

11.12.2019

TASTY GREEK SOUVLAKY

Mechanical Delivery File



EUROSAFETY INTERNATIONAL LTD.

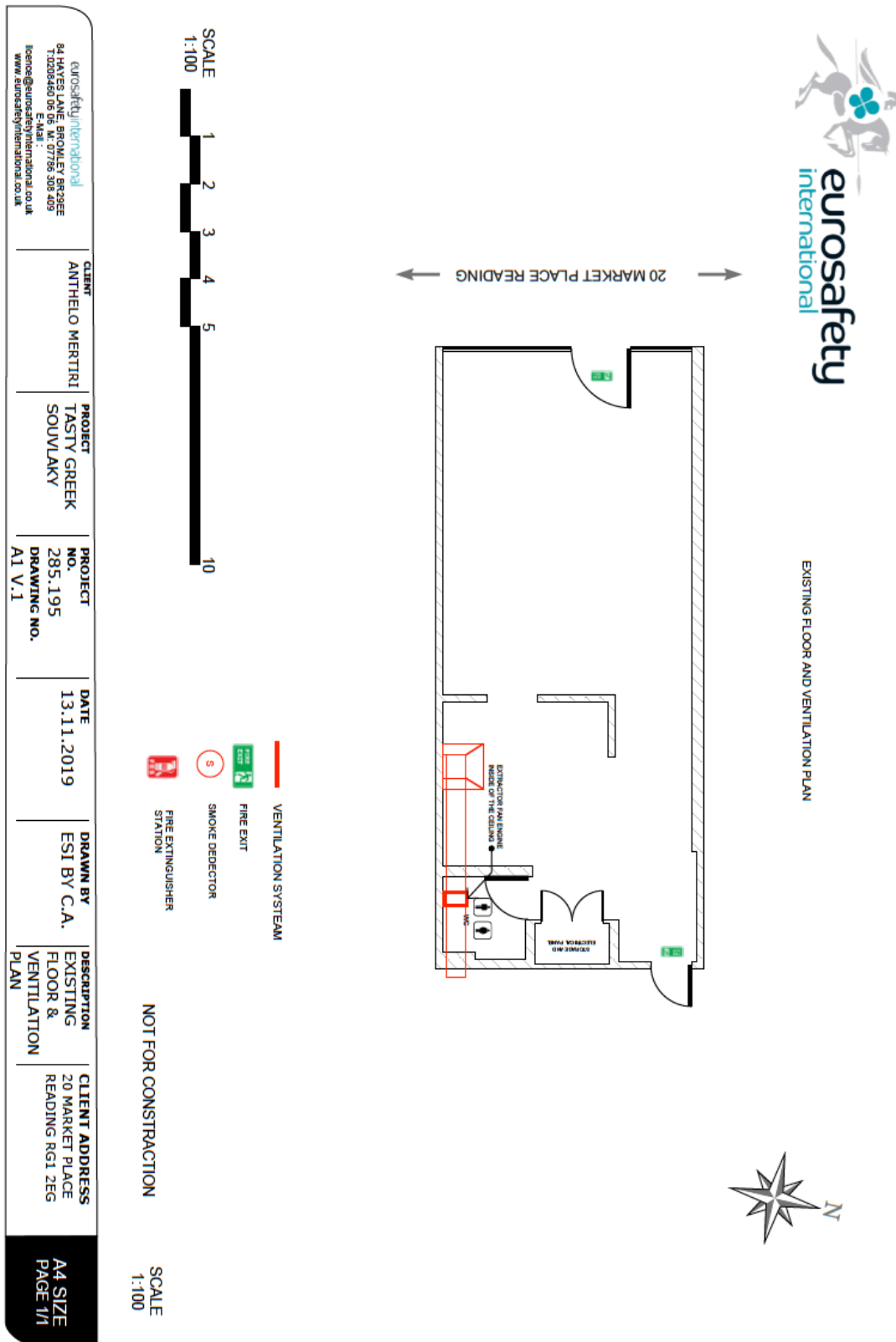
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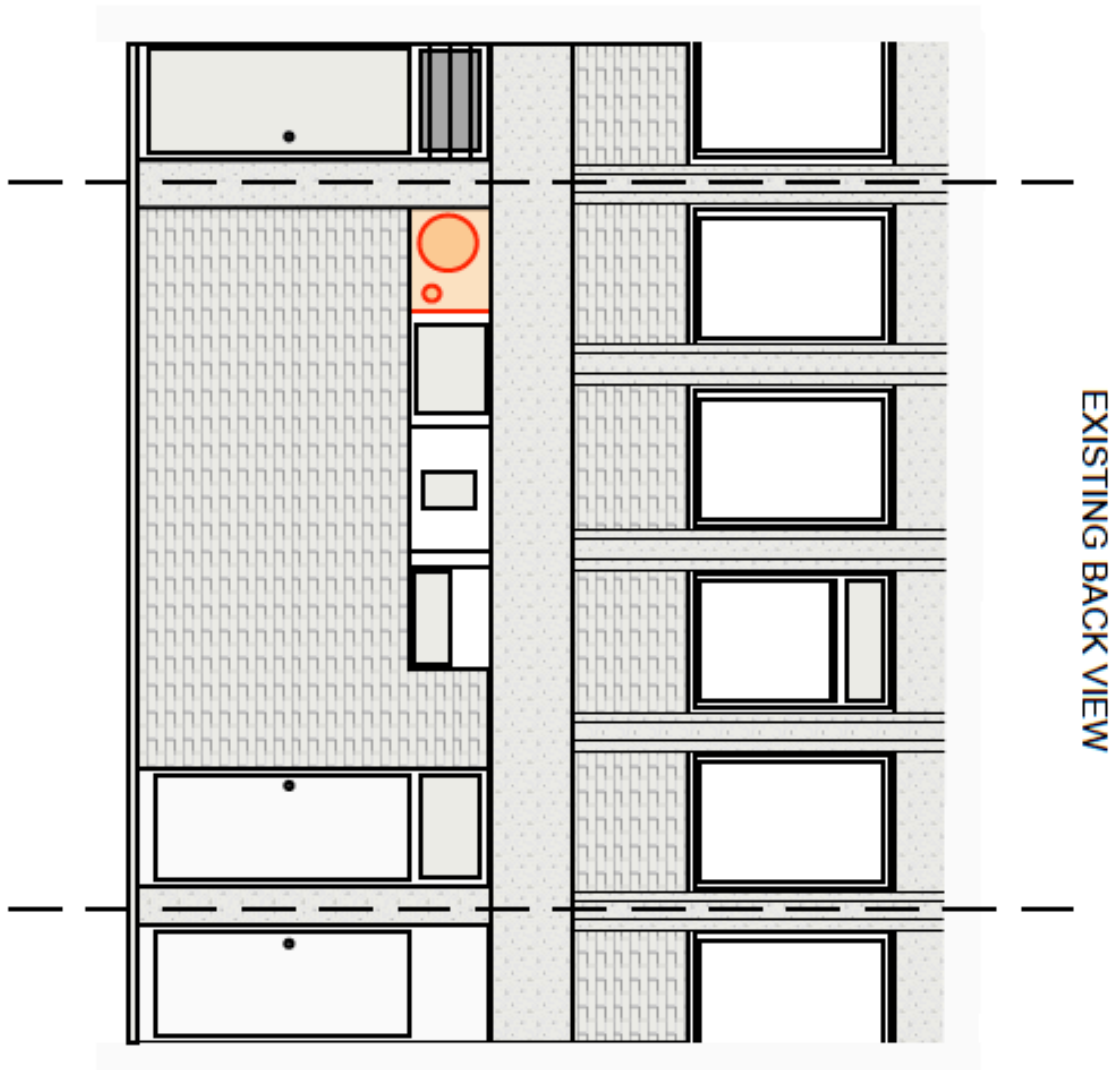
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CHAPTER 1.PLANS

