

SECTION 13 20 00

CLEAN ROOM PASS-THROUGH CHAMBERS

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\*\* NOTE TO SPECIFIER \*\* Terra Universal, Inc.; Cleanroom Pass-Through Chambers and accessory products.
.
This section is based on the products of Terra Universal, Inc., which is located at:
800 S. Raymond Ave.
Fullerton, CA 92381-5234
Tel: 714-578-6000
Fax: 714-578-6020
Email: [request info (info@TerraUniversal.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Terra+Universal,+Inc.&coid=43448&rep=&fax=714-578-6020&message=RE:%20Spec%20Question%20(13037ter):%20%20&mf=)
Web: <https://www.terrauniversal.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos43/arc43448.html) ] for additional information.
Terra Universal is the leading manufacturing expert in critical environment applications, with over 30 years of design and fabrication experience in cleanroom-related industries.
In addition to standard manufactured products, Terra customizes to unique requirements. Installation and certification services for modular cleanrooms and glove box isolators are also available.
This specification includes Cleanroom Pass-Through Chambers and accessories.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. General-Use Pass-Through Chambers.
		2. General-Use Pass-Throughs with Recirculating HEPA Filtration.
		3. CleanSeam Pass-Through Chambers.
		4. CleanMount CleanSeam Pass-Through Chambers.
		5. Smart CleanMount CleanSeam Pass-Through Chambers.
		6. BioSafe CleanMount CleanSeam Pass-Through Chambers.
		7. Smart BioSafe CleanMount CleanSeam Pass-Through Chambers.
		8. Refrigerated Smart CleanMount CleanSeam Pass-Through Chambers.
		9. Heavy Duty Ruggedized Pass-Through Chambers.
		10. Fire Rated Pass-Through Chambers.
		11. Roll-Up Pass-Through Chambers.
		12. Smart Recirculating Pass-Through Chambers.
		13. Air Shower Pass-Through Chambers.
		14. ValuLine Pass-Through Chambers.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05 50 00 - Metal Fabrications.
		2. Section 07 90 00 - Joint Protection.
		3. Section 08 71 00 - Door Hardware.
		4. Division 15 - HVAC; mechanical services and connections.
		5. Division 16 - Electrical; electrical power service and wiring connections.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM A 269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
		2. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
		3. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
		4. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
		5. ANSI/UL 10B - Standard for Fire Tests of Door Assemblies.
		6. CAN/ULC-S104-10 - Standard Method for Fire Tests of Door Assemblies
		7. FS 209E - Cleanroom and Workstation Requirements, Controlled Environments.
		8. ISO 146744-1 - Cleanrooms and associated controlled environmentsPart 1: Classification of air cleanliness
		9. UL (Underwriters Laboratories, Inc.) - Electrical Appliance and Utilization Equipment Directory.
		10. FDA/cGMP Requirements - 21 CFR Section 211 and Proposed Guidelines 21 CFR Section 212.
	1. DESIGN / PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs as required for the project. Note that FDA/cGMP requirements will required the use of CleanSeam or Bio-Safe Pass Through Equipment.

* + 1. Cleanroom Pass Through shall be capable of maintaining the following cleanroom performance requirements when installed as follows.
			1. Capable of maintaining Class 100 to 10,000 (ISO 5 to ISO 8) conditions in accordance with FS 209E and ISO 146744-1.
			2. Capable of meeting validation requirements of FDA/cGMP and the following requirements.
				1. Nonviability Particle Count: Maximum of 10,000 per cf, 0.5 micron or larger measured 6 inches above work surface (Class 10,000/ISO 7). Other permissible counts accord with nominal cleanliness rating (1000 per cf. for ISO 6, 100 per cf. for ISO 5).
				2. Viable Count: Less than 1.5 colony forming units per 10 cubic feet. Other permissible counts in accord with nominal cleanliness rating.
			3. Capable of maintaining a passive pressure differential of:
				1. Area outside room: balance condition
				2. Air lock: 0.05 inch w.g.
				3. Cleanroom: 0.1 inch w.g.
		2. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and finish.
		4. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
		5. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in the manufacture of products specified in this section with minimum 10 years documented experience.
		2. Installer Qualifications: Company specializing in performing work of this section with minimum 5 years documented experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Locate where designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
		2. Preinstallation Meetings: Conduct meeting to verify project requirements, substrate conditions, utility connections, manufacturer's installation instructions.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
		2. Do not deliver materials or assemblies to site until installation spaces are ready to receive units.
	2. SEQUENCING
		1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
		2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Terra Universal, Inc., which is located at: 800 S. Raymond Ave.; Fullerton, CA 92381-5234; Tel: 714-578-6000; Fax: 714-578-6020; Email: [request info (info@TerraUniversal.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Terra+Universal,+Inc.&coid=43448&rep=&fax=714-578-6020&message=RE:%20Spec%20Question%20(13037ter):%20%20&mf=); Web: <https://www.terrauniversal.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Select the cleanroom pass-through chamber and accessories as required from the following major paragraphs as required. Delete the paragraphs that are not applicable.

