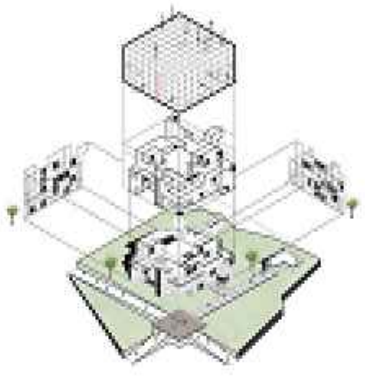
82 Camden High Street

NW1 0LT

Ventilation Statement



21th August 2023
Project No: G0070

NEONARCHITECTS
07736158299

DETAILS OF THE GEASE FILTER

1	Manufacturer`s Name	Longar Industries LTD
2	Filter name and product code	Longar TYPE2 Baffle Filter
3	Dimensions of the filter	395x395x45mm
4	Nature of the filter media	Filters are manufactured with stainless steel 430 polished finish, MAX operating temp. 400^{o}C
5	Manufacturer`s recommendation of the frequency and type of maintenance of the pre filter	Filters should be cleaned by a trained operative either daily for heavy use or weekly for light use

DETAILS OF THE PRE-FILTER

6	Manufacturer`s name	PurifiedAir
7	Filter name and product code/name	Bag Filter
8	Dimensions of the filter	610x610mm
9	Nature of the filter media	synthetic microfibres
10	Manufacturer`s recommendation on the frequency and type of maintenance of the pre-filter	Replace it once every 4 months

CARBON FILTER OR OTHER ODOUR ABATEMENT METHOD

11	**Unit 1 - Dimensions of the filter name**	Carbon Filters
12	Total number of filter panels in the filter bed / lambs	3
13	Nature of the filter	Carbon
14	Dwell time of the gases in the filter compartment and the setting of the control at which this is achieved	0.2
15	Total mass of item expressed in kilograms	100kg
16	**Unit 2 - Dimensions of the filter name**	ESP 3000E
17	Total number of filter panels in the filter bed / lambs	Electron
18	Nature of the filter	Magnetic
19	Dwell time of the gases in the filter compartment and the setting of the control at which this is achieved	0.2
20	Total mass of item expressed in kilograms	-
21	How to proposed to access the filter unit	From units access panels
22	Manufacturer`s name	Purified Air

COOKER HOOD

23	The length the cooker hood overhangs the appliances	2400mm x 1100mm Stainless Steel
24	The face velocity at the cooker hood, expressed in metres per second	Canopy face area 2.6m2 0.3 m/s face velocity
25	Dimensions of the opening of the cooker hood	2400x1100x300-500mm

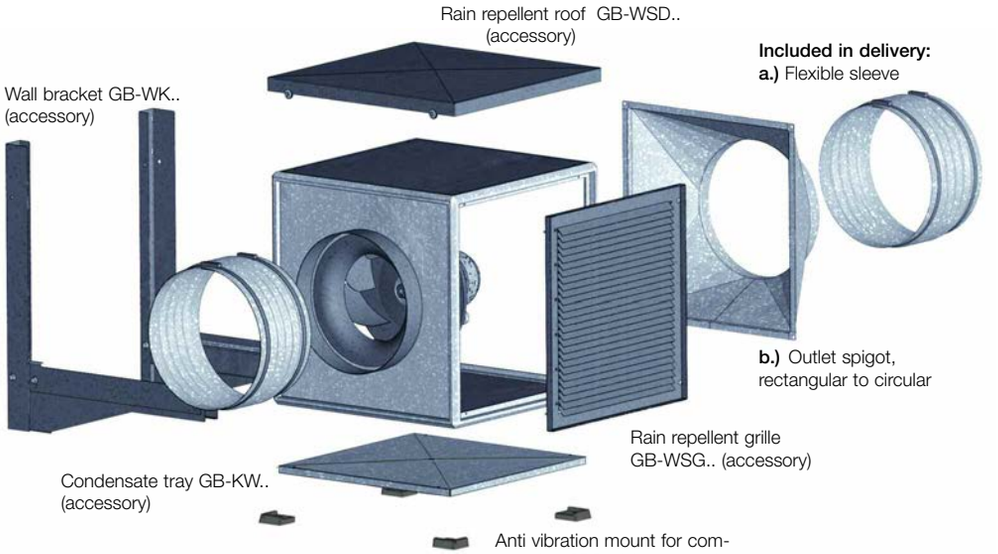
SYSTEM OPERATION

26	The extract rate (expressed as m^3/s) at the proposed rate of extract.	1 m^3 / s
27	The volume of the space to be ventilated in m^3	60m^3
28	The efflux speed at the flue terminal	15 m/s
29	The type of flue terminal to be fitted	Jet Cowl
30	Name and address of company to install system	N/A
31	Cleaning of washable grease filters. Frequency and method please describe.	Daily at least once of 2 day The filters should wash with warm soapy water
32	Frequency of inspection and replacement of the pre-filters please describe	Change filters every two weeks
33	Frequency of deep clean to fan and flue please describe.	Light use 12 months Moderate use 6 months Heavy use 4 months

NOISE

34	Specify the fan type, its sound power level and sound frequency characteristics and provide a manufacturer`s specification sheet showing those values	Helios 355 - Lw Details Breakout 54 db Intake 65db Exhaust 69db Sound press cage break out 38db in 4m
35	Describe how the fan and ducting will be isolated from the building	Duct work will be mounted on brackets, which will be fitted onto wall using anti vibartion mounts. this will eliminate any vibration from the duct work to the building. Fan will also be fitted using anti vibarion mounts and also there will be flexible connection between fan and duct work.

GigaBox and accessory



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

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 square 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. Lifting lugs are standard for using crane hooks.
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
All types (except GBD 630/4 T120) are speed controllable by voltage reduction using a 5-step transformer controller or an electronic 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 performances of the speeds are given in the performance curve.
3-phase models are controllable with frequency inverters by installation of a sinusoidal filter (accessories) between inverter and motor. Type GBD 630/4 is only controllable by frequency inverter.

Assembly
Assembly of types GB..
Adaptable installation position and flexible assembly using the five possible discharge directions via the discharge adapter. Removable panels allow inspection access on all sides.
Assembly of types GB.. T120
Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Inspection cover with handle, for cleaning and maintenance simply remove. Lifting lugs are standard for using crane hooks. Vibration transmission to the building is minimised by anti vibration mounts (type SDD-U, accessories). Vibration transmission to the ducting is prevented by using the standard flexible connector supplied.

Impeller
Smooth running centrifugal impeller with backward curved polymer blades (size 250 from steel) on a galvanised steel back plate, direct driven. Size 500 and all GB.. T120 types with impellers from aluminium. These energy efficient impellers are low noise. Dynamically balanced assembled with the motor to DIN ISO 1940 Pt.1 – class 6.3 or 2.5.

