



GT FLOW



TECHNICAL DATA SHEETS



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DIRECTORY



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GT FLOW

FAN FILTER UNITS



Guardtech offer a range of filtration solutions to best suit the needs of your application. Whether it's budget, lead time or performance that matters most, Guardtech provide a comprehensive choice of fan filter units (FFUs) to ensure your process requirements are achieved.

Whether it's a more economical energy-saving FFU with reduced power consumption you prefer, or a fan filter unit with the option to perform a Roomside Filter Change, the Guardtech Group's Directors, Design Engineers and Installation team have worked together to carefully select four industry-leading filtration options for your consideration.

Read on to discover the benefits and compromises of the different choices we have, then use this guide to make the most informed FFU choice possible.

Let Guardtech take your operation to the next level.



FLOW PHARMA

GT Flow Pharma is Guardtech's preferred GMP Pharmaceutical filtration solution – a high-integrity gel-seal terminal hood, supplied by an AHU and plenum, delivering HEPA-filtered air for demanding applications.



FLOW MAX

GT Flow Max is a new generation low profile energy-saving EC Fan Filter Unit with superior performance and addressable control systems – featuring Roomside Filter Change as standard and a gel seal.



FLOW PRO

GT Flow Pro is a robust, reliable Fan Filter Unit (FFU) with an efficient EC motor and H14 HEPA filters, which helps to deliver on low energy consumption. This FFU implements a gel seal.



FLOW PLUS

GT Flow Plus is Guardtech's mid-level Fan Filter Unit (FFU) – featuring an efficient AC motor which helps to deliver on low energy consumption, this FFU implements a gel seal.



FLOW LITE

GT Flow Lite is Guardtech's entry-level filtration solution – an economical HEP-Box terminal filtration solution, supplied by an AHU and plenum to provide dependable HEPA-filtered airflow for laboratories.



FLOW FIRE

This product range does not currently include a Fire Rated solution. Please consult a Guardtech rep for more information on your fire safety options.





GT FLOW PHARMA

GT Flow Pharma is Guardtech's preferred GMP Pharmaceutical filtration solution – a high-integrity gel-seal terminal hood, supplied by an AHU and plenum, delivering HEPA-filtered air for demanding applications.

GT Flow Pharma is a high-integrity gel-seal terminal hood designed for demanding cleanroom and controlled-environment applications, including Pharmaceutical manufacturing, Biotechnology, Life Sciences, Healthcare and Research.

Unlike a self-contained Fan Filter Unit, GT Flow Pharma does not incorporate an internal fan. Conditioned air is supplied by a central Air Handling Unit through ductwork and a dedicated plenum before passing through the terminal HEPA or ULPA filter and into the cleanroom.

Its rigid, fully welded, airtight construction is manufactured from corrosion-resistant steel with a durable RAL 9010 epoxy powder-coated finish. A stainless steel construction and specialist coatings are also available for applications requiring enhanced chemical resistance or compatibility with aggressive cleaning and decontamination processes.

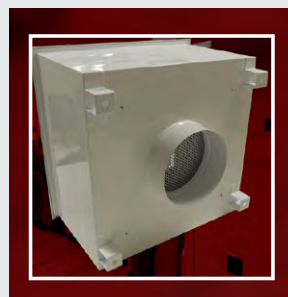


GT Flow Pharma accommodates gel-seal HEPA and ULPA filters between 80mm and 125mm deep. The terminal hood incorporates a single knife edge that interfaces with the filter gel

to form a secure airtight seal. Filters can be installed and replaced from the room side, simplifying maintenance while protecting the integrity of your process spaces.

