

**ESCO**  
LIFESCIENCES

# BioPass™ Pass Through

Transfer seamlessly. Biodecontaminate  
confidently.



## Introduction

BioPass™ Pass Through is floor standing airtight transfer chamber with onboard ventilation and integrated atomized or vaporized hydrogen peroxide (AHP/VHP, H2O2) based bio-decontamination system designed for material and equipment transfer into a ISO Class 5 cleanroom in an aseptic manner.

BioPass™ Pass Through provides a flush threshold enclosure to allow materials to be wheeled into the enclosure with minimum effort. Full stainless steel assembly in compliance with cGMP's design requirements.

## Application

- Hospital
- Food, Beverages & Confectionary
- Manufacturing Facilities
- Veterinary Surgeries
- Dentist
- Primary Healthcare Facilities
- Pharmaceutical Industry

## Integrated Biodecontamination System

Esco Healthcare has developed an effective hydrogen peroxide based biodecontamination system capable of achieving 6-log reduction in bio-burden. The spore log reduction has been validated by biological indicator challenge using biological indicator stainless steel ribbons populated with *Geobacillus stearothermophilus* spores.



GENERAL SPECIFICATIONS (AHP Cycle)	
Air Injection Pressure	4 bar ± 10%
Air Injection Flow Rate	32 lpm ± 10%
Injection Time	30 sec – 20 mins
Dwell Time	15 – 45 mins
Aeration Time	20 – 90 mins
Sterilant Used in One Cycle	10 – 150 mL
Sterilant Injection Flow Rate	200 – 1000 µL/sec
Sterilant	30% Hydrogen Peroxide

*Disclaimer: The AHP cycle parameters shown are indicative only. Actual cycle conditions may vary based on chamber design, size, load characteristics, and specific decontamination applications. For detailed guidance, please contact Esco Healthcare.*

## Standard Features

- **The interior and cleanroom side face is made of 316 stainless steel with a smooth interior and covered corners to ensure easy cleaning and biodecontamination.**

The interior surface is polished to Ra 0.8 µm, and external surfaces exposed to cleanroom environments are polished to Ra 1.2 µm. The cleanroom wall interface allows a flush finish with the surface for cleanliness.

- **Chamber doors are constructed with an integrated FDA-approved silicone inflatable seal around the perimeter.**

Doors shall give >90° opening for full access.

- **Interlocking doors**

Ensures that both side doors cannot be opened simultaneously and prevents the clean side doors from opening until biodecontamination is completed.

- **Direct reading pressure gauges**

Both sides of the pass-through are equipped with these indicators to display the chamber pressure.

- **Integrated with the Esco BioVap™ biodecontamination system, with HMI/PLC interface and chamber pressure decay testing to verify system integrity prior to cycle initiation**

Supports intuitive operation and electronic data management aligned with 21 CFR Part 11 requirements. Cycle reports can be generated via thermal printer or exported as PDF through the HMI. An onboard catalytic converter enables safe aeration and room air recirculation, with an interlocked H2O2 safety sensor to ensure operator safety and reduce reliance on external HVAC ducting.

## Accessories

### H2O2 Monitoring System - (One per Biopass Needed)

To ensure the concentration of hydrogen peroxide inside the chamber and to confirm end of aeration

- AHP Systems: Equipped with low-level H2O2 sensors (3 units)
- VHP Systems: Equipped with both high- and low-level H2O2 sensors (1 high-level and 3 low-level units)

### Room H2O2 sensor

### Remote Catalytic Converter

Allows aeration of the system and operation without the need for site ducting. The system can be exhausted to the room following aeration.

