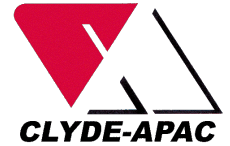# TFP Series
HEPA filter modules

CLYDE-APAC

Description

TFP modules are terminal HEPA filter plenums designed for ceiling installation in new cleanroom construction, or for upgrading existing rooms. Modules are suitable for use in ceilings of plasterboard or laminated-panel construction, and are supplied with fittings to facilitate installation.

A range of configurations and sizes enables the system designer to select modules for any application. Low-profile modules are recommended for installations where ceiling space is restricted.

Fan-assisted modules have been developed for applications where the existing air supply system does not have the fan capacity to overcome the additional static pressure of HEPA filters. Variable-speed fans enable airflows to be regulated to meet requirements for room pressure and airflow, and to compensate for filter dust loading.

An ultra-quiet version of low-profile fan-assisted modules with special acoustic treatment is available for applications where noise level is highly critical.
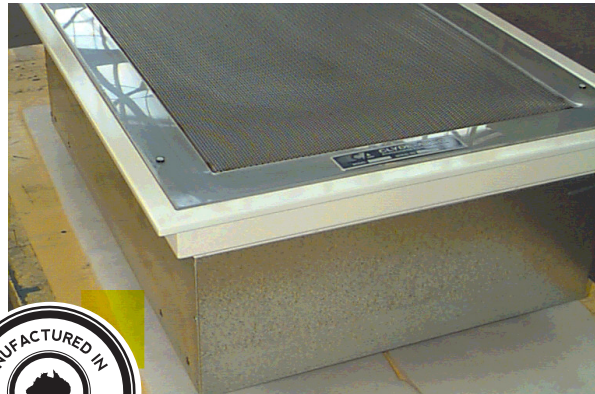
Applications

Sophisticated manufacturing and assembly environments such as Class 350 cleanrooms require the installation of HEPA filters at the point of air entry to the room. This requirement is set out in Australian Standard AS1386, Cleanrooms and clean workstations, and the Code of Good Manufacturing Practice for Therapeutic Goods - Medicinal Products published by the Department of Community Services and Health.

Typical applications include the manufacture and packaging of sterile pharmaceuticals, medical devices and electronics components; hospital operating theatres and hospital-pharmacy cleanrooms.

Construction

Housings

Constructed in corrosion-resistant electro-galvanised steel with the option of white baked enamel finish. Standard modules use a mechanical filter seal (gasket), and optional fluid seal (gel sealant) is available on some models. The standard gel is a special petroleum jelly. An optional two-part silicone elastomer gel may be preferred in some applications, e.g. electronics.

Access on the underside of the module (room side) for filter and fan service, an aerosol sample port and fan speed controller obviates the need for access to the ceiling space.

Pre-formed brackets are provided to facilitate suspension arrangements.

Fans

Direct-drive fans with manual speed controllers are used on fan-assisted units.

Electrical

Fan-assisted units operate on singlephase 240V, 50 Hz power via a lOA outlet.

Hepa Filters

Clyde-Apac Microseal™ HEPA filters are manufactured to comply fully with AS4260. Each filter is individually certified to achieve an arrestance efficiency of not less than 99.995% to the stringent BS3928 Sodium Flame test, and to be leak-free in accordance with AS 1807.6.
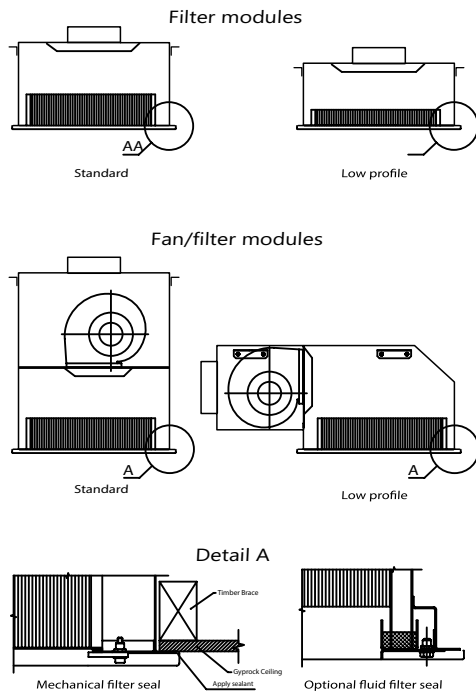
All testing is conducted in a NATA accredited factory laboratory and a NATA endorsed test label, being an extract of the test report, is affixed to each filter. A perforated metal guard, secured with quick-release fasteners, protects the filter from mechanical damage, and presents an attractive appearance to the room.

