



MARC
Laboratory Engineering

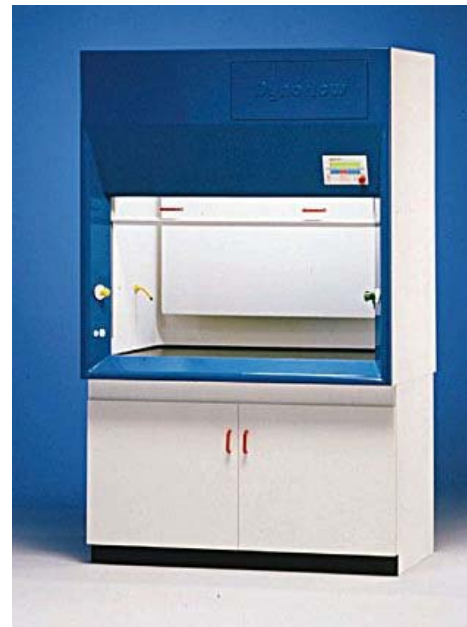
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SYSTEM SPECIFICATIONS

Dynaflow Aerodynamic Fume Cupboard

The Dynaflow Fume Cupboard is completed with a White picture frame aerodynamically shaped fascia manufactured from chemical resistant Glass Reinforced Plastic, to ensure a smooth and even flow of air into the chamber. Remote controls for services are mounted, in the user's preferred position, on each side of the front fascia or may alternatively be fitted to a panel on the support unit beneath the fume cupboard.

The vertical type sash window is counter balanced by a one-piece weight to ensure even and balanced operation in lieu of two independent weights. The sash window is glazed with 6mm armour plate glass supported in a molded PVC frame and runs in special PVC channels on oil impregnated nylon blocks. Stainless steel cables running in four ball bearing pulleys support the frame.



The sash has two purpose molded handles and is complete with an aerodynamically shaped bottom section to ensure a smooth flow of air into the chamber at this point. The entire length of the sash is completely sealed in its channels with special brushes.

The cupboard will be fitted with a concealed top by-pass system to reduce the velocity at the lower sash opening positions. With the sash fully raised, the by-pass system is correctly and completely sealed off to give all the available extraction through the sash opening for maximum safety. The extraction rate from the fume cupboard remains constant, irrespective of the position of the sash.

The chamber of the fume cupboard will be fitted with a specially designed back baffle manufactured from chemical resistant Glass Reinforced Plastic, containing no exposed fixing bolts. This special back baffle allows for the whole of the chamber to be scavenged, whether

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heavy or light corrosive fumes are present and assists in obtaining a more even, average, face velocity across the sash.

A completely sealed fluorescent light is mounted in a purpose made molded cover and illuminating the interior of the chamber via an armour plate glass panel sealed flush with the interior of the chamber to avoid disturbing

the smooth airflow inside the chamber. This molded cover, complete with light fitting, can be removed without disturbing the interior of the fume cupboard or the transparent panel.

The specially designed removable worktop is flat. The worktop is made from laboratory grade "Kemtop"

Installed in each cupboard will be 2 x 10 amp double GPO's, small pot sink and cold water tap.

Dynaflow aerodynamic fume cupboards meet exacting standards and recommendations for safety and containment in the laboratory. The Dynaflow Fume Cupboard complies with the Australian (AS 2243.8) and UK (BS 7258) standards and is manufactured wholly in Australia. The Dynaflow design has been independently tested using tracer gas and has been certified to comply with BS 7258 Type test.

The Dynaflow Fume Cupboard is the only fume cupboard in Australia to be granted the STANDARDSMARK license by Standards Australia with Product Certification to AS2243.8-2001

Perchloric Acid Use

Cupboards for perchloric acid use are fitted with a spray bar and solenoid valve to activate on shut down or can be activated manually. The solenoid valve will also activate sprays located within the exhaust duct to the scrubber.

