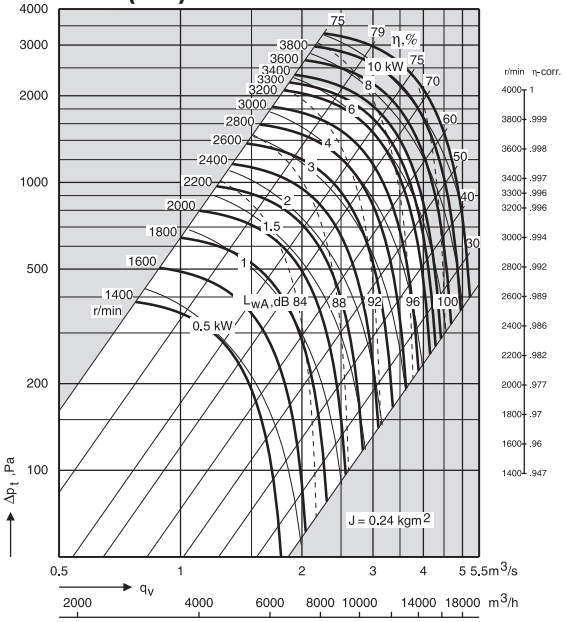
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-3	-2	-1	-1	-2	-6	-8	-15
to the outlet	+3	-3	-3	-4	-5	-7	-10	-15

Fan capacity – Belt-driven ELFR centrifugal fan with backward-curved blades

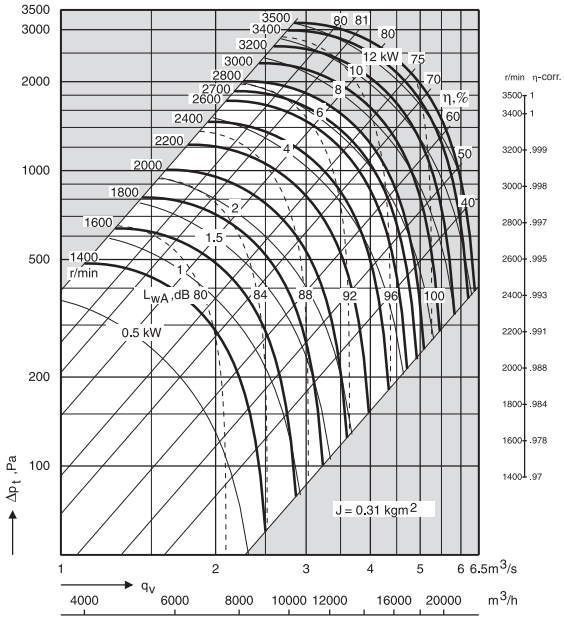
ELFR-150(190)-BB-028



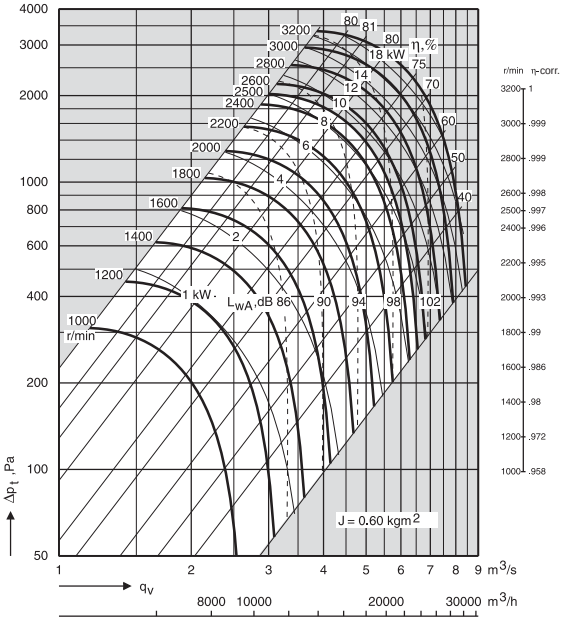
ELFR-240(300)-BB-035



ELFR-360-BB-040



ELFR-480-BB-045



= *inaccessible working range*

Δp_t=Total pressure rise, kW=Power required excl. transmission losses, q=Airflow, LwA=Total sound power level (A-weighted)

Sound level (data to ISO 5136). To break down the sound into octave bands add the appropriate correction Kok tabulated below to the LwA value read from the chart. The result will be a sound power level that is not A-weighted.

ELFR-150(190)-BB-028

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-6	-5	-3	+1	-2	-13	-23	-33
to the outlet	+2	+1	-4	-2	-6	-13	-22	-29

ELFR-240(300)-BB-035

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-7	-5	-4	-1	-5	-13	-22	-33
to the outlet	-4	-2	-5	-3	-6	-11	-22	-31

ELFR-360-BB-040

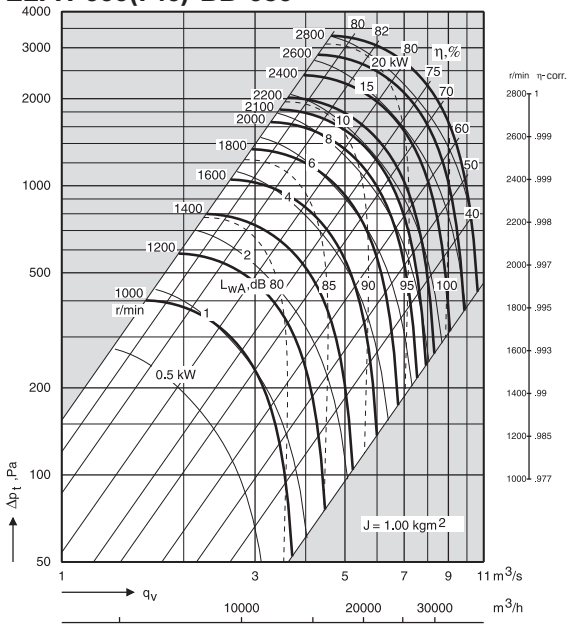
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-10	-7	-8	-2	-4	-13	-23	-32
to the outlet	-6	-4	-8	-4	-5	-11	-22	-30

ELFR-480-BB-045

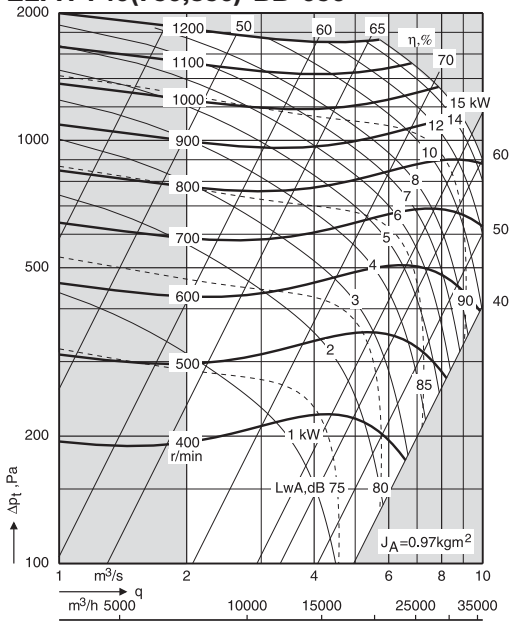
Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-3	-2	0	-4	-2	-13	-21	-31
to the outlet	-3	-2	+2	-7	-3	-14	-24	-30

Contd. Fan capacity – Belt-driven ELFR centrifugal fan with backward-curved blades

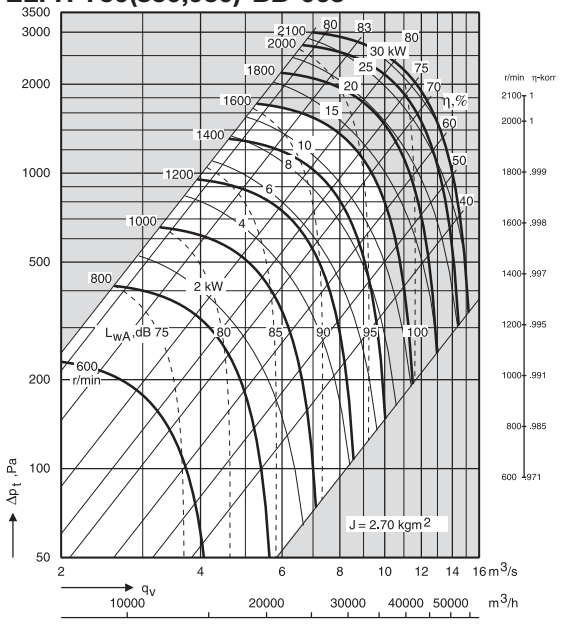
ELFR-600(740)-BB-050



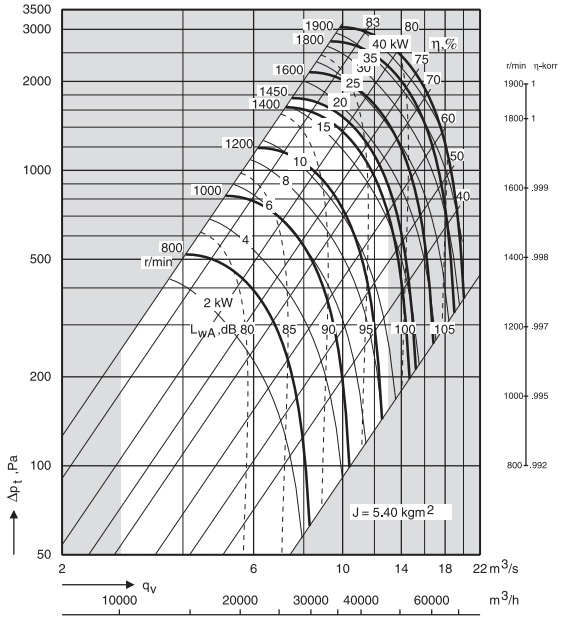
ELFR-740(750,850)-BB-056



ELFR-750(850,950)-BB-063



ELFR-950-BB-071



= *inaccessible working range*

Δp_t=Total pressure rise, kW=Power required excl. transmission losses, q=Airflow, LwA=Total sound power level (A-weighted)

Sound level (data to ISO 5136). To break down the sound into octave bands add the appropriate correction Kok tabulated below to the LwA value read from the chart. The result will be a sound power level that is not A-weighted.

ELFR-600(740)-BB-050

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-3	-3	+1	-3	-4	-14	-22	-30
to the outlet	0	-2	+2	-7	-5	-15	-24	-30

ELFR-740(750,850)-BB-056

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-3	-1	0	-2	-3	-13	-21	-29
to the outlet	1	0	3	-6	-3	-15	-23	-30

ELFR-750(850,950)-BB-063

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-4	-5	1	-4	-6	-14	-26	-33
to the outlet	-5	-5	1	-7	-3	-14	-22	-27

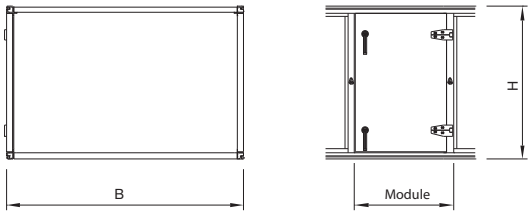
ELFR-950-BB-071

Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
to the inlet	-5	-6	-1	-2	-6	-15	-27	-36
to the outlet	-6	-5	-1	-6	-3	-14	-23	-30

Inspection fitting (code MIE-KM)

The fitting consists of a front casing panel in the form of an inspection cover. The air distributor can be fitted as an accessory. The fitting is designed for incorporation into a Standard Module (code EMM).

Dimensions



Size	Module (mm)			Dimensions (mm)	
	10	15	20	B	H
060	300	450	600	850	440
100	300	450	600	980	505
150	300	450	600	1080	695
190	300	450	600	1360	695
240	300	450	600	1360	805
300	300	450	600	1580	805
360	300	450	600	1580	990
480	300	450	600	1950	990
600	300	450	600	2160	1095
740	300	450	600	2480	1240
750	300	450	600	2020	1370
850	300	450	600	2560	1370
950	300	450	600	2020	1660

Weights (kg)

Size	Module		
	10	15	20
060	5	5	5
100	5	5	5
150	5	5	5
190	5	5	5
240	5	5	5
300	5	5	5
360	5	5	10
480	5	5	10
600	5	5	10
740	10	10	15
750	10	15	15
850	10	15	15
950	15	15	20

The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Accessory

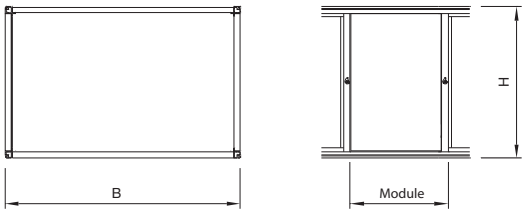
- Air distributor (code MIET-KM-01-a)

See also the section on Accessories.

Empty section fitting (code MIE-TD)

The fitting can be used for special functions (such as steam lances) or for spacing. The fitting consists of a fixed front casing panel and is designed for incorporation into a Standard Module (code EMM).

Dimensions



Size	Module (mm)																Dimensions (mm)	
	05	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	B	H
060	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	850	440
100	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	980	505
150	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1080	695
190	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1360	695
240	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1360	805
300	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1580	805
360	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1580	990
480	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	1950	990
600	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2160	1095
740	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2480	1240
750	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2020	1370
850	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2560	1370
950	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2020	1660

Weights (kg)

Size	Module															
	05	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
060	5	5	5	5	5	5	5	10	10	10	10	10	10	15	15	15
100	5	5	5	5	5	5	5	10	10	10	10	10	15	15	15	15
150	5	5	5	5	5	5	10	10	10	15	15	15	15	20	20	20
190	5	5	5	5	5	10	10	10	10	15	15	15	15	20	20	20
240	5	5	5	5	10	10	10	10	15	15	15	20	20	20	20	25
300	5	5	5	5	10	10	10	10	15	15	15	20	20	20	20	25
360	5	5	5	10	10	10	15	15	15	20	20	25	25	25	25	30
480	5	5	5	10	10	10	15	15	15	20	20	25	25	25	25	30
600	5	5	5	10	10	15	15	15	20	20	25	25	25	30	30	30
740	10	10	15	15	20	20	25	25	30	30	35	35	40	40	45	50
750	10	10	15	15	20	25	25	30	35	35	40	45	45	50	55	55
850	10	10	20	20	20	25	25	30	35	35	40	45	45	50	55	55
950	10	15	15	20	25	30	30	40	40	45	50	50	55	60	65	70

* The specified weight refers to a casing with standard insulation. For a casing with insulation to fire resistance class EI30, the weight should be calculated in the IV Produkt Designer product selection program..

Accessory

- Drip tray (code MIET-TD-01-a)

See also the section on Accessories.

Silencer fitting (code MIE-KL)

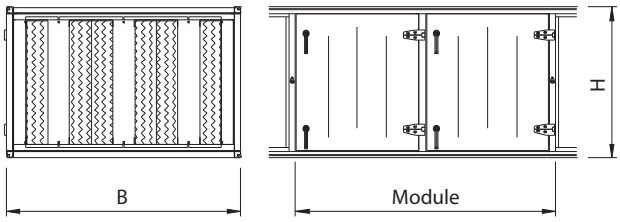
The MIE-KL silencer fitting consists of pointed baffle elements. The fitting is designed for incorporation into a Standard Module (code EMM).

- The silencers have 200 mm thick baffle elements.
- The baffle material, which is mineral wool, is externally lined with cleanable woven fabric. The material is type approved as an internal lining material in ventilation ducts.
- In the UB version (withdrawable) the baffles are mounted on slide rails and can be easily withdrawn from the casing for cleaning.
- In the EB version (not withdrawable) the baffle elements are fixed in their positions.
- Max. permissible temperature: 50 °C
- The face edges of the baffle elements are pointed to minimise the pressure drop.
- The silencers are available in five different versions to meet the degree of sound attenuation required.

Integral attenuation (dB)

Version	Module length	Octave band Mid-frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
UB	20	5	7	12	23	38	30	27	13
	30	6	10	18	30	41	35	30	16
	40	7	11	20	32	43	37	31	17
	50	8	12	25	38	46	41	35	21
	60	10	16	30	44	49	44	38	24
EB	20	5	7	12	23	38	30	27	13
	30	6	10	18	30	41	35	30	16
	40	8	13	23	36	45	39	33	20
	50	9	15	28	42	48	43	37	23
	60	10	19	33	47	50	46	40	26

Dimensions



Size	Module (mm)					Dimensions (mm)	
	20	30	40	50	60	B	H
060	600	900	1200	1500	1800	850	440
100	600	900	1200	1500	1800	980	505
150	600	900	1200	1500	1800	1080	695
190	600	900	1200	1500	1800	1360	695
240	600	900	1200	1500	1800	1360	805
300	600	900	1200	1500	1800	1580	805
360	600	900	1200	1500	1800	1580	990
480	600	900	1200	1500	1800	1950	990
600	600	900	1200	1500	1800	2160	1095
740	600	900	1200	1500	1800	2480	1240
750	600	900	1200	1500	1800	2020	1370
850	600	900	1200	1500	1800	2560	1370
950	600	900	1200	1500	1800	2020	1660

Weights (kg)

Size	Module with UB baffle elements				
	20	30	40	50	60
060	20	30	35	55	65
100	25	40	50	80	90
150	35	55	65	105	115
190	40	65	80	130	145
240	45	75	90	145	160
300	55	85	105	170	190
360	65	100	125	200	225
480	75	120	145	235	265
600	90	145	180	290	325
740	120	160	240	280	315
750	115	155	230	270	310
850	145	190	290	335	380
950	135	180	270	315	365

The specified weight refers to casings with standard insulation. Calculate casings with EI30 insulation in IV Produkt Designer.

Media fitting (code MIE-MD)

The fitting consists of a shielded space for the installation of electric and control equipment with an access panel that can be opened. The fitting is designed for incorporation into a Standard Module (code EMM).

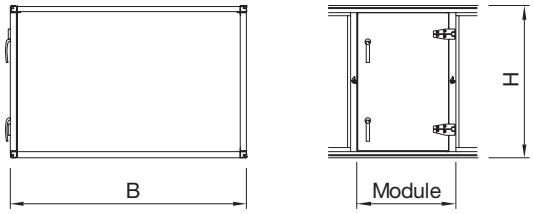
The media fitting is available in two variants:

- Module 20 is available for size 060– 950 supply air handling units.
- Module 30 is available for size 240–950 AHUs.

Available space for the control cubicle

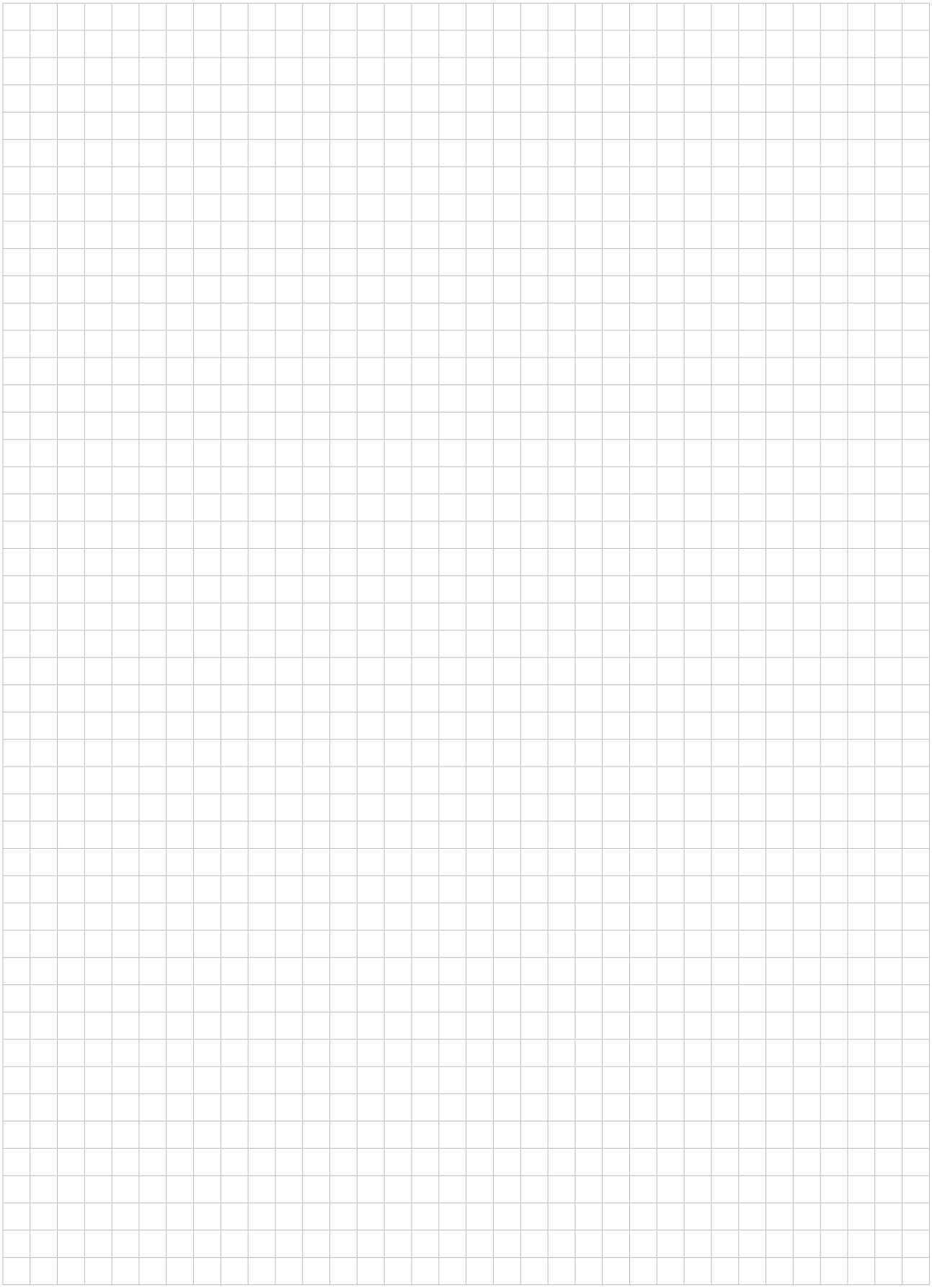
Size	Dimensions (mm)			
	B Module 20	B Module 30	H	Depth
060	530	–	330	150
100	530	–	395	150
150	530	–	585	150
190	530	–	585	150
240	530	680	695	280
300	530	680	695	280
360	530	680	880	280
480	530	680	880	280
600	530	680	985	280
740	530	680	1090	280
750	530	680	1220	280
850	530	680	1220	280
950	530	680	1510	280

Dimensions and weights



Size	Module (mm)		Dimensions (mm)		Wgt. (kg)*	
	20	30	B	H	20	30
060	600	–	850	440	12	–
100	600	–	980	505	13	–
150	600	–	1080	695	17	–
190	600	–	1360	695	17	–
240	600	900	1360	805	20	25
300	600	900	1580	805	20	25
360	600	900	1580	990	25	30
480	600	900	1950	990	25	30
600	600	900	2160	1095	30	35
740	600	900	2480	1240	30	35
750	600	900	2020	1370	35	45
850	600	900	2560	1370	35	45
950	600	900	2020	1660	40	50

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.



Complete functional sections

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

Rotary heat exchanger section (code EXA)

The EXA rotary heat exchanger is a complete unit with a rotor that transfers heat according to the air-to-air principle.

