

S2 Monobloc

Planning documentation



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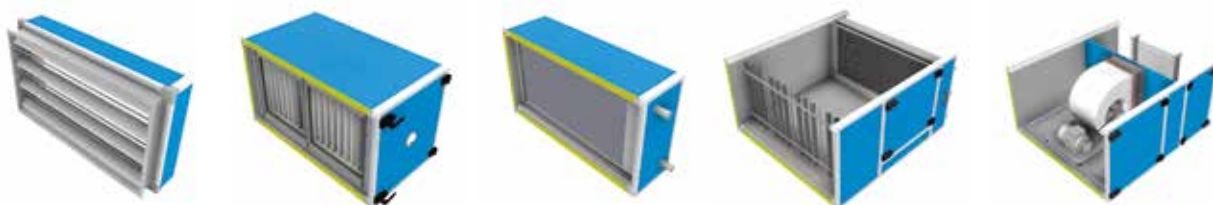


S2 Monobloc

Since 2000, Mountair has been successfully producing the new Monobloc S2 series. The distinguishing features of this system are on the one hand the absolute thermal separation of the whole housing such as panels, profile sections and corner profiles, and on the other, rigorous compliance with hygiene aspects such as smooth internal surfaces without ledges on the profiles and external fasteners. This means that our S2 Monobloc is designed to also be used in sophisticated plants such as in pharmaceuticals/ laboratories, food production and hospital buildings.

Notwithstanding the S2 standard types given in this document, we attach importance to individuality. Thus, if required, we can produce any intermediate size and also offer any special design.

On the basis of this documentation it is possible for you to define the size and weight of your Monobloc for yourself, within a reasonable time.



S2 Monobloc

Housing and mounting parts

The S2 construction system is a robust aluminium frame design (AlMgSi), which ensures three-dimensional independent climate envelopes with rigorous thermal insulation for use in indoor and outdoor areas. The aluminium extruded profiles with thermal separation, which can be in various lengths as required, are connected by means of ingenious three-dimensional corner profiles (without cold bridges). Double walled panels, wall thickness 42 mm / 54 mm or 100 mm, with hard foam, rock wool or honeycombed flame retardant, fire class BKZ 5.1 CEN/DIN B1.

Panels with a surrounding profile for thermal insulation of the insides of the panels and the outer parts. The two seal levels mean that leakage is reduced to an absolute minimum. The simple mounting allows robust steel constructions which are faced with fixed or openable sandwich panels. All surfaces are let in so that the frame fits closely, allowing a clean surface to be created. The panels which can be opened for service purposes are fitted with adjustable external hinges and locks. Parts with rotating elements are fitted with hexagon locks, other doors have handles. The frame construction can be specified so as to be separated throughout or thermally separated, depending on the requirement and application of the corresponding cube.

Additional equipment (optional):

- Doors with locking cylinder
- Spare hexagon key
- Complete wiring of the Monobloc fed to the outside
- Pressure measurement nipple fed to the outside

Dampers and flexible connectors

Counter flow fin dampers in aluminium with inserted seals. The drive mechanism is inserted into the structure, square leading axis. 30 mm connecting frames. Thermally insulated outside air/ exhaust air dampers. Optional: tight dampers according to DIN 1946/4, a number of drive axes according to surface and torque (see diagram page 28).

Filter

Standard filter elements in central tensioning frames. Frames are powder coated or optionally in V2A or V4A steel. Filter cell seal is in EPDM hollow profile seals as surrounds. Pocket filters with wooden frames, plastic frames or metal frames. Manufacturer varies according to your choice. Use of tested filter cells according to EN 779 standard. Energy efficiency class according to specification. Filter grades H11 to H14: Mounting of aerosol nozzle, filter frame with tight fit test groove. Pressure loss display with visual pressure loss gauge or with electrical differential pressure switch is optional.

In addition to visual filter pressure loss display, the following can also be offered:

- Differential pressure display mounted externally
- Differential pressure with/without display, with/without digital contact
- Differential pressure switch

- Spare filter
- Pans under the filter section
- Filter frame with test groove

Fans

Radial fan of high quality and optimum efficiency mounted on a robust base frame and with vibration dampers. Individual sizing according to application. The motor is on clamping slides with central clamping bolt. Drive with v-belt or flat belt. If with flat belt, then dual axis adjustable clamping slides are incorporated. Pressure sided decoupling with flexible connection. Free running impeller fan and fixed mounted drive motor with reinforced bearings. Motors with thermistor for operation with frequency inverters. Fan and motor mounted and fastened on the robust frame structure via vibration dampers. Intake side decoupling with flexible connectors.

Plug-in fans with EC motors with directly integrated inverter units for direct triggering with a 0 – 10 V signal.

Optional: Fans with Measurement ring line in the inlet nozzle and direct square root (digital and electrical output signal).

Optional: Inspection glass and lighting, reserve belt, protective safety grill.

Additional equipment (optional):

- Motors with mounted frequency inverters
- Control panel built into the front panels
- Inspection glass
- Internal lighting
- Measurement ring line connection fed to the outside
- Measuring transducer with/without flow rate indicator with signal output
- Differential pressure switch as flow monitor
- Oppermann sensor mounted with/without processing electronics, loose
- Spare belt
- Motor with thermistor
- Protective safety grill
- Electrical connections prewired to a terminal box

Expansion section

With incorporated perforated baffle plate fastened to sturdy carrier bars.

Sound attenuators

Noise baffles according to acoustic sizing with rounded edges. As required, with inlet cap, perforated plate or hygienic non-woven covering. Frame material galvanised or optionally in V2A steel. Abrasion resistant mineral fibre. Compliant with the standards, carcinogenic index KL>40.

Additional equipment (optional):

- perforated plate cover as enhanced mechanical protection
- inlet cap

Humidifiers

Contact humidifier in incorporated housing, interior V2A steel with pan and drain. Accessibility and design are according to currently valid hygiene regulations. Additional

equipment with UV lamp, water quality measurement and automatic desludging is available. Feed water requirements: Softened. Designed as adiabatic return air humidifier.

High/low pressure atomiser in incorporated housing, interior V2A steel with pan and drain. Complete profile powder coated. Nozzle rack and turbulators in V2A steel.

High pressure pump station supplied loose for external installation. Accessibility and design are according to currently valid hygiene regulations. Designed as supply air humidifier or adiabatic exhaust air humidifier. Feed water requirements: Osmosis.

Dual humidifier in incorporated housing interior V2A steel with pan and drain. Complete profile powder coated. Nozzle rack and turbulators in V2A steel. Pump station supplied loose for external installation. Accessibility and design are according to currently valid hygiene regulations. Designed as supply air humidifier or adiabatic exhaust air humidifier. Feed water requirements: Osmosis.

Steam humidifier with steam lance and V2A steel pan and drain connections. Incorporated front door. With steam generator or valve for connection to an external steam network. Designed as supply air humidifier.

Additional equipment (optional):

- Inspection glass with cover
- Illumination
- Conductivity measurement sensor for desludging
- UV lamp to reduce germ growth in the water bath
- Electrical connections wired to a terminal box
- Multi-stage control with valves in the control cabinet
- Steam valve already incorporated
- Compact steam generator with complete controls and steam hose

High performance Aircsol® circuit connected system (CCS)

Combined cycle systems standardised for high efficiency and optimised for annual level of utilisation – accurate and down to earth. System equipment complete with hydraulic section and heat recovery controller. Cu tubes 0.4 mm, hydraulically expanded. Fins min. 0.2 mm. Frame in stainless steel or AlMg3. Collectors in copper with gunmetal threads. Whole heat exchanger produced in non-ferrous material. Heat exchanger optimised hydraulically to maximum counter current exposure, fully ventilatable and drainable. Pressure PN 16. Design according to Eurovent, hygiene aspects concerning cleaning taken into consideration.

Optional with pipework in steel, copper or stainless steel.

Additional equipment (optional):

- Rotameter supplied loose
- Defroster heat exchanger
- Defroster cleaning unit automatic
- Adiabatic cooling of the exhaust heat recovery

Fin coil Aircsol® heat exchanger

Designed as heater, cooler, evaporator, condenser on the basis of a high-performance combined cycle system. Air cooler battery: Drip pan in V2A steel, drain downward with external thread. In the case of direct evaporation, interconnect from the bottom upward. Suction line at the

bottom. Droplet separator in PP in stainless steel frame. Pan slanted, drain downwards. Air heater battery in CU/Alu/V2A/Ms. Design and manufacture according to the AIRSOL® system; “good engineering”. Mounted on chassis runners in V2A steel. Standard counter current from the bottom upwards.

Additional equipment (optional):

- Flanges screwed on or supplied loose
- Internal ventilation fed outside
- Internal piping
- Enhanced version for higher heating medium pressure
- Pan heaters

Frost protection grid

Frost protection parts and capillary filler. Designed as retractable drawer with handles or mounted as a fixed grid on the exchanger and with a service component.

Rotor heat exchanger (RHE)

Rotating regeneration wheels in sheet-metal housing. Rotors for high temperature and moisture recovery are in aluminium, oxidised aluminium or with epoxy coating. Rotors in PP for sea water resistant designs. Pedestal bearings, adjustable seals, purge section, drive motor with belt drive are integrated elements.

Additional equipment (optional):

- Inspection glass
- Spare belt
- Segmented rotor
- Cassette divided rotor

Dezecor® sorption rotors

High performance rotors made of inorganic fibre with low temperature zeolite. In addition to the high-performance capability, Dezecor® rotors are characterised by the selective water load (no odour transfer) and low regeneration temperatures. Rotor sealing on the housing comes with a high-quality mechanical seal. Speed controlled drive with activated rotor monitoring. Brushless DC drive systems for extreme adjustment ranges at constant torque.

Plate heat exchanger (PHE)

The aluminium plate heat exchanger is built into an independent cube and completely sealed. Integrated bypass damper for performance control. Recuperative heat exchangers condense the latent heat (moisture) in the exhaust air. Designed taking into consideration the temperature stratification and risk of frost. Large area stainless steel drip water pan. Optional: Designed as either a double plate or counter current heat exchanger in PP, epoxy coated or with hydrophilic surface. Optionally, with moisture transfer.

Additional equipment (optional):

- Aluminium plate heat exchanger, coated
- Double plate heat exchanger
- Enhanced temperature resistance
- Enhanced pressure resistance
- Adiabatic wetting
- Pan heaters

Base frame

Bolted and welded construction in steel, hot dip galvanised, with height adjustable feet on rubber buffers.

Additional equipment (optional):

- Design in V2A / V4A
- Adjustable according to ground unevenness

Special designs

Exterior installation

Monoblocs are delivered in the standard RAL 7015/7035 UV-stable design. Other colours or V2A / V4A are available upon request. V2A bolts. Optionally, the aluminium profiles and weather protection grates can also be delivered in the same colour. Entire Monobloc in thermally decoupled profiles. Additionally, a glued-on waterproof Sarnafil sheet incl. all-round drip nozzle; increased plinth height. Additional equipment (optional): weather protection grating, rain cover, mesh screen, platform above openings below, transport and lifting straps.

Design with fire index number

Entire Monobloc housing in hardwood, completely planked with Duripanel plates with the fire index number EI30 / EI60 or EI90, interior mass identical to the S2 types. Monobloc length and connection supports are defined project-specifically.

ATEX conform design

For use in areas at risk of explosion.

Soundproof design

In addition to the acoustically optimised panel filling with wool (approx. 15 dB at 250 Hz), the panels can be fitted with a sound-deadening layer. The additional insulation amounts to approx. 8 dB at 250 Hz.

Special Monoblocs

Our S2 system and ingenuity have almost no limits. Whether you need cm-exact special designs, angled Monoblocs or complete climatic chambers for interior and exterior installations, we can fulfil your requirements. Test our flexibility!

Refrigeration machines – heat pumps

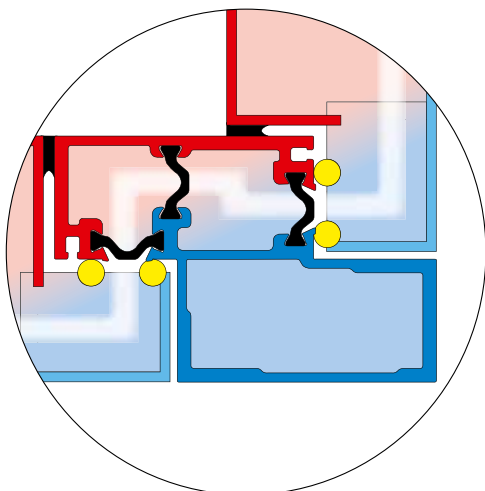
Complete refrigeration system divided according to performance level. Speed-regulated compressor. Coolant R407c, R410a, R134 and many more. Aggregate loose or built in.

Control

Completely automatic control. System and control description, electrical diagram, control cabinet, internal wiring, start-up and acceptance report with maintenance instructions. Control consisting of measuring units, controllers (DDC) and actuators. Communication interface (BUS), modem and remote maintenance. Brands: Siemens Synco, Siemens Climatix, Siemens S7 (on request) or Beckhoff.

Monobloc/AHU-housing

The Monobloc housing is designed with frame and sandwich panels, as for air conditioning stations. This means good insulation (noise and temperature) and a design without thermal bridges. The Mountair S2 housing fulfils the applicable hygiene norms VDI 6022 and is EN certified T2/TB2. The frames are in aluminium, the panels powder-coated, two shells without exposed insulation. The delivery is made in one part. Mountair is a Swiss product with design advantages, that is long-lasting and economically interesting.



Hygiene – VDI 6022

Corner profile and panels are continuous fitting with no penetration possible.

Proven sealing technology

Doubled, continuous sealing interior-exterior

Thermal separation

Panel – Profile – Corner

Tender Specifications

Standard version for indoor installation

Ventilation and air conditioning Monoblocs of a segment design for indoor installation consist of a corrosion resistant profile frame in aluminium (AlMg Si 0.5) with inserted seal. The whole profile frame structure is thermally decoupled up to the heat recovery section. The segments are connected to each other by bolts and sealing strips. The thermally decoupled sandwich panels (42 mm, 54 mm or 100 mm) are in galvanised steel sheet, powder coated (RAL5012, 60–80 µm) both sides, with surrounding aging resistant sealing bead. The sheet thickness inside and outside is 0.8–1.0 mm with 42 mm, 54 mm or 100 mm honeycombing/rock wool PIR sandwiched between. The inner lining is smooth walled, without any projecting parts in the interior space.