Motor
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.

Electrical connection
Terminal box protection to IP 54.

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 conversion of discharge adapter and panels. The correct motor rotation direction is marked through rotation arrows on the motor and has to 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. Typical indication for this is a very low air flow combined with high noise levels and vibration.

Ambient temperature
The maximum permitted air flow temperature is given in the individual fan chart.

Surrounding temperature
From – 40° C to + 40° C.

Information	Pages
Design of systems, acoustic	12 on
General techn. information, speed control	17 on

	Sound press. Case breakout	Sound press. Intake	Air flow volume $\dot{V}$ m³/s against static pressure												
Type GB..	L_{PA} dB(A)	L_{PA} dB(A)	($\Delta P_{stat.}$) 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	0.389	0.319	0.244	0.147									
GBW 315/4	29	41	0.414	0.361	0.300	0.236	0.153	0.042							
GBW 355/4	34	46	0.817	0.747	0.675	0.594	0.505	0.400	0.258						
GBD 355/4/4	34	46	0.836	0.772	0.711	0.638	0.577	0.492	0.367	0.089					
GBW 400/4	38	50	1.142	1.092	1.036	0.975	0.917	0.85	0.764	0.656	0.511				
GBD 400/4/4	38	50	1.097	1.031	0.961	0.889	0.811	0.725	0.628	0.469	0.114				
GBW 450/4	40	52	1.514	1.433	1.361	1.292	1.217	1.122	1.006	0.867	0.692	0.083			
GBD 450/4/4	40	52	1.514	1.431	1.344	1.256	1.161	1.061	0.947	0.822	0.664	0.083			
GBW 500/4	45	57	2.333	2.236	2.139	2.042	1.947	1.85	1.744	1.628	1.506	1.219	0.778	0.042	
GBD 500/4/4	44	57	2.458	2.367	2.278	2.189	2.097	2.006	1.903	1.789	1.664	1.369	0.947	0.014	
GBW 500/6	35	46	1.600	1.478	1.347	1.189	0.978	0.678	0.144						
GBD 560/4/4	44	57	3.497	3.397	3.300	3.203	3.106	3.011	2.911	2.811	2.706	2.461	2.142	1.731	1.144
GBD 560/6/6	35	48	2.400	2.261	2.114	1.953	1.767	1.539	1.239	0.767					
GBD 630/4/4	48	61	4.153	4.058	3.961	3.869	3.775	3.683	3.592	3.500	3.403	3.194	2.953	2.675	2.333
GBD 630/6/6	43	56	3.192	2.992	2.794	2.597	2.375	2.103	1.767	1.356	0.792				
GBD 710/6/6	46	59	5.194	4.989	4.783	4.564	4.333	4.083	3.811	3.511	3.178	2.333	0.753		
Type GB.. T120	L_{PA} dB(A)	L_{PA} dB(A)	($\Delta P_{stat.}$) in Pa												
	at 4 m	at 4 m	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**500**	**600**	**700**	**800**
GBW 355/4 T120	36	49	0.961	0.894	0.831	0.767	0.683	0.567	0.418	0.201					
GBD 355/4/4 T120	36	49	0.964	0.908	0.846	0.778	0.697	0.594	0.469	0.192					
GBW 400/4 T120	40	53	1.369	1.293	1.217	1.136	1.053	0.942	0.806	0.622	0.439				
GBD 400/4/4 T120	40	53	1.353	1.275	1.193	1.106	1.014	0.900	0.761	0.581	0.381				
GBW 450/4 T120	45	57	1.975	1.887	1.800	1.700	1.625	1.525	1.426	1.317	1.208	0.917	0.528		
GBD 450/4/4 T120	45	57	1.994	1.914	1.833	1.750	1.653	1.556	1.450	1.336	1.206	0.897	0.372		
GBW 500/4 T120	45	59	2.318	2.244	2.158	2.075	1.989	1.903	1.800	1.696	1.575	1.300	0.975	0.511	
GBD 500/4/4 T120	45	59	2.319	2.239	2.157	2.081	1.994	0.191	1.833	1.739	1.642	1.381	1.061	0.533	
GBD 560/4/4 T120	48	62	3.417	3.322	3.247	3.164	3.078	2.994	2.910	2.817	2.722	2.533	2.336	2.064	1.671
GBD 630/4 T120	53	67	3.928	3.867	3.803	3.742	3.667	3.594	3.533	3.469	3.397	3.242	3.097	2.908	2.703

Special application for GigaBox T120 – commercial kitchens

For the design of exhaust air systems in commercial kitchens the VDI 2052 (2006) "Ventilation equipment for kitchens – design, layout, approval" is applied. This follows for extract air fan:

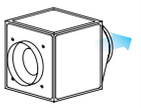
- ☐ Fans of exhaust air systems must be designed and installed in such a way that they are easily accessible, can be easily controlled and cleaned.
  They must be able to be switched off from the kitchen.
  The motors must be located outside of the extract air flow.
  Connected kitchen extraction hoods must separate solid and liquid components, if possible.
  A backdraft into following units is to be prevented.

These specific requirements from the GigaBoxes GB.. T120 are fulfilled in an outstanding manner. Easily accessible casing and double-walled side panels make cleaning simple with grease dissolving agents and steam possible.

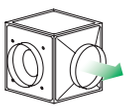
Requirements in excess thereof of kitchen extract air units and the appropriate fire protection can deviate country-specifically; these special requirements of the respective country, in which the unit is to be used, must be considered.

Models GB..

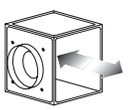
Arbitrary installation position and flexible assembly by five possible discharge directions.



Ⓐ Axial discharge



Ⓡ Centrifugal discharge

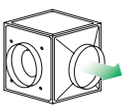


— centrifugal on both sides, free discharge

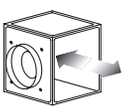
Models GB.. T120

NEW!

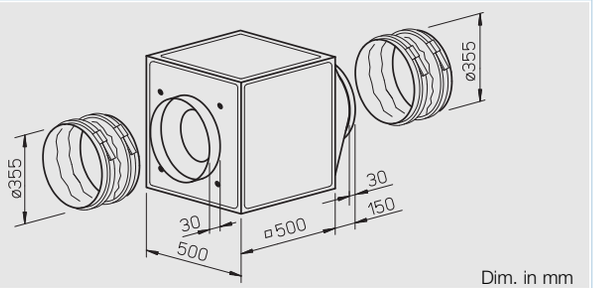
Designed for moving dirty, humid and hot air up to max. 120° C.