Design

The rotor in the heat exchanger is composed of alternated flat and corrugated strips of aluminium foil. This forms a myriad of smooth passages through which the air flows in a laminar pattern. As a result, the pressure drop across the rotor is low and there is little risk of dust or dirt collecting on rotor surfaces.

The rotor, which is withdrawable from the framework, is journalled in permanently lubricated spherical ball bearings.

An effective bristled sealing strip is fitted to and along the rotor periphery between the supply air and extract air paths.

The rotor is available in four different versions:

- NO, normal rotor
- HY, hygroscopic rotor for increased cooling energy recovery and moisture transfer
- NP, normal Plus rotor for enhanced efficiency
- HP, hygroscopic rotor in the Plus version

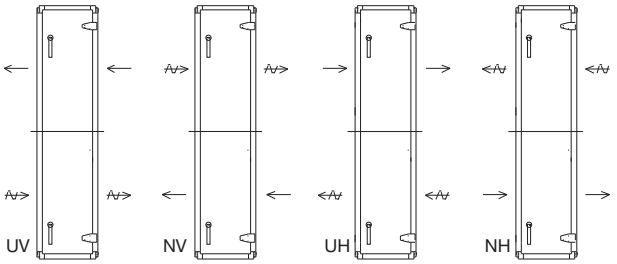
For aggressive environments, the rotor can be made of epoxy-treated sheet aluminium.

As an option, the edges of the rotor package can be reinforced with polyurethane paint for additional corrosion protection (code EXAT-01-a).

An adjustable purging sector continuously blows the rotor surfaces clean of impurities.

The rotor is driven by a worm gear motor with electronic speed control.

Configuration



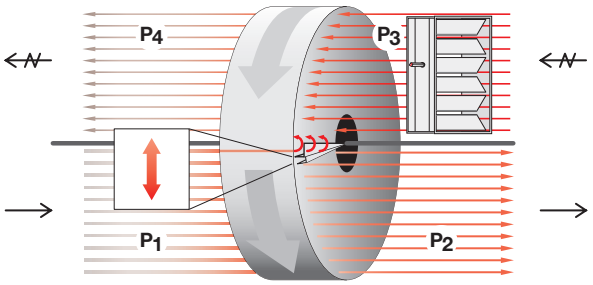
UV = Supply air, upper air path, left-hand version
NV = Supply air, lower air path, left-hand version
UH = Supply air, upper air path, right-hand version
NH = Supply air, lower air path, right-hand version

Rotor control function

The controller and drive motor are integrated components in the rotor control system. The controller that is incorporated into the heat exchanger includes ready-to-use functions for purging operation, rotation monitoring, motor protection and alarms.

On the size 190-950 units, rotor operation is supervised without any rotation sensor. The controller checks the motor torque and initiates an alarm if the rotor decelerates below a limit speed. The speed is controlled against a control curve that is almost linear in relation to the temperature efficiency.

Purging operation and leakage air flow

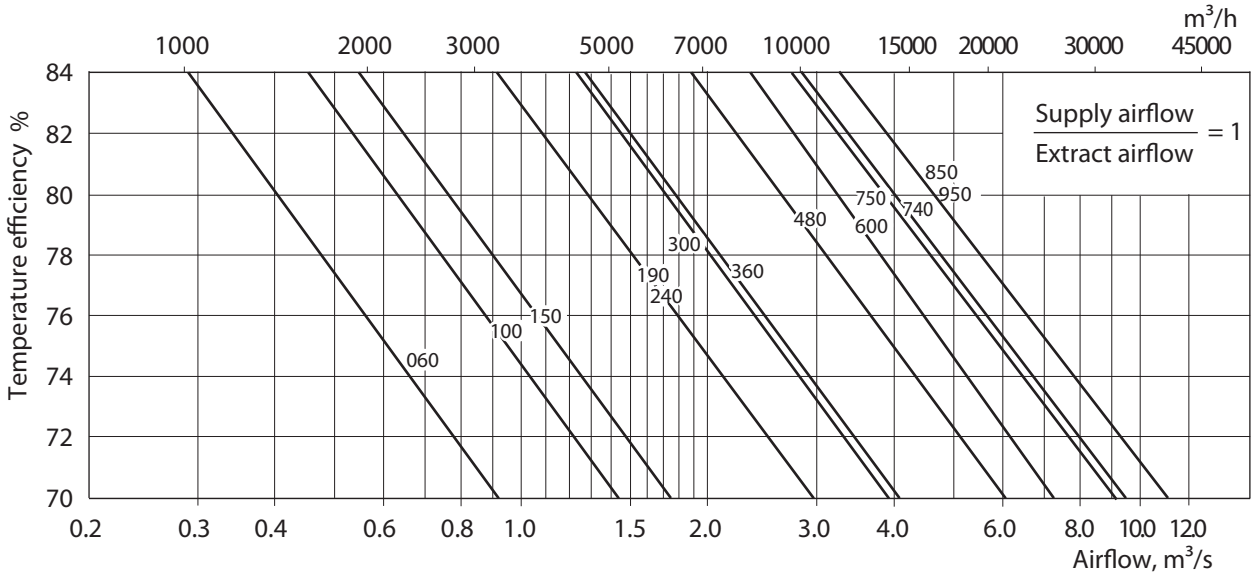


Rotary heat exchangers always carry over a certain volume of extract air to the supply air as they rotate.

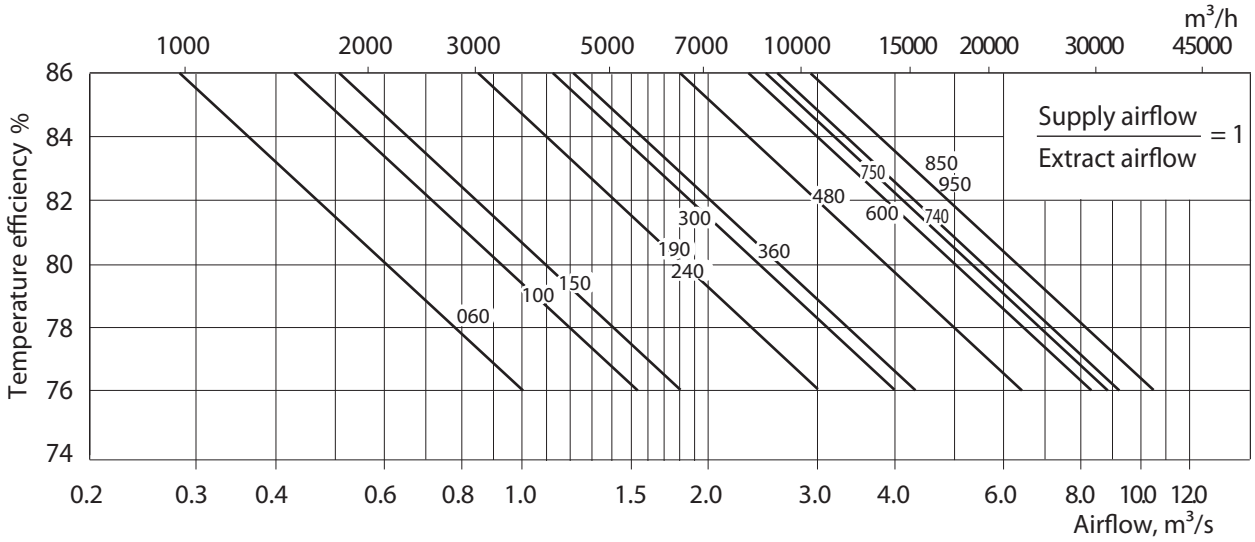
When a purging sector is in use, the rotor is blown clean and this eliminates any carryover of extract air to the supply air. On installing a heat exchanger with purging sector, the fans should be situated so that P1>P4 and P2>P3 as illustrated above. A possible trimming damper can be used to achieve the required pressure balance.

The purging sector is used for adjusting the purging airflow. IV Produkt Designer calculates the leakage airflow and possible need for a trimming damper.

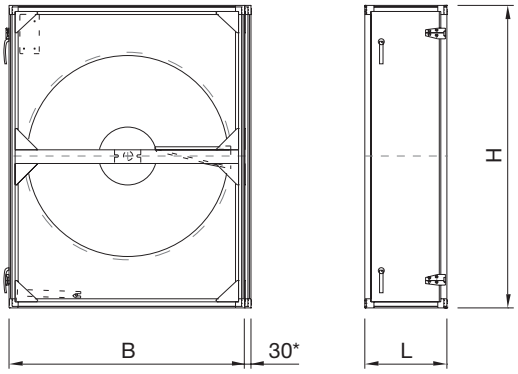
Temperature efficiency, rotor type NO (Normal) and HY (Hygroscopic)



Temperature efficiency, rotor type NP (Normal Plus) and HP (Hygroscopic Plus)



Dimensions and weights



Size	Dimensions (mm)			Wgt. (kg)** with normal rotor
	L	B	H	
060	380	850*	880	85
100	380	880*	1010	100
150	380	880*	1390	135
190	380	1360*	1390	160
240	380	1360*	1610	170
300	380	1580*	1610	200
360	380	1580*	1980	205
480	380	1950*	1980	290
600	380	2160*	2190	335
740	420	2480	2480	465
750	420	2480	2740	505
850	420	2560	2740	585
950	420	2730	3320	640

* For the size 060–600 unit, add 30 mm.

**The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Motor data

Size	Output (W)	Current (A)	Voltage (V)	Fuse prot. (AT)
060-150	40	0,33	1 × 230	10
190-360	40	0,7	1 × 230	10
480-600	100	1,3	1 × 230	10
740-950	160	1,7	1 × 230	10

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
EXA	3	4	4	3	4	5	6	8

Accessory

- Edge-reinforced rotor (code EXAT-01-a), applicable to NO/NP only

See also the section on Accessories.

Plate heat exchanger section (code EXC)

The EXC plate heat exchanger section is a complete unit with a plate heat exchanger that operates according to the air-to-air heat transfer principle.

Design

The heat exchanger is of cross-flow type and is composed of aluminium plates which are also available with epoxy-treated surfaces. The flat air passages in the airflow direction enable low pressure drop and low risk of dust or dirt deposits in the passages.

A special jointing technique makes the heat exchanger extremely tight and minimises the risk of leakage between the extract air and the supply air paths. Pressed plate surface enlargements in the direction of airflow provide large transfer surfaces and a stability that permits large differences in temperature.

Moisture is not recovered from the extract air. Whenever the outdoor temperature is low, the moisture from the extract air however precipitates and this releases energy.

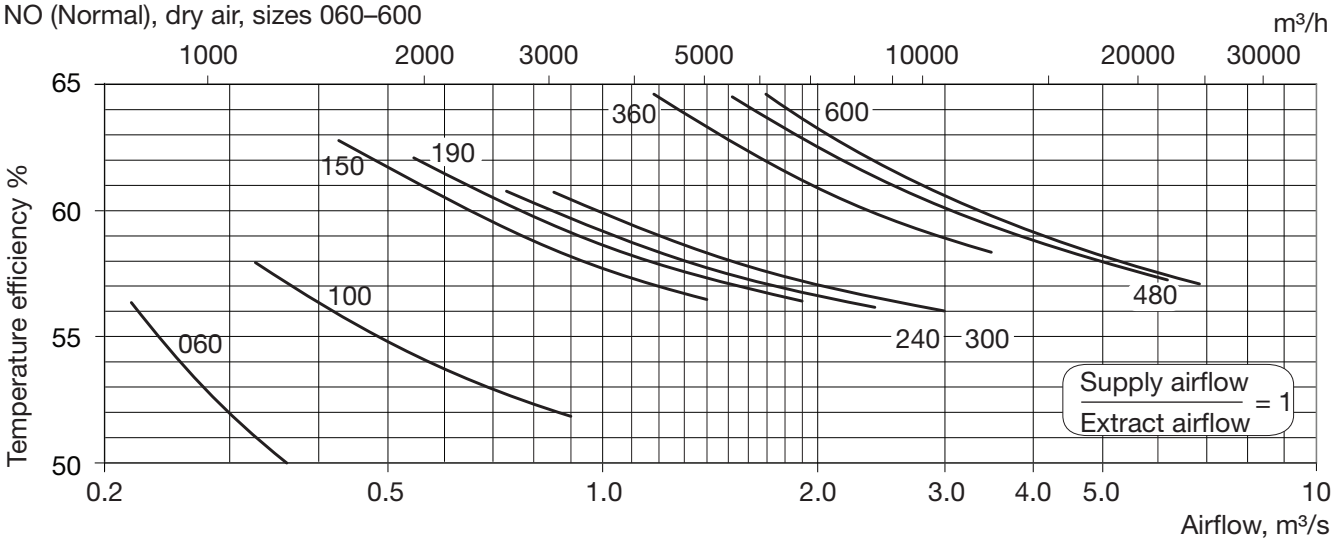
The condensate is collected in a drip tray with drain connection. Under normal humidity and temperature conditions the temperature efficiency of the heat exchanger increases by approx. 3 percentage units.

Moisture precipitation also gives rise to a risk of icing inside the heat exchanger. Icing can be avoided by allowing a portion of the outdoor air to bypass the heat exchanger.

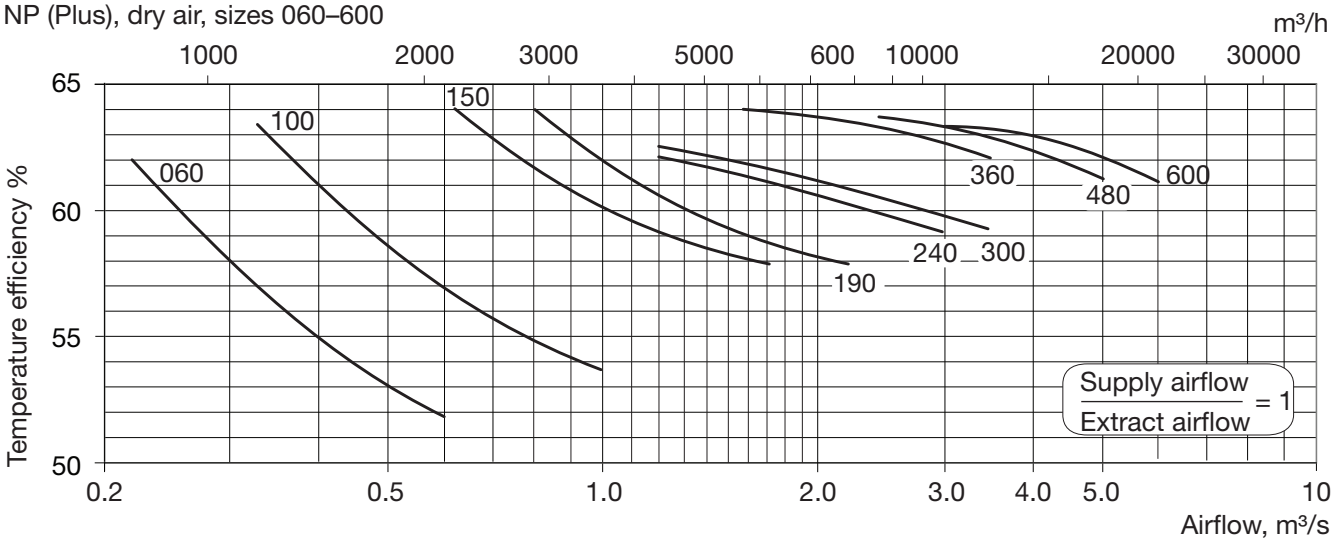
The bypass and shutoff dampers are of type KJS, tightness class 2 to SS-EN1751 (VVS AMA-98) and corrosion resistance class C4 to SS-EN ISO 12944-2.

Temperature efficiency

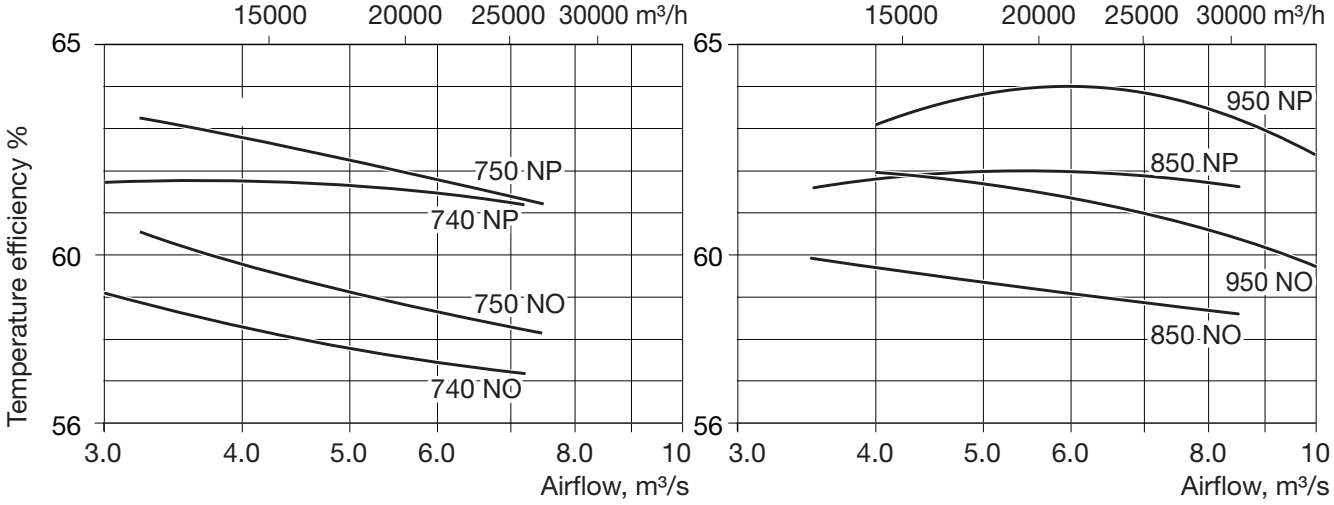
NO (Normal), dry air, sizes 060–600



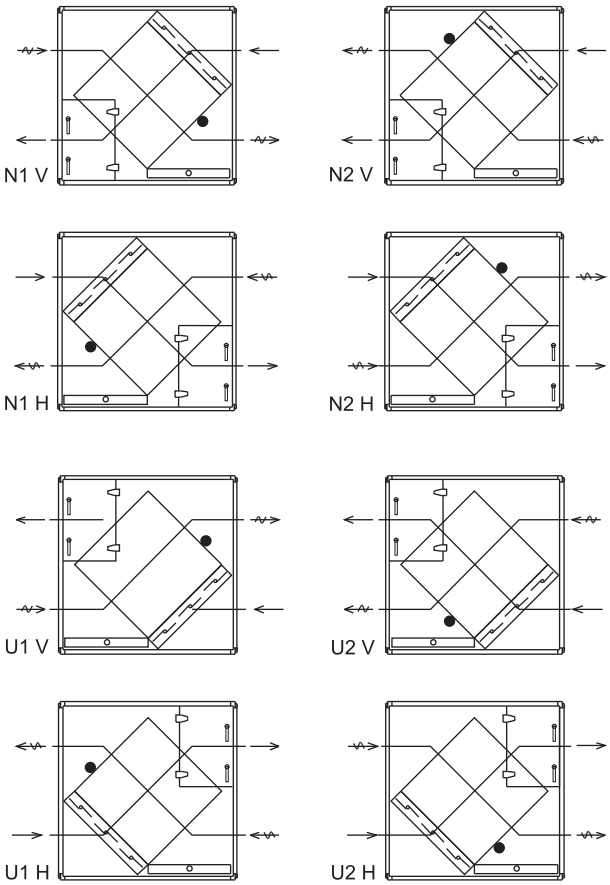
NP (Plus), dry air, sizes 060–600



NO (Normal) and NP (Plus), dry air, sizes 740–950



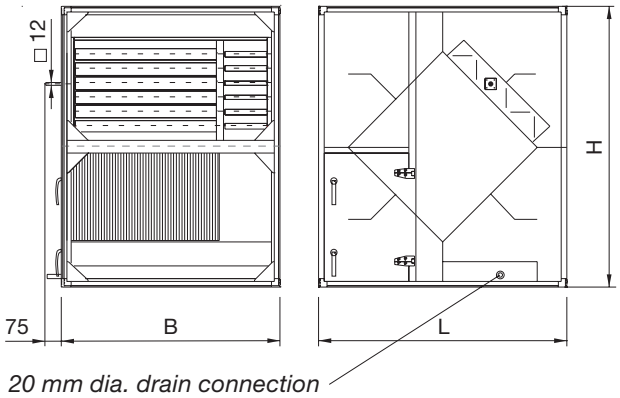
Configuration



● = *location of the anti-frost protection sensor*

N V = Supply air, lower air path, left-hand version
N H = Supply air, lower air path, right-hand version
U V = Supply air, upper air path, left-hand version
U H = Supply air, upper air path, right-hand version

Dimensions and weights



20 mm dia. drain connection

Size	Dimensions (mm)			Wgt. (kg)*	Torque req. (Nm)
	L	B	H		
060	780	850	880	100	3
100	1080	980	1010	150	3
150	1230	1080	1390	195	4
190	1230	1360	1390	223	5
240	1530	1360	1610	285	5
300	1530	1580	1610	320	5
360	1980	1580	1980	440	6
480	1980	1950	1980	535	10
600	1980	2160	2190	600	10
740	2020	2480	2480	715	11
750	2440	2020	2740	725	2×12**
850	2440	2560	2740	830	2×12**
950	3040	2020	3320	1025	2×12**

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 2 damper motors are required.

Integral attenuation (dB)

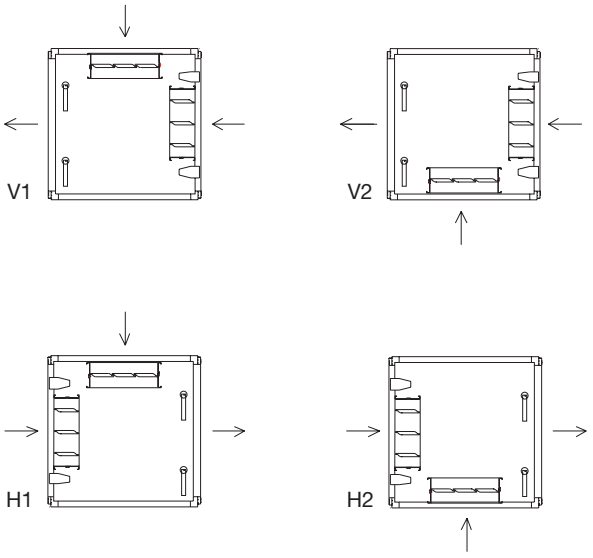
Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
EXC	6	7	6	5	7	10	15	18

Mixing section (code EBA)

The EBA mixing section is a functional section with two interconnected dampers for mixing outdoor air with recirculated air.