The Monobloc floor is without grooves or cavities. The panels are fastened from the outside with screws. Monitoring of the fan belts is through a double shelled inspection window which includes interior lighting.

The monobloc segments are mounted on a sturdy base frame made of galvanised profile steel and fitted with adjustable rubber feet. The design and construction are tested according to EN 1886.

For maintenance of the installed parts, the operating side has access doors with three-dimensional adjustable hinges and lever operated locks and have surrounds permanently inserted which have elastic double seal bead in the door leaf. Doors open outwards.

Sufficient space is provided between the individual air handling elements for the installation of control devices. Strength and tightness of the walls and other elements are reinforced and dimensionally stable and are designed to accommodate the negative and positive pressures in the device for maximum operating performance.

All duct connections are provided with elastic connecting pieces with coated polyester fabric, temperature resistant to 200 °C, incombustible (BKZ 6 q 3 – q). All connections to the ventilation device are equipped with potential equalisation.

Housing design according to EN 1886

Mechanical strength of the housing	Class 2A
Air tightness of the housing	Class B
Filter bypass leakage	0.16 %
Thermal transmission coefficient, rock wool 120 kg/m ³ , panels 42 mm	Class T2
Thermal bridge factor	Class TB2
Fire protection, rock wool 120 kg/m ³ , panels 42 mm	Class A1

Sound attenuation (level of insertion loss De)

Octave band [Hz]	63	125	250	500	1000	2000	4000	8000
De [dB]	2	8	13	22	29	25	26	38

Certificates

Hygiene certificate VDI 6022 for HYBACO hybrid recoolers

Hygiene certificate VDI 6022 for HUMIDOS adiabatic, atomizing humidifiers

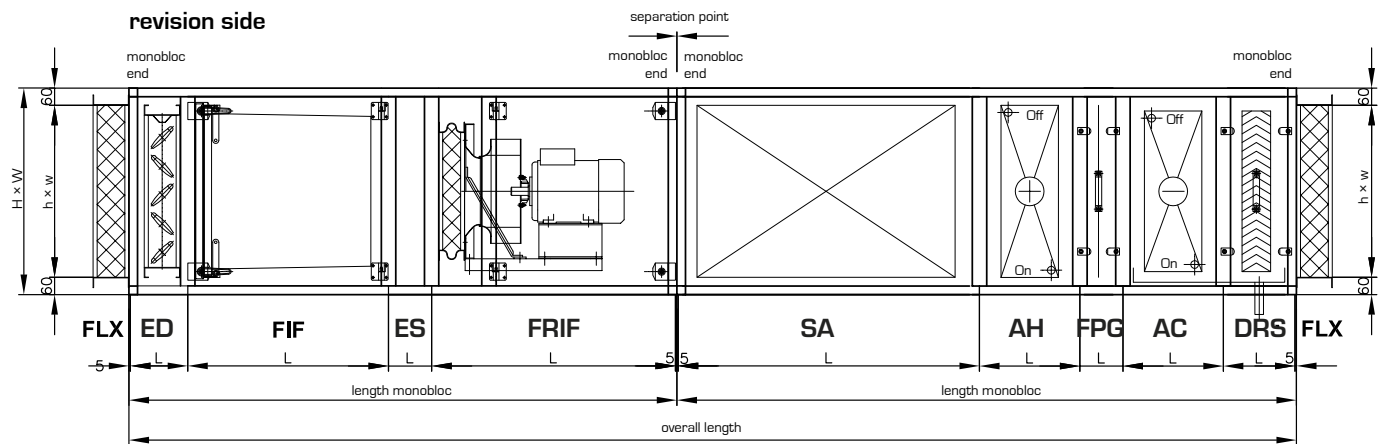


Quality grades according to SWKI

with Mountair upgrades

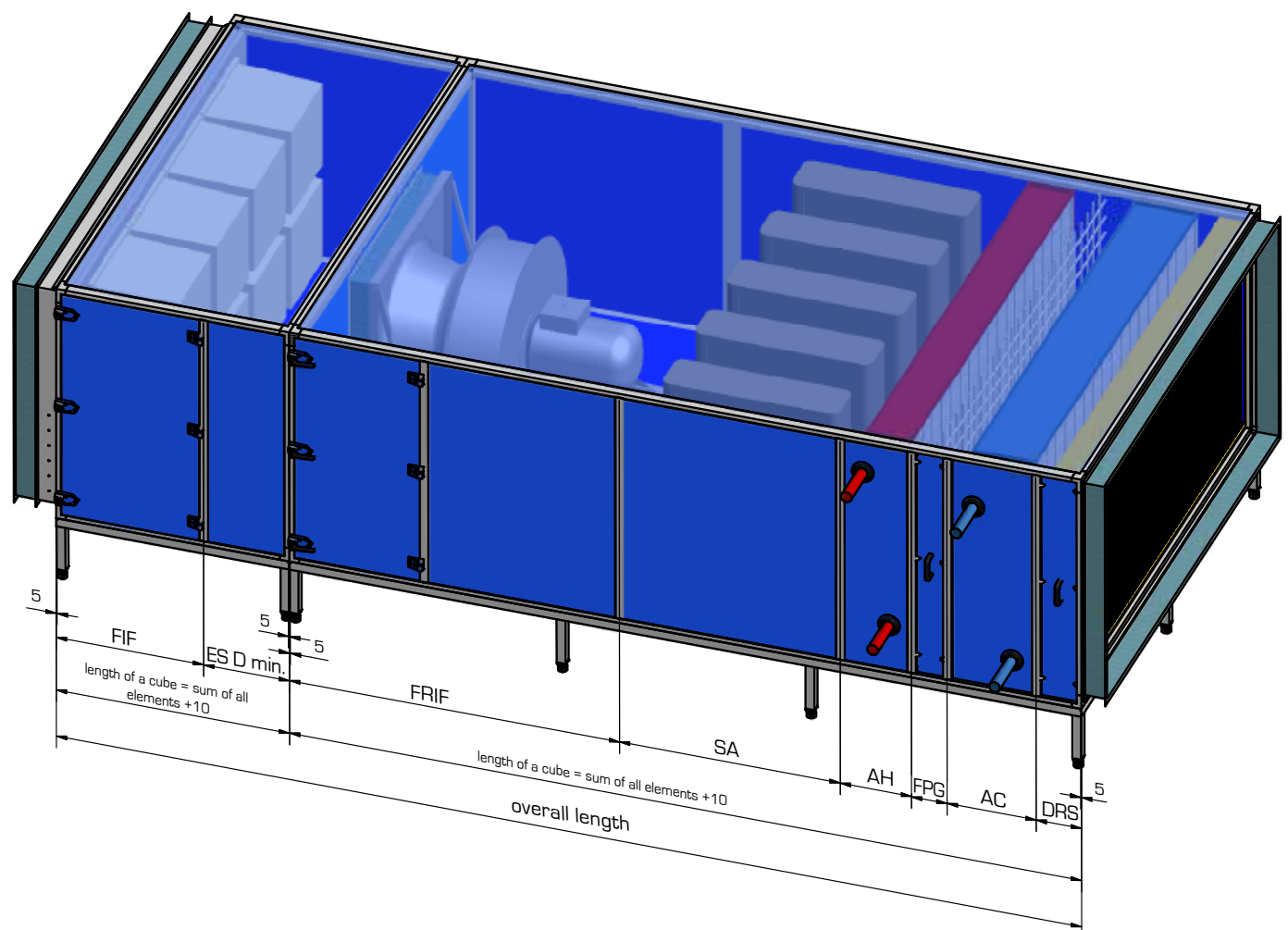
MONOBLOC PARTS		1	2	3	4
Frame profile		aluminium	aluminium	aluminium	aluminium + power coating
Frame profile seals		rubber profile up to 110 °C	rubber profile up to 110 °C	rubber profile up to 110 °C	rubber profile up to 110 °C
Cover plate, double skin version with insulation in between	inside	galvanised	powder coated	powder coated, Floor V2A steel	V4A
	outside	galvanised	powder coated	powder coated	powder coated
	Insulation	rock wool/PUR/bee board	rock wool/PUR/bee board	rock wool/PUR/bee board	rock wool/PUR/bee board
Condensation pan		V2A	V2A	V2A	V4A
Fasteners, handles	outside	anodised aluminium	anodised aluminium	anodised aluminium	anodised aluminium
Mounting parts	Filter frame	powder coated steel	powder coated steel	powder coated steel	V4A
	Air heater rails	V2A	V2A	V2A	V4A
	Air cooler rails	V2A	V2A	V2A	V4A
	Droplet separator	PP V2A	PP V2A	PP V2A	PP V4A
	Fan console	powder coated steel	powder coated steel	powder coated steel	V4A
Sound attenuator	Cladding	sendzimir galvanised	sendzimir galvanised	V2A	V4A
	Perforated plate	sendzimir galvanised	sendzimir galvanised	V2A	V4A
Fastening material		sendzimir galvanised	sendzimir galvanised	V2A	V2A / V4A
Finned tube heat exchanger	Collectors	Cu	Cu	Cu	Cu coated
	pipes	Cu	Cu	CuSn	Cu coated
	Fins	aluminium	aluminium	AlMg3	coated aluminium
Fans	Housing	sendzimir galvanised	sendzimir galvanised	sendzimir galvanised / powder coated	sendzimir galvanised / powder coated / V2A
	Impeller	Aluman / St Pv	Aluman / St Pv	Aluman / St Pv	Aluman / St Pv or PP
	Shaft	Rustproof steel	Rustproof steel	Rustproof steel	V2A
Manufacturer	Fan	Gebhardt/ABB/EBM	Gebhardt/ABB/EBM	Gebhardt/ABB/EBM	Gebhardt/ABB/EBM
Motors	Housing	synthetic resin coating	synthetic resin coating	synthetic resin coating	enhanced corrosion protection
	Shaft	steel	steel	steel	V2A
Dampers	Frame	aluminium	aluminium	aluminium	aluminium coated
	Fins	aluminium	aluminium	aluminium	aluminium coated
	Gear wheels	plastic	plastic	plastic	plastic
	Axis	aluminium/brass outer	aluminium/brass outer	aluminium/brass outer	aluminium/brass outer
Flexible connections		glass fibre fabric with double sided coating			
		Fire Class V1q 3, temperature resistant up to 150 °C, galvanised			
					Fire Class V1q 3, temperature resistant up to 150 °C, V4A steel
Duct connections		SBM30 sendzimir galvanised	SBM30 sendzimir galvanised	SBM30 sendzimir galvanised	SBM30 V4A
Base frame		steel galvanised	steel galvanised	steel galvanised	steel galvanised

Monobloc dimensioning



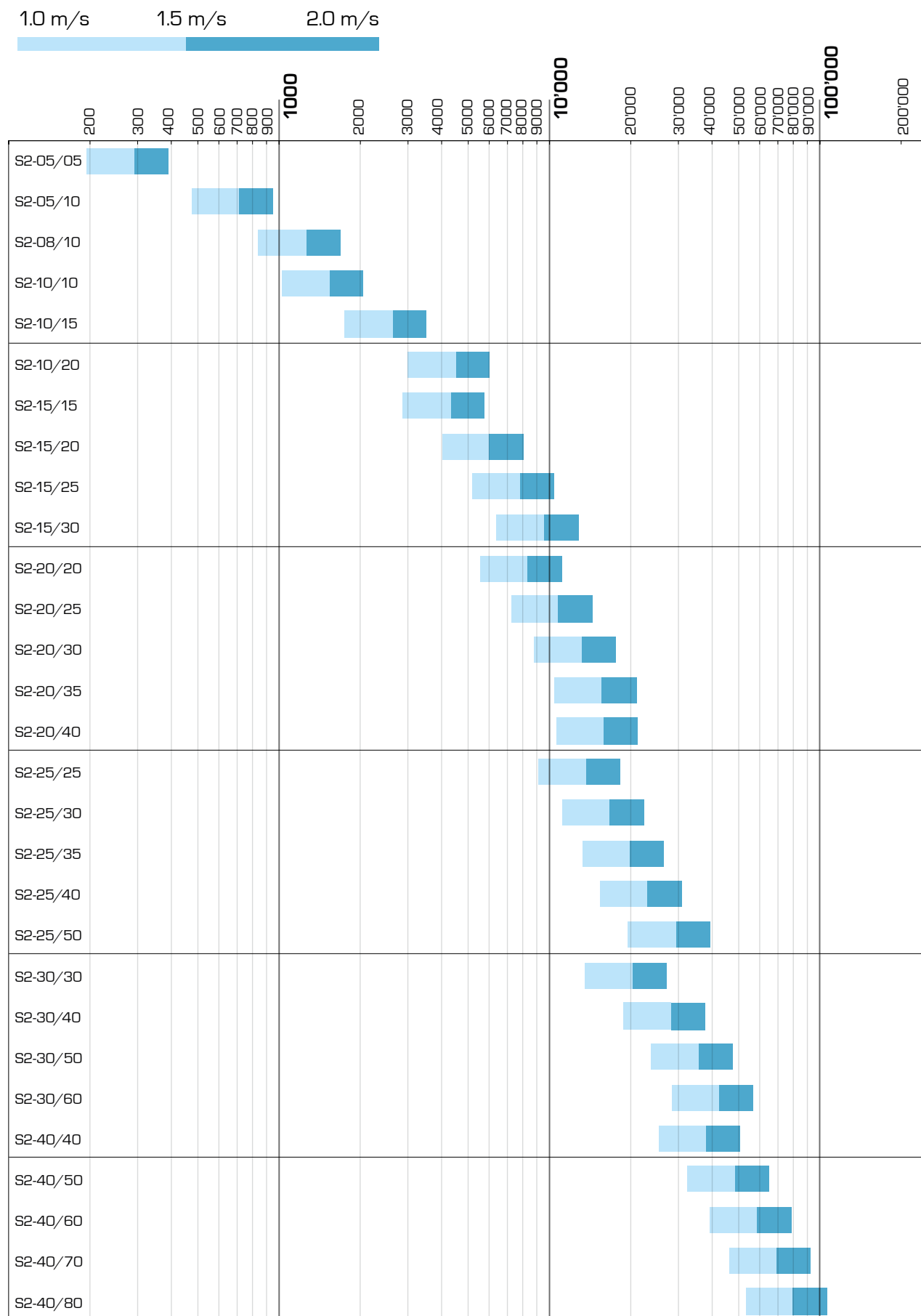
Monobloc/AHU calculation

- Length of a cube = sum of all element lengths + 10 mm
- Overall length = sum of all single cubes
- Normal ceiling reference grid 50 mm/100 mm, panel length = element length - 50 mm
- Profile thickness revision face 30 mm, end face 60 mm, below/above 30/60 mm
- Maximum cube length: 6000 mm



