



SPECIFICATIONS

FUME SCRUBBER C180

1. DESCRIPTION

Fume scrubber for installation in laboratory fume cupboards for digestion (fume extraction). The scrubber purifies the contaminated exhaust air there generated. The scrubber reliably absorbs aggressive and toxic gases at source. Housing made of Polypropylene in a compact design, with integrated switch box for fully automatic washing liquid replacement.

The noxious gases produced in the fume cupboard are suctioned up by the vacuum generated by the fume cupboard fan via two noxious gas tubes into the absorption chamber of the fume scrubber. The integrated spray wheel sucks the scrubbing liquid from the liquid reservoir nebulize the scrubbing liquid via 8 spray nozzles. This ensures that the noxious gases are thoroughly and optimally mixed with the scrubbing liquid, thus leading to a highly effective degree of absorption. The circulating liquid volume is about 2500 liters per hour.

The atomized spray is then separated from the exhaust air by agglomerators and droplet separators. The scrubbed exhaust air is dried by the absorption systems before leaving the fume scrubber through the clear air tube.

In the event of a fire, the FRIDURIT fume scrubber virtually acts as a flame arrester, i.e. deflagration due to a fire starting in the fume cupboard can be prevented from getting through to the air outlet pipe or can be slowed down. The water filling in the scrubber has an evaporative cooling effect.

2. ABSORPTION EFFICIENCY

Perchloric acid HClO ₄	up to 95 %
Hydrofluoric acid HF	up to 97 %
Sulphuric acid H ₂ SO ₄	up to 95 %
Hydrochloric acid HCl	up to 95 %
Nitric acid HNO ₃	up to 90 %
Perchloric + Nitric acid	2:1 up to 80 %
Hydrochloric + nitric acid (aqua regia)	3:1 up to 70 %

3. CONSTRUCTION

- Housing made of polypropylene (PP), with 4 inlet connectors diameter 250mm (block flange), 1 outlet tube diameter 250mm with standard flange, dimensions approx.: w = 850 mm, d = 750 mm, h = 1535 mm
- 2 level switches min/max
- 1 atomizer spraywheel with flanged motor
- 2 inspection covers for maintenance of separation system
- 1 water feed with male thread G 1/2", containing feed solenoid valve diameter 10mm with flow regulator 20 l/min, p = 0.5 – 10 bar (7 – 145 PSI), dirt filter and manual stop valve

- 1 water drain diameter 20mm including drain solenoid valve diameter 20mm made of PVC-U
- 1 water overflow diameter 32mm
- 1 plastic switch box including logic controller, display and keyboard
- 1 operating module to install in the fume hood, with button on / off, 2 light emitting diodes operating and fault, with connection cable length 5 m

4. TECHNICAL DATA

Weight:	ca. 120 kg empty, 190 kg filled
Air flow range:	600 to 1800 m ³ /h (350 to 1060 cfm)
Pressure drop:	160 to 1020 Pa
Motor speed:	1400 rpm
Power consumption:	0.55 kW
Main supply:	400/230 V
Frequency:	50 Hz
Water volume:	ca. 70 l
Noise level:	< 56 decibels (A) at 1500 m ³ /h

5. ELECTRICAL CONTROL

Plastic switch box, containing:

- Main switch 400V 16A on/off, lockable in off position
- Motor relay
- Thermal motor protection relay with signal to logic controller
- Line monitoring relay with signal to logic controller
- Logic controller with LCD display (backlight) and keyboard, with user software for time-based water replacement. Integrated transmitter for conductivity probe. Serial interface RS232 standard with MODBUS RTU protocol

6. OPTIONS

- Conductivity probe, measuring range 0 – 50 ms, with protection tube. Cable length 1.5 meters
- Chemical dosing unit with pH measurement
- Commissioning and user training by the local service partner

Assembly in the fume hood and connection to the air pipework on site. Test and function control in the suppliers' company. With operating and installation manual.

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