

Pharmacon™ Downflow Booths



Esco Pharmacon Downflow Booth,
Model DFB-G2

Introduction

Downflow booths provide operator, process and / or product protection by utilizing HEPA filtered unidirectional laminar downflow to maintain an ISO 5 environment at rest within the work zone and capture particulates during open handling processes.

The standard Esco DFBG2 has over 420 possible dimensional models and approximately 3.5 million possible system configurations ensuring that Esco can provide a standard solution to fit your specific process and facility requirements. Should a standard option not fit your requirements Esco can offer a customized solution.

The DFBG2 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

- Laminar airflow velocity of $0.45\text{m/s} \pm 20\%$ (89 ft/min) measured 150 mm (6") from terminal HEPA filter or diffuser face
- Containment Performance Target (CPT's) $\leq 100 \mu\text{g}/\text{m}^3$ over an 8 hour Time Weighted Average (TWA) when used with proper operator techniques.
- CPT's of $\leq 10 \mu\text{g}/\text{m}^3$ over an 8 hour TWA are achievable with the use of a high containment screen

- ISO 5 work space environment at rest conditions
- Enhanced cGMP practices
- Cross contamination control through negative pressure

Standard Features

- cGMP modular design with minimized joints and seams
- 6 different filter configurations available utilizing combinations of G4, F8, Carbon, H13, and H14
- Gel Seal HEPA Filters
- Integrated Filter challenge ports

Features

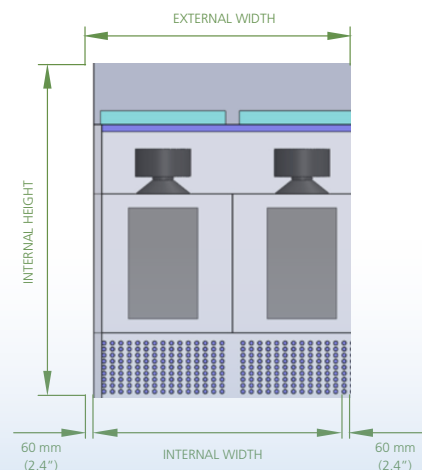
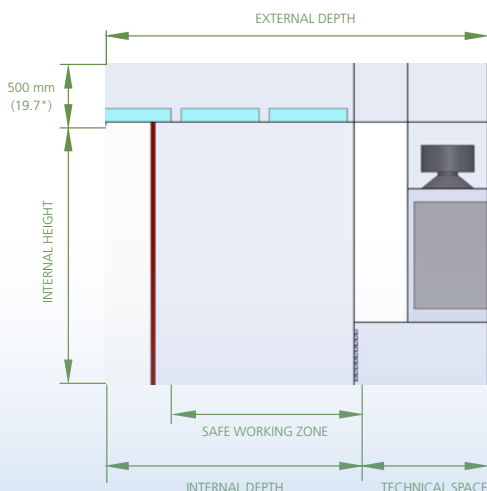
- Safe Change filter configurations are available for potent products, selectable to change either internally or externally to the booth
- Open loop or Closed Loop fan control configurations
- Recirculating airflow configurations allowing use for powder or solvent applications
- Optional cooling coil systems to provide operator comfort
- PVC strip curtains available
- Energy efficient EC fan units available to minimize operating costs
- Optional hazardous area configurations to meet ATEX rated requirements (NEC 505/NEC 500)
- Multiple control system options (HMI, Push Button or Sentinel Gold Microprocessor interfaces)
- Modular design allows future system adjustment without full booth replacement

| Model | Series | Explosive Rating | Inside Height | Outside Width | Inside Depth | Back Stack Depth | Filter Group | Fan/Filter Access | Recirculating or Single Pass Airflow | LOP Location | Bleed Position | Powder Coated Components | Stainless Steel Components | PVC Group | Supply Voltage | MCP Location | Control Type | Cooling Type | Other Options | |
|-------|--------|------------------|---------------|---------------|--------------|------------------|--------------|-------------------|--------------------------------------|--------------|----------------|--------------------------|----------------------------|-----------|----------------|--------------|--------------|--------------|---------------|--|
| DFBG2 | | | | | | | | | | | | | | | | | | | | |

Note: Refer to the configuration table below for parameter selection options and input them into the cells above. For example: DFBG2-SC-SA-21-24-20-B-A-R-F-PQ-RS-NILL-D-RM-3-CC-02-03-05 would be a safe change, safe area booth that has an internal height of 2.1m, an external width of 2.4m and an internal depth of 2.0m and so on. For any option that you may not desire (PVC curtains, cooling options or other options) insert NILL into the cell.

