ESCO
LIFESCIENCES

Pharmacon™ Downflow Booth Generation 3

Engineered Unidirectional Airflow for Reliable and Continuous Safety

Pharmacon™ Downflow Booth Generation 3

Clean, Filtered Air for User Protection

- H14 HEPA supply filter for air supply with high efficiency

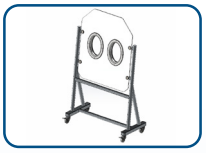
Front Bleed Grill

- Front bleed grill with scoop design to maintain negative pressure

Efficient 3-Stage Exhaust Filtration

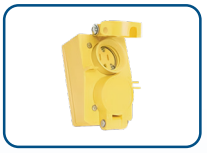
- An Efficient 3-stage Exhaust Filtration
- Effective particulate capture with G4 prefilter, F8 fine dust filter, and H13 HEPA filter and continuous supply of clean, filtered air

Options

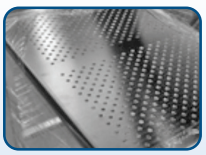


Mobile High Containment Screen

Computer Monitor Mounting Screen



Standard Duplex Outlet



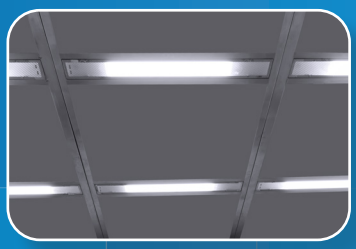
Bench; SST or Granite Tables, W x D, Fixed to Booth or Stand Alone

Material & Personnel Airlock

Pass Through

Featuring a Flush Mounted Lighting

- LED lights with smooth surface housing for easy cleaning, providing the >500 lux light intensity level



Safe Change Filter Housing

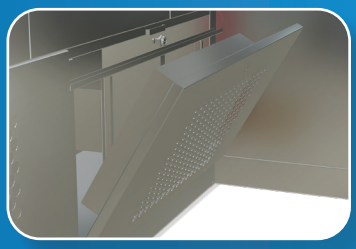
- Ensuring safety during the replacement of the filter

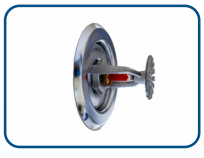
User-Friendly PLC - Controlled Interface

- Intuitive, flush-mounted design with simple push-button and pressure gauge operation
- Option for touch-screen display PLC controlled via Allen Bradley or Siemens for reliable, user-friendly operation and seamless monitoring

Quick Pre-Filter Access

- Lockable hinged panel for easy maintenance without panel removal.





Side Wall Fire Sprinkler Penetration

Bumper Rails

Ethernet & RS-232

Vision Panel

Temperature & Relative Humidity Local Display

Introduction

Esco Pharma's Downflow Booth Generation 3 (DFBG3) is a new generation of Esco powder containment booth which provides simplicity with assured quality. Downflow booth is used for non-aseptic, opening sytem ambience booth. The Esco Downflow Booth ensures operator and process protection using HEPA-filtered laminar downflow air to prevent the powders deposit to the operator breathing zone via the negative pressure principle during open handling processes such as weighing, dispensing and sampling. With various configurations provided, DFBG3 adapts to your specific needs with fully customizable options. Its flexible design suits a wide range of applications across various industries.

The DFBG3 is designed such that through the different configurations it can be applied; but not limited to, the following markets:

- Pharmaceutical
- Cosmetic
- Nutraceutical
- Food
- Biological
- Animal
- Robotic
- Electronic

Basic Principles

- Unidirectional airflow velocity measured 150 mm (6") from terminal HEPA filter or diffuser face.
- Cross contamination control through negative pressure.
- Recirculating with 10% Exhaust bleed air via Bleed Scoop design
- Non-aseptic intended booth - Powder handling activity