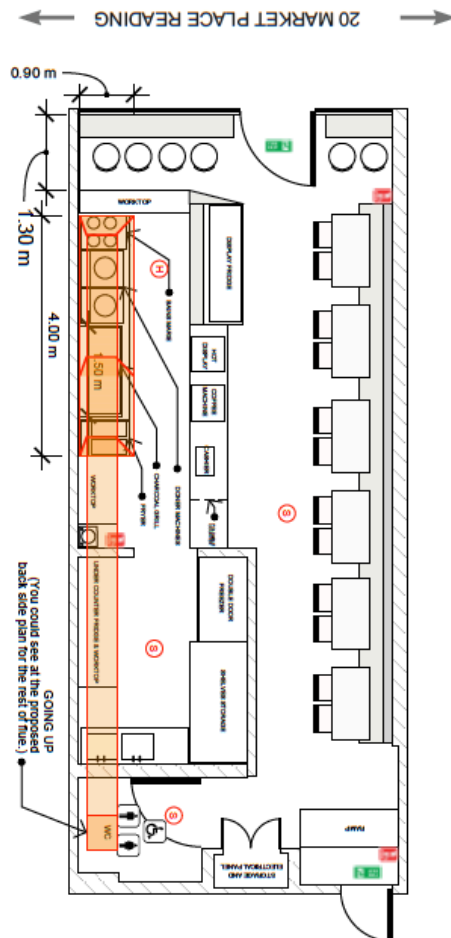
1.1 Current Floor and Extraction Hood Plans





1.2 Proposed Floor and Exraction Hood Plans

PROPOSED FLOOR AND VENTILATION PLAN - 2



SCALE 1:100

1 2 3 4 5 10

VENTILATION SYSTEM

FIRE EXIT

SMOKE DETECTOR

FIRE EXTINGUISHER STATION

NOT FOR CONSTRUCTION

SCALE 1:100

eurosafety international 84 HAYES LANE, BROMLEY BRIDGE T12020468 085 07755 388 409 licence@eurosafetyinternational.co.uk www.eurosafetyinternational.co.uk	CLIENT ANTHELO MERTIRI	PROJECT TASTY GREEK SOUVLAKY	PROJECT NO. 285.195 DRAWING NO. A3 V.2	DATE 13.11.2019	DRAWN BY ESI BY C.A.	DESCRIPTION PROPOSED FLOOR & VENTILATION PLAN 2	CLIENT ADDRESS 20 MARKET PLACE READING RG1 2EG	A4 SIZE PAGE 1/1
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eurosafety international 84 HAYES LANE, BROOKLYN BOROUGH E-MAIL: info@eurosafetyinternational.com WWW.EUROSAFETYINTERNATIONAL.COM		CLIENT ANTHELO MERTIRI		PROJECT TASTY GREEK SOUVIAKY		PROJECT NO. 285.195 DRAWING NO. AS V.2		ISSUE 02.08.2018		DRAWN BY ESI BY C.A.		DESCRIPTION PROPOSED 2 BACK & SIDE VIEW		CLIENT ADDRESS 20 MARKET PLACE READING RG1 2EG		A3 SIZE	
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SCALE
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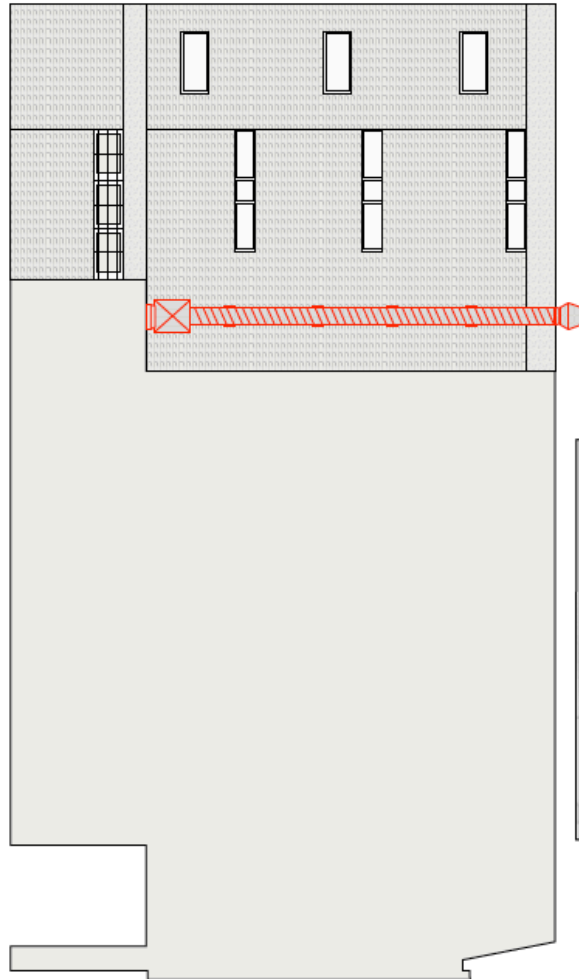
VENTILATION SYSTEM



NOT FOR CONSTRUCTION

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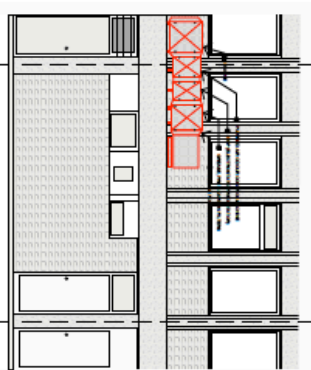
PROPOSED SIDE VIEW - 2



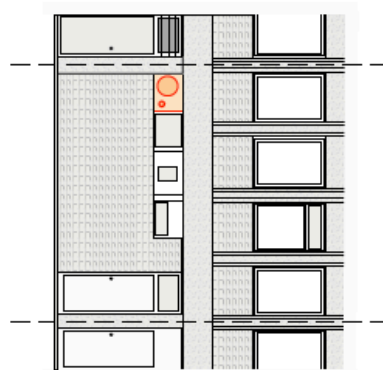
PROPOSED ON THE LOCATION PLAN



PROPOSED BACK VIEW - 2

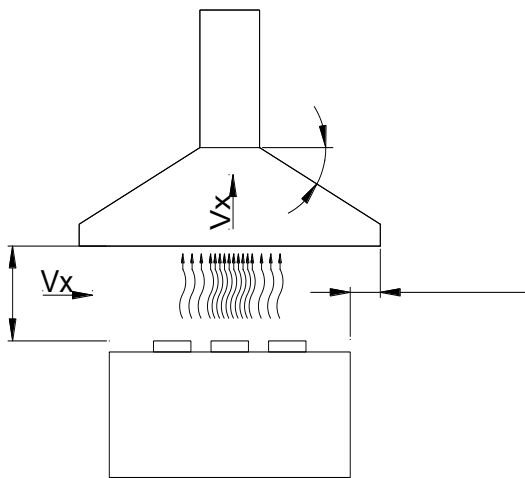


EXISTING BACK VIEW



CHAPTER 2. MECHANICAL INFORMATION

2.1 Extraction Hood of Variations



$$\text{Flow} = V = L \times W \times v_x$$

$$\text{Flow} = V \text{ (} m^3/h \text{)}$$

Length Side of Extraction Hood = L (m)

Width Side of Extraction Hood = W (m)

$$\text{Velocity} = v_x \text{ (} m^2/s \text{)}$$

$$\begin{aligned} &= (4,50m) \times (0,9m) \times (0,3 \text{ (} m^2/s \text{)}) \times 3600 \\ &= 4.374 \text{ (} m^3/h \text{)} = 1,214 \text{ (} m^3/s \text{)} \end{aligned}$$

2.2 Fan Selection

Brand : Helios
Model : GW 500/4



Gigabox with discharge adapter and flex. sleeve, 1-ph., controllable

Cubic ventilation box with intake and extract spigots, with flexible connectors to reduce vibration transmission and variable applicable side panels to suit to structural conditions. Simple positioning by standard crane hooks.

Self-supporting frame construction made from hollow aluminum profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. The casing panels can be replaced as required with accessories, such as the external weather louvre and condensate collector. Other accessories, wall bracket and outdoor cover hood.

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.

