



extract  
TECHNOLOGY



ENGINEERED CONTAINMENT SOLUTIONS

# Containment Booths



**At Extract Technology, we provide complete containment solutions based around an innovative range of Downflow Containment Booths.**

All bring different features and benefits to your application. But all have one thing in common: they give a "guaranteed working environment".

Extract Technology Booths are used extensively in the pharmaceutical industry to safeguard operators against harmful dusts generated during many manual powder handling operations. Clean air from the ceiling plenum is distributed evenly across the whole of the work area pushing any respirable dust generated downward and away from the operators breathing zone.

Extract also offers installation, commissioning, IQ/OQ validation and containment testing by our fully trained engineers to ensure the system fully conforms to your requirements. To complete the package, our dedicated Aftersales department will supply total support.

## Design Advantages

- Guaranteed operator exposure levels of  $100\mu\text{g}/\text{m}^3$  (task duration), which can be improved with the use of flexible or rigid screens to  $10\mu\text{g}/\text{m}^3$  (task duration)
- Available in epoxy coated zintec steel, 304/316L stainless steel or a combination of both
- Various heights and widths (up to 6m) are available
- Safe working depths to 2.2m are available to suit all applications
- Custom filtration designs with a minimum of fine dust and then Hepa filters in either the technical stack or the ceiling plenum
- Low noise levels (<70 dBA) on the smaller PharmAir Booth range
- Single pass/once through airflow systems used in applications where solvent vapours are present

**FOR MORE INFORMATION ON CONTAINMENT BOOTHS CALL  
+44 (0) 1484 432 727 OR EMAIL [info@extract-technology.com](mailto:info@extract-technology.com)**



# Downflow Containment Booths



As a provider of total containment solutions we can tailor Downflow Containment Booths to your exact requirements. However, you will find a summary of some of our standard features.

- Stainless steel or epoxy – coated mild steel construction.
- High efficiency EC fan system
- Safe change filters
- Overhead lighting within supply plenum
- Mobile workbenches
- Hazardous area electrics option
- Flush mounted computer integration
- Front/side access doors
- Glass walls and windows
- Floor/coving interfaces
- PLC controlled audible and visual alarm packages
- Pallet stop rails
- Cooling coils and controls
- Increased internal height
- Photo sensitive lighting
- High level exhaust grilles
- Incorporation of lifting and tipping equipment
- Materials and personnel airlocks systems
- Roller conveyors, rapid roller doors and turntables

When you need to provide a clean, contained environment for the safe handling of powders in dispensing, weighing, sampling, or subdivision operations, our PharmAir booths are a highly effective option.



Dispensing booths are available for both large and small scale operations, they facilitate the weighing from and into a wide range of receptacles, including drums, sacks, kegs and bags. Thanks to a specially designed airflow system with ultra – high quality

filtration, they achieve high levels of operator and product protection, and eliminate problems of cross contamination.

Warehouse environments, the typical location for raw materials sampling, can provide problems when it comes to product and operator protection. Our self – contained Sampling Booths solve both these problems. They provide a clean environment ensuring operator safety as well as product protection from external contamination.

Our Charge Booths enable materials to be transferred into IBCs, reactors, drums or vessels safely and cleanly, without risk of contamination to either operator or product. They facilitate a host of transfer methods, including hand scooping and allowing drums, sacks or large FIBCs to be manipulated easily. In addition to same floor transfer, Booths also make it possible to transfer product from one floor to another.

# Energy Efficient Downflow Booth



Extract Technology have designed their new energy efficient Downflow Booth boasting energy savings of up to 70% compared to that of conventional systems.

With environmental concerns and rising energy costs playing a key factor in the evaluation of any production process it became a must for Extract to adapt their equipment designs to meet this ever increasing demand.

Extract Technology has prided itself on being at the forefront of Booth design for the last 30 years and as such has continued to invest in R&D to ensure the ever changing demands of the Pharmaceutical

and Biotech industries are met.

In order to achieve this impressive saving Extract Technology looked at every aspect of the design from component selection to airflow design. Not only did this result in a more energy efficient system but it also presented an opportunity to look at cost reduction as a whole for the Booth. This culminated in a design which was far more cost effective both in the short and long term with key benefits such as -

## Key Benefits

- 70% energy savings
- Lower capital cost
- Shorter lead times due to batch component production and modular design.
- Flush light fittings with terminal HEPA filters.
- Quicker installation and commissioning times.
- Improved lighting levels with easy light access.
- Modular construction and multiple configurations together with an extensive list of options.
- Lower noise levels due to improved fan and ceiling plenum design.