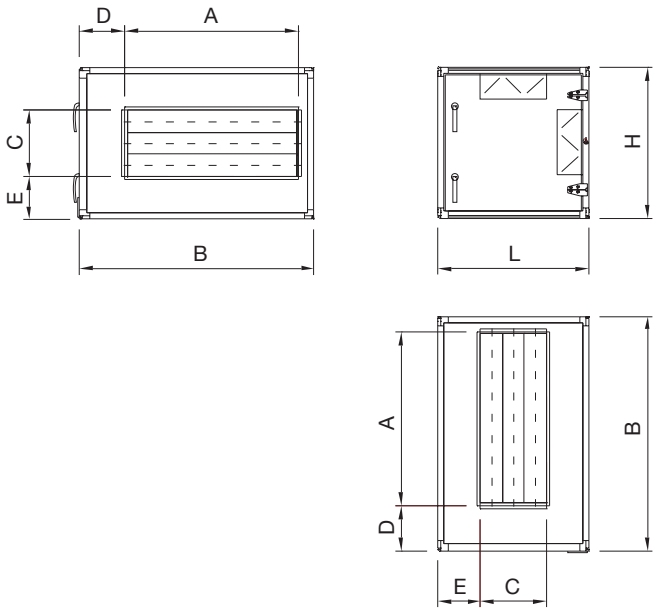
- The dampers are made of anodized profiled sheet aluminium and meet the provisions of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- For the size 060–600 units, the dampers are interconnected to a common internal shaft.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.
- The inspection cover is standard.

Configuration



V = Left-hand version, H = Right-hand version

Dimensions and weights



Size	Dimensions (mm)							Wgt. (kg)*	Torque req. (Nm)
	L	B	H	A	C	D	E		
060	440	850	440	500	200	210	70	30	3
100	505	980	505	700	200	210	130	45	4
150	695	1080	695	800	300	210	200	55	5
190	695	1360	695	1000	300	210	200	65	5
240	805	1360	805	1000	400	210	200	75	6
300	805	1580	805	1200	400	210	200	85	6
360	990	1580	990	1200	500	210	245	105	6
480	990	1950	990	1400	500	275	245	125	8
600	1095	2160	1095	1600	600	280	245	150	12
740	642	2480	1240	2380	540	50	50	170	2x6**
750	642	2020	1370	1920	540	50	50	150	2×6**
850	642	2560	1370	2460	540	50	50	180	2×6**
950	842	2020	1660	1920	740	50	50	175	2×7**

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 2 damper motors are required (12×12 mm damper shaft).

Accessories, inlet

- Connection frame (code EBAT-01-a)
- Flexible connection (code EBAT-02-a)

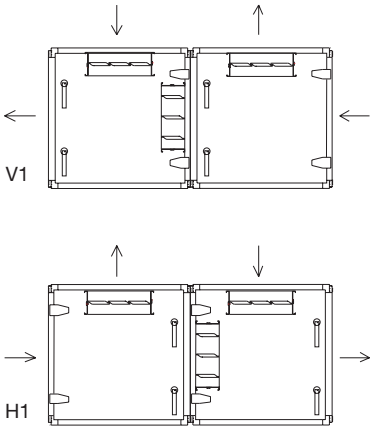
See also the section on Accessories.

Mixing section (code EBB)

The EBB mixing section is a unit section with three dampers for mixing extract air, recirculated air and outdoor air.

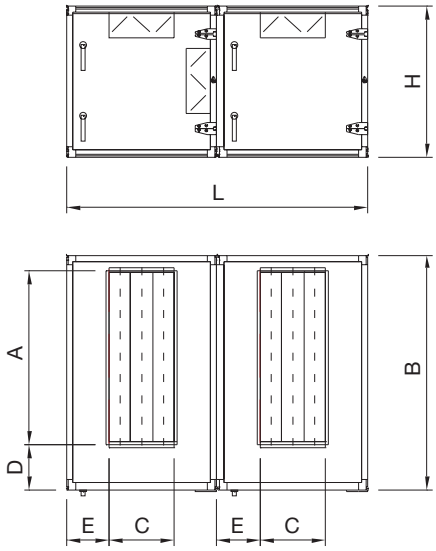
- The EBB mixing section has built-in IV Produkt type KJS dampers.
- The dampers are made of profiled sheet aluminium and meet the provision of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- For the size 060–600 units, the dampers are interconnected to a common internal shaft.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.
- The unit section has inspection covers as standard.

Configuration



V = Left-hand version, H = Right-hand version

Dimensions and weights



Size	Dimensions (mm)							Wgt. (kg)*	Torque req. (Nm)
	L	B	H	A	C	D	E		
060	880	850	440	500	200	210	70	55	3**
100	1010	980	505	700	200	210	130	70	4**
150	1390	1080	695	800	300	210	200	105	5**
190	1390	1360	695	1000	300	210	200	115	5**
240	1610	1360	805	1000	400	210	200	140	6**
300	1610	1580	805	1200	400	210	200	155	6**
360	1980	1580	990	1200	500	210	245	190	6**
480	1980	1950	990	1400	500	275	245	215	8**
600	2190	2160	1095	1600	600	280	245	260	12**
740	1284	2480	1240	2380	540	50	50	335	3×6***
750	1284	2020	1370	1920	540	50	50	295	3×6***
850	1284	2560	1370	2460	540	50	50	355	3×6***
950	1684	2020	1660	1920	740	50	50	345	3×7***

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 2 damper motors are required (12×12 mm damper shaft), of which one motor should be sized according to the table. The other motor should be sized according to the table value × 0.5.

*** 3 damper motors are required.

Accessories, inlet/outlet, top side

- Connection frame (code EBAT-01-a)
- Flexible connection (code EBAT-02-a)

See also the section on Accessories.

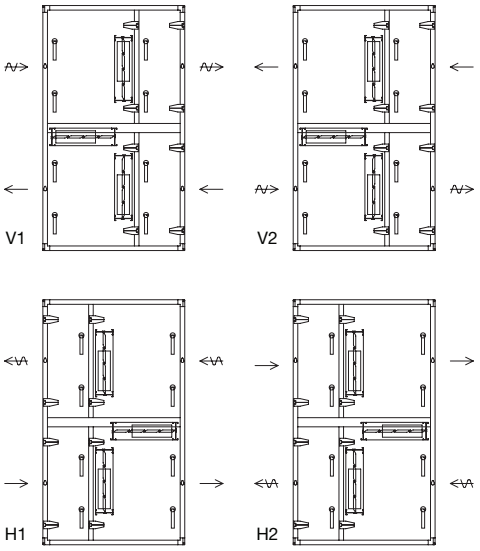
Mixing section (code EBC)

The EBC mixing section is a unit section with three dampers for mixing extract air, recirculated air and outdoor air.

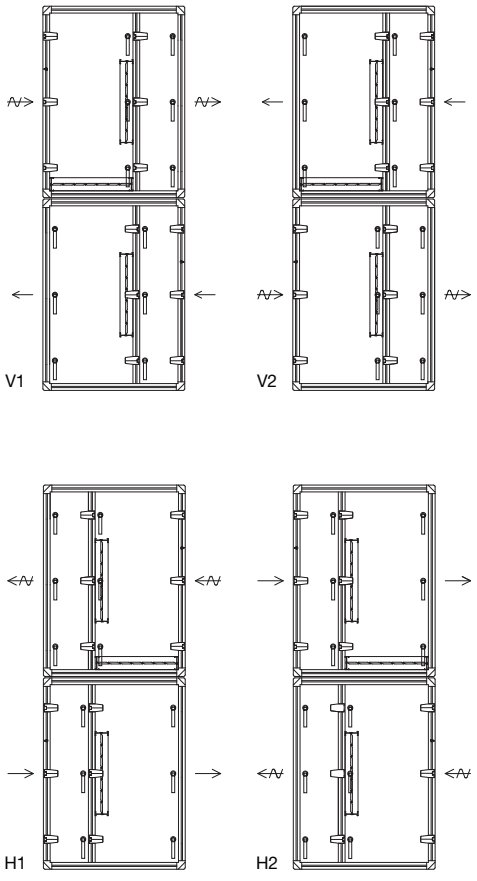
- The EBC mixing section has built-in IV Produkt type KJS dampers.
- The dampers are made of profiled sheet aluminium and meet the provision of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- For the size 060–600 units, the dampers are interconnected to two internal shafts.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.
- The EBC mixing section has an inspection cover in both the upper levelr and the lower level.

Configuration

V = Left-hand version, H = Right-hand version

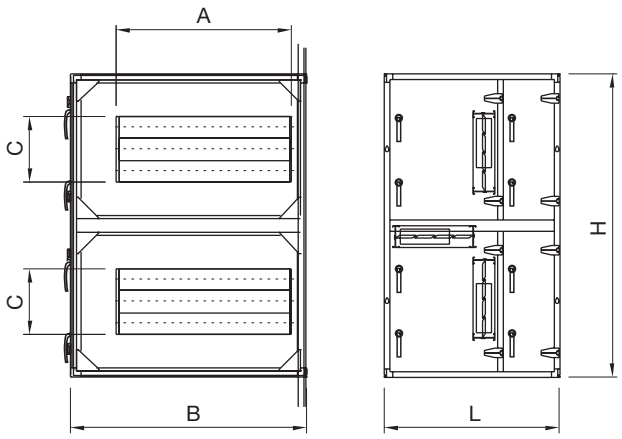


Size 060-600



Sizes 740-950 are of a split design.

Dimensions and weights



Size	Dimensions (mm)					Wgt. (kg)*	Torque req. (Nm)
	L	B	H	A	C		
060	630	850	880	500	200	55	3**
100	630	980	1010	700	200	70	3**
150	780	1080	1390	800	300	105	5**
190	780	1360	1390	1000	300	115	5**
240	930	1360	1610	1000	400	140	6**
300	930	1580	1610	1200	400	155	6**
360	930	1580	1980	1200	500	190	8**
480	930	1950	1980	1400	500	215	8**
600	1080	2160	2190	1600	600	260	12**
740	962	2480	2480	2000	500	410	3×6***
750	962	2020	2740	1600	500	370	3×6***
850	962	2560	2740	2200	500	445	3×6***
950	1162	2020	3320	1600	700	455	3×7***

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 2 damper motors are required (12×12 mm damper shaft), of which one motor should be sized according to the table. The other motor should be sized according to the table value × 0.5.

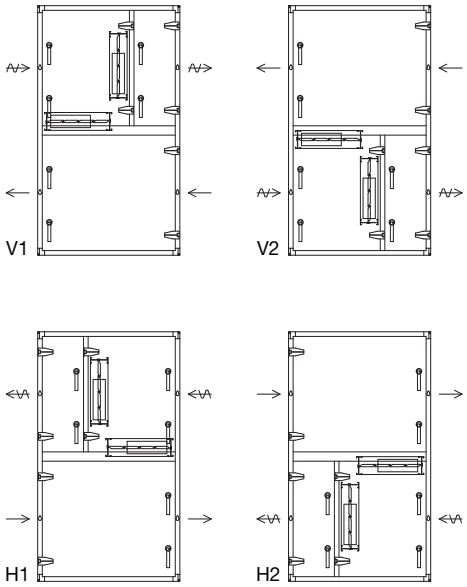
*** 3 damper motors are required.

Air recirculation section (code EBD)

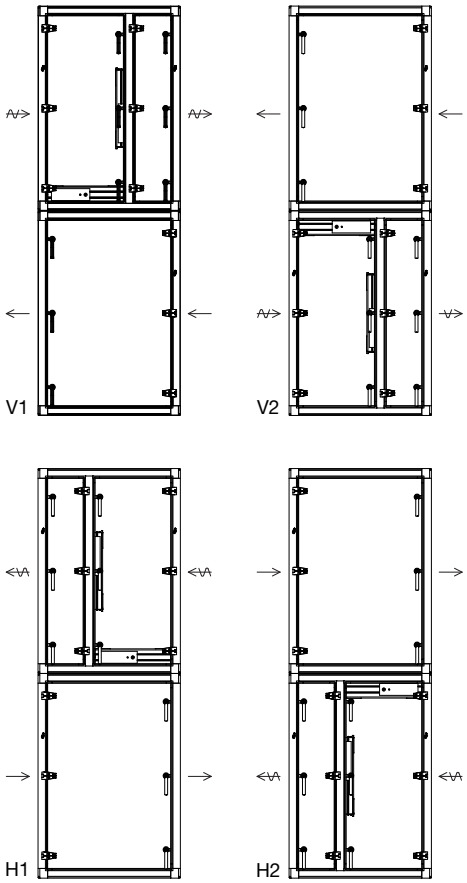
The EBD air recirculation section is a unit section with two dampers specially designed for heating rooms at night.

- The EBD air recirculation section has built-in IV Produkt type KJS dampers.
- The dampers are made of profiled sheet aluminium and meet the provision of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- For the size 060–600 units, the dampers are interconnected to a common internal shaft.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.
- The EBD air recirculation section has an inspection cover in both the upper levelr and the lower level.

Configuration

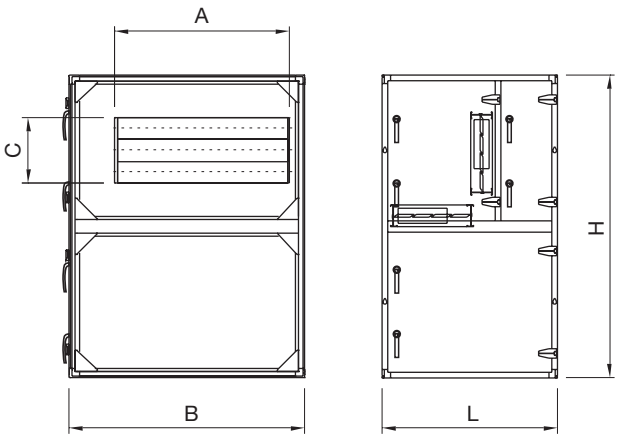


Size 060-600



Sizes 740-950 are of a split design.

Dimensions and weights



Size	Dimensions (mm)					Wgt. (kg)*	Torque req. (Nm)
	L	B	H	A	C		
060	630	850	880	500	200	50	3
100	630	980	1010	700	200	63	3
150	780	1080	1390	800	300	94	5
190	780	1360	1390	1000	300	101	5
240	930	1360	1610	1000	400	124	6
300	930	1580	1610	1200	400	136	6
360	930	1580	1980	1200	500	167	8
480	930	1950	1980	1400	500	186	8
600	1080	2160	2190	1600	600	225	12
740	962	2480	2480	2000	500	395	2×6**
750	962	2020	2740	1600	500	355	2×6**
850	962	2560	2740	2200	500	430	2×6**
950	1162	2020	3320	1600	700	445	2×7**

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 2 damper motors are required (12×12 mm damper shaft).

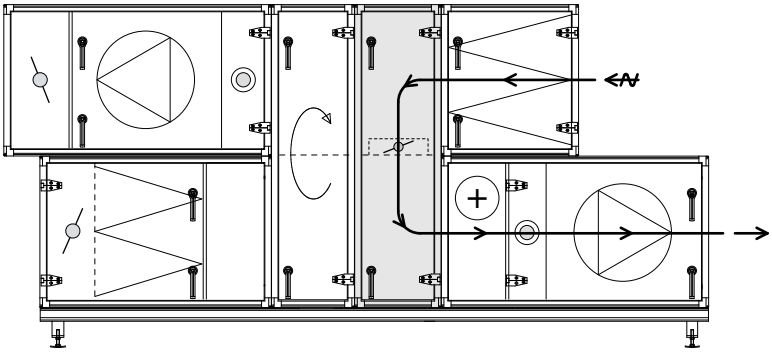
Air recirculation section (code EBE)

The EBE recirculated air section is a unit section with one damper and is designed for recirculating the extract air when heating rooms at night.

In order to obtain the intended function, the air handling unit must be equipped with a shut-off damper on the outdoor air and exhaust air sides.

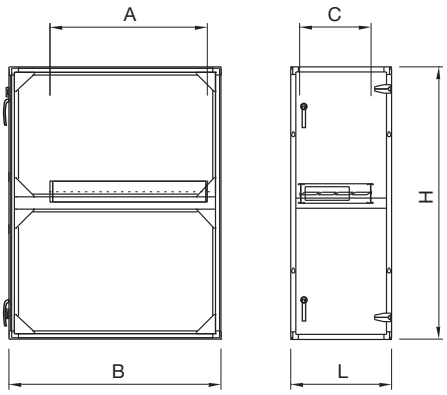
The unit section is fitted with an inspection cover in both the upper levelr and lower levels.

- The air recirculation section EBE has a built-in IV Produkt typ KJS damper.
- The damper is made of profiled sheet aluminium and meet the provision of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C.
  Permissible differential pressure: max. 1400 Pa.



Recirculation of air in the air recirculation section (grey-shaded section).

Dimensions and weights



Size	Dimensions (mm)					Wgt. (kg)*	Req.** Torque (Nm)
	L	B	H	A	C		
060	402	850	880	500	300	45	2
100	402	980	1010	700	300	55	2
150	402	1080	1390	800	300	65	3
190	402	1360	1390	1000	300	75	3
240	402	1360	1610	1000	300	80	3
300	402	1580	1610	1200	300	85	3
360	602	1580	1980	1200	500	110	4
480	602	1950	1980	1400	500	125	4
600	602	2160	2190	1600	500	140	6
740	642	2480	2480	2000	500	165	7
750	642	2020	2740	1600	500	150	6
850	642	2560	2740	2200	500	175	7
950	842	2020	3320	1600	700	175	8

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 1 damper motor is required (12×12 mm damper shaft)

Fan section (code EFA-FD/FR)

The EFA-FD/FR fan sections are unit sections with built-in fan with horizontal or vertical outlet for use as supply air or extract air fans in ventilation systems together with other functional sections in the Flexomix series.

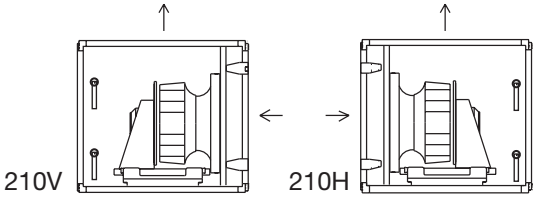
Design

- **EFA-FD** with direct-driven fan (code **ELFD**). The direct-driven fans are supplied with one of the following types of motor:
  - EC motor with built-in electronic speed control
  - Typ F1 motor with mounted frequency inverter
  - Motor to efficiency class eff1/IE2, for connection to an external frequency inverter. The motors for impeller size 025-071 are equipped with thermo-contact, motors for impeller size 080-090 have a termistor.
- **EFA-FR** with belt-driven fan (code **ELFR**). The belt-driven fan is available in two versions:
  - ELFR-FB belt-driven centrifugal fan with casing, forward-curved blades.
  - ELFR-BB belt-driven centrifugal fan with casing, backward-curved blades (Sizes 150-950).
- To facilitate servicing, the fan unit is simple to withdraw from the casing.
- For adequate motor cooling, the ambient air temperature should not exceed 50 ˚C.
- The fan and motor are effectively isolated from the casing by an anti-vibration outlet connection and rubber mountings sized to meet the operating conditions of the fan. The normal resonant frequency is 7–10 Hz.
- The fan section outlet is as standard equipped with an end connection.
- The design of some of the components in the fan system does not conform to corrosion resistance class C4.

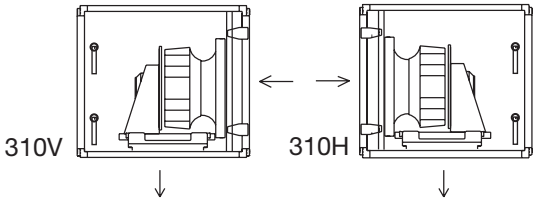
Other information can be read under the Complete functional sections tab, Direct-driven fan (code ELFD) and Belt-driven fan (code ELFR).

Configuration EFA-FD

ELFD-060 – 950

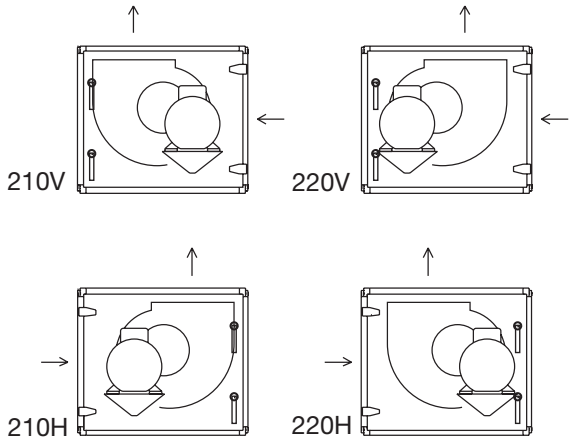


ELFD-060 – 190

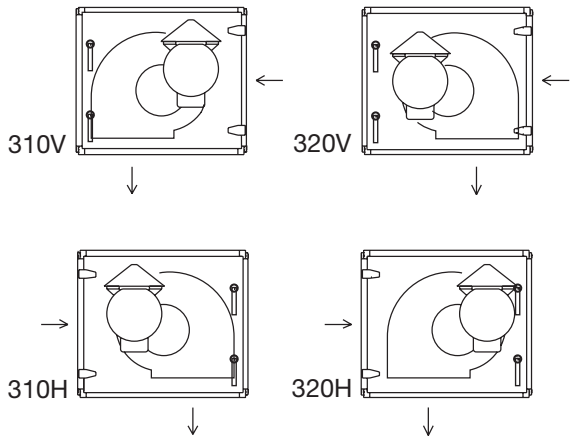


Configuration EFA-FR

ELFR-060 – 950-FB, ELFR-150 – 950-BB



ELFR-060 – 190-FB, ELFR-150 – 190-BB



Accessories for the fan section

Outlet:

- Connection frame, small (code MIET-AF-01-a). For fan section EFA-FR with belt-driven fan (code ELFR).
- Connection frame, large (code EMMT-02-a-1)
- Flexible connection, small (code MIET-AF-02-a). For fan section EFA-FR with belt-driven fan (code ELFR)
- Flexible connection, large (code EMMT-03-a-1)

Inlet:

- Connection frame, large (code EMMT-02-a-1)
- Connection frame, maximum (code EMMT-02-a-2)

See also the section on Accessories.

Accessories EFA-FD

- Steel-spring anti-vibration mountings (Sizes 360–950) (code MIET-FD-03-a-d)
- Manometer type airflow meter (code MIET-AF-09-d-DD)
- Electronic airflow meter (code MIET-AF-10)

See also the section on Accessories.

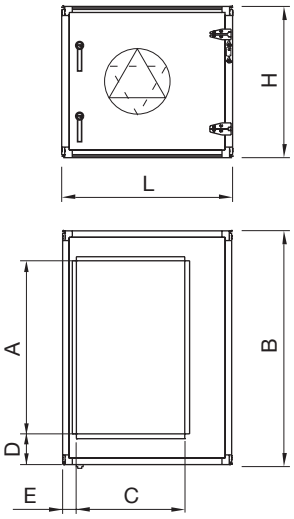
Accessories EFA-FR

- Steel-spring anti-vibration mountings (Sizes 150–600) (code MIET-AF-03-a)
- Measurement tapping for flow meter excl. meter (for ELFR-FB), (code MIET-AF-08-d-FB)
- Manometer type airflow meter (for ELFR-FB), (code MIET-AF-09-d-FB)
- Manometer type airflow meter (for ELFR-BB), (code MIET-AF-09-d-BB)
- Electronic airflow meter (code MIET-AF-10)

See also the section on Accessories.

