

Lewis Duct Clean

Kitchen Ventilation Specialists



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Liverpool

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30/5/2024

KITCHEN EXTRACTION & ODOUR CONTROL SYSTEM

Lewis Duct clean was asked to carry out a site survey and put together a proposal for the extraction system at the above address:

After concluding the odour risk assessment under the EMAQ and DEFRA guidance, the total score was 30 which leads to high level of odour filtration (please see attached Odour risk assessment).

The shop is serving pizza:

Above the electric fryers/oven and griddle cooking equipment, a stainless-steel extractor hood/canopy approx. 5,000mm long x 1,200mm deep X 500mm High.

The canopy is manufactured in 304 grade with external dull polish grain and internal filter housing to removable/washable baffle type grease filters.

Baffle filters are (first stage filters) of a re-usable stainless-steel type design. There will be sufficient primary grease filters fitted to cover the complete length of the canopy face above the cooking ranges which are highly efficient at grease removal.

A new ductwork from the canopy hood to be connected the second stage of filtration which is Electrostatic Precipitator (ESP) Kitchen Extract Grease and Smoke filtration such as Purified air ESP4500E. (please see attached tech spec for the ESP).

The ESP will then connect to the third stage of filtration which consist of 4X12"X24"X24" / 120KG of heavy duty activated carbon filtration unit which is accommodated in a housing box with G4 Pleated Panel Pre-Filters (carbon filtration has a dwell time of around seconds, please see attached tech spec for carbon and pre filter).

The filter housing unit will be designed to ensure ease of access for maintenance and to provide a good seal around the filters to prevent gases bypassing the filters.

The odour systems are then connected to Helios GBW 560-4-4 insulated box extractor fan with a transformer speed controller and overheat protection. (Please see attached fan technical specification).

The fan will be mounted on using anti vibration rubber mountings and connected to ducting using flexible connectors to eliminate vibration levels.

A sound attenuator installed after the fan (atmosphere outlet side) Type Acoustica R02-5-600 to achieve the insertion loss as per the acoustic engineer recommendation.

The ductwork after the silencer will discharge Vertically with high velocity jet accelerator. The system is designed and installed in accordance to DW172 and EMAQ guidance.

CLEANING AND MAINTAINCE SCHEDULE

Extractor hood canopy and baffle filters to be cleaned weekly.

TR19 extractor system, ductwork cleaning to be scheduled every 3 months.

3 - Carbon units to be replaced every 3 months.

ESP to be serviced and cleaned every 3 months.

Appendix 3: Risk Assessment for Odour

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

Impact Risk	Odour Control Requirement	Significance Score*
Low to Medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very high	Very high level odour control	more than 35

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Score	Score	Details
Dispersion	Very poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s.
	Moderate	10	Discharging 1m above eaves at 10 -15 m/s.
	Good	5	Discharging 1m above ridge at 15 m/s.
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge ¹ .
Size of kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away ¹ .
Cooking type (odour and grease loading)	Very high	10	Pub (high level of fried food), fried chicken, burgers or fish & chips. <i>Turkish, Middle Eastern or any premises cooking with solid fuel</i>
	High	7	Vietnamese, Thai, Indian, <i>Japanese, Chinese, steakhouse</i>
	Medium	4	<i>Cantonese, Italian, French, Pizza (gas fired),</i>
	Low	1	Most pubs (<i>no fried food, mainly reheating and sandwiches etc</i>), <i>Tea rooms</i> ¹

Note 1: A planner may take a pragmatic view when assessing whether certain low risk kitchens require any odour abatement to be fitted. In reaching this decision the Planner may consider the nature of the food being cooked and/or the size of kitchen and/or its location.

Our ESP Range

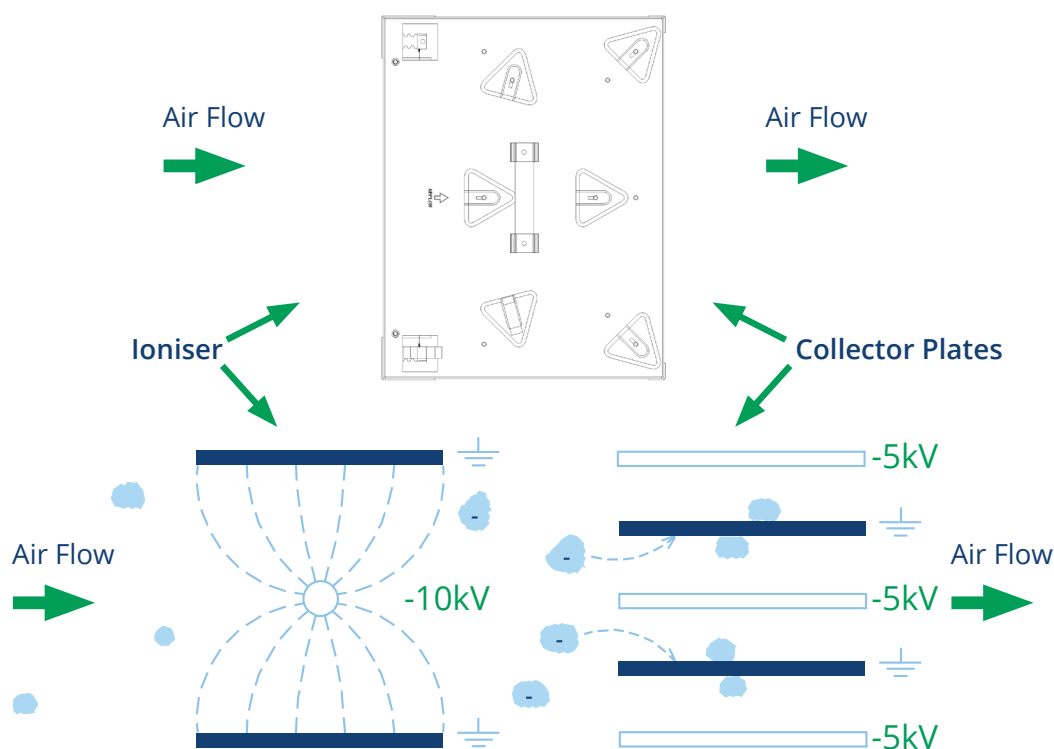


ESP 4500

- ESP 1500E which can handle up to 0.7m³/sec of air flow
- ESP 3000E which can handle up to 1.4m³/sec of air flow
- ESP 4500E which can handle up to 2.1m³/sec of air flow
- ESP 6000E which can handle up to 2.8m³/sec of air flow

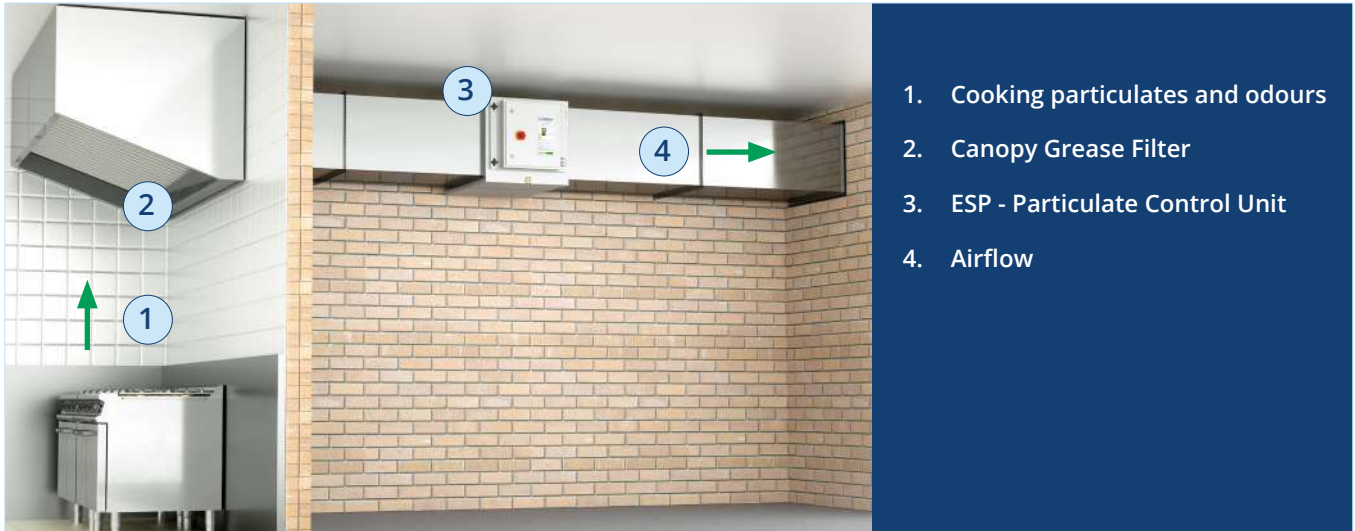
Our ESP's have been specifically designed for kitchen extract systems; they have integral sumps to collect the oil, grease and smoke particles filtered out of the exhaust. This not only simplifies servicing but eradicates potentially dangerous spillage from the bottom of the units and greatly cuts down on build-ups of grease within the ducting.

The ionisation voltage has been designed to run at a negative potential which enhances the ionisation of particles and also produces more ozone which is helpful in reducing cooking odours.



The above diagram shows, in a basic visual, how an electrostatic precipitator works. As air passes into the combined ioniser / collector cell, the particulates in the air stream are polarised to a negative potential. As they continue through the ioniser and between the collector cell plates, the polarised particulates are repelled away from the negatively charged plates and attracted to the earthed plates where they stick and so are filtered out of the air flow.

Our ESP units fit in-line with the kitchen ducting and can be configured modularly to cope with all extract volume requirements.



KEY FEATURES

- Eliminates up to 98% of oil, grease and smoke particles
- Filters particles down to sub-micron levels
- Produces Ozone to help reduce malodours
- Designed with an integral sump
- Modular in design
- Specifically designed for commercial kitchen application
- Energy efficient: - uses no more than 50W
- Greatly reduces grease build-up within the duct run



3 ESP Units Stacked in modular formation



4 ESP Units Stacked in modular formation with a double pass

Technical Specification

	ESP 1500E	ESP 3000E	ESP 4500E	ESP 6000E
Electrical Supply	220/240V 50Hz	220/240V 50Hz	220/240V 50Hz	220/240V 50Hz
Power Consumption	20 Watts	30 Watts	40 Watts	50 Watts
Max Air Volume	up to 0.7m ³ /sec	up to 1.4m ³ /sec	up to 2.1m ³ /sec	up to 2.8m ³ /sec
Dimensions W/H/D	450mm/630mm/ 640mm	900mm/630mm/ 640mm	1350mm/630mm/ 640mm	1800mm/630mm/ 640mm
Weight	55Kg	85Kg	118Kg	153Kg

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

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Pleated Panel Filters

Applications

The Pleated Panel is a medium efficiency disposable filter, suitable for ventilation and air conditioning systems which require a higher efficiency and greater dust holding capacity than can be achieved with glass or synthetic panels.

The Pleated Panel can be used where glass panels are undesirable, such as in the food industry and hospitals.

Construction

Pleated filters consist of a dry non-woven fabric media, pleated to give an extended surface area, producing a low initial resistance for the same air volume.

The pleated assembly is contained within either a rigid all cardboard casing, or a cardboard frame with perforated cap-punch retaining grids.



Technical

Filter Classification:

Grade G4 to EN779.

Pleated Material Flamability :

Fire Resistant to :-
Underwriters Laboratories
Standard 900 class 2

Maximum operating temperature:

100°C (212°F)

Dust Holding Capacity:

840 g/m² (2") and 1260 g/m² (4") to
EN779

Resistance to Airflow

Face Velocity										
m/s fpm	1.25 250		1.50 300		2.0 400		2.5 500		3.0 600	
Pressure Drop	Pa	"wg	Pa	"wg	Pa	"wg	Pa	"wg	Pa	"wg
2" Panel	22	0.09	27	0.11	50	0.20	70	0.28	-	-
1" Panel	25	0.10	30	0.12	55	0.22	75	0.30	87	0.35

Recommended discard resistance is 125 Pa (0.5"wg) in excess of clean resistances shown above for a 2" panel and 150 Pa (0.6"wg) for 4" panel.

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Capacity Chart (2" Pleated Panels)

Data based on Face Velocity of 2.5 m/s (500 fpm)

SIZE	SIZE	Flow Rate
OT Inches	Actual mm	m ³ /s
10 x 10	242 x 242	0.14
12 x 12	289 x 289	0.20
15 x 15	369 x 369	0.33
18 x 18	445 x 445	0.48
20 x 10	495 x 242	0.29
20 x 16	495 x 394	0.48
20 x 20	495 x 495	0.60
25 x 16	620 x 394	0.60
25 x 20	620 x 495	0.76
24 x 12	594 x 289	0.43
24 x 20	594 x 495	0.73
24 x 24	594 x 594	0.88

Actual Face Size = Nominal Size less 6mm (0.25")

Capacity Chart (4" Pleated Panels)

Data based on Face Velocity of 3.0 m/s (600 fpm)

SIZE	SIZE	Flow Rate
OT Inches	Actual mm	m ³ /s
10 x 10	242 x 242	0.18
12 x 12	289 x 289	0.25
15 x 15	369 x 369	0.41
18 x 18	445 x 445	0.60
20 x 10	495 x 242	0.36
20 x 16	495 x 394	0.58
20 x 20	495 x 495	0.73
25 x 16	620 x 394	0.72
25 x 20	620 x 495	0.91
24 x 12	594 x 289	0.51
24 x 20	594 x 495	0.87
24 x 24	594 x 594	1.05

Holding Frames and Casings

Holding frames and casings for Disposable Pleated Panels are available singularly or in multiples, and can be manufactured to suit non-standard sizes and special applications. See leaflets (code AC8) for full technical information.

Code AC1/3b Ref 06/11

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Metal Cased Discarbs

The metal cased 'Discarb' cells have the highest carbon loading in our range, and have standard or heavy-duty carbon panels permanently sealed into a galvanised sheet steel casing. This construction gives a very strong unit capable of handling large air volumes or where conditions dictate, increased contact time. The advantage of this unit is that with panels sealed in, there is no possibility of air leakage. Also, these units can be manufactured to almost any reasonable size, the limiting factors being the overall weight for handling purposes and the size of individual panels. When the unit has finished its useful life it is discarded and replaced with a complete new cell.



Standard Duty Cells							
Nominal Size	Actual Size mm	Number of	Carb.	Discarb	Airflow		Pressure
W x H x L	W x H x L	Panels	Weight	Weight	m ³ /s	cfm	Pa
12" x 12" x 12"	292 x 292 x 292	6	5 kg	9 kg	0.10	212	75
12" x 12" x 18"	292 x 292 x 445	6	8 kg	14 kg	0.15	318	95
12" x 12" x 24"	292 x 292 x 597	6	10 kg	18 kg	0.22	466	140
18" x 18" x 12"	445 x 445 x 292	8	10 kg	17 kg	0.21	445	55
18" x 18" x 18"	445 x 445 x 445	8	15 kg	25 kg	0.31	657	70
18" x 18" x 24"	445 x 445 x 597	8	21 kg	33 kg	0.41	868	105
24" x 24" x 12"	597 x 597 x 292	12	20 kg	31 kg	0.41	868	70
24" x 24" x 18"	597 x 597 x 445	12	31 kg	45 kg	0.61	1292	90
24" x 24" x 24"	597 x 597 x 597	12	42 kg	59 kg	0.81	1716	130
12" x 24" x 24"	298 x 597 x 597	6	21 kg	35 kg	0.40	847	130

Extra Duty Cells							
Nominal Size	Actual Size	No. of	Carb.	Discarb	Airflow		Pressure
W x H x L	W x H x L	Panels	weight	weight	m ³ /s	cfm	Pa
12" x 12" x 12"	292 x 292 x 292	6	6 kg	10 kg	0.13	275	125
12" x 12" x 18"	292 x 292 x 445	6	9 kg	15 kg	0.20	424	175
12" x 12" x 24"	292 x 292 x 597	6	12 kg	20 kg	0.27	572	250
18" x 18" x 12"	445 x 445 x 292	8	12 kg	19 kg	0.30	635	95
18" x 18" x 18"	445 x 445 x 445	8	19 kg	28 kg	0.41	868	125
18" x 18" x 24"	445 x 445 x 597	8	25 kg	37 kg	0.54	1144	185
24" x 24" x 12"	597 x 597 x 292	12	25 kg	35 kg	0.54	1144	125
24" x 24" x 18"	597 x 597 x 445	12	38 kg	52 kg	0.80	1694	150
24" x 24" x 24"	597 x 597 x 597	12	51 kg	68 kg	1.06	2245	225
12" x 24" x 24"	298 x 597 x 597	6	26 kg	46 kg	0.53	1122	225

The company reserves the right to change the specifications without notice. E & OE.

Code AC6/2a Ref 02/09

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Technical

The capacities shown are based on a dwell time of 0.1 seconds .

For contact times of 0.3 seconds, reduce rated airflow to 1/3rd, pressure drop will also reduce to 1/3rd.