Booth size	External width (mm)	Internal width (mm)	Overall depth (mm)			Chilled water flow rate (l/sec)	Fused supply (Amps)
			"L" model (containment depth 1200mm)	"LS" model (containment depth 1800mm)	"LX" model (containment depth 2200mm)		
1.5m	1500	1400	2750	3630	4425	0.13	25
2.0m	2100	2000	2750	3630	4425	0.13	25
2.5m	2500	2400	2750	3630	4425	0.13/0.26 (LX)	25
3.0m	3000	2900	2750	3630	4425	0.13/0.26 (LS & LX)	25
3.5m	3600	3500	2750	3630	4425	0.26	25
4.0m	4200	4100	2750	3630	4425	0.26	25
4.5m	4600	4500	2750	3630	4425	0.26	32
5.0m	5000	4900	2750	3630	4425	0.26/0.39 (LX)	32

Standard Internal Height on all Booths: 2300mm - Standard Overall Height on all Booths: 2750mm - Standard Technical Area Depth: 1050mm

## Technical Details



- Clean air from the ceiling plenum is distributed evenly across the whole of the work area pushing any respirable dust generated downward and away from the operators breathing zone.
- As the dust moves down to a low level, the high velocity exhaust grilles direct the dust into the filters.
- A small amount of air is exhausted after the filters thereby creating a slight negative environment. Inward air movement into the Booth at low level ensures containment.
- This design enables the Booths to be fully "stand-alone" and has no impact on the existing HVAC or room pressures.

# Optional Features

Incorporating the Extract Technology patented Flexible or Rigid Screens into a Downflow Booth provides a physical barrier between the active product and the operator, thereby immediately improving the attainable containment levels. Recent tests on Booths have confirmed that levels  $<1\mu\text{g}/\text{m}^3$  can be achieved, depending upon the application.

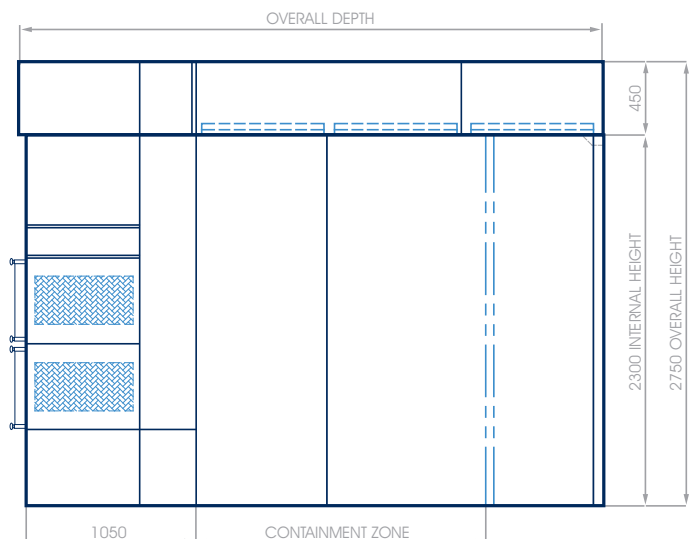
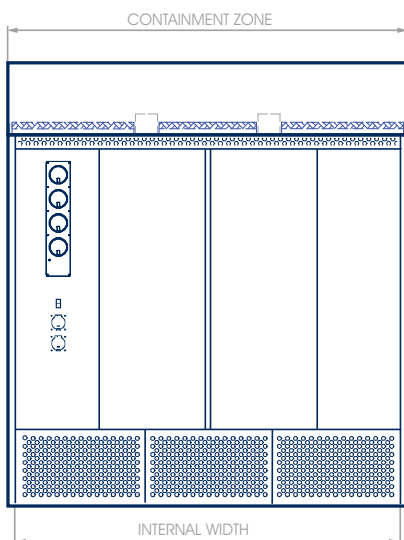


## 5D High Containment Screens

Up to 5 dimensions of movement including side to side, up and down, front to back, rotational and lockable tilt options, providing the best possible ergonomic solution

A comprehensive list of options is available to customise the Booth to your requirements.