* 1. GENERAL-USE PASS-THROUGH CHAMBERS

\*\* NOTE TO SPECIFIER \*\* Select the Material, Wall or Floor Mount, and Outside Dimension for the pass-through(s) required from the following paragraphs. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out. Doors add 1 inch (25 mm) to depth. Internal Access size equals W by H minus 2 inches (51 mm). Also available in 316L stainless steel, Contact manufacturer for additional information.

* + 1. Metal Pass-Through Chambers
			1. 304 Stainless Steel with Stainless Steel Doors/Dissipative PVC Windows.
				1. Wall Mount

 Cat. #1992-09D

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

 Cat. #1992-10D

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

 Cat. #1992-11D

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

 Cat. #1992-12D

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

 Cat. #1992-13D

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

 Cat. #1992-14D

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

 Cat. #1992-15D

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

 Cat. #1997-03D

 Outside Dimensions: 39 inches by 40 inches by 27 inches (991 mm by 1016 mm by 689 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

 Cat. #1992-16D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #6705-26D

 Outside Dimensions: 27 inches by 28 inches by 51 inches (689 mm by 711 mm by 1295 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

 Cat. #1997-06D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1997-08D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - * 1. Floor Mount with Ramp: Subtract 1 inch (25 mm) from internal vertical clearance for ramps.

 Cat. #1992-84D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #1992-85D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1992-86D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - 1. Powder-Coated Steel with Powder-Coated Steel Doors/Dissipative PVC Windows.
				1. Wall Mount

 Cat. #1991-00D

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

 Cat. #1992-18D

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

 Cat. #1992-00D

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

 Cat. #1992-19D

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

 Cat. #1993-00D

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

 Cat. #1992-20D

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

 Cat. #1992-21D

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

 Cat. #1992-22D

 Outside Dimensions: 39 inches by 40 inches by 27 inches (991 mm by 1016 mm by 689 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

 Cat. #1992-23D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #6705-27D

 Outside Dimensions: 27 inches by 28 inches by 51 inches (689 mm by 711 mm by 1295 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

 Cat. #1992-24D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1992-25D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - * 1. Floor Mount with Ramp: Subtract 1 inch (25 mm) from internal vertical clearance for ramps.

 Cat. #1993-01D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #1993-02D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1993-03D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)0

* + 1. Plastic Pass-Through Chambers: Plastic cabinets come with stainless steel reinforced door frames.
			1. Polypropylene with Nondissipative PVC Doors.
				1. Wall Mount (Outside Dimensions W x D x H (mm) Add 1/2 inch (13 mm) to W x H for cutout)

 Cat. #1992-26D

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

 Cat. #1992-27D

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

 Cat. #1992-28D

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

 Cat. #1992-29D

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

 Cat. #1992-30D

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

 Cat. #1992-31D

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

 Cat. #1992-32D

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

 Cat. #1992-33D

 Outside Dimensions: 39 inches by 40 inches by 27 inches (991 mm by 1016 mm by 689 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

 Cat. #1992-34D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. # 6705-28D

 Outside Dimensions: 27 inches by 28 inches by 51 inches (689 mm by 711 mm by 1295 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

 Cat. #1992-35D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1992-36D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - * 1. Floor Mount with Ramp includes low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.

 Cat. #1993-04D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #1993-05D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1993-06D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)0

* + - 1. Static Dissipative PVC with Dissipative PVC Doors.
				1. Wall Mount (Outside Dimensions W x D x H (mm) Add 1/2 inch (13 mm) to W x H for cutout)

 Cat. #1992-37D

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

 Cat. #1992-38D

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm))

 Cat. #1992-39D

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

 Cat. #1992-40D

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

 Cat. 1992-41D

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

 Cat. #11992-42D

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

 Cat. #1992-43D

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

 Cat. #1992-45D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Floor Mount with Ramp: Include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps)

 Cat. #1993-07D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - 1. Acrylic with Acrylic Doors: Internal Access W by H minus 2 inches (51 mm).
				1. Wall Mount: Add 1/2 inch (13 mm) to W by H for cutout.

 Cat. #1993-12D

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

 Cat. #1948-20D

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

 Cat. #1992-48D

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

 Cat. #1992-49D6

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

 Cat. #1992-50D

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

 Cat. #1992-51D

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

 Cat. #1992-44D

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

 Cat. #1992-52D

 Outside Dimensions: 39 inches by 40 inches by 27 inches (991 mm by 1016 mm by 689 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

 Cat. #1992-46D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. # 6705-29D

 Outside Dimensions: 27 inches by 28 inches by 51 inches (689 mm by 711 mm by 1295 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

 Cat. #1992-53D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1992-80D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - * 1. Floor Mount with Ramp: Includes low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.

 Cat. #1993-04D

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

 Cat. #1993-09D

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

 Cat. #1993-10D

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* 1. GENERAL USE PASS-THROUGH WITH RECIRCULATING HEPA FILTRATION

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Recirculating Pass-Throughs with HEPA Filtration: 304 Stainless Steel Floor Mount. Includes Ramp.
			1. Standard Features:
				1. HEPA filter removes particles of 0.3 &micro;m or larger at 99.99% efficiency.
				2. Air Return slots at bottom of chamber circulate air back through filter.
				3. Speed control knob allows adjustment of blower RPM
				4. Brushless DC fan motor
				5. Isolated interlock prevents both doors from being open simultaneously
			2. Options:

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - * 1. Power Requirements:

 120VAC, 60Hz.