Standard Features

- cGMP modular design with minimized joints and seams.
- Filter configurations available utilizing combinations of G4, F8, Carbon, H13, and H14.
- Gel Seal HEPA Filters.
- Integrated Filter mounted on the inner ceiling.
- Materials option: SS316, SS304 or While EG Steel Powder Coated
- Safe Change Filter (Bag In-Bag Out) with option for internal or external filter access.
- Selectable fan control configurations for either Open or Closed Loop.
- Recirculating airflow configuration for containment during powder handling applications
- Single pass with downflow configuration for containment during solvent handling applications.
- Optional cooling coil systems to provide operator comfort and to control temperature and humidity within the booth.
- Energy efficient EC fan units available.
- Optional hazardous area configurations to meet ATEX rated requirements NEC 505 is used globally except USA and NEC 500 is used in USA.
- Push-button control with pressure gauges or HMI touchscreen. PLC options: Allen Bradley or Siemens.
- Modular design allows future system adjustment without full booth replacement.

Best model to suit the site

Mechanical

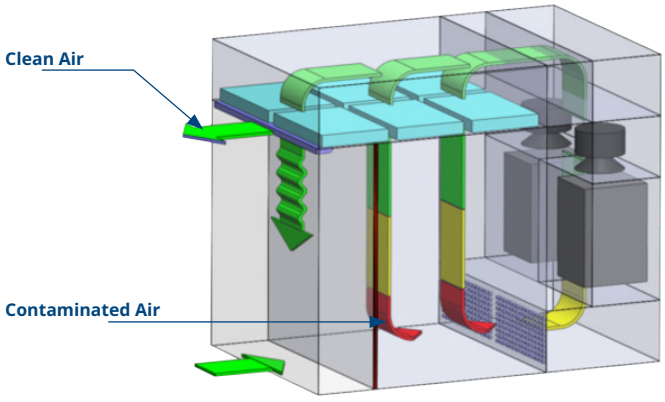
- Wide range of standard options is designed to meet client needs, streamlining project start-up and fabrication times. This results in faster equipment delivery times.
- Modular design provides the option of increasing / decreasing booth size on-site without purchasing a new piece of equipment.

Controller

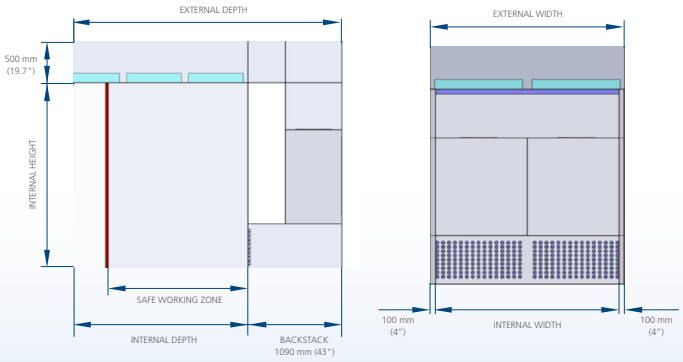
- Control system offerings (Siemens or Allen-Bradley) provide options for international compliance and true closed loop control.

Airflow Regime

- Air is delivered into the Operator's Breathing Zone (OBZ) via the overhead HEPA filters, thus providing a clean and safe environment.
- Potential dust clouds are suppressed and removed via the exhaust filtration system.
- The operator carries out tasks in the high velocity zone at the rear of the Booth so that dangerous dusts will not rise into the breathing zone.