Max Temperature 40 Deg C

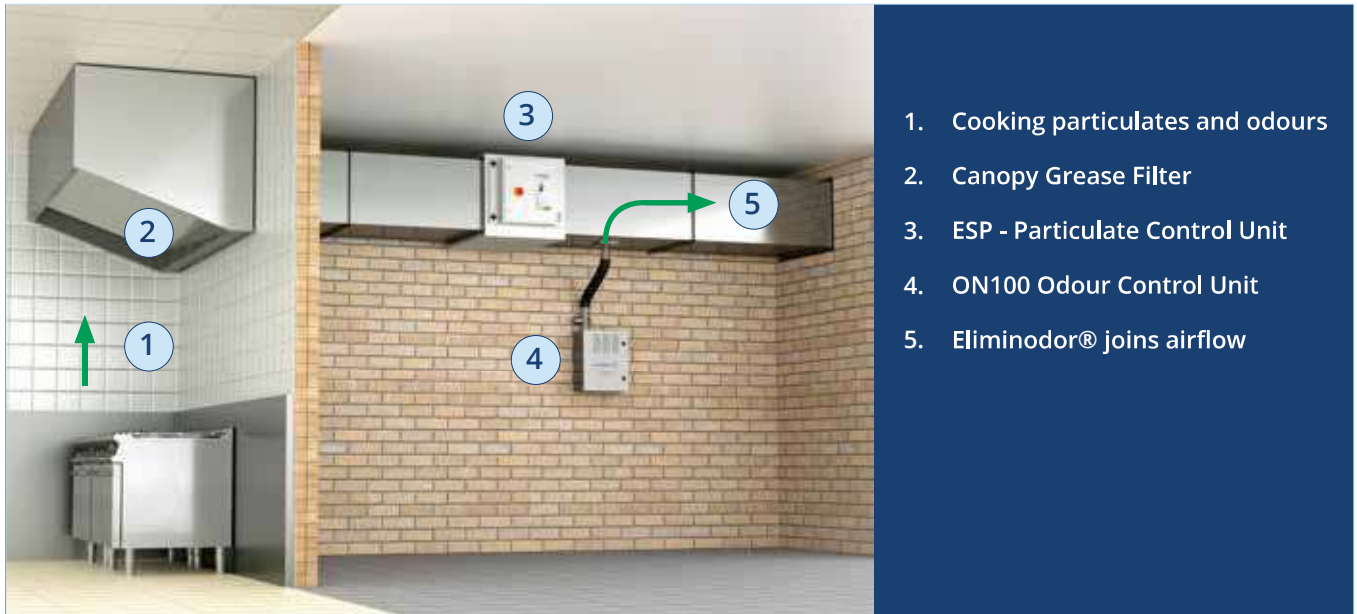
Max Humidity 80% RH

Non-standard sizes

Other sizes are available to suit individual requirements. Our Technical Department will be pleased to

ON100

Purified Air use patented technology to scientifically treat cooking odours emitted by commercial kitchen and restaurant exhausts.



Once the airstream in the exhaust duct has had the majority of the particulates removed by one of our ESP units the gaseous phase or malodour can then be treated by the ON 100.



The vapour from a specially blended neutralising agent, ELIMINODOR®, is mixed with ambient air drawn into the ON100 and ionised to a negative potential of

15,000 volts. This ionised vapour then passes along a nonconductive tube to be discharged into the centre of the duct via a venturi spigot, the metal ducting is earthed through the same high tension circuit which makes the contaminant at an opposite potential to the negatively charged ELIMINODOR® vapour. This then causes the negative and positive particles to combine, so treating the malodour by chemical reaction.

Key Features

- Compact Design
- Easy to maintain
- Easy to install
- No airflow resistance
- Energy efficient - uses no more than 40W

Technical Specification

Electrical Supply	220/240V 50Hz
Max Power Consumption	40 Watts
Ionisation voltage	15kV negative
Max Air Volume	up to 4.16m ³ /sec
Dimensions	W 400mm H 500mm D 200mm
Weight	12.25kg



ON100 Unit

ELIMINODOR®

This product has been specifically developed and blended for use in Purified Air's ON100 unit.

ELIMINODOR® is a finely balanced blend of essential oils and other chemicals which neutralise odorous gases found in the exhausts of commercial kitchens and restaurants.

Purified Air have designed this unique system to ensure that only minimal quantities of ELIMINODOR® are required for optimum results.

Approximate dosage: one litre every 2 - 4 weeks under normal conditions.

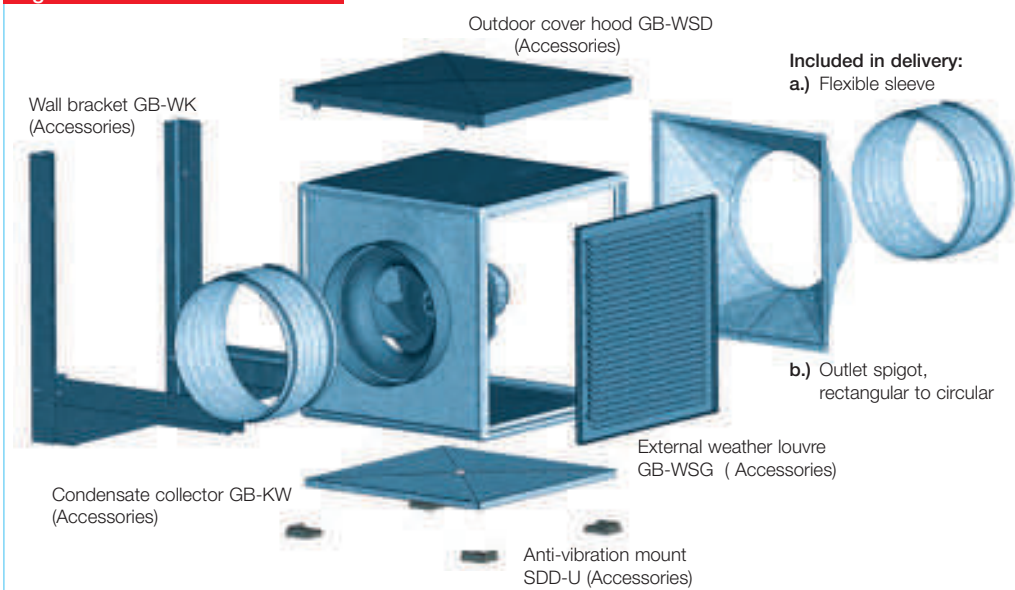
Guaranteed Process

Purified Air's ON100 unit in conjunction with ELIMINODOR® can reduce malodour in your commercial kitchen exhaust by up to 90%.



The contamination of ELIMINODOR® with any other ingredients will cause its blend to become unstable and could render ELIMINODOR® completely ineffective, it will also nullify all and any manufacturer's warranty supplied by Purified Air Limited for the ELIMINODOR® and the ON100 unit within which it is used.

GigaBox and accessories



Information	Page
Information for planning, acoustics	10 on
General techn. information, speed control	15 on

■ **Application**

Multifunctional fan box, suitable for medium to higher air flow volumes against high resistances in every type of ventilation system. The compact frame construction offers easy conversion of the outlet position, together with a choice of ideal accessories make these units ideal for all applications.

□ **GB T120**

The GigaBox T120 types are suitable for the extraction of dirty, humid and hot air up to max. 120 °C, such as extract air fan in commercial kitchens and many process technology applications.

□ **GB EC**

GigaBox types with EC motor technology are available for energy-saving application and lowest operating costs.

■ **Casing**

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool.

Intake cone for ideal airflow, spigot and flexible connector for duct connection. With outlet adapter (from rectangular to circular) on the exhaust side for low-loss discharge and flexible connector to reduce vibration transmission.

The flexible connectors are supplied as standard and correspond to the max. permissible air flow temperature of +70 °C and/or +120 °C with the types GB T120. Easy positioning with crane hooks as standard.

- With GB T120, the motor is located outside of the air flow.

The thermally insulated partition panel is also the support plate for the motor and impeller unit and can be removed completely for inspection without removing the complete fan from the system.

■ **Speed control**

□ **GB and GB T120**

All types (except GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120) are speed controllable by voltage reduction using a 5-step transformer controller or an electronic controller. The 3-phase GB types can also be 2 speed controlled by Y/Δ switch (accessories DS 2 or full motor protection device M4). The performances stages are specified in the performance curve. 3-phase models are controllable by means of frequency inverter with Sine filter (FU-BS, accessories); GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120 only controllable by frequency inverter FU-BS.

□ **GB EC**

All EC types are steplessly speed-controllable by means of speed-potentiometer. Furthermore, control is also possible by means of three-step switch or steplessly via a universal control system or electronic differential pressure/temperature controller. The example performances stages are specified in the performance curve.

■ **Assembly, Installation**

□ **GB and GB EC**

Installation in any position and flexible assembly using the five possible discharge directions via the discharge adapter. Removable panels allow inspection access on all sides.

□ **GB T120**

Installation must be carried out with downward condensation discharge. Flexible assembly through three possible centrifugal discharge directions via the discharge adapter. Easy-access inspection cover with handle, for cleaning and maintenance. Easy positioning of all types with integrated crane hooks. Vibration transmission to the building is minimised with anti-vibration mounts (Type SDD-U, accessories). Vibration transmission to the ducting is prevented using the standard flexible connector supplied.

■ **Impeller**

Free-running high-performance centrifugal impeller with backward curved polymer blades (NG 250 made from steel) on a galvanised steel back plate, direct driven. Series GB EC, GB from NG 500 and GB T120 with aluminium impellers. Energy-efficient with low noise generation. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3 or 2.5.

■ **Motor**

□ **GB and GB T120**

IEC-standard motor or maintenance-free external rotor motor protected to IP 54 or 44. Thermal overload protection through built-in thermal contacts. Suitable for continuous operation S1. Insulation class F. Ball bearings are lubricated for life.

□ **GB EC**

Energy-saving, speed-controllable EC external rotor motor protected to IP 54 with high level of efficiency. Maintenance-free and interference-free, ball bearing mounted.

■ **Electrical connection**

□ **GB and GB T120**

Standard terminal box, protected to IP 54.

□ **GB EC**

Standard terminal box (IP 54) mounted to running cable.

■ **Air flow direction**

The air flow direction of centrifugal fans is not reversible, but can be set by positioning the fan to the required air flow direction. Furthermore the position can be set individually to constructional conditions through the conversion of the discharge adapter and panels. The correct motor rotation direction is marked by rotation arrows on the motor and must be checked at start-up.

■ **Incorrect direction of rotation**

If the fan is operated in the incorrect direction of rotation, the motor will overheat and the thermal contact will trip. A typical indication of this is a very low air flow combined with high noise levels and vibration.

■ **Air flow temperature**

The maximum permitted air flow temperature is specified in the type table.

■ **Ambient temperature**

From –40 °C to +40 °C.

VDI 2052 (2006) "Ventilation equipment for kitchens – Planning, design, inspection" is applied when planning exhaust air systems in commercial kitchens. This means the following for exhaust air fans:

- Fans in exhaust air systems must be designed and fitted so that they are easy to access, easy to control and easy to clean. It must be possible to turn them off from inside the kitchen. The motors must be located outside the flow line of the exhaust air. Connected extractor hoods must be able to distinguish between solid and liquid components where possible. Passage of flame to the following components is to be prevented.

These specific requirements are excellently fulfilled in the GigaBox GB T120. Freely accessible casing and dual-wall side panels allow easy cleaning with degreasing agents and steam.

The guidelines on fire safety requirements for ventilation systems (LüAR) from September 2006 have been introduced across large areas of Germany.

This places the following additional requirements on exhaust air systems in commercial and comparable kitchens:

- Exhaust air ducts must be made of non-flammable components (building material class A1 or A2 according to DIN 4102). From the kitchen outlet, they have to have at least a fire resistance class of L90 or must be equipped with a shut-off device with proof of use for this purpose.
- Kitchen exhaust air ducts must not be connected to one another or to other ventilation ducts. Having a joint line for the room air and the kitchen exhaust within the kitchen and the connection of multiple extractor hoods in a kitchen to a shared exhaust line is permitted.
- Suitable grease filters or separating devices made of non-combustible materials are to be attached placed on or directly behind exhaust devices (hoods or ventilation ceilings). It must be possible to remove and reattach these easily for cleaning.

- The exhaust ducts must have smooth, easy-to-clean interior surfaces. Profiled walls, such as flexible ducts and porous or absorbent materials are not permitted. Neither fat nor condensate must be able to pass through the walls.

- The exhaust ducts must have a cleaning opening after every change of direction and in horizontal, straight sections at intervals of no more than 3 m. Their dimensions must have a duct cross-section of at least 3600 cm². Devices must be placed at suitable locations in the ducting to collect and discharge condensate and cleaning agents.

■ Fire protection to neighbouring buildings

If there is a ventilation system on the building envelope (wall), the parts of the ventilation system must have fire-resistant L90 lining. This also applies to fans and their exhaust lines, which are guided outwardly up through the roof.

■ Fire protection in the roof space

Parts of the ventilation system (fan) in the roof space must have fire-resistant L90 lining. Lines that lead to the outdoors must have this lining up to the roof panels. Ventilation ducts (in the building and roof space) must have fire-resistant lining.



- In the GigaBox T120 range, the motor is located outside the delivery flow and is separated from the impeller by a heat-insulated wall. The motor impeller unit can be removed without dismantling the ducting system.

- Assembly of the shaped piece on exhaust side with GB T120 centrifugally above or at the side.

- GB T120 with easy-to-remove access panel.

By combining the parameters of static pressure increase ΔP_{sta} , radiated noise and intake air noise as sound pressure at 4 m

(free field conditions), the following table facilitates the selection of GigaBox centrifugal fans.

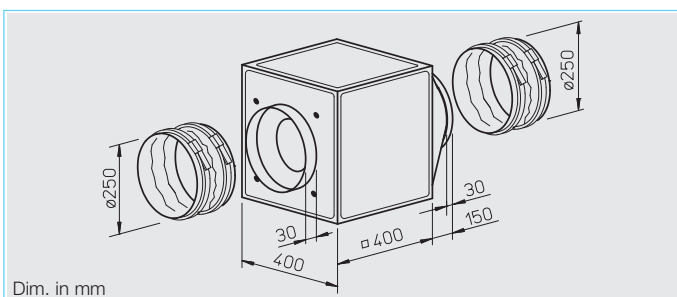
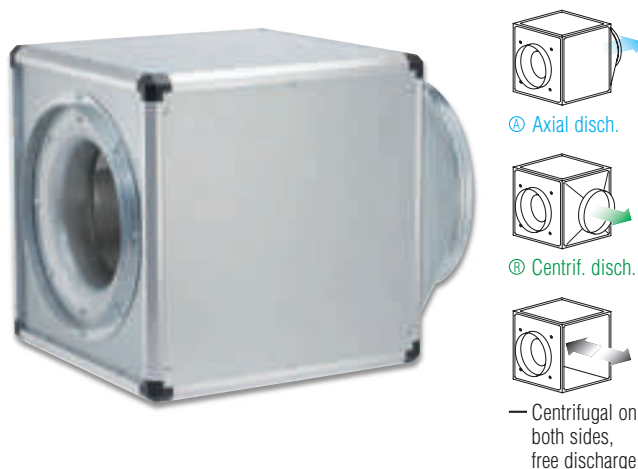
	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V} \text{ m}^3/\text{h}$ depending on static pressure												
Type GB EC	L_{PA} dB(A)	L_{PA} dB(A)	(ΔP_{sta}) in Pa												
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW EC 250	31	43	2010	1880	1750	1600	1360	1010							
GBW EC 315	32	44	2620	2460	2310	2130	1830	1500							
GBW EC 355	30	49	3440	3270	3120	2950	2740	2500	2135	1630					
GBW EC 400 A	36	48	4050	3860	3600	3350	3050	2670	1880						
GBW EC 400 B	37	52	5160	4970	4730	4550	4210	4100	3800	3410	2900				
GBW EC 450	38	55	6460	6280	6100	5890	5660	5450	5190	4870	4600	3810			
GBD EC 450	39	56	7300	7120	6870	6650	6390	6110	5800	5500	5180	4420	3070		
GBD EC 500 A	43	55	8280	7980	7700	7380	7000	6620	6170	5680	5070	1800			
GBD EC 500 B	46	59	10500	10260	9980	9730	9410	9100	8850	8600	8320	7600	6650	5300	
GBD EC 560	49	59	13370	13110	12800	12510	12190	11930	11610	11280	10920	10310	9580	8320	6700
GBD EC 630	44	60	15000	14680	14200	13870	13450	12930	12380	11900	11310	10180	7850		
GBD EC 710 A	42	53	15890	15020	14250	13500	12510	11670	10680	9500	6730				
GBD EC 710 B	48	61	19630	19060	18400	16760	17130	16460	15720	15050	14060	11910	6960		