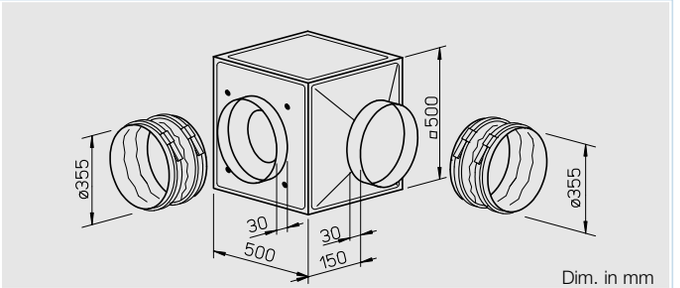
Ⓡ Centrifugal discharge



— centrifugal on both sides, free discharge



Dim. in mm



Dim. in mm

■ **Special features of type 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 of types 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-retardantmineral 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 44 or 54. With ball bearings and radio suppressed 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. level case breakout	Motor power (nominal)	Current full load	Current speed controlled	Wiring diagram	Maximum air flow temperature full load	Maximum air flow temperature controlled	Nominal weight (net)	5 step transformer controller with motor protect. unit Type	Ref. No.	5 step transformer controller without motor protect. unit Type	Ref. No.	Full motor protection unit using the thermal contacts Type	Ref. No.
		V̇ m³/h	min⁻¹	dB(A) at 4 m	kW	A	A	Nr.	+°C	+°C	kg						
1 Phase motor, 230 V / 1 ph. / 50 Hz, capacitor motor, protection to IP 54																	
GBW 355/4	5511	2940	1325	34	0.29	1.30	1,40	864	60	60	32	**MWS 1.5**	1947	**TSW 1.5**	1495	**MW**[1]	1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/△-wiring, protection to IP 54																	
GBD 355/4/4	5512	2700/3010	1115/1355	34	0.20/0.30	0.35/0.70	0,70	867	55	55	32	**RDS 1**	1314	**TSD 0.8**	1500	**M4**[2]	1571
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	1.60	1.80	935	120	120	38	**MWS 3**	1948	**TSW 3.0**	1496	**MW**[1]	1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/△-wiring, protection to IP 54																	
GBD 355/4/4 T120	5771	2990/3470	1100/1360	36	0.22/0.33	0.40/0.80	0.80	947	120	120	38	**RDS 1**	1314	**TSD 0.8**	1500	**M4**[2]	1571

[1] incl. operation switch
[2] incl. operation and 2 speed switch

The Particulate Phase

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.

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

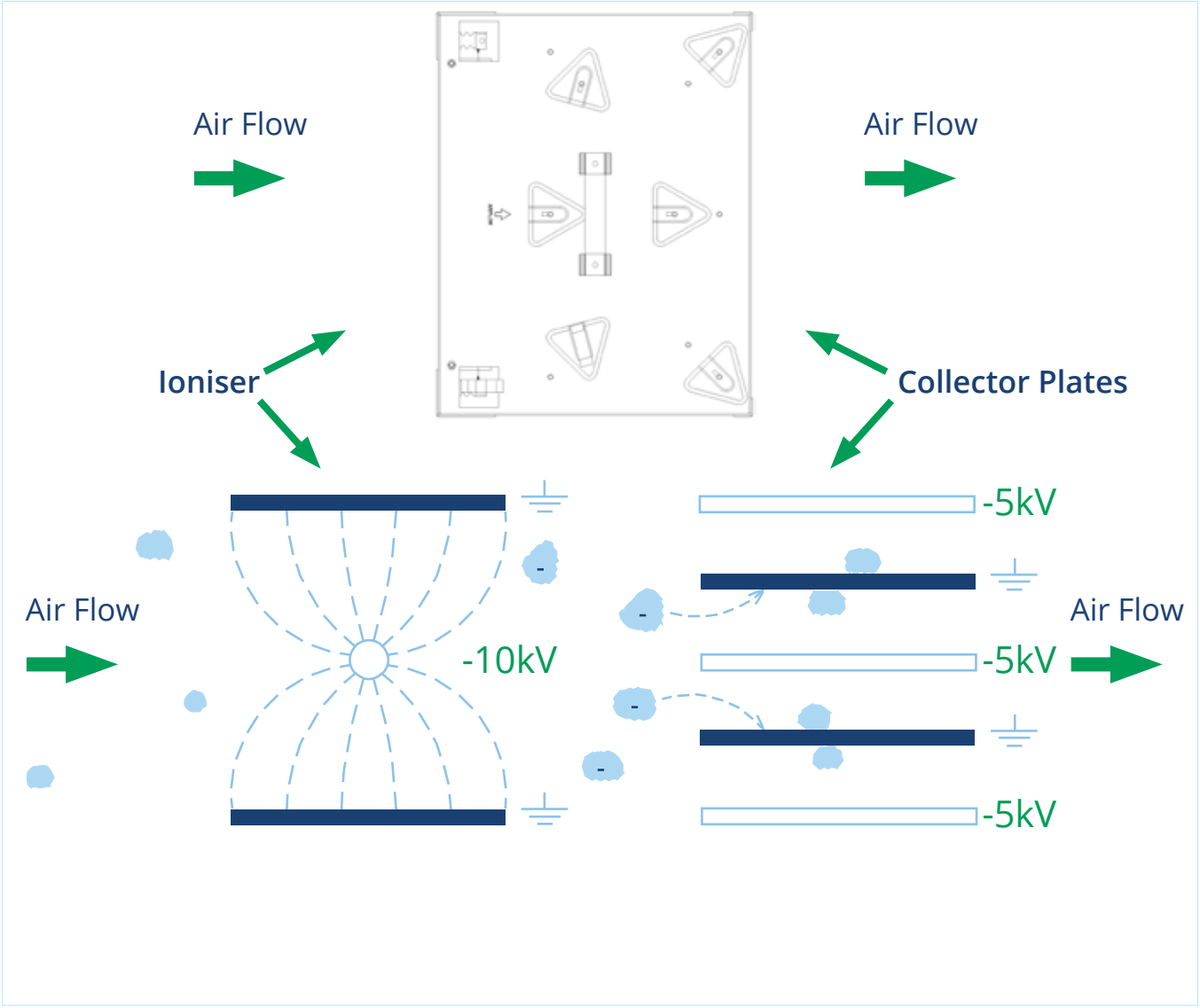
KEY FEATURES

- 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

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 0.7m³/sec	up to 1.4m³/sec	up to 2.1m³/sec	up to 2.8m³/sec
Dimensions W/H/D	450mm/630mm/ 640mm	900mm/630mm/ 640mm	1350mm/630mm/ 640mm	1800mm/630mm/ 640mm
Weight	55Kg	85Kg	118Kg	153Kg

1. Cooking particulates and odours
2. Canopy Grease Filter
3. ESP - Particulate Control Unit
4. Airflow



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.

An Autowash option can be provided for our entire ESP range.

The autowash nozzle attachment sits inside our standard ESP units. Once connected to the control / wash station the collection cells can be automatically cleaned at regular frequency. The system is usually factory fitted but can also be retro fitted in existing installations, dependant on the generation of units installed.

