PUREAIREPRO

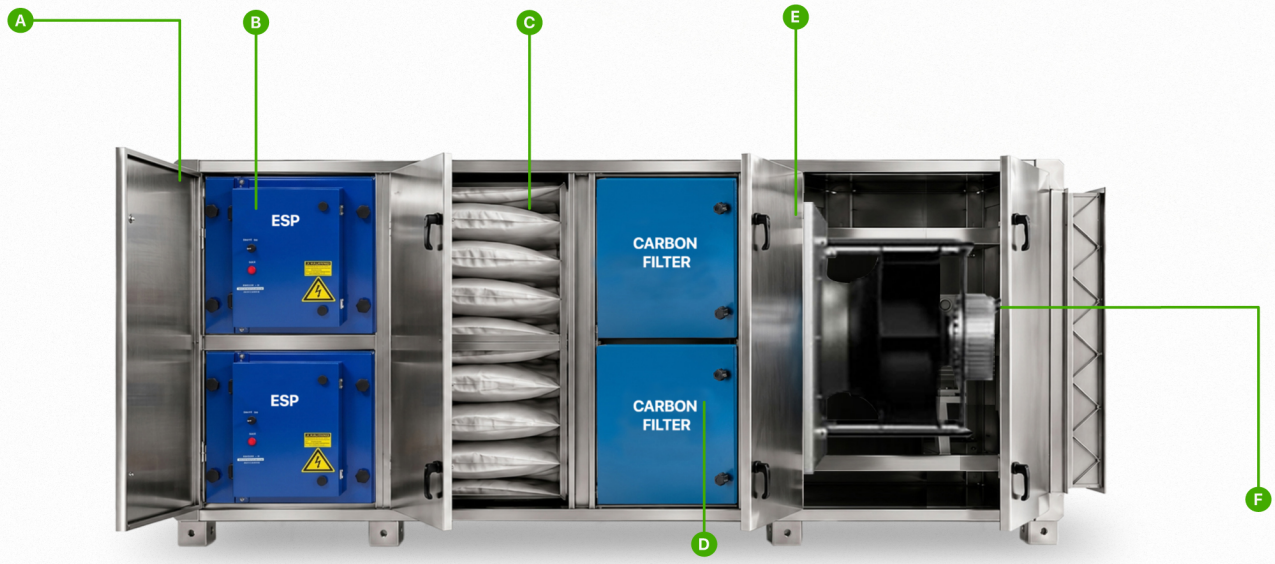
E-100-DSP



Kitchen Ecology Unit Datasheet

www.pureairepro.com

Pureairepro E-100-DSP



Application	Casing Material	Construction	Fan Integration
Commercial Restaurant Kitchen	316 Grade Stainless Steel	Single/Double Skinned Panel Design	Plug Fan

Model	Dimensions	Airflow Range		External Static Pressure	Fan
		CFM	CMH(m^3/h)		
Pureairepro E-100-DSP	2000 x 643 x 534 +100 (legs)	1000-2300	1699-3907	500 Pa	K3G310-PV69-03

All dimensions may differ based on the fan selection



(A) Alumininum Pre-filter

Primary mechanical barrier — the first line of defence against bulk grease and coarse particulates entering the filtration system.

Filter media: Aluminium mesh / multi-layer expanded metal construction

- UL Listed, commercial-grade Aluminium Pre-filter
- Thickness: 2 inches (50 mm) for adequate grease-holding capacity
- Efficiency rating: MERV 8 per ASHRAE Standard 52.2 — captures particles ≥ 3 µm
- Grease capture efficiency: ~40% of total grease load, protecting downstream stages
- Frame: Rigid aluminium extrusion — corrosion-resistant, fully washable, and reusable
- Maintenance: Remove, degrease, and reinstall; typical service interval every 2–4 weeks depending on cooking load
- Purpose: Extends service life of electrostatic cells and bag filters by preventing premature loading

