

# LAS

*for laser smoke*



**Clean air,  
high performance.**



**The LAS series  
Laser smoke  
extraction and  
filtration systems.**

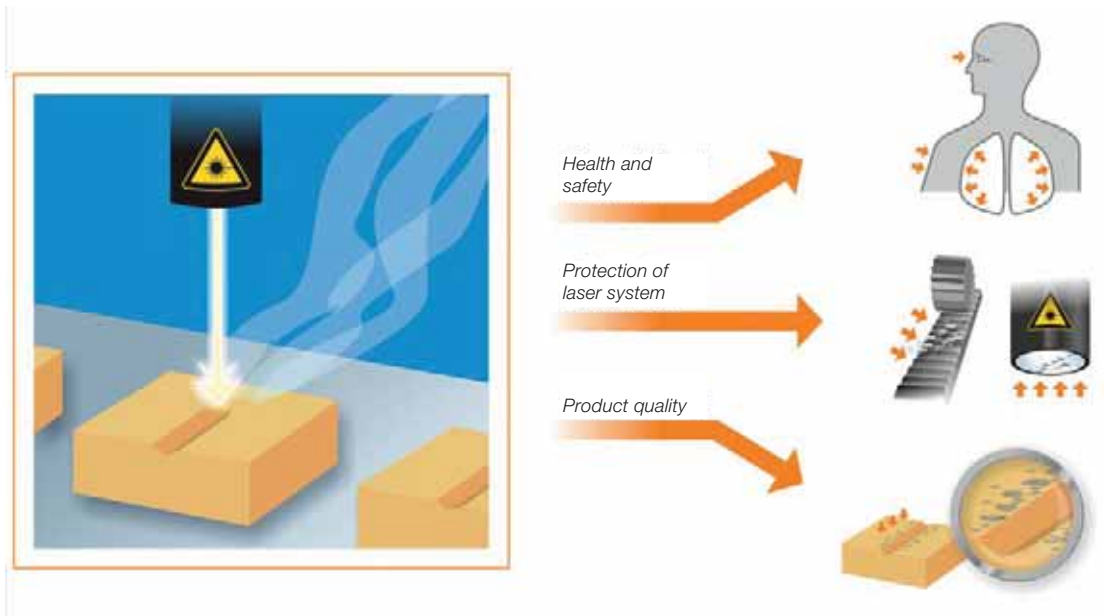


**Air filtration equipment for environmental  
and health protection**

# Laser applications emit hazardous substances



# LAS



## Laser smoke

As a negative side effect, laser machining generates non-atmospheric substances. Pyrolysis and oxidation from intensive heat, and explosive ablation effects produce a mixture of dust, suspended solids, aerosols and gases. These emissions are known as laser smoke. While the amount and composition of laser smoke depend on the machining process, it is basically a hazardous substance and needs to be extracted and purified under clean air provisions for workplaces, and in order to ensure process quality. Failure to do so may cause health problems in the long run, and impair the function of the laser system.

## Extraction and filtration systems

The LAS range of evacuation systems and filters cleans the air directly at the workplace and thus prevents health hazards, and damage to products and equipment. ULT AG supplies reliable user-oriented extraction systems for mechanical and electrical engineering, tool and prototype production, the manufacture of medical equipment, and the printing industry. Excellent filter efficiency makes it possible to recirculate the air and reduce energy costs. A wealth of experience from years of research and practical application makes it possible to provide customized solutions.





Pharmaceuticals industry: opening eggs



Mechanical engineering: drilling steel

# Laser smoke

## is hazardous for:

- **Staff**

Ultra-fine smoke particles are inhaled and, through the lung alveoli, invade body cells and the bloodstream causing damage to health.

- **Laser systems**

Contact with dust particles will quickly damage sensitive laser lenses and mirrors and reduce beam quality. Systems then develop errors and inaccuracies, making the process unreliable.

- **Product quality**

Contamination with dust particles impairs the properties of the final product.

### Choice of equipment

#### Criteria for selecting from the LAS range:

- required volume flow for suction
- type and quantity of hazardous substances to be filtered

While the volume flow for suction depends on geometric, thermal and dynamic conditions at the point of machining, the filtration method will be chosen to suit the quantity, composition and physical condition of the hazardous substances. Here ULT can provide extensive consulting.