GT Flow Pharma options

- H14 HEPA and U15 ULPA filtration
- Energy-saving low-pressure-drop filters
- Anti-bacterial powder coating
- VHP-resistant chemical coating
- 304 or 316 stainless steel construction
- Alternative inlet positions and spigot sizes
- Multiple diffuser configurations
- Custom terminal dimensions



Gel hood spigot

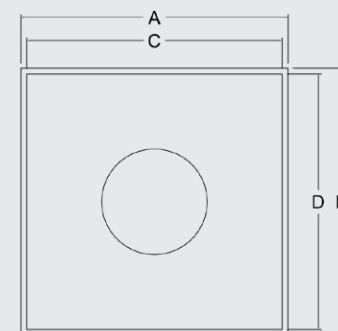
TECHNICAL FEATURES

- Fully welded, airtight steel construction
- Gel-seal H14 HEPA or U15 ULPA filters
- Roomside filter installation and replacement
- Challenge port for filter integrity testing
- Circular top, circular side or rectangular side inlet
- Perforated, swirl and directional diffuser options
- Air-inlet diffusion plate for uniform airflow distribution
- Panel-ceiling fixing system for rapid installation
- Custom sizes available

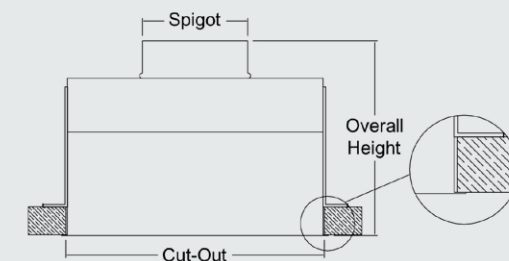


TECHNICAL DRAWINGS

Installation detail for panel ceilings



A	B	C	D	Spigot	Height	Cut-Out
349	349	327	327	198	364	333 X 333
501	501	479	479	198	364	485 X 485
654	654	632	632	248	364	638 X 638
806	806	784	784	298	364	790 x 790
1263	654	1241	632	298	364	1247 X 638



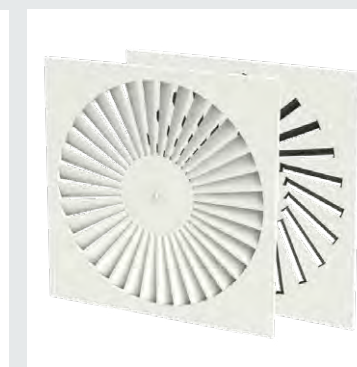
DIFFUSER OPTIONS



Perforated



Four-Way Throw



Spiral



Filter Housing

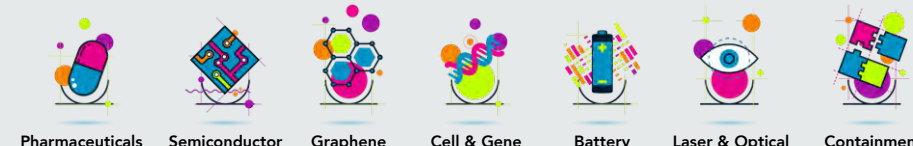
BENEFITS

- High-integrity gel seal supports demanding contamination-control strategies
- Roomside filter change simplifies servicing
- Challenge port supports filter testing
- Multiple coatings support cleaning regimes
- Low-pressure-drop filters can reduce AHU energy demand
- Flexible inlet and diffuser options

COMPROMISES

- Requires connection to an appropriately sized AHU, ductwork and plenum system
- Higher specification and cost than a basic terminal filter box
- AHU pressure must accommodate the terminal filter pressure drop
- Air volume is controlled centrally rather than by an individual onboard fan

APPLICATIONS



GT Flow Pharma suits the most demanding of applications, typically where particulate needs to be controlled to extremely tight tolerances. This often includes cleanrooms with an ISO5 or 6 classification, as well as those required to comply with cGMP conditions outlined in EU GMP Annex 1, ISO 14644-1 and US FS209E.



GT FLOW MAX



GT Flow Max is a new generation low profile energy-saving EC Fan Filter Unit with superior performance and addressable control systems – featuring Roomside Filter Change as standard and a gel seal.