- Audible and visual alarm packages
- Downdraught workbench in various widths
- High level exhaust grills
- Pallet crash rails
- Safe change (Bag-in, Bag-out) filter housings
- Door and window systems
- Materials and personnel airlocks
- Base plinth to enable covering by client
- Photo sensitive lighting integration of a computerised dispensary management system
- Cut-outs and drawers for the integration of a computerised dispensary management system
- Cooling systems to offset heat gains inside the Booth
- Upgrade to suit explosive dust and gas environments
- Incorporation of lifting and tipping systems
- Roller conveyors, rapid roller doors and turntables can be incorporated





# Glassware Containment Booths

The Extract Technology Glassware Containment Booth has been developed to protect personnel from hazardous dusts, vapours and aerosols during reactions, distillation and general experimental work, normally undertaken in Kilo Labs.

Modular construction offers the ultimate in design flexibility, with three operating widths available. Operator access to the glassware rig is provided by robust hinge open doors with safety glass vision panels. An air transfer grille mounted in the base of each door permits movement of the fresh air supply from the operator zone through to the equipment zone.

The airflow method ensures that the glassware equipment enclosure is maintained under negative pressure and that vapours or dusts are effectively drawn into the exhaust plenum.

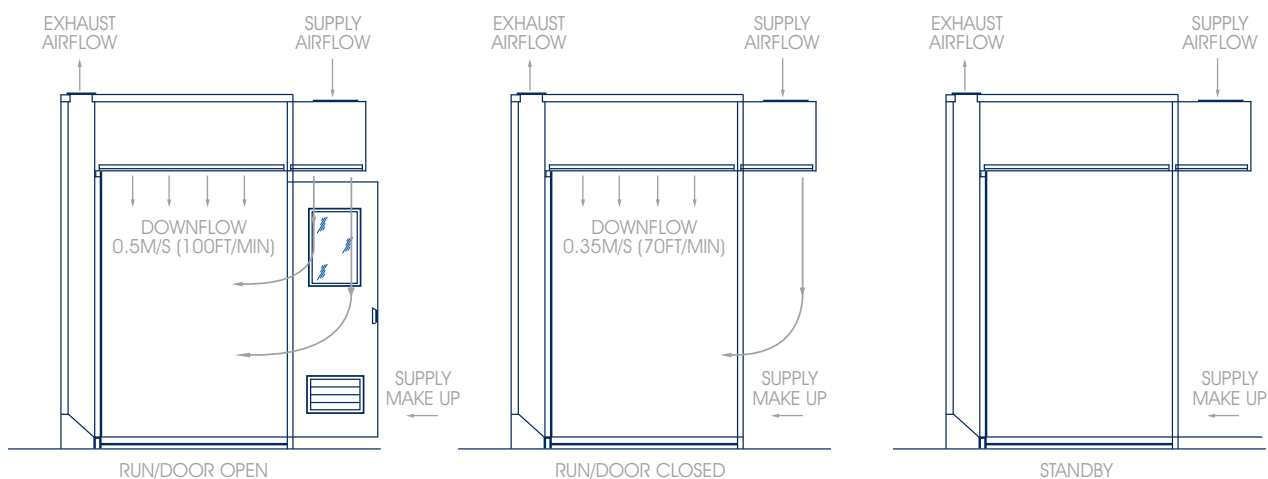
Unlike traditional walk-in fume hoods, Glassware Containment Booths offer operator protection to levels as low as  $10\mu\text{g}/\text{m}^3$  (task duration) with 100% fresh air supply.