S2 Types

Selection diagram according to air volume in m³/h

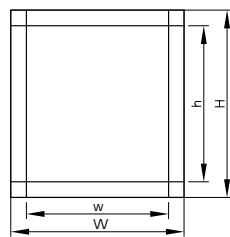


Air volumes and Monobloc/AHU sizes

AHU UNIT	2 M/S AIR HEATER		2 M/S FC (free cross section)		H	W	h	w
Type	V [m³/s]	V [m³/h]	V [m³/s]	V [m³/h]	mm	mm	mm	mm
S2-5-5	0.11	411	0.21	755	420	420	312	336
S2-5-10	0.26	951	0.40	1429	420	720	312	636
S2-8-10	0.47	1698	0.65	2345	620	720	512	636
S2-10-10	0.57	2053	0.78	2802	720	720	612	636
S2-10-15	0.97	3497	1.22	4389	720	1080	612	996
S2-10-20	1.66	5987	1.99	7147	840	1440	732	1356
S2-15-15	1.60	5754	1.94	6970	1080	1080	972	996
S2-15-20	2.22	8002	2.64	9490	1080	1440	972	1356
S2-15-25	2.91	10462	3.34	12009	1080	1800	972	1716
S2-15-30	3.55	12786	4.04	14529	1080	2160	972	2076
S2-20-20	3.19	11501	3.61	13005	1440	1440	1332	1356
S2-20-25	4.04	14547	4.57	16457	1440	1800	1332	1716
S2-20-30	4.91	17685	5.53	19910	1440	2160	1332	2076
S2-20-35	5.81	20916	6.49	23362	1440	2520	1332	2436
S2-20-40	6.73	24239	7.45	26815	1440	2880	1332	2796
S2-25-25	5.14	18514	5.81	20905	1800	1800	1692	1716
S2-25-30	6.23	22415	7.03	25291	1800	2160	1692	2076
S2-25-35	7.38	26553	8.24	29676	1800	2520	1692	2436
S2-25-40	8.47	30504	9.46	34062	1800	2880	1692	2796
S2-25-50	10.82	38964	11.90	42833	1800	3600	1692	3516
S2-30-30	7.55	27193	8.52	30672	2160	2160	2052	2076
S2-30-40	10.42	37520	11.47	41309	2160	2880	2052	2796
S2-30-50	13.21	47559	14.43	51947	2160	3600	2052	3516
S2-30-60	15.88	57167	17.38	62584	2160	4320	2052	4236
S2-40-40	14.03	50495	15.50	55804	2880	2880	2772	2796
S2-40-50	17.93	64554	19.49	70174	2880	3600	2772	3516
S2-40-60	21.84	78613	23.48	84544	2880	4320	2772	4236
S2-40-70	25.74	92672	27.48	98914	2880	5040	2772	4956
S2-40-80	29.65	106731	31.47	113284	2880	5760	2772	5676

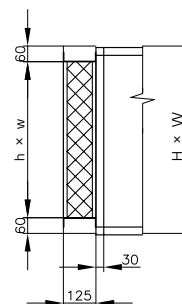
NPK 200 Intake, dampers, flexible connectors

S2 MONOBLOC ELEMENTS



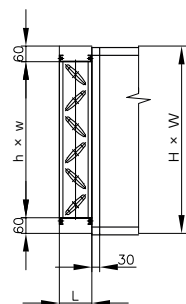
Cross section

FLEXIBLE CONNECTORS (FLX)

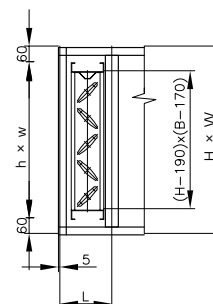


MONOBLOC	DIMENSIONS	CONNECTOR DIMENSIONS		FLX	
Type	H × W [mm]	h [mm]	w [mm]	Length [mm]	Weight [kg]
S2-05/05	420 × 420	300	300	125	2
S2-05/10	420 × 720	300	600		4
S2-08/10	620 × 720	500	600		4
S2-10/10	720 × 720	600	600		5
S2-10/15	720 × 1080	600	960		6
S2-10/20	840 × 1440	720	1320		8
S2-15/15	1080 × 1080	960	960		8
S2-15/20	1080 × 1440	960	1320		9
S2-15/25	1080 × 1800	960	1680		11
S2-15/30	1080 × 2160	960	2040		12
S2-20/20	1440 × 1440	1320	1320		11
S2-20/25	1440 × 1800	1320	1680		12
S2-20/30	1440 × 2160	1320	2040		13
S2-20/35	1440 × 2520	1320	2400		15
S2-20/40	1440 × 2880	1320	2760		16
S2-25/25	1800 × 1800	1680	1680		13
S2-25/30	1800 × 2160	1680	2040		15
S2-25/35	1800 × 2520	1680	2400		16
S2-25/40	1800 × 2880	1680	2760		18
S2-25/50	1800 × 3600	1680	3480		21
S2-30/30	2160 × 2160	2040	2040		16
S2-30/40	2160 × 2880	2040	2760		19
S2-30/50	2160 × 3600	2040	3480		22
S2-30/60	2160 × 4320	2040	4200		25
S2-40/40	2880 × 2880	2760	2760		22
S2-40/50	2880 × 3600	2760	3480		25
S2-40/60	2880 × 4320	2760	4200		28
S2-40/70	2880 × 5040	2760	4920		31
S2-40/80	2880 × 5760	2760	5640		34

INTERNAL DAMPER (ID)

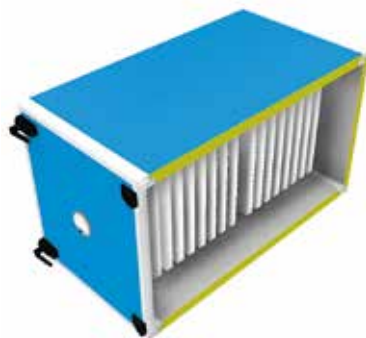
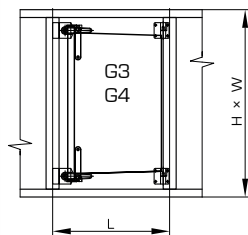
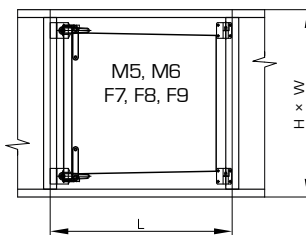
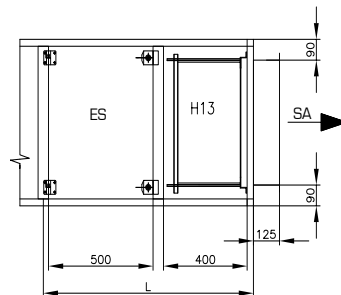


EXTERNAL DAMPER (ED)

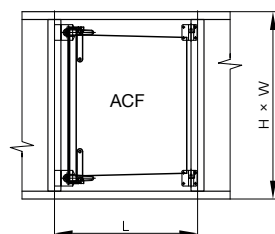
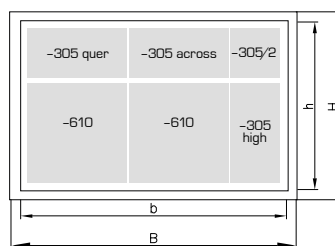


MONOBLOC	DIMENSIONS	ID	ED		
Type	H x W [mm]	Length [mm]	weight [kg]	Length [mm]	weight [kg]
S2-05/05	420 x 420	125	4	250	3
S2-05/10	420 x 720		6		5
S2-08/10	620 x 720		8		7
S2-10/10	720 x 720		10		8
S2-10/15	720 x 1080		14		12
S2-10/20	840 x 1440		21		19
S2-15/15	1080 x 1080		20		18
S2-15/20	1080 x 1440		26		23
S2-15/25	1080 x 1800		32		29
S2-15/30	1080 x 2160		38		25
S2-20/20	1440 x 1440	165	33	250	31
S2-20/25	1440 x 1800		41		38
S2-20/30	1440 x 2160		48		45
S2-20/35	1440 x 2520		56		53
S2-20/40	1440 x 2880		64		60
S2-25/25	1800 x 1800		50		47
S2-25/30	1800 x 2160		50		56
S2-25/35	1800 x 2520		66		63
S2-25/40	1800 x 2880		78		74
S2-25/50	1800 x 3600		97		92
S2-30/30	2160 x 2160	165	70	250	67
S2-30/40	2160 x 2880		92		88
S2-30/50	2160 x 3600		114		110
S2-30/60	2160 x 4320		136		131
S2-40/40	2880 x 2880		121		116
S2-40/50	2880 x 3600		149		145
S2-40/60	2880 x 4320		178		173
S2-40/70	2880 x 5040		207		201
S2-40/80	2880 x 5760		236		229

NPK 300 Filter


**COARSE DUST
FILTER (CF)**

MEDIUM FILTER (FIF)

**HIGH EFFICIENCY
FILTER (HEF)**


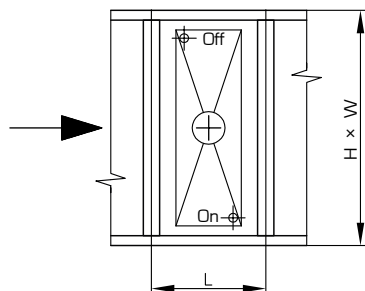
MONOBLOC	DIMENSIONS	CF (360)		FIF (580)		HEF (292)	
Type	H x W [mm]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]
S2-05/05	420 x 420	450	74	650	85	1005	25
S2-05/10	420 x 720		94		109		36
S2-08/10	620 x 720		110		127		45
S2-10/10	720 x 720		123		141		50
S2-10/15	720 x 1080		156		179		67
S2-10/20	840 x 1440	550	204	750	233		93
S2-15/15	1080 x 1080		199		227		89
S2-15/20	1080 x 1440		242		274		112
S2-15/25	1080 x 1800		303		340		134
S2-15/30	1080 x 2160		350		390		157
S2-20/20	1440 x 1440		296		332		140
S2-20/25	1440 x 1800		369		410		168
S2-20/30	1440 x 2160		425		470		195
S2-20/35	1440 x 2520		481		531		223
S2-20/40	1440 x 2880		547		600		251
S2-25/25	1800 x 1800		435		480		201
S2-25/30	1800 x 2160		501		350		234
S2-25/35	1800 x 2520		567		620		258
S2-25/40	1800 x 2880		645		702		300
S2-25/50	1800 x 3600		776		843		367
S2-30/30	2160 x 2160	550	578	750	631		273
S2-30/40	2160 x 2880		744		806		350
S2-30/50	2160 x 3600		896		967		427
S2-30/60	2160 x 4320		1048		1128		504
S2-40/40	2880 x 2880		963		1034		448
S2-40/50	2880 x 3600		1161		1240		547
S2-40/60	2880 x 4320		1358		1446		646
S2-40/70	2880 x 5040		1577		1674		744
S2-40/80	2880 x 5760		1775		1880		843

**ACTIVATED CARBON
FILTER (ACF)****FILTER CELLS**

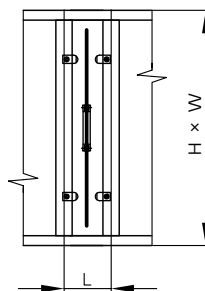
MONOBLOC	DIMENSIONS	ACF (300)		FILTER CELLS				
Type	H x W [mm]	L [mm]	W [kg]	-610	-305 trav.	-305 Up	-305 / 2	-SPEC
S2-05/05	420 x 420	450	74	0	0	0	1	0
S2-05/10	420 x 720		94	0	1	0	0	0
S2-08/10	620 x 720		110	0	0	0	0	-508
S2-10/10	720 x 720		123	1	0	0	0	0
S2-10/15	720 x 1080		156	1	0	1	0	0
S2-10/20	840 x 1440		204	2	0	0	0	0
S2-15/15	1080 x 1080		199	1	1	1	1	0
S2-15/20	1080 x 1440		242	2	2	0	0	0
S2-15/25	1080 x 1800	550	303	2	2	1	1	0
S2-15/30	1080 x 2160		350	3	3	0	0	0
S2-20/20	1440 x 1440		296	4	0	0	0	0
S2-20/25	1440 x 1800		369	4	0	2	0	0
S2-20/30	1440 x 2160		425	6	0	0	0	0
S2-20/35	1440 x 2520		481	6	0	2	0	0
S2-20/40	1440 x 2880		547	8	0	0	0	0
S2-25/25	1800 x 1800		435	4	2	2	1	0
S2-25/30	1800 x 2160		501	6	3	0	0	0
S2-25/35	1800 x 2520		567	6	3	2	1	0
S2-25/40	1800 x 2880		645	8	4	0	0	0
S2-25/50	1800 x 3600		776	10	5	0	0	0
S2-30/30	2160 x 2160		578	9	0	0	0	0
S2-30/40	2160 x 2880		744	12	0	0	0	0
S2-30/50	2160 x 3600		896	15	0	0	0	0
S2-30/60	2160 x 4320		1048	18	0	0	0	0
S2-40/40	2880 x 2880		963	16	0	0	0	0
S2-40/50	2880 x 3600		1161	20	0	0	0	0
S2-40/60	2880 x 4320		1358	24	0	0	0	0
S2-40/70	2880 x 5040		1577	28	0	0	0	0
S2-40/80	2880 x 5760		1775	32	0	0	0	0

