



PUREX

LASEREX

a l p h a



- Reduce Downtime
- Increase Production
- Enhance Laser Performance
- Protect Personnel from Hazardous Fumes



- * **Protect Personnel**
- * **Reduce Downtime**
- * **Increase Production**
- * **Enhance Laser Performance**



The Problem

Laser marking and engraving systems burn away layers of material to cut or mark a product. This generates hazardous toxicological particles and gases that include Benzene and Toluene from certain plastics and Chromium and Nickel from some metals. Virtually all materials when processed will emit some fumes that are hazardous to health; even cardboard and paper labels which can produce respirable dust and formaldehyde.

Hazardous dust generated by laser processing can mask or even damage expensive laser optics and cause beam attenuation leading to blurred or incomplete marks. Product and machine contamination may also occur leading to rejects and increased downtime for cleaning.

Increasingly stringent environmental legislation and the risk of compensation cases means that a laser fume filtration system is a sound investment.

The Solution

These cost effective units extract LGACs (Laser Generated Airborne Contaminants) from the laser process then filter out hazardous particles and gas using a unique 3-stage process before returning clean air to the workplace. The Laserex Alpha™ includes many unique and patented features and has a minimal footprint of only 465mm² which is useful where space is limited.

Whisper Stream™ Technology

The Laserex Alpha™ features a unique, powerful blower and silencing system that delivers excellent performance, maximum reliability and whisper quiet operation. Ideal for areas where sound levels need to be low e.g. schools, shops and during laser demonstrations.

VariColour™ Warning System

No longer will the operator have to guess when the filter needs replacing. To ensure the health and safety of employees, the VariColour™ system constantly monitors the condition of the filter and reports automatically.

- Green shows the filter is clean.
- Amber warns the operator when a replacement filter should be ordered.
- Red (along with an audible alarm) tells the operator when to replace the filter.

Labyrinth™ Pre-Filter

The purpose of a pre-filter is to protect the main HEPA filter from premature blockage by removing larger particles from the airstream. This quick change, patented filter technology is not available from any other manufacturer and is designed to overcome inherent weaknesses in pleated paper and bag filter design. To keep your consumable costs low and to deliver long filter life this pre-filter has outstanding particle holding capacity by using many deep layers of filter material.

The small, lightweight and robust construction of this filter means your storage and shipping costs are minimal compared with other pre-filters. Also, problematic materials producing sticky moist particles can also be handled safely and efficiently. The reverse airflow system also removes larger particles from the airstream to further increase filter life.

Submicronic HEPA Filter

Reinforced unburstable HEPA media is used in main filters to remove small hazardous particles from the airstream. Purex filters are proven in independent tests to capture 99.997% of particles at 0.3µm and 95% at 0.01µm in size. A high performance deep chemical layer in the filter then adsorbs toxic gas before clean air is returned to the workplace. All filters are easily accessed from the front of the machine and can be changed in seconds without tools.

Reduce costs even further.

Consumable costs can be lowered by increasing filter life even further using Upgrade Pack-1. Filters will last much longer if the speed at which the particles enter the filter is controlled and maintained. Speed Control allows the airflow to be set to the optimum level on site.

The problem is that once a filter begins to collect particles the resistance to air passing through the filter increases. This means that the airflow will fall and eventually fumes will not be extracted from the process. To overcome this, Upgrade Pack-1 includes a Closed Loop Flow Control system which maintains the airflow at precisely the correct level by automatically adjusting the motor speed.

Closed Loop Flow Control

Ensures:

- Filter life is maximised.
- Consumable costs are lowered.
- No manual intervention is required.
- Personnel are constantly protected.
- Airflow is constant throughout the life of the filter.

Laser Interfacing

Additional safety functions and controls are available by simply interfacing the Laserex Alpha™ with your laser using Upgrade Pack-2. Interfacing with the laser provides a closed loop, automatic solution where operator intervention is kept to an absolute minimum. Features:

- Automatic extraction STOP/START with the laser.
- Relay any alert signals to the laser or automatically turn the laser off. (Optional)
- No manual intervention is required.
- Patch into laser alert system.
- Run on timer.



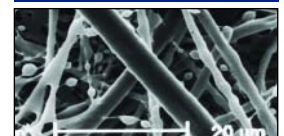
Multi Stage Filtration



**Whisper Stream™
Quiet Operation**



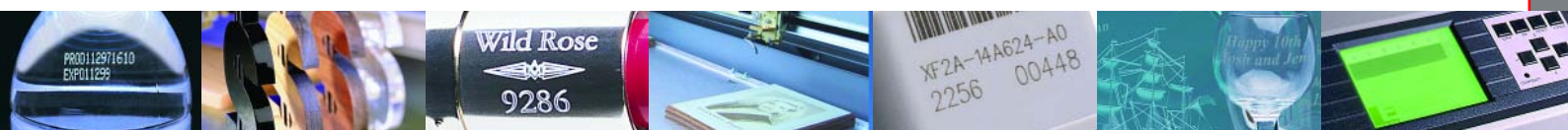
**VariColour™
Warning System**



**H.E.P.A.
Submicronic Filter**



**Labyrinth™
Patented Pre-Filter**

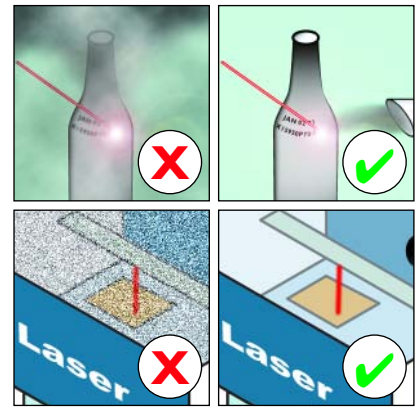


Standard Features...