Daily cleaning keeps the filters working at their optimum efficiency and will greatly reduce the number of service visits required through the year.

For more information please contact our sales team.

3 ESP Units Stacked in modular formation

4 ESP Units Stacked in modular formation with a double pass

Passive Filtration

At Purified Air we supply a range of passive filtration that can be used both in conjunction with our powered units or as standalone filters dependant on the situation.

The filters include:

1. **Carbon Filters**
2. **Absolute (HEPA) Filters**
3. **Bag Filters**
4. **Pleated Panels**

Carbon Filters

We manufacture Sitesafe carbon filters, these innovative carbon units measure 594x196x597mm, three combining to 594x594x597mm, directly replacing our original carbon blocks whilst providing exactly the same filter performance as an existing full size cell.

Their advantage is that they only weigh 18kg each against the 68kg of our original blocks. This takes the strain out of fitting and servicing, allowing only one engineer to complete the task where two had been previously required.

Our Sitesafe carbon filters use panels of activated carbon to remove the malodourous gases within the commercial kitchen extract duct through the process of chemical adsorption. By installing our ESP units before our Sitesafe filters, the carbon life span is greatly increased, allowing it to nullify malodours at optimum efficiency for much longer.

DDM 9/9 E6G3501 1F 4P 1V +SCT

Technical Data

DDM 9/9 E6G3501	Speed control	Curves	Nominal motor power W	Poles –	Phases	Connection	Mains frequency Hz	Max. power consumption W	Max. current consumption A	Speed 1/min
1F 4P 1V +SCT	*	[B1/B2]	60	2	1~		50/60	170	0.7	2500

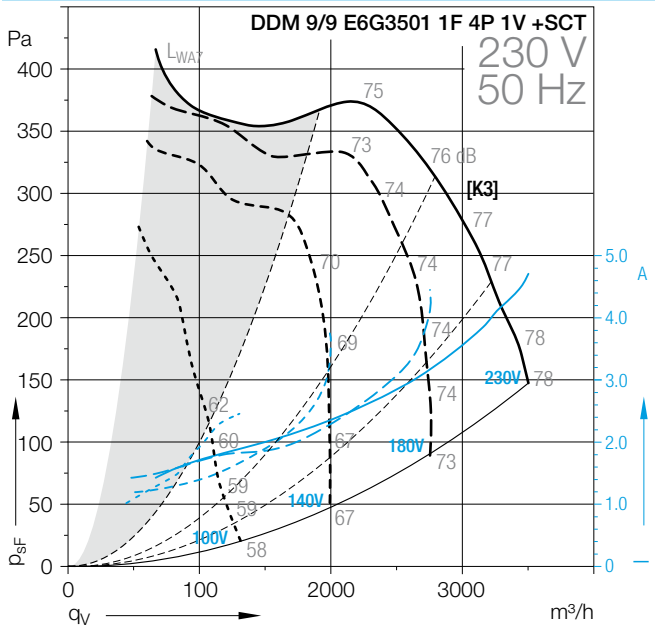
Technical Data

DDM 9/9 E6G3501	Operating Capacitor µF	Nominal capacitor voltage V	Motor protection class	Motor thermal class	Thermal protection	Media Temperature max. °C	Fan weight kg	Density of media kg/m³	Installation type (ISO 5801)	Article number
1F 4P 1V +SCT	4	450	IP32	B	INT	40	5	1.2	B	6M02097

(1) = Speed controllable via Transformer
(2) = Speed controllable via TRIAC or Transformer
(3) = Speed controllable via Inverter
* = No speed control available
[HI] High speed, [ME] Medium speed, [LO] Low speed

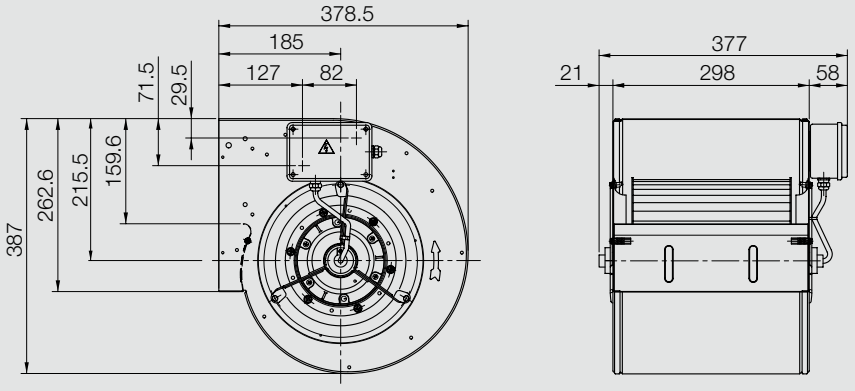
Attention! We suggest to do not use the fan in the grey marked area! The noise ratings given in the performance curves are sound power level L_{WA7}, see „Technical Description“.

Curves



Dimensions in mm, Subject to change.

DDM 9/9 E6G3501 1F 4P 1V +SCT



DDM 9/9 E6G2503 1F 4P 1V

Technical Data

DDM 9/9 E6G2503	Speed control	Curves	Nominal motor power W	Poles –	Phases	Connection	Mains frequency Hz	Max. power consumption W	Max. current consumption A	Speed 1/min
1F 4P 1V	(2)	[K5/K6]	550	4	1~		50/60	1611	6.8	1400