Dimensions and weights

EFA-FD Fan section with ELFD fan

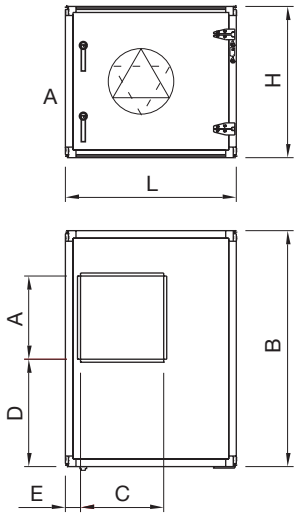


Size -aaa-	Impeller Size -bbb-	Dimensions (mm)							Total wgt. (kg)* incl. max. motor	Max. motor size IEC
		L	B	H	A	C	D	E		
060	025	630	850	440	500	300	175	165	65	71
100	028	630	980	505	700	300	140	205	80	80
150	035	780	1080	695	800	500	140	100	120	90
190	040	930	1360	695	1000	500	180	250	160	100
240	050	930	1360	805	1000	600	180	100	180	100
300	050	930	1580	805	1200	600	190	100	195	100
360	050	1080	1580	990	1200	800	190	100	225	100
360	056	1080	1580	990	1200	800	190	100	240	112
480	056	1230	1950	990	1400	800	275	100	250	100
480	063	1230	1950	990	1400	800	275	100	340	132
600	063	1230	2160	1095	1600	800	280	100	350	132
600	071	1380	2160	1095	1600	800	280	100	375	132
740	071	1420	2480	1240	2000	900	240	170	475	132
740	080	1570	2480	1240	2000	900	240	170	560	160
750	071	1420	2020	1370	1600	1000	210	50	455	132
750	080	1570	2020	1370	1600	1000	210	120	540	160
850	071	1420	2560	1370	2200	1000	180	50	505	132
850	080	1570	2560	1370	2200	1000	180	120	595	160
950	080	1570	2020	1660	1600	1200	210	50	575	160
950	090	1870	2020	1660	1600	1200	210	315	790	200

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Dimensions and weights

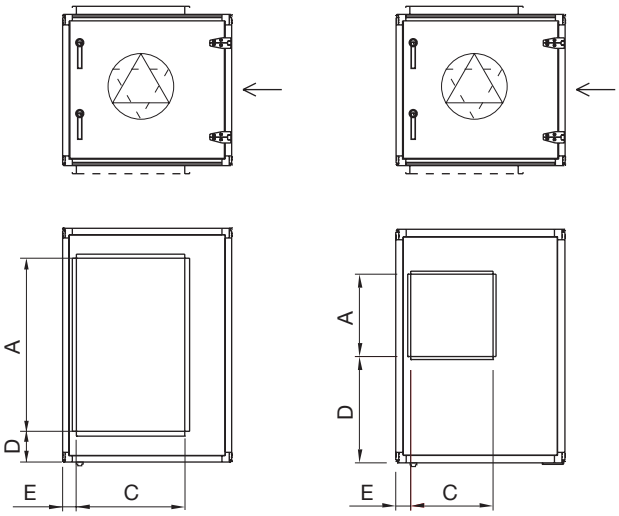
EFA-FR Fan section with ELFR fan



Size -aaa-	Impeller size -bbb-	Dimensions (mm)								Total weight (kg)* incl. max. motor		Max. motor size IEC
		L	B	H	A	C	D	E V.210 & 310	E V.220 & 320	ELFR-FB	ELFR-BB	
060	016	630	850	440	230	230	380	80	320	65	–	80
100	020	630	980	505	280	280	480	65	285	100	–	100
150	028	780	1080	695	385	385	490	65	330	135	140	112
190	028	930	1360	695	385	385	700	65	480	155	160	112
240	035	930	1360	805	475	475	550	75	380	220	225	132
300	035	930	1580	805	475	475	730	75	380	235	240	132
360	040	1230	1580	990	530	530	730	95	605	280	285	132
480	045	1230	1950	990	570	570	780	210	450	385	390	160
600	050	1230	2160	1095	640	640	780	255	335	435	445	160
740	050	1420	2480	1240	640	640	920	424	356	510	515	160
740	056	1570	2480	1240	720	720	880	130	719	575	585	180M
750	056	1570	2020	1370	720	720	899	130	719	555	565	180M
750	063	2020	2020	1370	806	806	607	143	1070	615	635	180
850	056	1570	2560	1370	720	720	920	130	719	600	610	180M
850	063	1720	2560	1370	806	806	877	131	782	625	645	180M
950	063	2020	2020	1660	806	806	607	144	1070	645	665	180
950	071	2170	2020	1660	903	903	558	233	1033	705	715	180

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Connection frames, outlet, Dimensions



To EFA-FD fan section *To EFA-FR fan section*

For connection frames, inlet, see the EMMT-02.

Connection frame for the EFA-FD Fan section

Size -aaa-	Impeller size -bbb-	Large frame, EMMT-02, Dimensions (mm)			
		A	C	D	E
060	025	500	300	175	165
100	028	700	300	140	205
150	035	800	500	140	100
190	040	1000	500	180	250
240	050	1000	600	180	100
300	050	1200	600	190	100
360	050, 056	1200	800	190	100
480	056, 063	1400	800	275	100
600	063, 071	1600	800	280	100
740	071	2000	900	240	170
740	080	2000	900	240	170
750	071	1600	1000	210	50
750	080	1600	1000	210	120
850	071	2200	1000	180	50
850	080	2200	1000	180	120
950	080	1600	1200	210	50
950	090	1600	1200	210	315

Connection frame for the EFA-FR Fan section

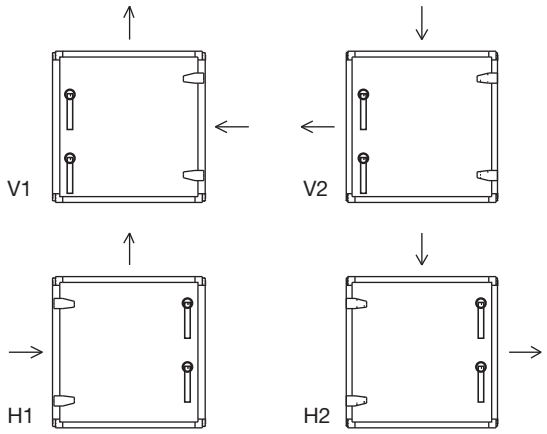
Size -aaa-	Impeller size -bbb-	Small frame, MIET-AF-01, Dimensions (mm)					Large frame, EMMT-02, Dimensions (mm)				
		A	C	D	E V.210 & 310	E V.220 & 320	A	C	D	E V.210 & 310	E V.220 & 320
060	016	300	300	345	65	265	500	300	175	65	265
100	020	300	300	470	65	265	700	300	140	65	265
150	028	500	500	430	65	215	800	500	140	65	215
190	028	500	500	640	65	365	1000	500	180	65	365
240	035	600	600	485	65	265	1000	600	180	65	265
300	035	600	600	665	65	265	1200	600	190	65	265
360	040	800	800	595	65	365	1200	800	190	65	365
480	045	800	800	665	200	230	1400	800	275	200	230
600	050	800	800	665	200	230	1600	800	280	200	230
740	050	900	900	790	170	355	2000	900	240	170	355
740	056	900	900	790	130	540	2000	900	240	130	540
750	056	1000	1000	760	130	440	1600	1000	210	130	440
750	063	1000	1000	510	140	875	1600	1000	210	140	875
850	056	1000	1000	780	130	440	2200	1000	180	130	440
850	063	1000	1000	780	130	590	2200	1000	180	130	590
950	063	1200	1200	410	140	675	1600	1200	210	140	675
950	071	1200	1200	410	230	735	1600	1200	210	230	735

Angle section (code EKV)

The EKV angle section is used for deflecting the air-flow through the size 060–600 units.

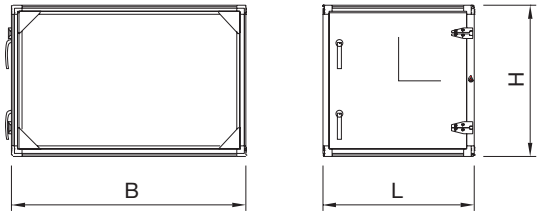
- The angle section is an empty unit section used for 90˚ vertical air deflection.
- The section has an inspection cover.
- The unit section can be fitted with a filter (code EKVT-01-a). For filter data see MIE-FB.
- The unit section can be fitted with a surface mounted type EMT-01 duct damper.

Configuration



V = Left-hand version, H = Right-hand version

Dimensions and weights



Size	Dimensions (mm)			Wgt. (kg)*
	L	B	H	
060	440	850	440	25
100	505	980	505	30
150	695	1080	695	45
190	695	1360	695	50
240	805	1360	805	60
300	805	1580	805	65
360	990	1580	990	80
480	990	1950	990	90
600	1095	2160	1095	110

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
EKV	2	6	7	6	3	4	4	4

Accessories

- Filter fitting (code EKVT-01-a)

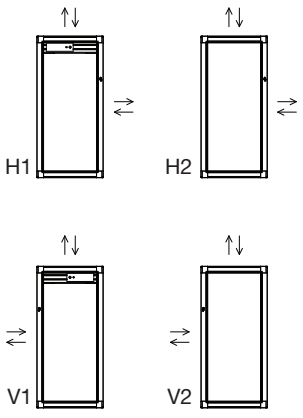
See also the section on Accessories.

Connection section (code EAC)

The EAC connection section is used for deflecting the airflow through the size 740–950 units. Can be equipped with a damper to obtain an intake function.

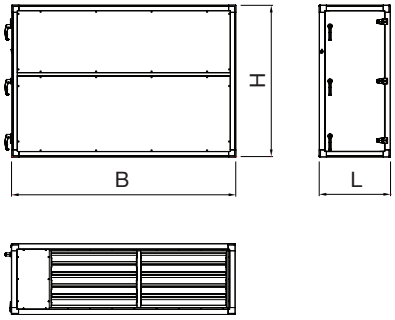
- The damper, of IV Produkt type KJS, is made of anodised profiled sheet aluminium and meets the provisions of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and silicone tubular gaskets that create a seal between the blades.
- The damper has an internal shaft.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).
- Permissible temperature range: -40 to +80 ˚C. Permissible differential pressure: max. 1400 Pa.

Configuration



V = Left-hand version, H = Right-hand version

Dimensions and weights

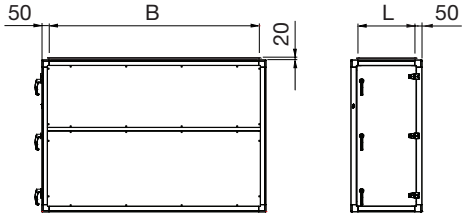


Size	Dimensions (mm)			Wgt. (kg)* excl. damper	Req.** torque (Nm)
	L	B	H		
740	642	2480	1240	135	6
750	642	2020	1370	120	6
850	642	2560	1370	145	6
950	842	2020	1660	150	7

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** 1 damper motor is required (12×12 mm damper shaft)

Dimensions, Connection frame (code EBAT-01)



Size	Dimensions (mm)	
	L	B
740	540	2380
750	540	1920
850	540	2460
950	740	1920

Accessories

- Connection frame (code EBAT-01-a)
- Flexible connection (code EBAT-02-a)
- Damper motor, mounted (code KJST-04 -a-b)

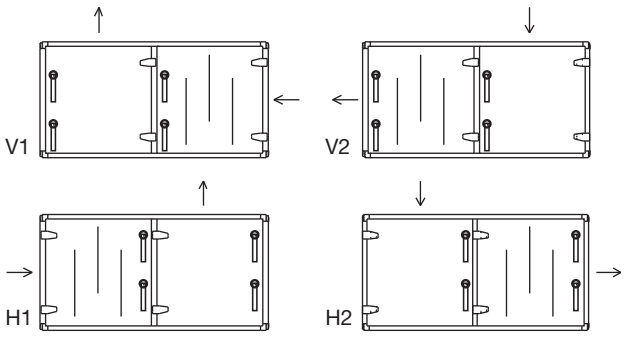
See also the section on Accessories.

Angle silencer (code ELV)

The ELV angle silencer is used for deflecting the airflow in combination with sound attenuation.

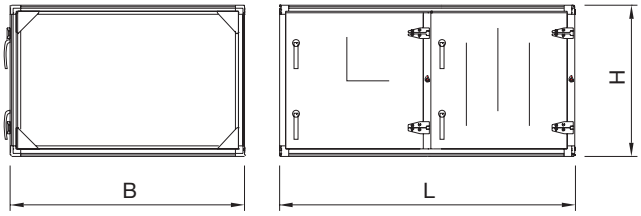
- The angle silencer is a unit section containing sound baffle elements and is used for 90˚ vertical deflection of the airflow.
- The section has an inspection cover.
- The sound attenuating baffle elements are 200 mm thick.
- The baffle material, which is mineral wool, is externally lined with cleanable woven fabric. The material is type approved for lining the inner surfaces of ventilation ducts.
- In version UB (withdrawable) the baffles are mounted on slide rails and can be easily withdrawn from the casing for cleaning.
- In version EB (not withdrawable) the baffles are fixed in their positions.
- Permissible max. temperature: 50 ˚C.
- The face edges of the baffle elements are pointed to minimise the pressure drop.

Configuration



V = Left-hand version, H = Right-hand version

Dimensions and weights



Size	Dimensions (mm)			Wgt. (kg)* with type UB baffles
	L	B	H	
060	930	850	440	60
100	930	980	505	70
150	1080	1080	695	100
190	1080	1360	695	110
240	1230	1360	805	160
300	1230	1580	805	180
360	1530	1580	990	220
480	1530	1950	990	260
600	1530	2160	1095	295
740	1570	2480	1240	365
750	1720	2020	1370	360
850	1720	2560	1370	435
950	1870	2020	1660	425

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

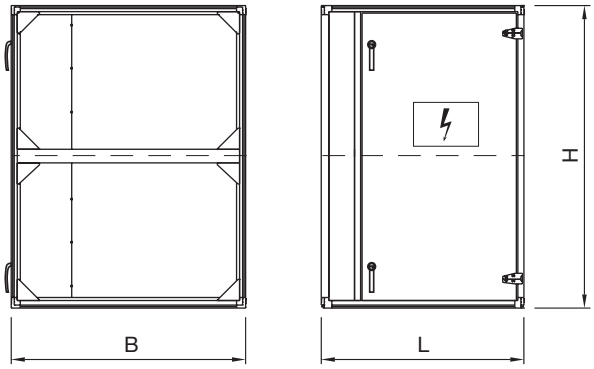
Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
060–190	5	7	12	23	38	30	27	13
240–950	6	10	18	30	41	35	30	16

Media section (code EMD)

The EMD media section, sizes 060–600, has a shielded space for the installation of electric and control equipment. The media section is of two-level design.

Dimensions and weights



Size	Dimensions (mm)			Wgt. (kg)*
	L	B	H	
060	930	850	880	80
100	930	980	1010	90
150	930	1080	1390	110
190	930	1360	1390	120
240	930	1360	1610	130
300	930	1580	1610	140
360	930	1580	1980	155
480	930	1950	1980	175
600	930	2160	2190	190

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Available space for a control cubicle

Size	Dimensions (mm)		
	B	H	Depth
060	680	780	230
100	680	910	230
150	680	1290	230
190	680	1290	230
240	680	1510	280
300	680	1510	280
360	680	1880	280
480	680	1880	280
600	680	2090	280

Cooling units

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

EcoCooler cooling unit (code ACU)

The ACU EcoCooler is a complete cooling unit designed for stepless cooling of the supply air. The cooling unit contains a cooling circuit with evaporator and condenser coils, speed-controlled compressor(s), electronic expansion valves and electrical equipment for power input and safety – all ready-built, wired and tested at the factory.

Depending on size, the EcoCooler can also be equipped with 1-3 step-by-step switched compressors.

The unit is equipped with an ACA (Automatic Cooling Adjustment) function. This function enhances the unit's reliability in operation and enables cooling operation within a large flow range under variable airflow conditions.

The evaporator coil is designed to enable the outflow of condensate to a drip tray without the need for a droplet separator. The coil has reinforced fins for enhanced protection against corrosion.

- 10 unit sizes in the airflow range of 0.3–8.5 m³/s with 13–142 kW cooling capacity at $t_{outdoor\ air}$ +26 ˚C, RH 50% and $t_{extract\ air}$ +22 ˚C.
- 2 capacity variants for sizes 150–480.
- 3 capacity variants for sizes 600–850.
- Stepless cooling output.
- Environmentally compatible refrigerant R407C.
- CE marked, tested and documented cooling installation.
- Service-friendly, simple to design and install.
- The IV Produkt Designer product selection program offers simple project design and enables you to optimize the performance.

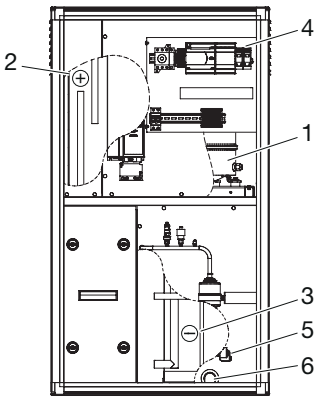
Design

The cooling unit is designed as a direct-acting cooling system, DX, with less than 10 kg refrigerant per circuit. The evaporator heat, cooled and removed by the compressor, is transferred to the condenser in the extract air.

A lockable cover in the front of the unit allows access for commissioning and servicing the cooling unit. The coils and compressors can be inspected via access covers and doors. The compressors are anti-vibration mounted in the unit.

The casing of the cooling unit is of the same design and those of the other functional sections. The evaporator and condenser coils consist of copper tubes with aluminium fins. The drip trays are made of stainless steel with plastic drain connections.

Refrigerant circuit



1. Compressor
2. Condenser
3. Evaporator
4. Electric equipment
5. Electronic expansion valve
6. Condensate drain Ø 32 mm

The refrigerant circuit contains the following:

- Fully hermetic reciprocating compressors with oil sight glass and temperature and current-sensing phase switch.
- The evaporator coil with drip tray, condenser coil, drying filter, electronic expansion valve, low and high pressure switches and pressure overload protection equipment.
- Pressure probe for tranmitting readings to the ACA function.
- Refrigerant tubes made of copper jointed together by brazing.
- Service connection and refrigerant.

Project design

Plan the unit for optional supply air and extract air flows within the given airflow range. Exact sizing should be carried out in the IV Produkt Designer product selection program.

Electrical equipment

The cooling unit contains a main switch, frequency inverter, protective motor switch, contactors and equipment for controlling the compressors. The cooling capacity is controlled in response to a 0–10 VDC external input. The cooling unit is allowed to start when both fans are operating in response to closure of external contacts (potential-free, 24 V).

If the airflow is low and the exhaust air temperature is higher than 50 ˚C, the ACA function reduces the cooling capacity.

If a pressure switch or protective motor switch trips, the cooling circuit(s) in use is/are switched out and a group alarm is initiated via potential-free contacts.

See also Wiring instructions and fuse protections.

Commissioning

The installation of units with 3 kg refrigerant or more per circuit require leakage inspections by a certified refrigeration technician. Prior to commissioning, the fitter must attend to certain measures. See the separate Operation and maintenance instructions.

Technical data, 100–480

Size			100	150		190		240		300		360		480	
Capacity variant			1V	1V	2V	1V	2V	1V	2V	1V	2V	1V	2V	1V	2V
Air volume	min.	(m^3/s)	0.25	0.38	0.44	0.50		0.58	0.69	0.68		0.85		1.07	
	max.	m^3/s)	0.95	1.61		2.12		2.48		2.91		3.64		4.61	
Max. permissible cooling capacity*		(kW)	12.9	20.7	23.3	22.3	28.9	31.7	36.0	33.4	40.0	48.5	61.9	66.0	78.1
Nom. power required by compressor(s)		(kW)	3.0	4.5	5.5	4.5	6.6	6.8	8.6	6.8	9.5	10.2	16.1	14.9	19.3
Number of compressors		(qty.)	1	1		1		1		1		2		2	
Max. operating current, 3×400V+N 50Hz		(A)	9	15	20	15	20	20	29	20	29	29	43	41	54
Rec. fuse protection, 3×400V+N 50Hz		(A)	16	20	25	20	25	25	32	25	32	32	50	50	63
Refrigerant, R407C	Circuit 1	(kg)	2.9	4.8	4.8	6.0	6.0	7.1	7.1	8.1	8.1	6.2	6.9	6.9	7.6
	Circuit 2	(kg)	–	–	–	–	–	–	–	–	–	4.6	6.6	6.5	6.4

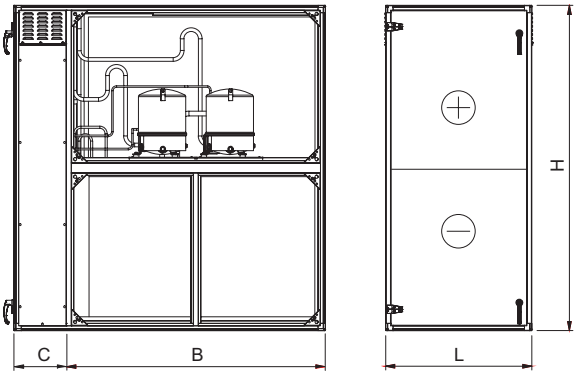
* Applicable to $t_{outdoor\ air}$ +26 ˚C, RH 50% and $t_{extract\ air}$ +22 ˚C.

Technical data, 600–850

Size			600			740			850		
Capacity variant			1V	2V	3V	1V	2V	3V	1V	2V	3V
Air volume	min.	(m^3/s)	1.34			1.71			1.98		
	max.	m^3/s)	5.75			7.34			8.47		
Max. permissible cooling capacity*		(kW)	73.8	83.5	96.8	96.5	105.5	121.7	109.3	125.7	142.3
Nom. power required by compressor(s)		(kW)	15.4	18.3	22.8	20.1	24.2	30.0	21.8	28.8	36.0
Number of compressors		(qty.)	2			4			4		
Max. operating current, 3×400V+N 50Hz		(A)	43	54	57	51	64	73	55	73	88
Rec. fuse protection, 3×400V+N 50Hz		(A)	50	63	63	63	80	80	63	80	100
Refrigerant, R407C	Circuit 1	(kg)	8.6	8.6	9.2	6.2	6.2	6.6	6.8	6.8	9.2
	Circuit 2	(kg)	7.0	7.0	7.4	7.6	7.6	8.7	8.6	8.6	10.0
	Circuit 3	(kg)	–	–	–	5.8	5.8	7.1	7.2	7.2	8.8

* Applicable to $t_{outdoor\ air}$ +26 ˚C, RH 50% and $t_{extract\ air}$ +22 ˚C.

Dimensions and weights



Size	Dimensions (mm)				Vikt	
	L	B	H	C	Eff-var.	(kg)*
100	780	980	1010	320	1	195
150	780	1080	1390	320	1 2	240 249
190	780	1360	1390	320	1 2	268 280
240	780	1360	1606	320	1 2	298 328
300	780	1576	1606	320	1 2	304 343
360	890	1576	1980	320	1 2	403 482
480	890	1950	1980	320	1 2	511 569
600	890	2160	2190	320	1 2 3	563 608 628
740	970	2480	2480**	340	1 2 3	904 948 1006
850	970	2560	2740**	340	1 2 3	999 1013 1148

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** Add the height of the support frame: 195 mm

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
ECU	1	1	2	3	3	3	3	3

Addition, extract air side (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
100	1	0	0	0	3	5	6	3
150	2	0	0	0	6	10	8	4
190	2	0	0	0	6	10	8	4
240	2	0	1	1	9	14	10	5
300	2	0	1	1	9	14	10	5
360	2	0	1	1	9	14	10	5
480-1V	2	0	1	1	9	14	10	5
480-2V	0	1	1	1	7	15	23	12
600-1V	2	0	1	1	9	14	10	5
600-2V, -3V	0	1	1	1	7	15	23	12
740-1V	0	0	0	0	4	8	5	3
740-2V, -3V	1	0	1	0	7	12	11	6
850-1V	1	0	1	0	7	12	11	6
850-2V, -3V	1	1	1	1	5	12	19	10

Accessories

- Water trap (code MIET-CL-04)

See also the section on Accessories.