Airflow Schematic



GENERAL SPECIFICATIONS - Pharmacon™ Downflow Booths		
Standard Booth - Safe Change Version		
Back Stack		1090 mm (43")
Booth Type		Safe Change No Bag
		Safe Change With Bag
Area Rating		Safe Area or Hazardous Area
Dimensional Options	**Internal Width (m)**	1.6, 1.8, 2.0, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4.0, 4.2, 4.4, 4.6, 4.8 *(add +0.2 m for the External Width)*
	Internal Depth (m)	2.0, 2.5, 3.0
	Internal Height (m)	2.5 (External height is 0.5 m from the internal height)
Safe working zone		Internal depth - 400 mm
Filter Arrangement Options		**Note: If carbon filter is used, the filter package in order is to be G4-F8-Carbon-H14* *(The standard is G4-F8-H13-H14)*
Fan/Filter Access		External
		Internal
Airflow Arrangement		Recirculating
		Single Pass With Downflow
LOP Location		Rear wall
		Option: Side panel
Bleed position		Front
		Top
Material of Construction	**Ceiling plenum**	Option 1: SS304 Option 2: SS316 Option 3: White EG steel Powder Coated *Note: A combination of materials above can be done*
	Side panels, Rear wall	
	Filter housing, fan box, Space (if any) & transition	
	Plinth	
	Exhaust grilles	
	Exterior side panels	
Voltage supply		400 V, 50 Hz, 3 Ph
		480 V, 50 Hz, 3 Ph (For US countries)
MCP Location		Remote mounted
		On-board
Control Type		Push Button with Smart Controller - Pressure Gauge - Open Loop
		HMI/PLC Siemens/Allen Bradley - Closed Loop
Cooling Type		Chilled water/Glycol
		Direct Expansion
PAO Ports		Inner ceiling

Guide to DFBG3 Model Code

Model	DFBG3-SC-16-20-25-F-PB-CC					
Product Code	Filter replacement	Internal dimensions			Bleed position	Controller Type	Cooling Coil
		Width	Depth	Height			
DFBG3	SC - Safe Change	16 - 1.6 m	20 - 2.0 m	25 - 2.5 m	F - Front	PB - Push Button with Smart Controller - Pressure Gauge - Open Loop – PB/PDI/Open Loop	NIL - Not required
		*	*	*	T - Top	AB - 7" HMI/PLC Allen Bradley - Closed Loop – HMI Allen-Bradley/PLC/Closed Loop	CC - Chilled water
						SM - 7" HMI/PLC Siemens - Closed Loop – HMI Siemens/ PLC/Closed Loop	DX - Direct Expansion
							GL - Glycol

**Note: follow standard configuration size*

DFBG3 Safe Change Model Configurations

No.	Internal Width (mm)	External Width (mm)	Internal Depth (mm)	Safe Working Zone	Back Stack Depth	Internal Height (mm)	External Height (mm)
1	1600	1800	2000	-400 mm from the Internal Depth	1090	2500	3000
2			2500				
3			3000				
4	1800	2000	2000				
5			2500				
6			3000				
7	2000	2200	2000				
8			2500				
9			3000				
10	2400	2600	2000				
11			2500				
12			3000				
13	2600	2800	2000				
14			2500				
15			3000				
16	2800	3000	2000				
17			2500				
18			3000				
19	3000	3200	2000				
20			2500				
21			3000				
22	3200	3400	2000				
23			2500				
24			3000				
25	3400	3600	2000				
26			2500				
27			3000				
28	3600	3800	2000				
29			2500				
30			3000				
31	3800	4000	2000				
32			2500				
33			3000				
34	4000	4200	2000				
35			2500				
36			3000				
37	4200	4400	2000				
38			2500				
39			3000				
40	4400	4600	2000				
41			2500				
42			3000				
43	4600	4800	2000				
44			2500				
45			3000				
46	4800	5000	2000				
47			2500				
48			3000				

ESCO®
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Improving Lives Through Science

DIRECT MANUFACTURER

- Animal Research Workstation
- Biosafety Safety Cabinet
- CO_2 Incubator
- Ducted Fume Hood
- Ductless Fume Hood
- Filtered Storage Cabinet
- Laboratory Centrifuge
- Laboratory Oven and Incubator
- Laboratory Refrigerator and Freezer
- Laboratory Shaker
- Laminar Flow Cabinet
- PCR Cabinet
- PCR Thermal Cycler
- Powder Weighing Balance Enclosure
- Ultra-low Temperature Freezer