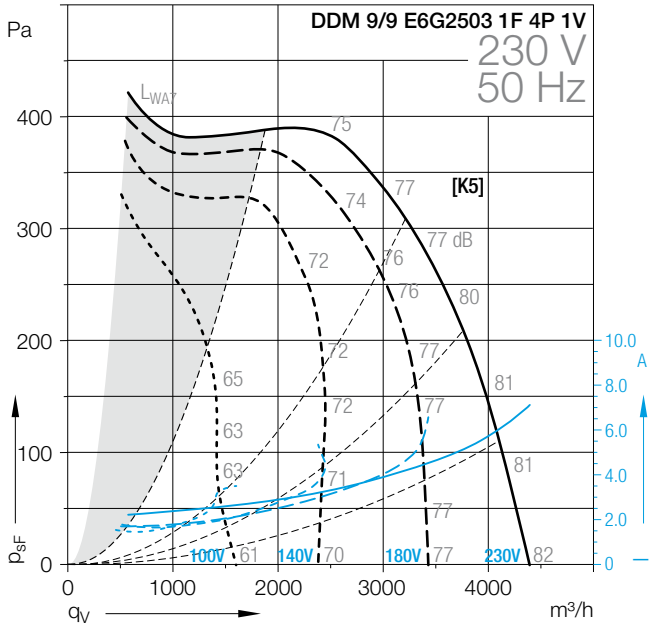
Technical Data

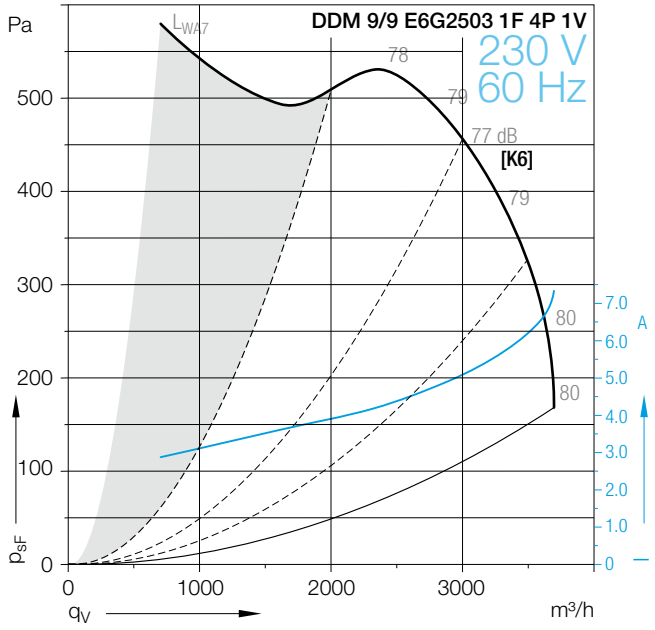
DDM 9/9 E6G2503	Operating Capacitor µF	Nominal capacitor voltage V	Motor protection class	Motor thermal class	Thermal protection	Media Temperature max. °C	Fan weight kg	Density of media kg/m³	Installation type (ISO 5801)	Article number
1F 4P 1V	20	450	IP10	F	EXT	40	17	1.2	B	6M02R8

(1) = Speed controllable via Transformer
(2) = Speed controllable via TRIAC or Transformer
(3) = Speed controllable via Inverter
* = No speed control available
[HI] High speed, [ME] Medium speed, [LO] Low speed

Attention! We suggest to do not use the fan in the grey marked area! The noise ratings given in the performance curves are sound power level L_{WA7}, see „Technical Description“.

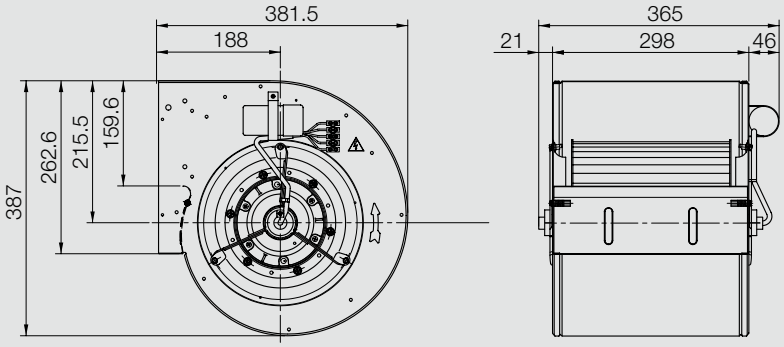
Curves





Dimensions in mm, Subject to change.

DDM 9/9 E6G2503 1F 4P 1V +SCT



DDM 9/9 E6G3405 1F 4P 1V +SCT

Technical Data

DDM 9/9 E6G3405	Speed control	Curves	Nominal motor power W	Poles –	Phases	Connection	Mains frequency Hz	Max. power consumption W	Max. current consumption A	Speed 1/min
1F 4P 1V +SCT	(2)	[K7]	420	4	1~		50	920	3.6	1320

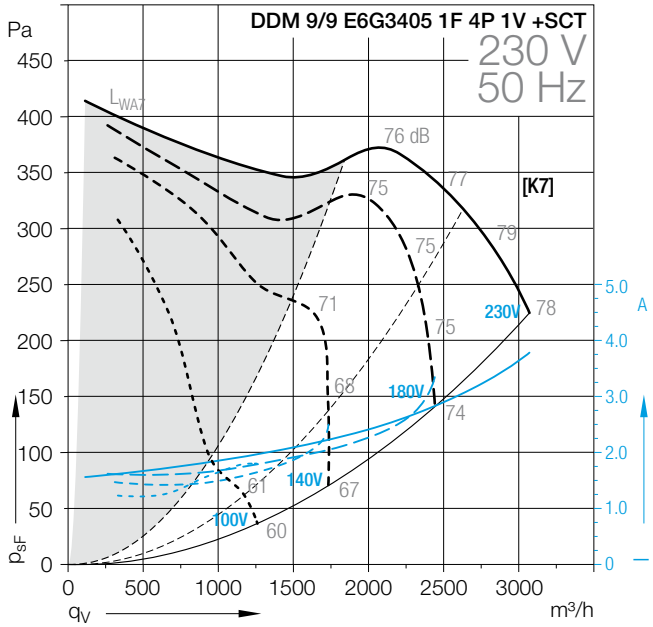
Technical Data

DDM 9/9 E6G3405	Operating Capacitor µF	Nominal capacitor voltage V	Motor protection class	Motor thermal class	Thermal protection	Media Temperature max. °C	Fan weight kg	Density of media kg/m³	Installation type (ISO 5801)	Article number
1F 4P 1V +SCT	16	450	IP55	F	EXT	40	17	1.2	B	6M02XN

(1) = Speed controllable via Transformer
(2) = Speed controllable via TRIAC or Transformer
(3) = Speed controllable via Inverter
* = No speed control available
[HI] High speed, [ME] Medium speed, [LO] Low speed

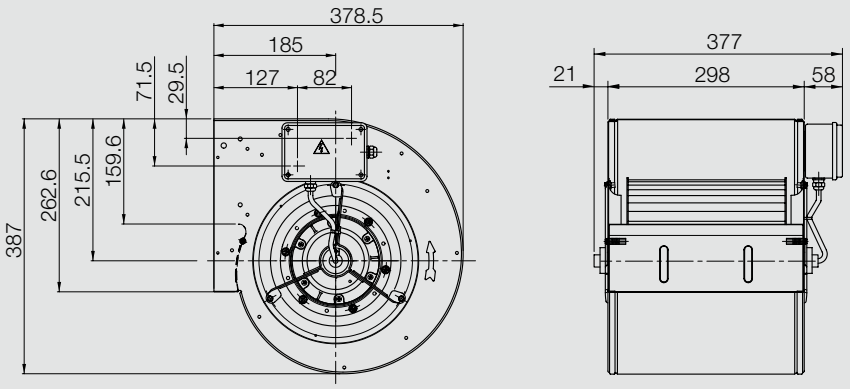
Attention! We suggest to do not use the fan in the grey marked area! The noise ratings given in the performance curves are sound power level L_{WA7}, see „Technical Description“.

Curves



Dimensions in mm, Subject to change.