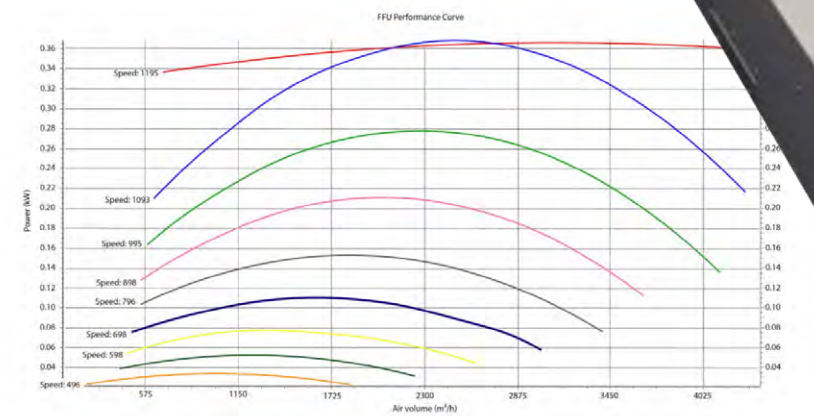
GT Flow Max Fan Filter Units (FFUs) are specifically designed for applications with limited space that require a low-profile fan filter unit – such as the Guardtech Group's range of award-winning portable shipping container Cleancube Mobile Cleanrooms.

These EC slimline units have their own EBM controller mounted on the casing and can also be connected to intelligent Airflo control systems which can be installed by Guardtech.

As used in:



Cleancube
mobile cleanrooms



PRODUCT FEATURES

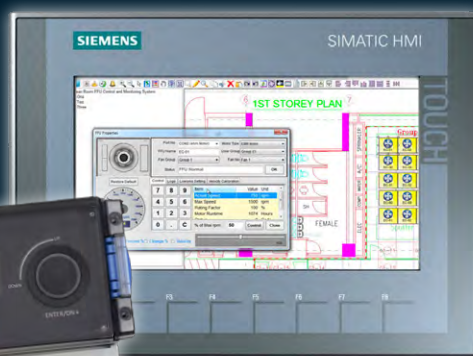
SPECIFICATION

- EC (electronically commutative) motors for reduced energy consumption
- H14 filter – 99.995% efficient at 0.3 micron particle size
- EBM Controller mounted on Fan Filter Unit (FFU)
- Backward Curved Fan
- Aluminium casing with anodised finish
- Low energy consumption

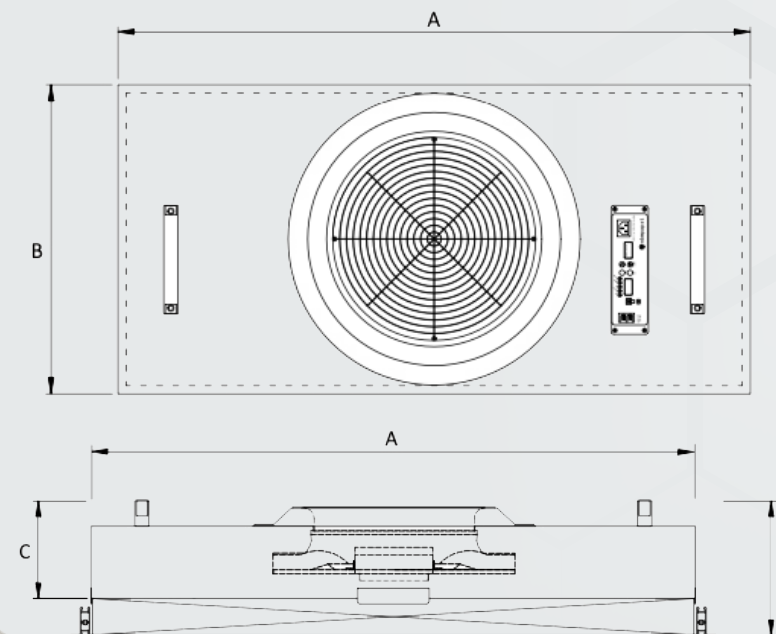


CONTROLS

GT Max is designed to be operated by a digital fan speed controller. The is a standalone monitoring and control unit for up to 200 fans, offering easy access to two separate, free configurable and individual operating closed loop cycles (Volume, Pressure, Temperature). The units can be wall-mounted or recessed.