EcoCooler cooling unit with cooling energy recovery (code ACR)

The ACR EcoCooler is a complete cooling unit designed for stepless cooling of the supply air. The unit has a built-in rotary heat exchanger for cooling energy recovery in sequence with the cooling unit. This ensures maximum energy utilisation and a low connected load. In addition to the rotary heat exchanger, the cooling unit contains a cooling circuit with evaporator and condenser coils, speed-controlled compressor(s), electronic expansion valves and electrical equipment for power input and safety – all ready-built, wired and tested at the factory.

Depending on size, the EcoCooler can also be equipped with 1-3 step-by-step switched compressors.

The unit is equipped with an ACA (Automatic Cooling Adjustment) function. This function enhances the unit's reliability in operation and enables cooling operation within a large flow range under variable airflow conditions.

The evaporator coil is designed to enable the outflow of condensate to a drip tray without the need for a droplet separator. The coil has reinforced fins for enhanced protection against corrosion.

The unit can be supplied in split version to facilitate transport within the building site.

For all sizes, the rotary heat exchanger can be selected in the standard version or as a plus rotor with or without hygroscopic treatment for optimized total cooling capacity.

If heating is required, the rotary heat exchanger operates in sequence with the reheater for energy recovery from the extract air.

- 10 unit sizes in the airflow range of 0.3–8.5 m³/s with 17–185 kW cooling capacity at $t_{outdoor\ air}$ +26 ˚C, RH 50% and $t_{extract\ air}$ +22 ˚C.
- 2 capacity variants for sizes 150–480.
- 3 capacity variants for sizes 600–850.
- Stepless cooling capacity and cooling energy recovery.
- Environmentally compatible refrigerant R407C.
- CE marked, tested and documented cooling installation.
- Service-friendly, simple to design and install.
- The IV Produkt Designer product selection program offers simple project design and enables you to optimize the performance.

Design

The cooling unit is designed as a direct-acting cooling system, DX, with less than 10 kg refrigerant per circuit. In the cooling case, when the outdoor temperature is higher than the indoor temperature, the rotary heat exchanger operates in sequence with the cooling unit to cool the supply air. In this case, the rotor transfers the temperature and moisture from the outdoor air to the exhaust air, which reduces the need for cooling from the active cooling unit.

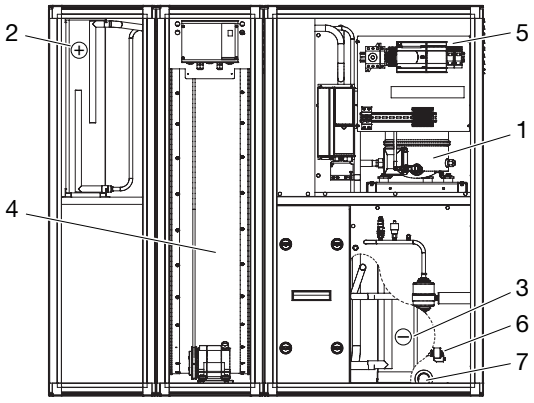
The evaporator heat, cooled and removed by the compressor, is transferred to the condenser in the extract air.

A lockable cover in the front of the unit allows access for commissioning and servicing the cooling unit. Coils, compressors and rotary heat exchanger can be inspected via access covers and doors. The compressors are anti-vibration mounted in the unit.

The casing of the cooling unit is of the same design and those of the other functional sections. The evaporator and condenser coils consist of copper tubes with aluminium fins. The drip trays are made of stainless steel with plastic drain connections.

The size 100–360 units are supplied without support frame. The other sizes are supplied on a support frame with legs and adjustable feet.

Refrigeration circuit



1. Compressor *2. Condenser*
3. Evaporator *4. Rotary heat exchanger*
5. Electrical equipm. *6. Electronic expansion valve*
7. Condensate drain, Ø 32 mm

The refrigerant circuit contains the following:

- Fully hermetic reciprocating compressors with oil sight glass and temperature and current-sensing phase switch.
- The evaporator coil with drip tray, condenser coil, drying filter, electronic expansion valve, low and high pressure switches and pressure overload protection equipment.
- Pressure probe for transmitting readings to the ACA function.
- Refrigerant tubes made of copper jointed together by brazing.
- Service connection and refrigerant.

Project design

Plan the unit for optional supply air and extract air flows within the given airflow range. Exact sizing should be carried out in the IV Produkt Designer product selection program.

Electrical equipment

The cooling unit contains a main switch, frequency inverter, protective motor switch, contactors and equipment for controlling the compressors. The cooling capacity is controlled in response to a 0–10 VDC external input. The cooling unit is allowed to start when both fans are operating in response to closure of external contacts (potential-free, 24 V).

If the airflow is low and the exhaust air temperature is higher than 50 ˚C, the ACA function reduces the cooling capacity.

If a pressure switch or protective motor switch trips, the cooling circuit(s) in use is/are switched out and a group alarm is initiated via potential-free contacts.

The rotary heat exchanger contains an electronic controller, drive motor, rotation guard, protective motor switch and alarm. The equipment should be wired to a 0–10 V control signal and a 1×230 V mains power supply, fuse protection: 6 AT.

See also Wiring instructions and fuse protections.

Commissioning

The installation of units with 3 kg refrigerant or more per circuit require leakage inspections by a certified refrigeration technician. Prior to commissioning, the fitter must attend to certain measures. See the separate Operation and maintenance instructions.

Technical data, 100–480

Size			100	150		190		240		300		360		480	
Capacity variant			1V	1V	2V	1V	2V	1V	2V	1V	2V	1V	2V	1V	2V
Air volume	min.	(m^3/s)	0.25	0.38	0.44	0.50		0,58	0,69	0.68		0.85		1.07	
	max.	m^3/s)	0.95	1.61		2.12		2.48		2,91		3.64		4.61	
Max. permissible cooling capacity*		(kW)	17.1	26.6	29.6	29.7	38.2	41.3	46.5	44.1	35.2	62.7	79.6	86.4	102.8
Nom. power required by compressor(s)		(kW)	3.0	4.5	5.3	4.5	6.4	6.5	8.3	7.6	9.3	9.7	15.5	14.4	18.2
Number of compressors		(qty.)	1	1		1		1		1		2		2	
Max. operating current, 3×400V+N 50Hz		(A)	9	15	20	15	20	20	29	20	29	29	43	41	54
Rec. fuse protection, 3×400V+N 50Hz		(A)	16	20	25	20	25	25	32	25	32	32	50	50	63
Refrigerant, R407C	Circuit 1	(kg)	2.9	4.8	4.8	6.0	6.0	7.1	7.1	8.1	8.1	6.2	6.9	6.9	7.6
	Circuit 2	(kg)	–	–	–	–	–	–	–	–	–	4.6	6.6	6.5	6.4

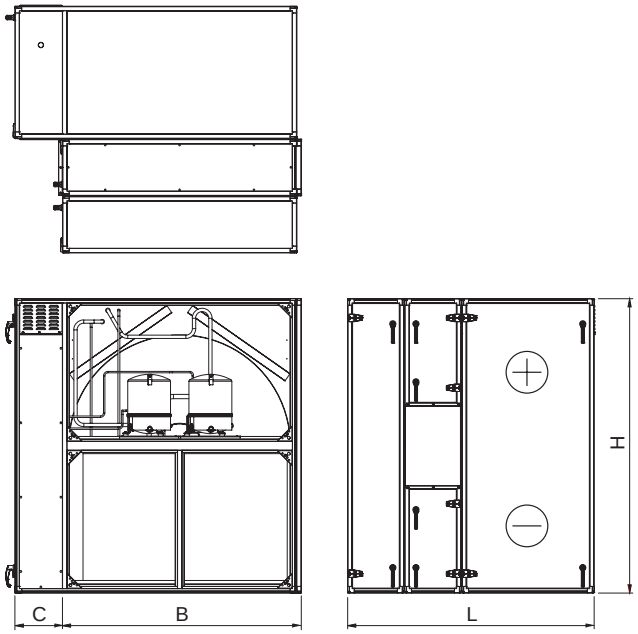
* Applicable to $t_{outdoor\ air}$ +26 °C, RH 50%, $t_{extract\ air}$ +22 °C and standard rotor in hygroscopic version (HY).

Technical data, 600–850

Size			600			740			850		
Capacity variant			1V	2V	3V	1V	2V	3V	1V	2V	3V
Air volume	min.	(m^3/s)	1.34			1.71			1.98		
	max.	m^3/s)	5.75			7.34			8.47		
Max. permissible cooling capacity*		(kW)	97.1	110.9	127.2	126.4	138.3	158.9	143.0	163.4	185.1
Nom. power required by compressor(s)		(kW)	14.9	17.4	22.1	18.9	22.8	28.6	20.7	27.4	34.0
Number of compressors		(qty.)	2			4			4		
Max. operating current, 3×400V+N 50Hz		(A)	43	54	57	51	64	73	55	73	88
Rec. fuse protection, 3×400V+N 50Hz		(A)	50	63	63	63	80	80	63	80	100
Refrigerant, R407C	Circuit 1	(kg)	8.6	8.6	9.2	6.2	6.2	6.6	6.8	6.8	9.2
	Circuit 2	(kg)	7.0	7.0	7.4	7.6	7.6	8.7	8.6	8.6	10.0
	Circuit 3	(kg)	–	–	–	5.8	5.8	7.1	7.2	7.2	8.8

* Applicable to $t_{outdoor\ air}$ +26 °C, RH 50%, $t_{extract\ air}$ +22 °C and standard rotor in hygroscopic version (HY).

Dimensions and weights



Size	Dimensions (mm)				Vikt	
	L	B	H	C	Eff-var.	(kg)*
100	1540	980+30	1010	320	1	340
150	1540	1080+30	1390	320	1 2	449 461
190	1540	1360+30	1390	320	1 2	492 505
240	1540	1360+30	1606	320	1 2	537 568
300	1540	1576+30	1606	320	1 2	579 618
360	1650	1576+30	1980	320	1 2	689 768
480	1650	1950+30	1980**	320	1 2	947 1005
600	1650	2160+30	2190**	320	1 2 3	1059 1104 1124
740	1810	2480	2480**	340	1 2 3	1537 1581 1639
850	1810	2560	2740**	340	1 2 3	1760 1774 1909

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

** Add the height of the support frame: 195 mm.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
ECR	4	5	6	6	7	8	9	11

Addition, extract air side (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
100	1	0	0	0	3	5	6	3
150	2	0	0	0	6	10	8	4
190	2	0	0	0	6	10	8	4
240	2	0	1	1	9	14	10	5
300	2	0	1	1	9	14	10	5
360	2	0	1	1	9	14	10	5
480- 1V	2	0	1	1	9	14	10	5
480-2V	0	1	1	1	7	15	23	12
600-1V	0	1	2	1	9	14	17	17
600-2V, -3V	0	1	1	1	7	15	23	12
740-1V	0	0	0	0	4	8	5	3
740-2V, -3V	1	0	1	0	7	12	11	6
850-1V, -2V	1	0	1	0	7	12	11	6
850-3V	1	1	1	1	5	12	19	10

Accessories

- Split version (code ECRT-01)
- Water trap (code MIET-CL-04)

See also the section on Accessories.

Cooling unit/heat pump Q-Cooler (code EQU)

The EQU Q-Cooler is a complete reversible cooling unit designed for cooling the supply air and, alternatively if heating is required, operating as a heat pump recovering heat from the extract air and transferring the heat to the supply air. The cooling unit contains supply and extract air coils, cooling circuits and electrical equipment for power input and safety – all ready-built, wired and tested at the factory.

In the winter, no other heat recovery is needed other than the built-in reversible cooling operational system, since the unit is combined with a rotary heat exchanger.

In the event of very high outdoor and indoor temperatures, the unit in capacity variant 2 can as an option be equipped with a WCC water-cooled condenser.

- 6 sizes in the airflow range of 1.2–6.0 m³/s with a cooling capacity range of 26–115 kW.
- 2 capacity variants for the size 190–480 units.
- 3 capacity variants for the size 600 units.
- Capacity control of the cooling capacity divided into 3 to 8 steps.
- The extra WCC module WCC (Water-cooled condenser) enables operation with variable airflow to 50% of the min. airflow.
- Environmentally compatible refrigerant R407C.
- CE marked, tested and documented cooling installation.
- Heat pump operation as a heat recovery function in the winter, annual temperature efficiency of 70 %.
- Service-friendly design, simple to plan and install.
- The IV Produkt Designer product selection program offers simple project design and enables you to optimize the performance.

Design

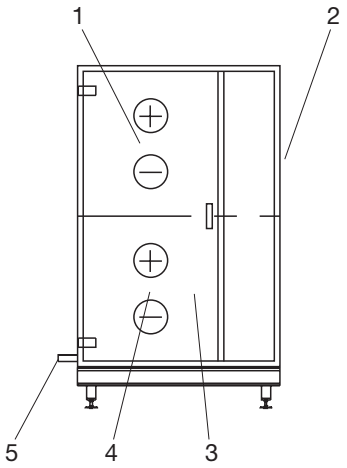
The cooling unit is designed as a direct-expansion system with a minimum volume of refrigerant.

The compressor circuits cool the supply air in the summer using a supply air coil where the absorbed heat is transferred to the extract air coil. In the winter, the cooling process is reversed and heat is recovered out of the extract air and transferred to the supply air.

The design of the cooling unit is service-friendly with the circuits located outside the air stream. The system can be inspected and serviced from lockable inspection covers in the front end of the unit.

The casing and framework of the cooling unit is of the same design and those of the other functional sections in the Flexomix. The supply and extract air coils consist of copper tubes with aluminium fins. The drip tray is made of SLC-treated metal with a plastic drain connection. Supplied on a support frame with legs and adjustable feet.

Refrigerant circuit



1. Supply air coil *2. Electrical equipment*
3. Compressor *4. Extract air coil*
5. Condensate drain, Ø 32 mm

The refrigerant circuit contains the following:

- Fully hermetic compressors with oil sight glass, crank case heater as well as temperature and current-sensing phase switch. Reversing valve for cooling/heating operation.
- Supply and extract air coils. Refrigerant tank with sight glass, safety valve, drying filter, pressure reducing device for expansion, condenser pressure as well as low and high pressure switches.
- Refrigerant tubes made of copper jointed together by brazing.
- Service connection and refrigerant.

Project design

Plan the unit for optional supply air and extract air flows within the given airflow range. Exact sizing and possible need for climate control or EQUT-02 electric heating can be obtained from the IV Produkt Designer product selection program.

Electrical equipment

The cooling unit contains a main switch, protective motor switch, contacts, control equipment for the compressors and anti-frost protection device. The cooling capacity and heat recovery are regulated in response to signals from two external 0-10 V DC inputs together with the 24 V AC power supply.

The cooling unit is allowed to start when both fans are operating by means of closure of external contacts (potential-free, 24 V). If a pressure switch or a protective motor switch trips, each circuit is switched out and a group alarm is initiated via potential-free contacts.

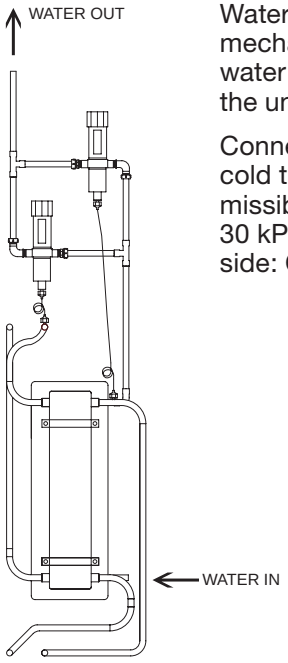
Commissioning

Cooling units that contain more than 3 kg refrigerant require commissioning by a certified refrigeration technician.

Prior to commissioning, the fitter must see to the following:

1. Connect the power supply to the main switch and wire the control signal cables for cooling and heating operation.
2. Connect the condensate discharge pipe across a water trap to the floor drain.
3. Connect the blow-off line from the safety valve of the cooling circuit. The blow-off line on top of the cooling unit should be connected according to Swedish Refrigeration Standard, Section 13.10 dealing with outlet pipes. If the room is continuously ventilated (24 h/day) and has a free room volume according to the table below, no special outlet pipe is required.
4. Commission the design supply and extract airflows.
5. Cold water supply and drainage from the condenser, if climate control is included.

Water-cooled condenser, WCC



Water-cooled condenser with mechanical pressure controlled water saving valve mounted on the unit.

Connect the condenser to the cold tap water line: max. permissible water flow: 0.3 l/s for 30 kPa. Connection on water side: Cu 15 mm.

Free room volume and blow-off connection

Size		190		240		300		360		480		600		
Capacity variant		1	2	1	2	1	2	1	2	1	2	1	2	3
Free room volume	(m^3)	32	32	41	35	45	41	69	69	93	84	93	93	91
Connection, O.D.	(mm)	35	35	35	35	35	35	35	35	35	35	42	42	42

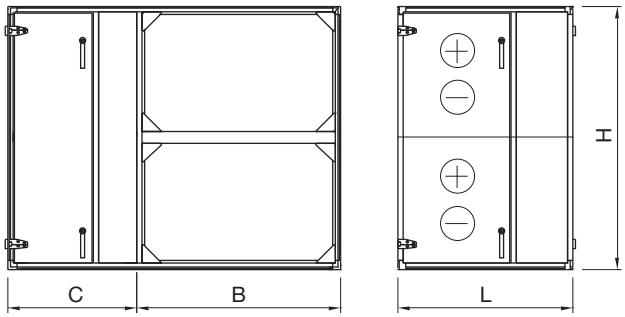
Technical data

			Size	190		240		300		360		480		600		
			Capacity variant	1	2	1	2	1	2	1	2	1	2	1	2	3
Air volume	nom.	(m^3/s)		1.25	1.41	1.56	1.79	2.00	2.27	2.49	2.81	3.13	3.52	4.09	4.68	5.49
	min.	(m^3/s)		1.10	1.24	1.37	1.58	1.76	1.96	2.19	2.47	2.75	3.10	3.60	4.12	5.11
	max.	(m^3/s)		1.86	1.90	2.08	2.40	2.66	3.00	3.31	3.60	4.17	4.80	5.45	6.00	6.00
Nom. cooling conditions*																
Nom. cooling capacity		(kW)		26.0	29.4	32.6	37.5	41.8	46.6	52.0	58.7	65.4	73.7	85.6	98.0	114.9
Nom. power required, compr.		(kW)		8.2	9.3	10.3	11.9	13.2	14.7	16.4	18.2	20.6	23.5	27.0	30.4	33.1
Nom. coefficient of cooling performance		(C.O.P.)		3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.2	3.2	3.5
Nom. heating conditions**																
Nom. heating capacity		(kW)		30.4	34.3	38.1	43.8	48.7	54.4	60.7	68.6	76.3	86.0	99.9	114.4	134.1
Nom. power required, compr.		(kW)		5.2	5.9	7.1	7.7	8.1	9.3	10.0	11.5	12.9	14.1	16.8	19.3	22.2
Nom. coefficient of heating performance				5.8	5.8	5.4	5.7	6.0	5.8	6.1	6.0	5.9	6.1	5.9	5.9	6.0
Number of compressors		(st)		2	2	2	3	3	3	4	4	4	4	4	4	4
Number of control steps		(st)		3	3	3	5	5	5	8	8	8	8	8	8	8
Max. conn. power, compressor		(kW)		8.7	9.8	10.9	12.6	14.0	15.5	17.4	19.3	21.9	24.9	28.6	32.3	35.1
Max. op. current, 3×400V~ 50Hz		(A)		16.5	18.6	20.1	24.0	25.9	29.1	32.6	37	39.4	44.0	48.0	54.8	67.2
Rec. fuse protection, 3×400V~ 50Hz		(A)		25	25	35	35	35	50	50	50	63	63	63	80	80
Max. op. current, 3×230V~ 50Hz		(A)		34.6	39.8	44.0	55.1	51.9	55.5	74.4	82.4	74.4	81.6	90.2	95.2	116.2
Rec. fuse protection, 3×230V~ 50Hz		(A)		50	50	63	63	63	63	100	100	100	100	125	125	160
Refrigerant, R407C	Circuit 1	(kg)		6,0	6.0	7.0	7.0	9.9	9.9	8.1	8.1	9.5	9.5	9.6	9.6	9.6
	Circuit 2	(kg)		9,9	9.9	12.0	12.0	14.0	14.0	21.4	21.4	26.0	26.0	29.9	29.9	29.9
Conn. power, El. heating, EQUT-02-a		(kW)		3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0

* Applicable to $t_{outdoor\ air}$ +26 ˚C, RH 50% and $t_{extract\ air}$ +22 ˚C.

** Applicable to $t_{outdoor\ air}$ +0 ˚C, RH 50% and $t_{extract\ air}$ +20 ˚C.

Dimensions and weights



Size	Capacity variant	Dimensions (mm)				Wgt. (kg)*
		L	B	C	H	
190	1	930	1360	780	1390	602
	2	930	1360	780	1390	610
240	1	930	1360	780	1606	663
	2	930	1360	780	1606	718
300	1	1080	1580	780	1606	823
	2	1080	1580	780	1606	839
360	1	1080	1580	930	1980	1016
	2	1080	1580	930	1980	1024
480	1	1080	1950	1080	1980	1163
	2	1080	1950	1080	1980	1217
600	1	1080	2160	1080	2190	1365
	2	1080	2160	1080	2190	1389
	3	1080	2160	1080	2190	1389

* The specified weight refers to casings with standard insulation. The weight of casings with insulation to fire resistance class EI30 can be calculated in the IV Produkt Designer product selection program.

Integral attenuation (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
EQU	2	1	1	2	2	3	3	4

Increase to the surroundings (dB)

Octave band Mid-frequency (Hz)	63	125	250	500	1000	2000	4000	8000
190–480	0	0	3	0	3	4	4	5
600	0	0	7	0	6	10	9	8

Accessories

- Water trap (code MIET-CL-04).
- Outdoor version (code EQUT-01-a)
  According to EMMT-04 plus a heating cable in the condensate drain line, equipped with earth-fault circuit breaker.
- Electric heating (EQUT-02-a)
  When the EQU cooling unit is combined with a rotary heat exchanger and the system cannot manage the outgoing temperature, a slight extra heating capacity is sufficient (see the Technical data). This feature does not increase the connected power supplied to the unit, but instead constitutes the difference between the capacities for meeting the cooling/heating operating conditions.

  The electric power is controlled in one step from the built-in compressor controller. Interlocking can be wired from the pressure switch included in the supply.

See also the section on Accessories.