DDM 9/9 E6G3405 1F 4P 1V +SCT



Quiet-Duct Ultra™ / Green Silencers
Section 15000 Specifications

1.01 General

A. Furnish and install "Quiet-Duct Ultra™/Green" (rectangular) silencers of the types and sizes shown on the plans and/or listed in the schedule. Silencers shall be the product of Industrial Acoustics Company. Any specification change must be submitted in writing and approved by the Architect/Engineer, in writing, at least 10 days prior to the bid due-date.

2.01 Materials

A. Outer casings of rectangular silencers shall be made of 22 gauge type #G-90 lock-former-quality galvanized steel.

B. Interior partitions for rectangular silencers shall be not less than 26 gauge type #G-90 galvanized lock-former-quality perforated steel.

C. Acoustic fill material shall be 100% environmentally friendly, and constructed of recycled natural fibers. Each fiber shall be treated with an EPA registered fungal inhibitor in order to prevent mold, mildew, fungi, and pest protection. The fill material must not contain any harmful chemicals, irritants, and/or volatile organic compounds (VOCs) in order to prevent off-gassing.

D. Combustion ratings for the silencer acoustic fill shall be not greater than the following when tested to ASTM E 84, NFPA Standard 255, or UL No. 723:

Flamespread Classification 5
Smoke Development Rating..... 35

3.01 Construction

A. Units shall be constructed in accordance with the ASHRAE Guide recommendations for high pressure duct work. Seams shall be lock formed and mastic filled. Rectangular casing seams shall be in the corners of the silencer shell to provide maximum unit strength and rigidity. Interior partitions shall be fabricated from single-piece, margin-perforated sheets and shall have die-formed entrance and exit shapes so as to provide the maximum aerodynamic efficiency and minimum self-noise characteristics in the sound attenuator. Blunt noses or squared off partitions will not be accepted.

B. Attachment of the interior partitions to the casing shall be by means of an interlocking track assembly. Tracks shall be solid galvanized steel and shall be welded to the outer casing. Attachment of the interior partitions to the tracks shall be such that a minimum of 4 thicknesses of metal exist at this location. The track assembly shall stiffen the exterior casing, provide a reinforced attachment detail for the interior partitions, and shall maintain a uniform airspace width along the length of the silencer for consistent aerodynamic and acoustic performance. Interior partitions shall be additionally secured to the outer casing with welded nose clips at both ends of the sound attenuator.

C. Sound attenuating units shall not fail structurally when subjected to a differential air pressure of 8 inches water gauge from inside to outside the casing. Airtight construction shall be provided by use of a duct sealing compound on the jobsite material and labor furnished by the contractor.

4.01 Acoustic Performance

A. All silencer ratings shall be determined in a duct-to-reverberant room test facility which provides for airflow in both directions through the test silencer in accordance with ASTM Specification E477-99. The test facility shall be NVLAP accredited for the ASTM E477-99 test standard. Data from a non-accredited laboratory will not be acceptable. The test set-up and procedure shall be such that all effects due to end reflection, directivity, flanking transmission, standing waves and test chamber sound absorption are eliminated.

Acoustic ratings shall include Dynamic Insertion Loss (DIL) and Self-Noise (SN) Power Levels both for FORWARD FLOW (air and noise in same direction) and REVERSE FLOW (air and noise in opposite directions) with airflow of at least 2000 fpm entering face velocity. Data for rectangular and tubular type silencers shall be presented for tests conducted using silencers no smaller than the following cross-sections:

Rectangular, inch: 24 x 24, 24 x 30, or 24 x 36
Tubular, inch: 12, 24, 36 and 48

5.01 Aerodynamic Performance

A. Static pressure loss of silencers shall not exceed those listed in the silencer schedule as the airflow indicates. Airflow measurements shall be made in accordance with ASTM specification E477-99 and applicable portions of ASME, AMCA, and ADC airflow test codes. Tests shall be reported on the identical units for which acoustic data is presented.

6.01 Certification

A. With submittals, the manufacturer shall supply certified test data on Dynamic Insertion Loss, Self-Noise Power Levels, and Aerodynamic Performance for Reverse and Forward Flow test conditions. Test data shall be for a standard product. All rating tests shall be conducted in the same facility, shall utilize the same silencer, and shall be open to inspection upon request from the Architect/Engineer.

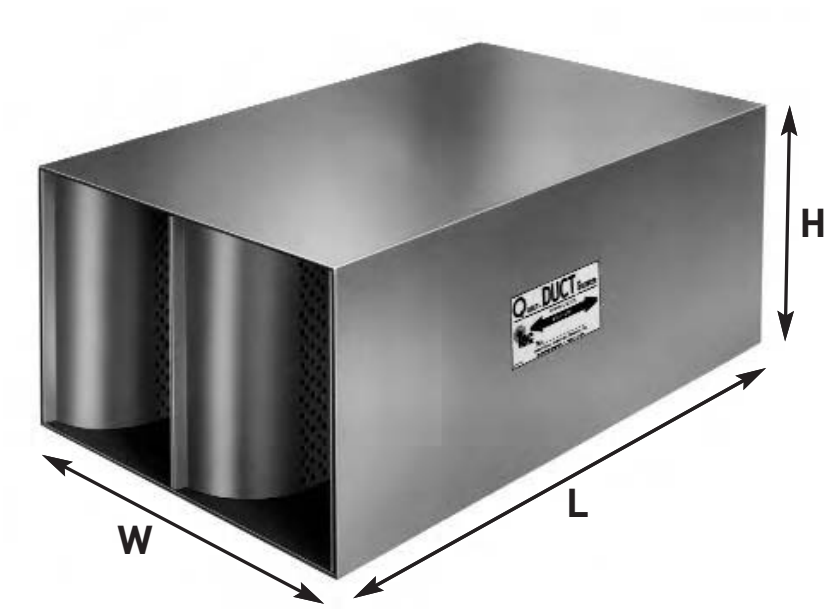
7.01 Duct Transitions

A. When transitions are required to adapt silencer dimensions to connecting duct work they shall be furnished by the installing contractor.

Quiet-Duct Ultra™/Green Silencers
Introduction

Environmentally Sound Silencers with Forward & Reverse Flow Ratings

The Ultra™/Green Quiet-Duct Series complements the traditional Commercial Series Silencers, but instead of using fiberglass or mineral wool insulation as the infill material, Ultra™/Green Quiet-Duct Series line of silencers have been designed and developed in response to the trend for environmentally friendly building projects and products. This 100% environmentally friendly attenuation solution uses recycled cotton-fiber based acoustic fill material and delivers performance that meets or exceeds that of a standard Quiet-Duct silencer. They still have the necessary flame-/smoke-spread ratings they also inhibit the growth of mold, which is a significant concern in many interior environments needing this specific type of application. All Ultra™/Green Quiet-Duct silencers have been rated with procedures certified in strict accordance with ASTM E477-99 in IAC's NVLAP Accredited Acoustical Laboratory.

