FLOW SCIENCES, INC.

EHA SERIES

CERTIFIED ISO 9001:2008 COMPANY

THE FLOW SCIENCES HYBRID ISOLATOR SERIES

- AT OR NEAR ISOLATOR CONTAINMENT LEVELS FOR A FRACTION OF THE COST
- FOR APPLICATIONS THAT REQUIRE CONTAINMENT OF LESS THAN 50 ng/m^3
- REDUCE TURBULENCE AND REPRODUCE CONSISTENT PERFORMANCE BASED RESULTS WITH BALANCE STABILITY TO THE 7TH DECIMAL PLACE.

SAFETY. The Hybrid Isolator series provides containment for highly toxic applications using APIs that need more safety than an opened face enclosure. FSI engineering controls are built in to prevent loss of containment. Third Party testing has proven containment on these units to below 50 ng/m^3 based on process and quantity.

DESIGN. Designed as the next step in containment above the Top Mounted CVE, this unit is able to effectively contain using airfoils and plenums to create laminar airflow across the work surface and reduce eddies and turbulence. The Hybrid Isolator system is equipped with dual 4" HEPA filters that can be recirculated into the lab or sent directly to house exhaust.

PHENOLIC BASE. The chemically resistant phenolic base is dished to maintain spills and protects the work surface from harmful chemicals.

DUAL SPEED FAN. This enclosure includes a 2 speed adjustable fan that automatically switches between high and low speed depending on the draft shield being attached or unattached.

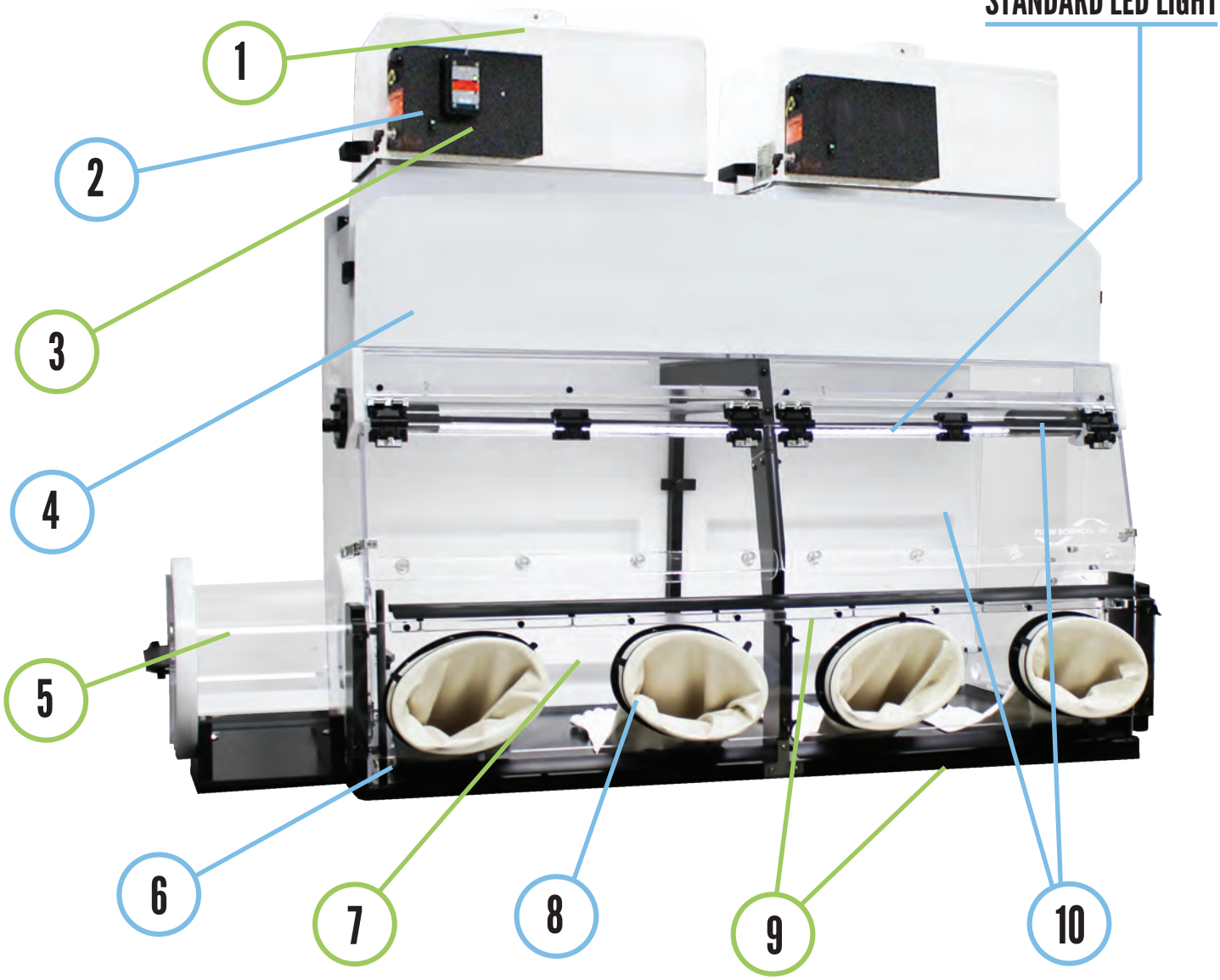
ACRYLIC WALLS. The clear acrylic walls are used for increased ambient light transmission.