Accessories

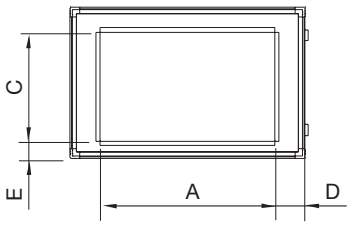
! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

End connection (code EMMT-01)

End connections can be selected for mounting on the inlet, outlet or both.

- Casing panel with connection opening.
- Can be fitted with EMMT-02 connection frame.

Dimensions



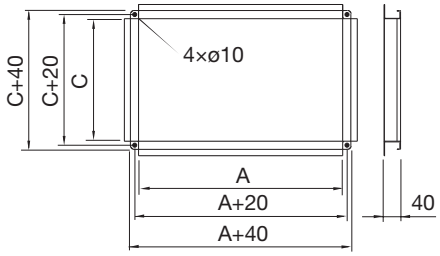
Size	Dimensions (mm)			
	A	C	D	E
060	500	300	175	70
100	700	300	140	105
150	800	500	140	100
190	1000	500	180	100
240	1000	600	180	100
300	1200	600	190	100
360	1200	800	190	95
480	1400	800	275	95
600	1600	800	280	150
740	2000	900	240	170
750	1600	1000	210	185
850	2200	1000	180	185
950	1600	1200	210	230

Connection frame (code EMMT-02)

The connection frame can be selected for mounting on the EMMT-01 and other unit sections.

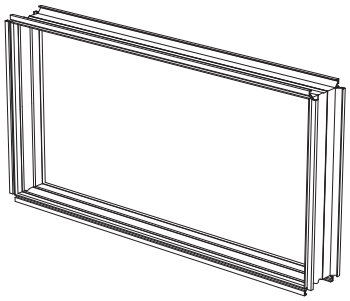
- Sheet metal frame for slip-clamp (PG) and flange connection.

Dimensions



Size	Dimensions (mm)			
	Large		Maximum	
	A	C	A	C
060	500	300	790	380
100	700	300	920	445
150	800	500	1020	635
190	1000	500	1300	635
240	1000	600	1300	740
300	1200	600	1515	740
360	1200	800	1515	930
480	1400	800	1890	930
600	1600	800	2100	1035
740	2000	900	2380	1140
750	1600	1000	1920	1270
850	2200	1000	2460	1270
950	1600	1200	1920	1560

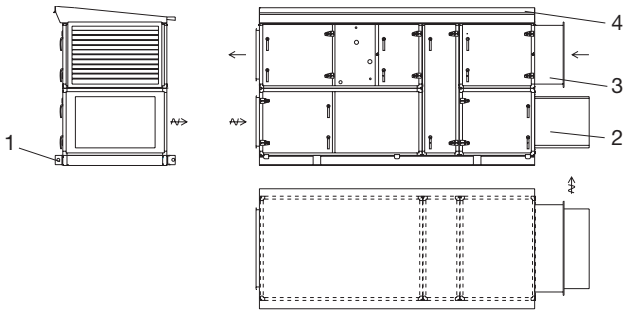
Flexible connection, inlet/outlet (code EMMT-03)



Flexible connection made of woven fabric for connection to a duct. Length: 110–150 mm

Designed for connection to an EMMT-02 connection frame.

Outdoor version (code EMMT-04)

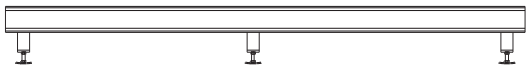


1. Support frame
2. Exhaust air hood
3. Intake air grille
4. Roof

Supplementary kit for installing the air handling unit outdoors. If the AHU is erected on the roof of a building, it must be placed on a frame or braces, on a water-tight roof. Ducts, etc. cannot be connected to the bottom of the air handling unit.

- Roof made of plastic-coated profiled sheet steel.
- Intake air grille made of baked painted sheet steel fitted to the sheet metal connection.
- Optional supplementary exhaust air hood (code EMMT-04T-a-b-FD/FR). The exhaust air hood is used for minimizing any short-circuiting airflow. Depending on the selection of fan, choose the EMMT-04T-a-b-FD for a direct-driven fan, sizes 060–850, or the EMMT-04T-a-b-FR for belt-driven fan, sizes 060–600.
- Bottom support frame made of, in most cases, extruded, natural anodised profiled sheet aluminium. Height: 100 mm. Grooves for fasteners are provided in the frame.
- Length, width, height and bottom frame dimensions can be obtained from IV Produkt Designer.

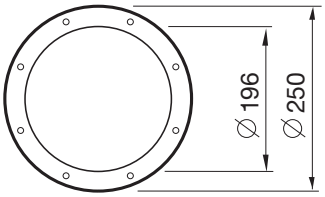
Support frame (code EMMT-05)



Floor support frame for use as a base for modules and functional sections.

- The support frame consists of extruded, profiled, anodized aluminium sections. The profiled sections are to be assembled by means of bolts. The legs have adjustable feet.
- Height: 195–245 mm.
- Length and width according to specification in IV Produkt Designer product selection program.

Inspection window (code EMMT-06, EMMT-11)

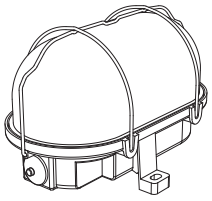


EMMT-06 = Sizes 060–600

EMMT-11 = Sizes 740–950

IThe inspection window consists of inner and outer Plexiglas panes. For casing 00 only (standard insulation) and module lengths larger than 10.

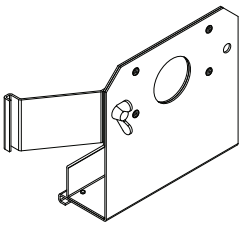
Interior light fitting (code EMMT-07)



Light fitting supplied mounted in the relevant unit section with two meter long cable in the armature. The switches of the light fittings should be located at the same spot as the other light switches in the fan room.

- The armature consists of a base made of polycarbonate with aluminium reflector and ribbed glass cover protected by steel wire mesh.
- Enclosure class IP44.
- Height: 175 mm, Width: 120 mm, Depth: 115 mm.

Lifting brackets (code EMMT-08)



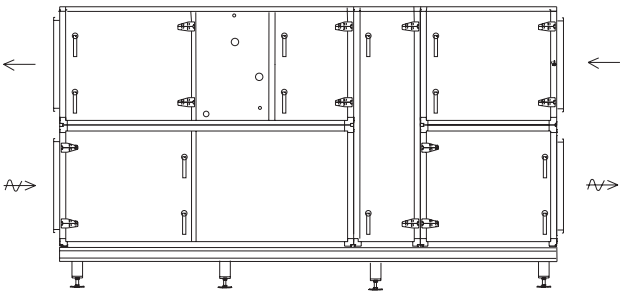
The lifting brackets are designed for insertion into the groove provided in the aluminium profiled frame member. Mount the load safety device and the module is ready for lifting.

Supplied in sets of four.

Bottom plate (code EMMT-09)

Bottom plate made of acid-proof stainless steel.

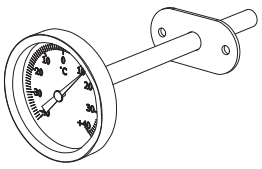
One-piece unit version (code EMMT-10)



All types of AHU in the Flexomix series up to and incl. size 600 are available in the One-piece unit version.

- All the component functional sections are supplied mounted on the EMMT-05 support frame. Max. length: 6000 mm (Sizes 060-300), 5000 mm (Sizes 360-600).
- Length, width and height: see the IV Produkt Designer product selection program.

Thermometer (code EMMT-16)



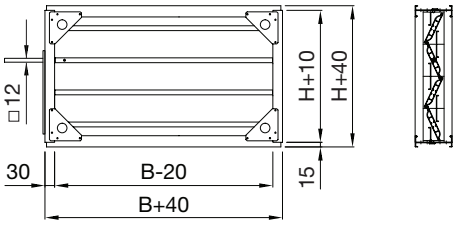
Thermometer of insertion type shown. -40 to +40 ˚C.

Duct damper (code EMT-01)

Duct damper designed for the EMMT-02 connection frame and intended for use as a shut-off or control damper.

- The louvre damper is made of profiled sheet aluminium and meets the provisions of corrosion resistance class C4 to SS-EN ISO 12944-2.
- The damper blades are driven by ABS plastic gear wheels and a tubular silicone rubber gasket creates a seal between the damper blades.
- Permissible temperature: -40 to +80 ˚C
  Permissible differential pressure: max. 1400 Pa.
- Tightness class 3 to SS-EN1751 (VVS AMA-98).

Dimensions



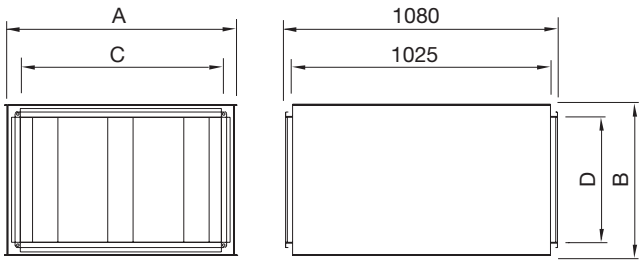
Size	Dimensions (mm)	
	B	H
060	500	300
100	700	300
150	800	500
190	1000	500
240	1000	600
300	1200	600
360	1200	800
480	1400	800
600	1600	800
740	2000	900
750	1600	1000
850	2200	1000
950	1600	1200

Duct sound attenuator (code EMT-02)

The duct sound attenuator is designed for the EMMT-02 connection frame.

- The sound attenuators are composed of a casing made of 200 mm thick galvanized sheet steel with 200 mm thick baffle elements.
- The baffle elements, which contain mineral wool, are externally lined with cleanable woven fabric. The material is type approved as an interior lining material for ventilation ducts.
- The baffles are arranged 100 mm apart.
- The baffles are ”pointed” at the inlet and outlet. If mounted on the fan outlet, a 400 mm long straight duct must be fitted between the AHU and the sound attenuator.

Dimensions

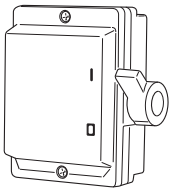


Size	Dimensions (mm)			
	A	B	C	D
060	600	400	500	300
100	900	400	700	300
150	900	600	800	500
190	1200	600	1000	500
240	1200	700	1000	600
300	1500	700	1200	600
360	1500	900	1200	800
480	1800	900	1400	800
600	1800	1000	1600	800
740	2100	1000	2000	900
750	1800	1200	1600	1000
850	2400	1100	2200	1000
950	1800	1400	1600	1200

Sound attenuation

Mid-frequency (Hz)	Sound attenuation (dB)
63	8
125	11
250	19
500	29
1000	40
2000	35
4000	27
8000	19

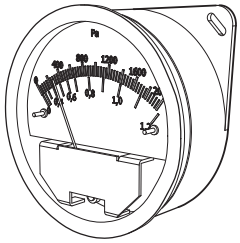
Electric wiring, safety switch (code MIET-AF-06)



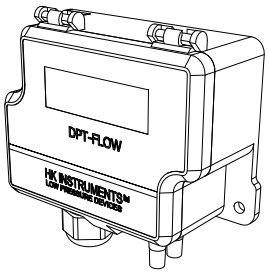
Safety switch mounted with cable wired to fan motor. The safety switch is designed to match the relevant type of motor, output and frequency inverter, if fitted.

- Safety switch conforming to enclosure class IP54.
- Cable and cable glands between the safety switch and the motor conform to the EMC Directive in force if an external frequency inverter will be used.

Manometer type airflow meter (code MIET-AF-09)

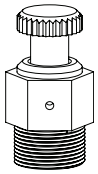


Electronic airflow meter (code MIET-AF-10)



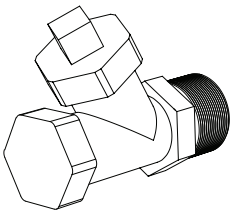
Shows the current airflow. Consists of a display unit and flow-linear pressure sensor. 0-10 V output signal for readings transmitted to an external supervisory system or as a sensor signal for constant flow regulation.

Air purging valve (code MIET-CL-01)



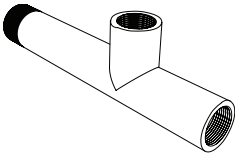
Made of brass and fitted with an o-ring within. Max. permissible pressure: 1.0 MPa, max. permissible temperature: 110 °C. G8 male threads.

Drain valve (code MIET-CL-02)



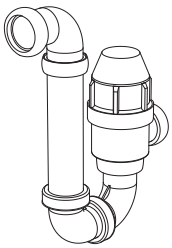
With male threads and cover, size 15.

T-pipe for anti-frost protection and venting/drainage (code MIET-CL-03)



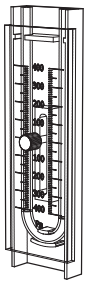
T-pipe for frost protection and venting/drainage. G8 female threads.

Water trap (code MIET-CL-04)



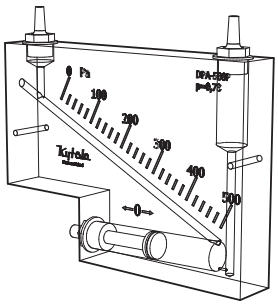
Water trap made of plastic. Built-in non-return valve.

U-tube manometer filter guard (code MIET-FB-01)



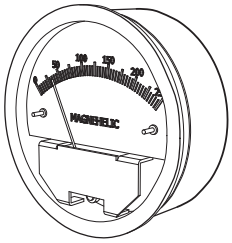
Measurement range: 0±400 Pa

Kytölä manometer filter guard (code MIET-FB-02)



Meas. range: 0–500 Pa.

Magnehelic manometer filter guard (code MIET-FB-03)



Meas. range: 0–250 Pa.

Wiring instructions

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

Functional fittings

Damper motor, mounted (code KJST-04)

POWER SUPPLY,
24 V~
max 9 VA

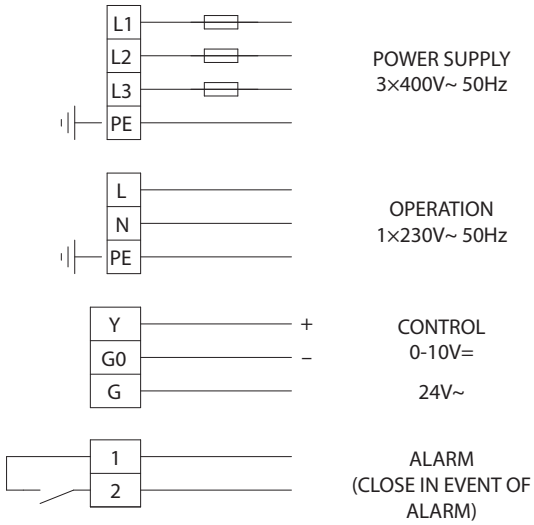
Electric air heater (code MIE-EL/ELEE)

Electric heater without control, HT

Ø1 Ø2	Overheating protection with automatic reset
Ø3 Ø4	Overheating protection with manual reset
Ø5 Ø	To connect the first step: 0.2-3.5 kW 2-phase 400 V. N.B. Outputs more than 3.5 kW: the first step is 3-phase 400 V. Wire the output steps one by one and start with conn. 5.
Ø Ø Ø	To connect the second step: 3.6-43 kW 3-phase 400 V
Ø Ø Ø	To connect the third step: 3,6-43 kW 3-phase 400 V
Ø Ø Ø	To connect the fourth step: 3.6-43 kW 3-phase 400 V

If any of the output groups exceeds 43 kW, it must be split into two equally large group levels.

Electric heater with integrated control , HS

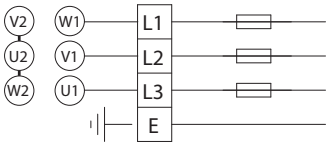


Size	Capacity variant / rec. fuse (A) 3×400V~ 50Hz				
	01	02	03	04	05
060	10*	10	20	40	50
100	10	16	32	50	80
150	16	25	40	80	100
190	16	25	63	100	160
240	20	40	80	125	200
300	25	40	80	160	200
360	25	50	100	200	–
480	35	80	160	–	–
600	40	80	200	–	–
740	80	160	200	–	–
750	80	160	200	–	–
850	80	160	200	–	–
950	100	160	200	–	–

* 2×400V~ 50Hz to be protected by a max. 10 A fuse.

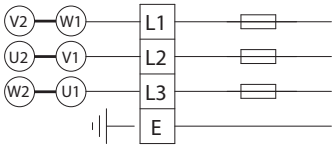
Humidifier (code MIE-EF)

Star coupling of the pump motor, main voltage 400 V.



3×400V~ 50Hz
POWER SUPPLY

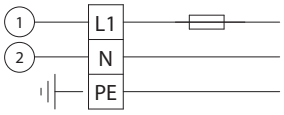
Delta (Δ) coupling of the pump motor, main voltage 230 V.



3×230V~50Hz
POWER SUPPLY

Solenoid valve (code MIET-EF-01)

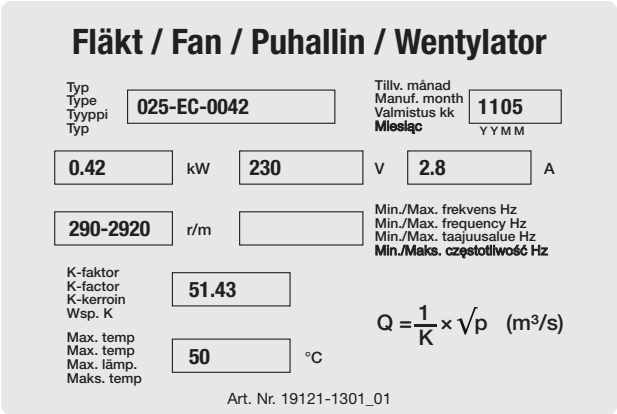
Accessory for the humidifier.



1×230V~ 50Hz
POWER SUPPLY

Direct-driven fan (code ELFD), speed controlled

The power supply and rated current can be read from the fan rating plate (see example below) or the relevant values can be read from the table on the next page.

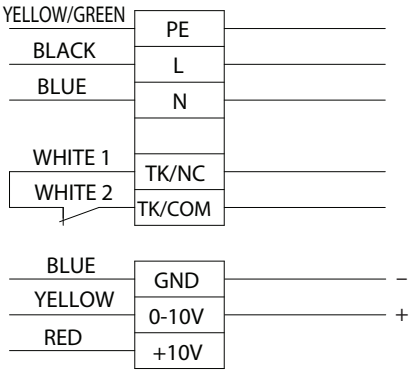


Typical fan rating plate

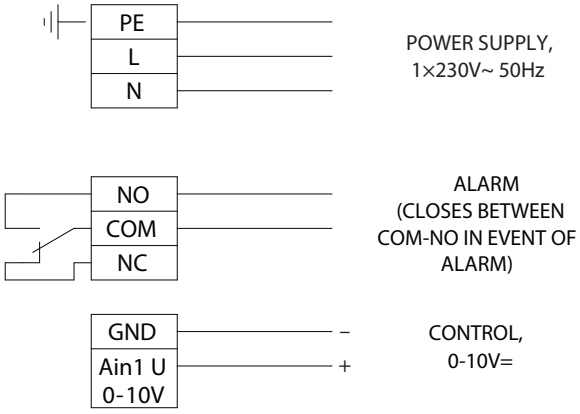
N.B! The fans can be of different sizes/variants. Read the rating plate of both the supply air and the extract air fan.

Relevant wiring diagram: Identified by the heading. The type of motor is specified on the rating plate.

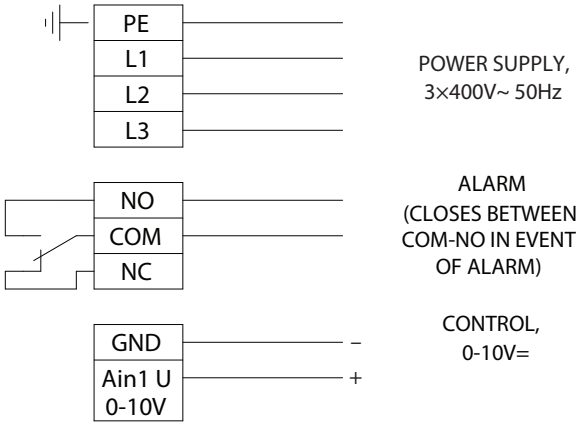
Motor type 025-EC 1×230V, 0.42 kW



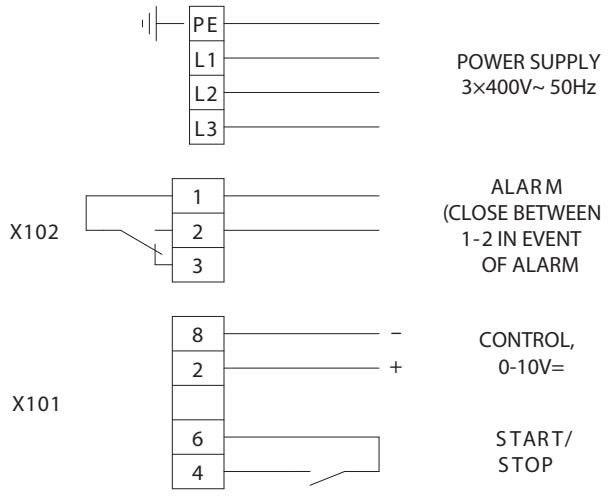
Motor type EC 1×230V (all excl. 025-EC 1×230V, 0.42 kW)



Motor type EC 3×400V



Motor type F1 3×400V



Electrical data

Size	Impeller size	Motor type	Output (kW) *				Power supply (voltage)	Rated current (A) for 230 V	Rated current (A) for 400 V
060	025	EC	0.42	0.70			1×230V~ 50Hz	2.8 / 3.0	–
100	028	EC EC E1	0.72 1.00	 1.1			1×230V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	3.5 – 3.95	– 1.6 2.28
100	310	EC	1.48				1×230V~ 50Hz	6.4	–
150	035	EC E1	1.00 1.1	1.5 1.5	2.2		3×400V~ 50Hz 3×230/400V~ 50Hz	– 4.21 / 5.72 / 7.5	1.75 2.43 / 3.3 / 4.3
150	040	EC EC	1.85 3.00				3×400V~ 50Hz 3×400V~ 50Hz	– –	2.9 4.6
190	035	EC	1.00				3×400V~ 50Hz	–	1.75
190	040	EC EC E1	1.85 3.00 1.1	 1.5	 2.2	 3.0	3×400V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	– – 4.21 / 5.72 / 7.8 / 10.4	2.9 4.6 2.43 / 3.3 / 4.5 / 6.0
240, 300	045	EC	1.62				3×400V~ 50Hz	–	2.5
240, 300	050	EC EC E1	2.82 5.50 1.5	 2.2	 3.0		3×400V~ 50Hz 3×400V~ 50Hz 3×230/400V~ 50Hz	– – 5.72 / 7.8 / 10.4	4.3 8.0 3.3 / 4.5 / 6.0
360	050	EC E1	2.82 2.2				3×400V~ 50Hz 3×230/400V~ 50Hz	– 7.8	4.3 4.5
360	056	EC E1	4.70	 3.0	 4.0		3×400V~ 50Hz 3×230/400V~ 50Hz	– 10.4 / 13.7	7.7 6.0 / 7.9
480	056	F1 E1	3.0 3.0				3×400V~ 50Hz 3×230/400V~ 50Hz	– 10.4	6.4 6.0
480	063	F1 E1		4.0 4.0	5.5 5.5	7.5 7.5	3×400V~ 50Hz 3×230/400V~ 50Hz	– 13.7 / 18.4 / 25.1	8.4 / 11.1 / 15.1 7.9 / 10.6 / 14.5
600	063	F1 E1	4.0 4.0	5.5 5.5			3×400V~ 50Hz 3×230/400V~ 50Hz	– 13.7 / 18.4	8.4 / 11.1 7.9 / 10.6
600	071	F1 E1			7.5 7.5		3×400V~ 50Hz 3×230/400V~ 50Hz	– 25.1	15.1 14.5
740, 750, 850	071	F1 E1		7.5 7.5			3×400V~ 50Hz 3×230/400V~ 50Hz	– 25.1	15.1 14.5
740, 750, 850, 950	080	HE	5.5	7.5	11.0	15.0	3×230/400V~ 50Hz	–/–/–/–	12.8/17.0/24.5/28.5
950	090	HE	7.5	11.0	15.0	18.5	3×230/400V~ 50Hz	–/–/–/–	17.0/24.5/29.5/36.5

EC = EC motor with built-in electronic speed control

E1 = Motor to efficiency class 1, eff1/IE2

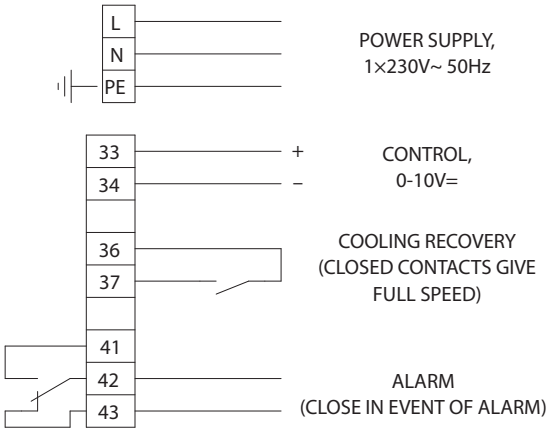
F1 = Motor with frequency inverter mounted on it

HE = 4 or 6-pole motor to IE2, 8-pole motor with enhanced efficiency

* For EC sizes 060–360: The value refers to the power consumption, for the other sizes the value refers to shaft power.