NPK 400 Heat Exchanger

AIR HEATER (AH)

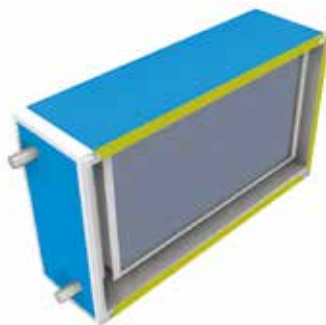
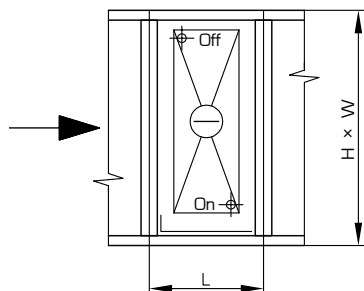


FROST PROTECTION GRID (FPG)

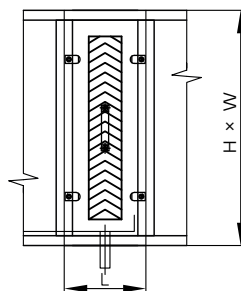


MONOBLOC	DIMENSIONS	2 TR		4 TR		6 TR		FPG	
Type	H × W [mm]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]
S2-05/05	420 × 420	200	17	250	20	300	24	150	11
S2-05/10	420 × 720		23		30		37		13
S2-08/10	620 × 720		29		39		50		15
S2-10/10	720 × 720		32		44		57		15
S2-10/15	720 × 1080		44		62		82		18
S2-10/20	840 × 1440	250	62	300	92	350	123		22
S2-15/15	1080 × 1080		59		88		118		21
S2-15/20	1080 × 1440		75		116		159		24
S2-15/25	1080 × 1800		91		146		202		27
S2-15/30	1080 × 2160		107		177		249		30
S2-20/20	1440 × 1440	300	96	350	154	400	213		27
S2-20/25	1440 × 1800		116		188		263		31
S2-20/30	1440 × 2160		150		230		313		34
S2-20/35	1440 × 2520		172		266		363		38
S2-20/40	1440 × 2880		193		301		413		41
S2-25/25	1800 × 1800	350	154	400	238	450	325		37
S2-25/30	1800 × 2160		181		282		387		39
S2-25/35	1800 × 2520		200		314		432		41
S2-25/40	1800 × 2880		234		371		511		46
S2-25/50	1800 × 3600		287		459		634		54
S2-30/30	2160 × 2160	400	212	450	335	500	461		43
S2-30/40	2160 × 2880		275		440		608		52
S2-30/50	2160 × 3600		347		554		766		62
S2-30/60	2160 × 4320		411		661		914		73
S2-40/40	2880 × 2880		366		588		814		68
S2-40/50	2880 × 3600	400	449	450	728	500	1010		82
S2-40/60	2880 × 4320		531		866		1206		97
S2-40/70	2880 × 5040		614		1005		1403		113
S2-40/80	2880 × 5760		696		1145		1600		130

AIR COOLER (AC)



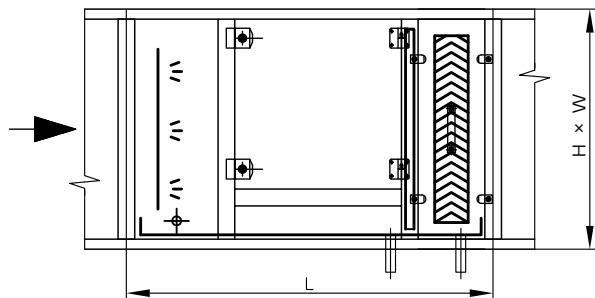
DROPLET SEPARATOR (DRS)



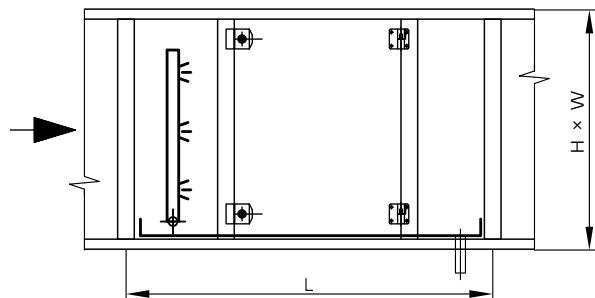
MONOBLOC	DIMENSIONS	8 TR		10 TR		12 TR		DRS	
Type	H x W [mm]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]
S2-05/05	420 x 420	350	31	400	35	450	40	250	19
S2-05/10	420 x 720		48		55		65		26
S2-08/10	620 x 720	400	66	450	76	500	85		33
S2-10/10	720 x 720		76		87		100		37
S2-10/15	720 x 1080		109		125		140		51
S2-10/20	840 x 1440	450	164	550	188	600	215		72
S2-15/15	1080 x 1080		158		181		205		70
S2-15/20	1080 x 1440		208		238		270		89
S2-15/25	1080 x 1800		257		295		335		108
S2-15/30	1080 x 2160	500	306		346		400		127
S2-20/20	1440 x 1440		273		313		355		114
S2-20/25	1440 x 1800		338		387		435		139
S2-20/30	1440 x 2160		418		469		520		163
S2-20/35	1440 x 2520		495		550		605		188
S2-20/40	1440 x 2880		551		620		690		213
S2-25/25	1800 x 1800	550	434	600	492	650	450		169
S2-25/30	1800 x 2160		516		580		645		200
S2-25/35	1800 x 2520		576		648		720		222
S2-25/40	1800 x 2880		681		767		855		261
S2-25/50	1800 x 3600		846		953		1060		322
S2-30/30	2160 x 2160	550	614	650	691	750	770		236
S2-30/40	2160 x 2880		811		914		1020		309
S2-30/50	2160 x 3600		1032		1129		1225		381
S2-30/60	2160 x 4320		1232		1373		1515		454
S2-40/40	2880 x 2880		1095		1220		1345		404
S2-40/50	2880 x 3600	550	1358	650	1516	750	1675		499
S2-40/60	2880 x 4320		1621		1812		2005		595
S2-40/70	2880 x 5040		1884		2108		2332		690
S2-40/80	2880 x 5760		2147		2403		2660		785

NPK 500 Humidifier

HIGH / LOW PRESSURE HUMIDIFIER (HPH)



STEAM HUMIDIFIER (STH)



MONOBLOC	DIMENSIONS	HPH		STH	
Type	H × B [mm]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]
S2-05/05	420 × 420	1500	58	1350	51
S2-05/10	420 × 720		87		74
S2-08/10	620 × 720		110		92
S2-10/10	720 × 720		122		101
S2-10/15	720 × 1080		165		133
S2-10/20	840 × 1440		227		180
S2-15/15	1080 × 1080		216		171
S2-15/20	1080 × 1440		268		209
S2-15/25	1080 × 1800		321		247
S2-15/30	1080 × 2160		373		285
S2-20/20	1440 × 1440		331		525
S2-20/25	1440 × 1800		393		296
S2-20/30	1440 × 2160		455		339
S2-20/35	1440 × 2520		547		382
S2-20/40	1440 × 2880		579		425
S2-25/25	1800 × 1800		464		344
S2-25/30	1800 × 2160		536		393
S2-25/35	1800 × 2520		588		428
S2-25/40	1800 × 2880		680		490
S2-25/50	1800 × 3600		824		588
S2-30/30	2160 × 2160		618		447
S2-30/40	2160 × 2880		782		556
S2-30/50	2160 × 3600		945		664
S2-30/60	2160 × 4320		1108		772
S2-40/40	2880 × 2880		964		686
S2-40/50	2880 × 3600		1187		816
S2-40/60	2880 × 4320		1390		946
S2-40/70	2880 × 5040		1593		1076
S2-40/80	2880 × 5760		1796		1206

Humidos adiabatic, atomizing humidifier

Hygiene certified according to VDI 6022

INSTITUT FÜR LUFTHYGIENE
Luft und Wasser · Planung · Analyse · Sanierungsmaßnahmen

ILH BERLIN

Zertifikat

Hygiene – Konformitätsprüfung

Geprüftes Baumuster	Hybrider Luftbefeuchter Humidos siehe Anlage 1
Auftraggeber / Hersteller	Mountain AG, Sonnenwiesenstr. 14, 8280 Kreuzlingen, Schweiz
Prüfdatum / -ort	20.-31.08.2014, 18.02.2015 Mountain AG, Sonnenwiesenstr. 14, 8280 Kreuzlingen, Schweiz
Prüfingenieur	Dipl.-Ing. (FH) Jacob Kornack
Prüfkriterien	Im Rahmen der Hygiene-Konformitätsprüfung wurden die hygienerelevanten Anforderungen* der nachfolgend mit „-“ markierten Regelwerke geprüft:

Allgemeine Raumlufttechnik VDI 6022, Blatt 1 (07/2011) ☒ SWKI VA104-01 (04/2006) ☒ VDI 3803, Blatt 1 (02/2010) ☒ ONORM H 6021 (09/2003) ☒ DIN EN 13779 (09/2007) ☒	Krankenhausbereich DIN 1946 Teil 4 (12/2000)* ☒ SWKI 99-3 (05/2003) ☒
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Prüfresultat Die Konformität des geprüften Gerätes mit den hygienerelevanten Anforderungen der o. g. Regelwerke wird bestätigt.

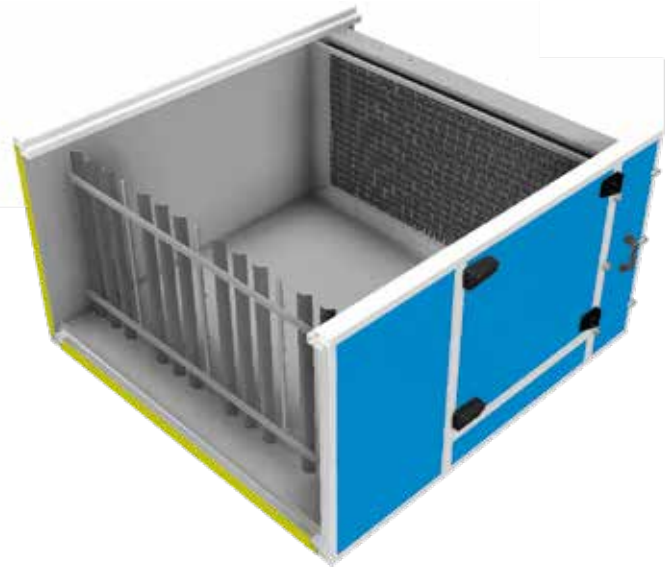
Gültigkeitszeitraum 5 Jahre: 10.2015 – 10.2020

Registriernummer HKP 08/14 - 01

J. Kornack
Dipl.-Ing. (FH) J. Kornack

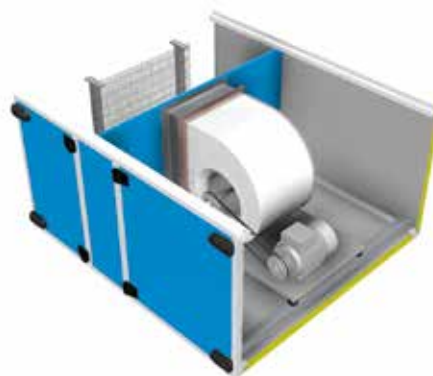
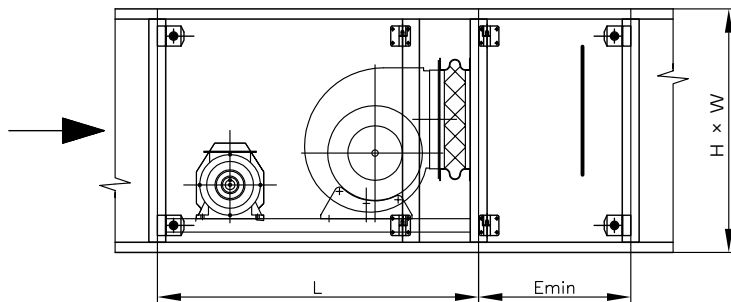
ausgestellt am 19.10.2015, Berlin

* Gemäß DIN 1946 Teil 4 ist der Einsatz des geprüften Baumusters in OP-Abteilungen nicht zulässig.
 * Regelwerke bzw. Anforderungen aus Regelwerken, auf die in den zu dieser Hygiene-Konformitätsprüfung (HKP) herangezogenen Regelwerken verwiesen wird, wurden nicht berücksichtigt.
 Die HKP beinhaltet keine toxiskologischen Prüfungen oder Bewertungen der in dem geprüften Baumuster eingesetzten Materialien. Dieses Zertifikat einschließlich seiner Anlagen darf nur in vollständiger Form ververvielfältigt, verbreitet und/oder zugänglich gemacht werden. Eine Vervielfältigung, Verbreitung und/oder Zugänglichmachung ohne Anzeigen oder sonst in unvollständiger Form bedarf der Zustimmung des Instituts für Lufthygiene (ILH) Berlin. Alle Rechte, wie insbesondere Urheber- und Leistungsschutzrechte, bleiben im Übrigen vorbehalten.

