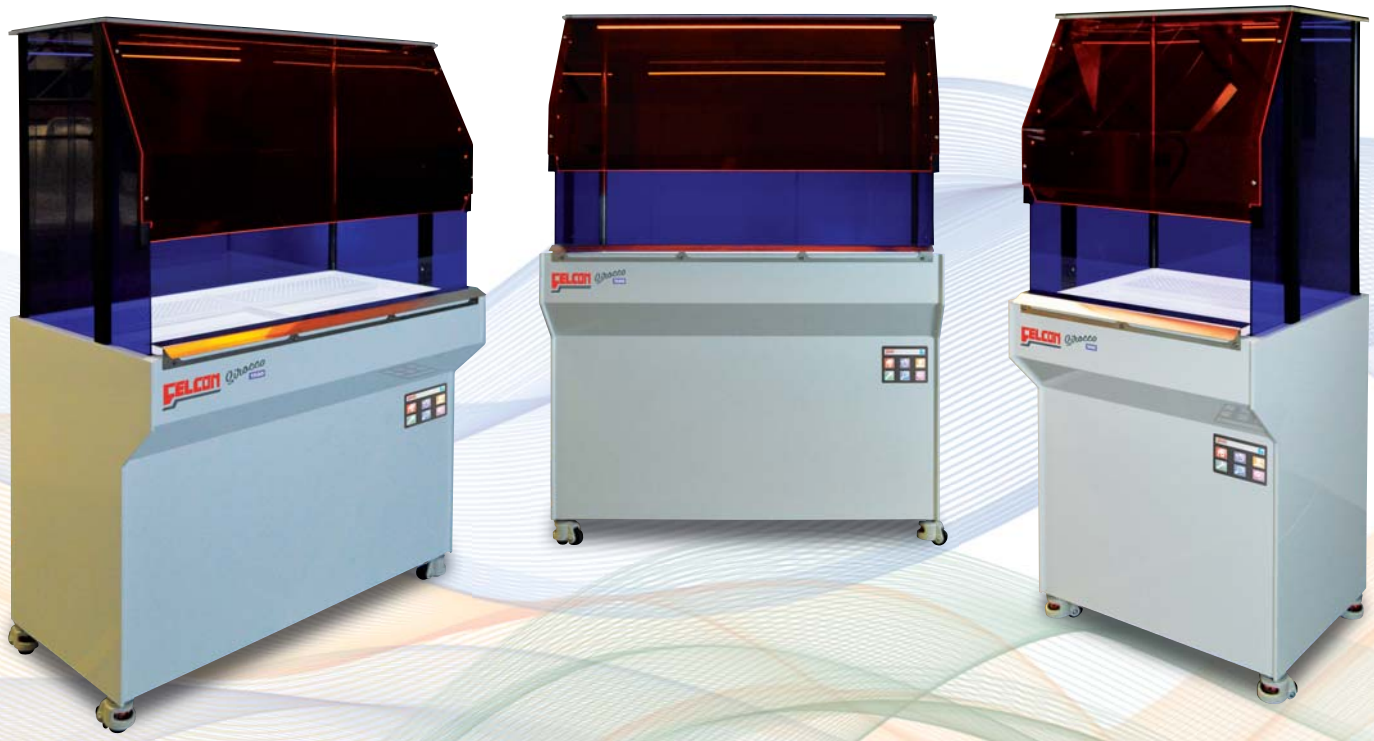
• ROBOTICS ENCLOSURES • RECIRCULATING FUME & FLOW HOODS • STORAGE CABINETS • PCR CABINETS
• POWDER WEIGHING STATIONS • CUSTOMISED CONTAINMENT SOLUTIONS • DUCTED FUME HOODS



Design & innovation for science

PRODUCT RANGE 2017

FELCON

INTRODUCTION

Felcon has been designing and manufacturing specialist equipment for cleanrooms, laboratories, universities, hospitals and the pharmaceutical industry, since 1971.

By evolving with an ever-changing world and working to the highest possible standards, Felcon have created their own individuality and strength to provide not only professional worldwide equipment, but also an edge over our competitors.