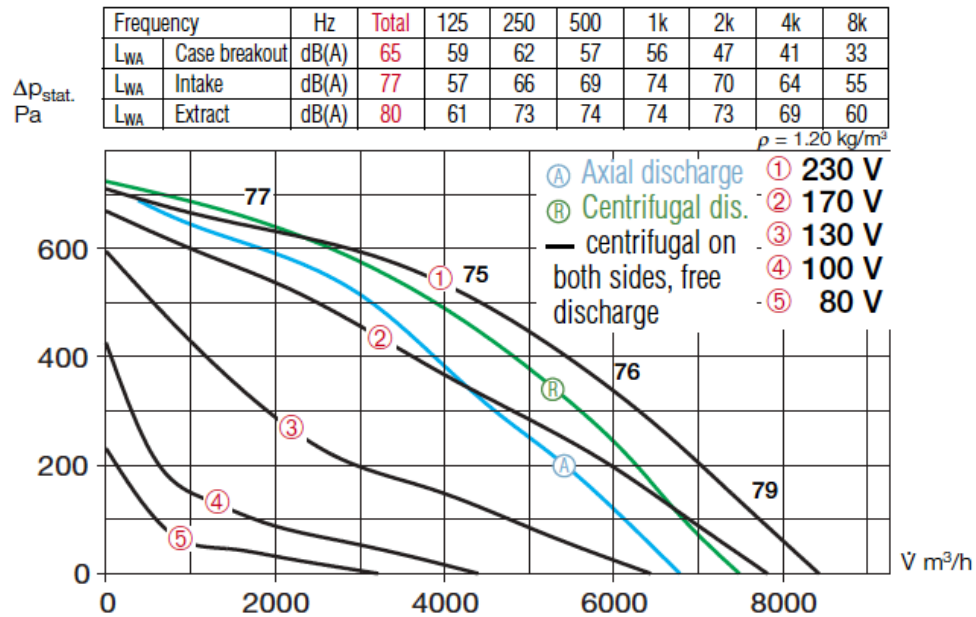
Single phase, enclosed, maintenance free external rotor motor with thermal contacts wired to the terminal block, speed controllable by voltage reduction. Low-noise, sealed for life ball bearings. Mains supply via terminal box which is fitted externally on the motor as standard (IP 54).

Type	Ref. No.	Air flow volume (FID)	R.P.M.	Sound press. level case breakout	Motor power (nominal)	full load	Current speed controlled	Wiring diagram	Maximum air flow temperature full load	controlled	Nominal weight (net)	5 step transformer controller with motor protect. unit				Full motor protection unit using the thermal contacts	
		V m³/h	min⁻¹	dB(A) at 4 m	kW	A	A	Nr.	+°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 500/6	5519	5760	880	35	0.52	2.30	2.60	864	45	45	47	MWS 3	1948	TSW 3.0	1496	MW ¹⁾	1579
GBW 500/4	5517	8400	1350	45	1.38	6.40	8.20	865	65	55	61	MWS 10	1946	—	—	—	—
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/△-wiring, protection to IP 54																	
GBD 500/4/4	5518	8000/8850	1075/1340	45	0.97/1.45	1.60/2.80	2.90	867	50	50	57	RDS 7	1578	TSD 5.5	1503	M4 ²⁾	1571
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	—	—	MW ¹⁾	1579
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/△-wiring, protection to IP 54																	
GBD 500/4/4 T120	5777	7320/8350	1070/1365	45	1.07/1.50	1.80/3.00	3.0	947	120	110	75	RDS 4	1316	TSD 3.0	1502	M4 ²⁾	1571

¹⁾ incl. operation switch

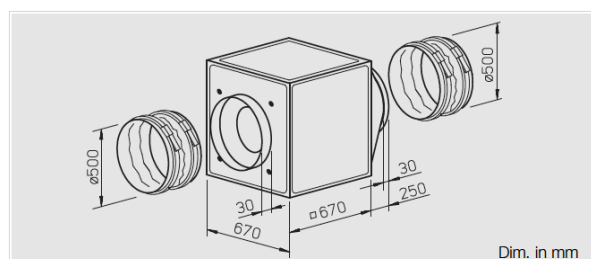
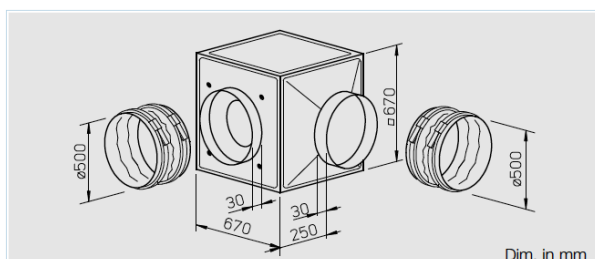
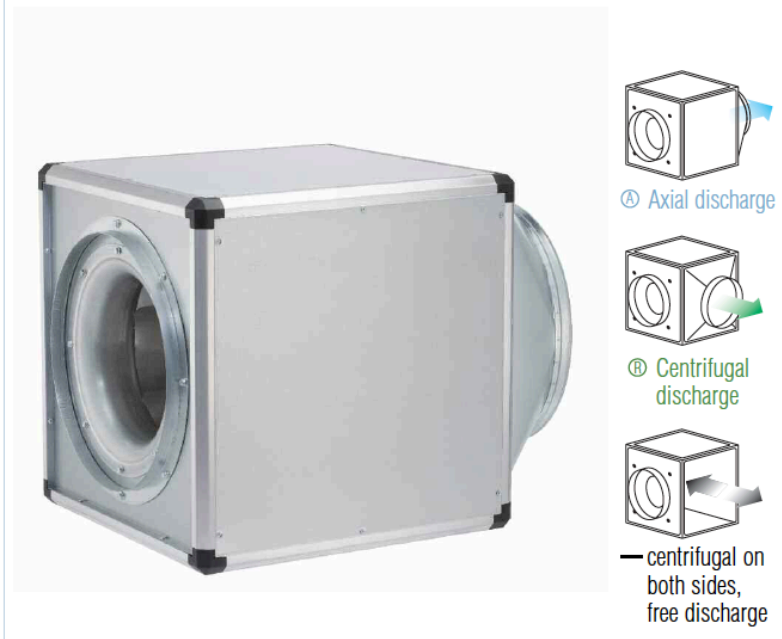
²⁾ incl. operation and 2 speed switch

GBW 500/4



Models GB..

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



☐ **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 extract
- in the tables above the performance curve. Beside, the sound power level (on intake) is stated over the rated characteristic curve. In the table below you can also find the
- case breakout level at 4 m (freefield conditions).

☒ **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 over 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 star/delta motors.

DS 2 ³⁾ Ref. No. 1351

☒ **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

³⁾full motor protection unit recommended: MD Ref. No. 5849

2.3 Installation and Operating Instructions

2.3.1 Important information

To ensure safety and correct operation please read and observe the following instructions carefully before proceeding. The electrical connection must be fully isolated from the supply up to the final assembly! Keep the installation and operating instructions as a reference at the device. After the final assembly the document must be handed out to the operator (tenant/owner).

2.3.2 Warning and safety instructions

Accompanying symbol is a safety-relevant prominent warning label. All safety regulations and/or symbols must be absolutely adhered to, so that any danger situation is avoided.

2.3.3 Warranty – Exclusion of liability

If the preceding instructions are not observed all warranty claims and accommodation treatment are excluded. This also applies to any liability claims extended to the manufacturer.

The use of accessories not offered or recommended by Helios is not permitted. Potential damages are not liable for warranty.

2.3.4 Certificates

If the product is installed correctly and used to its intended purpose, it conforms to all applicable European Standards at its date of manufacture.

2.3.5 Receipt

Please check delivery immediately on receipt for accuracy and damage. If damaged, please notify carrier immediately. In case of delayed notification, any possible claim may be void.

2.3.6 Storage

When storing for a prolonged time the following steps are to be taken to avoid damaging influences: Protection of motor by dry, air- dustproof packing (plastic bags with drying agent and moisture indicators). The storage place must be water proof, vibration-free and free of temperature variations.

When storing for several years or non-rotation of motor an inspection of the bearings with possible relubrication and an electrical inspection to VDE 0701 and VDE 0530 are absolutely necessary before starting operation. When transshipping (especially over longer distances) check if the packing is adequate for method and manner of transportation.

Damages due to improper transportation, storage or putting into operation are not liable for warranty.