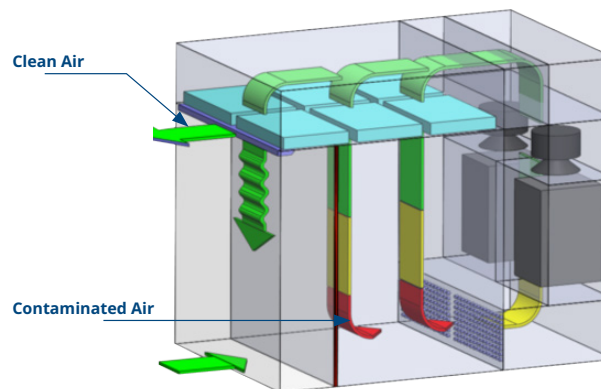
| | | 0.3 m Back Stock | 0.6 m Back Stock | 1.0 m Back Stock |
|----------------------------|--|---|---|---|
| Series | Option SC: Safe Change | | | ✓ |
| | Option SCNB: Safe Change No-Bag | | | ✓ |
| Explosive Rating | Option ST: Standard | ✓ | ✓ | |
| | Option SA : Safe Area | ✓ | ✓ | ✓ |
| | Option ED: Explosive Dust | | ✓ | ✓ |
| Dimensional Option | Option EG: Explosive Gas | | ✓ | ✓ |
| | Internal Height Options (m) | 2.1, 2.5 | 2.1, 2.5 | 2.1, 2.5 |
| | External Width Options (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, 5.0 | 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, 5.0 | 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, 5.0 |
| Filter Arrangement Options | Internal Depth Options (m) | 0.8, 1.2, 1.6 | 0.8, 1.2, 1.6, 2.0, 2.4 | 0.8, 1.2, 1.6, 2.0, 2.4, 2.8 |
| | Option A - G4,F8,H13,H14,PLF | | | ✓ |
| | Option B - G4,F8,H13,H14 | | | ✓ |
| | Option C - G4,F8,H13,PLF | | | ✓ |
| | Option D - G4,F8,H14 | | ✓ | ✓ |
| Fan / Filter Access | Option E - Carbon,H14 | ✓ | | ✓ |
| | Option A - Internal to Booth | ✓ | ✓ | ✓ |
| Airflow Arrangement | Option B - External Area | | | ✓ |
| | Option R - Recirculating | ✓ | ✓ | ✓ |
| Bleed Position | Option S - Single Pass with Downflow Air | | | ✓ |
| | Option T - Top | | | ✓ |
| M.O.C. Options | Option F - Front | ✓ | ✓ | ✓ |
| | Option P: Ceiling Plenum | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| | Option Q: Side Panels, Rear Wall | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| | Option R: Filter Housings, Fan Boxes, Spacer (if present) & Transition | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| | Option S: Plinth | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| | Option T: Exhaust Grills | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| PVC Curtains | Option U: Exterior Side Panels | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel | A: 316SS, B: 304 SS, C: White P.C. EG Steel |
| | Option T - Top | | | ✓ |
| | Option F - Front | ✓ | ✓ | ✓ |

Notes: * Explosive Rating requires full definition at the time of enquiry



| | | 0.3 m Back Stock | 0.6 m Back Stock | 1.0 m Back Stock |
|-----------------------|---|------------------|------------------|------------------|
| Voltage Supply | Option A: 230 V, 50 Hz, 1 Ph | ✓ | | |
| | Option B: 400 V, 50 Hz, 3 Ph | | ✓ | ✓ |
| | Option C: 208 V, 60 Hz, 3Ph | | ✓ | |
| | Option D: 480 V, 60 Hz, 3 Ph | | ✓ | ✓ |
| | Option E: 120 V, 60 Hz, 1 Ph | ✓ | | |
| MCP Location | OR: Onboard Right Access | ✓ | ✓ | ✓ |
| | OL: Onboard Left Access | ✓ | ✓ | ✓ |
| | OF: Onboard Front Access | ✓ | | |
| | RM: Remote Mounted | ✓ | ✓ | ✓ |
| Control Type | Option 1: PLC/PB's/PDI/PDT - Allen Bradley Components - Closed Loop | | ✓ | ✓ |
| | Option 2: PLC/PB's/PDI/PDT - Siemens Components - Closed Loop | | ✓ | ✓ |
| | Option 3: PLC/HMI/PDT - Allen Bradley Components - Closed Loop | | ✓ | ✓ |
| | Option 4: PLC/HMI/PDT - Siemens Components - Closed Loop | | ✓ | ✓ |
| | Option 5: Sentinel Gold/PDI/PDT - Open Loop/Closed Loop | ✓ | ✓ | ✓ |
| Cooling Type | Option CC: Chilled Water | | ✓ | ✓ |
| | Option DX: Direct Expansion | | ✓ | ✓ |
| | Option GL: Glycol | | ✓ | ✓ |

| | |
|-------------------|--|
| Mechanical | Many standard offerings to fit our client's needs result in reduced project start-up and fabrication times resulting in quicker equipment deliveries |
| | Modular design provides the option of increasing / decreasing booth size on-site without purchasing a new piece of equipment |
| Controls | DFB control system is pre-programmed for all possible options so existing DFBs can be easily adapted to suit changing customer needs |
| | Control system offerings (Siemens, AB, Sentinel Controller) provide options for international compliance and true closed loop control |
| Sales | Automated DFBG2 sales tool allows for instant quoting and drawing generation to greatly reduce the time between RFQ and quote submittal |