 240VAC, 60Hz.

* + - * 1. Replacement HEPA Filters
		1. Recirculating Pass-Through Chambers with HEPA Filtration:
			1. Wall Mount:
				1. Cat. # 2634-80C

 Outside Dimensions including hardware: 21.5 inches by 18.5 inches by 30 inches (546 mm by 470 mm by 762 mm)

 Inside Clearance: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* + - * 1. Cat. # 2634-82

 Outside Dimensions including hardware: 27.5 inches by 24.5 inches by 36 inches (699 mm by 622 mm by 914 mm)

 Inside Clearance: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - 1. Floor Mount with Ramp:
				1. Cat. # 2634-84

 Outside Dimensions including hardware: 39.5 inches by 36.5 inches by 48 inches (1003 mm by 927 mm by 1219 mm)

 Inside Clearance: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* 1. CLEANSEAM PASS-THROUGH CHAMBERS
		1. CleanSeam 304 Stainless Steel Pass-Through Chambers: Single wall 304 stainless steel construction fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection.
			1. Stainless steel mounting brackets are included. Brackets require 0.25 inch (6 mm) clearance between wall cut-out and pass-through.
			2. Standard mounting is 2 inches (51 mm) from the front of the cleanroom side. One set is welded on the cleanroom side.
			3. Floor Mount models include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.
			4. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Continuous seams create smooth, easy-clean interiors.
				2. Lifting latches eliminate hinge strain for long service life.
				3. Isolated interlocks prevent both doors from being open simultaneously
				4. One-piece, heat-formed gaskets will not creep, deform or outgas.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Stainless Steel ULPA-Filtered Air Shower Cat. #1993-11A.
				2. Ventilation System: Remove particles from make-up air. Cat. #6705-24.
				3. CleanTops sloped for easier wipe-down
				4. UV sterilization
				5. Foot-operated doors
				6. Stainless steel shelves on chrome-plated racks with height adjustment in 2 inch (51 mm) increments.

\*\* NOTE TO SPECIFIER \*\* Select the Material, Wall or Floor Mount, and Outside Dimension for the pass-through(s) required from the following paragraphs. Select optional interlock if required or delete if not required. Note that 316L stainless is also available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Outside Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. CleanSeam 304 Stainless Steel Pass-Through Chambers:
			1. Wall Mount
				1. Cat. #2636-01D, FirmLok Interlock 6705-50A

 Outside Dimensions: 15 inches by 16 inches by 15 inches (381 mm by 457 mm by 381 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

* + - * 1. Cat. #2636-02D, FirmLok Interlock 6705-50A

 Outside Dimensions: 15 inches by 16 inches by 27 inches (381 mm by 457 mm by 689 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

* + - * 1. Cat. #2636-03D, FirmLok Interlock 6705-51A

 Outside Dimensions: 21 inches by 22 inches by 19 inches (533 mm by 559 mm by 487 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

* + - * 1. Cat. #2636-04D, FirmLok Interlock 6705-51A

 Outside Dimensions: 21 inches by 22inches by 27 inches (533 mm by 559 mm by 737 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

* + - * 1. Cat. #2636-05D, FirmLok Interlock 6705-52A

 Outside Dimensions: 27 inches by 28 inches by 19 inches (689 mm by 711 mm by 487 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

* + - * 1. Cat. #2636-06D, FirmLok Interlock 6705-52A

 Outside Dimensions: 27 inches by 28 inches by 27 inches (689 mm by 711 mm by 689 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. #2636-07D, FirmLok Interlock 6705-53A

 Outside Dimensions: 27 inches by 40 inches by 27 inches (689 mm by 1016 mm by 689 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

* + - * 1. Cat. #2636-08D, FirmLok Interlock 6705-53A

 Outside Dimensions: 39 inches by 40 inches by 27 inches (991 mm by 1016 mm by 689 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

* + - * 1. Cat. #2636-09D, FirmLok Interlock 6705-52A

 Outside Dimensions: 27 inches by 28 inches by 39 inches (689 mm by 711 mm by 991 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. #2636-16D, FirmLok Interlock 6705-52A

 Outside Dimensions: 27 inches by 28 inches by 51 inches (689 mm by 711 mm by 1295 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

* + - * 1. Cat. #2636-10D, FirmLok Interlock 6705-53A

 Outside Dimensions: 39 inches by 40 inches by 39 inches (991 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2636-11D, FirmLok Interlock 6705-53A

 Outside Dimensions: 39 inches by 40 inches by 51 inches (991 mm by 1016 mm by 1295 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - 1. Floor Mount
				1. Cat. #2636-12D, FirmLok Interlock 6705-52A

 Outside Dimensions: 28 inches by 28 inches by 38.46 inches (711 mm by 711 mm by 977 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. #2636-13D, FirmLok Interlock 6705-53A

 Outside Dimensions: 40 inches by 40 inches by 38.46 inches (1016 mm by 1016 mm by 991 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2636-14D ,FirmLok Interlock 6705-53A