All Felcon equipment, stainless steel or thermoplastic, is built within our own manufacturing plant in Newhaven, on the south coast of the UK. We are a team of highly experienced in-house design, mechanical, electrical, software and test engineers, and as such are able to design and build to suit any application, however large or small your project.

Felcon supply many leading companies in all areas of industry, research and education, throughout the world.

Bringing Felcon firmly into the 21st Century, we are proud to present you with our latest brochure, introducing a full new range of products (Fellab) to complement our existing manufacturing processes.

Felcon is committed to providing the best quality, best value equipment and services, to customers worldwide. The company strives for constant improvement and flexibility, in an ever-changing business world.

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Bringing colour into your laboratories

Using proven carbon filter technology, Felcon introduces you to their new range of 'Sirocco' re-circulating fume hoods, offered in three standard sizes; 900mm, 1200mm and 1500mm wide. These are all polypropylene and acrylic construction, so easy to clean with no corrosion.
Of course, if you don't want the colour, these can be manufactured in all clear acrylic, and offer a whole host of features as standard.

- *Operator protection, both carbon and HEPA filtration*
- *Ergonomic design, robust construction*
- *Trolley mounted, with under bench storage and foot master castors*
- *LED lighting*
- *Quiet fan; less than 55db*
- *Dynamic air flow patterns, dynamic stainless steel aerofoil*
- *Airflow monitor*
- *Radiused edges, easy to clean*
- *Easy to maintain*
- *Non-corrosive*
- *0.5m/s airflow*

Custom sizes available on request.

FELCON Sirocco

FELLAB RE-CIRCULATING FUME HOODS

Dimensions (W x L x H):

Sirocco 900	External dimensions: 900mm x 610mm x 1660mm Internal dimensions: 830mm x 535mm x 745mm
Sirocco 1200	External dimensions: 1200mm x 610mm x 1660mm Internal dimensions: 1130mm x 535mm x 745mm
Sirocco 1500	External dimensions: 1500mm x 610mm x 1660mm Internal dimensions: 1430mm x 535mm x 745mm

POWDER WEIGHING STATIONS

The Felcon Powder Weighing Stations come in two sizes; 900mm wide and 1200mm wide, designed with dynamic airflow patterns, providing the best operator protection whilst also maintaining balance accuracy.

Features:

- *Designed with operator protection in mind*
- *Robust construction, floor mounted, ergonomic design*
- *Dynamic aerofoils (stainless steel)*
- *Solid black base and rear baffle design*
- *Easy to operate*
- *LED lighting*
- *Quiet fan less than 55db*
- *Easy to maintain and easy to clean*
- *Face velocity 0.3m/s – 0.5m/s*
- *Pre-filter to 5 microns in size*
- *HEPA filter to 0.5 microns in size – 99.995% efficient*
- *Low airflow alarm*
- *Airflow monitor*
- *Good access and all round visibility*
- *Auxillary electrical socket*
- *Safe waste disposal*
- *Robust stainless steel stand with pull out shelf/ work surface and foot master castors*

All of these cabinets can be ducted to the outside, or can re-circulate into the laboratory.

POWDER WEIGHING STATIONS

Dimensions (W x L x H):

External dimensions:	900mm x 780mm x 1654mm high 1200mm x 780mm x 1654mm high
Internal dimensions:	880mm x 580mm x 730mm 1180mm x 580mm x 730mm

FELCON Astrea 800

The Astrea PCR Workstation from Felcon provides HEPA filtered clean air across the entire worksurface, UV lighting with 30 minute timer for effective decontamination of the working environment, and easy to clean surfaces.

Features:

- *UV lighting with 30 minute timer and micro switch, with protective front screen and reflectors from UV rays*
- *HEPA Filtration, H14, ISO 5 Clean Laminar Air, 99.995 % efficient*
- *LED white lighting when UV turned off*
- *10mm thick acrylic for protection against UV with chamfered edging on front screen*
- *All clear acrylic design providing excellent visibility*
- *Base tray with easy to clean surfaces*
- *Useful corner shelf for placing critical items*
- *0.45m/s down flow with lower panel raised and UV light off*
- *Quiet fan*

PCR (Polymerase Chain Reaction) is a technique that is widely used in laboratories working with DNA and RNA samples. Because PCR amplification is extremely sensitive to contamination, the prevention of contamination requires good laboratory practices to minimise external or cross-contamination during sample preparation. The Astrea PCR cabinet has been designed as an ideal environment for the manipulation of DNA and RNA, especially for the set-up of PCR assays. An integrated UV lamp enables rapid decontamination of the work zone between experiments and prevents cross-contamination. HEPA filtered clean air across the entire worksurface ensures an ultraclean operational environment.