Complete functional sections

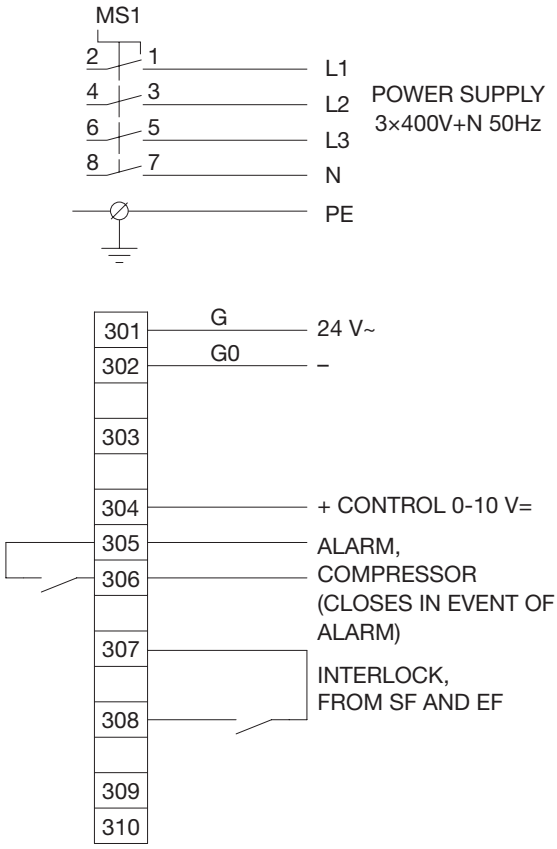
Rotary heat exchanger section (code EXA)



Rec. fuse prtection: 10AT

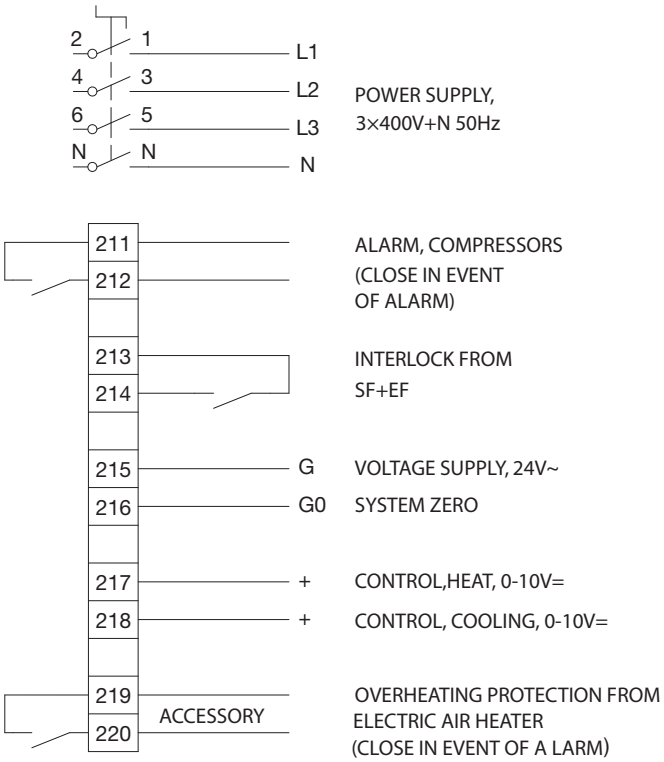
Cooling units

EcoCooler (code ACU)
EcoCooler with cooling energy recovery (code ACR)



Size	ACU/ACR - rec. fuse protection (3×400V+N) / capacity variant		
	01	02	03
100	16AT	–	–
150	20AT	25AT	–
190	20AT	25AT	–
240	25AT	32AT	–
300	25AT	32AT	–
360	32AT	50AT	–
480	50AT	63AT	–
600	50AT	63AT	63AT
740	63AT	80AT	80AT
850	63AT	80AT	100AT

Q-Cooler cooling unit/heat pump (code EQU)

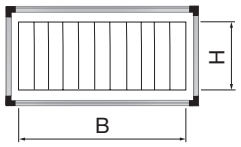
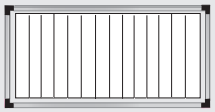
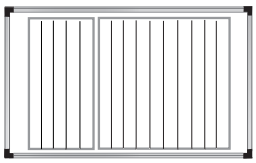
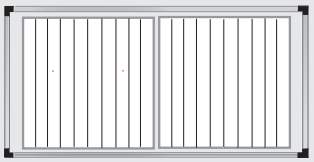
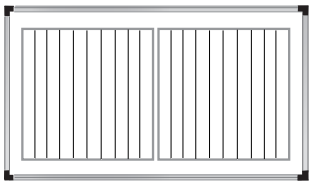
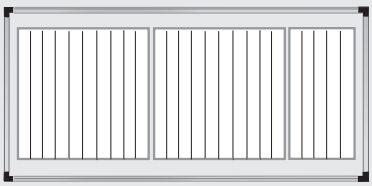


Size	EQU - rec. fuse protection (3×400V+N) / capacity variant		
	01	02	03
190	25A	–	–
240	25A	–	–
300	35A	50A	–
360	35A	50A	–
480	50A	63A	–
600	63A	80A	–

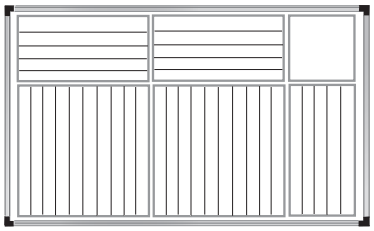
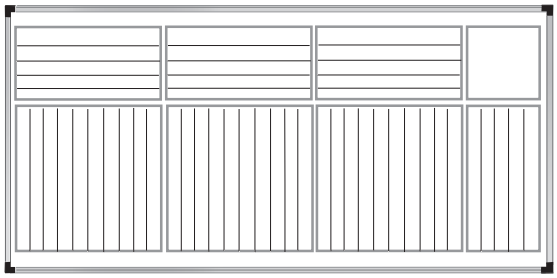
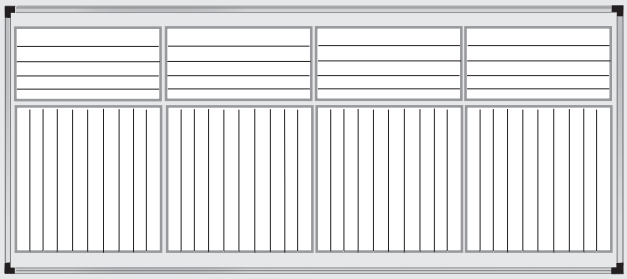
Filter overview

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

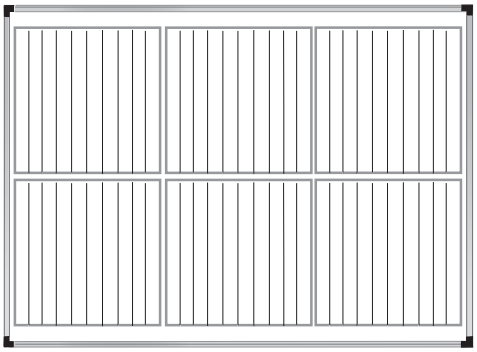
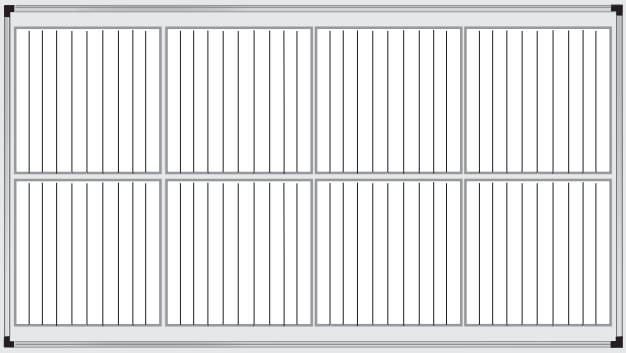
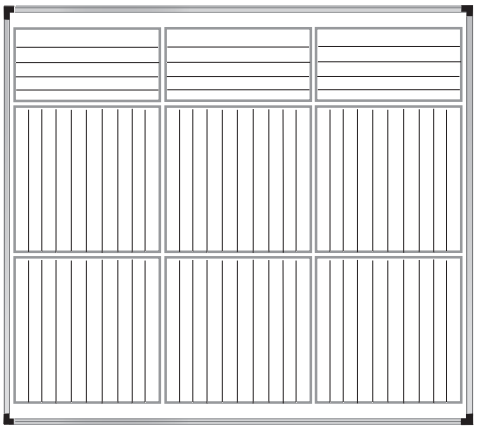
Filter, cross section and number of filters

Unit size	Type of filter	No. of filters	Dimensions (mm)		Filter area total (m²)	Filter arrangment
			B × H	Length		
060	Bag filter, G4	1	736 × 287	360	1.5	
	Bag filter, F6–F9	1	736 × 287	380	2.4	
	Panel filter, P4	1	736 × 287	48	0.2	
	Aluminium filter	1	736 × 287	25	0.2	
	Carbon filter, C7	–	–	–	–	
100	Bag filter, G4	1	892 × 409	360	2.4	
	Bag filter, F6–F9	1	892 × 409	380	4.3	
	Panel filter, P4	1	736 × 393	48	0.3	
	Aluminium filter	1	892 × 409	25	0.4	
	Carbon filter, C7	–	–	–	–	
150	Bag filter, G4	1 1	287 × 592 592 × 592	360 360	3.6	
	Bag filter, F6–F9	1 1	287 × 592 592 × 592	535 535	9.8	
	Panel filter, P4	1 1	292 × 596 596 × 596	48 48	0.5	
	Aluminium filter	1 1	287 × 592 592 × 592	25 25	0.5	
	Carbon filter, C7	1 1	287 × 592 592 × 592	292 292	8.0	
190	Bag filter, G4	2	592 × 592	360	4.8	
	Bag filter, F6–F9	2	592 × 592	535	13.0	
	Panel filter, P4	2	596 × 596	48	0.7	
	Aluminium filter	2	592 × 592	25	0.7	
	Carbon filter, C7	2	592 × 592	292	16.0	
240	Bag filter, G4	2	592 × 592	360	4.8	
	Bag filter F6–F9	2	592 × 592	535	13.0	
	Panel filter, P4	2	596 × 596	48	0.7	
	Aluminium filter	2	592 × 592	25	0.7	
	Carbon filter, C7	2	592 × 592	292	16.0	
300	Bag filter, G4	1 2	287 × 592 592 × 592	360 360	6.0	
	Bag filter, F6–F9	1 2	287 × 592 592 × 592	535 535	16.3	
	Panel filter, P4	1 2	292 × 596 596 × 596	48 48	0.9	
	Aluminium filter	1 2	287 × 592 592 × 592	25 25	0.9	
	Carbon filter, C7	1 2	287 × 592 592 × 592	292 292	19.5	

Contd. Filter, cross section and number of filters

Unit size	Type of filter	No. of filters	Dimensions (mm) B × H	Dimensions (mm) Length	Filter area total (m²)	Filter arrangment
360	Bag filter, G4	3 2	287 × 592 592 × 592	360 360	8.4	
	Bag filter, F6–F9	3 2	287 × 592 592 × 592	535 535	22.9	
	Panel filter, P4	3 2	292 × 596 596 × 596	48 48	1.2	
	Aluminium filter	3 2	287 × 592 592 × 592	25 25	1.2	
	Carbon filter, C7	3 2	287 × 592 592 × 592	292 292	26.5	
480	Bag filter, G4	3 3	287 × 592 592 × 592	360 360	10.8	
	Bag filter, F6–F9	3 3	287 × 592 592 × 592	535 535	29.4	
	Panel filter, P4	3 3	292 × 596 596 × 596	48 48	1.6	
	Aluminium filter	3 3	287 × 592 592 × 592	25 25	1.5	
	Carbon filter, C7	3 3	287 × 592 592 × 592	292 292	34.5	
600	Bag filter, G4	4 3	287 × 592 592 × 592	360 360	12.0	
	Bag filter, F6–F9	4 3	287 × 592 592 × 592	535 535	32.7	
	Panel filter, P4	4 3	292 × 596 596 × 596	48 48	1.8	
	Aluminium filter	4 3	287 × 592 592 × 592	25 25	1.7	
	Carbon filter, C7	4 3	287 × 592 592 × 592	292 292	38	
740	Bag filter, G4	4 4	287 × 592 592 × 592	360 360	14.4	
	Bag filter, F6–F9	4 4	287 × 592 592 × 592	535 535	39.0	
	Panel filter, P4	4 4	292 × 596 596 × 596	48 48	2.2	
	Aluminium filter	4 4	287 × 592 592 × 592	25 25	2.0	
	Carbon filter, C7	4 4	287 × 592 592 × 592	292 292	46.0	

Contd. Filter, cross section and number of filters

Unit size	Type of filter	No. of filters	Dimensions (mm) B × H	Dimensions (mm) Length	Filter area total (m²)	Filter arrangment
750	Bag filter, G4	6	592 × 592	360	14.4	
	Bag filter, F6–F9	6	592 × 592	535	39.0	
	Panel filter, P4	6	596 × 596	48	2.1	
	Aluminium filter	6	592 × 592	25	2.1	
	Carbon filter, C7	6	592 × 592	292	48.0	
850	Bag filter, G4	8	592 × 592	360	19.2	
	Bag filter, F6–F9	8	592 × 592	535	52.0	
	Panel filter, P4	8	596 × 596	48	2.8	
	Aluminium filter	8	592 × 592	25	2.8	
	Carbon filter, C7	8	592 × 592	292	64.0	
950	Bag filter, G4	3 6	287 × 592 592 × 592	360 360	18.0	
	Bag filter, F6–F9	3 6	287 × 592 592 × 592	535 535	48.8	
	Panel filter, P4	3 6	292 × 596 596 × 596	48 48	2.7	
	Aluminium filter	3 6	287 × 592 592 × 592	25 25	2.7	
	Carbon filter, C7	3 6	287 × 592 592 × 592	292 292	58.5	

Ordering keys

! This product catalogue is designed to provide information about the products in the Flexomix series. It should be regarded as a complement to the IV Produkt Designer product selection program. Always carry out sizing in IV Produkt Designer before placing orders for products.

Functional fittings

Standard Module (code EMM)

EMM -a-b-c	**Standard Module**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Damper fitting (code MIE-KS)

MIE-KS -a-10-c	**Damper fitting**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
10 - Module	
c - Front	00 = Standard insulation E3 = Insulation to fire resist. class EI30
Accessories:	
KJST-03	**Lever actuator**
KJST-04 -a-b	**Damper motor, mounted**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Version	1 = Damper motor with spring

Intake air fitting (code MIE-ID)

MIE-ID -a-25-c-d	**Intake air fitting**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
25 - Module	
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
d - Filter rails	ST = Standard SF = Acid-proof stainless steel
Accessories for the fitting:	
KJST-04 -a-b	**Damper motor, mounted**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Version	1 = Damper motor with spring
ELEF -a-b	**Set of filters**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Filter class	AL, G4, F6-F9, C7 sizes 150-950
Accessories for the set of filters:	
MIET-FB-01	**U-tube manometer filter guard**
MIET-FB-02	**Kytölä manometer filter guard**
MIET-FB-03	**Magnehelic manometer filter guard**

Filter fitting (code MIE-FB)

MIE-FB -a-b-c-d **MIE-FC -a-b-c-d**	**Bag filter fitting** **Panel filter fitting**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	10 = for panel filter FC 15 = for filter classes AL, G4, F6-F9, sizes 060-100 20 = for other types and sizes of filter
c - Front	00 = Standard insulation E3 = Insulation to fire resist. class EI30
d - Filter rails	ST = Standard SF = Acid-proof stainless steel
ELEF -a-b	**Set of filters**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Filter class	AL, G4, P4, F6-F9, C7, sizes 150-950
Accessories for the set of filters:	
MIET-FB-01	**U-tube manometer filter guard**
MIET-FB-02	**Kytölä manometer filter guard**
MIET-FB-03	**Magnehelic manometer filter guard**

Air cooler/air heater fitting (code MIE-CL/ELEV/ELTV/ELES/ELBC/ELBD/ELXT/ELXF)

MIE-CL -a-b-c	
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	10, 15, 20
c - Front	00 = Standard insulation E3 = Insulation to fire resist. class EI30
Accessories:	
MIET-CL-01	**Air purging valve**
MIET-CL-02	**Drain valve**
MIET-CL-03	**T-pipe for anti-frost protection and venting/draining**
MIET-CL-04	**Water trap**
MIET-CL-05-a	**Coil casing**
ELEV -a-b	**Air heater, water**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Cap. variant	00, 01, 02, 03, 04
ELTV -a-b-c	**Air heater, water type Thermoguard**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950

b - Cap. variant	00, 01, 02, 03
c - Connection	H = Right-hand V = Left-hand
ELES -a-b	**Air heater, steam**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Cap. variant	01, 02
ELBC -a-b-c-d-e-f	**Air cooler, water**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Cap. variant	02, 03, 04, 06, 08
c - Loop length	1 = Short loop length 2 = Long loop length
d - Fin spacing	20 = 2,0 mm 30 = 3,0 mm
e - Droplet separator	0 = Without 1 = With
f - Connection side	H = Right-hand V = Left-hand
ELBD -a-b-c-d-e-f	**DX air cooler, direct expansion**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Cap. variant	02, 03, 04
c - Coupling	To be calculated by computor
d - Fin spacing	20 = 2.0 mm 30 = 3.0 mm
e - Droplet separator	0 = Without 1 = With
f - Connection side	H = Right-hand V = Left-hand
Accessories:	
ELBDT-01 -a	**Number of cap. steps, DX air cooler**
a - No. of cap steps	1, 2, 3
ELXT -a-b-c-d-e-f **ELXF -a-b-c-d-e-f**	**Energy recovery coil, supply air** **Energy recovery coil, extract air**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Cap. variant	04, 06, 08, 10, 12
c - Loop length	1 = Short loop length 2 = Long loop length
d - Fin spacing	20 = 2.0 mm 30 = 3.0 mm 40 = 4.0 mm (enbart ELXF)
e - Droplet separator	0 = Without 1 = With
f - Connection side	H = Right-hand V = Left-hand

Electric air heater fitting (code MIE-EL/ELEE)

MIE-EL -a-b-c	**Electric air heater fitting**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	15, 20, 25, 30, 35
c - Front	00 = Standard insulation E3 = Insulation to fire resist. class EI30
ELEE -a-b-c-d	**Electric air heater**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Output variant	01, 02, 03, 04, 05
c - Version	HT = High temperature HS = High temperature with integrated equipment for controlling the output

Humidifier fitting (code MIE-EF)

MIE-EF -a-25-c	**Humidifier fitting**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
25 - Module	
c - Front	00 = Standard insulation E3 = Insulation to fire resist. class EI30
EFEF -a-b-c-d-e	**humidifier**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Humidif. rate	85 = 85% 95 = 95%
c - Water system	C1 = Circulating water D1 = Once-through water
d - Droplet separator	0 = Without 1 = With
e - Inspection side Viewed in direction of airflow.	H = Right-hand V = Left-hand

Sizes 060 and 100, with once-through water only, 85% humidification rate and without droplet separator.