 Outside Dimensions: 40 inches by 40 inches by 50.46 inches (1016 mm by 1016 mm by 1282 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* 1. CLEANMOUNT CLEANSEAM PASS-THROUGH CHAMBERS
		1. CleanMount CleanSeam 316L Stainless Steel Pass-Through Chambers: Double wall 316L stainless steel construction with flush-mount wall bracket: Fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection.
			1. Stainless steel mounting brackets require 0.25 inch (6 mm) clearance between wall cut-out and pass-through.
			2. Integrated clean-side bracket seats flush to wall without fasteners or caulking; opposing bracket snaps in place with no visible fasteners.
			3. Floor Mount models include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.
			4. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Continuous seams create smooth, easy-clean interiors.
				2. Isolated interlock prevents both doors from being open simultaneously
				3. Lifting latches eliminate hinge strain for long service life.
				4. One-piece, heat-formed gaskets will not creep, deform or outgas.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Stainless Steel ULPA-Filtered Air Shower Cat. #1993-11A.
				2. Ventilation System: Remove particles from make-up air. Cat. #6705-24.
				3. CleanTops sloped for easier wipe-down
				4. UV sterilization
				5. Foot-operated doors
				6. Stainless steel shelves on chrome-plated racks with height adjustment in 2 inch (51 mm) increments.
		1. CleanMount CleanSeam 316L Stainless Steel Pass-Through Chambers:
			1. Wall Mount
				1. Cat. #2638-70B-2

 Outside Dimensions: 22.5 inches by 17.5 inches by 16.5 inches (572 mm by 445 mm by 419 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

* + - * 1. Cat. #2638-71B-2

 Outside Dimensions: 22.5 inches by 17.5 inches by 28.5 inches (572 mm by 444 mm by 724 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

* + - * 1. Cat. #2638-86B-2

 Outside Dimensions: 28.5 inches by 23.5 inches by 22.5 inches (724 mm by 597 mm by 571 mm)Inside Dimensions: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* + - * 1. Cat. #2638-72B-2

 Outside Dimensions: 28.5 inches by 23.5 inches by 20.5 inches (724 mm by 597 mm by 521 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

* + - * 1. Cat. #2638-73B-2

 Outside Dimensions: 28.5 inches by 21.56 23.5 inches by 28.5 inches (724 mm by 597mm by 724 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

* + - * 1. Cat. #2638-74B-2

 Outside Dimensions: 34.5 inches by 29.5 inches by 20.5 inches (876 mm by 749 mm by 521 mm)Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

* + - * 1. Cat. #2638-75B-2

 Outside Dimensions: 34.5 inches by 29.5 inches by 28.5 inches (876 mm by 749mm by 724 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. #2638-76B-2

 Outside Dimensions: 34.5 inches by 41.5 inches by 28.5 inches (876 mm by 1054 mm by 724 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

* + - * 1. Cat. #2638-87B-2

 Outside Dimensions: 40.5 inches by 35.5 inches by 34.5 inches (1029 mm by 901 mm by 876 mm)

 Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)

* + - * 1. Cat. #2638-77B-2

 Outside Dimensions: 46.5 inches by 41.5 inches by 28.5 inches (1181 mm by 1054 mm by 724 mm)

 Inside Dimensions: 36 inches by 36 inches by 24 inches (914 mm by 914 mm by 610 mm)

* + - * 1. Cat. #2638-78B-2

 Outside Dimensions: 34.5 inches by 29.5 inches by 40.5 inches (876 mm by 749 mm by 1028 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. #2638-79B-2

 Outside Dimensions: 34.5 inches by 29.5 inches by 52.5 inches (876 mm by 749 mm by 1333 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

* + - * 1. Cat. #2638-80B-2

 Outside Dimensions: 46.5 inches by 41.5 inches by 40.5inches (1181 mm by 1054 mm by 1028 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2638-81B-2

 Outside Dimensions: 46.5 inches by 41.5 inches by 52.5inches (1181 mm by 1054 mm by 1333 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - 1. Floor Mount
				1. Cat. #2638-82B-2-316

 Outside Dimensions: 34.5 inches by 38.5 inches by 40 inches (876 mm by 978 mm by 1016 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. #2638-83B-2-316

 Outside Dimensions: 46.5 inches by 50.5 inches by 40 inches (1181 mm by 1282 mm by 1016 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2638-84B-2-316

 Outside Dimensions: 46.5 inches by 50.5 inches by 52 inches (1181 mm by 1282 mm by 1321 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* 1. SMART CLEANMOUNT CLEANSEAM PASS-THROUGH CHAMBERS
		1. Smart CleanMount CleanSeam 316L Stainless Steel Pass-Through Chambers with flush-mount wall bracket: Double wall chamber fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection.
			1. Stainless steel mounting brackets require 0.25 inch (6 mm) clearance between wall cut-out and pass-through.
			2. Integrated clean-side bracket seats flush to wall without fasteners or caulking; opposing bracket snaps in place with no visible fasteners.
			3. Floor Mount models include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.
			4. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Continuous seams create smooth, easy-clean interiors.
				2. Isolated interlock prevents both doors from being open simultaneously
				3. Lifting latches eliminate hinge strain for long service life.
				4. One-piece, heat-formed gaskets will not creep, deform or outgas.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Stainless Steel ULPA-Filtered Air Shower Cat. #1993-11A.
				2. Ventilation System: Remove particles from make-up air. Cat. #6705-24.
				3. CleanTops sloped for easier wipe-down
				4. UV sterilization
				5. Foot-operated doors
				6. Stainless steel shelves on chrome-plated racks with height adjustment in 2 inch (51 mm) increments.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Smart CleanMount CleanSeam Pass-Through Chambers:
			1. Wall Mount
				1. Cat. #2635-10B-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 25.6 inches (955 mm by 610 mm by 650 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610)