2.3.7 Application

For operation under difficult conditions further inquiry and operation release is necessary as the standard execution might not be suitable. Outdoor use is possible with outdoor cover hood and external weather louvre (one or two-sided, accessories). A drilling for the rain drainage (accessories) is prepared. The insulation class, the IP rating and the maximum air flow temperature (at normal operation -TR and using speed regulation) are given on the fan name plate. The fan is limited for continuous operation S1 and frequent switching operations are not allowed. The fan may only be used for its intended purpose.

Use and operation only according to this installation and operating instructions. Using the fan to move heavily polluted air or in potential hazardous areas is not allowed! The fan may only be used for its intended purpose.

2.3.8 Operation as room ventilation device

In order to achieve the desired fan performance (ambient temperatures of -40° to $+40^{\circ}\text{C}$) a systematic air supply is essential.

2.3.9 Performance data

The unit must be installed correctly to achieve the optimum performance. This applies to the installation of the unit, the ducting and the replacement air supply.

- Electrical parameters

The motor rating plate provides information on the electrical data. These data are to be examined for its conformity to the local conditions.

- Acoustics

The GigaBox casing is acoustically insulated. Adverse operating conditions etc. can lead to an increase of the given data.

2.3.10 Impellers

The GigaBox fans have backwards curved centrifugal impellers made from aluminium with galvanised steel support plates. The impeller and the motor as one unity are dynamically balanced to quality standard G 6.3 or 2.5 – DIN ISO 1940 T.1.

2.3.11 Sound level

The sound levels stated in the catalogue can differ considerably after installation as the sound pressure level depends on the absorption capacity of the room, the place of installation and other factors. Sound reduction is possible by using sound attenuators and by speed regulation.

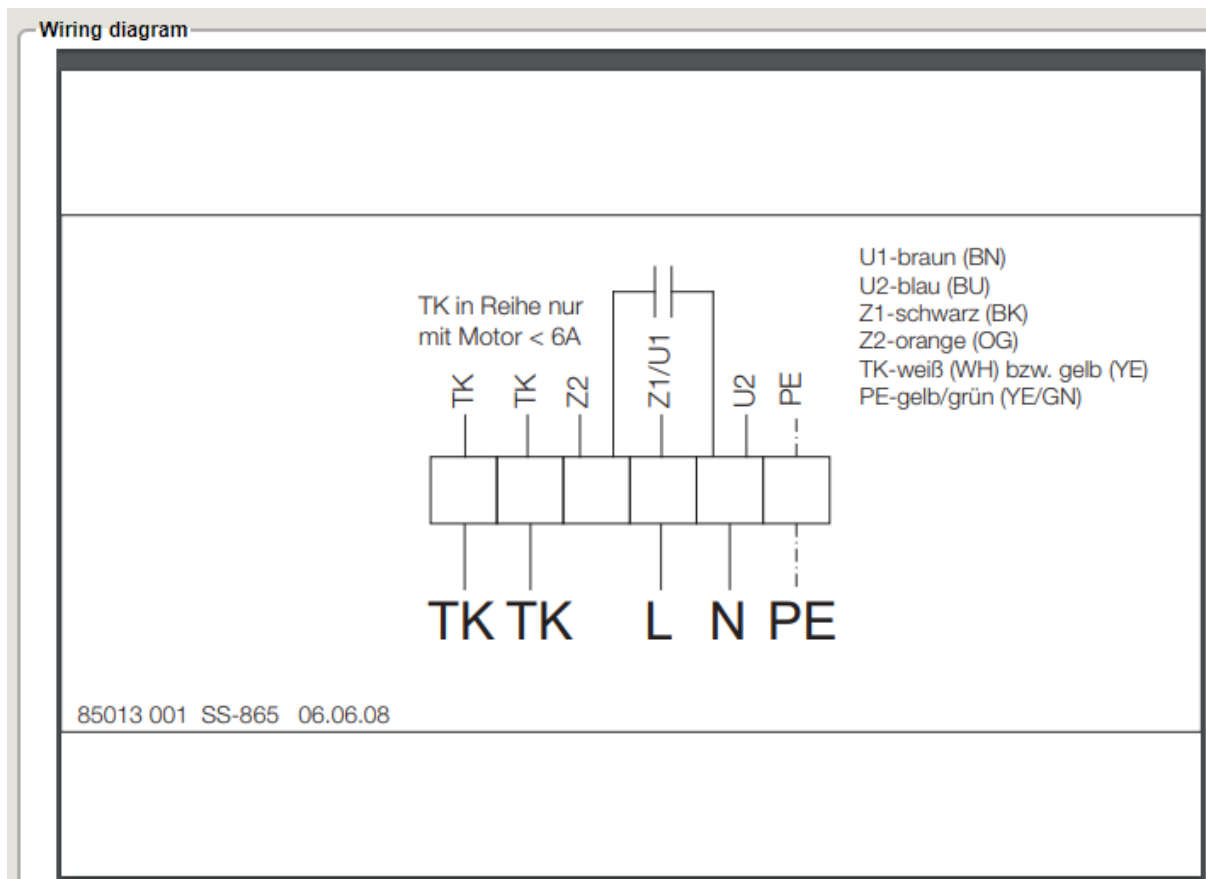
2.3.12 Safety

- A certified electrician may only carry out all servicing and installations.
- The fans may be operated only with the rated voltage indicated on the type plate.
- Technical data on type plate are to be adhered to without fail.
- The degree of protection given on the type plate is only valid with designed installation in accordance with these installation and operating instructions and with closed aggregate.

2.3.13 Electrical connection

All work must be carried out with the equipment fully isolated from the power supply. The electrical connection is to be carried out in accordance with the relevant wiring diagram and is only to be done by a certified electrician. The electrical connection must be fully isolated from the supply up to the final assembly!

All relevant safety regulation, national standards and norms are to be adhered to. An appliance is required for cut off from the supply with a minimum of 3 mm contact opening of each pole. The rated voltage and frequency must correspond with the data on the type plate. The standard terminal box is located on the motor support plate.



2.3.14 Protection against accidental contact

When installing observe the valid regulations for labour protection and accident prevention. Any contact with rotating parts must be avoided. Make sure that no textiles (such as curtains) or other materials, which could be sucked in, as for instance clothing, are close to the suction area of the fan.

Depending on the installation conditions a contact safety device on the discharge side may be necessary. Corresponding grilles are available as accessories. Fans protected by their installation in ventilation channels or closed aggregates do not need a protection grille, if the installation guarantees the protection (see DIN 31001 and 24167). We emphasize that the installer will be held responsible for accidents occurring as a result of missing protection devices.

2.3.15 Air flow direction and direction of rotation

The Gigabox T120 model ranges have a fixed direction of rotation, i.e. they are not reversible. An arrow on the units indicates the direction. Correct rotation must be ensured when running the fan. Incorrect direction of rotation leads to lower air volumes, increased noise levels and a higher electrical current, which will harm the motor.

The fan should be installed in such a way to ensure desired air flow direction in the system.

The air flow direction of the fans can be determined by appropriate installation (see operation/use above). The discharge is possible in any direction by changing the discharge adapter and side panels to suit to desired result. Therefore most desired discharge options are available.