Dynasafe Control System MK 3

The fume cupboard comes with a Dynasafe Mk 3 Control System. This Control System is a state of the art, electronic, programmable P.C.B. module containing 40 x 4 character liquid crystal back lit display, and all switches, timers and relays to enable the fume cupboard to comply with the Australian Standards, Nos. 2243.8-2001, 3000-2000 and 2430.3.6-1999 Appendix 'A'.

The Dynasafe MK 3 Control System is complete with a special adjustable flow sensor for fixing to the extraction ducting system. This allows (in the event of an extraction rate failure) the Control System to activate an alarm and graphic warning display on the Dynasafe control panel, and will turn off power and gas supplies via a contactor and solenoid valve supplied and fitted by us.

Also contained within the module is an internal battery back-up supply to ensure alarm activation when the power supply is lost either by circuit failure or power failure. This feature is required for compliance to AS2243.8 2001.

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The Dynasafe MK 3 Control System is complete with pre-purge, and post purge timers, all graphic indication giving status of fan, light, pre-purge, post-purge, power/gas availability, alarm, alarm mute, it also contains controls for spray bar, fume scrubber pump, Syncroflow Sash System and heat sensor to operate when these are installed.

Fitted on the front of the panel is a "Fume Cupboard Emergency Isolator" with graphic indication which when activated will isolate power/gas supplies, but will allow the fan to continue running as required by the Australian Standards.

The unit can also be simply programmed by the operator to start or stop the fume cupboard at any preset time.

The Dynasafe MK 3 Control System also has an RS485 communication channel, which will allow the system to communicate with other computers or building management systems over long distances and in electronically noisy environments.

Pre-wiring

The fume cupboard is pre-wire internally to a terminal strip ready for connection of input and fan output cables by site electrician. Contactors for power outlets, fan starting equipment and fan overload protection are included.

PIFAN Chemical Fume Extraction Fan

The exhaust fan is a PIFAN Series II Direct Driven Chemical Fume Extraction Fan, manufactured expressly for the purpose of corrosive fume extraction, being of the centrifugal type. The casing is being molded in one piece with no seams or joints from Chemical resistant Glass Reinforced Plastic. This unit is complete with a forward curved multivane impeller, directly driven by a totally enclosed fan cooled motor suitable for connection to a 420 volt 3 phase supply. The whole of the fan is resiliently mounted on a molded corrosion resistant fan stool. The fan is complete with a drain off point at the lowest part of the scroll. This fan is designed to give an average extraction rate of not less than 0.5 m/s across the open face of each fume cupboard.



Dynaflow Perchloric Fume Scrubber

A self-contained compact fume scrubber designed specifically for extract systems where Perchloric acid is being scrubbed. Independent testing shows that the units are 98.3% efficient with the removal of the acid fumes. This fume scrubber has been developed for situations where site conditions do not allow the fume scrubber to be mounted directly to the outlet of the fume cupboard.

The Dynaflow Fume Scrubber is manufactured from chemical resistant Glass Reinforced Plastic, specially designed for Perchloric and other acid removal. This scrubber contains a

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special scrubbing pack and a mist eliminator pack in special sliding frames, spray section, a clear panel on the front to monitor spray operation and packs, and having connections for pressure feed and drain.

Magnetic Drive Chemical Pump

The Fume scrubber comes with a magnetic drive, leak-proof, polypropylene centrifugal chemical pump, coupled to a totally enclosed motor and equipped with thermal overload protection and having a ceramic rotating spindle supported at both ends of T.F.E. fluorocarbon bearings.

This pump is correctly sized to pump the water or neutralising agent from the recycle tank to spray section of fume scrubber and is suitable for connection to a 240 volt single phase supply.

Pre-Plumbed Interconnecting Pipe-work

The fume scrubber is fitted with all the necessary pipe, fittings and valves to pre-plumb all connections between recycle tank and pump, pump to spray section of fume scrubber, drain from fume scrubber to recycle tank, overflow from recycle tank to drain valve connection.



Ducting & Installations

MARC is a specialist in the design and installations of ducting and scrubbing systems.



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