* + - * 1. Cat. #2635-11B-2-316

 Outside Dimensions: 37.5 inches by 36 inches by 25.6 inches (955 mm by 914 mm by 650 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610)

* + - * 1. Cat. #2635-12B-2-316

 Outside Dimensions: 49.5 inches by 36 inches by 25.6 inches (1260 mm by 914 mm by 650 mm)

 Inside Dimensions:36 inches by 36 inches by 24 inches (914 mm by 914 inches by 610 mm)

* + - * 1. Cat. #2635-13B-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 37.6 inches (955 mm by 610 mm by 955 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm 610 mm 914 mm)

* + - * 1. Cat. #2635-14B-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 49.6 inches (955 mm by 610 mm by 1260 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)

* + - * 1. Cat. #2635-21B-2-316

 Outside Dimensions: 43.5 inches by 30 inches by 31.6 inches (1105 mm by 762 mm by 803 mm)

 Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)

* + - * 1. Cat. #2635-15B-2-316

 Outside Dimensions: 49.5 inches by 36 inches by 37.6 inches (1260 mm by 914 mm by 955 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2635-16B-2-316

 Outside Dimensions: 49.5 inches by 36 inches by 49.6 inches (1260 mm by 914 mm by 1260 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* + - 1. Floor Mount
				1. Cat. #2635-17B-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 37.6 inches (955 mm by 610 mm by 955 mm)

 Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. #2635-18B-2-316

 Outside Dimensions: 49.5 inches by 36 inches by 37.6 inches (1260 mm by 914 mm by 955 mm)

 Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)

* + - * 1. Cat. #2635-19B-2-316

 Outside Dimensions: 49.5 inches by 36 inches by 49.6 inches (1260 mm by 914 mm by 1260 mm)

 Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)

* 1. BIOSAFE CLEANMOUNT CLEANSEAM PASS-THROUGH CHAMBERS
		1. BioSafe CleanMount CleanSeam 316L Electropolished Stainless Steel Pass-Through Chambers with flush-mount wall bracket: Double wall chamber fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection. Door design is autoclave-safe; uses a potted polyurethane seal for easy wipe-down.
			1. Stainless steel mounting brackets require 0.25 inch (6 mm) clearance between wall cut-out and pass-through.
			2. Integrated clean-side bracket seats flush to wall without fasteners or caulking; opposing bracket snaps in place with no visible fasteners.
			3. Floor Mount models include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.
			4. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Continuous seams create smooth, easy-clean interiors.
				2. Isolated interlock prevents both doors from being open simultaneously
				3. Lifting latches eliminate hinge strain for long service life.
				4. One-piece, heat-formed gaskets will not creep, deform or outgas.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Stainless Steel ULPA-Filtered Air Shower Cat. #1993-11A.
				2. Ventilation System: Remove particles from make-up air. Cat. #6705-24.
				3. CleanTops sloped for easier wipe-down
				4. UV sterilization
				5. Foot-operated doors
				6. Stainless steel shelves on chrome-plated racks with height adjustment in 2 inch (51 mm) increments.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. BioSafe CleanMount CleanSeam 316L Electropolished SS
			1. Wall Mount
				1. Cat. # 2636-74C

 Outside Dimensions: 22.5 inches by 16 inches by 16.6 inches (572 mm by 406 mm by 422 mm)

 Inside Dimensions: 12 inches by 12 inches by 12 inches (305 mm by 305 mm by 305 mm)

* + - * 1. Cat. # 2636-75C

 Outside Dimensions: 22.5 inches by 16 inches by 28.6 inches (572 mm by 406 mm by 726 mm)

 Inside Dimensions: 12 inches by 12 inches by 24 inches (305 mm by 305 mm by 610 mm)

* + - * 1. Cat. # 2636-76C

 Outside Dimensions: 28.5 inches by 21.5 inches by 20.6 inches (724 mm by 546 mm by 523 mm)

 Inside Dimensions: 18 inches by 18 inches by 16 inches (457 mm by 457 mm by 406 mm)

* + - * 1. Cat. # 2636-77C

 Outside Dimensions: 28.5 inches by 21.5 inches by 28.6 inches (724 mm by 546 mm by 726 mm)

 Inside Dimensions: 18 inches by 18 inches by 24 inches (457 mm by 457 mm by 610 mm)

* + - * 1. Cat. # 2636-78C

 Outside Dimensions: 34.5 inches by 27.5 inches by 20.6 inches (876 mm by 699 mm by 523 mm)

 Inside Dimensions: 24 inches by 24 inches by 16 inches (610 mm by 610 mm by 406 mm)

* + - * 1. Cat. # 2636-79C

 Outside Dimensions: 34.5 inches by 27.5 inches by 28.6 inches (876 mm by 699 mm by 726 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. # 2636-80C

 Outside Dimensions: 34.5 inches by 39.5 inches by 28.6 inches (876 mm by 1003 mm by 726 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