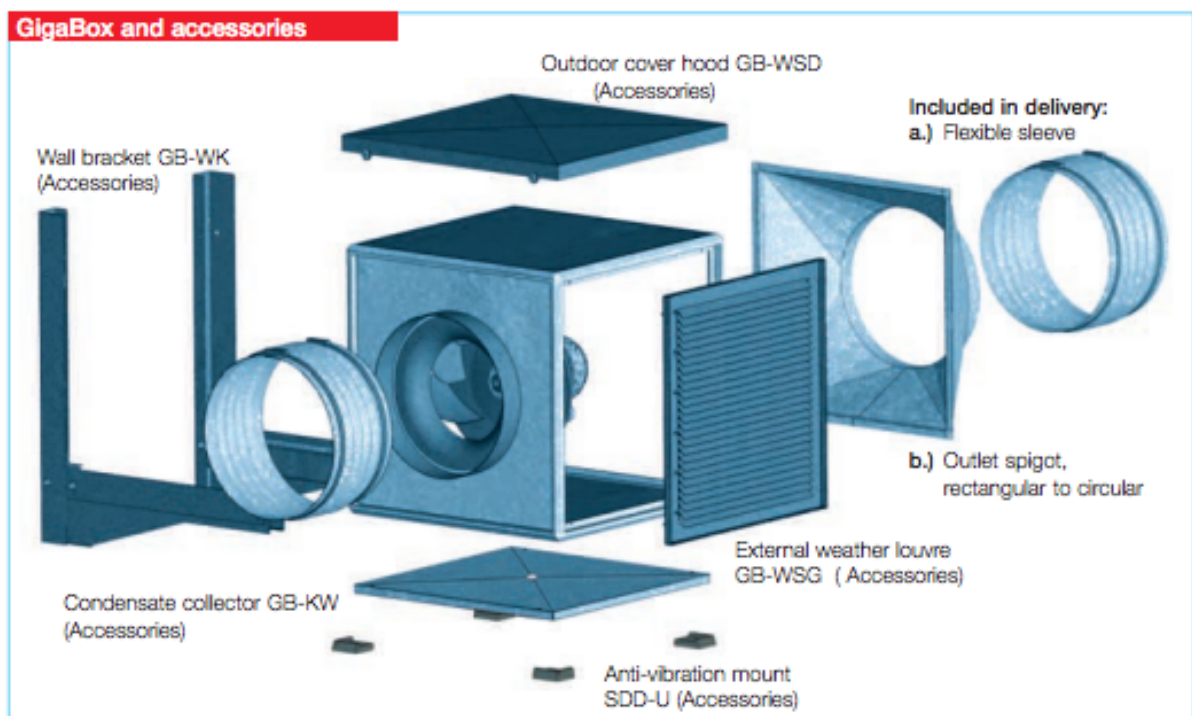
2.3.16 Speed control

All units (except GB 630/4 T120, GB 710/4 T120) are speed controllable via a 5-step transformer controller (accessories). The 3 phase units can also be operated via star-delta connection giving 2 speed steps (accessories - 2 speed switch DS 2 or motor protection unit M 4).

The use of the other brands, especially other electronic devices, can lead to malfunctioning and even failure of controller and/or fan. Controllers, which have not been cleared by Helios, are not liable for warranty and guarantee claims.

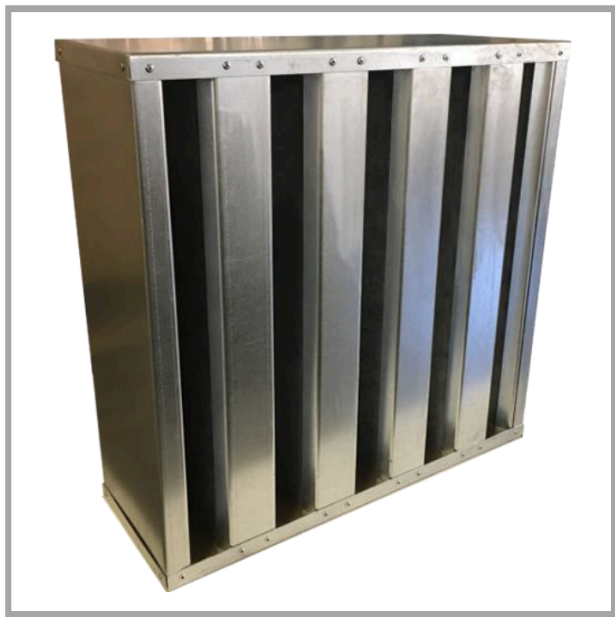
2.3.17 Motor protection

All Gigabox T120 units are equipped with maintenance-free motors with build-in thermal contacts, suitable for continuous operation S1, insulation class F. All units should be connected to a suitable motor protection device (accessories, see catalogue). Only through this an approved motor protection is achieved.



2.4 Filters

2.4.1 Activated Carbon Filter



Operational Criteria

As far as possible water vapour should be eradicated from the air-stream to eliminate condensation within the filter that could cause porous blockage causing a dramatic increase in resistance – this also applies to loose carbon, however humidity levels as high as 80% RH are normally acceptable providing no interstitial condensation takes place.

Air-stream temperatures entering the filter in excess of 40°C should be avoided. In the case of anticipating temperatures above this level steps should be taken to reduce the temperature to an acceptable level by fresh air bleed, cooling coil or heat exchanger. In catering and food preparation applications smoke and grease must be removed from the air-stream prior to entry into the carbon

Dwell Times

In order to ensure a carbon filter operates satisfactorily certain criteria need to be met which do not apply to particulate filters. The most important aspect is the “dwell time” (the period of time the air is in contact with the carbon). The minimum dwell time used is 0.1 seconds and this is shown below as maximum permissible airflow. The dwell time may increase considerably according to the contaminant to be removed.

Application

Carbon filtration is ideal for removing unpleasant or even dangerous odours and gases from a wide variety of sources.

The ever increasing awareness of this problem from public health authorities and environmentalists has resulted in an increase in the use of the unique properties of activated carbon filtration.

Carbon will adsorb chemical molecules in the air stream in varying degrees according to the type of contaminant and the period of time the air remains resident in the carbon. Activated Carbon in its loose granular form can present problems as there is a tendency for granules to abrade one another, this causes both settlement of the carbon – creating potential bypass voids and produces carbon dust that can be re-entrained into the air-stream. The unique bonding method eradicates these problems by producing a solid and stable biscuit of consistent quality and dimensional stability that produces an even resistance. Once formed the biscuits are bonded in a rigid mitred ‘U’ channel Frame for a panel or into a galvanised steel case for the discarb.

Technical Information

Due to the complex nature of adsorption, carbon filters are generally designed to suit the application, however, the following information is given as an indication of the physical requirements for their use.

Filter Type	Typical Panel Size (HxWxD)	Maximum Permissible Airflow (m ³ /s) at 0.1 sec dwell time	Resistance at 0.1 sec (pa)	Resistance at 0.2 sec (pa)
Panel Frame	595 x 595 x 20mm	0.07	100	50
Panel Frame	595 x 595 x 45mm	0.16	100	50
Panel Frame	600 x 600 x 22mm	0.07	100	50
Panel Frame	495 x 495 x 18mm	0.06	100	50
Discarb	597 x 297 x 597mm	0.52	130	65
Discarb	597 x 597 x 293mm	0.52	130	65
Discarb	597 x 198 x 597mm	0.34	130	65
Discarb	597 x 597 x 597mm	1.04	130	65

2.4.2 BAFFLE GREASE FILTER

ACE FILTRATION LTD

TECHNICAL DATA SHEET: AF111

BAFFLE GREASE FILTER TYPE VEEVENT

Construction

Outer frame: Rolled stainless steel section with safety edge. Drain holes in both top & bottom leading edge, allowing filters to be installed either way up.

Baffle plates: Unique profiled stainless-steel section ensuring maximum airflow and optimum grease retention.

Handles: Fitted as standard on short side.

Maintenance:

As the VEEVENT baffle filter is self draining, all that is required is to wash the filter occasionally in a mild detergent.

STANDARD SIZES AND TECHNICAL DATA

Nominal Size (w x h x d)	Actual Size (w x h x d)	Rated Airflow	Operating Pd
500x250x50	495 x 241 x 48	0.23 m ³ /s	80 Pa
500x400x50	495 x 394 x 48	0.36 m ³ /s	80 Pa
500x500x50	495 x 495 x 48	0.45 m ³ /s	80 Pa
450x450x50	445 x 445 x 48	0.36 m ³ /s	80 Pa
400x400x50	394 x 394 x 48	0.29 m ³ /s	80 Pa

Notes: In order to get good grease retention a slot velocity of between 4.5 and 5.5 m/s is recommended. Standard sizes only available. For specific performance data please contact the Sales Office on 01474 325666.

2.4.3 Grease Filters

Standard Mesh Type Grease Filters

for Kitchen Extracts and Canopies

Applications

Mesh Grease Filters are generally installed in the kitchen canopy above cooking ranges, fryers, and gas hobs in commercial restaurant kitchens. These air filters effectively eliminate or greatly reduce grease build up in duct work and on fans in the kitchen extract system.



Mesh Canopy Filters significantly reduce the frequency of expensive duct cleaning, and offer some protection against grease-fire hazards.

Airclean now have many thousands of mesh grease filters operating satisfactorily in leading restaurants, hotel kitchens and ship's galleys.