	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V} \text{ m}^3/\text{h}$ depending on static pressure												
Type GB	L_{PA} dB(A)	L_{PA} dB(A)	(ΔP_{sta}) in Pa												
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW 250/4	27	39	1420	1160	890	500									
GBW 315/4	29	41	1760	1500	1260	970	560								
GBW 355/4	38	48	3060	2850	2640	2420	2180	1900	1510	560					
GBD 355/4/4	34	46	3090	2910	2720	2520	2290	2030	1680	1000					
GBW 400/4	38	50	4120	3920	3720	3500	3270	3000	2690	2260	1440				
GBD 400/4/4	38	50	4120	3910	3710	3500	3290	3050	2780	2430	1870				
GBW 450/4	40	49	4610	4400	4200	3990	3770	3530	3270	2970	2610				
GBD 450/4/4	40	52	5500	5220	4930	4640	4330	4000	3640	3210	2670				
GBW 500/4	47	59	8320	8020	7740	7460	7180	6910	6630	6340	6030	5330	4340	370	
GBD 500/4/4	45	57	8860	8540	8220	7880	7530	7160	6770	6350	5900	4800	2940	140	
GBW 560/4	45	57	9150	8910	8670	8420	8160	7890	7620	7330	7030	6360	5570	4500	2270
GBD 560/4/4	44	57	12610	12260	11910	11560	11200	10830	10450	10050	9630	8690	7540	5950	2940
GBD 560/6/6	35	48	8670	8160	7600	6990	6280	5410	4210	2190					
GBD 630/4/4	51	62	14430	14070	13710	13370	13040	12720	12390	12050	11710	11000	10200	9280	8110
GBD 630/6/6	42	53	9990	9430	8870	8290	7670	6980	6160	5070	3020				
GBD 710/4	46	59	20280	20020	19760	19490	19210	18930	18640	18340	18040	17400	16730	15990	15190
GBD 710/6/6	51	62	18740	17980	17190	16360	15490	14560	13550	12440	11170	7730	970		

	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V} \text{ m}^3/\text{h}$ depending on static pressure												
Type GB T120	L_{PA} dB(A)	L_{PA} dB(A)	(ΔP_{sta}) in Pa												
	at 4 m	at 4 m	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
GBW 355/4 T120	36	49	3460	2990	2460	1505									
GBD 355/4/4 T120	36	49	3470	3045	2510	1690									
GBW 400/4 T120	40	53	4930	4380	3790	2900	1580								
GBD 400/4/4 T120	40	53	4870	4295	3650	2740	1370								
GBW 450/4 T120	45	57	7110	6480	5850	5135	4350	3300	1900						
GBD 450/4/4 T120	45	57	7180	6600	5950	5220	4340	3230	1340						
GBW 500/4 T120	45	59	8345	7770	7160	6480	5670	4680	3510	1840					
GBD 500/4/4 T120	45	59	8350	7765	7490	7180	6600	5910	4970	3820	1920				
GBD 560/4/4 T120	48	62	12300	11690	11080	10475	9800	9120	8410	7430	6000				
GBD 630/4 T120	53	67	14140	13690	13200	12720	12230	11670	11150	10470	8830	7850	6820	5150	
GBD 710/4 T120	55	66	18200	17650	17200	16650	16000	15300	14500	13750	12800	11850	10850	9800	8500

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

□ Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

□ Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

□ Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

□ Motor protection

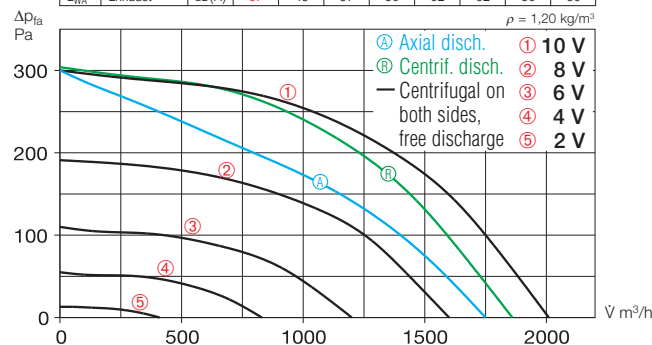
Integrated electronic temperature monitoring for EC motor and electronics.

□ Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

GBW EC 250

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	51	41	48	44	41	39	36	29
L _{WA} Intake	dB(A)	63	44	54	56	58	57	52	45
L _{WA} Exhaust	dB(A)	67	45	57	59	62	62	56	50



Voltage V	n min ⁻¹	V m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1650	2010	120	0.79	31	0.22
8	1325	1600	70	0.46	28	0.15
6	1000	1200	35	0.25	22	0.11
4	710	830	21	0.18	17	0.09



□ Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.

For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
 - Sound level intake
 - Sound level exhaust
- In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 250 Ref. no. 5625

External weather louvre to cover exhaust opening.

GB-WSG 250 Ref. no. 5637

Outdoor cover hood for protected outdoor installation.

GB-WSD 250 Ref. no. 5746

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 250 Ref. no. 5642

■ Accessory details Page

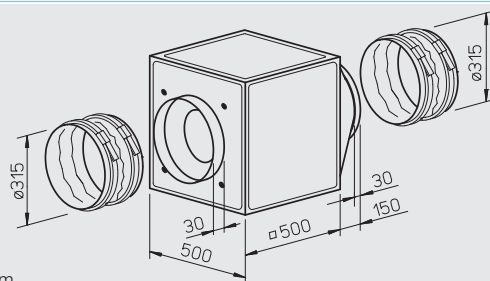
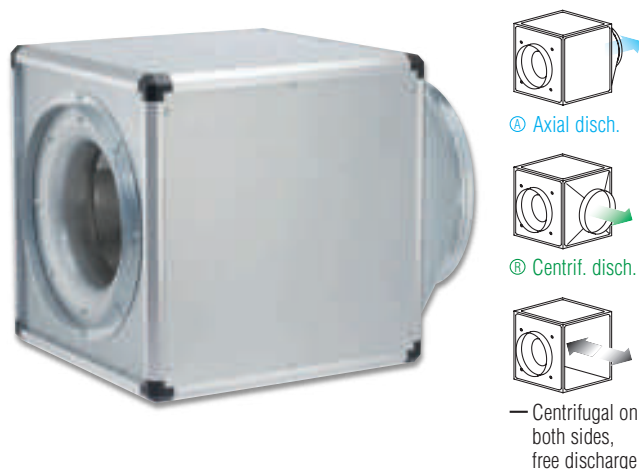
Universal control system, electronic controller, speed-potentiometer 539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Single phase motor, 1 ~, 230 V, 50/60 Hz, EC motor, protection to IP 54													
GBW EC 250	5807	250	2010	1650	31	0.17	1.05	973	55	20.0	EUR EC 1) 2) 1347	PU 24 1) 1736	PA 24 1) 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

■ Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

■ Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

■ Motor protection

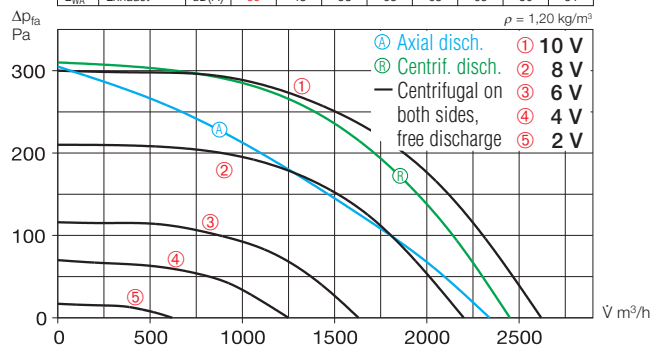
Integrated electronic temperature monitoring for EC motor and electronics.

■ Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

GBW EC 315

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	52	38	46	46	46	45	43	32
L _{WA} Intake	dB(A)	64	43	56	57	58	58	54	44
L _{WA} Exhaust	dB(A)	69	48	58	63	65	65	59	51



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m²/s
10	1500	2620	142	0,91	32	0,20
8	1250	2200	85	0,58	29	0,14
6	930	1630	42	0,31	24	0,09
4	710	1250	25	0,19	20	0,07



■ Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.

For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 315 Ref. no. 5625

External weather louver to cover exhaust opening.

GB-WSG 315 Ref. no. 5638

Outdoor cover hood for protected outdoor installation.

GB-WSD 315 Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 315 Ref. no. 5643

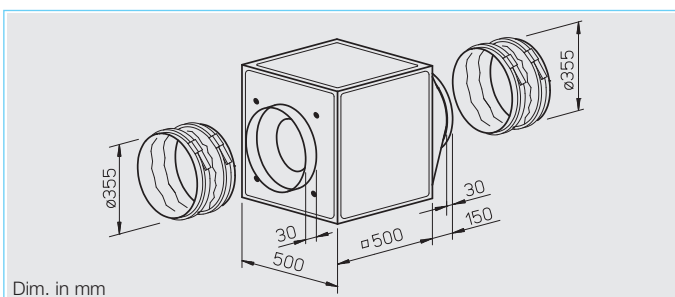
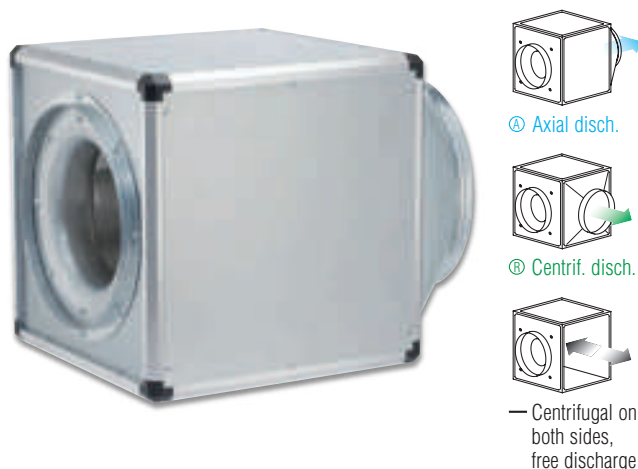
Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush		Speed-potentiometer surface	
		mm	l/s	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54																
GBW EC 315	5808	315	2620	1500	32	0.20	1.25	973	55	31.0	EUR EC 1 ²⁾	1347	PU 24 ¹⁾	1736	PA 24 ¹⁾	1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

■ Motor

Energy saving, speed control-lable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

■ Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

■ Motor protection

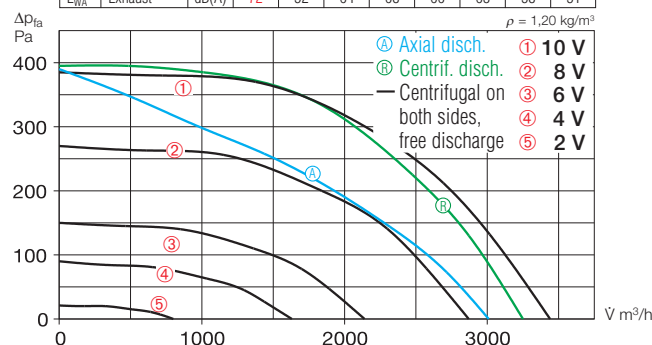
Integrated electronic temperature monitoring for EC motor and electronics.

■ Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

GBW EC 355

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 50	45	44	39	42	41	38	29
L _{WA} Intake		dB(A) 69	49	63	65	62	59	55	48
L _{WA} Exhaust		dB(A) 72	52	64	68	66	63	58	51



Free discharge						
Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1500	3440	235	1,40	30	0,25
8	1250	2870	140	0,87	27	0,17
6	930	2140	64	0,45	22	0,11
4	710	1630	34	0,26	18	0,08



■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 355 Ref. no. 5625

External weather louvre to cover exhaust opening.

GB-WSG 355 Ref. no. 5638

Outdoor cover hood for protected outdoor installation.

GB-WSD 355 Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 355 Ref. no. 5643

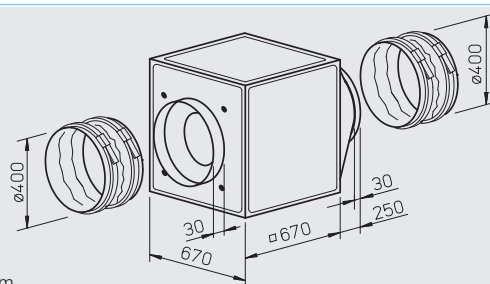
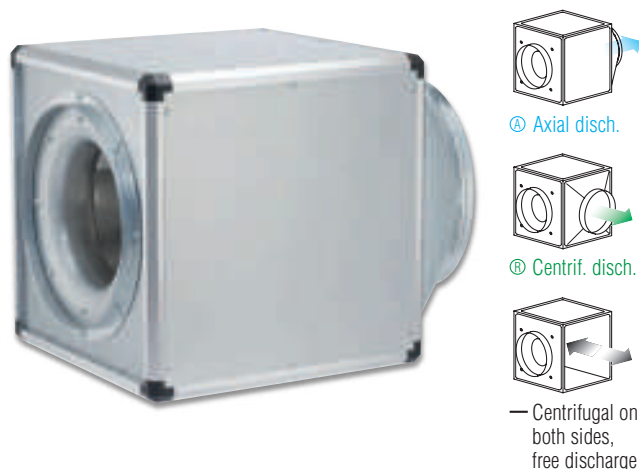
Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush		Speed-potentiometer surface	
		mm	V m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54																
GBW EC 355	5809	355	3440	1500	30	0.35	2.10	973	50	33.0	EUR EC 1) 2)	1347	PU 24 1)	1736	PA 24 1)	1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Impeller and remaining design see description on page 241.

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.
SDD-U Ref. no. 5627

Wall bracket for wall mounting.
GB-WK 400 Ref. no. 5626

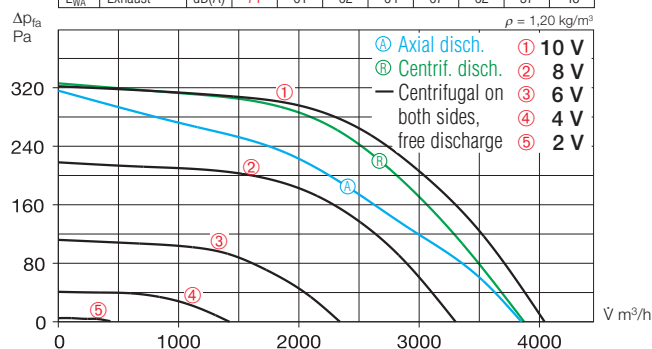
External weather louvre to cover exhaust opening.
GB-WSG 400 Ref. no. 5639

Outdoor cover hood for protected outdoor installation.
GB-WSD 400 Ref. no. 5748

Condensate collector with condensate spigot (centre) for pipe connection.
GB-KW 400 Ref. no. 5644

GBW EC 400 A

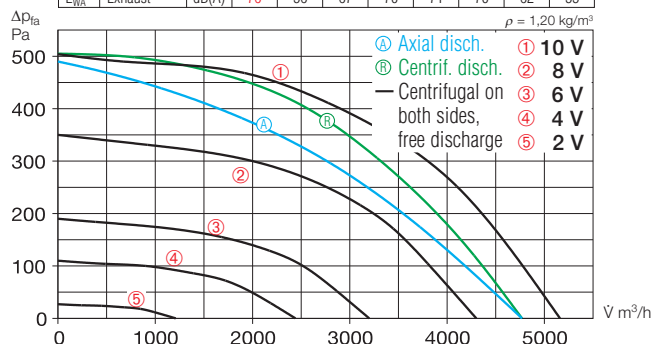
Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	56	52	52	47	43	40	35	27
L _{WA} Intake	dB(A)	68	53	62	67	60	58	55	48
L _{WA} Exhaust	dB(A)	71	61	62	64	67	62	57	48



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1200	4040	209	1.2	36	0.19
8	990	3300	118	0.7	32	0.13
6	710	2340	49	0.3	25	0.08
4	430	1420	21	0.2	18	0.05

GBW EC 400 B

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	57	46	54	49	48	46	43	39
L _{WA} Intake	dB(A)	72	53	64	65	66	67	59	53
L _{WA} Exhaust	dB(A)	76	56	67	70	71	70	62	55



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1500	5160	395	2.52	37	0.28
8	1250	4300	244	1.63	34	0.21
6	930	3200	117	0.85	29	0.13
4	710	2440	63	0.49	25	0.09



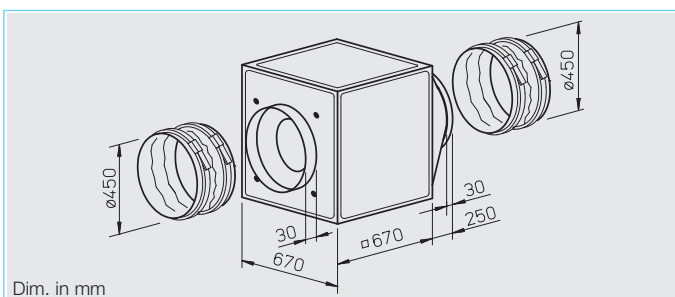
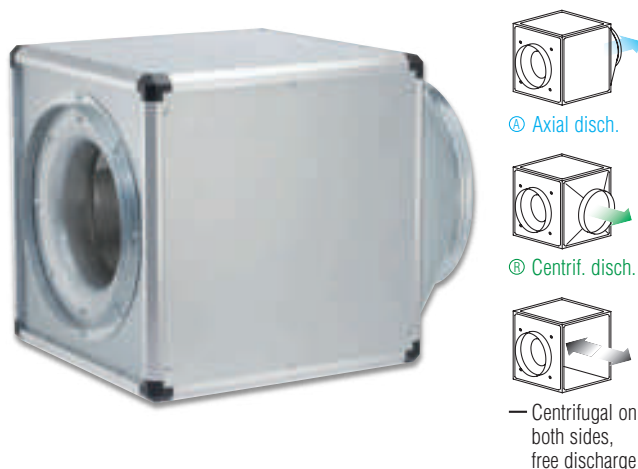
Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V̇ m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54													
GBW EC 400 A	5817	400	4050	1200	36	0.35	2.00	973	50	43.0	EUR EC ^{1) 2)} 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737
GBW EC 400 B	5810	400	5160	1500	37	0.62	3.70	976	50	46.0	EUR EC ^{1) 2)} 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

□ Impeller

Impeller and remaining design see description on page 241.