Filter Name	ALUMINIUM PRE-FILTER
Media	ALUMINIUM MEDIA
Frame	ALUMINIUM / GALVANIZED STEEL
Filter Depth	1/"2"/4"
Special Size available	YES
Maximum Operating temperature	80° C
Filter Class EN779:2012	G2
Filter Class ASHRAE 52.2:2007	MERV 4
Certification	UL 900

Filter size	Arrestance	Resistance (inch.W.G)	
inches		350fpm	500fpm
24X24X1	62.0%	0.04	0.085



(B) Electrostatic Precipitator (ESP)

High-voltage ionisation stage that electrostatically charges and collects sub-micron grease aerosols and smoke particles invisible to mechanical filters.

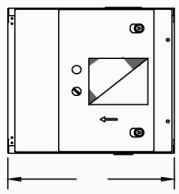
- UL Listed, commercial-grade Electrostatic Precipitator (ESP)
- Operating principle: Two-stage electrostatic precipitation — ioniser wires charge particles; collector plates attract and retain them
- Target particle range: 0.01 µm – 1.0 µm (sub-micron grease mist, cooking smoke, fine aerosols)
- Collection efficiency: >95% on sub-micron grease particles at rated airflow
- Cell voltage: High-voltage DC supply (~8,000–12,000 V ioniser; ~4,000–6,000 V collector)
- Certification: UL Listed — meets UL 867 standard for electrostatic air cleaners
- Maintenance: Cells slide out for periodic wash-down; power-wash or dishwasher-safe (check OEM guidance)
- Safety: Automatic high-voltage shutdown on cell removal; arc-fault protection built in

T1001

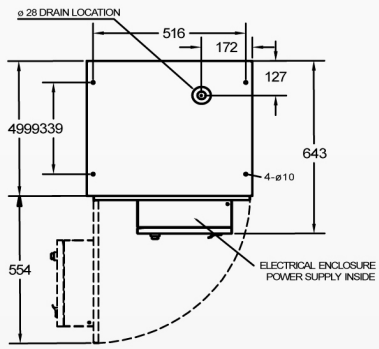
The T1001 is designed for in- duct installation where other external sources provide air movement. It has a single combined aluminum ionizer/collector cell with stainless steel spiked ionizers and an air volume range up to 4,000 CMH.

T1001 specifications	
Dimensions (mm)	560D x 643W x 534H
Installation	Suspended, wall, frame, or duct mounted
Unit weight (kg)	50
Input voltage	220-240V/50Hz/1PH
Ionizer/collector output voltage	12kV/6kV
Product power (w)	30
Number of cells	1
Airflow (CMH)	4,000 (2,354 CFM)
Pressure drop (Pa)	≤65
Flange size (mm)	499 x 534
Controls	Power switch with an indicator light
Pre-filter	460L x 460W x 22.2D Standard aluminum mesh Heavy oil filter (optional)
Primary filter	Standard forever filter - electronic ionizer/ collector cell
After-filter	Activated carbon plate filter (optional)
Power supply	High-frequency solid- state design
Efficiency	To 95% based on ASHRAE 52.2 To 99% for double pass (calculated)
Construction	Welded galvanized steel, 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns
Finish	Blue epoxy powder coating (RAL 5017)
Particle size	0.01 to 10 microns
General	Multiple units can be joined together for increased volume or higher frequency

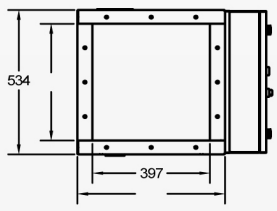
FRONT VIEW



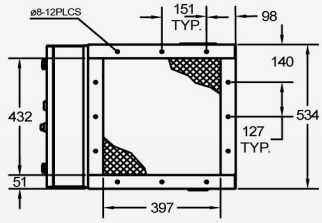
TOP VIEW

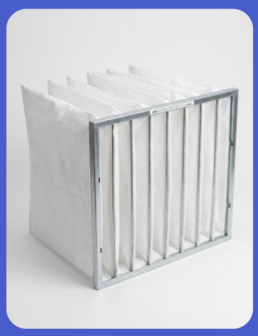


DISCHARGE END



INTAKE END





Ⓒ Poly bag filter

High-efficiency final mechanical stage that captures fine residual particulates not collected by the ESP, ensuring clean air discharge.