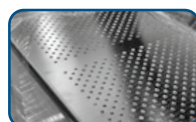


Airflow Schematic

OPTIONS



- 1. High Containment Screen (1 or 5D)



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



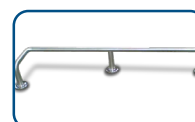
- Pass Through Connections



- 3. Computer Monitor Mounting Screen



- 7. Side Wall Fire Sprinkler Penetration



- 11. Bumper Rails



- 4. Airlock



- 8. Material Handling



- 12. Temperature & .H. Local Display



- 5. Standard woodhead Duplex Outlet



- 9. Vision Panel



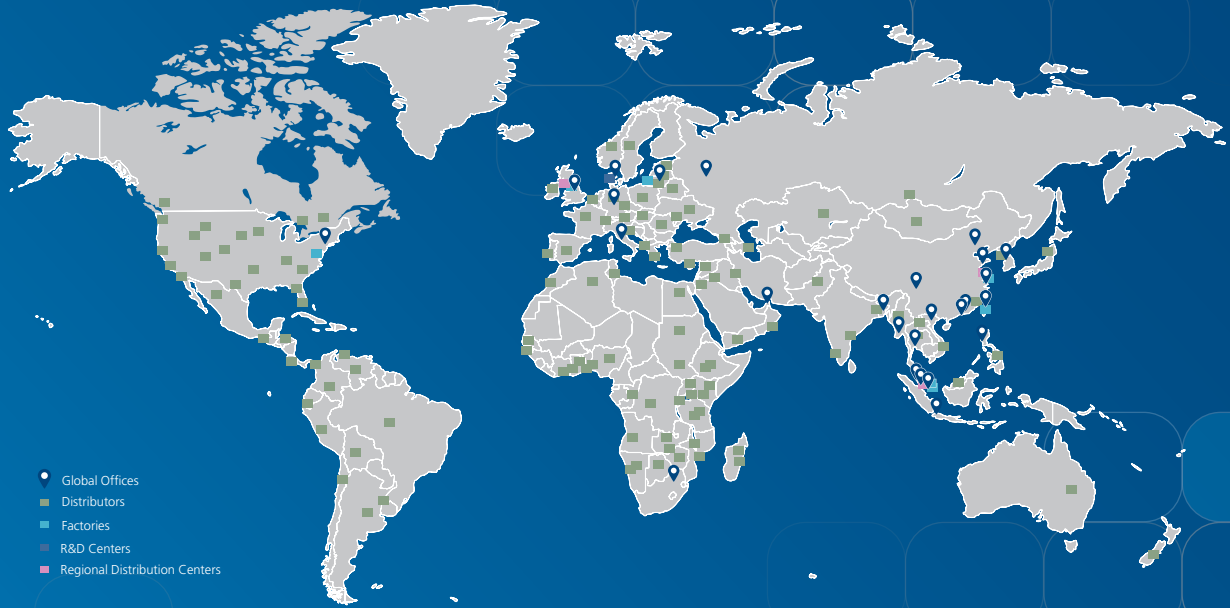
- 13. Drum Tipper

- 6. Pass Through

- 10. Ethernet & RS-232

ESCO LIFESCIENCES GROUP NETWORK

42 Locations in 21 Countries All Over the World



- Global Offices
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers



- 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.



Esco Micro Pte Ltd
 19 Changi South Street 1,
 Singapore 486779
 Tel: +65 65420833
 Email: mail@escolifesciences.com

Esco Technologies, Inc.
 2512 Metropolitan Drive, Suite 120 B
 Feasterville-Trevose, PA 19053-6738
 Tel: +1 215 322 2155
 Email: eti.pharma@escolifesciences.com

Esco GB Ltd
 Unit 2 R-evolution @ Gateway 36, Kestrel
 Way, Barnsley, S70 5SZ
 Tel: +44 (0) 1226 360 799
 Email: egb.info@escolifesciences.com



Esco Lifesciences Offices: Bangladesh | China | Denmark | Germany | Hong Kong | India | Indonesia | Italy | Japan | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam



9010694_DFB_Gen2_SolBlue_C03062025
 Esco can accept no responsibility for possible errors in catalogues, brochures and other printed material. All trademarks and logos in this material are the property of Esco and the respective companies.