#### How much hazardous material is generated?

Choose **saturation filter**  
or **cartridge filter**

#### What suction volume is required?

Choose **series type**

### Advantages of the LAS series:

- low noise
- compact construction
- high-capacity fans
- low energy use
- efficient filters
- easy and safe operation/ maintenance/filter change

### Applications

Laser machining, e.g.:

- inscription
- cutting
- sintering
- coating removal
- cleaning



# LAS saturation filter units



2.0 LAS JUMBO filter trolley



LAS 150



LAS 210



Saturation filter units are mainly used where the amounts of laser smoke produced are comparatively small, in order to remove sticky smoke fractions and odorous emissions. They suck in smoke and force it through a special filter system which retains dust and harmful gaseous matter. The purified air goes back to the working area. Saturation filtration systems use different filter elements which need to be replaced at intervals. Replacement is easy so that operating costs are low.





Automotive industry:  
rubber structuring



Electronics industry:  
laser cutting



LAS 250



LAS 400



LAS 1000

### Technical data for saturation filter units *with easy-change filters*

LAS series	Volume flow max. m <sup>3</sup> /h	Vacuum max. Pa	Nominal capacity m <sup>3</sup> /h at Pa	Power connection	Rated motor output kW	Size l x w x h mm
<b>Jumbo</b>	170	2,800	80/1,400	230 V / 50 Hz	0.15	450 x 340 x 530
<b>150</b>	170	2,800	60/1,400	230 V / 50 Hz	0.15	370x370x530-1,110
<b>210 FQ</b>	450	2,600	250/2,200	230 V / 50 Hz	0.37	630 x 400 x 470
<b>210 EC</b>	220	22,000	200/3,300	230 V / 50 Hz	1.20	630 x 400 x 470
<b>220 EC</b>	220	22,000	200/3,300	230 V / 50 Hz	1.20	370x370x620-1,180
<b>250 FQ</b>	450	2,600	250/2,200	230 V / 50 Hz	0.37	520x370x680-1,260
<b>400-1</b>	600	3,300	400/2,500	230 V / 50 Hz	0.70	630x580x900-1,300
<b>400-2</b>	1,500	3,100	600/2,500	230 V / 50 Hz	0.82	630x580x900-1,300
<b>400-2 EC</b>	440	22,000	300/10,000	230 V / 50 Hz	2.40	630x580x900-1,300
<b>1000</b>	1,700	2,600	1.000/1,800	400 V / 50 Hz	1.50	790 x 680 x 1,260
<b>1000-V</b>	1,500	3,100	1.000/1,800	230 V / 50 Hz	0.82	790 x 680 x 1,260

For detailed technical data refer to the specific information leaflets or visit our website  
[www.ult.de](http://www.ult.de)