- UL Listed, commercial-grade Poly Bag Filter
- Filter class: MERV 13 per ASHRAE Standard 52.2 — equivalent to EN779 F7
- Depth: 15 inches (380 mm) multi-pocket (bag) design for high dust-holding capacity
- Efficiency: 90–95% on particles 1.0–3.0 µm; >98% on particles ≥ 3 µm
- Media: Synthetic non-woven polyester micro-fibre — moisture-resistant and dimensionally stable
- Pocket count: Multiple pockets increase effective media area, reducing face velocity and pressure drop
- Initial pressure drop: Typically 80–120 Pa at rated airflow; replace at terminal pressure drop per design spec
- Frame: Rigid galvanised or plastic header frame — sealed to prevent bypass leakage
- Purpose: Polishes exhaust air, captures any ESP-escaped particles and carbon fines, meets emission standards

PRODUCT DESCRIPTION

POLY-PAC Filters are medium to high efficiency extended surface self-supported pocket (bag) filters made of super fine synthetic (polyester) filter media. The progressive density multi –layered fiber arrangement offers excellent filtration performance combined with very high dust holding capacity.

EXCELL-HVAC POLY-PAC filters are ideal air contributing system in Hospitals, Pharmaceutical plants, food processing plants etc.

IMPORTANT FEATURES

- Very high dust holding capacity.
- Washable.
- Low Pressure Drop.
- Long Service Life.
- Environmentally friendly.
- Suitable for 100% humidity

1) DESIGN & CONSTRUCTION

POLY-PAC, self-supporting bag filters are made up of superior grade synthetic filter media.

2) ASHRAE RATING

Available in G4 (EN779) 30% - 40% (Ashrae Dust Support).

3) SPECIFICATIONS:

Filter Name	POLY-PAC
Media	Synthetic polyester
Frame	GALVANIZED STEEL/Aluminum
Frame thickness	20MM ,25MM, 28 MM
Special Size available	YES
Filter Class EN779:2012	G4
Filter Class ASHRAE 52.2:2007	MERV 6
Maximum Operating temperature	65° C



(D) Activated Carbon Filter

Chemical adsorption stage that eliminates odours, VOCs, and gaseous cooking by-products before discharge to atmosphere.

- Brand / model: Trion V-Carbon — granular activated carbon in flat panel (tray) configuration
- Adsorption mechanism: Physical adsorption — microporous carbon surface traps gas-phase molecules
- Target contaminants: Cooking odours, hydrogen sulphide (H_2S), nitrogen dioxide (NO_2), acrolein, aldehydes, and other VOCs
- Carbon bed depth: Sufficient for meaningful dwell time at design face velocity
- Face velocity recommendation: ≤ 0.5 m/s to maximise contact time and adsorption efficiency
- Carbon type: Virgin activated carbon (coconut shell or coal-based) with high iodine number (≥ 900 mg/g)
- Service life: Typically 6–12 months depending on cooking type and hours of operation; replace when breakthrough odour is detected
- Panel configuration: Modular trays allow partial replacement without full system shutdown

V-Carbon T-1001

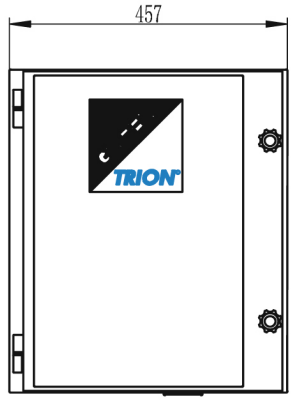
TRION V-carbon adopts U-shaped structure design and is filled with high-quality activated carbon particles, which can effectively adsorb and remove the odor in oil fume. Modular design can be quickly assembled with the kitchen air cleaners, to meet different types of kitchen applications.