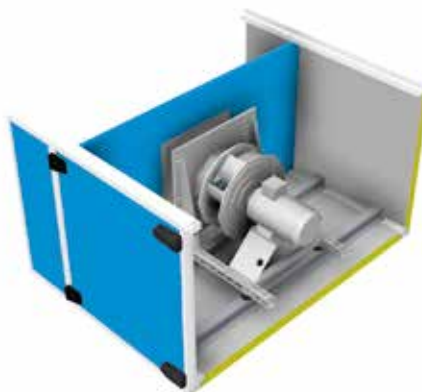
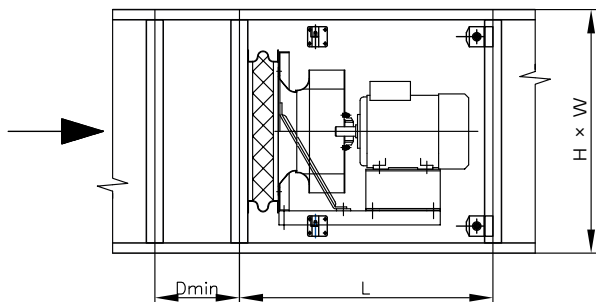


NPK 600 Fan

BELT DRIVEN FAN (BDF) + EXPANSION SECTION (E)



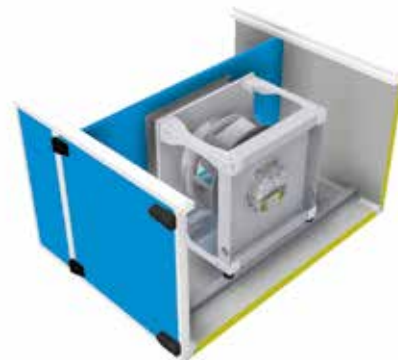
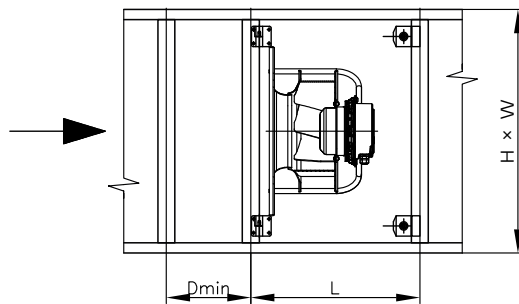
MONOBLOC	DIMENSIONS	BDF				
Type	H × W [mm]	MAX. Size	Length [mm]	Weight [kg]	E Min. [mm]	m E [kg]
S2-05/05	420 × 420	-	-	-	-	-
S2-05/10	420 × 720	-	-	-	-	-
S2-08/10	620 × 720	225	900	90	350	28
S2-10/10	720 × 720	280	950	117	450	35
S2-10/15	720 × 1080	280	950	135	450	44
S2-10/20	840 × 1440	315	1000	180	500	59
S2-15/15	1080 × 1080	400	1350	256	600	65
S2-15/20	1080 × 1440	400	1350	282	600	77
S2-15/25	1080 × 1800	400	1350	311	600	94
S2-15/30	1080 × 2160	400	1350	340	600	104
S2-20/20	1440 × 1440	560	1650	470	850	126
S2-20/25	1440 × 1800	560	1650	506	850	140
S2-20/30	1440 × 2160	560	1650	541	850	164
S2-20/35	1440 × 2520	560	1650	592	850	179
S2-20/40	1440 × 2880	560	1650	625	850	194
S2-25/25	1800 × 1800	710	1950	766	1100	204
S2-25/30	1800 × 2160	710	1950	809	1100	223
S2-25/35	1800 × 2520	710	1950	858	1100	253
S2-25/40	1800 × 2880	710	2050	926	1100	272
S2-25/50	1800 × 3600	710	2150	1026	1100	310
S2-30/30	2160 × 2160	900	2250	1218	1350	302
S2-30/40	2160 × 2880	900	2250	1302	1350	349
S2-30/50	2160 × 3600	900	2350	1430	1350	418
S2-30/60	2160 × 4320	900	2450	1565	1350	464
S2-40/40	2880 × 2880	1250	2850	2135	1900	563
S2-40/50	2880 × 3600	1250	2950	2300	1900	630
S2-40/60	2880 × 4320	1250	2950	2420	1900	710
S2-40/70	2880 × 5040	1250	2950	2550	1900	790
S2-40/80	2880 × 5760	1250	2950	2700	1900	870

FREE RUNNING IMPELLER FAN (FRIF) + INTAKE

MONOBLOC	DIMENSIONS	FRIF				
Type	H x W [mm]	MAX. Size	Length [mm]	Weight [kg]	D Min. [mm]	m D [kg]
S2-05/05	420 x 420	-	-	-	-	-
S2-05/10	420 x 720	-	-	-	-	-
S2-08/10	620 x 720	2528	750	83	100	12
S2-10/10	720 x 720	3135	750	99	100	13
S2-10/15	720 x 1080	3135	750	112	100	14
S2-10/20	840 x 1440	4045	950	180	150	22
S2-15/15	1080 x 1080	5663	1050	265	250	30
S2-15/20	1080 x 1440	5663	1050	283	250	34
S2-15/25	1080 x 1800	5663	1050	301	250	39
S2-15/30	1080 x 2160	5663	1050	326	250	43
S2-20/20	1440 x 1440	8090	1350	557	400	58
S2-20/25	1440 x 1800	8090	1350	582	400	69
S2-20/30	1440 x 2160	8090	1350	608	400	76
S2-20/35	1440 x 2520	8090	1450	651	400	82
S2-20/40	1440 x 2880	8090	1450	678	400	89
S2-25/25	1800 x 1800	1011	1600	1047	500	92
S2-25/30	1800 x 2160	1011	1600	1077	500	100
S2-25/35	1800 x 2520	1011 / 2 x 5056	1700	1130	500	109
S2-25/40	1800 x 2880	1011 / 2 x 5663	1700	1161	500	118
S2-25/50	1800 x 3600	1011 / 2 x 7180	1700	1222	500	135
S2-30/30	2160 x 2160	1214	1800	1300	650	138
S2-30/40	2160 x 2880	1214 / 2 x 5663	1800	1365	650	161
S2-30/50	2160 x 3600	1214 / 2 x 7180	1900	1600	650	183
S2-30/60	2160 x 4320	1214 / 2 x 8090	1900	1670	650	206
S2-40/40	2880 x 2880	1214 / 2 x 5663	1900	1610	650	183
S2-40/50	2880 x 3600	1214 / 2 x 7180	2000	1710	650	205
S2-40/60	2880 x 4320	1214 / 2 x 8090	2100	1930	650	230
S2-40/70	2880 x 5040	2 x 1011	2100	2150	650	255
S2-40/80	2880 x 5760	2 x 1214	2100	2400	650	280

NPK 600 Fan

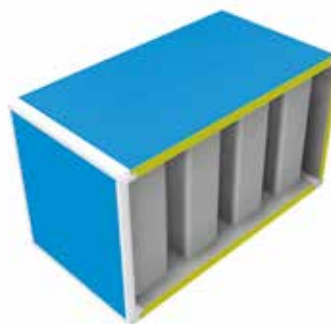
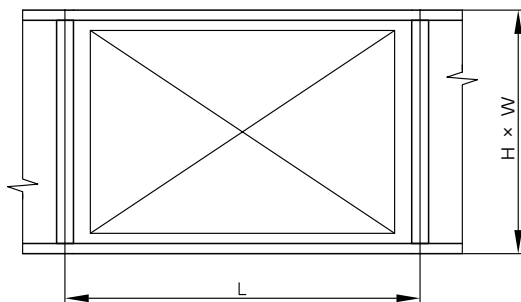
DIRECT DRIVE EC FAN (DDF) + INTAKE SECTION (D)



MONOBLOC	DIMENSIONS	DDF				
Type	H × W [mm]	MAX. Size	Length [mm]	Weight [kg]	D Min. [mm]	m D [kg]
S2-05/05	420 × 420	250	450	34	150	11
S2-05/10	420 × 720	250	450	44	150	14
S2-08/10	620 × 720	400	650	83	250	20
S2-10/10	720 × 720	400	650	86	250	21
S2-10/15	720 × 1080	400	650	97	250	26
S2-10/20	840 × 1440	500	850	147	300	36
S2-15/15	1080 × 1080	630	950	214	350	39
S2-15/20	1080 × 1440	630	950	230	350	45
S2-15/25	1080 × 1800	630	950	246	350	51
S2-15/30	1080 × 2160	630 / 2 × 500	950	268	350	57
S2-20/20	1440 × 1440	800	1150	328	450	64
S2-20/25	1440 × 1800	800	1150	350	450	76
S2-20/30	1440 × 2160	800 / 2 × 500	1150	371	450	84
S2-20/35	1440 × 2520	800 / 2 × 630	1150	393	450	91
S2-20/40	1440 × 2880	800 / 2 × 800	1150	415	450	99
S2-25/25	1800 × 1800	900	1250	430	500	92
S2-25/30	1800 × 2160	900 / 2 × 500	1250	453	500	100
S2-25/35	1800 × 2520	900 / 2 × 630	1250	675	500	109
S2-25/40	1800 × 2880	900 / 2 × 800	1250	700	500	118
S2-25/50	1800 × 3600	900 / 2 × 900	1250	745	500	135
S2-30/30	2160 × 2160	900 / 4 × 500	1250	680	500	109
S2-30/40	2160 × 2880	2 × 800 / 4 × 630	1250	730	500	126
S2-30/50	2160 × 3600	2 × 900 / 4 × 630	1250	780	500	143
S2-30/60	2160 × 4320	2 × 900 / 4 × 630	1250	830	500	160
S2-40/40	2880 × 2880	2 × 900 / 4 × 800	1250	790	500	150
S2-40/50	2880 × 3600	2 × 900 / 4 × 800	1250	920	500	170
S2-40/60	2880 × 4320	2 × 900 / 4 × 800	1250	1050	500	190
S2-40/70	2880 × 5040	2 × 900 / 4 × 800	1250	1180	500	210
S2-40/80	2880 × 5760	2 × 900 / 4 × 800	1250	1350	500	230

NPK 700 Sound attenuator

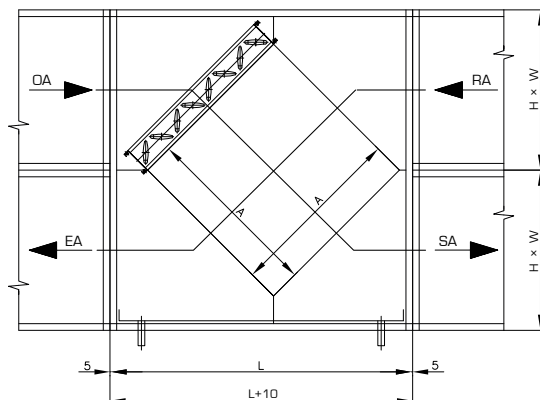
SOUND ATTENUATOR (SA)



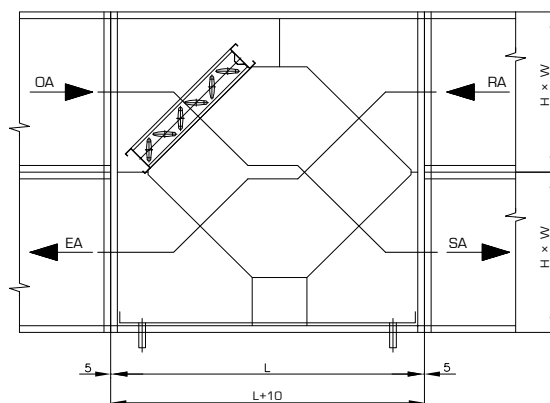
Attenuation* at 250/500 Hz		18/29 dB		21/32 dB		22/33 dB		24/32 dB	
MONOBLOC	DIMENSIONS	SA 600		SA 900		SA 1200		SA 1500	
Type	H × W [mm]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]	L [mm]	W [kg]
S2-05/05	420 × 420	750	33	1050	41	1350	50	1650	59
S2-05/10	420 × 720		46		59		73		86
S2-08/10	620 × 720		55		73		91		108
S2-10/10	720 × 720		60		80		100		119
S2-10/15	720 × 1080		79		105		132		158
S2-10/20	840 × 1440		106		142		180		216
S2-15/15	1080 × 1080		101		136		171		206
S2-15/20	1080 × 1440		123		166		210		253
S2-15/25	1080 × 1800		145		195		249		300
S2-15/30	1080 × 2160		168		227		288		347
S2-20/20	1440 × 1440		149		202		256		308
S2-20/25	1440 × 1800		176		237		301		363
S2-20/30	1440 × 2160		202		273		347		418
S2-20/35	1440 × 2520		228		309		393		473
S2-20/40	1440 × 2880		254		344		438		528
S2-25/25	1800 × 1800	750	206	1050	278	1350	354	1650	426
S2-25/30	1800 × 2160		236		319		406		489
S2-25/35	1800 × 2520		257		348		444		535
S2-25/40	1800 × 2880		296		401		510		615
S2-25/50	1800 × 3600		356		482		615		741
S2-30/30	2160 × 2160		269		365		465		560
S2-30/40	2160 × 2880		337		457		582		702
S2-30/50	2160 × 3600		405		549		700		844
S2-30/60	2160 × 4320		473		641		818		986
S2-40/40	2880 × 2880		421		570		726		875
S2-40/50	2880 × 3600		504		682		871		1049
S2-40/60	2880 × 4320		587		795		1015		1222
S2-40/70	2880 × 5040		671		908		1159		1396
S2-40/80	2880 × 5760		754		1021		1303		1569

* Mean values / Examples as benchmarks

NPK 810 Plate Heat Exchanger

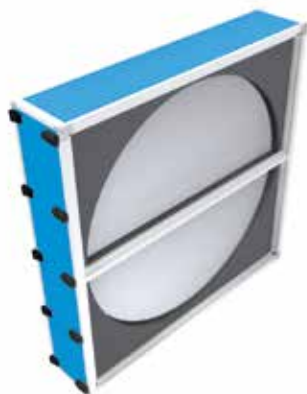
CROSS FLOW PLATE HEAT EXCHANGER (PHE)