# LAS cartridge filter units



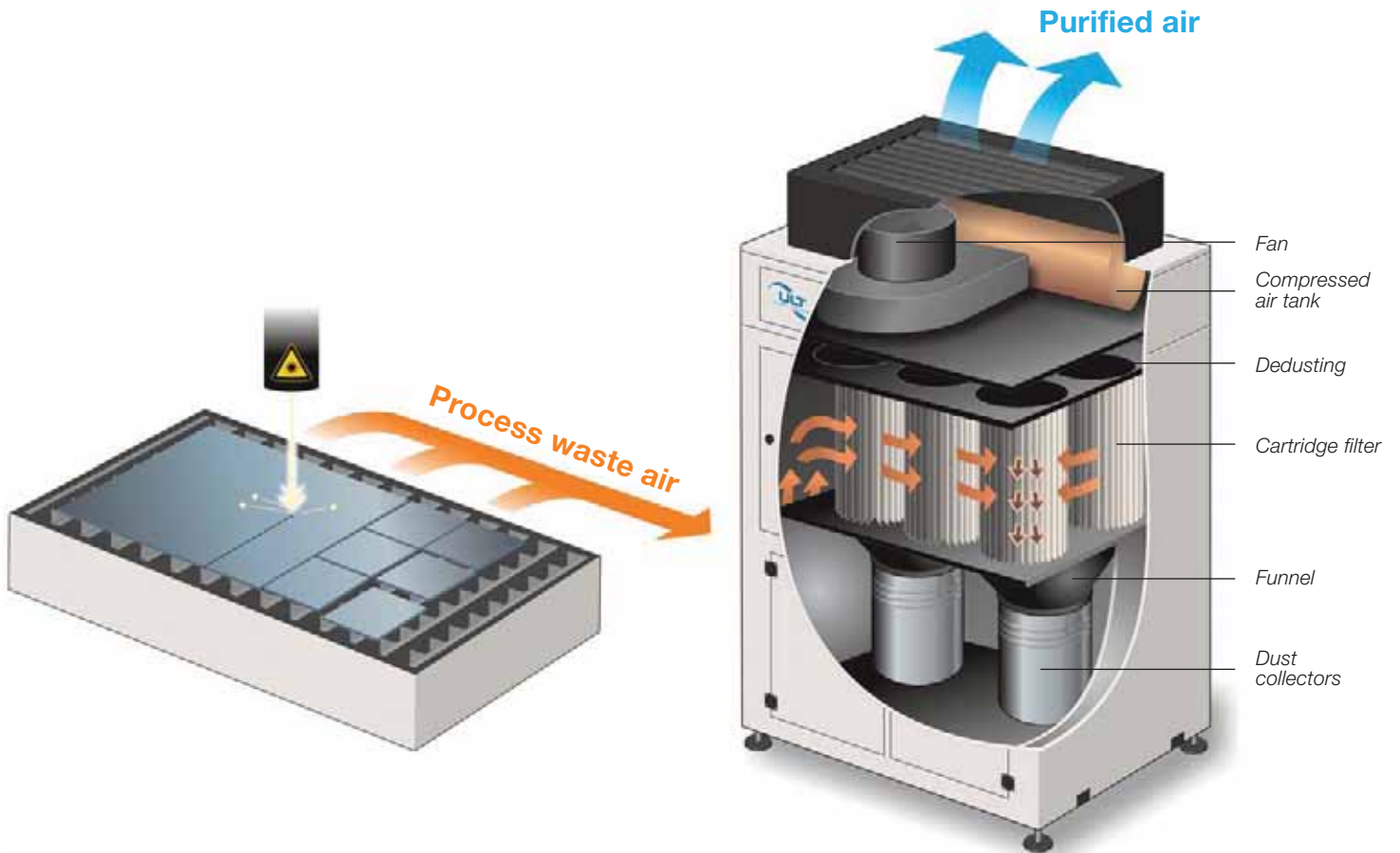
LAS 200



LAS 280



LAS 500



Cartridge filter units are ideally suited for removing dry, intensive laser smoke. Their filter elements can be dedusted. According to the principle of surface filtration, hazardous substances collect at the cartridge surface. Dedusting is automatic by compressed air backwash, and all separated dust goes to dust collectors. Purified air is returned to the work space.





Electronics industry:  
laser inscription on aluminium



Metalworking:  
Laser cutting



LAS 2000-3FP



LAS 2000-6FP



LAS 3000-9FP

## Technical data for cartridge filter units *with automatic dedusting*

LAS series	Volume flow max. m <sup>3</sup> /h	Vacuum max. Pa	Nominal capacity m <sup>3</sup> /h at Pa	Power connection	Rated motor output kW	Size l x w x h mm
<b>200-1FP FQ</b>	450	2,600	250/2,200	230 V / 50 Hz	0.37	460x400x1,000
<b>200-1FP EC</b>	220	22,000	200/3,300	230 V / 50 Hz	1.2	460x400x1,000
<b>280-2FP FQ</b>	450	2,600	250/2,200	230 V / 50 Hz	0.37	550x500x900
<b>280-2FP EC</b>	220	22,000	200/3,300	230 V / 50 Hz	1.2	550x500x900
<b>500-1</b>	600	3,300	400/2,500	230 V / 50 Hz	0.7	700x600x2,050
<b>500-2</b>	1,500	3,100	600/2,500	230 V / 50 Hz	0.82	700x600x2,050
<b>500-3</b>	1,700	2,600	600/2,400	400 V / 50 Hz	1.5	700x600x2,300
<b>500-4</b>	2,360	2,880	800/2,500	400 V / 50 Hz	2.2	700x600x2,300
<b>500-10</b>	440	22,000	400/3,300	230 V / 50 Hz	2.4	700x600x2,050
<b>2000-2FP</b>	3,280	3,550	2,000/3,000	400 V / 50 Hz	3.0	1,350x820x2,500
<b>2000-3FP</b>	3,280	3,550	2,000/3,000	400 V / 50 Hz	3.0	1,350x820x2,500
<b>2000-6FP</b>	3,280	3,550	2,000/3,000	400 V / 50 Hz	3.0	1,350x820x2,500
<b>3000-9FP</b>	4,300	4,000	3,600/3,300	400 V / 50 Hz	5.5	1,350x1,500x2,700
<b>3500-9FP</b>	4,200	6,000	3,500/5,300	400 V / 50 Hz	11.0	1,350x1,500x2,900