ESCO® LIFESCIENCES

- Airflow Containment
- Cross-Contamination Facility Integrated Barrier
- Isolation Containment
- Ventilation Containment
- Radiopharmacy
- Adherent Cell Bioreactors
- Adherent Automated Cell Harvesting System
- Cell Culture Monitoring Tools
- Single-use Consumables for Bioprocessing

ESCO® MEDICAL

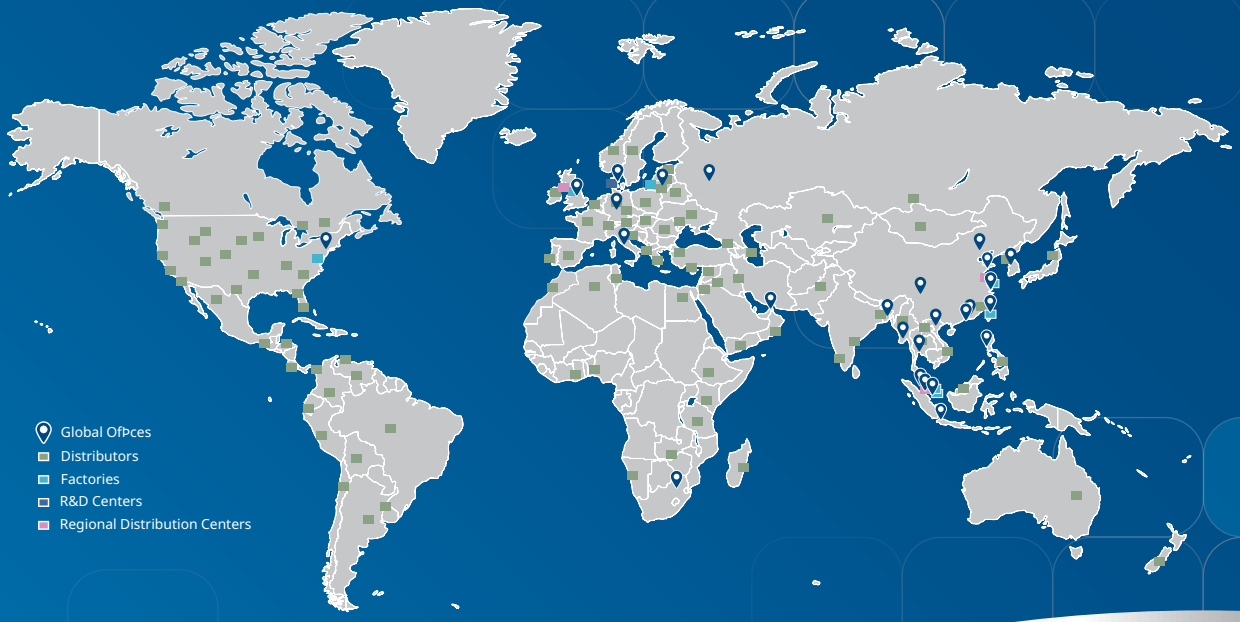
- Time-Lapse Incubator
- Benchtop Incubator
- ART Workstation
- CO_2 Incubator
- Anti-Vibration Table
- Gas Analyser

ESCO® ASTER

CRDMO Services

www.escolifesciences.com

ESCO LIFESCIENCES GROUP NETWORK
42 Locations in 24 Countries All Over the World



Air Shower
Aseptic Containment Isolator (ACTI)
Ceiling Laminar Airflow Units
Cleanroom Transfer Hatch
Containment Barrier Isolator (CBI)
Downflow Booth (DFB)
Dynamic Floor Laminar Hatch
Dynamic Pass Box
Evidence Drying Cabinet
Garment Storage Cabinet
General Processing Platform Isolator (GPPI)
Laminar Flow Horizontal Trolley
Laminar Flow Straddle Units, Single and Double
Laminar Flow Vertical Trolley
Pass Box
Soft Wall Cleanroom
Sputum Booth
Ventilated Balance Enclosure (VBE)
Weighing and Dispensing Containment Isolator (WDCI)

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community.

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