INTERNAL LED LIGHT. This enclosure features an internal LED light for improved visibility inside of the enclosure and can be adjusted directly on to the application. This light comes standard with every Hybrid Isolator Enclosure.

STANDARD SIZES. The Hybrid Isolator series is available in 3, 4, 5, 6, and 8 foot standard width options. Customs are available.

WWW.FLOWSCIENCES.COM
1.800.849.3429

FEATURES & BENEFITS



1 EXHAUST PORT - This unit can onnect 6" thimble connections to house exhaust system or can be recirculated back into the lab

2 DUAL SPEED FAN - Adjustable fan that has 2 settings for containment when the draft shield is present and when it is removed

3 FS1650 ALARM - FS1650 Face Velocity Alarm alerts the operator when airflow is compromised

4 BAG-IN / BAG-OUT - HEPA change out system that allows for safe removal and replacement of the main 4" HEPA filter

5 TRANSFER PORT - Transfer port for the safe handling of powders or samples being transferred in and out of the enclosure

6 DISHED BASE - Dished phenolic base captures accidental liquid and powder spills

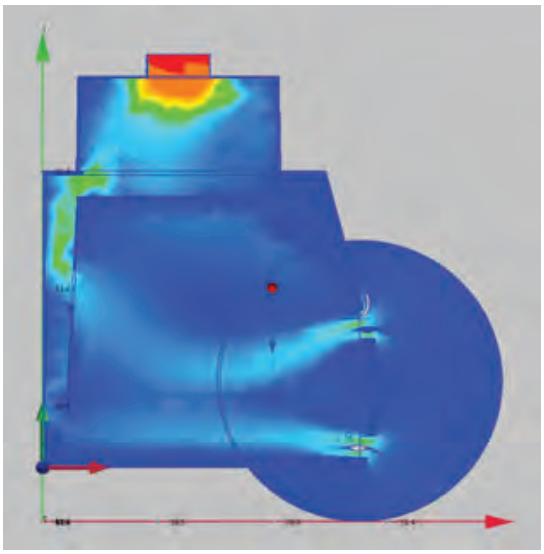
7 DRAFT SHIELD - Removable draft shield for loading of equipment and open faced applications