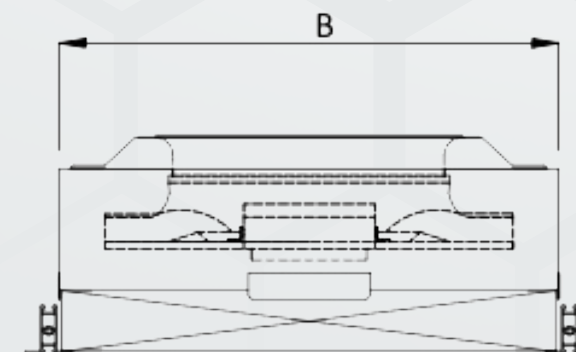


TECHNICAL DRAWINGS



GT FLOW MAX OPTIONS

- Airflo PLC for intelligent FFU control and monitoring (see page 6)
- ULPA filters – 99.9995% efficient at 0.12 micron particle size
- RFC (Roomside Filter Change) Gel filter is replaced from the roomside
- Bespoke Guardtech air inlet spigot connection



FFU SIZES (MM)	AIR VOLUME (M3/H)	TSP (PA)	MAX POWER (W)	WEIGHT (KG)	A	B	C	D
870 x 570	735	360	360	14	870	570	192	277
1170 x 570	976	360	360	15	1170	570	192	277

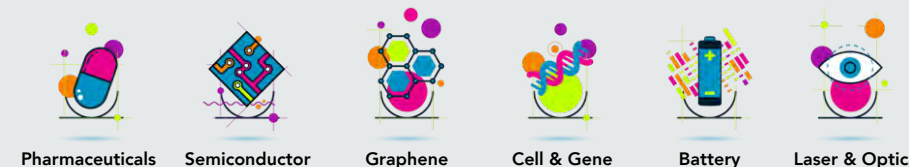
BENEFITS

- Unique low profile slimline design provides extra space above/void space
- Reduced power consumption thanks to high-performance EC motor
- Constructed to allow for roomside filter change
- Superior gel seal
- Acoustic insulation offers most superior noise level performance in GT Flow range

COMPROMISES

- Higher price point
- Potentially longer lead times
- Potentially longer waiting periods for maintenance and repairs

APPLICATIONS



GT Flow Max suits the most demanding of applications, typically where particulate needs to be controlled to extremely tight tolerances. This often includes cleanrooms with an ISO5 or 6 classification, as well as those required to comply with cGMP conditions outlined in EU GMP Annex 1, ISO 14644-1 and US FS209E.





GT FLOW PRO



GT Flow Pro is a robust, reliable Fan Filter Unit (FFU) with an efficient EC motor and H14 HEPA filters, which helps to deliver on low energy consumption. This FFU implements a gel seal.

GT Flow Pro is a robust, reliable Fan Filter Unit with an efficient EC motor and H14 HEPA filters.

The GT Flow Pro model gives users the flexibility of Roomside Filter Change and implements a gel seal.

Providing outstanding performance, efficiency and value in its class, GT Flow Pro is available with both individual and group control systems and a wide range of further options. Please ask a Guardtech rep for more information.