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.
SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 450 Ref. no. 5626

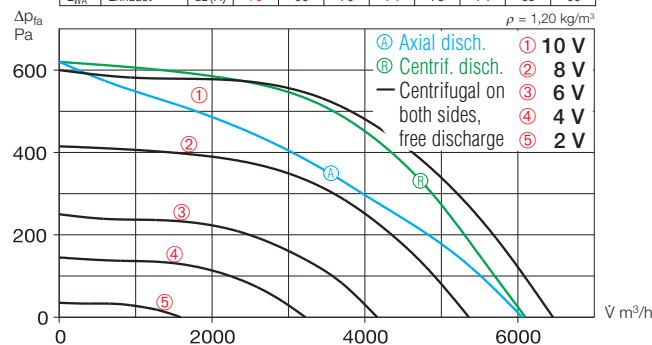
External weather louvre to cover exhaust opening.
GB-WSG 450 Ref. no. 5639

Outdoor cover hood for protected outdoor installation.
GB-WSD 450 Ref. no. 5748

Condensate collector with condensate spigot (centre) for pipe connection.
GB-KW 450 Ref. no. 5644

GBW EC 450

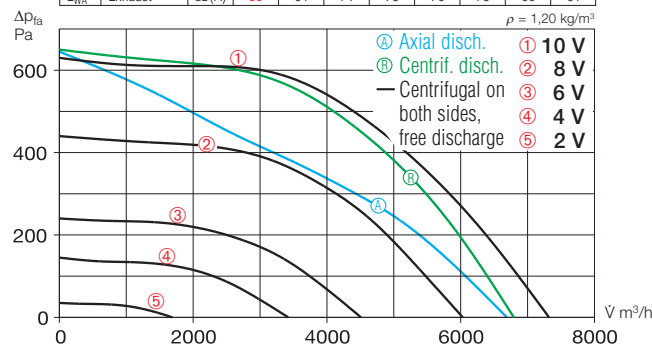
Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 58	48	56	48	47	46	42	31
L _{WA} Intake		dB(A) 75	54	66	68	70	69	64	57
L _{WA} Exhaust		dB(A) 79	60	70	74	75	74	65	60



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1450	6460	614	3,71	38	0,34
8	1200	5360	363	2,35	35	0,24
6	930	4160	185	1,27	31	0,16
4	710	3220	92	0,68	26	0,10

GBD EC 450

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 59	49	57	49	48	47	43	32
L _{WA} Intake		dB(A) 76	55	67	69	71	70	65	58
L _{WA} Exhaust		dB(A) 80	61	71	75	76	75	66	61



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1500	7320	640	1,20	39	0,31
8	1250	6030	380	0,80	36	0,23
6	930	4510	170	0,45	31	0,14
4	710	3420	90	0,27	28	0,10



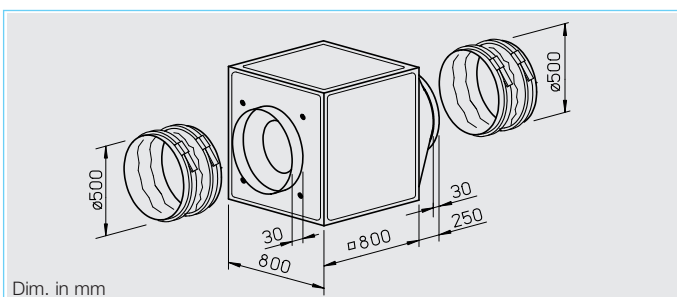
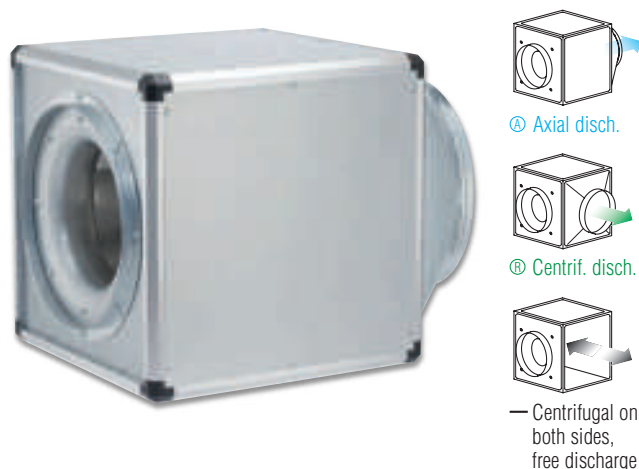
Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54													
GBW EC 450	5811	450	6460	1450	38	1.00	5.70	976	50	55.0	EUR EC 1 ²⁾ 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54													
GBD EC 450	5812	450	7320	1500	39	1.00	1.80	976	55	52.0	EUR EC 1 ²⁾ 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Impeller and remaining design see description on adjacent page.

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 500 Ref. no. 5626

External weather louvre to cover exhaust opening.

GB-WSG EC500 Ref. no. 5640

Outdoor cover hood for protected outdoor installation.

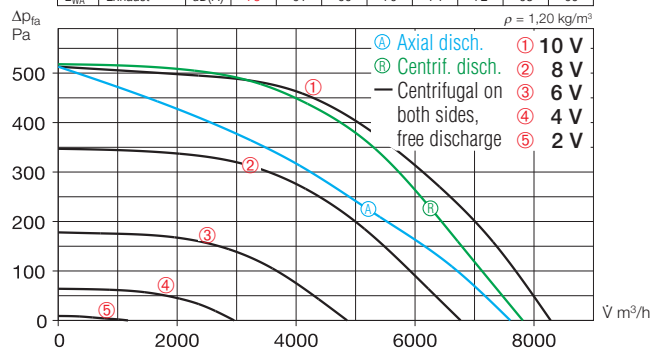
GB-WSD EC500 Ref. no. 5749

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW EC500 Ref. no. 5645

GBD EC 500 A

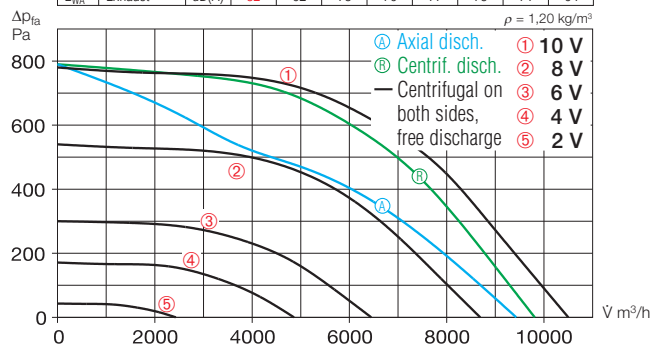
Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 63	57	60	55	54	45	39	31
L _{WA} Intake		dB(A) 75	57	66	66	69	68	66	59
L _{WA} Exhaust		dB(A) 78	61	66	70	74	72	68	60



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1200	8280	701	1,20	43	0,30
8	990	6770	414	0,75	39	0,22
6	710	4860	190	0,37	32	0,14
4	430	2960	63	0,16	22	0,08

GBD EC 500 B

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 66	56	65	58	57	53	50	43
L _{WA} Intake		dB(A) 79	58	70	72	74	73	68	61
L _{WA} Exhaust		dB(A) 82	62	73	76	77	75	71	64



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1500	10500	1250	2,10	46	0,43
8	1250	8690	745	1,30	43	0,31
6	930	6450	300	0,60	38	0,17
4	710	4860	170	0,40	34	0,13



■ Accessory details Page

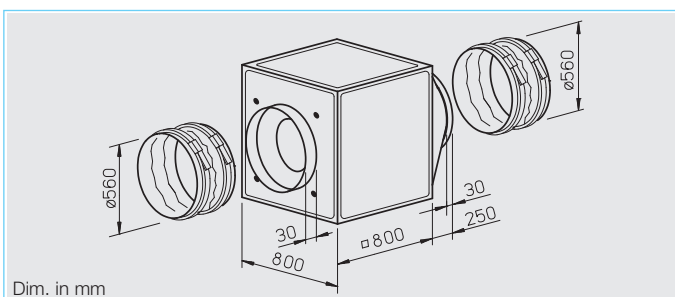
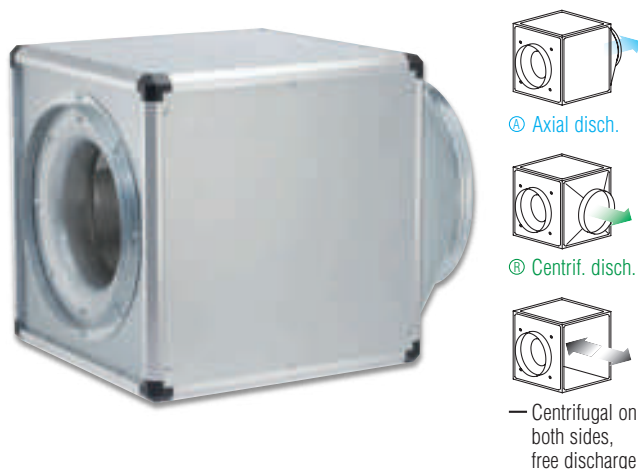
Universal control system, electronic controller, speed-potentiometer 539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V̇ m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54													
GBD EC 500 A	5818	500	8280	1200	43	1.10	1.80	976	50	80.5	EUR EC 1) 2) 1347	PU 24 1) 1736	PA 24 1) 1737
GBD EC 500 B	5813	500	10500	1500	46	1.95	3.10	976	50	79.0	EUR EC 1) 2) 1347	PU 24 1) 1736	PA 24 1) 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

□ Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 2.5.

□ Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

□ Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

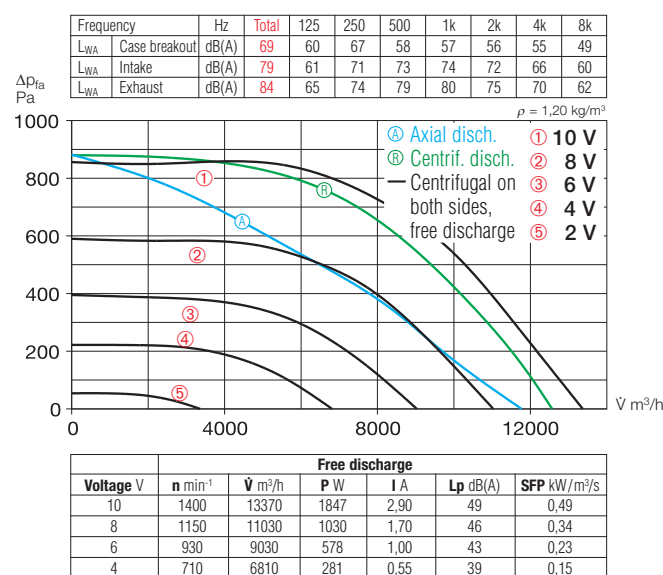
□ Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

□ Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

GBD EC 560



■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 560 Ref. no. 5626

External weather louvre to cover exhaust opening.

GB-WSG 560 Ref. no. 5640

Outdoor cover hood for protected outdoor installation.

GB-WSD 560 Ref. no. 5749

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 560 Ref. no. 5645

■ Accessory details Page

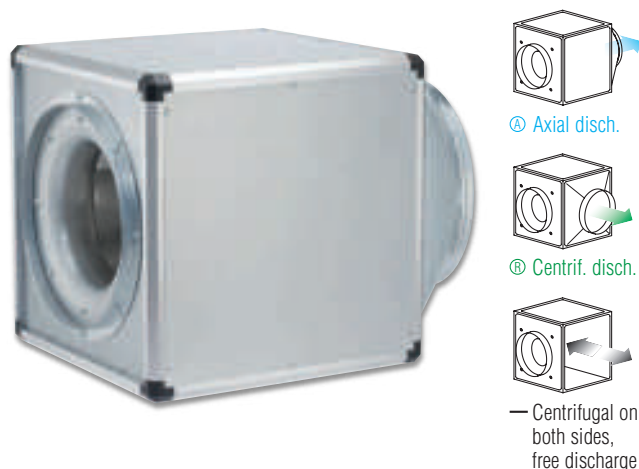
Universal control system, electronic controller, speed-potentiometer 539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54													
GBD EC 560	5814	560	13370	1400	49	2.80	4.30	976	50	83.0	EUR EC 1) 2) 1347	PU 24 1) 1736	PA 24 1) 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

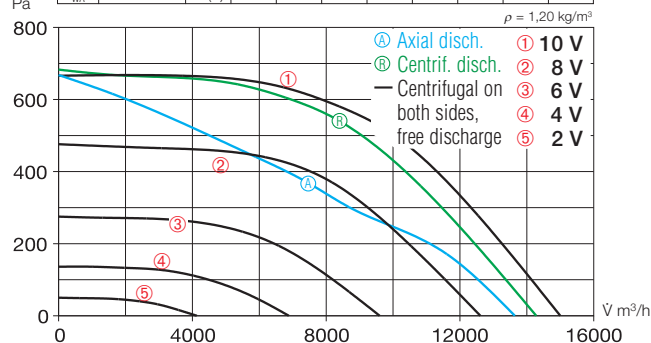
GB EC

Arbitrary installation position and assembly in five possible discharge directions.

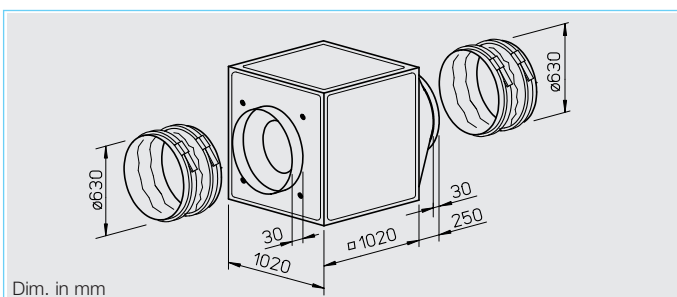


GBD EC 630

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	64	58	61	53	53	51	49	41
L _{WA} Intake	dB(A)	80	66	71	72	74	73	72	68
L _{WA} Exhaust	dB(A)	83	69	76	77	78	75	68	61



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m²/s
10	1100	15000	1430	2,40	44	0,34
8	930	12610	890	1,50	42	0,25
6	710	9600	415	0,78	38	0,16
4	500	6880	170	0,36	32	0,09



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 2.5.

■ Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

■ Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

■ Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

■ Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

■ Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.

For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

External weather louvre to cover exhaust opening.

GB-WSG EC630 Ref. no. 5641

Outdoor cover hood for protected outdoor installation.

GB-WSD EC630 Ref. no. 5750

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW EC630 Ref. no. 5646

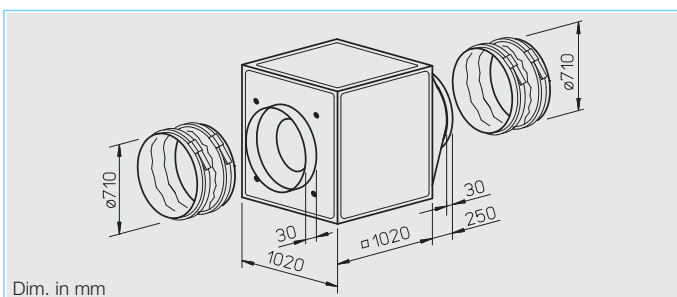
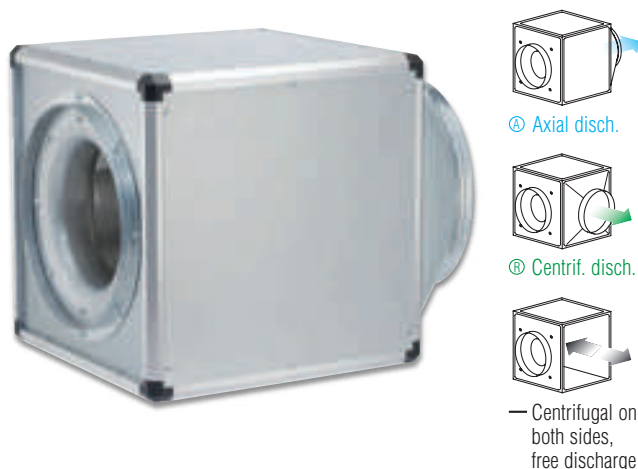
Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush		Speed-potentiometer surface		
		mm	ṽ m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54																
GBD EC 630	5815	630	15000	1100	44	2.30	3.70	976	50	116.0	EUR EC 1 ²⁾ 1347		PU 24 ¹⁾ 1736		PA 24 ¹⁾ 1737	

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

GB EC

Arbitrary installation position and assembly in five possible discharge directions.



■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

□ Impeller

Impeller and remaining design see description on adjacent page.