Airflow And Initial Resistance

Non-fan-assisted modules have an airflow/ resistance relationship that is essentially linear, similar to that of ClydeApac Microseal™ HEPA filters. See data in Microseal Bulletin No. 75.1021.

Options
- Prefilter in place of spigot
- Alternative spigot dimensions and orientation
- TFPE configuration for exhaust applications
- 'Ultra-quiet' variant of TFPBL Series
- Stainless-steel filter guard

Filter modules

Standard   Low profile

Fan/filter modules

Standard   Low profile

Detail A

Mechanical filter seal   Optional fluid filter seal

The airflows shown below are in accordance with AS 1386, at a face velocity not > 0.6m/s. Fanassisted modules may be operated at airflows up to 60% higher than those shown. Lower face velocities down to 0.37 m/ s (minimum recommended in AS1386) will contribute to lower sound level.

Add 75mm to height for top spigot on TFP, TFPL, TFPFL and TFPB Series, and 75mm to length for TFPBL Series.

These modules are for supply. Special TFPE Series modules are available for exhaust applications such as cytotoxics cleanrooms and biological containment laboratories.

Physical Data

| TYPE | MODEL | AIRFLOW L/S | DIMENSIONS (MM) | | | SPIGOT DIAMETER | WEIGHT KG | CATALOGUE NO. |
			LENGTH	WIDTH	HEIGHT			
Standard module with 150mm filter and mechanical seal	TFP200	200	715	695	450	250	38	2050200
	TFP300	300	1020	695	450	250	55	2050300
	TFP400	400	1325	695	450	300	66	2050400
Low profile module with minipleat filter and mechanical seal	TFP200L	200	715	695	300	250	31	2050208
	TFP300L	300	1020	695	300	250	43	2050308
	TFP400L	400	1325	695	300	300	52	2050408
Standard module with 150mm filter and fluid seal	TFP200F	200	740	750	450	250	37	2050205
	TFP300F	300	1040	750	450	250	53	2050305
	TFP400F	400	1340	750	450	300	64	2050405
Low profile module with minipleat filter and fluid seal	TFP200FL	200	740	750	300	250	29	2050206
	TFP300FL	300	1040	750	300	250	41	2050306
	TFP400FL	400	1340	750	300	300	49	2050406
Fan-assisted module with 150mm filter and mechanical seal	TFP200B	200	715	695	850	250	61	2050201
	TFP300B	300	1020	695	850	250	76	2050301
	TFP400B	400	1325	695	850	300	90	2050401
Low profile fan-assisted module with 150mm filter and mechanical seal	TFP200BL	200	1125	695	500	250	60	2050203
	TFP300BL	300	1430	695	500	250	75	2050303
	TFP400BL	400	1735	695	500	300	89	2050403

All measurements are in mm. Additional sizes are available as specials made to the clients requirements.

Quality Control

Clyde-Apac laminar flow and HEPA filter products are manufactured in Australia under an accredited Total Quality Management system which complies with the international standard 1509001. Accreditation is confirmed by Quality Assurance Services registration No QEC3556.

AES Environmental maintains an ISO 9001:2008 quality management system to ensure process and product conformance.

Product Range

- HWS™ and VWS™ Series laminar flow cabinets
- BSC2000™ Class I biological safety cabinets
- BH2000™ Class 11 biological safety cabinets
- CG2000™ Cytogard cytotoxic drug safety cabinets
- Laminar flow cleanroom modules
- Laminar flow operating theatre enclosures
- Recirculating fume cabinets
- Microseal™ HEPA filters

On Site Testing

TFP Series modules are factory tested and certified by a NATA-Accredited laboratory. Additional testing and certification is recommended as follows:

- On site prior to use
- After maintenance
- After filter replacement
- After re-location
- At least annually

In special circumstances, e.g. if faulty operation is suspected.

The Company

AES Environmental is an Australian owned manufacturing business producing products under Clyde-Apac, Email Air Handling and Vokes brand names for industries that are as varied as industrial plants, commercial buildings, power stations, food processing, healthcare, science and electronics. AES Environmental considers the Australian Standards as a core component of its product mix and has developed an export market in 25 countries, promoting Australian Standards, engineering and manufacturing solutions. AES Environmental, a trusted manufacturer capable of delivering reliable product solutions to highly-critical applications, where the control of hazardous airborne contamination is often critical to process and personnel.