ASTREA PCR WORKSTATION

Dimensions (W x L x H): External: 800 x 610 x 1009mm: Internal: 692 x 548 x 610mm

ROBOTICS ENCLOSURES

Felcon have been enclosing automated processes within the pharmaceutical manufacturing industry since the 1970's, so it should come as no surprise that we are experts in this field and now make enclosures for laboratory robotics, with successful installations throughout Europe and the USA.

Knowing that each installation is unique, we will listen to your requirements, and carefully project manage every stage of your needs with close attention to detail.

Robotics Enclosures designed to enclose your automation, providing:

- *Product protection*
- *Operator protection*
- *Clean air environment*
- *Environmental control*
- *Custom built to meet your exact requirements*
- *Easy all round access for routine accessibility and maintenance*
- *LED lighting*
- *Colour touchscreen control panel*
- *Low fan noise*
- *Robust construction*
- *Easily maintained and serviced, readily available filters*
- *Enclosures can either be filtered or ducted to your exhaust system*

Accessories

Electrical Lift Trolley (docking station)

- *Battery operated variable height trolley*
- *Maximum 50–300 Kgs lift*
- *50 lifts per charge*
- *Silent operation*
- *Small footprint for ease of manoeuvrability*
- *Digital display with 3 memory settings available*
- *Spare wall mountable rechargeable battery packs available enabling a fully charged battery to always be ready for use*
- *Battery condition indicator and low alarm*

Under bench polypropylene mobile storage cabinets

A range of under bench polypropylene mobile storage cabinets, sized to suit your applications. Easy to clean, and providing excellent access to equipment and reagents.

Height adjustable stainless steel trollies/ benches

Felcon manufacture a complete range of height adjustable, robust, stainless steel benches, ideal for holding and moving heavy equipment, such as liquid handlers and incubators. Sizes available on request.

FELCON Schools 800

The Felcon Educational Cabinet 'Schools 800' has been designed as a mobile, easy to clean cabinet, with good all-round visibility enabling the user to clearly demonstrate experiments within the classroom environment.

- *Robust simple design for use within the classroom*
- *Mobile, fitted with foot master castors*
- *Swan neck tap / sink / gas tap and auxillary electrical socket*
- *F/GPS carbon filtration for the removal of commonly used fumes and vapours used for general experiments in the classroom environment*
- *All clear acrylic panels for good all round visibility*
- *Easy to clean, corrosion free, all polypropylene construction*
- *Simple to operate*

These cabinets can also be supplied as bench mounted.

Pre-filter to 5 microns in size; 95% efficient.

Multi-purpose F/GPS carbon filter for the effective removal of most commonly used solvent and acid vapours.

'SCHOOLS 800' EDUCATIONAL CABINET

Dimensions (W x L x H): External: 800 x 610 x 1690mm. Internal: 710 x 548 x 610mm

Face Velocity 0.5m/s

DUCTED FUME HOODS

Felcon have a wealth of experience in the manufacture and design of ducted fume cupboards, providing optimum operator protection with by-pass airflow characteristics.These are supplied in a variety of configurations, complete with sliding front visor and intelligent airflow indicator.

Options:

- *All polypropylene construction*
- *All stainless steel construction*
- *Walk-in type*
- *Laminar airflow*
- *Acid rich earth science versions*
- *Cast epoxy work tops*
- *Gas taps and vacuum taps*
- *Auxillary electrical sockets*
- *In-built scrubbing*
- *3ft, 4ft, 5ft, 6ft, 7ft, and 8ft as standard sizes*
- *Optional storage cupboards or support frame below*

Manual wet process benches: polypropylene (acid based), stainless steel (solvent based), with laminar air flow

Felcon wet processing tools are used where substrates or products require chemical etching or cleaning. This is often as part of a larger manufacture – of silicone wafers for example, or in medical applications such as stent manufacture.