* + - * 1. Cat. # 2636-82C

 Outside Dimensions: 34.5 inches by 27.5 inches by 40.6 inches (876 mm by 699 mm by 1029 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 614 mm)

* + - * 1. Cat. # 2636-85C

 Outside Dimensions: 40 inches by 27.5 inches by 54.6 inches (1016 mm by 699 mm by 1387 mm)

 Inside Dimensions: 27 inches by 24 inches by 50 inches (686 mm by 610 mm by 1270 mm)

* + - * 1. Cat. # 2636-89C

 Outside Dimensions: 28.5 inches by 21.25 inches by 22.6 inches (724 mm by 540 mm by 574 mm)

 Inside Dimensions: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* + - * 1. Cat. # 2636-91C

 Outside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 650 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610 mm)

* + - 1. Floor Mount
				1. Cat. # 2636-87A

 Outside Dimensions: 38 inches by 33.5 inches by 34.6 inches (965 mm by 851 mm by 876 mm)

 Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)

* 1. SMART BIOSAFE CLEANMOUNT CLEANSEAM PASS-THROUGH CHAMBERS
		1. Smart BioSafe CleanMount CleanSeam 316L Electropolished Stainless Steel Pass-Through Chambers with flush-mount wall bracket: Double wall chamber fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection. Door design is autoclave-safe; uses a potted polyurethane seal for easy wipe-down.
			1. Stainless steel mounting brackets require 0.25 inch (6 mm) clearance between wall cut-out and pass-through.
			2. Integrated clean-side bracket seats flush to wall without fasteners or caulking; opposing bracket snaps in place with no visible fasteners.
			3. Floor Mount models include low-profile access ramps for easy transport of carts. Subtract 1 inch (25 mm) from internal vertical clearance to compensate for ramps.
			4. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Continuous seams create smooth, easy-clean interiors.
				2. Isolated interlock prevents both doors from being open simultaneously
				3. Lifting latches eliminate hinge strain for long service life.
				4. One-piece, heat-formed gaskets will not creep, deform or outgas.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Stainless Steel ULPA-Filtered Air Shower Cat. #1993-11A.
				2. Ventilation System: Remove particles from make-up air. Cat. #6705-24.
				3. CleanTops sloped for easier wipe-down
				4. UV sterilization
				5. Foot-operated doors
				6. Stainless steel shelves on chrome-plated racks with height adjustment in 2 inch (51 mm) increments.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Smart BioSafe CleanMount CleanSeam Pass-Through Chamber
			1. Wall Mount
				1. Cat. #2635-75A-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 25.6 inches (952 mm by 610 mm by 650 mm)

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610)

* + - * 1. Cat. # 2635-76A-2-316

 Outside Dimensions: 37.5 inches by 36 inches by 25.6 inches (952 mm by 914 mm by 650 mm)

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610)

* + - * 1. Cat. # 2635-77A-2-316

 Outside Dimensions: 37.5 inches by 24 inches by 37.6 inches (952 mm by 610 mm by 955 mm)

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm 610 mm 914 mm)

* + - * 1. Cat. # 2635-74A-2-316

 Outside Dimensions: 43.5 inches by 30 inches by 31.6 inches (1105 mm by 762 mm by 803 mm)

 Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)

* + - * 1. Cat. #2635-78A-2-316

 Outside Dimensions: 41 inches by 24 inches by 51.6 inches (1045 mm by 610 mm by 1311 mm)

 Inside Dimensions: 27.5 inches by 24 inches by 50 inches (699 mm by 610 mm by 1270 mm)

* + - 1. Floor-Mount with Access Ramp
				1. Cat. #2635-79A-2-316

 Outside Dimensions: 41 inches by 24 inches by 51.6 inches (1045 mm by 610 mm by 1311 mm)

 Inside Dimensions: 27.5 inches by 24 inches by 50 inches (699 mm by 610 mm by 1270 mm)

* 1. REFRIGERATED SMART CLEANMOUNT CLEANSEAM PASS-THROUGH CHAMBERS
		1. Refrigerated Smart CleanMount CleanSeam Pass-Through Chambers: Optimized for critical applications that require tight inventory and access control. Fabricated with continuous-seam welds that are ground smooth for easy cleaning and disinfection.
			1. Standard Features: Designed to mount on walls of various sizes and thicknesses:
				1. Seamless stainless steel design eliminates cracks for easy cleaning, sterilization.
				2. Lipless construction allows easy materials transfer.
				3. Doors (with or without window) can be removed for autoclaving.
				4. Double-wall, sealed construction adds rigidity, houses interlock, utilities.
				5. Interlock prevents both doors from being open simultaneously.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Automatic Door for hands-free operation. Ideal for pharmacy and medical applications to minimize contamination during sample transfer.
				2. UV-C Sanitizing Module neutralizes microorganisms
				3. Micro-Filtered Air Shower directs high-velocity ULPA Filtered air to dislodge contaminates from material surface
				4. Recessed LED Light activated when door opens
				5. Refrigerated Module maintains temperature as low as 5 degrees C
				6. ProxPad Keyless Door Entry Panel combines proximity care and PIN reader for enhanced security
				7. Fingerprint Reader unlocks electronic interlock only when the authorized fingerprint scan is detected.
				8. Iris Scanner allows hands-free operation