TECHNICAL FEATURES

EFFICIENT EC MOTORS

BACKWARD CURVED FAN

H14 HEPA FILTER
99.995% efficient at 0.3 micron particle size

DIGITAL SPEED CONTROLLER OPTIONS

AIRFLO PLC CONTROLS
Options for intelligent FFU control and monitoring

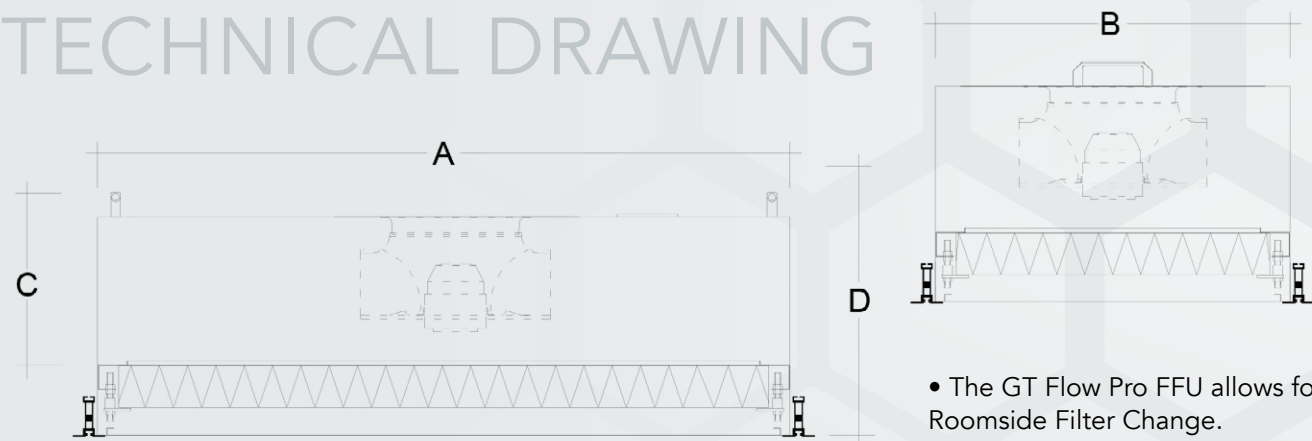
GALVANISED CASING

LOW ENERGY CONSUMPTION

LOW OPERATING SOUND



TECHNICAL DRAWING



DIMENSIONS			
A	B	C	D
570	570	355	490
870	570	355	440
1170	570	355	440
1170	870	355	440
1170	1170	355	440

OPTIONS

- ULPA filters – 99.9995% efficient at 0.12 micron particle size
- AMC (Airborne Molecular Contamination) filter options
- Air inlet spigot connection
- Plug and play wiring options
- G4 Pre-filter

BENEFITS

- Efficient EC motor
- Low energy consumption
- Gel seal
- Constructed to allow for roomside filter change
- Superior noise reduction performance compared to GT Flow Lite and Plus

CONTROLS

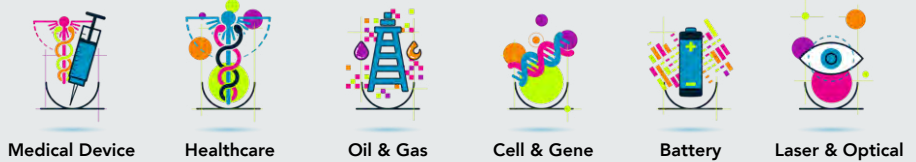


GT Flow Pro can also utilise the Airflo AFC-EC200S digital fan speed controller system, operating up to 200 Fan Filter Units on one unit.

COMPROMISES

- Higher price point
- Inferior noise reduction performance compared to GT Flow Max

APPLICATIONS



GT Flow Pro FFUs cover a wide range of applications with a varying degree of air change rate requirements. This version of the dependable all-rounder does include the option for roomside change – giving it far more flexibility than the GT Flow Plus incarnation.



GT FLOW PLUS



GT Flow Plus is Guardtech’s mid-level Fan Filter Unit (FFU) – featuring an efficient AC motor which helps to deliver on low energy consumption, this FFU implements a gel seal.

GT Flow Plus is a robust, reliable Fan Filter Unit with an efficient AC motor and H14 HEPA filters.

Guardtech’s mid-level FFU implements a Roomside Filter Change set-up as standard, as well as a gel seal.

Providing outstanding performance, efficiency and value in its class, GT Flow Plus is available with both individual and group control systems as well as a wide range of further options. Please ask a Guardtech rep for more information.