Felcon wet benches are either manually or automatically operated with robotic product transfer. Felcon wet benches may be built using 'FM' (Factory Mutual) materials of construction with optional fire detection and suppression systems. They are suitable for all types of clean rooms and may also incorporate laminar air flow with HEPA filters.

All wet benches are manufactured by Felcon at Newhaven, Sussex.

ENDOSCOPY STORAGE CABINETS

Felmed ENT Scope Storage Cabinets offer effective drying and safe storage of flexible endoscopes. They are certified to the latest EN Standards, using the latest technologies for tracking and traceability, and offer 99.995% efficient HEPA Filtration

- *Certified to BS EN/16442 2015*
- *Meets latest specifications*
- *Ultra quiet fan with rapid air purge when doors are opened*
- *Easy to clean, all stainless steel construction*
- *User-friendly touch-sensitive control panel*
- *Clear interlocked doors*
- *Bar code reader and printer for recordable tracking and traceability*
- *Heavy duty foot master castors for stability and mobility*
- *Ergonomic, easy to use scope supports, with dedicated individual easy to clean compartments*
- *Minimal cross contamination*
- *Ultra-clean air to 0.15 microns*
- *Optimised efficient drying*
- *Available in 3 models; 5 scopes, 10 Scopes and 20 Scopes*

Height adjustable and static stainless steel sinks

Felmed manufacture a range of height adjustable and static stainless steel sinks – HTM64 compliant single or multiple height adjustable sink units for manual cleaning of both instruments and scopes. Optional washing spray guns can be supplied. Bespoke stainless steel height adjustable sinks are designed and manufactured in our factory to suit specific applications.

We work closely with our customers to ensure that we produce quality manufactured height adjustable sinks to fit exactly into the available space.

Stainless steel height adjustable electrically operated table

Robust, sturdy design in 304 or 316 stainless steel, with push button operation, 4 programmable user heights incorporating 'True Parallel Drive', which ensures that the tabletop will always remain level and true during use.

Tables can be supplied in any width, depth, height and load carrying range to suit the customer's individual requirements, with mountings for fan/filter modules, power points, equipment or storage racks which can be fitted to the worktop as required.

A wide range of high efficiency air filters (HEPA) designed to suit a variety of applications and exacting performance requirements are available from Felcon. Efficiencies of HEPA and ULPA filters range from 95% to 99.99999%.

Filter Selection Guide: BS EN 1822

Grade	efficiency @ 0.3 micron.	Efficiency @ MPPS
H10	>95%	>85%
H11	>98%	>95%
H12	>99.99%	>99.5%
H13	>99.997%	>99.95%
H14	>99.999%	>99.995%

Through continuous in-house research and development, a combination of conventional and specialist filter materials (some developed in-house) are employed in the production of high performance filters to deal effectively with particulate matter, gaseous, bacterial and viral contaminants.

Felcon's design expertise and vast range of filter products are utilised in a wide variety of market sectors. In addition to providing conventional HEPA filter products, Felcon is guided by the principles of developing effective, innovative and affordable solutions to a rapidly increasing number of air quality and air filtration related problems.

Critical clean rooms/laminar flow benches/mechanical ventilation systems/fume cupboards & safety cabinets/health & safety (respirator) industry/research laboratories/medical sector/military sector.

Felcon Mini-Pleat Filters incorporate a continuously pleated high-grade filter medium, separated from the next by uniformly formed thermosetting adhesive beads. The assembly is sealed into a satin finished anodised aluminium case (as standard), with an appropriate single or double gasket added as required. Double face grilles are fitted as standard, to provide protection for the filter face during transport, installation and under operating conditions.

'Gel-Seal': A range of Mini-Pleat Filters are available with an extended case extrusion utilising a 'liquid gel-seal' (as opposed to a neoprene gasket). Alternatively, filters are supplied with a 'knife edge' to suit 'liquid gel-seal' frame installations.