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Refrigerated Smart CleanMount CleanSeam 316L Stainless Steel Wall Mount Pass-Through Chambers.
			1. Cat. #2635-10B-2-316-R
				1. Outside Dimensions: 32 inches by 24 inches by 48 inches (813 mm by 610 mm by 1219 mm)
				2. Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610)
			2. Cat. #2635-11B-2-316-R
				1. Outside Dimensions: 32 inches by 36 inches by 48 inches (813 mm by 914 mm by 1219 mm)
				2. Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610)
			3. Cat. #2635-12B-2-316-R
				1. Outside Dimensions: 44 inches by 36 inches by 48 inches (1117 mm by 914 mm by 1219 mm)
				2. Inside Dimensions:36 inches by 36 inches by 24 inches (914 mm by 914 inches by 610 mm)
			4. Cat. #2635-13B-2-316-R
				1. Outside Dimensions: 32 inches by 24 inches by 60 inches (813 mm by 610 mm by 1524 mm)
				2. Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm 610 mm 914 mm)
			5. Cat. #2635-14B-2-316-R
				1. Outside Dimensions: 32 inches by 24 inches by 72 inches (813 mm by 610 mm by 1829 mm)
				2. Inside Dimensions: 24 inches by 24 inches by 48 inches (610 mm by 610 mm by 1219 mm)
			6. Cat. #2635-21B-2-316-R
				1. Outside Dimensions: 38 inches by 30 inches by 54 inches (965 mm by 762 mm by 1371 mm)
				2. Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)
			7. Cat. #2635-15B-2-316-R
				1. Outside Dimensions: 44 inches by 36 inches by 60 inches (1117 mm by 914 mm by 1219 mm)
				2. Inside Dimensions: 36 inches by 36 inches by 36 inches (914 mm by 914 mm by 914 mm)
			8. Cat. #2635-16B-2-316-R
				1. Outside Dimensions: 44 inches by 36 inches by 72 inches (1117 mm by 914 mm by 1829 mm)
				2. Inside Dimensions: 36 inches by 36 inches by 48 inches (914 mm by 914 mm by 1219 mm)
	1. HEAVY DUTY RUGGEDIZED PASS-THROUGH CHAMBERS

\*\* NOTE TO SPECIFIER \*\* Select the Material and Dimension for the pass-through(s) required from the following paragraphs. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Heavy Duty Ruggedized Pass-Through Chambers: Singlewall, all-stainless steel chamber with two 2.5 inch thick doors and 304 stainless steel self-closing spring hinges. Provided with dual-side, 0.25 inch thick UL fire-rated wired safety glass viewing windows. Includes mechanical interlock.
			1. 304 Stainless Steel
				1. Cat. #2640-65

 Outside Dimensions including hardware: 15 inches by 20.6 inches by 15 inches (531 mm by 627 mm by 683 mm)

 Inside Clearance Dimensions: 9.38 inches by 11.88 inches by 9.5 inches (238 mm by 302 mm by 241 mm)

 Viewing Window Dimensions: 4.66 inches by 8 inches (118 mm by 203 mm)

* + - * 1. Cat. #2640-66

 Outside Dimensions including hardware: 21 inches by 24.6 inches by 27 inches (533 mm by 624 mm by 685 mm)

 Inside Clearance Dimensions: 15.38 inches by 17.88 inches by 21.5 inches (391 mm by 454 mm by 546 mm).

 Viewing Window Dimensions: 7 inches by 16 inches (178 mm by 406 mm)

* + - * 1. Cat. #2640-67

 Outside Dimensions including hardware: 27 inches by 30.6 inches by 27 inches (685 mm by 777 mm by 685 mm)

 Inside Clearance Dimensions: 21.38 inches by 23.88 inches by 21.5 inches (543 mm by 606 mm by 546 mm)

 Viewing Window Dimensions: 9.3 inches by 16 inches (236 mm by 406 mm)

* + - * 1. Cat. #2640-68

 Outside Dimensions including hardware: 27 inches by 30.6 inches by 51 inches (685 mm by 777 mm by 1295 mm)

 Inside Clearance Dimensions: 21.38 inches by 23.88 inches by 45.5 inches (543 mm by 606 mm by 1155 mm)

 Viewing Window Dimensions: 9.3 inches by 32 inches (236 mm by 812 mm)

* + - * 1. Cat. #2640-69

 Outside Dimensions including hardware: 39 inches by 42.6 inches by 39 inches (990 mm by 1082 mm by 990 mm)

 Inside Clearance Dimensions: 33.38 inches by 35.88 inches by 33.5 inches (848 mm by 911 mm by 851 mm).

 Viewing Window Dimensions: 14 inches by 24 inches (356 mm by 610)

* + - * 1. Cat. #2640-70

 Outside Dimensions including hardware: 39 inches by 42.6 inches by 51 inches (990 mm by 1082 mm by 1295 mm)

 Inside Clearance Dimensions: 33.38 inches by 35.88 inches by 45.5 inches (848 mm by 911 mm by 1155 mm)

 Viewing Window Dimensions: 14 inches by 24 inches (356 mm by 610 mm).