TECHNICAL FEATURES

EFFICIENT AC MOTORS

BACKWARD CURVED FAN

H14 HEPA FILTER
99.995% efficient at 0.3 micron particle size

ANALOGUE SPEED CONTROLLER OPTIONS

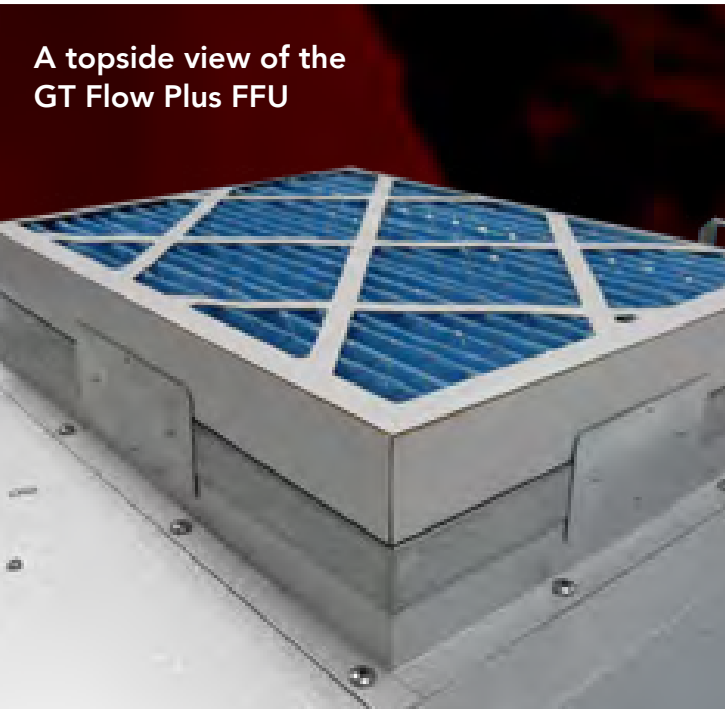
AIRFLO PLC CONTROLS
Options for intelligent FFU control and monitoring

GALVANISED CASING

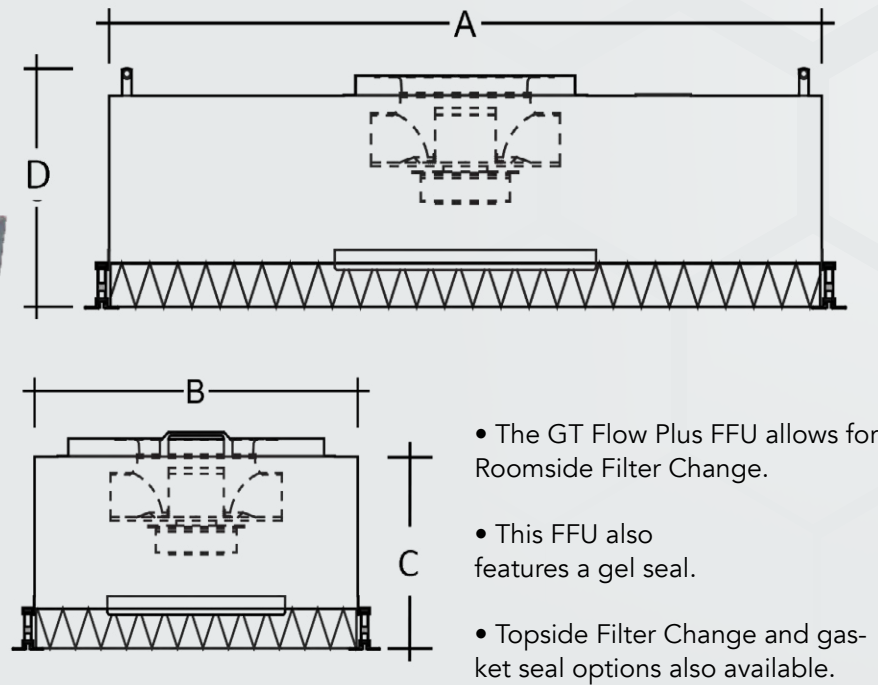
LOW ENERGY CONSUMPTION

LOW OPERATING SOUND





TECHNICAL DRAWING



DIMENSIONS			
A	B	C	D
595	595	320	350
1195	595	320	350

BENEFITS

- Efficient AC motor
- Low energy consumption
- Both Roomside Filter Change and Topside Filter Change options available
- Either gel seal or gasket seal

COMPROMISES

- Comparatively lower price point
- Inferior noise reduction level performance compared to GT Flow Pro and Max
- Not as energy efficient as the EC motors
- No slimline model available (if required, speak to a member of the Guardtech team and an alternative will be provided)



APPLICATIONS

**Cosmetics**

**Automotive**

**Horticulture**

**Digital Printing**

**Aerospace**

**Manufacturing**

GT Flow Plus delivers a Fan Filter Unit that can cover a wide range of applications with a varying degree of air change rate requirements. However, this dependable all-rounder doesn’t include the option for roomside change – which limits its appeal to controlled environment users in certain industries.