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.
SDD-U Ref. no. 5627

External weather louvre to cover exhaust opening.
GB-WSG 710 Ref. no. 5641

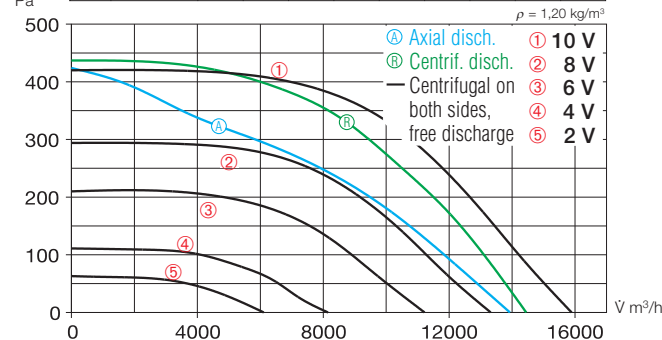
Outdoor cover hood for protected outdoor installation.
GB-WSD 710 Ref. no. 5750

Condensate collector with condensate spigot (centre) for pipe connection.
GB-KW 710 Ref. no. 5646

Accessory details	Page
Universal control system, electronic controller, speed-potentiometer	539 on

GBD EC 710 A

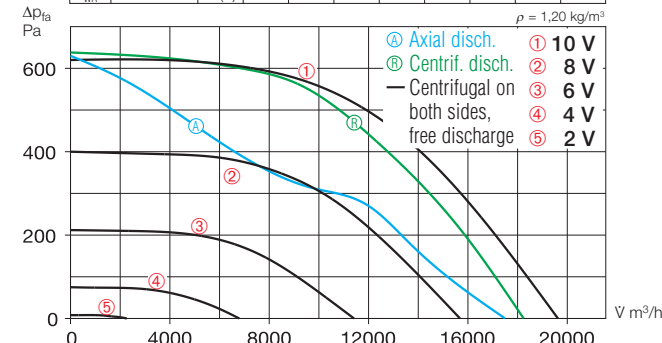
Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 62	58	57	52	51	50	46	44
L _{WA} Intake		dB(A) 73	60	64	66	68	66	61	59
L _{WA} Exhaust		dB(A) 75	60	67	69	72	68	63	62



Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	775	15890	935	1,50	42	0,21
8	650	13320	561	1,00	40	0,15
6	550	11220	358	0,70	38	0,12
4	400	8150	158	0,34	33	0,07

GBD EC 710 B

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout		dB(A) 68	65	64	54	53	51	47	41
L _{WA} Intake		dB(A) 81	62	74	75	75	73	70	61
L _{WA} Exhaust		dB(A) 85	65	74	77	82	76	72	63



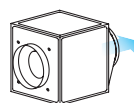
Voltage V	n min ⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	940	19650	1700	2,70	48	0,31
8	750	15690	904	1,50	43	0,21
6	550	11420	393	0,80	36	0,12
4	330	6800	97	0,20	26	0,05



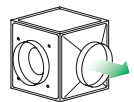
Type	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-potentiometer flush	Speed-potentiometer surface
		mm	V̇ m³/h	min ⁻¹	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54													
GBD EC 710 A	5816	710	15890	775	42	1.50	2.40	976	50	119.0	EUR EC 1 ²⁾ 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737
GBD EC 710 B	5819	710	19650	940	48	2.65	4.10	976	50	100.0	EUR EC 1 ²⁾ 1347	PU 24 ¹⁾ 1736	PA 24 ¹⁾ 1737

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories

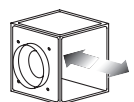
GB



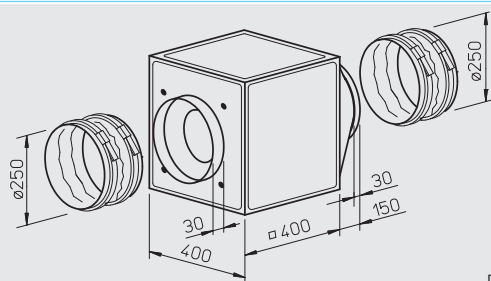
④ Axial disch.



⑥ Centrif. disch.



— Centrifugal on both sides, free discharge



Dim. in mm

■ Specification
■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

■ Impeller

Free-running high-performance centrifugal fan made from steel with backward curved blades on a galvanised steel plate, direct driven. Energy efficient with low noise development. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3.

■ Motor

Through maintenance-free, speed controllable external rotor motor protected to IP 44. Ball bearing mounted, interference-free.

■ Electrical connection

Standard terminal box (IP 54) on motor.

■ Motor protection

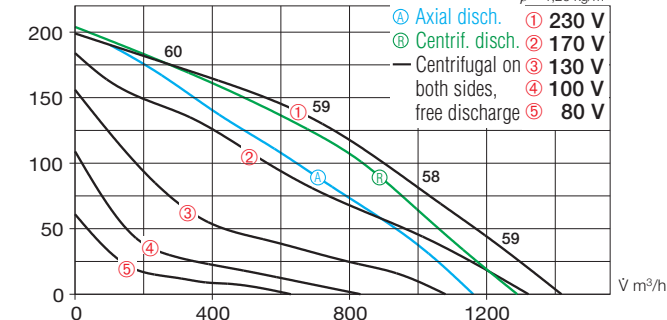
Through built-in thermal contacts wired in series with the winding, switches off and on automatically after cooling.

■ Speed control

Through voltage reduction by means of 5-step transformer or electronic speed controller. The performance stages are specified in the performance curve.

GBW 250/4

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	47	37	45	40	33	30	22	19
L _{WA} Intake	dB(A)	59	41	49	52	54	55	49	39
L _{WA} Exhaust	dB(A)	62	42	53	56	57	54	53	44

 $\rho = 1,20 \text{ kg/m}^3$

■ Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.

For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 250 Ref. no. 5625

External weather louvre to cover exhaust opening.

GB-WSG 250 Ref. no. 5637

Outdoor cover hood for protected outdoor installation.

GB-WSD 250 Ref. no. 5746

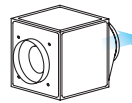
Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 250 Ref. no. 5642

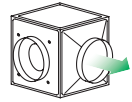
Information	Page
Information for planning	10 on
General techn. information, speed control	15 on
Accessory-Details	Page
Speed switch, controller	525 on

Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power	Current full load	Current controlled	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer-speed switch without full motor protection	Type	Ref. no.
		m^3/h	min^{-1}	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg		
Single phase motor, 1~, 230 V, 50 Hz, capacitor motor, protection to IP 44													
GBW 250/4	5509	1500	1290	27	0.11	0.44	0.48	864	65	65	20.0	TSW 1,5	1495

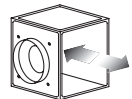
GB



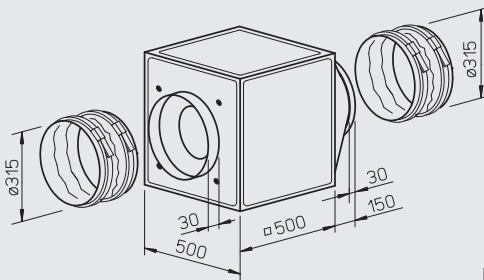
④ Axial disch.



⑥ Centrif. disch.



— Centrifugal on both sides, free discharge



Dim. in mm

■ Specification

■ Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

□ Impeller

Free-running high-performance centrifugal fan made from steel with backward curved blades on a galvanised steel plate, direct driven. Energy efficient with low noise development. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3.

□ Motor

Through maintenance-free, speed controllable external rotor motor protected to IP 44. Ball bearing mounted, interference-free.

□ Electrical connection

Standard terminal box (IP 54) on motor.

□ Motor protection

Through built-in thermal contacts wired in series with the winding, switches off and on automatically after cooling.

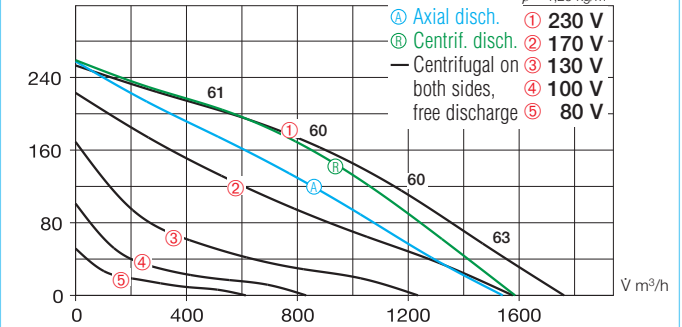
□ Speed control

Through voltage reduction by means of 5-step transformer or electronic speed controller. The performance stages are specified in the performance curve.

GBW 315/4

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Case breakout	dB(A)	49	41	45	44	39	34	23	20
L _{WA} Intake	dB(A)	61	49	50	56	56	53	49	36
L _{WA} Exhaust	dB(A)	64	51	55	60	58	55	51	40

$\rho = 1,20 \text{ kg/m}^3$



■ Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 315 Ref. no. 5625

External weather louvre to cover exhaust opening.

GB-WSG 315 Ref. no. 5638

Outdoor cover hood for protected outdoor installation.

GB-WSD 315 Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection.

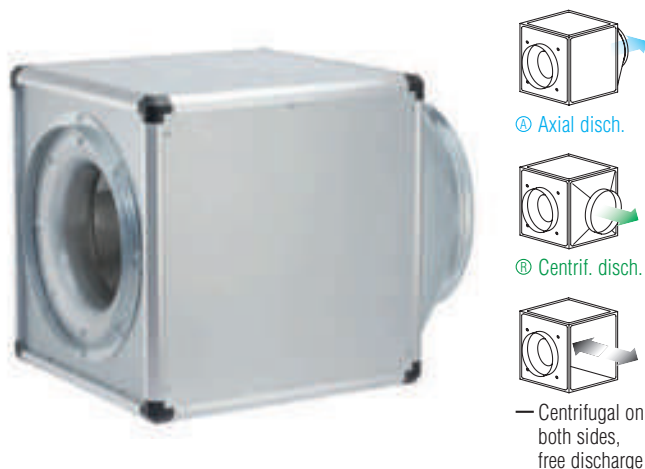
GB-KW 315 Ref. no. 5643

Information	Page
Information for planning	10 on
General techn. information, speed control	15 on
Accessory-Details	Page
Speed switch, controller	525 on

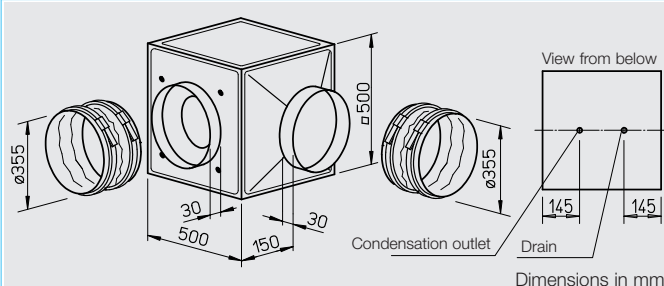
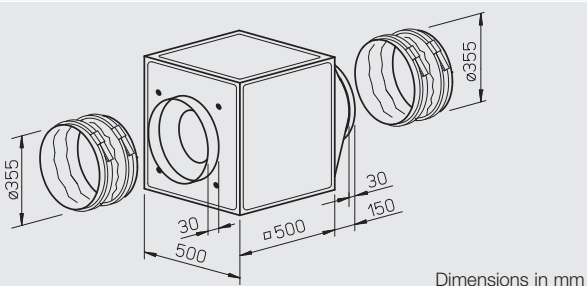
Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power	Current full load	Current controlled	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer-speed switch without full motor protection	
		m^3/h	min^{-1}	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Type Ref. no.
Single phase motor, 1~, 230 V, 50 Hz, capacitor motor, protection to IP 44												
GBW 315/4	5510	1760	1230	29	0,123	0,55	0,55	864	55	55	31,0	TSW 1,5 1495

GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


■ Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

□ Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Feature
□ Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

■ Specification of both types
□ Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

□ Impeller

Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

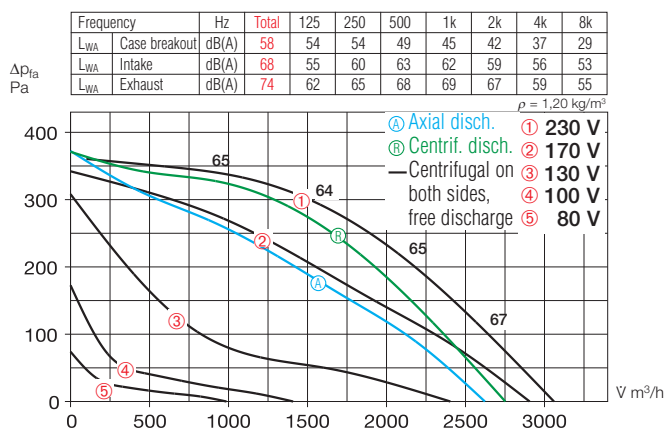
□ Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

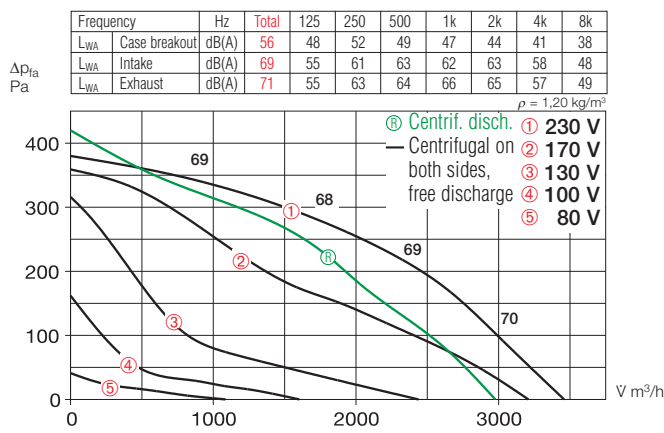
Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Weight (net) kg	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		m^3/h	min^{-1}	dB(A) in 4 m	kW	A	A	No.	$^{\circ}\text{C}$	kg	Type Ref. no.	Type Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 355/4	5511	3060	1375	38	0.29	1.47	1.90	864	60	32.0	MWS 3 1948	TSW 3,0 1496 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 355/4/4	5512	2850/3100	1230/1405	34	0.25/0.34	0.41/0.75	0.75	867	55	35.0	RDS 1 1314	TSD 1,5 1501 MD 5849
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 355/4 T120	5770	3460	1340	36	0.32	1.55	1.75	935	120	38.0	MWS 3 1948	TSW 3,0 1496 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 355/4/4 T120	5771	2990/3470	1100/1360	36	0.22/0.33	0.40/0.75	0.75	947	120	38.0	RDS 1 1314	TSD 0,8 1500 MD 5849

1) incl. operation switch

GBW 355/4



GBW 355/4 T120



Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

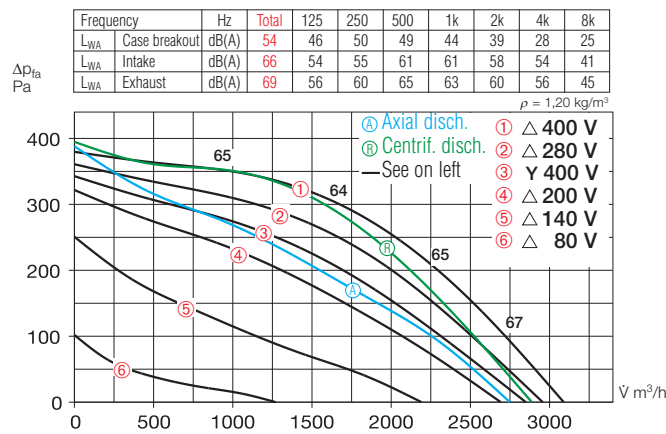
Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

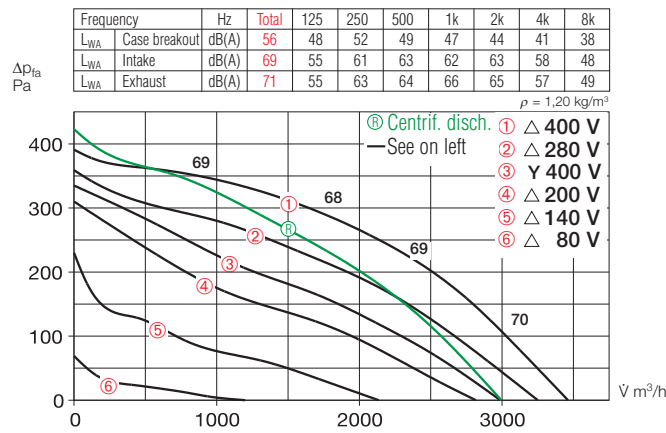
- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 355/4/4



GBD 355/4/4 T120



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 355 Ref. no. 5625

External weather louvers to cover exhaust opening.

GB-WSG 355 Ref. no. 5638

Outdoor cover hood for outdoor installation.