## Design Advantages

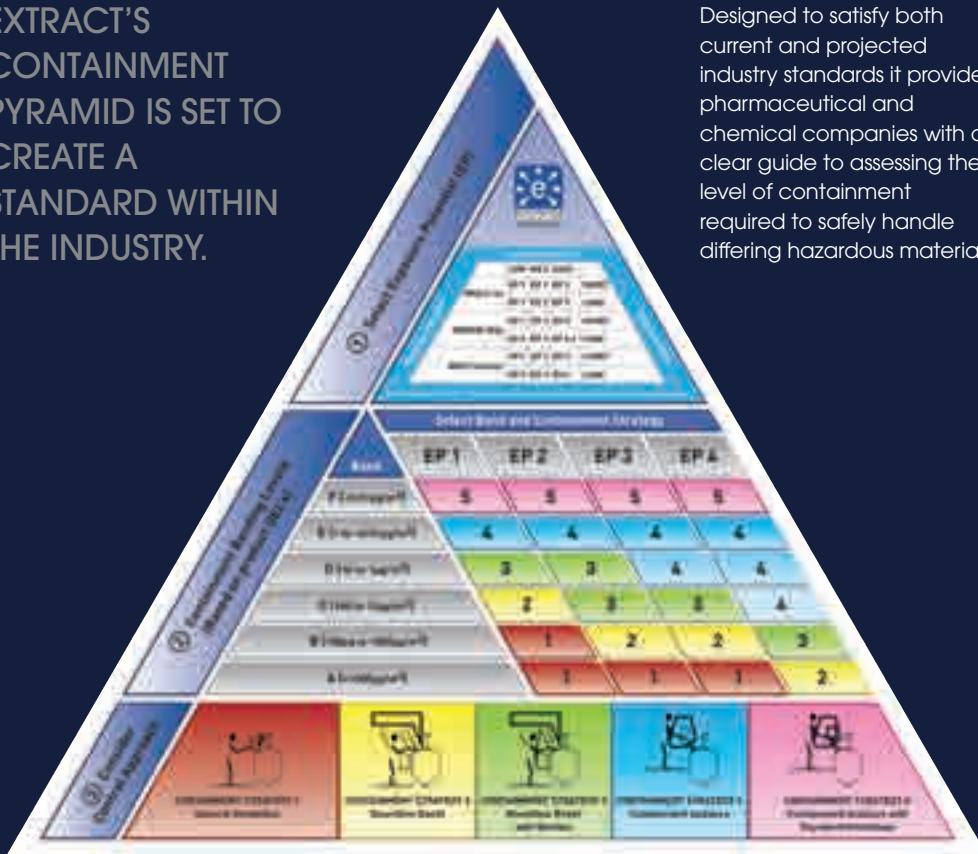
- Modular construction offers the ultimate in design flexibility
- Operator exposure levels of  $<10\mu\text{g}/\text{m}^3$  (task duration) are attainable
- Most operations are carried out from outside the Booth structure
- Integrated with customers own HVAC system, or supplied as part of the Booth package
- Hazardous area plenum mounted lighting
- Reduced airflow settings for stand-by or night operation
- "Stay open" hinged doors to assist equipment loading

## BOOTH AIRFLOWS



# The Control Strategy Pyramid

EXTRACT'S  
CONTAINMENT  
PYRAMID IS SET TO  
CREATE A  
STANDARD WITHIN  
THE INDUSTRY.



Designed to satisfy both current and projected industry standards it provides pharmaceutical and chemical companies with a clear guide to assessing the level of containment required to safely handle differing hazardous materials.



## DEFINING THE CONTROL STRATEGY

The selection grid at the heart of the Control Strategy Pyramid permits the exposure potential rating and operator exposure band to intersect at the recommended Control Strategy selection. This is a simple cross reference to identify the correct equipment to be used to control and handle a specific process.

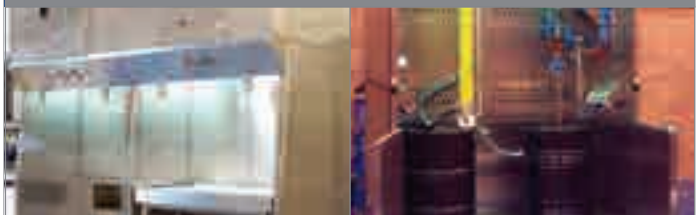
## ADDITIONAL CONTAINMENT SYSTEMS



1 Powder Handling Bench



2 Pack Off and Process



3 Quadraflow Bench

4 Drum Solvent Booth

FOR MORE INFORMATION ON CONTAINMENT BOOTHS PLEASE VISIT OUR WEBSITE

### EXTRACT TECHNOLOGY LIMITED

Bradley Junction Industrial Estate, Leeds Road,  
Huddersfield, HD2 1UR, United Kingdom

T. +44 (0) 1484 432 727

F. +44 (0) 1484 432 659

W. [www.extract-technology.com](http://www.extract-technology.com)