- VariColour™ warning system
- Labyrinth™ patented filter technology
- Whisper Stream™ low noise system
- Exceptionally low capital and running costs
- Minimal installation required
- Submicronic particle and gas filtration
- IP56 rated construction from stainless steel
- Excellent filter life reduces consumable costs
- Castors for extra mobility

Prevents...

- Lens damage
- Product contamination
- Incomplete marks
- Downtime
- Increased sick leave
- Health compensation claims
- Excessive laser cleaning
- Rejects



Upgrade packs for extra performance...

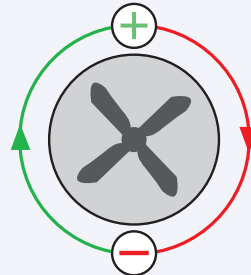
Upgrade Pack 1 - Automatic Electronic Airflow Control

Speed Control

Set the airflow rate to the optimum level.

Flow Control - Maximize the life of your filters

To prevent loss of airflow as the filter becomes blocked, the Closed Loop Flow Control system automatically adjusts the speed of the motor to maintain a constant airflow throughout the life of the filter.



Upgrade Pack 2 - Laser Interfacing

ON/OFF control

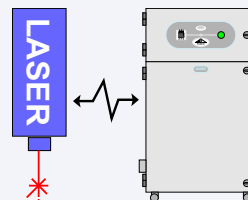
Extraction unit starts/stops when the laser is switched on/off.

Run on Timer

Extractor briefly runs on after laser is switched off to ensure all fume is removed.

Filter Blocked Warning

A signal is sent to the laser to trigger a laser alert or to shut down the laser.

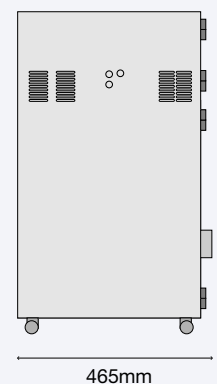
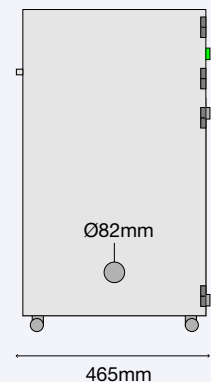
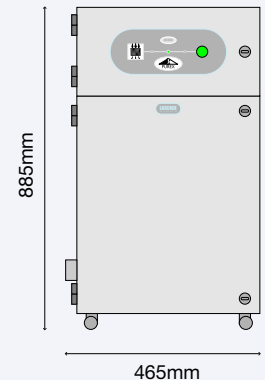


Other Options

- Hose connection kit
- Extraction arms
- Hoods and enclosures
- Specialist filters (e.g. for engraving rubber)
- Installation by Purex engineers

Unit	Specification			
	Laserex Alpha-200		Laserex Alpha-400	
Voltage	230V ±10%	120V ±10%	230V ±10%	120V ±10%
Part number	0AL2102	0AL2103	0AL4102	0AL4103
Wattage	0.08 kW	0.16 kW	0.24 kW	0.48 kW
Max flowrate	200 m ³ /hr	125 cf/m	400 m ³ /hr	235 cf/m

- Replacement HEPA/Double chemical filter (#113505)
- Replacement Labyrinth™ pre-filter (#111085)



50/60 Hz

41 Kg

45 dBA

Purex Product Range



Datasheet 1

FumeCube™ multi purpose arm extraction unit for 1 or 2 users.



Datasheet 7

SuperFlow™ fume extractors for up to 50 soldering iron users.



Datasheet 2

SuperFlow™ multi purpose arm extraction unit for up to 50 users.



Datasheet 8

Tip extraction accessories.



Datasheet 3

Fume extraction arms and accessories.



Datasheet 9a

PowerFlow™ systems for wave and reflow soldering and other automated processes.



Datasheet 4

CleanCab™ extraction cabinets.



Datasheet 9b

Laserex™ systems to extract fumes from laser marking, engraving, cutting and welding applications.



Datasheet 5

FumeBuster™ multi purpose arm extraction unit for up to 4 users.



Datasheet 9c

Laserex™ Alpha systems to extract fumes from light laser marking and engraving applications.



Datasheet 6

Portable fume extractors for up to 10 soldering iron users.



Brochure

Contains pictures and specifications of all Purex systems.

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