MONOBLOC	DIMENSIONS	PHE	
Type	H x W [mm]	Cross flow Length [mm]	whole Monobloc Weight [kg]
S2-05/05	420 x 420	850	55
S2-05/10	420 x 720	850	85
S2-08/10	620 x 720	1200	140
S2-10/10	720 x 720	1400	175
S2-10/15	720 x 1080	1400	240
S2-10/20	840 x 1440	1650	385
S2-15/15	1080 x 1080	2150	425
S2-15/20	1080 x 1440	2150	545
S2-15/25	1080 x 1800	2150	650
S2-15/30	1080 x 2160	2150	755
S2-20/20	1440 x 1440	2650	855
S2-20/25	1440 x 1800	2650	1010
S2-20/30	1440 x 2160	2650	1240
S2-20/35	1440 x 2520	2650	1350
S2-20/40	1440 x 2880	2650	1500
S2-25/25	1800 x 1800	3250	1380
S2-25/30	1800 x 2160	3250	1600
S2-25/35	1800 x 2520	3250	1750
S2-25/40	1800 x 2880	3250	2000
S2-25/50	1800 x 3600	3250	2400
S2-30/30	2160 x 2160	4050	2020
S2-30/40	2160 x 2880	4050	2570
S2-30/50	2160 x 3600	4050	3000
S2-30/60	2160 x 4320	4050	3560
S2-40/40	2880 x 2880	4550	3500
S2-40/50	2880 x 3600	4550	4100
S2-40/60	2880 x 4320	4550	4450
S2-40/70	2880 x 5040	4550	4780
S2-40/80	2880 x 5760	4550	5100

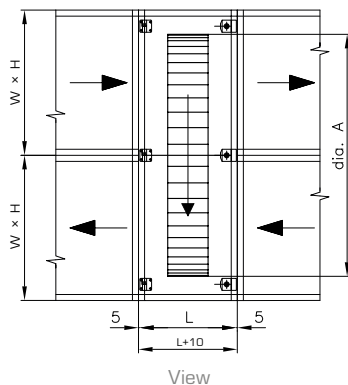
COUNTER FLOW PLATE HEAT EXCHANGER (CF-PHE)

MONOBLOC	DIMENSIONS	CF-PHE		
Type	H x W [mm]	Counter flow	Length [mm]	Weight [kg]
S2-05/05	420 x 420	GS45	800	45
S2-05/10	420 x 720	GS65	1000	78
S2-08/10	620 x 720	GS80	1200	127
S2-10/10	720 x 720	GS95	1350	159
S2-10/15	720 x 1080	GS110	1450	235
S2-10/20	840 x 1440	GS110	1450	314
S2-15/15	1080 x 1080	GS110	1450	300
S2-15/20	1080 x 1440	GS110	1450	360
S2-15/25	1080 x 1800	GS110	1450	430
S2-15/30	1080 x 2160	GS110	1450	495
S2-20/20	1440 x 1440	-	-	-
S2-20/25	1440 x 1800	-	-	-
S2-20/30	1440 x 2160	-	-	-
S2-20/35	1440 x 2520	-	-	-
S2-20/40	1440 x 2880	-	-	-
S2-25/25	1800 x 1800	-	-	-
S2-25/30	1800 x 2160	-	-	-
S2-25/35	1800 x 2520	-	-	-
S2-25/40	1800 x 2880	-	-	-
S2-25/50	1800 x 3600	-	-	-
S2-30/30	2160 x 2160	-	-	-
S2-30/40	2160 x 2880	-	-	-
S2-30/50	2160 x 3600	-	-	-
S2-30/60	2160 x 4320	-	-	-
S2-40/40	2880 x 2880	-	-	-
S2-40/50	2880 x 3600	-	-	-
S2-40/60	2880 x 4320	-	-	-
S2-40/70	2880 x 5040	-	-	-
S2-40/80	2880 x 5760	-	-	-

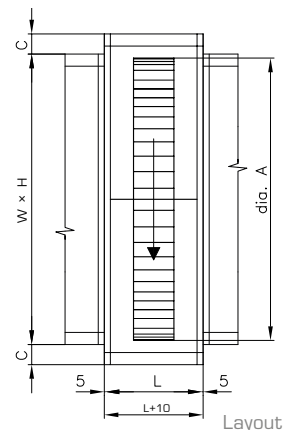
NPK 830 Rotation Heat Exchanger



ROTATION HEAT EXCHANGER (RHE)



View



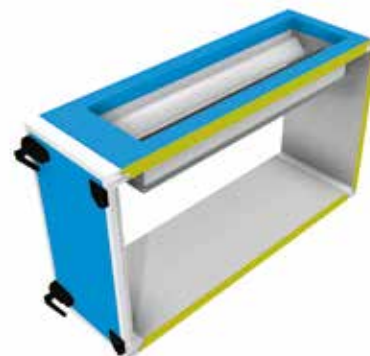
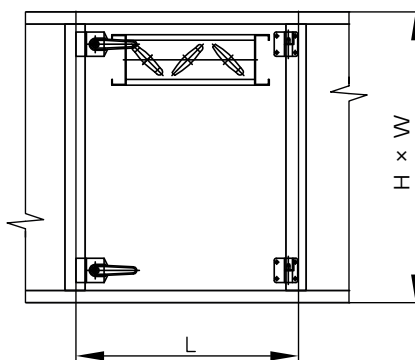
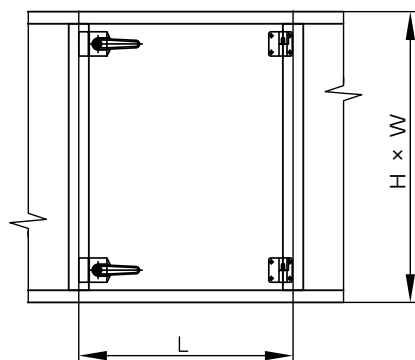
Layout

MONOBLOC	DIMENSIONS	RHE	HOUSING		
Type	H x W [mm]	Length [mm]	Rotor max. A [mm]	whole Monobloc m [kg]	broadened C [mm]
S2-05/05	420 x 420	-	-	-	-
S2-05/10	420 x 720	405	650	75	60
S2-08/10	620 x 720		1050	135	260
S2-10/10	720 x 720		1250	170	360
S2-10/15	720 x 1080		1250	195	180
S2-10/20	840 x 1440	445	1500	280	120
S2-15/15	1080 x 1080		1850	345	420
S2-15/20	1080 x 1440		1950	410	360
S2-15/25	1080 x 1800		1950	450	180
S2-15/30	1080 x 2160		1950	485	0
S2-20/20	1440 x 1440	555	2000	545	360
S2-20/25	1440 x 1800		2100	600	240
S2-20/30	1440 x 2160		2350	680	180
S2-20/35	1440 x 2520		2550	750	120
S2-20/40	1440 x 2880		2650	850	0
S2-25/25	1800 x 1800	665	2550	870	480
S2-25/30	1800 x 2160		2650	960	360
S2-25/35	1800 x 2520		2750	990	240
S2-25/40	1800 x 2880		3100	1130	240
S2-25/50	1800 x 3600		3350	1350	0
S2-30/30	2160 x 2160	spez.	3000	1230	540
S2-30/40	2160 x 2880		3350	1450	360
S2-30/50	2160 x 3600		3700	1690	180
S2-30/60	2160 x 4320		4050	1920	0
S2-40/40	2880 x 2880		3700	2050	540
S2-40/50	2880 x 3600	spez.	4050	2400	360
S2-40/60	2880 x 4320		4400	2700	180
S2-40/70	2880 x 5040		5000	spez.	120
S2-40/80	2880 x 5760		5500	spez.	0

NPK 900 empty section

EMPTY SECTION (ES)

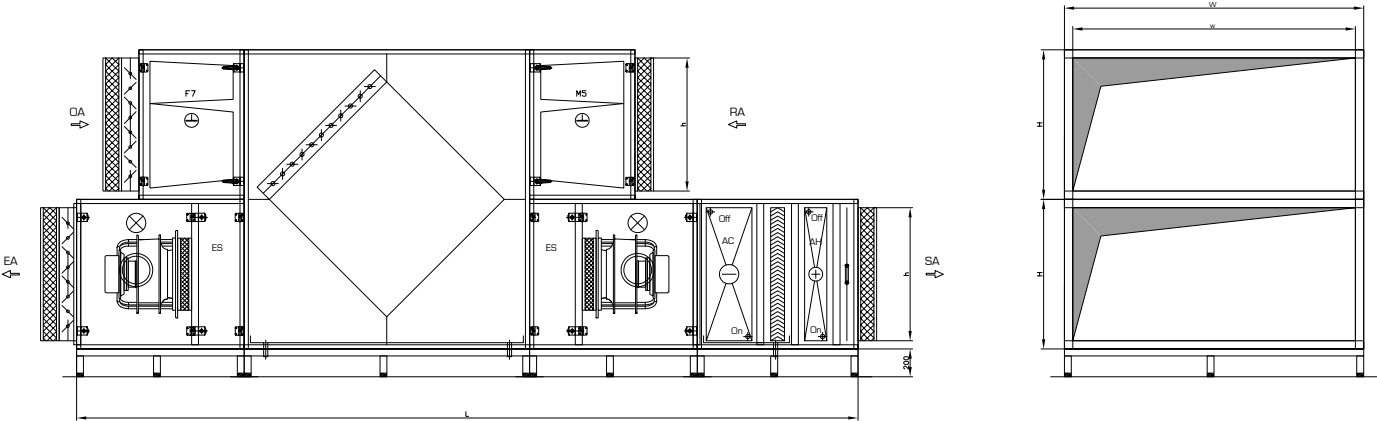
AIR RECIRCULATION SECTION (ARS)



MONOBLOC	DIMENSIONS	ES		ARS	
Type	H x W [mm]	Length [mm]	Weight [kg]	Length [mm]	Weight [kg]
S2-05/05	420 x 420	350	17	250	16
S2-05/10	420 x 720		20	250	23
S2-08/10	620 x 720		28	250	29
S2-10/10	720 x 720		29	250	34
S2-10/15	720 x 1080		35	350	50
S2-10/20	840 x 1440	450	52	350	60
S2-15/15	1080 x 1080		50	450	70
S2-15/20	1080 x 1440		58	450	81
S2-15/25	1080 x 1800		66	450	91
S2-15/30	1080 x 2160		87	450	101
S2-20/20	1440 x 1440	650	77	550	109
S2-20/25	1440 x 1800		87	550	123
S2-20/30	1440 x 2160		97	550	135
S2-20/35	1440 x 2520		122	550	147
S2-20/40	1440 x 2880		134	550	160
S2-25/25	1800 x 1800	750	112	650	159
S2-25/30	1800 x 2160		123	650	172
S2-25/35	1800 x 2520		149	650	185
S2-25/40	1800 x 2880		166	650	199
S2-25/50	1800 x 3600		192	650	223
S2-30/30	2160 x 2160		189	750	211
S2-30/40	2160 x 2880		222	750	237
S2-30/50	2160 x 3600		279	750	267
S2-30/60	2160 x 4320		315	750	297
S2-40/40	2880 x 2880		280	750	275
S2-40/50	2880 x 3600		372	750	309
S2-40/60	2880 x 4320		416	750	340
S2-40/70	2880 x 5040		460	750	370
S2-40/80	2880 x 5760		503	750	401

Classic PHE-Monobloc/AHU

Technical data



Dimensions and weight

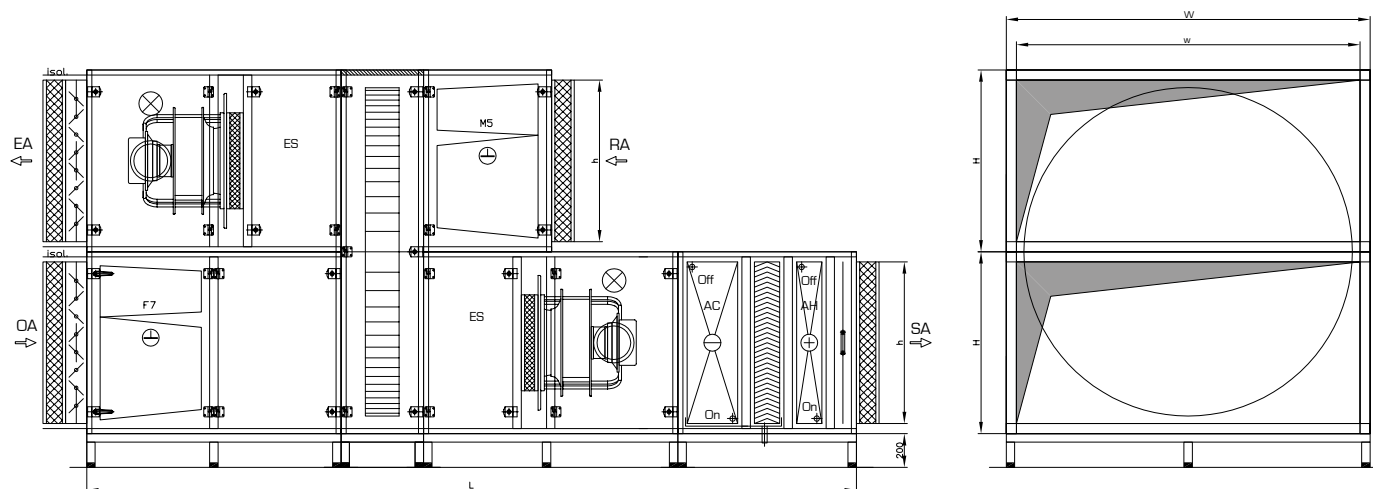
		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
H (Height)	mm	840	1080	1080	1440	1440	1440
B (Width)	mm	1440	1440	2160	1440	2160	2880
h	mm	720	960	960	1320	1320	1320
b	mm	1320	1320	2040	1320	2040	2760
L (Length)	mm	4540	5140	5090	5590	6040	6040
m (weight)	kg	1600	2100	3000	2700	3900	5000