GB-WSD 355 Ref. no. 5747

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2²⁾ Ref. no. 1351

²⁾ full motor protection unit recommended:
MD Ref. No. 5849

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 355 Ref. no. 5643

(Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

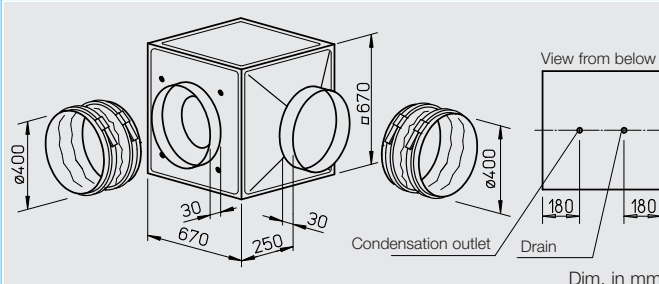
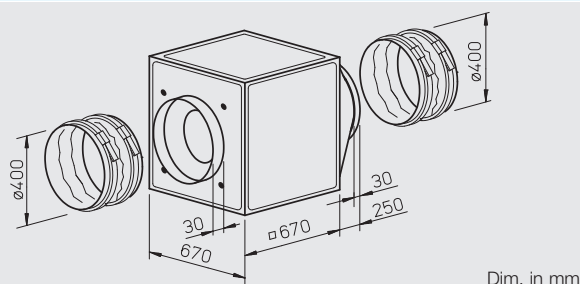
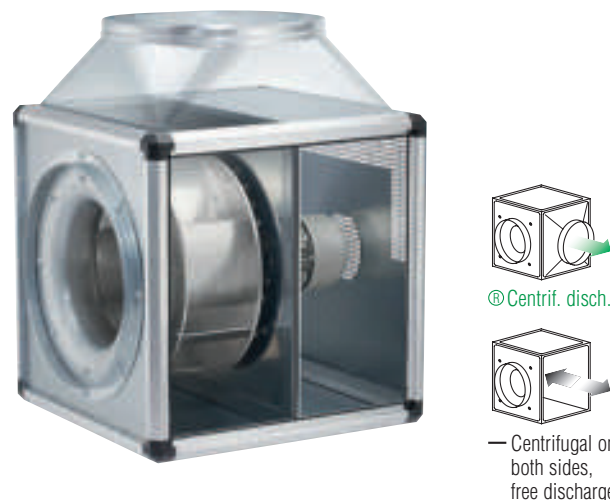
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GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

Feature
Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

Specification of both types
Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

Impeller

Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

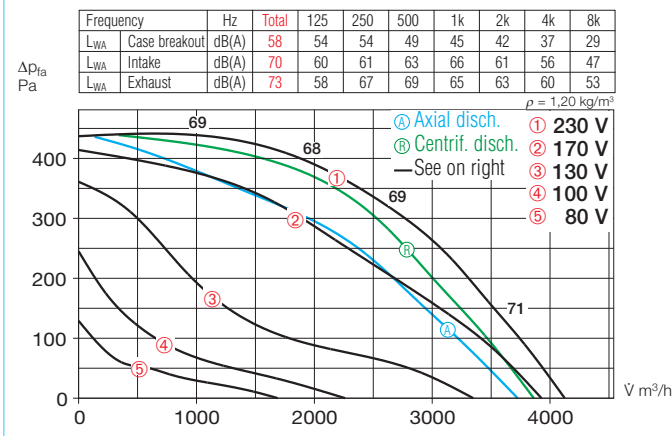
Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

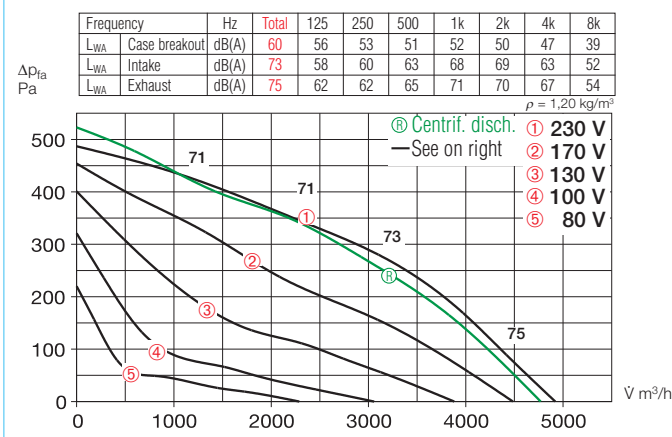
Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Weight (net) kg	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		m^3/h	min^{-1}	dB(A) in 4 m	kW	A	A	No.	$^{\circ}\text{C}$	kg	Type Ref. no.	Type Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 400/4	5513	4300	1360	38	0.53	2.40	2.80	864	50	50	MWS 5 1949	TSW 5,0 1497 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 400/4/4	5514	3700/4100	1193/1390	38	0.38/0.49	0.61/1.05	1.08	867	50	45	RDS 2 1315	TSD 1,5 1501 MD 5849
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 400/4 T120	5772	4930	1280	40	0.54	2.50	2.50	935	120	100	MWS 3 1948	TSW 3,0 1496 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 400/4/4 T120	5773	4010/4870	975/1255	40	0.29/0.48	0.50/1.10	1.10	947	120	120	RDS 1 1314	TSD 1,5 1501 MD 5849

1) incl. operation switch

GBW 400/4



GBW 400/4 T120



Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

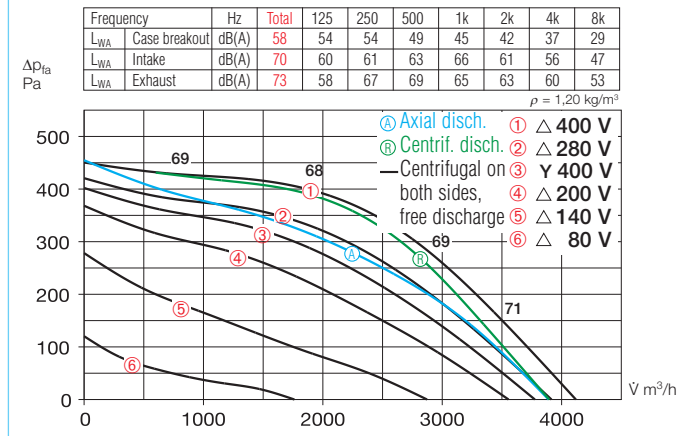
Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

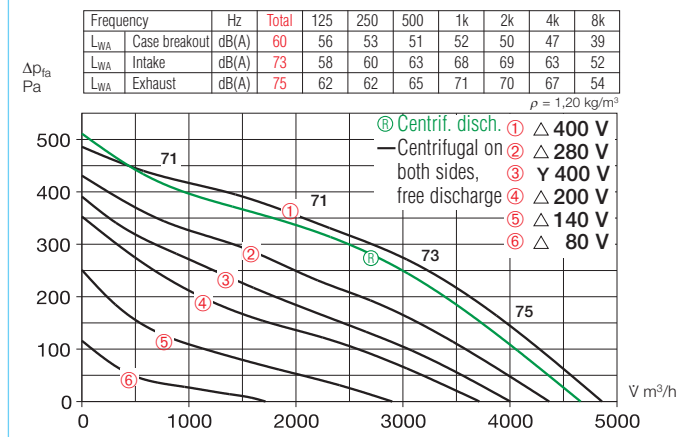
- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 400/4/4



GBD 400/4/4 T120



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 400 Ref. no. 5626

External weather louvers to cover exhaust opening.

GB-WSG 400 Ref. no. 5639

Outdoor cover hood for outdoor installation.

GB-WSD 400 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2²⁾ Ref. no. 1351

²⁾ full motor protection unit recommended: MD Ref. No. 5849

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 400 Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

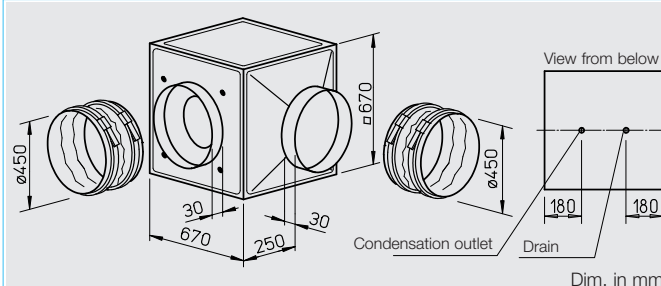
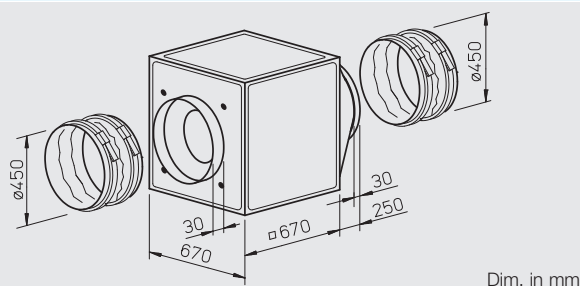
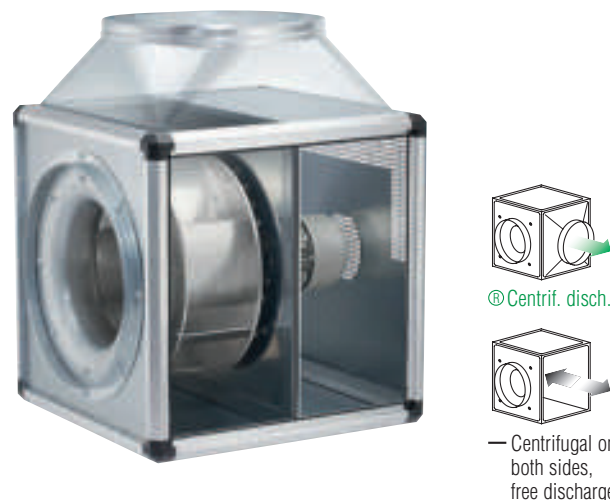
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GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


■ Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

□ Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Feature
□ Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

■ Specification of both types
□ Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

□ Impeller

Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

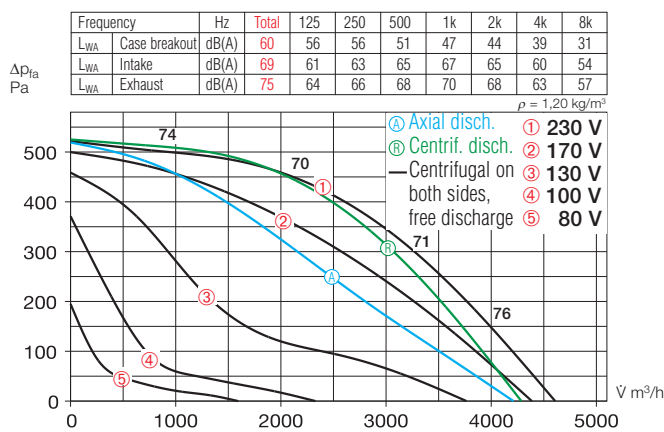
□ Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

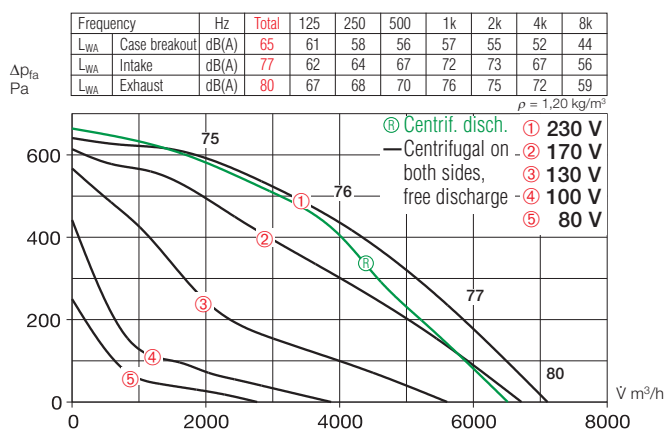
Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Weight (net) kg	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		V m ³ /h	min ⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Type Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 450/4	5515	4600	1380	40	0.66	2.90	4.0	864	45	45	49.0	MWS 5 1949 TSW 5,0 1497 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 450/4/4	5516	4350/5450	880/1240	40	0.36/0.67	0.67/1.33	1.30	867	55	55	49.0	RDS 2 1315 TSD 1,5 1501 MD 5849
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 450/4 T120	5774	7110	1370	45	1.00	4.60	5.50	935	120	100	74.0	MWS 7,5 1950 TSW 7,5 1596 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 450/4/4 T120	5775	6210/7180	1100/1350	45	0.65/0.90	1.10/1.60	1.80	947	120	110	74.0	RDS 2 1315 TSD 3,0 1502 MD 5849

¹⁾ incl. operation switch

GBW 450/4



GBW 450/4 T120



Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

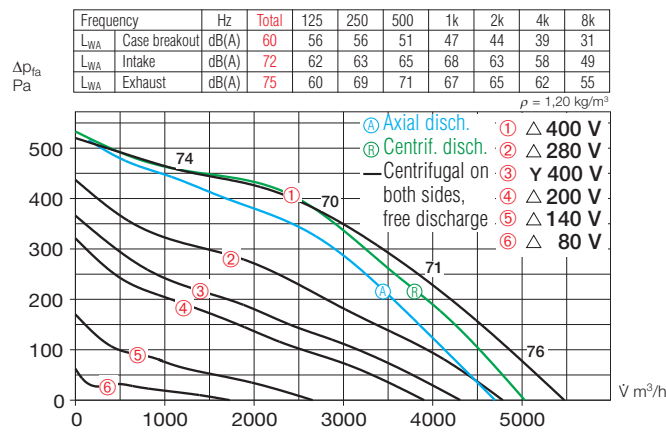
All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

Sound levels

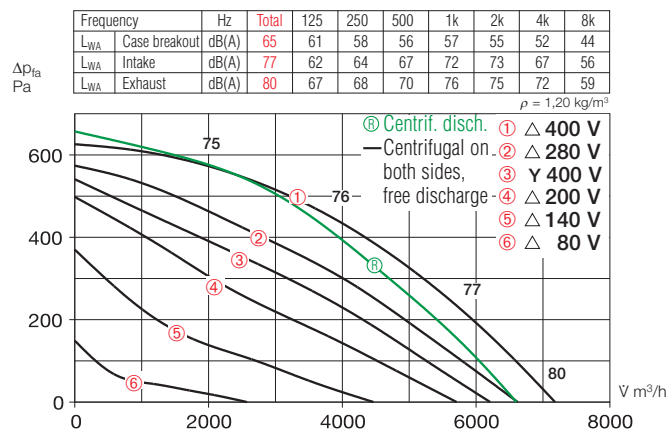
Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
 - Sound level intake
 - Sound level exhaust
- In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 450/4/4



GBD 450/4/4 T120



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 450 Ref. no. 5626

External weather louvers to cover exhaust opening.

GB-WSG 450 Ref. no. 5639

Outdoor cover hood for outdoor installation.

GB-WSD 450 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2²⁾ Ref. no. 1351

²⁾ full motor protection unit recommended:
MD Ref. No. 5849

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 450 Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

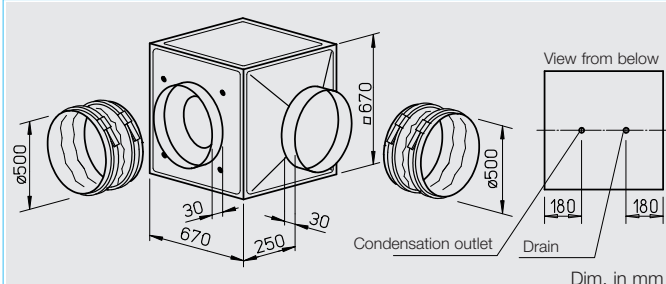
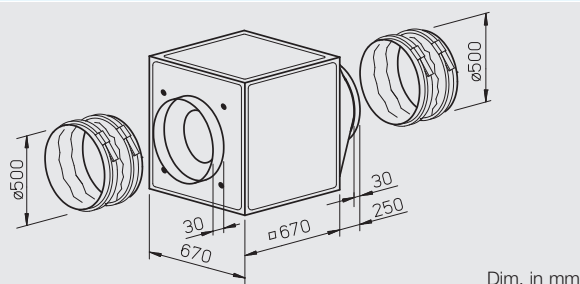
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GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

Feature
Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

Specification of both types
Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

Impeller

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

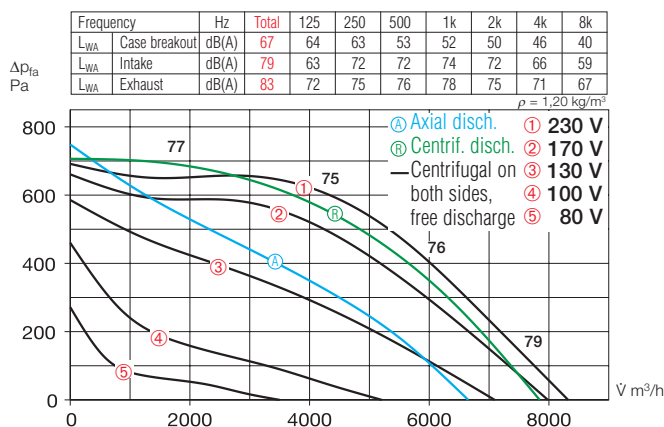
Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