OPTIONS

- ULPA filters – 99.9995% efficient at 0.12 micron particle size
- AMC (Airborne Molecular Contamination) filter options
- Air inlet spigot connection
- Plug and play wiring options
- G4 Pre-filter



CONTROLS

GT Flow Plus is designed to utilise an analogue speed controller, operating up to 6 FFUs per unit.





GT FLOW LITE



GT Flow Lite is Guardtech’s entry-level filtration solution – an economical HEP-Box terminal filtration solution, supplied by an AHU and plenum to provide dependable HEPA-filtered airflow for laboratories.

GT Flow Lite is Guardtech’s economical HEP-Box terminal filtration solution, designed to supply HEPA or ULPA-filtered air to cleanrooms, laboratories and other controlled environments requiring dependable vertical airflow.

The HEP-Box does not contain an integral fan or motor. It is served by a central Air Handling Unit, which supplies conditioned air through the facility ductwork to the terminal unit’s circular inlet collar. Air enters the integrated plenum, is distributed across the filter and then delivered vertically into the controlled environment.

The terminal frame is manufactured from extruded anodised aluminium and connected to a self-extinguishing, single-block plenum.

The mini-pleated filter media is manufactured from waterproof and fire-resistant micro-glass fibre, using polyurethane-based sealant and continuous thermoplastic separators. A white epoxy-painted, micro-drawn steel protection grille protects the filter face.

GT Flow Lite is available with either an H14 HEPA filter or U15 ULPA filter. Every filter is individually scan-tested and labelled with its test results before supply.

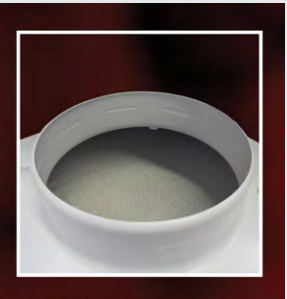


Technical features		
Product	H14 HEP-BOX	U15 HEP-BOX
Efficiency MPPS	99,995 %	99,9995 %
EN 1822:2009 classification	H14	U15
Suggested final pressure drop	400 Pa	400 Pa
Maximum pressure drop	600 Pa	600 Pa
Maximum operating temperature	60 °C	60 °C
Maximum relative humidity	90 %	90 %
CE mark	•	•
ATEX version on request (Aluminum plenum)	•	•

TECHNICAL FEATURES

- Extruded anodised aluminium terminal frame
- Integrated self-extinguishing plenum
- Circular duct connection collar
- H14 HEPA or U15 ULPA filtration
- Mini-pleated micro-glass-fibre filter media
- Waterproof and fire-resistant filter construction
- Continuous thermoplastic separators
- White epoxy-painted steel protection grille
- Individually scan-tested and labelled filters
- Suitable for installation within suspended ceiling systems

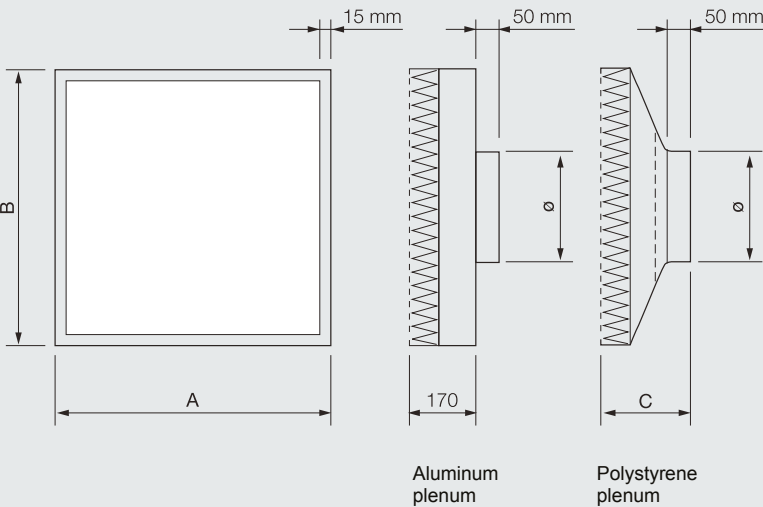
- H14 HEPA or U15 ULPA filtration
- Polystyrene or aluminium plenum, depending upon configuration
- ATEX version available on request with an aluminium plenum
- Alternative system configurations subject to project requirements