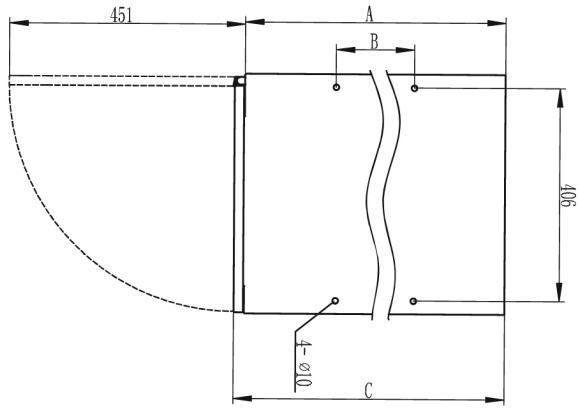
Specification

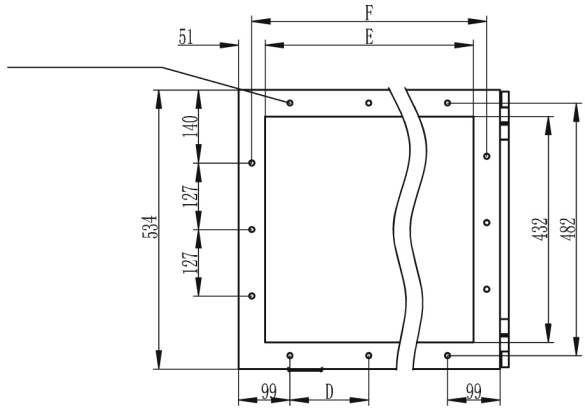
V-Carbon T1001	
Applicable Product	T1001
Filter Area (sqm)	0.4
Dimension (DxWxH) mm	457x520x534
Flange size (mm)	499x534
Airflow (CMH)	4000 (2354 CFM)
Unit weight (kg)	34 kg
Pressure drop (Pa)	less than or equal to 140

A in mm	499
B in mm	153
C in mm	519
D in mm	150.8
E in mm	397
F in mm	448
G (quantity)	24

Dimensions







(E) UV-C Germicidial Irridation filter



Primary mechanical barrier — the first line of defence against bulk grease and coarse particulates entering the filtration system.

- UL Listed, commercial-grade UV-C Germicidial Irridation filter
- UV wavelength: 253.7 nm (UV-C band) — optimal germicidal wavelength for DNA/RNA disruption
- Micro-organism inactivation: Bacteria, viruses, moulds, and fungal spores in the exhaust airstream
- Odour reduction: Photolysis of residual VOC molecules not fully captured by carbon stage
- Lamp type: Low-pressure mercury UV-C lamps or UV-C LED arrays (OEM-specified)
- Dose: System designed to deliver sufficient UV dose (μW·s/cm²) at design airflow velocity
- Safety: Enclosed within duct — no direct UV exposure to personnel; end-of-lamp-life indicators recommended
- Lamp life: Typically 9,000–12,000 hours; replace annually or per lumen-output monitoring
- Controls: Interlocked with system fan — UV lamps de-energise when airflow stops
- Application benefit: Particularly recommended for high-volume cooking operations (grills, fryers) and where discharge is near occupied areas

Saber UV deodorization equipment, uses the ultraviolet light generated by the UV lamp and ozone generated in the reaction of oxygen in the air, photolysis oxidative decomposition of odor in smoke and oil, thereby effectively reducing the odor in the exhaust. Suitable for places where odors of food fumes are purified, such as restaurant in hotel, commercial building restaurant, food courts and etc.

High Quality UV lamp

Saber UV uses imported high-quality quartz UV lamps, nano-scale coatings and high-quality filament technology to ensure the UV output and deodorizing effect of the product.