8 GLOVE PORTS - Gloves for safe handling during applications and improved personnel protection

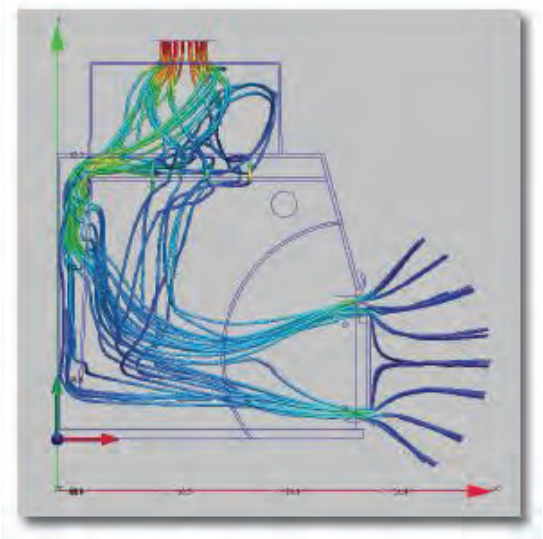
9 AIRFOILS - Airfoils staged around the perimeter of the face opening stabilize the airflow, improve laminar airflow, and improve containment along the leading edge

10 PLENUMS - Rear and Top Plenums are used to direct airflow and maintain containment at the face opening. These also prevent particles from possibly falling back onto the work surface if the fan is turned off

With the explosion in usage of High Potency Active Pharmaceutical Ingredients (HPAPI's), containment of these compounds and personnel protection have become of major concern to scientists. There is often a high expense associated with new equipment designed to handle the task. In order to combat these potentially high capital outlays, many companies are looking at alternative methods of containment, including modification of existing equipment. The Hybrid Isolator, offered by Flow Sciences, Inc., is one such method of reducing the cost of containment.



A Velocity Profile demonstrates the gentle airflow across the work surface shown in blue.



A Particle Trace shows the distribution of particulates as they travel to the back plenums of the enclosure, through the HEPA filters and out of the exhaust port.

The Hybrid Isolator is designed to protect workers from exposure to chemicals by fully encompassing equipment used by scientists during research and development, and manufacturing processes. The Isolator has been developed using Flow Sciences' expertise in Computational Fluid Dynamics (CFD) and can be designed and manufactured to fit the customer's needs.

Air distributes evenly, without roll, across the HEPA filters and leaves through an adjustable speed fan with integrated alarm.

Blue indicates gentle, low velocity ambient room air entering over the air foils and being pulled across the work surface through the rear plenums.

FAN / BIBO

- BAG-IN / BAG-OUT FILTER CHANGE
- DUAL 4" PLEATED HEPA FILTERS
- CIRCULATE INTO LAB OR CONNECT TO HOUSE EXHAUST

The Bag-in / Bag-out (BIBO) filter change method is unique to Flow Sciences and we are very proud to provide dual HEPA filtration and ease of filter change. This system allows for circulation into the lab and also connection straight to house exhaust. The BIBO system allows for the filter to be changed in a clean environment where the saturated filter is not exposed to the lab environment.

MESH FAN / FILTER

- RECIRCULATE INTO LAB
- DUAL 4" PLEATED HEPA FILTERS
- USE IN LOW CEILING APPLICATIONS

Often times in a low ceiling situation, a focused exhuast port could deflect off of the ceiling and send air down across the face opening. To prevent this, Flow Sciences has mesh top fans that evenly distribute the exhausted air, thus preventing face opening sheer. Equipped with a single 4" pleated HEPA filter, this exhaust option is ideal for recirculating back into the room.

FACTORY ACCEPTANCE TESTING WITH PROVEN RESULTS

Surrogate Powder and Factory Acceptance Testing (F.A.T.) with results showing containment below 50 nanograms/m3 (ng/m3) over an 8 hour time weighted average. Higher levels of containment available with Factory Acceptance Test. Reduce turbulence and reproduce consistent performance based results. Balance stability to the 7th decimal.

THE BULK POWDER HYBRID ISOLATOR SERIES

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