For detailed technical data refer to the specific information leaflets or visit our website  
[www.ult.de](http://www.ult.de)

# LAS modular system



LAS 150 F1



LAS 220 EC F1



LAS 250 FQ F1

A careful choice of suitable filtration systems and their optimized use is needed when machining a variety of materials using different laser sources and powers. Changes in the user's process often call for supplementing the range of filter units available.

The LAS modular system has been developed to meet these requirements. With cost-efficient modular solutions, users can benefit from an initial set of equipment that can be supplemented later without any problem.

**Modular solutions are also available for series 400 (saturation filter systems), 200 and 500 (cartridge filter systems).**

In the LAS range, all units may be supplemented with

- proven prefilters for high amounts of sticky laser smoke particles
- spark extinction units for fire hazards
- automatic metering devices for filter aids to bind and inert particles

**Machining of: plastics**

**rubber**

**wood**

**metal**



## Performance classes

**150**

**Fan with EC drive:**

maintenance-free, low energy consumption, small collection volumes

**220**

**Turbine with collector motor:**

medium collection volumes, compensation of high pressure losses in intake path

**220 EC**

**Turbine with EC drive:**

maintenance-free, medium collection volumes, compensation of high pressure losses in intake path

**250 FQ**

**Fan with EC drive:**

maintenance-free, low energy consumption, large collection volumes

## Filter versions

**F1**

**Standard LAS combination filter**

Compact universal filter cassette for low-intensity laser smoke

**F2**

**Dust filter combination**

Large filter capacity for medium-intensity laser smoke

**A**

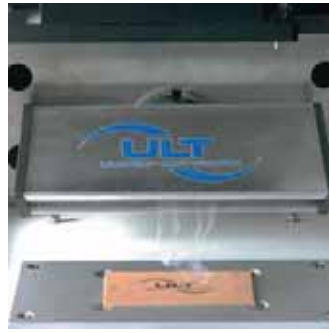
**Adsorption filter**

Activated carbon for gases, vapors, odors





Machining examples: Plastic



Wood



Metal



LAS 250 FQ F1-A



LAS 220 EC F2



LAS 250 FQ F2-A

	F 1 Filter module -F1-	F 1-A Filter module -F1- and additional module A	F 2 Filter module -F2-	F 2-A Filter module -F2- and additional module A
150 Fan module 150				
220 and 220 EC Fan module 220 and fan module 220 EC				
250 FQ Fan module 250 FQ				





# ***Clean air, high performance.***



ULT is committed to protecting the health of those employed in industry, research and craftsman's businesses. Thousands of our extraction and filtration systems have been installed since 1994, the time when this supplier in the German state of Saxony began to grow at a steady pace. New buildings which have been enlarged in several stages provide capacity for mass production also in future.

***Our clients throughout Europe, Asia and Australia are served by competent local agents.***

- Our success is based on innovative technology and after-sales services.
- Our strategy is based on flexibility, which means that all ULT products can be adjusted to a variety of production and working conditions.
- Your operating costs are reduced by extracting hazardous substances at the point of origin and using superior filter technology.
- Our units and systems are characterized by above-average reliability and operating safety.
- Modular combinations of filtration systems for gases, vapors and dust guarantee efficiency and success in everyday use.

***When it comes to customer services, ULT can be relied on to:***

- **Extensive consulting on the use/adjustment of system solutions before/after sales**
- **Provision of test/trial systems**
- **Maintenance/repair of air handling/ventilation systems**
- **12-month warranty**



## ULT series units for:



## Characteristics of ULT equipment:

- low noise
- esthetic design
- easy operation
- easy maintenance
- low energy consumption
- efficient filters
- modular construction

## Optional features:

- explosion proof versions
- construction conforming to ESD
- digital control for stabilization, timer function, filter analysis
- special steel models
- special voltages/frequencies
- interfaces for external triggering/signaling
- special designs, process-specific units/equipment

## For extraction use our:

- suction arms
- suction cabinets
- special devices
- fume hoods
- suction tables



Control box optional

For more information see our product-specific literature.



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Filter units  
Ventilation systems  
Accessories to meet  
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