Description

The grease filtration media is a crimped galvanised knitted wire mesh, that is enclosed in either an aluminium or galvanised channel frame. Galvanised steel retaining meshes are fitted to both faces of the grease filter, and corner plates provide rigidity.

Handles are normally desirable on grease filters for ease of removal and cleaning, but these are optional. Drain holes also provide an outlet for grease to drain away from the filter into drain trays and grease traps.

Stainless Steel Mesh Type Grease Filters are available and these can be found as our Gridmesh Style Grease Filter. See AC3.4 Stainless Steel Gridmesh Grease Filters for further information.

Technical

Filter Classification: Grade G2/G3 to EN779 Maximum Operating Temperature: 100°C (212°F)
Maximum Recommended Face Velocity 2.5 m/s

Size		Flow Rate	Filter Depth	
OT Inches	Actual mm	m ³ /s	1" (22mm) Part No	2" (47mm) Part No
10 x 10	242 x 242	0.15	1310101	1310201
12 x 12	292 x 292	0.21	1310102	1310202
15 x 15	369 x 369	0.34	1310103	1310203
16 x 16	394 x 394	0.39	1310104	1310204
18 x 9	445 x 216	0.24	1310105	1310205
18 x 18	445 x 445	0.50	1310106	1310206
20 x 10	495 x 242	0.30	1310107	1310207
20 x 16	495 x 394	0.49	1310108	1310208
20 x 20	495 x 495	0.61	1310109	1310209
25 x 16	623 x 394	0.61	1310110	1310210
25 x 20	620 x 495	0.77	1310111	1310211
24 x 24	597 x 597	0.89	1310112	1310212

Notes

- Actual sized filters will be manufactured as ordered +/- 3mm
- Clean Pressure Drops 1" -25Pa, 2" - 30Pa, based on FV= 2.5m/s
- Handles and Drain Holes come as standard and are only removed upon request.
- Handles are located on the shortest side of the grease filter as standard.
- Alternative Frame Materials available : Aluminium (1315990), Stainless Steel 430 (1315991), Stainless Steel 304 (1315992)
- Heavy Duty Grease Filters with 25% extra filter media are available on request (Increased Pressure Drop).

Grease Filter Cleaning

To ensure the prolonged efficiency and life of a kitchen mesh grease filter they must be cleaned regularly (according to use).

Airclean offer a range of suitable Grease Filter Cleaning Tanks (Heated and Non Heated), and Non Caustic Cleaning Agents (See Catalogue Section 8, Page AC3.8).

Alternative cleaning solutions for grease filters include steam cleaning or an automatic dishwasher.



2.5. Electrostatic Precipitation (ESP)

Brand :

Air Boss® T-Series *Electronic Air Cleaners*

Model: T2002



2.5.1. Introduction

The Trion® T-Series is ideal for the removal of smoke, fumes, and oil/coolant smoke and mist. The T-Series has the ability to clean contaminated indoor air and recirculate it back to the work area, reducing energy costs by not having to exhaust conditioned air to the outside. Models T1300, T2600 and T5200 can be installed either unducted or ducted for source capture. Models T1001 and T2002 are designed for in-ducted capture.

Features

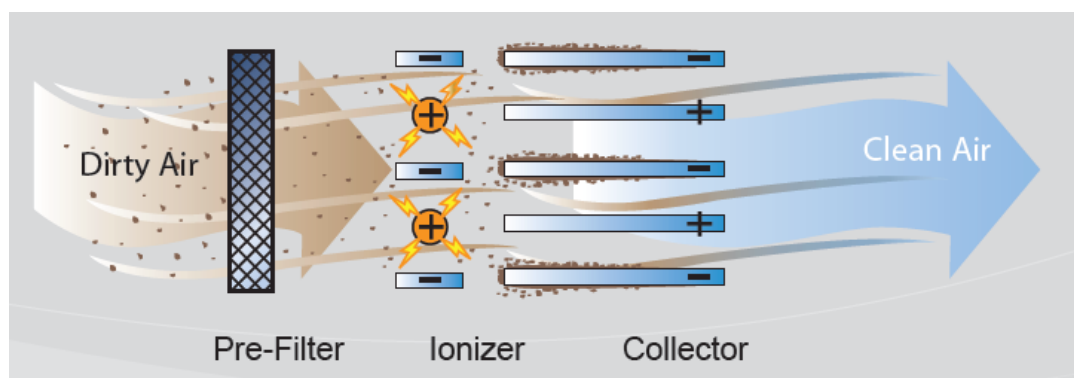
- Solid State Power Supply
- Spiked Ionizing Blades
- Extra Depth Collector Cells
- Totally Enclosed Fan Cooled Motor
- Electrical Component Box Mounted out of Air Stream
- Optional Multi-Purpose Plenum
- Motor HP Options for Added Static Pressure

Benefits

- Self Glazing Ceramic Insulators: Out of Airstream; Impervious to Liquids; Provide Operational Longevity and Power Supply Life; Easy to Clean
- Extra Depth Collector Cell with More Dirt Holding Capacity
- Spiked Ionizer: No Ionizing Wires to Replace, Reducing Maintenance and Replacement Cost
- High Efficiency: Up to 95% on Single Pass and 99% on Double Pass Option
- Permanent Ionizer/Collector Elements: No Filter Replacement Cost; Just Wash, Dry and Reinstall
- Low Pressure Drop: Lower Energy Cost to Operate Compared to Media and Cartridge Units
- Hinged Filter Access: No Tools Required for Quick and Easy Service

2.5.2. How It Works

The Trion® T-Series utilizes the principle of Electrostatic Precipitation. Air is drawn by the motor/blower through a washable metal mesh pre-filter which traps large dust particles. The remaining particles, some as small as 0.01 microns, pass into a strong electrical field (ionizing section) where the particulate receives an electrical charge. The charged particles then pass into a collector plate section made up of a series of equally spaced parallel plates. Each alternate plate is charged with the same polarity as the particles, which repel, while the interleaving plates are grounded, which attract and collect.



2.5.2. Specifications

Air Boss® T2002 Specifications



T2002 Blowerless

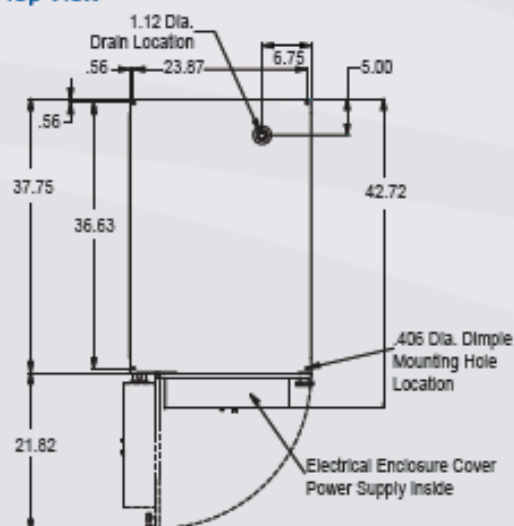
Dimensions	25" L x 43" W x 21" H
Installation	Suspended, Wall, Frame Or Duct Mounting
Unit Weight	148 Lbs., Shipping Wt. 221 Lbs.
Air Volume	1600 - 3200 CFM
Controls	On/Off Switch with Indicating Light
Pre-Filter (2) Required	Aluminum Mesh Standard 18.4" L x 18.4" W x .88" D Optional Impinger
Primary Filter (2) Required	Standard Forever Filter - Electronic Ionizer/Collector Cell Optional Bag Filter Optional Absorber Module
After Filter (2) Required	Optional Disposable Charcoal After Filter 18.4" W x 18.4" H x .88" D
Power Supply	High Frequency Solid State Design
Efficiency	To 95% Based On D.O.P. Test Method, To 99% for Double Pass (Calculated)
General	Multiple Units can be Joined Together for Increased Volume or Higher Efficiency

Standard Specifications for Each Unit

Cabinet	16 Gauge Welded Galvanized Steel
Finish	Blue Epoxy Powder Coat
Air Flow	Horizontal — Standard Right to Left (Left to Right Option)
Accessories	Optional Source Capture Plenum Optional Brass Drain Fitting

Note: Units can be stacked in configurations up to 16000 CFM.