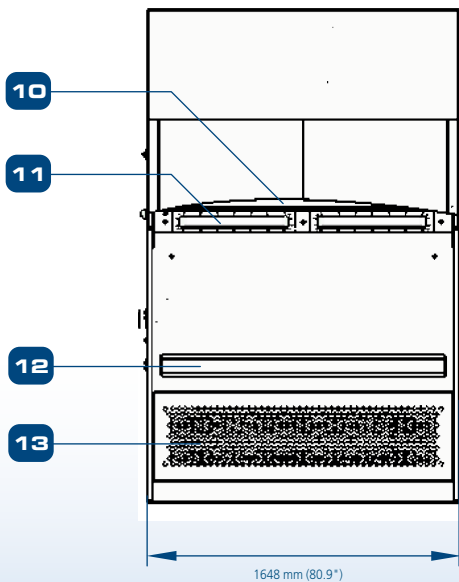
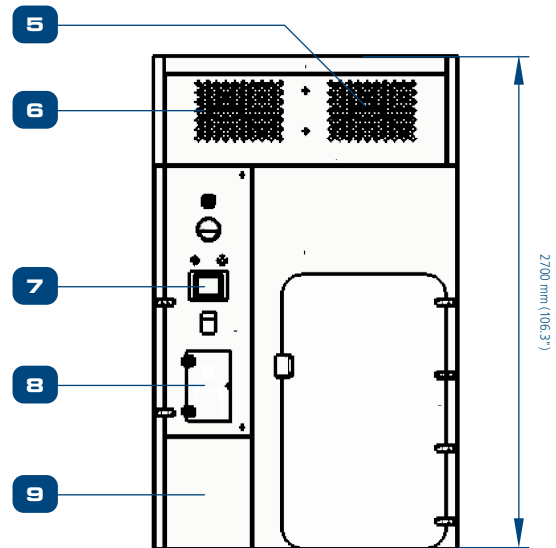
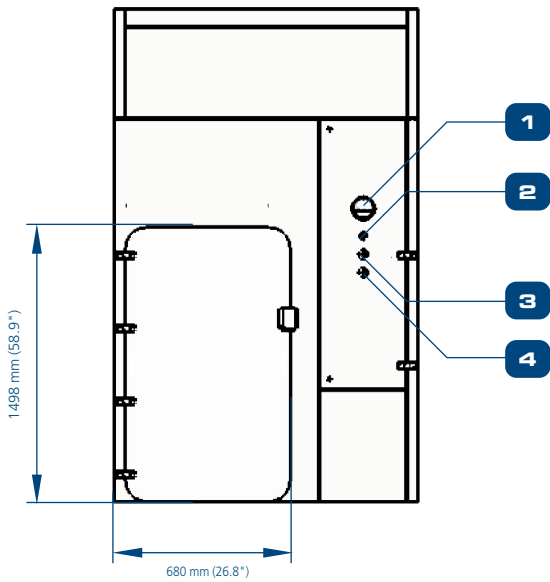
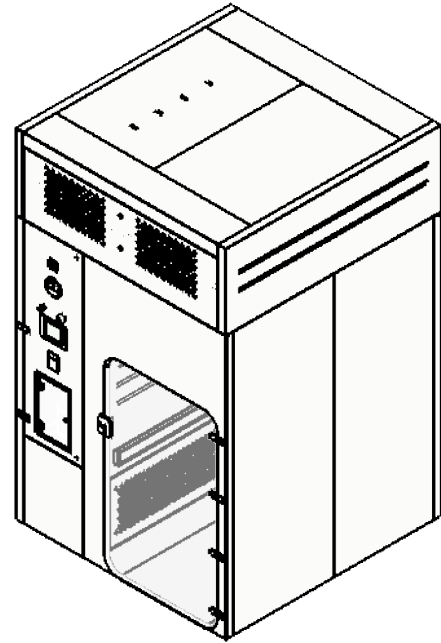
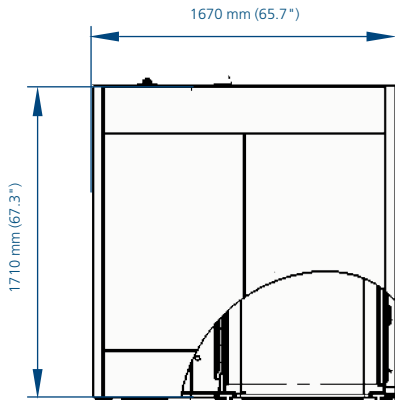


Remote Catalytic Converter

## STANDARD INTERNAL DIMENSIONS

W x D x H (mm)	700 x 700 x 700 mm	800 x 800 x 800 mm	900 x 900 x 900 mm	1000 x 1000 x 1000 mm	1200 x 1200 x 1200 mm
W x D x H (in)	27.6" x 27.6" x 27.6"	31.5" x 31.5" x 31.5"	35.5" x 35.5" x 35.5"	39.4" x 39.4" x 39.4"	47.3" x 47.3" x 47.3"
W x D x H (ft)	2.30' x 2.30' x 2.30'	2.63' x 2.63' x 2.63'	2.96' x 2.96' x 2.96'	3.3' x 3.3' x 3.3'	3.94' x 3.94' x 3.94'