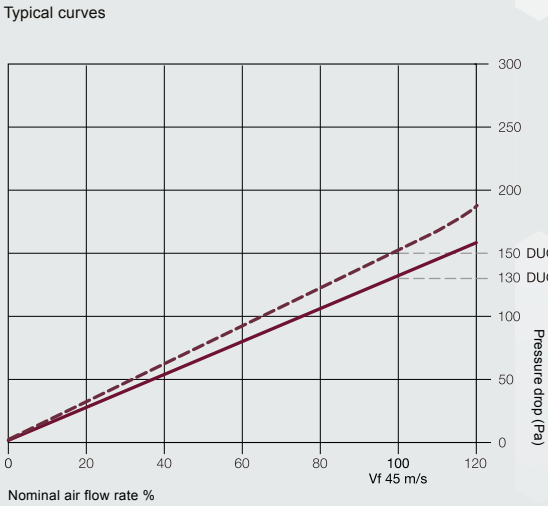
Terminal hood spigot



TECHNICAL DRAWING



NOMINAL AIR FLOW v PRESSURE DROP



Type	Dimensions (mm)		Collar		Nominal air flow rate Q		Filtering surface	Initial pressure drop
HEP-BOX	A	B	C	Ø (mm)	m³/h	m³/s x 10 ⁻³ *	m²	Pa
H-BOX6060-H14*	595	595	220	250	570	159	9.5	130
H-BOX6060-U15*	595	595	220	250	570	159	9.5	150
H-BOX1260-H14**	1195	595	220	315	1146	321	19.1	130
H-BOX1260-U15**	1195	595	220	315	1146	321	19.1	150

*1 m³/s x 10⁻³ = 1 l/s / * = Polystyrene plenum box / ** = Aluminum plenum box

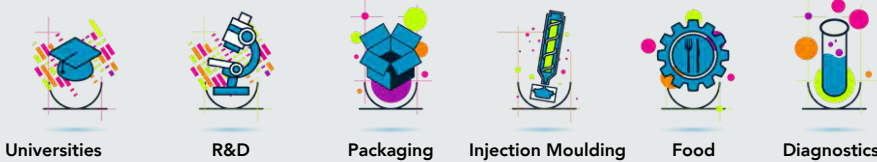
BENEFITS

- Economical terminal filtration solution
- No individual fan or motor to maintain within the terminal
- H14 and U15 filtration options
- Integrated plenum supports even filter loading
- Straightforward suspended-ceiling installation
- Individually tested filters provide documented performance

COMPROMISES

- Requires an appropriately sized central AHU, ductwork and plenum arrangement
- No individual fan-speed control at the terminal
- Airflow adjustment must be managed through the central ventilation system
- Offers fewer construction, coating and diffuser options than GT Flow Pharma

APPLICATIONS



GT Flow Lite suits the least demanding of applications – most commonly laboratories or non-classified controlled environments where considerations on the movement of air and type of airflow is of far less significance.



QUICK-LOOK COMPARISON GUIDE

FEATURES				
EC Motor				
AC Motor				
Gel Seal				
Gasket Seal option				
Roomside Filter Change				
Slimline low profile for extra void space				
H14 HEPA Filters (optional)				
ULPA Filters (optional)				
Low-energy consumption				
Digital fan speed controller				
Superior low operating sound				





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