Application and performance examples

		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
SA volume	m ³ /h	5660	7680	12200	11040	17500	24150
RA volume	m ³ /h	5660	7680	12200	11040	17500	24150
Fresh air	%	100	100	100	100	100	100
SA external pressure	Pa	300	300	300	300	300	300
RA external pressure	Pa	300	300	300	300	300	300
OA sound power	dB(A)	64.4	71.9	74.9	73.5	74.9	80.2
SA sound power	dB(A)	81.1	80.8	83.5	82.5	82.7	87
RA sound power	dB(A)	65.6	73.5	77.1	75.2	76.3	82.5
EA sound power	dB(A)	84.8	85	88.2	86.7	86.3	92.2
FANS ebm-papst K3G		K3G-450	K3G-500	K3G-560	K3G-560	K3G-710	K3G-800
Motor power SA	kW	1.85	2.73	4.7	4.7	7.86	11.6
SFP factor SA	W/m ³ /h	0.297	0.302	0.303	0.342	0.357	0.363
Motor power RA	kW	1.85	2.73	4.7	4.7	7.86	11.6
SFP factor RA	W/m ³ /h	0.261	0.264	0.268	0.303	0.314	0.326
PHE-HR Aluminium	%	72	73	73	74	74	74
HR performance (winter)	kW	45.3	62.4	99.1	91	144.4	198.9
AIR HEATER	°C	10 – 22	10 – 22	10 – 22	10 – 22	10 – 22	10 – 22
PWW (35/30)	kW	21.8	29.6	47	42.5	67.4	93.1
Tube rows	TR	2	2	2	2	2	2
Heater pressure loss	kPa	5.95	5.78	3.23	5.63	3.1	6.3
Connections	G"	1"	1 ¼"	1 ½"	2"	2 ½"	2 ½"
AIR COOLER	°C	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18
PKW (14/20)	kW	26.9	36.5	58.5	52.5	83.3	115.1
Tube rows	TR	6	6	6	6	6	6
Cooler pressure loss	kPa	16.2	15.7	19	15.24	16.2	17
Connections	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"

Klimafritz Rotor Monobloc/AHU

Technical data



Dimensions and weight

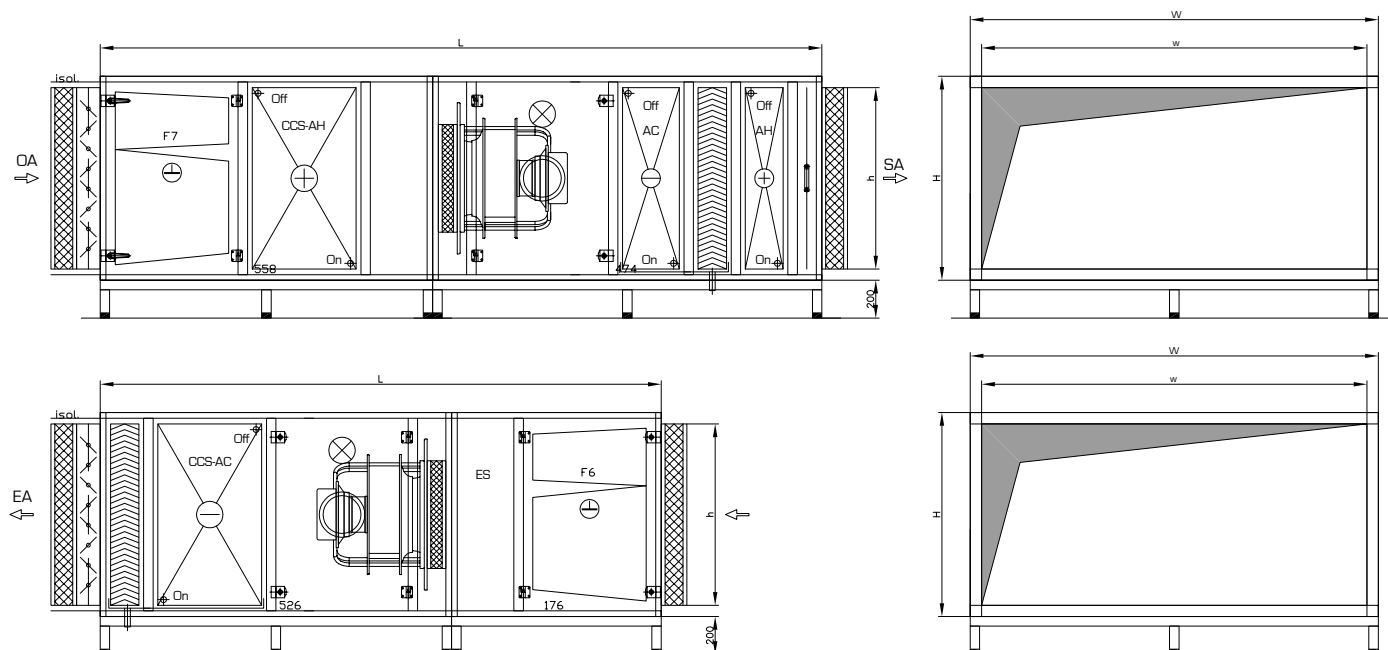
		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
H (Height)	mm	840	1080	1080	1440	1440	1440
B (Width)	mm	1440	1440	2160	1440	2160	2880
h	mm	720	960	960	1320	1320	1320
b	mm	1320	1320	2040	1320	2040	2760
L (Length)	mm	4120	4220	4570	4580	4770	4920
m (weight)	kg	1100	1300	1800	1600	2100	2600
C (excess)	mm	60	240	-	300	180	-

Application and performance examples

		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
SA volume	m³/h	5660	7680	12200	11040	17500	24150
RA volume	m³/h	5660	7680	12200	11040	17500	24150
Fresh air	%	100	100	100	100	100	100
SA external pressure	Pa	300	300	300	300	300	300
RA external pressure	Pa	300	300	300	300	300	300
OA sound power	dB(A)	63.9	66.5	69.8	68.2	69.5	75.8
SA sound power	dB(A)	77.3	79.2	83.4	81.8	81.6	87.3
RA sound power	dB(A)	64.7	68.5	71.9	69.8	70.9	78.1
EA sound power	dB(A)	80.6	83.6	88.1	86.1	85.3	92.6
FANS ebm-papst K3G		K3G-450	K3G-500	K3G-560	K3G-560	K3G-710	K3G-800
Motor power SA	kW	2.73	2.83	4.7	4.7	7.86	11.6
SFP factor SA	W/m³/h	0.292	0.285	0.3	0.289	0.293	0.313
Motor power RA	kW	2.73	2.83	4.7	4.7	7.86	11.6
SFP factor RA	W/m³/h	0.248	0.245	0.265	0.254	0.254	0.278
RHE-HR Aluminium	%	78	79	76	76	74	75
HR performance (winter)	kW	68.3	93.4	142	130.1	144.4	276.9
AIR HEATER	°C	14 – 22	14 – 22	13 – 22	14 – 22	14 – 22	13 – 22
PWW (35/30)	kW	14.5	19.7	35.2	28.3	44.9	69.6
Tube rows	TR	2	2	2	2	2	2
Heater pressure loss	kPa	2.79	2.71	3.13	2.64	8.14	3.67
Connections	G"	1"	1 ¼"	1 ½"	1 ½"	2"	2 ½"
AIR COOLER	°C	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18
PKW (14/20)	kW	26.8	36.3	57.9	52.2	83	114.6
Tube rows	TR	6	6	6	6	6	6
Cooler pressure loss	kPa	15.84	15.36	17.47	14.94	15.94	16.75
Connections	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"

AIRSOL® CCS2 (circuit connected system)

Technical data



Dimensions and weight

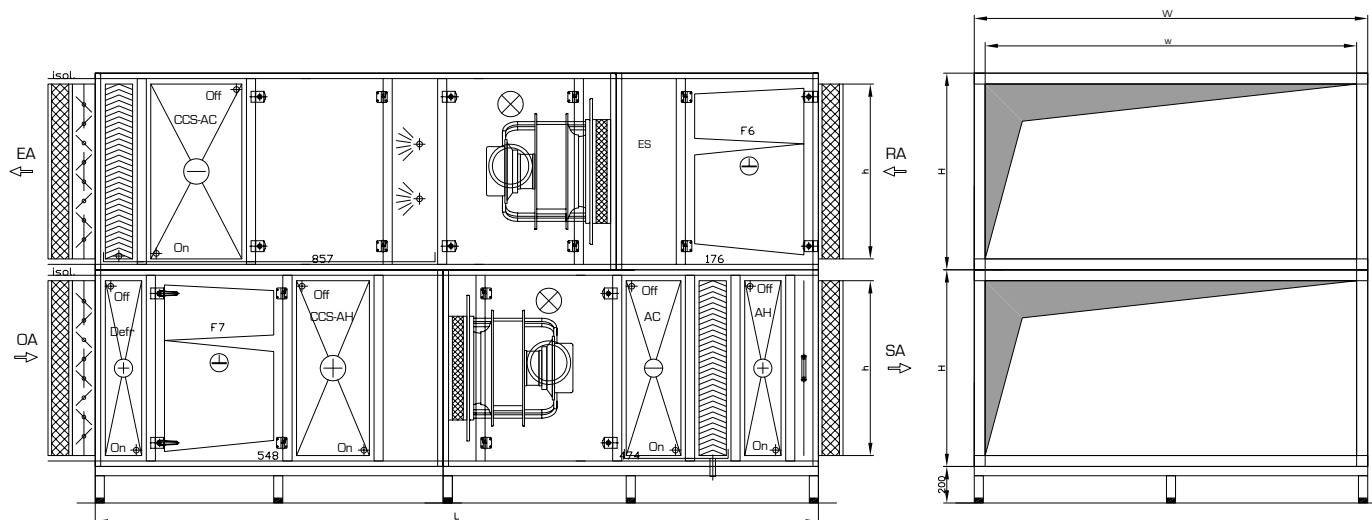
		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
H (Height)	mm	840	1080	1080	1440	1440	1440
B (Width)	mm	1440	1440	2160	1440	2160	2880
h	mm	720	960	960	1320	1320	1320
b	mm	1320	1320	2040	1320	2040	2760
L (Length)	mm	3470	3570	3820	3770	4020	4270
m (weight)	kg	1300	1600	2300	2000	2900	3700

Application and performance examples

		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
SA volume	m ³ /h	5660	7680	12200	11040	17500	24150
RA volume	m ³ /h	5660	7680	12200	11040	17500	24150
Fresh air	%	100	100	100	100	100	100
SA external pressure	Pa	300	300	300	300	300	300
RA external pressure	Pa	300	300	300	300	300	300
OA sound power	dB(A)	61.4	65	67.7	65.9	66.9	73.5
SA sound power	dB(A)	77.7	80	83.4	81.8	81.7	87.3
RA sound power	dB(A)	69	74	77.3	74.8	75.2	83
EA sound power	dB(A)	71.1	73.9	78.4	76.3	75.9	82.6
FANS ebm-papst K3G		K3G-450	K3G-500	K3G-560	K3G-560	K3G-710	K3G-800
Motor power SA	kW	2.73	3.51	4.7	4.7	7.86	11.6
SFP factor SA	W/m ³ /h	0.303	0.3	0.3	0.292	0.298	0.31
Motor power RA	kW	2.73	3.51	4.7	4.7	7.86	11.6
SFP factor RA	W/m ³ /h	0.255	0.256	0.261	0.252	0.253	0.272
CCS-HR	%	71	72.5	72	72.3	72.6	72.6
HR performance (winter)	kW	44.7	62	97.7	88.8	141.4	195.1
Tube rows	TR	14	14	14	14	14	14
CCS heater pressure loss	kPa	92.18	117.32	107.31	127.74	119.2	101.13
Connections	G"	1"	1 ¼"	1 ¼"	1 ¼"	1 ½"	2"
AIR HEATER	°C	11 – 22	12 – 22	12 – 22	12 – 22	12 – 22	12 – 22
PWW (35/30)	kW	19.8	24.4	38.8	35.1	55.7	76.8
Tube rows	TR	2	2	2	2	2	2
Heater pressure loss	kPa	6.37	4.05	2.72	3.95	2.14	4.4
Connections	G"	1 ¼"	1 ¼"	1 ½"	1 ½"	2"	2 ½"
AIR COOLER	°C	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18
PKW (14/20)	kW	26.8	36.3	57.9	52.2	83	114.6
Tube rows	TR	6	6	6	6	6	6
Cooler pressure loss	kPa	15.84	15.36	17.47	14.94	15.94	16.75
Connections	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"

AIRSOL® CCS3-AD (circuit connected system, adiabatic)

Technical data



Dimensions and weight

		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
H (Height)	mm	840	1080	1080	1440	1440	1440
B (Width)	mm	1440	1440	2160	1440	2160	2880
h	mm	720	960	960	1320	1320	1320
b	mm	1320	1320	2040	1320	2040	2760
L (Length)	mm	3620	3670	3970	3870	4120	4270
m (weight)	kg	1500	1800	2500	2300	3200	4100