## Engineering Drawing

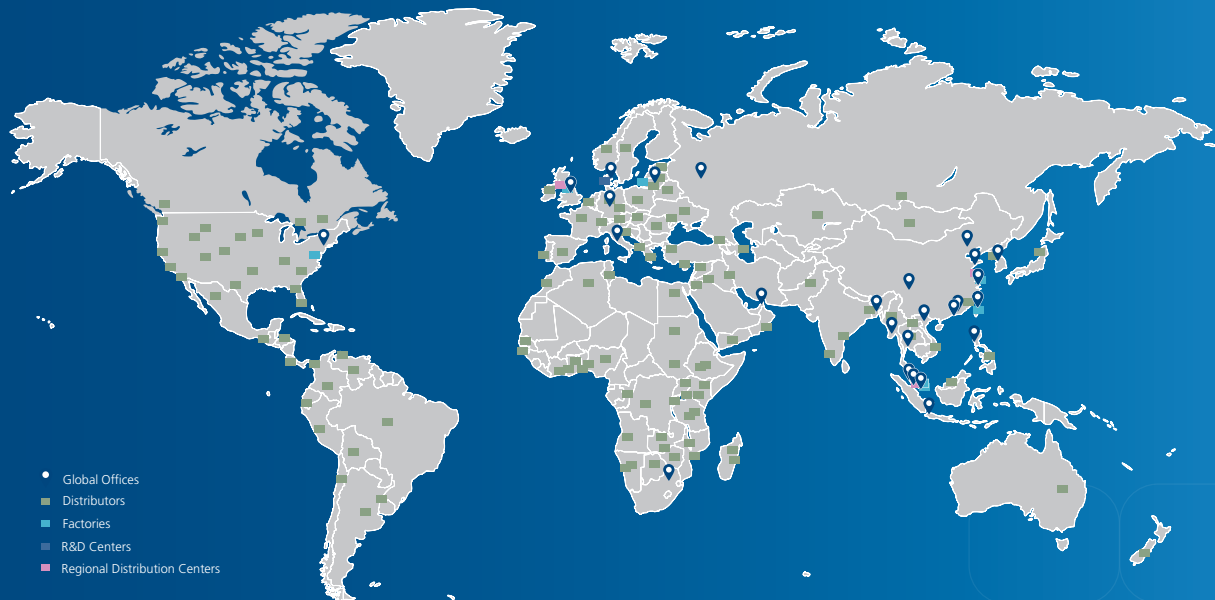


1. Chamber Pressure Gauge
2. Emergency Stop
3. Door Button
4. Door Availability Indicator
5. Inlet Filter
6. Exhaust Filter
7. HMI Display
8. AHP/VHP Bottle Loader
9. Technical Housing
10. Supply HEPA Filter
11. Chamber Light Assembly
12. Bumper Rails (customization only)
13. Exhaust HEPA Filter

**GENERAL SPECIFICATIONS**

<b>Air Classification</b>		ISO Class 5 as per ISO-14644-1	
<b>Airflow Pattern</b>	<b>During normal operation</b>	Single Pass Airflow	
	<b>During biodecontamination</b>	Recirculatory Airflow (During injection) Single Pass Airflow (During aeration)	
<b>Operating Pressure</b>		+50Pa with respect to ambient environment	
<b>Operating Pressure</b>		250 ACH	
<b>Leak Tightness</b>		The acceptable leakage rate of the chamber will be no greater than 10 <sup>-2</sup> /h, Refer to ISO 10648-2, Class 3 Containment Enclosure.	
<b>Lighting</b>		Internal lighting shall be provided giving an average of ≥600 lux illumination over the whole area of the chamber when measured at 1 m above the floor level.	
<b>Noise Level</b>		≤75 dBA	
<b>Temperature</b>	<b>During normal operation</b>	Monitored only	
	<b>During biodecontamination</b>	<b>AHP</b>	Monitored only
<b>VHP</b>		Monitored and controlled	
<b>Humidity</b>	<b>During normal operation</b>	Monitored only	
	<b>During biodecontamination</b>	<b>AHP</b>	Monitored only
<b>VHP</b>		Monitored and controlled	
<b>Filtration Elements</b>	<b>Pre-Filter</b>	G4	
	<b>Supply Filter</b>	HEPA (H14) filter with typical efficiency of ≥ 99.995% at MPPS	
	<b>Exhaust Filter</b>		
<b>Biodecontamination</b>		BioVap™ (Hydrogen peroxide-based) capable of achieving a minimum of log 6 reduction in spore forming micro-organisms validated using a BI challenge validation	

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



**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



9010716\_BioPass\_Sellsheet\_A4\_08\_04222026  
Esco can accept no responsibility for possible errors in catalogues, brochures and other printed materials. Esco reserves the right to alter its products and specifications without notice. Esco is a registered trademark of Esco and is the property of Esco and the respective companies.