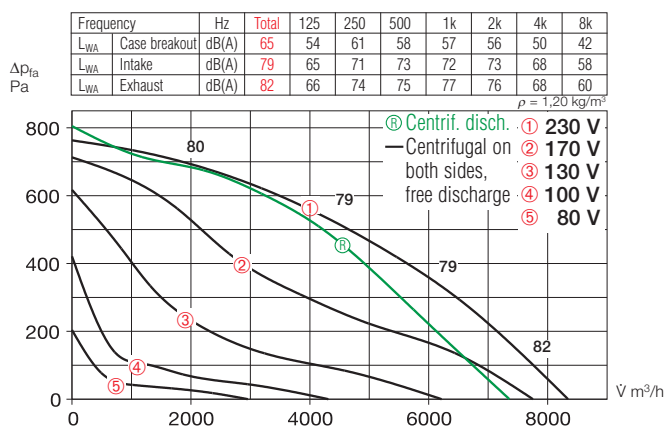
Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Current		Wiring diagram	Maximum air flow temperature		Weight (net) kg	5 step transformer controller with mot. protect. unit		Full motor protection unit using the thermal contacts			
		V m³/h	min ⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54																	
GBW 500/4	5517	8321	1401	47	1.50	6.70	9.60	865	65	55	61	MWS 10	1946	TSW 10	1498	MW ¹⁾	1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54																	
GBD 500/4/4	5518	8000/9200	1075/1340	45	0.97/1.45	1.60/2.80	2.90	867	50	50	57	RDS 7	1578	TSD 5,5	1503	MD	5849
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54																	
GBW 500/4 T120	5776	8345	1340	45	1.40	6.1	7.0	301	120	100	75	MWS 10	1946	—		—	
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54																	
GBD 500/4/4 T120	5777	7320/8350	1120/1370	45	0.95/1.30	1.60/2.50	2.5	947	120	110	75	RDS 4	1316	TSD 3.0	1502	MD	5849

1) incl. operation switch

GBW 500/4



GBW 500/4 T120



Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

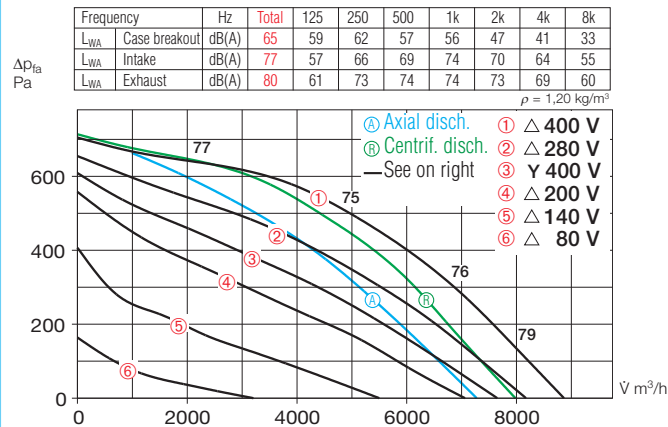
All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

Sound levels

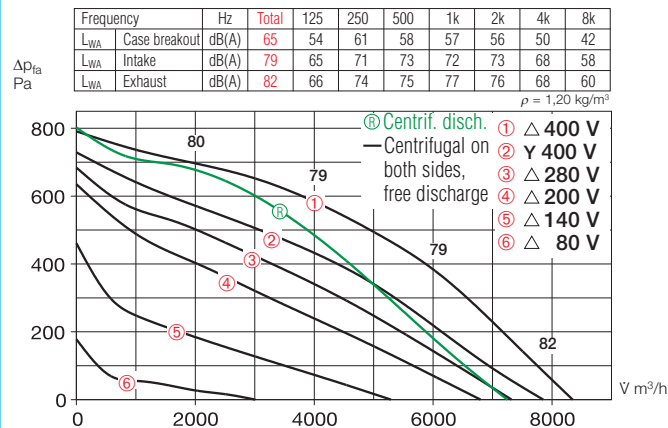
Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
 - Sound level intake
 - Sound level exhaust
- In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 500/4/4



GBD 500/4/4 T120



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 500 Ref. no. 5626

External weather louvers to cover exhaust opening.

GB-WSG 500 Ref. no. 5639

Outdoor cover hood for outdoor installation.

GB-WSD 500 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2²⁾ Ref. no. 1351

²⁾ full motor protection unit recommended:
MD Ref. No. 5849

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 500 Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

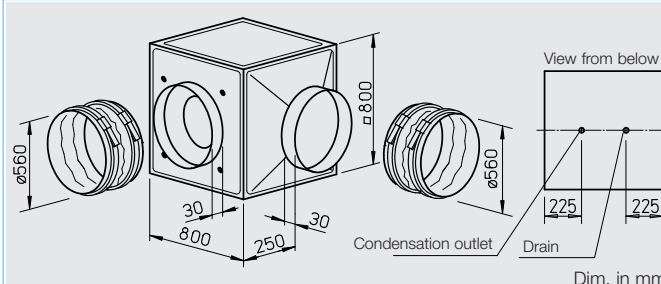
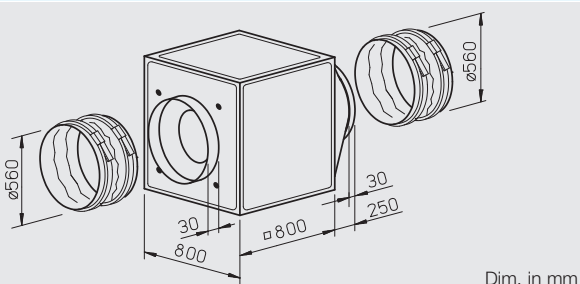
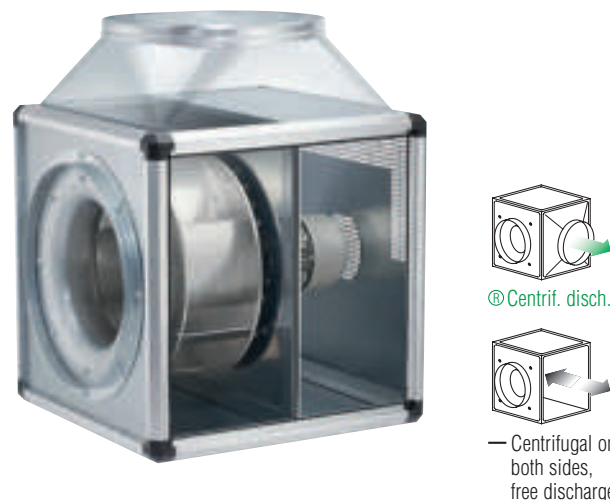
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GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

Feature
Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

Specification of both types
Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

Impeller

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

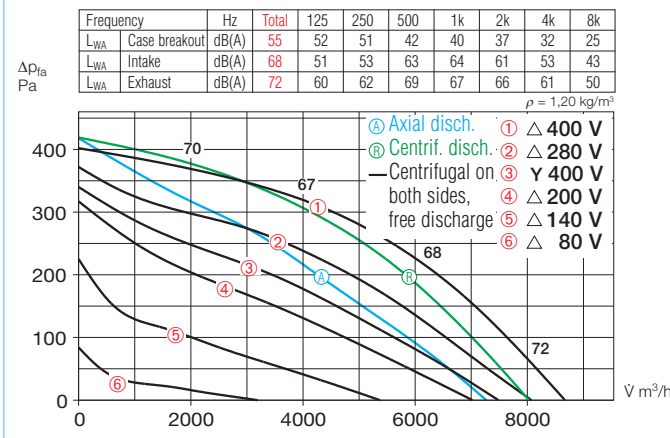
Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

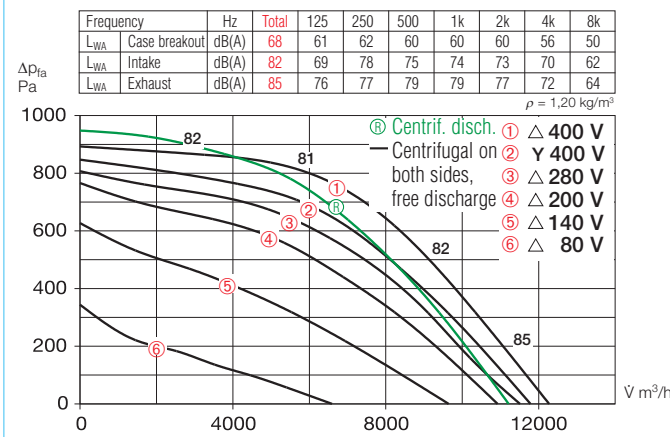
Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Weight (net) kg	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		V m³/h	min⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	Type Ref. no.	Type Ref. no.
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54												
GBW 560/4	5508	9123	1409	45	1.83	7.93	10.4	867	45	45	MWS 10 1946	TSW 10 1498 MW ¹⁾ 1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 560/6/6	5522	7800/9000	705/885	35	0.51/0.80	0.90/1.85	1.90	867	60	60	RDS 4 1316	TSD 3,0 1502 MD 5849
GBD 560/4/4	5521	11500/13000	1110/1350	44	1.70/2.60	2.80/4.80	4.90	867	55	45	RDS 7 1578	TSD 7,0 1504 MD 5849
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 560/4/4 T120	5778	11520/12300	1250/1400	48	1.85/2.50	3.20/6.80	6.80	520	120	120	RDS 7 1578	TSD 7,0 1504 MD 5849

1) incl. operation switch

GBD 560/6/6



GBD 560/4/4 T120



Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

Speed control

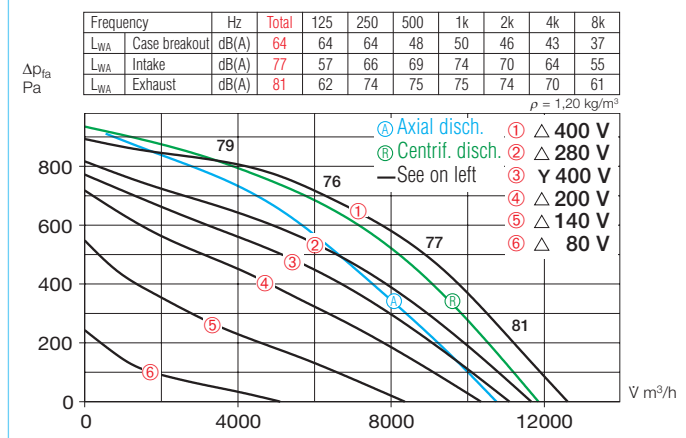
All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

Sound levels

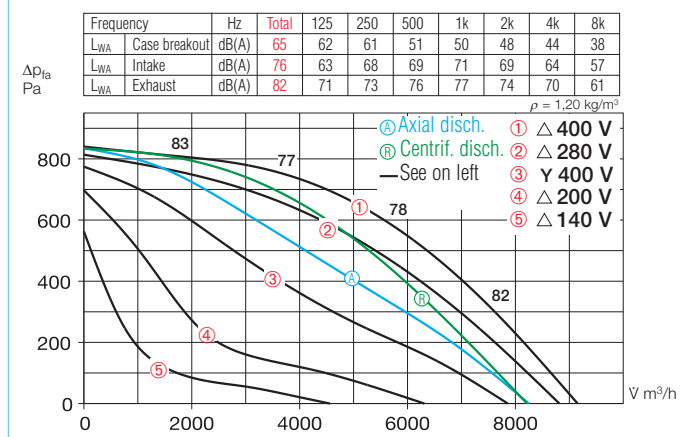
Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
 - Sound level intake
 - Sound level exhaust
- In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 560/4/4



GBW 560/4



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 560 Ref. no. 5626

External weather louvers to cover exhaust opening.

GB-WSG 560 Ref. no. 5640

Outdoor cover hood for outdoor installation.

GB-WSD 560 Ref. no. 5749

On/Off and 2-speed switch for 3-phase Y/ Δ motors.

Type DS 2²⁾ Ref. no. 1351

²⁾ full motor protection unit recommended:
MD Ref. No. 5849

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 560 Ref. no. 5645

(Condensate collector with condensate spigot included in delivery with GB T120).

for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

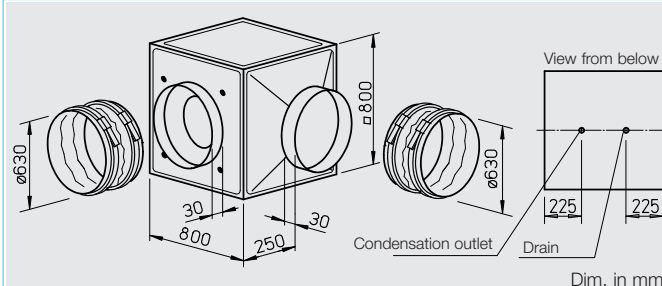
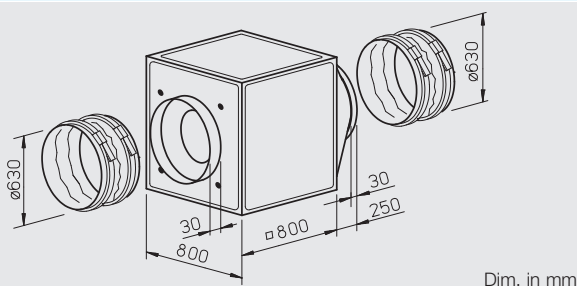
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GB

Arbitrary installation position and flexible assembly by five possible discharge directions.


GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.


■ Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

□ Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

■ Feature
□ Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

■ Specification of both types
□ Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

□ Impeller

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

□ Motor

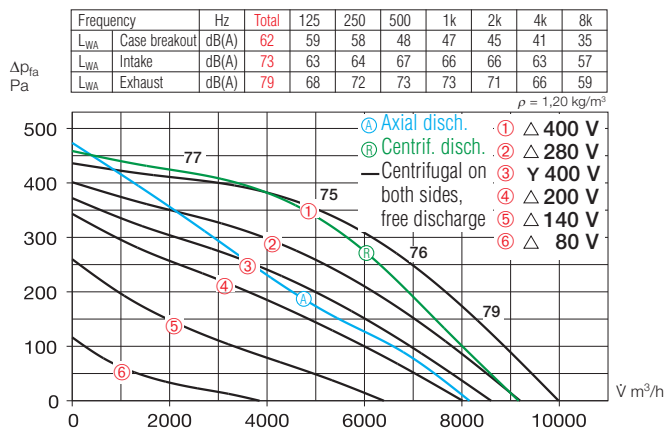
Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

□ Electrical connection

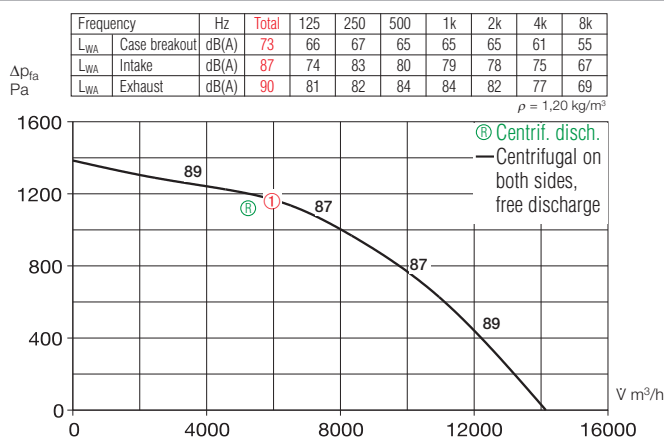
Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Current full load	Current speed controlled	Wiring diagram	Maximum air flow temperature Full load	Weight (net) kg	5 step transformer controller				Full motor protection unit using the thermal contacts		
		∇ m³/h	min ⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54																	
GBD 630/6/6	5524	8600/9990	723/893	42	0.64/0.93	1.08/1.88	2.03	867	60	60	86	RDS 4	1316	TSD 5,5	1503	MD	5849
GBD 630/4/4	5523	12954/14430	1128/1383	51	2.40/3.45	4.10/6.20	7.20	867	75	50	105	RDS 11	1332	TSD 11,0	1513	MD	5849
3 Phase motor, 3~, 400 V, 50 Hz, protection to IP 54																	
GBD 630/4 T120	5779	14200	1445	53	4.40	8.0	—	499	120	—	105	—	—	—	—	MD	5849

GBD 630/6/6



GBD 630/4 T120



Motor protection

Types GBD with thermal contacts embedded on the terminal strip, which must be wired with the full motor protection device. Type GBD T120 with PTC thermistor for direct wiring with the full motor protection device or frequency inverter FU-BS (see table below, accessories).

Speed control

All types (except GB T120) are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by Y/Δ switch or full motor protection unit M4; Type GBD T120 is exclusively controllable via frequency inverter with Sine filter. The duties at different speeds are given in the performance curve.

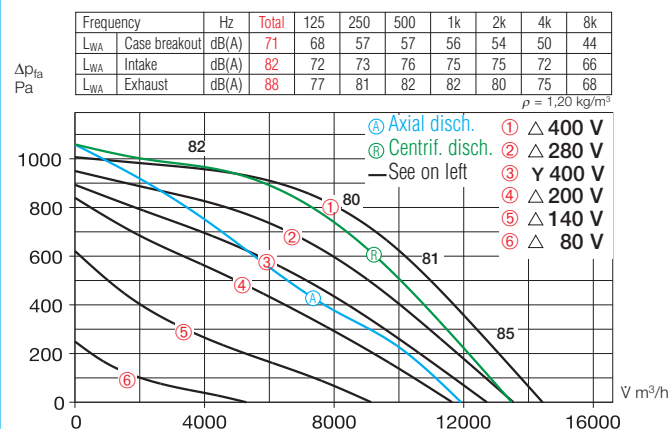
Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 630/4/4



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

Wall bracket for wall mounting.

GB-WK 630 Ref. no. 5626

External weather louvers to cover exhaust opening.

GB-WSG 630 Ref. no. 5640

Outdoor cover hood for outdoor installation.

GB-WSD 630 Ref. no. 5749

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 630 Ref. no. 5645

(Condensate collector with condensate spigot included in delivery with GB T120).