Fan fitting direct-driven (code MIE-FD)

MIE-FD -a-b-c-d	Fan fitting direct-driven
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	20 = Size 060-100 25 = Size 150 30 = Size 190-300 35 = Size 360 40 = Size 480, 600 m impeller 063 45 = Size 600-850 m impeller 071 50 = Size 740-950 m impeller 080 60 = Size 950 m impeller 090
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
d - Impeller size	025 = Size 060 028 = Size 100 035 = Size 150 040 = Size 190 050 = Size 240-360 056 = Size 360-480 063 = Size 480-600 071 = Size 600-850 080 = Size 740-950 090 = Size 950 **Impeller with EC-motor** E251 = Size 060 E281 = Size 100 E311 = Size 100 E351 = Size 150, 190 E401 = Size 150, 190 E451 = Size 240, 300 E501 = Size 240, 300, 360 E561 = Size 360

Accessories:

EMMT-02-a-1	**Connection frame, large**
EMMT-02-a-2	**Connection frame, maximum**
EMMT-03-a-1	**Flexible connection, large**
EMMT-03-a-2	**Flexible connection, maximum**
MIET-FD-03-a-d	**Steel-spring anti-vibration mountings** (Size 360–950)
MIET-AF-09-d-DD	**Manometer type airflow meter**
MIET-AF-10	**Electronic airflow meter**

Fan fitting belt-driven (code MIE-FR)

MIE-FR -a-b-c-d-e	Fan fitting belt-driven
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	20 = Sizes 060-100 25 = Size 150 30 = Sizes 190-300 40 = Sizes 360-600 45 = Size 740 with impeller 050/056, 750 with impeller 056, 850 with impeller 056 50 = Size 850 with impeller 063 60 = Size 750 with impeller 063, 950 with impeller 063 65 = 950 with impeller 071
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
d - Impeller size	016 = Size 060 020 = Size 100 028 = Sizes 150-190 035 = Sizes 240-300 040 = Size 360 045 = Size 480 050 = Sizes 600-740 056 = Sizes 740-850 063 = Sizes 750-950 071 = Size 950

Accessories:

MIET-AF-01-a	**Connection frame, small**
EMMT-02-a-1	**Connection frame, large**
EMMT-02-a-2	**Connection frame, maximum**
MIET-AF-02-a	**Flexible connection, small**
EMMT-03-a-1	**Flexible connection, large**
EMMT-03-a-2	**Flexible connection, maximum**
MIET-AF-03-a	**Steel-spring anti-vibration mountings** (for ELFR-FB, -BB, sizes 150–600)
MIET-AF-08-d-FB	**measurement tapping for airflow meter** (for ELFR-FB, excl. meter)
MIET-AF-09-d-FB	**Manometer type airflow meter** (for ELFR-FB)
MIET-AF-09-d-BB	**Manometer type airflow meter** (for ELFR-BB)
MIET-AF-10	**Electronic airflow meter**

Direct-driven fan (code ELFD)

ELFD -a-b-c-d-e	**Direct-driven fan**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Impeller size	025 = Size 060 028 = Size 100 035 = Size 150 040 = Size 190 050 = Sizes 240-360 056 = Sizes 360-480 063 = Sizes 480-600 071 = Sizes 600-850 080 = Sizes 740-950 090 = Size 950 **Impeller with EC motor** 025 = Size 060 028 = Size 100 031 = Size 100 035 = Sizes 150, 190 040 = Sizes 150, 190 045 = Sizes 240, 300 050 = Sizes 240, 300, 360 056 = Size 360
c - Motor type	F1 = IE2 motor incl. mounted frequency inverter, 3×400V~ 50Hz E1 = motor to eff1/IE2 EC = EC motor
d - Rated output	Example 0018 = 0.18 kW 1100 = 11 kW The two first digits refer to integers and the two last digits refer to decimals. For all the rated outputs: see the Electrical data table under Direct-driven fan, Functional fittings tab.
e - Version - fan inlet	0 = Standard 1 = Sparkproof

Belt-driven fans (code ELFR-FB/BB)

ELFR -a-b-c-d	**Belt-driven fans**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Fan type	FB = Forward-curved blades BB = Backward-curved blades
c - Impeller size	016 = Size 060 020 = Size 100 028 = Sizes 150-190 035 = Sizes 240-300 040 = Size 360 045 = Size 480 050 = Sizes 600-740 056 = Sizes 740-850 063 = Sizes 750-950 071 = Size 950
e - Version - fan inlet	0 = Standard 1 = Sparkproof
a-b-c-d-e-f-g	**Fan motor**
a - Motor type	1 = eff2/IE1 foot motor 4 = eff1/IE2 foot motor
b - Size	Standard motor size to IEC
c - Factory code	–
d - No. of poles	200 = 2-pole 240 = 2/4-pole 400 = 4-pole 460 = 4/6-pole 480 = 4/8-pole
e - Rated output	Example 0018 = 0.18 kW 1100 = 11 kW The two first digits refer to integers and the two last digits refer to decimals.
f - Voltage	12 = 1×230V~ 50Hz 32 = 3×230/400V~ 50Hz 34 = 3×400V~ 50Hz
g - Thermo-contact	0 = No thermo-contact 1 = Thermo-contact
Belt transmission:	
RD -a-b	**V-belt**
a - Output interval	Example 040 = up to 4 kW
b - Speed	Example 0650 = 650 r/min
RB -a-b	**Poly-V, Ribbed belt**
a - Output interval	Example 040 = up to 4 kW
b - Speed	Example 0650 = 650 r/min

Inspection fitting (code MIE-KM)

MIE-KM -a-b-c	Inspection fitting
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	10, 15, 20
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Accessory

MIET-KM-01-a	**Air distributor**

Empty section fitting (code MIE-TD)

MIE-TD -a-b-c	Empty section fitting
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	05*, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

** Not available as a separate module.*

Accessory

MIET-TD-01-a	**Drip tray**

Silencer fitting (code MIE-KL)

MIE-KL -a-b-c-d	Silencer fitting
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	20, 30, 40, 50, 60
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
d - Baffle type	EB = Non-withdrawable baffles UB = Withdrawable baffles

Media section fitting (code MIE-MD)

MIE-MD -a-b-c	Media section fitting
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	20 = for supply air handling unit 30 = for sizes 240-950
c - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Complete functional sections

Rot. heat exchanger section (code EXA)

EXA -a-b-c	Rotary heat exchanger section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Rotor type	NO = Normal HY = Hygroscopic NP = Normal Plus HP = Hygroscopic Plus EX = Epoxy
Accessory	
EXAT-01-a	**Edge-reinforced rotor** (for the NO/NP only)

Plate heat exchanger section (code EXC)

EXC -a-b-c-d	Plate heat exchanger section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Plate exch. type	A = Aluminium B = Epoxy
d - Version	NO = Normal NP = Plus

Mixing section (code EBA)

EBA -a-b	Mixing section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
Accessories	
EBAT-01-a	**Connection frame**
EBAT-02-a	**Flexible connection**

Mixing section (code EBB)

EBB -a-b	Mixing section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
Accessories	
EBAT-01-a	**Connection frame**
EBAT-02-a	**Flexible connection**

Mixing section (code EBC)

EBC -a-b	Mixing section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Air recirculation section (code EBD)

EBD -a-b	Air recirculation section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Air recirculation section (code EBE)

EBE -a-b	Air recirculation section
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Fan section (code EFA-FD/FR)

EFA -a-b-c-d-e	**Fan section (To be supplemented with ELFD direct-driven or ELFR belt-driven fan)**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Fan type	FR = Belt-driven FD = Direct-driven
d - Impeller size	**FD:** 025 = Size 060 028 = Size 100 035 = Size 150 040 = Size 190 050 = Sizes 240-360 056 = Sizes 360-480 063 = Sizes 480-600 071 = Sizes 600-850 080 = Sizes 740-950 090 = Size 950 **FD (impeller with EC motor):** E251 = Size 060 E281 = Size 100 E311 = Size 100 E351 = Sizes 150, 190 E401 = Sizes 150, 190 E451 = Sizes 240, 300 E501 = Sizes 240, 300, 360 E561 = Size 360 **FR:** 016 = Size 060 020 = Size 100 028 = Sizes 150-190 035 = Sizes 240-300 040 = Size 360 045 = Size 480 050 = Sizes 600-740 056 = Sizes 740-850 063 = Sizes 750-950 071 = Size 950
e - Configuration	210, 220, 310, 320 See Configuration under Fan section, Complete functional sections tab.

Accessories for the fan section:

MIET-AF-01-a	**Connection frame, small** (c = FR)
EMMT-02-a-1	**Connection frame, large**
MIET-AF-02-a	**Flexible connection, small** (c = FR)
EMMT-03-a-1	**Flexible connection, large**
Accessories EFA-FD:	
MIET-FD-03-a-d	**Steel-spring anti-vibration mountings** (Sizes 360–950)
MIET-AF-09-d-DD	**Manometer type airflow meter**
MIET-AF-10	**Electronic airflow meter**
Accessories, EFA-FR:	
MIET-AF-03-a	**Steel-spring anti-vibration mountings** (for ELFR-FB, ELFR-BB Size 150–600)
MIET-AF-08-d-FB	**Meas. tappings for flow meter** (for ELFR-FB, excl. meter)
MIET-AF-09-d-FB	**Manometer type airflow meter** (for ELFR-FB)
MIET-AF-09-d-BB	**Manometer type airflow meter** (for ELFR-BB)
MIET-AF-10	**Electronic airflow meter**

Angle section (code EKV)

EKV -a-b	**Angle section**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
Accessory	
EKVT-01-a	**Filter fitting**

Connection section (code EAC)

EAC -a-b-c	**Connection section**
a - Size	740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Damper	1 = With damper 2 = Without damper
Accessories	
EBAT-01-a	**Connection frame**
EBAT-02-a	**Flexible connection**
KJST-04 -a-b	**Damper motor, mounted**
a - Size	740, 750, 850, 950
b - Version	1 = Damper motor with spring

Angle silencer (code ELV)

EAC -a-b-c	**Angle silencer**
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Version	EB = Non-withdrawable baffle elements UB = Withdrawable baffle elements

Media section (code EMD)

Media section EMD -a -b

a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Cooling unit

EcoCooler cooling unit (code ACU)

ACU -a-b-c-0-e-f-g

a - Size	100, 150, 190, 240, 300, 360, 480, 600, 740, 850
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Capacity variant	1V = 1 (Sizes 100–850) 2V = 2 (Sizes 150–850) 3V = 3 (Sizes 600–850)
e - Voltage	40 = 3×400V+N, 50Hz
f - Supply air	U = Upper level N = Lower level
g - Inspection side	H = Right-hand V = Left-hand

EcoCooler cooling unit with cooling energy recovery (code ACR)

ACR -a-b-c-0-e-f-g-h

a - Size	100, 150, 190, 240, 300, 360, 480, 600, 740, 850
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Capacity variant	1V = 1 (Sizes 100–850) 2V = 2 (Sizes 150–850) 3V = 3 (Sizes 600–850)
e - Voltage	40 = 3×400V+N, 50Hz
f - Rotor	NO = Normal HY = Hygroscopic NP = Normal Plus HP = Hygroscopic Plus
g - Supply air	U = Upper level N = Lower level
h - Inspection side	H = Right-hand V = Left-hand

Accessory:

ACRT-01 -a-c	**Split version**
a - Size	100, 150, 190, 240, 300, 360, 480, 600, 740, 850
c - Capacity variant	1V = 1 (Sizes 100–850) 2V = 2 (Sizes 150–850) 3V = 3 (Sizes 600–850

Q-Cooler cooling unit/heat pump (code EQU)

EQU -a-b-c-d-e-f-g	**Q-Cooler cooling unit/heat pump**
a - Size	190, 240, 300, 360, 480, 600
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30
c - Capacity variant	1 (Sizes 190–600) 2 (Sizes 190–600) 3 (Sizes 600)
d - Water-cooled condenser	0 = Without 1 = With
e - Voltage	23 = 1×230V~ 50Hz 40 = 3×400V~ 50Hz
f- Supply air	U = Upper level N = Lower level
g - Inspection side	H = Right-hand V = Left-hand

Accessories

EQUT-01 -a	**Outdoor version**
EQUT-02 -a	**Electric heating**
MIET-CL-04	**Water trap**

Accessories

End connection (code EMMT-01)

EMMT-01 -a-b	End connection
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Casing	00 = Standard insulation E3 = Insulation to fire resist. class EI30

Connection frame (code EMMT-02)

EMMT-02 -a-b	Connection frame
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Version	1 = Large 2 = Maximum

Flexible connection in-/utlopp (code EMMT-03)

EMMT-03 -a-b	Flexible connection, inlet/outlet
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Version	1 = Large 2 = Maximum

Outdoor version (code EMMT-04)

EMMT-04 -a-b-c	Outdoor version
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Number of levels	1, 2
c - Length intervall	01, 02, 03, 04, 05, 06, 07 01 = 0–1000 02 = 1000–2000, etc.

Accessories:

EMMT-04T -a-b	Exhaust air hood
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740*, 750*, 850*, 950*
b - Fan type	FD = ELFD FR = ELFR

* Not available for fan type FR=ELFR.

EMMT-04G -a-0	Exterior wall grille
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950

EMMT-04H-a-0	Weather hood
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950

Support frame (code EMMT-05)

EMMT-05 -a-b	Support frame
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Length intervall	0, 1, 2, 3, 4, 5 0 = 0–1000 1 = 1000–2000, etc.

Inspection window (code EMMT-06, EMMT-11)

EMMT-06	Size 060–600
EMMT-11	Size 740–950

Interior light fitting (code EMMT-07)

Lifting brackets (code EMMT-08)

Bottom plate, acid-pr. (code EMMT-09)

EMMT-09 -a-b	Bottom plate, acid-proof stainless steel
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950
b - Module	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80

One-piece unit version (code EMMT-10)

EMMT-10 -a-b	One-piece unit version
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600
b - Number of delivery units	01, 02, 03, 04, 05, 06, 07, 08, 09, 10

Thermometer (code EMMT-16)

Duct damper (code EMT-01)

EMT-01 -a	Duct damper
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600 , 740, 750, 850, 950

Duct sound attenuator (code EMT-02)

EMT-02 -a	Duct sound attenuator
a - Size	060, 100, 150, 190, 240, 300, 360, 480, 600, 740, 750, 850, 950

Electric wiring, safety switch (code MIET-AF-06)

MIET-AF-06 -a-b-c-d-e-f Electric wiring, safety switch

a - Fan type	R = Belt-driven D = Direct-driven
b - Motor type	1 = Single speed 2 = Two speed
c - Type of safety switch	ST = Standard YD = Star/Delta-start EF = External FO (frequency inverter) PF = Mounted FO (frequency inverter) 2H = Two-speed operation
d - Voltage	34 = 3×400V~ 50Hz
e - Capacity range	0400 = 4.0 kW 1100 = 4.0–11.0 kW 2200 = 15.0–22.0 kW 0780 = –7.8 kW (2H) 2200 = 7.8–22.0 kW (2H)

Manometer type airflow meter (code MIET-AF-09)

Electronic airflow meter (code MIET-AF-10)

Air purging valve (code MIET-CL-01)

Drain valve (code MIET-CL-02)

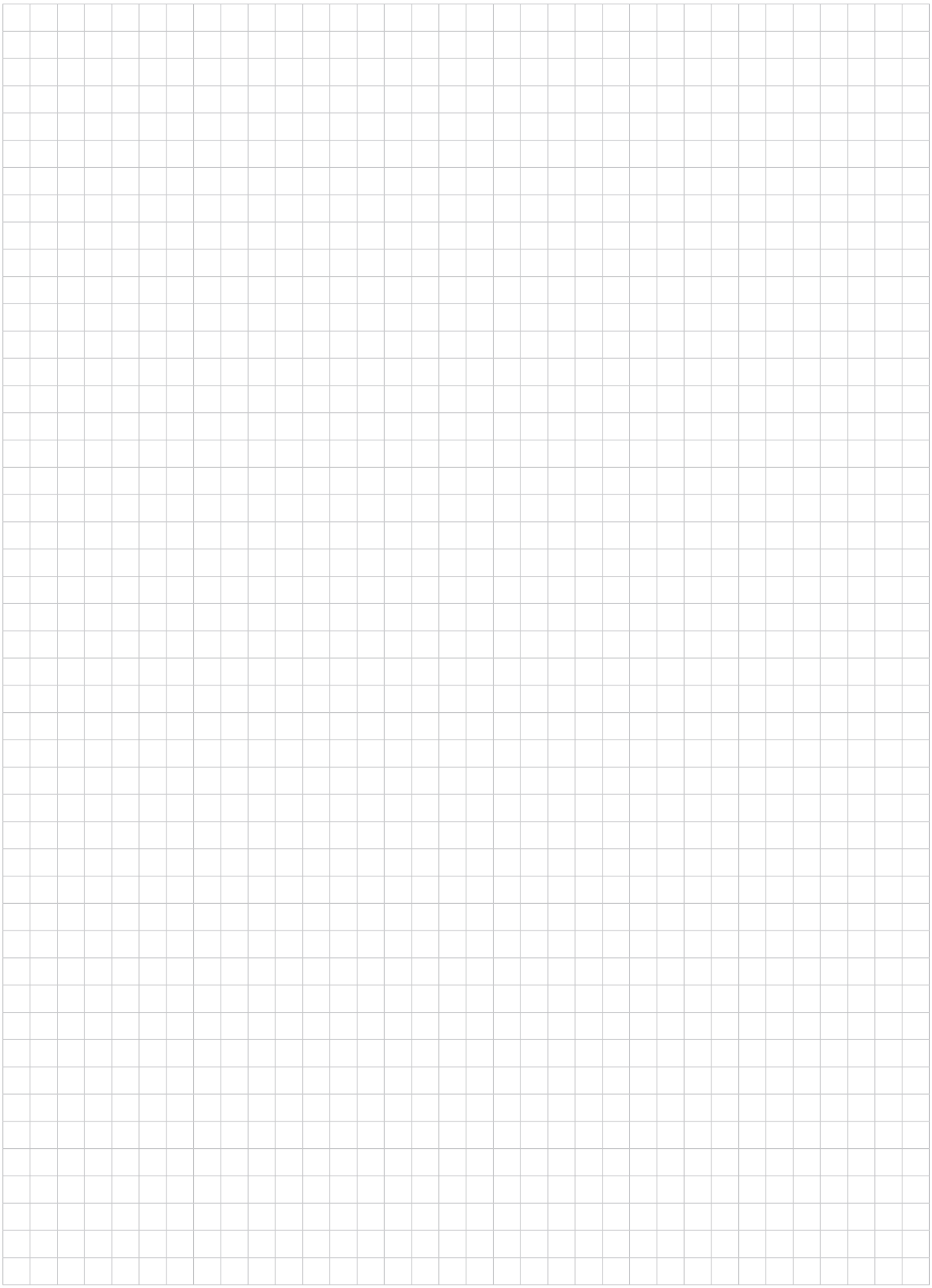
T-pipe for anti-frost protection and venting/drainage (code MIET-CL-03)

Water trap (code MIET-CL-04)

U-tube manometer filter guard (code MIET-FB-01)

Kytölä manometer filter guard (code MIET-FB-02)

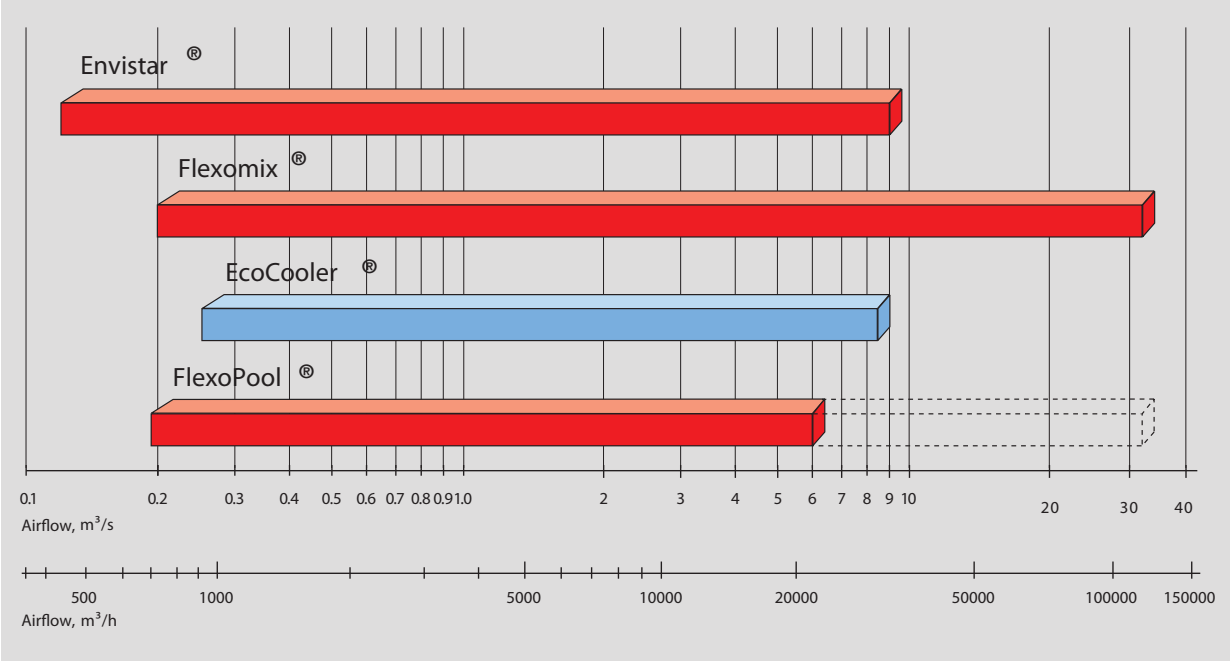
Magnehelic manometer filter guard (code MIET-FB-03)



The Air Handling Units by IV Produkt

IV Produkt's air handling units are flexible, designed to suit many different requirements in both public and private businesses. You can easily combine unit sections and find a total solution in our range of products.

An overview of IV Produkt's range of air handling units.



Envistar is a total solution and can be supplied in the one-piece unit version or as Modules. Available in 3 different models - The Top, Compact and Flex, which in turn are available in various sizes. The Siemens Climatix controller with a variety of different functions and several different communication options is available in the Envistar.

Flexomix is a Modular air handling unit that enables you to decide the version you want delivered. The units are available in 20 sizes and can be operated with any of 4 different types of energy recovery.

EcoCooler is a complete, stepless and speed-controlled cooling unit as an option for our Envistar Flex and Flexomix series. EcoCooler is available with or without cooling energy recovery. Requires no installations outdoors and is CE marked. It is an economical, reliable solution and is simple to install.

FlexoPool is a complete dehumidification plant for indoor swimming pools and water parks.

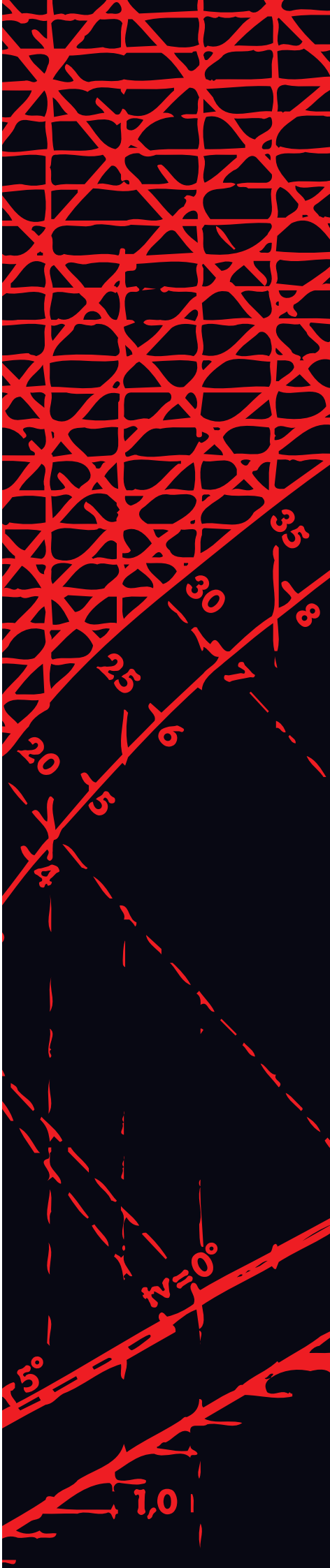
IV Produkt Designer is our product selection software for selecting air handling units.

For more information visit **www.ivprodukt.se**

Eurovent
Envistar and Flexomix AHUs are Eurovent certificated and can always meet energy class A according to 2009 classification. Our product series are tested by Eurovent to EN 1886 and EN 13053. All data presented in our specifications are verified by an independent laboratory.

EUROVENT CERTIFIED PERFORMANCE
AHU N°: 05.07.300 and AHU N°: 00.09.027
Range: Envistar and Flexomix
www.eurovent-certification.com

www.eurovent-certification.com
www.certiflash.com



PRODUKT

Air handling with the focus on LCC

IV Produkt AB, P.O. 3103, SE-350 43 VÄXJÖ, SWEDEN
Phone: +46-470 75 88 00 • Fax: +46-470 75 88 76
E-mail: info@ivprodukt.com • www.ivprodukt.com

PF060-950.110822.04.EN