Special Features: The shallow depth, combined with its uniform 'close-pleat' design (lightweight with high air volume capacity), makes the Mini-Pleat the ideal filter for all laminar flow applications.

Caution: All Felcon HEPA and ULPA products are individually tested and suitably packed for 'mainland' transportation. In the event that any packages show any sign of visible damage, they must be signed for as 'damaged', and reported. Filters must be handled carefully and stored in clean, dry areas no more than 3 filters high. Deep pleat HEPA filters should be stored with the pleats in the vertical plane. Care must be exercised in unpacking of boxes (particularly in instances where the filter has no face grilles). The box should be opened from the top, turned through 180° and the box removed from the filter.

CARBON FILTRATION

Using proven carbon filtration technology, Felcon supply a wide range of molecular filtration products that remove chemicals, environmental pollutants and odours. Our standard HEPA filter range covers a full range of efficiencies, from G4-H13, in sizes and formats to suit most applications.

All filters are manufactured in the UK and Europe. Laboratory testing allows us to test our products for both air flow and efficiencies down to the nano-particle range. In-house testing combined with external certification provides assurance that the production processes and final products meet all industry standards.

The Felcon technical sales and service teams provide a range of services to ensure customers are fully acquainted with developments in the filtration world, following indoor air quality best practice and achieving the best possible balance of energy saving and performance. Felcon can also supply filters for most competitor hoods and cabinets. We have our own service department who are able to service any item of your equipment. Please contact us for further details or a competitive quotation.

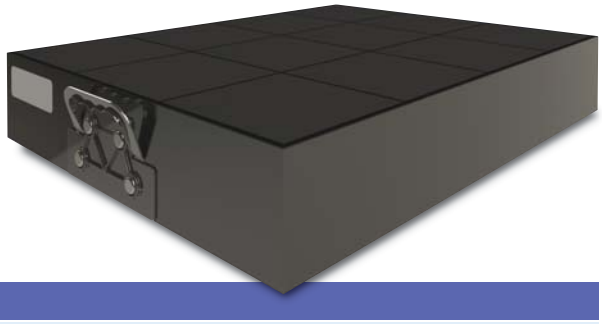
Filter casings are manufactured from either Zintec steel or thermo-plastic sheet depending on the size and contaminants. The carbon is retained in the filter casing by thermally bonding or clinching an enclosing media to both sides of the filter case. Gaskets and handles are fitted as required.

Pre-Filters: To protect and extend the life of carbon filters, a particulate pre-filter should be fitted to the air-on face of the carbon filter. Packs of pre-filters are available.

Specifically selected grades of carbon, including base and chemically impregnated, are used to provide effective filtration to ensure adsorption of the organic and inorganic substances requiring removal. Only high activity carbon grades are used to ensure maximum contaminant loading and life expectancy while providing 99.9% efficiency rates.

Testing and quality assurance: All of our carbon fume cabinet filters are tested using a DOP particle scanning test and guaranteed to meet BS7989. Certificates of conformity can be issued upon request.

Advice on care & maintenance: Fume cabinets should be tested, serviced and validated on an annual basis to ensure efficient operation and conformance with safety requirements. Pre-filters should be changed every 6-12 months depending on use of the cupboard. Damaged or insecure seals on filters can lead to leakage into the work environment. The carbon filter lifespan will depend on the types of contaminants it is required to remove and their volume. Carbons give no warning that they are nearing the end of their life – they simply stop working. Carbon also has a limited lifespan even if the fume cupboard itself is not being used. Laboratory technicians are therefore advised to include testing of the carbon filter as part of their regular testing and validation procedures.



Filter Type	Felcon Reference	Application
SOL	FEL-SOL-38/305-1	General organic solvents with a secondary capability for acid vapours
GP	FEL-GP-38/305-1	General purpose mixed carbon for use in schools (organic, acid and alkali removal)
K (AM)	FEL-K-38/305-1	Removal of ammonia & amine containing compounds (and general organics)
F	FEL-F-38/305-1	Removal of formaldehyde (and general organics)
AC	FEL-AC-38/305-1	Removal of acidic compounds (and general organics)
HP (HEPA)	FEL-HP-38/305-1	HEPA filter to 0.3 microns in size. 99.997% efficient

CHEMICAL LISTINGS

These are some of the chemicals which are retained by our GP general purpose filter. When ordering a cabinet, please indicate which chemicals/organics/inorganics you are using, so that we can determine the best filter combination for your purpose.