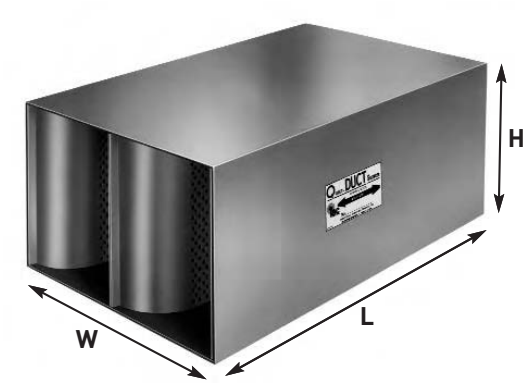


QUIET-DUCT ULTRA™/GREEN SILENCER TYPES:

- UGLFS
- UGLFM
- UGLFL
- UGS
- UGMS
- UGML
- UGL

Quiet-Duct Ultra™ / Green Silencers
Type: UGLFS

Environmentally Sound Silencers with Forward & Reverse Flow Ratings



The IAC Type UGLFS Quiet-Duct Ultra™/Green Silencers provide that same superior low frequency attenuation, now with a 100% environmentally friendly attenuation solution which uses recycled acoustic fill material, instead of fiberglass. All UGLFS Silencers have been rated and certified with procedures certified in accordance with applicable portions of ASTM E4777. All Dynamic Insertion Loss and Self-Noise Acoustic Performance data were obtained in IAC Acoustics' Aero-Acoustic Laboratory using the duct-to-room reverberant test facility with air flowing through the silencers. Like the standard LFS, the UGLFS is still advantageous where low frequency DIL requirements are high in HVAC systems. In some systems, high frequency attenuation may be provided by the system components or may not be needed.

Designating Silencers

Model: 5UGLFS-24-18
Type: UGLFS **Length:** 5' **Width:** 24" **Height:** 18"

Table I: Dynamic Insertion Loss (DIL) Ratings: Forward (+) / Reverse (-) Flow

IAC Model	Octave Band	1	2	3	4	5	6	7	8
	Hz	63	125	250	500	1K	2K	4K	8K
	Face Velocity, fpm	Dynamic Insertion Loss, dB							
3UGLFS	-2000	6	13	25	32	28	20	17	14
	-1000	6	12	24	32	27	20	19	14
	0	5	12	24	32	28	21	19	14
	1000	6	11	22	30	27	21	18	14
	2000	5	9	20	29	26	20	18	14
5UGLFS	-2000	11	23	39	46	44	27	24	19
	-1000	11	22	36	45	44	29	25	18
	0	10	20	35	43	43	29	24	17
	1000	10	17	31	40	41	28	22	14
	2000	9	14	29	38	39	29	20	14
7UGLFS	-2000	12	27	43	50	49	33	21	18
	-1000	12	23	43	48	49	36	25	17
	0	10	24	40	45	46	32	23	16
	1000	10	22	35	42	43	29	20	17
	2000	10	23	37	45	44	28	19	16
10UGLFS	-2000	16	32	48	52	52	43	24	18
	-1000	15	31	52	51	54	45	30	19
	0	16	30	51	52	54	47	32	20
	1000	14	26	48	54	53	49	33	24
	2000	13	24	47	56	55	49	36	26

NVLAP®

(+) Forward Flow / (-) Reverse Flow. Aero-acoustic performance data based on NVLAP accredited laboratory tests conducted in strict accordance with ASTM E477-99. Contact IAC if attenuation in excess of 50 dB is required.

Table II: Weights & Measures

Nominal Length	W/In	6	6	6	6	6	6	12	12	12	12	12	12	24	24	24
	H/In	18	24	30	36	42	48	18	24	30	36	42	48	18	24	30
3'	Wt/lb.	18	21	25	29	31	35	35	42	50	57	61	70	54	64	74
5'		29	35	42	47	52	59	58	70	83	94	104	117	89	104	121
7'		41	49	59	67	75	83	82	98	118	134	150	166	125	146	175
10'		59	70	84	95	N/A	N/A	117	140	167	190	N/A	N/A	178	209	250

Nominal Length	W/In	24	24	24	36	36	36	36	36	36	48	48	48	48	48	48
	H/In	36	42	48	18	24	30	36	42	48	18	24	30	36	42	48
3'	Wt/lb.	82	92	102	89	106	124	139	153	172	108	128	148	164	184	204
5'		136	152	157	147	174	204	230	256	274	178	208	242	272	304	314
7'		196	218	240	207	244	293	330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10'		280	N/A	N/A	295	349	417	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table III: Aerodynamic Performance

IAC Model	L/Ft	Static Pressure Drop, i.w.g.															
UGLFS	3'	0.04	0.05	0.07	0.09	0.11	0.14	0.17	0.20	0.24	0.28	0.32	0.36	0.41	0.46	0.51	0.57
	5'	0.04	0.06	0.08	0.10	0.13	0.16	0.19	0.22	0.26	0.31	0.35	0.40	0.45	0.51	0.56	0.62
	7'	0.04	0.06	0.08	0.10	0.13	0.16	0.20	0.23	0.28	0.32	0.37	0.42	0.47	0.53	0.59	0.65
	10'	0.04	0.06	0.09	0.11	0.14	0.18	0.21	0.26	0.30	0.35	0.40	0.45	0.51	0.57	0.64	0.71
Silencer Face Velocity, fpm		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000

Table IV: Self-Noise Power Levels, dB re: 10-12 Watts

IAC Model	Octave Band	1	2	3	4	5	6	7	8
	Hz	63	125	250	500	1K	2K	4K	8K
	Silencer Face Velocity, fpm								
UGLFS (all sizes)	-2000	58	54	58	61	62	62	65	63
	-1500	51	49	53	56	56	59	60	53
	-1000	45	42	45	43	45	49	44	37
	1000	46	42	45	43	45	49	44	37
	1500	56	54	57	56	52	56	57	51
	2000	68	64	65	66	61	61	64	61

(+) Forward Flow / (-) Reverse Flow. Aero-acoustic performance data based on NVLAP accredited laboratory tests conducted in strict accordance with ASTM E477-99.

TAKE NOTE!

- Silencer Face Area is the cross-sectional area at the silencer entrance
- Face Velocity is the CFM of airflow divided by the Face Area (in sq. ft.)
- Pressure Drop for any velocity can be calculated from this equation:
  PD = (Actual FV/Catalog FV)2 x (Catalog PD)
- Self Noise values shown are for a four-square-foot face area silencer
- For each doubling of the face area add 3 dB to the self-noise values listed
- For each halving of the face area subtract 3 dB from the self-noise values listed
- Weights and measures are listed for limited number of available sizes

Will require two people plus lifting equipment to carry and install.