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2¹⁾ Ref. no. 1351

¹⁾ full motor protection unit recommended: MD Ref. No. 5849

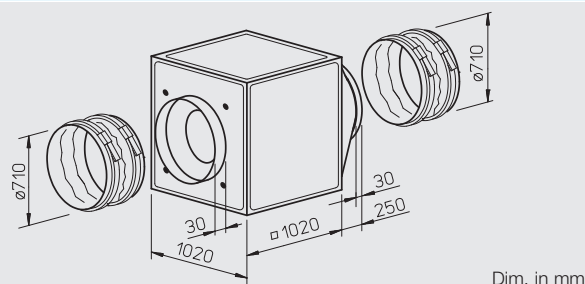
for types GB T120

Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

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GB


Special features of types GB T120

- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

Assembly GB T120

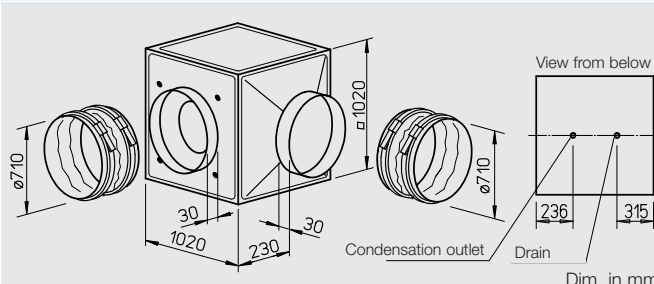
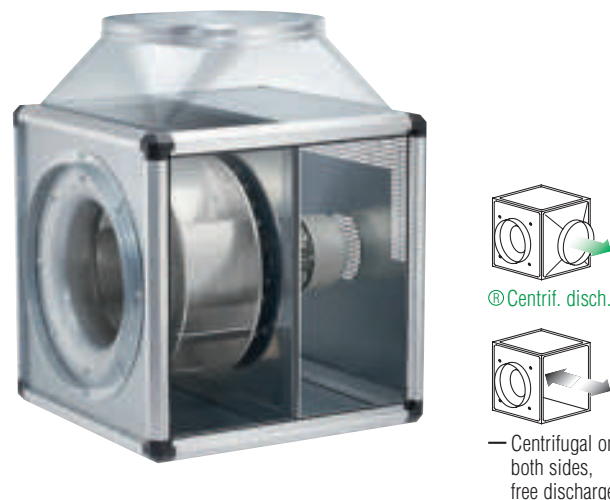
Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

Feature
Assembly of types GB

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.



hood and external weather louvers (accessories).

Specification of both types
Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

Impeller

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

Motor

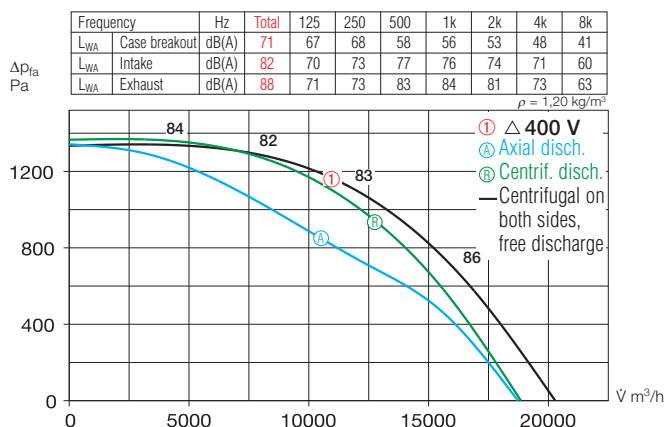
Maintenance-free external rotor motor or IEC-standard motor protected to IP 54/55. With ball bearings and interference-free as standard.

Electrical connection

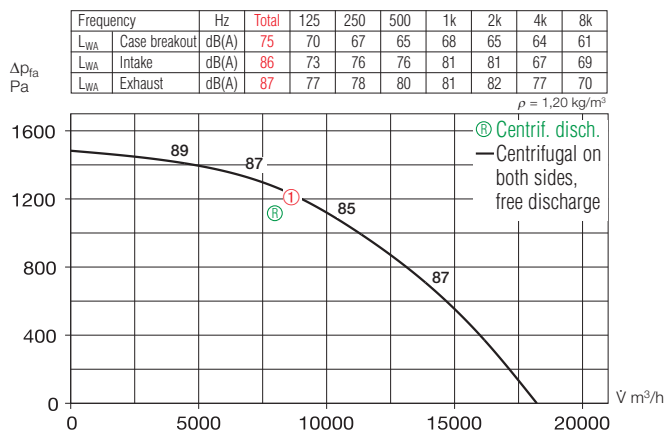
Standard terminal box (IP 54/55) fitted on the motor; with GB T120 fitted on the motor support plate.

Type	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	full load	speed controlled	Wiring diagram	Maximum air flow temperature	Weight (net)	5 step transformer controller with mot. protect. unit	Full motor protection unit using the thermal contacts
		V m³/h	min⁻¹	dB(A) in 4 m	kW	A	A	No.	+°C	+°C	kg	Ref. no.
3 Phase motor, 3~, 400 V, 50 Hz, Y/Δ wiring, protection to IP 55												
GBD 710/4	5529	20285	1465	51	5.97	10.20	—	499	70	—	170	MD 5849
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/Δ wiring, protection to IP 54												
GBD 710/6/6	5525	16500/19000	690/890	46	1.55/2.45	2.90/4.70	4.70	867	50	50	157	RDS 7 1578 TSD 7,0 1504 MD 5849
3 Phase motor, 3~, 400 V, 50 Hz, protection to IP 54												
GBD 710/4 T120	5756	18200	1465	55	5.89	10.4	—	499	120	—	188	MD 5849

GBD 710/4



GBD 710/4 T120



Motor protection

Types GBD with thermal contacts embedded on the terminal strip, which must be wired with the full motor protection device. Type GBD T120 with PTC thermistor for direct wiring with the full motor protection device or frequency inverter FU-BS (see table below, accessories).

Speed control

All types (except GB T120) are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by Y/Δ switch or full motor protection unit M4; Type GBD T120 is exclusively controllable via frequency inverter with Sine filter. The duties at different speeds are given in the performance curve.

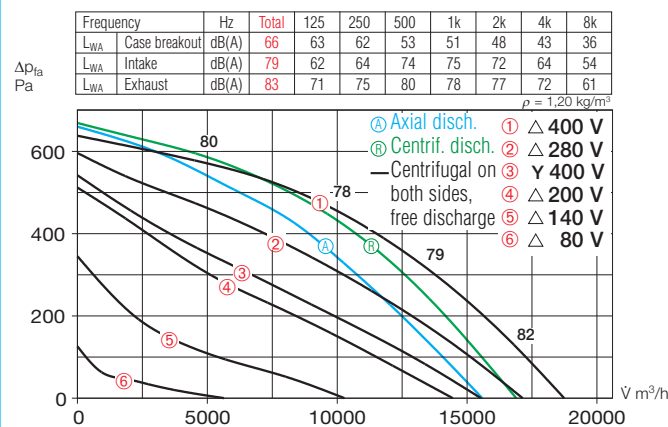
Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

GBD 710/6/6



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4.

SDD-U Ref. no. 5627

External weather louvers to cover exhaust opening.

GB-WSG 710 Ref. no. 5641

Outdoor cover hood for outdoor installation.

GB-WSD 710 Ref. no. 5750

Specific accessories

for types GB

Condensate collector with condensate spigot for pipe connection.

GB-KW 710 Ref. no. 5646

(Condensate collector with condensate spigot included in delivery with GB T120).

On/Off and 2-speed switch for 3-phase Y/Δ motors.

Type DS 2¹⁾ Ref. no. 1351

¹⁾ full motor protection unit recommended: MD Ref. No. 5849

for types GB T120

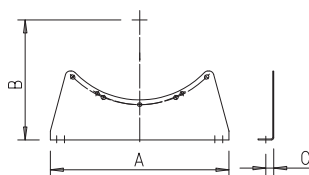
Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

GB-RA Ref. no. 9418

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MK

Dimensions in mm



Mounting feet

To fix Axial/VAR cased fans on ceiling, wall or floor. Made from galvanised sheet steel or hot dipped galvanised steel. Fixing holes fit casing flanges. Set includes a pair of feet, nuts and bolts.

Note:

If motors of high weight are installed, an extension duct (VR...) is recommended to move the centre of gravity within the mounting feet. Mount feet on the outer flange.

Type	Ref. No.	A	B	C	Weight in kg
MK 200-225	1446	310	208/220	20	1.5
MK 250-280	1447	340	227/245	20	1.7
MK 315-355	1448	380	281/300	25	2.2
MK 400-450	1449	360	311/335	25	2.6
MK 500-560	1450	570	383/415	25	5.3
MK 630	1333	600	465	30	8.5
MK 710	1372	670	515	35	10.5
MK 800	1373	680	565	35	15.5
MK 900	1374	760	625	35	18.0
MK 1000	1375	840	690	35	19.5

SDD-U

Dimensions in mm



Anti vibration pads

The rubber mounting pads SDD-U are suitable as a base for installation of fans on flat, horizontal surfaces. They reduce the direct noise and vibration transmission to the building structure.

One set consists of 4 elements, which are positioned individually under the corners of the fan unit. Maximum compression: 40 kg/pad = total 160 kg.

SDD-U Ref. No. 5627

SDD

Dimensions in mm

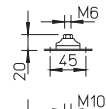
SDD
1 - 3



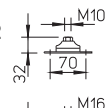
SDD 1F,
4 - 10



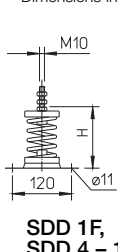
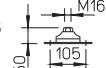
SDD 1



SDD 2



SDD 3



SDZ

Dimensions in mm

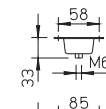
SDZ
1 - 3



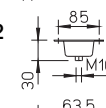
SDZ 1F,
4 - 9



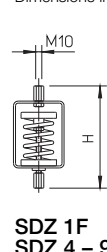
SDZ 1



SDZ 2



SDZ 3



Anti vibration mounts for compression

To reduce noise and vibration transmission of fans installed on horizontal surfaces. Simple installation in combination with feet MK (accessory). Select size according to fan weight (see table).

Rubber elements are suitable for small to middle weights and ambients up to +60 °C. Spring elements are suitable for higher temperatures above +60 °C (e.g. smoke extraction).

Anti vibration mounts for suspension

To reduce noise and vibration transmission of fans installed hanging from ceilings. Specification as model SDD.

Important note for installation!

Make sure that fan system is well balanced (centre of gravity of heavy motor may cause uneven loading of mounts).

Type	Ref. No.	Maximum fan weight in kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDD 1	1452	80	*		
SDD 1F	1942	70	112 - 82	•	
SDD 2	1453	180	*		
SDD 3	1367	750	*		
SDD 4	1944	130	112 - 86	•	
SDD 5	1924	210	112 - 86	•	
SDD 6	1926	400	112 - 80	•	
SDD 7	1928	580	112 - 82	•	
SDD 8	1930	900	112 - 82	•	
SDD 9	1934	1300	112 - 85	•	
SDD 10	1951	1800	112 - 88	•	

* shown in dimensional drawing

Type	Ref. No.	Maximum fan weight in kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDZ 1	1454	60	*		
SDZ 1F	1943	70	190 - 220	•	
SDZ 2	1455	160	*		
SDZ 3	1366	300	*		
SDZ 4	1945	130	190 - 216	•	
SDZ 5	1925	210	190 - 216	•	
SDZ 6	1927	400	190 - 221	•	
SDZ 7	1929	580	190 - 220	•	
SDZ 8	1931	900	190 - 220	•	
SDZ 9	1935	1300	190 - 217	•	

* shown in dimensional drawing

R02 Rectangular Silencers

R02 - 5 - Attenuator

Available in seven standard lengths R02 5 Rectangular Duct Mounted Silencers have excellent attenuation properties, achieved with sound absorbing infill splitters, retained in the attenuator casing by a perforated liner. The resistance to airflow is a function of the face velocity and length. It is not recommended to select the R02 5 Silencers with a face velocity above 3.5 metres per second without asking advice regarding re-generated self noise. We can advise on the selections and can perform system analysis to ensure the correct unit is specified.

- High performance rectangular duct silencer
- Seven standard lengths
- Many connection options
- Cross section dimensions in 1mm increments
- System pressure within ducted systems to 1500 Pa
- Special lengths on request



Insertion Loss (dB) - Centre Band Frequency

Product Code	Length (mm)	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
R02 - 5 - 600	600	4	6	11	19	24	23	18	12
R02 - 5 - 900	900	4	6	12	26	30	31	22	16
R02 - 5 - 1200	1200	5	9	18	32	40	39	28	19
R02 - 5 - 1500	1500	7	11	23	37	45	45	32	22
R02 - 5 - 1800	1800	8	13	25	44	50	50	37	24
R02 - 5 - 2100	2100	9	16	28	50	50	50	45	29
R02 - 5 - 2400	2400	11	19	33	50	50	50	50	32

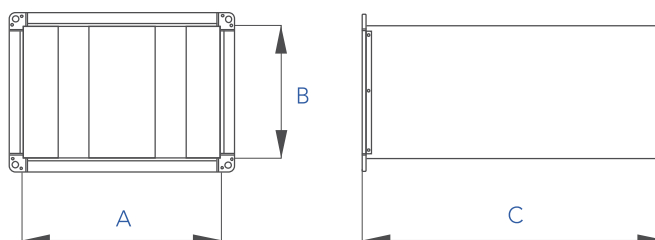
Insertion loss data is derived from continual testing to BS4718 and other standards in independent UKAS certified laboratories, which includes where appropriate, re-generated or self noise testing in both forward and reverse flow conditions. If you request system analysis from our technicians all predictions will be assessed using the relevant certified insertion loss data together with relevant dynamic corrections.

Dimensional Data

Code	A Min	A Max	B Min	B Max	C Min	C Max
R02 - 5	100	1200	100	1200	400	2400

Resistance to Airflow (Pa)

Product Code	1.0m/s	1.5m/s	2.0m/s	2.5m/s	3.0m/s
R02 - 5 - 600	10	16	22	39	60
R02 - 5 - 900	10	16	23	40	62
R02 - 5 - 1200	11	16	24	40	64
R02 - 5 - 1500	11	17	25	40	66
R02 - 5 - 1800	11	18	26	42	67
R02 - 5 - 2100	12	19	26	43	69
R02 - 5 - 2400	13	19	28	48	71



R02

Rectangular Silencers



Material & Finish

All components are manufactured from mill finish hot dip galvanised mild steel conforming to EN10327 (BS2989). To prevent erosion of absorbing materials, the R Series Silencers are fitted with perforated splitters manufactured from galvanised mild steel conforming to EN10327 (BS2989). R Series Silencers utilise acoustic grade mineral fibre absorbing infill and are manufactured to the HVCA specification DW144 class B and M&E 100 for sheet steel thickness and stiffening.

Pressure Up to 1500 Pascals positive and negative.

Temperature -12° to +100°C.

Location Internally & externally mountable.

Melinex Lining (Optional)

Where moist conditions exist (e.g. process systems) or for critically clean applications (e.g. hospitals) the sound absorbing material may be required to be fully sealed by Melinex lining to prevent fibre migration. This will however, effect the acoustic performance of the silencer. Please contact us to discuss your requirements.

Alternative Specification

The above specification refers to our standard, stock range. We can also supply custom materials such as 304 and 316 grade stainless steels, cold reduced (CR4) mild steel and aluminium.

Dimensional Data

Units smaller than the minimum and larger than the maximum with the same aero-acoustic performances are available, but may have different manufacturing methods and are therefore coded accordingly.

Connection Options	
MEX Flanges	20, 30 & 40mm
Ductmate Flanges	25 & 35mm
Circular Spigot	"SPIRAL FIT" circular spigots, can be offset.
Rectangular Spigot	Rectangular spigots, can be offset
Raw	Plan end for slip jointing etc.

Installation

For recommendations for the support of the fan the principles of Part Six (pages 43-46) of the HVCA DW144 standard should be followed. Always use the correct size bolts as specified in the dimensional data table above. The arcuate holes are sized to allow the metric thread sizes to be utilised, for example, for an M10 fixing, the slot is made 19mm long by 13mm wide. Please contact us to confirm the suitability of any fan manufacturers product.

Equipment	Location
Centrifugal Fans	Position at least one duct width from inlet or outlet.
Axial Fans	Position at least one duct width from inlet or outlet.
Mixed Flow Fans	Position at least one duct width from inlet or outlet.
Ductwork Bends	Position at least three duct widths from inlet or outlet. One duct width will increase resistance by 90%, two by 20%. Ensure splitters are in parallel plane to bend.
Ductwork Reducers	Direct couple only with reducers of maximum 15° cheek slope.
Finned Coils & Filters	Leave 500mm plenum between silencer and coil or filter, and suitable reducer as specified in HVCA DW/144 1998.

Cleaning & Maintenance

Should the product require routine cleaning we recommend low-pressure air blasting, vacuuming or wiping the exposed surfaces with a damp cloth. It is not unusual for "White Zinc Oxide" to develop on galvanised silencers when the zinc in the galvanising reacts electrolytically with moisture. Silencers are of a passive nature and as such require no routine maintenance or lubrication.