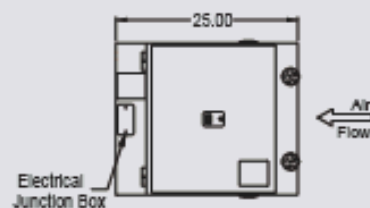
Top View



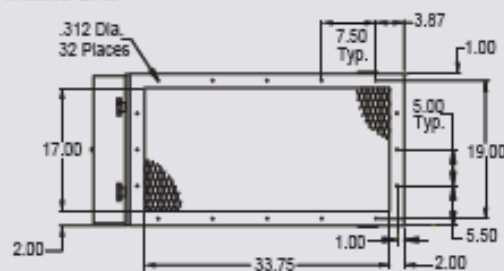
Discharge End



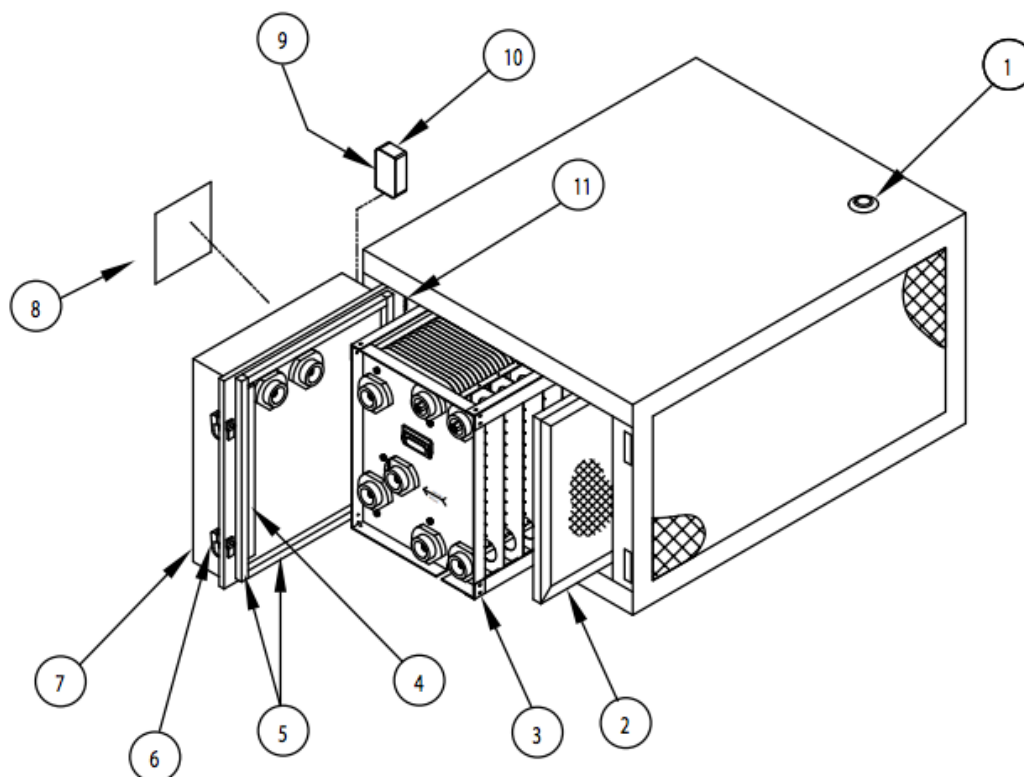
Front View



Intake End

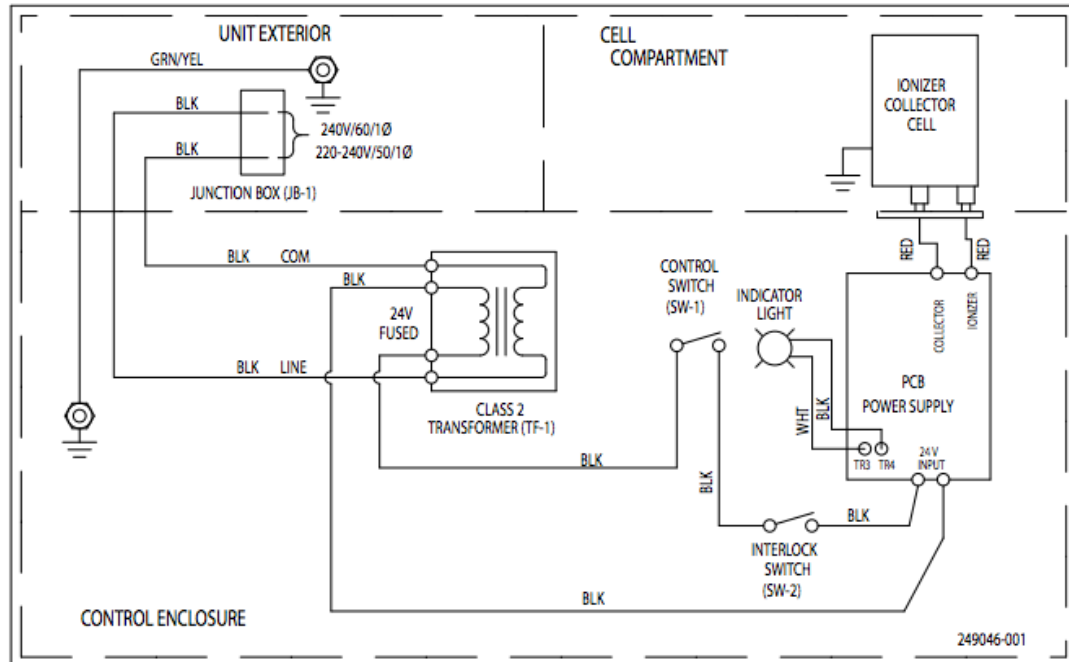


2.5.3. T2002 Module Assembly



Item	TRION Part No.	Description	Qty.
1	247962-002	Cap Plug	2
2	224451-006	Aluminum Mesh Prefilter	2
3	450568-001 (English) 450568G-001 (Metric)	Ionizer Collector Cell	2
4	224779-028	Gasket, Adhesive Back (3/4" x 11/16")	19"
5	224779-015	Gasket, Adhesive Back (1" x 1/4")	86"
6	334562-005	Draw Latch	2
7	348667-001	Control Enclosure Assembly	1
8	252029-001	Label	1
9	149882-001	Outlet Box Cover	1
10	249884-001 (English) 249884G-001 (Metric)	Outlet Box	1
11	146442-001 (English) 146442G-001 (Metric)	Hinge	2

2.5.4. T2002 Wiring Diagrams



2.5.5. Operating Principles

Commercial kitchen exhaust pollution is composed of two distinct phases:

- The particulate phase; oil, smoke and grease particles.
- The gaseous or odour phase.

2.5.6. Oil, Smoke and Grease Filtration

The primary function of Electrostatic Precipitators (ESPs) is to effectively filter the particulate phase (oil, smoke and grease) of extracted kitchen fumes.

The Unit covered by this manual utilises an ionisation process to filter particulates in the exhaust down to a sub-micron level, with an efficiency of up to 98% when fitted correctly.

The ESP Filters have been exclusively designed for filtering extracted kitchen fumes and have integral sumps built in to collect the oil and grease particles.

2.6. Odour Neutraliser

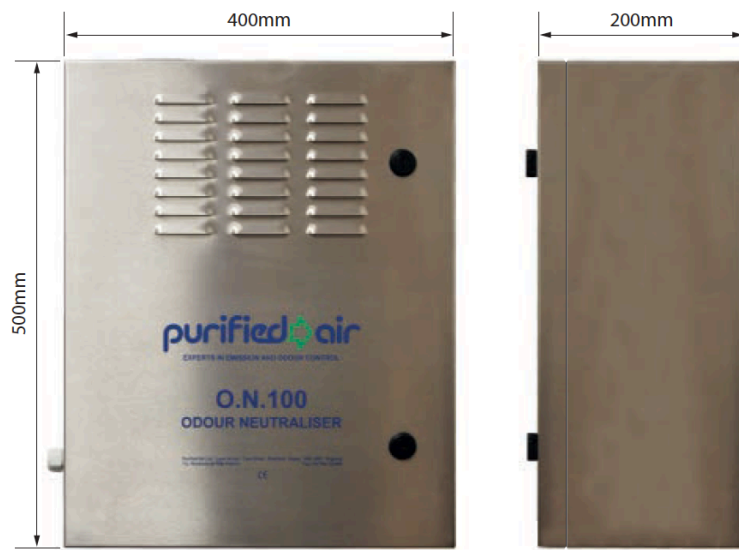
Brand : Purified Air

Model : O.N.100 Odour Neutraliser

2.6.1. Technical Specifications

The technical specifications of the O.N.100 are listed below:

Electrical Supply	220/240V 50Hz
Max Power Consumption	50 Watts
Ionisation Voltage	12kV negative
Max Air Volume	up to 4.16m ³ /sec
Weight:	12.25kg



2.6.2. Features

When installed correctly, Purified Air's O.N.100 has the following features and associated benefits:

- Instant control of odours via the ELIMINODOR[®] concept, with up to to 90% of odours eliminated.