Carbon PA242424

Size	594 x 594 x 597
Gross Weight	68.2Kg
Carbon Weight	50Kg
Rated Airflow	3600m³/hr*
Pressure Drop	120Pa

Safe for one person to carry.

No special lifting equipment required.

Sitesafe PA240824

Size	594 x 196 x 597
Gross Weight	17.95Kg
Carbon Weight	16.6Kg
Rated Airflow	1200m³/hr*
Pressure Drop	120Pa

Sitesafe 3 x PA240824

Size	594 x 594 x 597
Gross Weight	53.85Kg
Carbon Weight	50Kg
Rated Airflow	3600m³/hr*
Pressure Drop	120Pa

*Rated Airflow based on a dwell time of 0.1 seconds. Available in all sizes to retrofit carbon cells

Carbon Filter Cell Part Number	Nominal Size (inches)	Height (mm)	Width (mm)	Depth (mm)	Weight of Encased Carbon (Kg)	Weight of Entire Cell (Kg)	Capacity @ 0.1 Second Dwell Time M3/h
PA-240824-7C "Site Safe"	24 x 08 x 24	594	196	597	17	18	1266
PA-242412-7C	24 x 24 x 12	594	594	297	25	36	1900
PA-242424-7C	24 x 24 x 24	594	594	597	50	61	3800

Please find our most popular sizes above, we do supply many different sizes and grades of carbon filters so please contact us with your requirements.

Absolute (HEPA) Filters

To qualify to be called a High-Efficiency Particulate Air or HEPA filter, the filter must be able to remove, from the air that passes through it, 99.97% of particles down to a sub-micron level. Our main use of HEPA filtration is the removal of smoke particles.

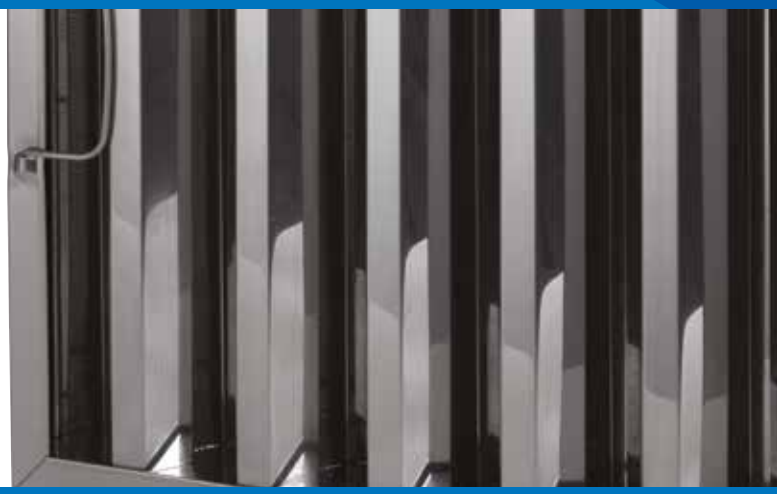
We do supply many different sizes and grades of HEPA filters so please contact us with your requirements.

Bag Filters

Our general purpose bag filters are manufactured using a galvanised steel header to retain the pocket sets.

The pockets are produced from synthetic micro-fibres specifically designed for use in air filtration. They can be applied as a pre filter to carbon cells in malodour extraction, taking out oil and grease particles ahead of the carbon filter stage.

LONGAR® Type 2
High Performance Premium Baffle Filter



LONGAR® TYPE 2 FEATURES:
- 100% Flame barrier protection to DIN 18869-5.
- Cutsafe safety edges.
- Fully welded construction – all stainless steel construction.
- Meets insurance requirements.
- Meets HVCA DW172 requirements.
- Folding handles and drainholes as standard.
- Robust baffle filter construction – built to last.
- Tested & certified to European standard DIN 18869-5.
- Tested & certified to American standard UL1046.
- Tested & certified to ASTM2519.

APPLICATIONS
- Commercial kitchens
- Water mist separation
- Spark arrestors
- Sand filtration
- Grease filtration

LONGAR® TYPE 2 PREMIUM BAFFLE FILTER
For use in commercial kitchens and ventilation to extract grease laden air and act as a fire barrier. Fire barriers prevent any cooking flames traveling past the extract canopy. The new Type 2 is a development of customers requesting certain attributes for the baffle filter, the main ones being safety edges on frame and blades. LONGAR® Type 2 is available in standard depths of 20mm and 45mm depths, this is required for the filter to operate at a constant efficiency and to protect the system as a flame barrier as tested to European Standard DIN 18869-5 and American Standard UL1046. Custom sizes are available on request.

CONSTRUCTION / MATERIAL SPECIFICATIONS
As standard all baffles are manufactured with Stainless Steel 430 polished finish, (Other finishes and materials are available). Maximum Operating temperature 400C or 750F.

FITTING INSTRUCTIONS
- Fit products, handles in direction of air in.
- Product vertical in air stream.

HANDLING
- Handle with care when unpacking.
- Store in dry and frost protected place.

MAINTENANCE
- All maintenance should be carried out in accordance with the planned maintenance set by installation contractor.
- When handling any components suitable PPE should be used - gloves, eye protection and access equipment.
- Filters should be cleaned by a trained operative either daily for heavy use or weekly for light use.
- For more exact guide to cleaning you should contact a cleaning specialist.

PACKAGING
- All units are packaged in double wall boxes with separators for standard sizes, glued closed for protection whilst in transit against contamination.

FILTER CLASSIFICATION:
- Filter Class G2
- UL Class 2

TESTED TO:
- DIN 18869-5
- UL 1046
- ASTM 2519

MANUFACTURED TO:
- DW172
- ISO9001

A.V.MOUNT (ANTI VIBRATION MOUNT)

Anti Vibration Mounts (A.V. Mounts) attach to the bottom of Mounting Feet.A.V. Mounts are used to isolate the fan from the system to prevent vibration transfer through fixings or structures.A.V. Mounts can be used to isolate any products from the main system to prevent vibration transfer. The main uses we supply A.V. Mounts for are, Axial flow fans, Box fans, Centrifugal fans, in fact A.V. Mounts can be used with anything that causes vibration.

Flexible Duct Connector

For damping vibration generated by fans or ventilation equipment and transferred to air ducts. For partial compensation of ductworks distortion resulting from temperature changes. Flexible vibration damping connectors are fixed to air ducts with clamps.

Universal Bracket For Wall Mounting

High Velocity Jet Cowl

High velocity jet cowl. This type of termination provides a higher efflux velocity over standard cowls. In simple terms any residual odours will be "Jetted" high above areas that may be affected by nuisance odours. DEFRA kitchen guidance 2018 actually lists this is a preferred method of extraction. Rainwater is captured in a dish within the cowl and is fed out through a drinage tube.