① Imported Brand
② 12000h life time
③ High in Power

Control Display

Saber UV is equipped with operating indicator and fault indicator that display the status of the device.

Lightbox Module Interlocking Design

The interlocking design between the light box modules, convenient for extraction and pushing in on one side, and also ensures the tight connection between the light boxes.

Safety Switch

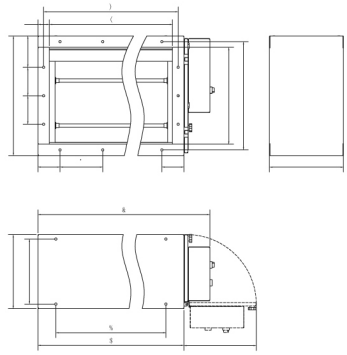
Saber UV deodorization device comes with a safety switch open door for power failure protection, and a manual power switch, to ensure the product is safe to use ans safe for doing maintenance.

Fan Linkage

Linked with a fan to ensure that the equipment and the system are operate collaboratively.

Aviation Joint

Saber UV comes with an aviation connector for power line connection between light box modules; this connector uses zinc alloy chrome plating to prevent rust and is durable, with I67 protection grade, safe and reliable.





(F) Plug EC Fan

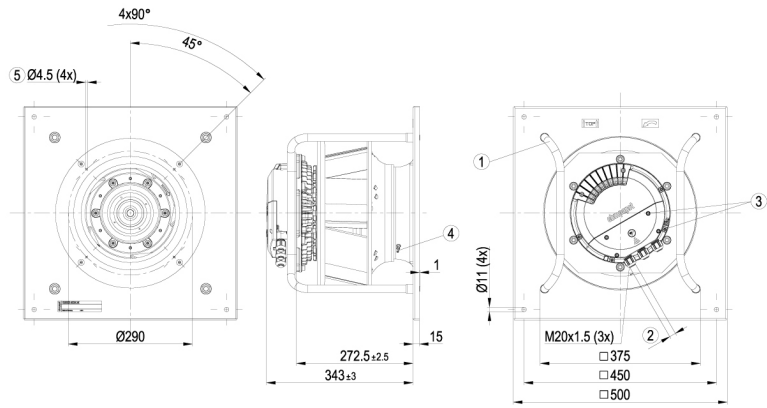
System air-mover — engineered to overcome the cumulative static pressure of all filtration stages and deliver design airflow under all operating conditions.

- High-efficiency EC centrifugal plug fan with backward-curved, single-intake impeller, designed for reliable and energy-efficient air movement in commercial kitchen ventilation and Ecology Unit applications. The fan incorporates an electronically commutated (EC) motor with integrated control electronics, providing variable-speed operation, high efficiency, soft start, motor protection and advanced monitoring capabilities.
- Fan type option B: EC (Electronically Commutated) direct-drive plug fan — integrated VFD, IE5 motor efficiency class
- Duty point: Selected and matched to system total static pressure (TSP) at design volumetric airflow (CFM / m³/h)
- Speed control: Variable Frequency Drive (VFD) enables demand-controlled ventilation — fan speed adjusts to cooking load
- Drive arrangement (belt-drive): Adjustable sheaves for field airflow balancing; belt and bearing inspection access provided
- Motor: TEFC (Totally Enclosed Fan-Cooled), suitable for grease-laden air; Class F insulation minimum
- Casing: 316 stainless steel fan section with integral acoustic insulation — meets noise attenuation requirements
- Access: Hinged or removable access panel for fan wheel inspection, cleaning, and belt tensioning

Nominal data

Type	**K3G310-PV69-03**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	4000
Power consumption	W	3050
Current draw	A	4.7
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40



ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	60	56.6
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		65.4	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	3.07
09 Air flow q_v	m³/h	4020
09 Pressure increase p_{fs}	Pa	1583
10 Speed (rpm) n	min^{-1}	3980
11 Specific ratio*		1.02

Data obtained at optimum efficiency level.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-206389

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).