Acetaldehyde
Acetic acid
Acetic anhydride
Acetone
Acetonitrile
Acids (organic)
Acrolein
Acrylic acid
Acrylonitrile
Adhesives
Alcohol
Aldehydes
Aliphatic hydrocarbons
Allyl alcohol
Amyl acetate
Amyl alcohol
Amylene
Aniline
Aromatic hydrocarbons
Ashphalt fumes
Automobile exhaust fumes

Benzene
Bromine
Butadiene
Butane
Butanol
Butyl acetate
Butyl alcohol
Butyl cellosolve
Butyl chloride
Butyraldehyde
Butyric acid

Camphor
Caprylic acid
Carbon disulphide
Carbon tetrachloride
Carbonyl sulphide
Cellosolve (ethyl glycol)
Chlorine
Chlorobenzene
Chlorobutadiene
Chloroethene
Chloroform
Chloronitropropane
Chloropicrin
Chloropropane
Corrosive gases
Creosote
Cresol
Crontonaldehyde
Cumene
Cyclohexane
Cyclohexanol
Cyclohexanone
Cyclohexene

Decane
Dibromoethane
Dichlorobenzene
Dichlorodifluoromethane
Dichloroethane
Dichloroethylene
Dichloromonofluoromethane
Dichloronitroethane
Dichloropropane
Dichlorotetrafluoroethane
Diesel fumes
Diethyl amine
Diethyl keytone
Dimethylaniline
Dimethylsulphate
Dioexane
Dipentane
Dipropylketone

Epichlorhydrin
Essential oils
Esters
Ethanol
Ethyl acetate
Ethyl acrylate
Ethyl alcohol
Ethyl amine
Ethyl benzene
Ethyl bromide
Ethyl chloride
Ethylene chlorohydrin
Ethylene dichloride
Ethylene oxide
Ethyl formate
Ethyl silicate
Eucalyptole

Fluorotrichloromethane
Formaldehyde
Freons

Gasoline
Glutaraldehyde

Halogens
Heptane
Heptanol
Heptene
Hexanol
Hexene
Hexylene (1-hexene)
Hexyne (butyl acetylene)
Hydrogen selenide

Indole
Inorganic vapours
Iodine
Iodoform
Iso-butane
Isocyanates
Isoprene
Isopropyl acetate
Isopropyl alcohol

Kerosene
Keytones

Lactic acid

Mesityl oxide
Methanol
Methyl acetate
Methyl acrylate
Methylal
Methyl alcohol
Methyl bromide
Methyl butyl ketone
Methyl cellosolve
Methyl chloride
Methyl chloroform
Methyl cyclohexane
Methyl cyclohexanol
Methylcyclohexanone
Methylene chloride
Methyl ethyl ketone
Methyl formate
Methyl isobutyl ketone
Methyl isocyanate
Methyl methacrylate
Monochlorobenzene

Naphthalene
Nicotine
Nitro benzene
Nitroethane
Nitrogen compounds
Nitroglycerine
Nitromethane
Nitropropane
Nitrotoluene
Nonane

Octalene
Octane
Organic chemicals
Organic vapours
Ozone

Pentane
Pentanol
Pentanone
Pentene
Perchlorethylene
Phenol
Phosgene
Plasticisers
Propane
Propanol
Propionaldehyde
Propyl acetate
Propyl alcohol
Propyl chloride
Propylene
Pyridine

Rubber odour

Skatole
Solvents
Styrene monomer
Sulphur trioxide

Tar fumes
Tetrachloroethane
Tetrachloroethylene
Tetrahydrofuran
Toluene
Toluene di isocyanate
Toluidine
Trichlorobenzene
Trichloroethane
Trichloroethylene
Trichlorofluoromethane
Triethylamine
Trimethylbenzene
Turpentine

Ureauric acid

Valeric acid
Valericaldehyde
Vinyl acetate
Vinyl chloride
Volatile organic compounds

Xylene

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