Dependent on the level of activity within the kitchen, only a faint odour of cooking or

ELIMINODOR[®] (the neutralising chemical) will be detected directly at the discharge.

- A visual indication of the neutralising chemical's (ELIMINODOR[®]) level.
- Fully adjustable.
- Simple and economical to maintain.
- Easily installed into new/existing systems.
- No resistance to airflow in the extraction duct.

The O.N.100 does not cause any pressure drop and can therefore be installed into any new or existing system without needing to upgrade the fan.

- User-friendly controls.

The O.N.100 works by adding an odour neutralising chemical (ELIMINODOR[®]) to the airstream extracted from the kitchen.

The ELIMINODOR[®] neutralising chemical produced by Purified Air Limited combines odour neutralising agents with materials that impart a pleasant scent to the air.

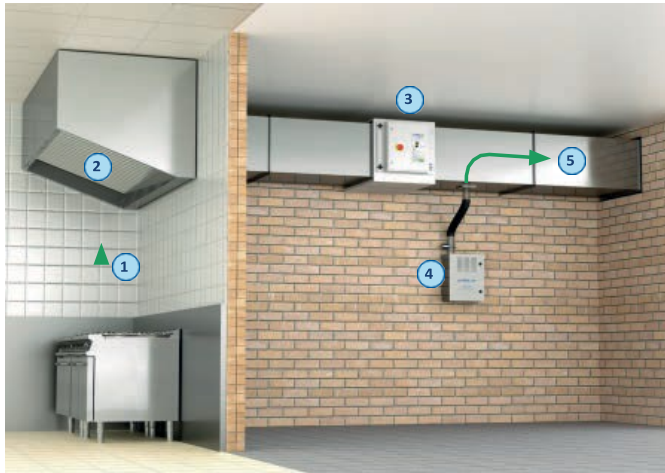
The O.N.100 unit is supplied with an Eliminator fluid level, float indicator, built into the tank. This provides a volt free contact to indicate when the Eliminator has reached a low level and requires topping up that can be connected to a BMS system if required.

2.6.3. Operating Principles

After being cleaned of the majority of particulate contaminants by suitable Purified Air Units, the gaseous phase of the contamination passes the O.N.100 Unit for odour elimination by the Odorfoyl process as follows:

1. Ambient air is drawn into the Unit and mixed with the odour neutralising chemical (ELIMINODOR[®]).
2. A vapour is formed which is then ionised to a negative potential of 15,000V by a High Voltage Power Supply.
3. The flow of neutralising chemical (ELIMINODOR[®]) is controlled by the air velocity within the duct therefore, once a system is commissioned and balanced, the optimum dosage will always be supplied.
4. The metal ducting is earthed through the High Voltage Power Supply's circuit giving the contaminants an opposite potential to the negatively charged vapour.

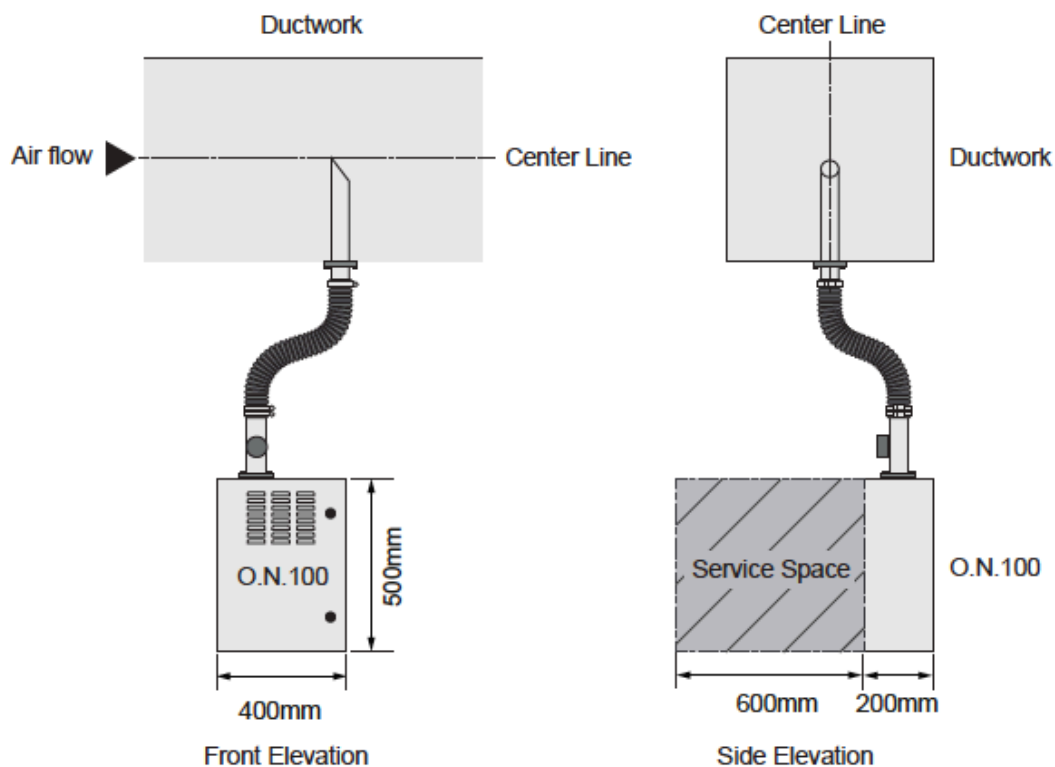
5. The electrostatic difference between the contaminants and the neutralising vapour causes the two to combine, facilitating chemical reactions between them which neutralise the malodour.



- 1 Cooking particulates and odours
- 2 Canopy Grease Filter
- 3 ESP - Particulate Control Unit
- 4 ON100 Odour Control Unit
- 5 ELIMINODOR[®] joins airflow

2.6.4. Installing O.N. 100

To install and setup the O.N.100, first install the main Unit and then connect the Venturi Tube and Spigot to the extraction ducting.



2.7. Ventilation Air System Calculation

Supply ventilation system

Close area of Premises = 69 m^2

Air quantity per $\text{m}^2 = 0,9 \text{ l/s.m}^2$

$$\begin{aligned} \text{Close area of Premises} \times \text{Air quantity per } \text{m}^2 \times 3,6 \text{ (} \frac{\text{m}^3}{\text{h.l}} \text{)} = \\ 69 (\text{m}^2) \times 0,9 (\frac{\text{l}}{\text{s.m}^2}) \times 3,6 (\frac{\text{m}^3}{\text{h.l}}) = 223 \frac{\text{m}^3}{\text{h}} \end{aligned}$$

The average number of person = 30 person

Air quantity per person = $3,8 \text{ m}^3/\text{s}$

$$\begin{aligned} \text{The average number of person} \times \text{Air quantity per person} \times 3,6 \text{ (} \frac{\text{m}^3}{\text{h.l}} \text{)} = \\ 30 \text{ person} \times 3,8 (\frac{\text{l}}{\text{s}}) \times 3,6 (\frac{\text{m}^3}{\text{h.l}}) = 410 \frac{\text{m}^3}{\text{h}} \end{aligned}$$

$$223 \frac{\text{m}^3}{\text{h}} + 410 \frac{\text{m}^3}{\text{h}} = 633 \frac{\text{m}^3}{\text{h}}$$

Total Supply Ventilation x Factor of Safety =

$$633 \frac{\text{m}^3}{\text{h}} \times 1,25 = 791 \frac{\text{m}^3}{\text{h}}$$