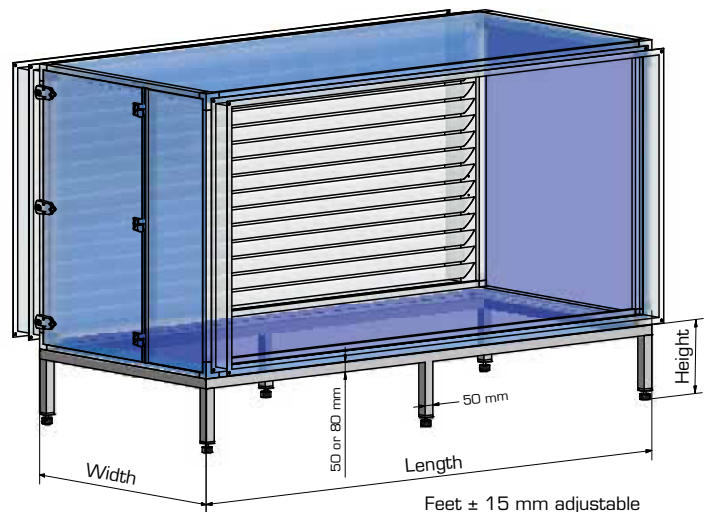
Application and performance examples

		S2-10/20	S2-15/20	S2-15/30	S2-20/20	S2-20/30	S2-20/40
SA volume	m ³ /h	5660	7680	12200	11040	17500	24150
RA volume	m ³ /h	5660	7680	12200	11040	17500	24150
Fresh air	%	100	100	100	100	100	100
SA external pressure	Pa	300	300	300	300	300	300
RA external pressure	Pa	300	300	300	300	300	300
OA sound power	dB(A)	62.2	65.1	67.7	66	67.3	73.3
SA sound power	dB(A)	78.4	80.3	83.6	82.1	82.2	87.1
RA sound power	dB(A)	71.3	74.7	77.1	75.4	76.3	82.5
EA sound power	dB(A)	69.6	71.5	74.6	73.2	73.5	77.8
FANS ebm-papst K3G		K3G-450	K3G-500	K3G-560	K3G-560	K3G-710	K3G-800
Motor power SA	kW	2.73	3.51	4.7	4.7	7.86	11.6
SFP factor SA	W/m ³ /h	0.326	0.317	0.319	0.317	0.327	0.335
Motor power RA	kW	2.73	3.51	4.7	4.7	7.86	11.6
SFP factor RA	W/m ³ /h	0.324	0.315	0.309	0.318	0.319	0.328
DEFROSTER							
Winter performance [-13°C, 90% rH]	kW	5.9	8.3	12.9	11.4	18.4	25.9
Summer performance [32°C, 40% rH]	kW	2.3	3.2	4.9	4.4	7	9.8
Tube rows	TR	2	2	2	2	2	2
Pressure loss	kPa	15.39	17.69	13.45	18.23	14.3	18.82
Connections	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"
CCS HR SUPPLY AIR		%					
HR performance winter	kW	72.5	72.5	73	72.4	72.7	73
HR performance summer	kW	39.8	53.6	86.2	77.5	123.1	170.3
Tube rows	TR	14.2	19.1	30.2	27.6	43.9	60.4
CCS heater pressure loss	kPa	12	12	12	12	12	12
Connections	G"	86.15	106.48	86.16	109.6	103.48	100.33
	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"
AIR HEATER		°C					
PWW (35/30)	kW	14 – 22	14 – 22	13 – 22	14 – 22	14 – 22	13 – 22
Tube rows	TR	14.5	19.7	35.2	28.3	44.9	69.6
Heater pressure loss	kPa	2	2	2	2	2	2
Connections	G"	2.79	2.71	3.13	2.64	8.14	3.67
	G"	1"	1 ¼"	1 ½"	1 ½"	2"	2 ½"
AIR COOLERS		°C					
PKW (14/20)	kW	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18	32 – 18
Tube rows	TR	26.8	36.3	57.9	52.2	83	114.6
Cooler pressure loss	kPa	6	6	6	6	6	6
Connections	G"	15.84	15.36	17.47	14.94	15.94	16.75
	G"	1 ¼"	1 ½"	2"	2"	2 ½"	2 ½"

Base frames

Floor base frames

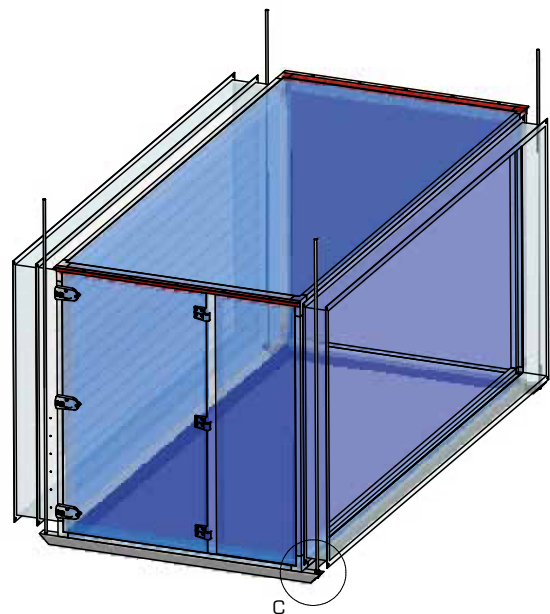
The consoles with feet is produced in welded 50 mm square steel tubing. For very large and heavy Monoblocs, 80 mm square steel tubing is used. One console per Monobloc cube is the standard. The welded steel frame is completely galvanised and then fitted with adjustable rubber feet. The usual base frame height is 100 to 500 mm; in addition a special solution can also be offered. Feet are adjustable over a range of ± 15 mm. Unless otherwise agreed, the base frames are bolted to the cube and delivered.



Ceiling mounting

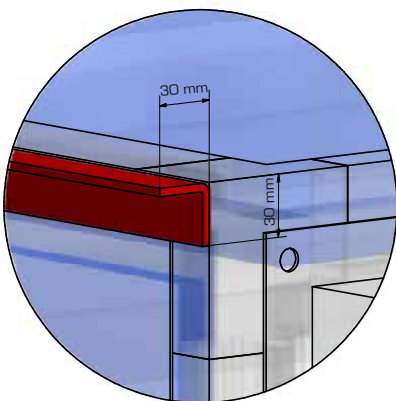
Smaller units can be fitted with aluminium or V2A steel brackets for direct mounting on the ceiling, depending on customer requirements.

You decide the fixing points on site, and you make the suspension holes yourself. Larger units are produced in 50 mm square steel tubing which has lugs welded on for fixing. Threaded rods are usually used for mounting. Here the suspension holes are decided beforehand and defined in a layout plan.

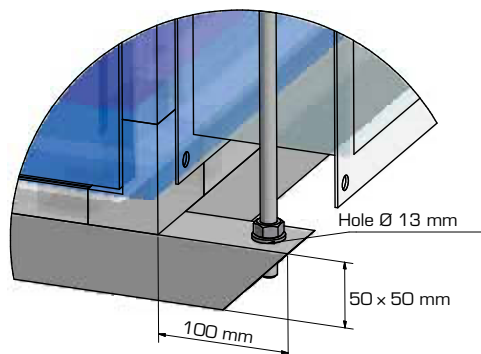


Special design

We can of course also fulfil your particular wishes, whether they concern wall consoles or height-adjusted floor consoles.



Ceiling mounting brackets



Console ceiling mounting

Damper actuators

The number of damper actuators depends largely on the size of the damper. In addition the maximum differential pressure, blade size, struts, materials, sealing class, etc. also play a role. The table below can be used as a help in determining the size.

Reference values for the damper torque in NM (per actuator)

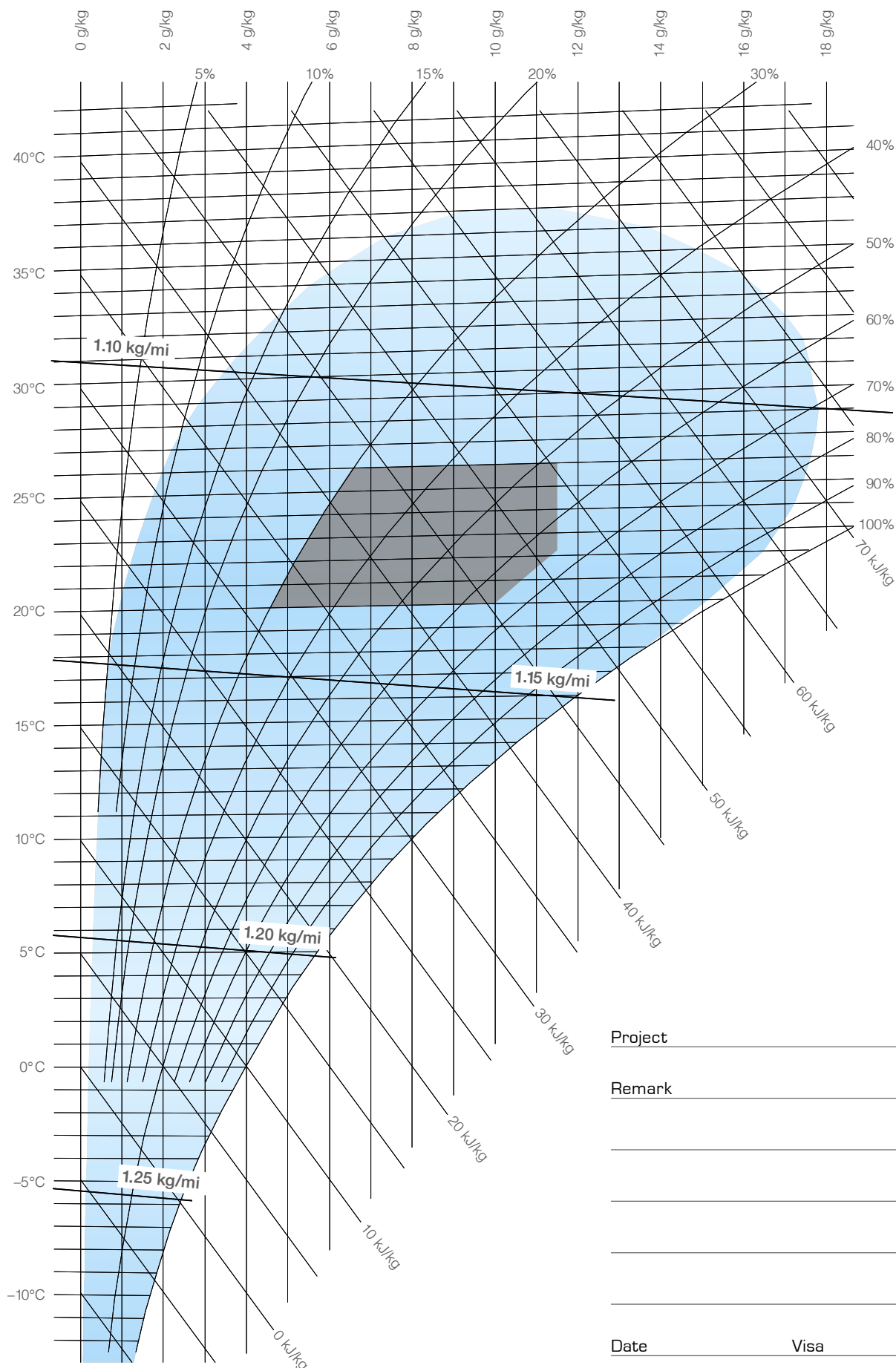
		1 Axis			2 Axes			3 Axes				
Height [mm]	Type											
3600	50	16.0	28.2	20.2	30.3	36.4	40.0	45.8	30.3	33.3	36.4	
3240	45	14.8	25.7	17.9	26.7	32.1	37.5	42.9	26.7	29.4	32.1	
2880	40	12.7	22.4	32.1	23.1	27.8	32.5	37.2	41.9	25.5	27.8	
2520	35	11.3	19.9	28.6	42.7	23.5	27.5	31.5	35.4	39.4	43.3	
2160	30	9.4	16.6	23.8	35.6	42.8	22.5	25.7	29.0	32.2	35.5	
1800	25	7.5	13.3	19.0	28.5	34.2	40.0	20.0	22.5	25.1	27.6	
1440	20	6.1	10.8	15.5	23.1	27.8	32.5	37.2	19.3	21.5	23.6	
1080	15	4.2	7.5	10.7	16.0	19.3	22.5	25.7	29.0	32.2	35.5	
720	10	2.8	5.0	7.1	10.7	12.8	15.0	17.2	19.3	21.5	23.6	
360	5	0.9	1.7	2.4	3.6	4.3	5.0	5.7	6.4	7.2	7.9	
		5	10	15	20	25	30	35	40	45	50	
Width [mm]		360	720	1080	1440	1800	2160	2520	2880	3240	3600	

Reference values for leakages

- Standard version: Leakage loss approx. $40 \frac{\text{m}^3}{\text{h} \times \text{m}^2}$ at 100 Pa
- DIN 1946/4 version: Leakage loss approx. $8 \frac{\text{m}^3}{\text{h} \times \text{m}^2}$ at 100 Pa

Mollier HX diagram

Mollier HX diagram for moist air at 450 m a.s.l. (0.96 bar)



Quote Request

Mountair S2 Monobloc	Date
Company	Deadline
Contact person	
E-mail	Phone
Project name	

TECHNICAL DATA

Plant number/name	
Height above sea level	a. s. l.
Minergie	☐ Yes ☐ No
Quality grade supply air	☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4
Insulation thickness	☐ 42/54 mm ☐ 54 mm ☐ 100 mm
Supply air volume flow [20 °C/40 %]	m³/h
External pressure supply air	Pa
Filtration supply air	☐ G4 ☐ M5 ☐ M6 ☐ F7 ☐ F8 ☐ F9 ☐ H10 ☐ H11 ☐ H12 ☐ H13
Quality grade return air	☐ Q1 ☐ Q2 ☐ Q3 ☐ Q4
Return air volume flow [20 °C/40 %]	m³/h
External pressure return air	Pa
Filtration return air	☐ G4 ☐ M5 ☐ M6 ☐ F7 ☐ F8 ☐ F9
Recirculated air	%
Stratification air flow	☐ 1 ☐ 2 ☐ variable
Installation	☐ indoor ☐ outdoor
Heat recovery type	☐ CCS (Connected circuit heat exchanger) ☐ PHE (Plate heat exchanger) ☐ RHE (Rotation heat exchanger) ☐ none
Min. efficiency of heat recovery	%

Air heater feed	°C
Air heater return	°C
Air cooler feed	°C
Air cooler return	°C
Fan type	☐ EC ☐ Belt ☐ Direct with KL motor
Humidifier	☐ Steam humidifier SA ☐ Contact humidifier SA ☐ Contact humidifier RA ☐ Atomiser SA ☐ Atomiser RA
Water quality humidifier	☐ softened ☐ desalinated
Dehumidification circuit	☐ Yes ☐ No
Damper	☐ outside air OA ☐ exhaust air EA ☐ supply air SA ☐ return air RA ☐ recirculated air
Connectors	☐ Yes ☐ No ☐ insulated
Base frame height	mm
Maximum dimensions	Length mm Width mm Height mm
Accessories	☐ Installation ☐ Disassembled, assembled on site ☐ Refrigeration plant ☐ Control

AIR CONDITIONS

SUMMER

WINTER

OA: Temperature	°C	°C
OA: Relative / absolute humidity	% / g/kg	% / g/kg
SA: Temperature	°C	°C
SA: Relative / absolute humidity	% / g/kg	% / g/kg
RA: Temperature	°C	°C
RA: Relative / absolute humidity	% / g/kg	% / g/kg

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