* + - 1. 316L Stainless Steel
				1. Cat. #2640-75

 Outside Dimensions including hardware: 15 inches by 20.6 inches by 15 inches (531 mm by 627 mm by 683 mm)Inside Clearance Dimensions: 9.38 inches by 11.88 inches by 9.5 inches (238 mm by 302 mm by 241 mm)

 Viewing Window Dimensions: 4.66 inches by 8 inches (118 mm by 203 mm)

* + - * 1. Cat. #2640-76

 Outside Dimensions including hardware: 21 inches by 24.6 inches by 27 inches (533 mm by 624 mm by 685 mm)

 Inside Clearance Dimensions: 15.38 inches by 17.88 inches by 21.5 inches (391 mm by 454 mm by 546 mm).

 Viewing Window Dimensions: 7 inches by 16 (178 mm by 406 mm)

* + - * 1. Cat. #2640-77

 Outside Dimensions including hardware: 27 inches by 30.6 inches by 27 inches (685 mm by 777 mm by 685 mm)Inside Clearance Dimensions: 21.38 inches by 23.88 inches by 21.5 inches (543 mm by 606 mm by 546 mm)

 Viewing Window Dimensions: 9.3 inches by 16 inches (236 mm by 406 mm)

* + - * 1. Cat. #2640-78

 Outside Dimensions including hardware: 27 inches by 30.6 inches by 51 inches (685 mm by 777 mm by 1295 mm)Inside Clearance Dimensions: 21.38 inches by 23.88 inches by 45.5 inches (543 mm by 606 mm by 1155 mm)

 Viewing Window Dimensions: 9.3 inches by 32 inches (236 mm by 812 mm)

* + - * 1. Cat. #2640-79

 Outside Dimensions including hardware: 39 inches by 42.6 inches by 39 inches (990 mm by 1082 mm by 990 mm)Inside Clearance Dimensions: 33.38 inches by 35.88 inches by 33.5 inches (848 mm by 911 mm by 851 mm)

 Viewing Window Dimensions: 14 inches by 24 inches (356 mm by 610 mm)

* + - * 1. Cat. #2640-80

 Outside Dimensions including hardware: 39 inches by 42.6 inches by 51 inches (990 mm by 1082 mm by 1295 mm)Inside Clearance Dimensions: 33.38 inches by 35.88 inches by 45.5 inches (848 mm by 911 mm by 1155 mm)

 Viewing Window Dimensions: 14 inches by 24 inches (356 mm by 610 mm).

* 1. FIRE RATED PASS-THROUGH CHAMBERS
		1. Fire-Rated Pass-Through Chambers with or without Fire-Rated Viewing Windows: Each stainless steel chamber features one fire-rated 2.56 inch (65 mm) thick, insulated, stainless steel access panel door with flush pull handle.
			1. Features:
				1. Fire-rated access panels carry the UL-10B label for 90-minute fire exposure (suitable for 2-hour wall rating). Conforms To: ANSI/UL 10B, CAN/ULC-S104-10.

 Fire-rated access panel can be configured with or without viewing window. Viewing window is 10 inch by 10 inch (254 mm by 254 mm) clear, polished fire-rated ceramic556994223glass556994223HJHarry Johnson556994223-948342054This is a General Paragraph speaking to the featured available including "with or without" viewing window. The Viewing Window selection is made in Paragraphs B-F. .

 Access door on opposite side non-fire-rated door includes LiftLatch and transparent static-dissipative PVC viewing window.

 All models include mounting brackets and door interlock mechanism.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Fire Rated General-Use Pass-Through Chambers: Single wall stainless steel construction with non-continuous seam welds. Includes mechanical interlock. Insulated fire-rated door with window on one side of chamber.
			1. Without Fire-Rated Viewing556994224Window556994224HJHarry Johnson556994224-948342102This says "without fire rated viewing window".:
				1. Cat.#1993-71A

 Outside Dimensions: 15 inches by 15 inches by 15 inches (381 mm by 381 mm by 381 mm)

 Inside Clearance: 9.8 inches by 12 inches by 10.6 inches (249 mm by 305 mm by 269 mm)

* + - * 1. Cat.#1993-72A

 Outside Dimensions: 21 inches by 21 inches by 27 inches (533 mm by 533 mm by 686 mm)

 Inside Clearance: 15.8 inches by 18 inches by 22.6 inches (401 mm by 457 mm by 574 mm)

* + - * 1. Cat.#1993-73A

 Outside Dimensions: 27 inches by 27 inches by 27 inches (686 mm by 686 mm by 686 mm)

 Inside Clearance: 21.8 inches by 24 inches by 22.6 inches (558 mm by 610 mm by 574 mm)

* + - * 1. Cat.#1993-74A

 Outside Dimensions: 27 inches by 27 inches by 51 inches (686 mm by 686 mm by 1295 mm)

 Inside Clearance: 21.8 inches by 24 inches by 46.6 inches (558 mm by 610 mm by 1118 mm)

* + - * 1. Cat.#1993-75A

 Outside Dimensions: 39 inches by 39 inches by 39 inches (990 mm by 990 mm by 990 mm)Inside Clearance: 33.8 inches by 36 inches by 34.6 inches (859 mm by 914 mm by 879 mm)

* + - * 1. Cat.#1993-76A

 Outside Dimensions: 39 inches by 39 inches by 51 inches (990 mm by 990 mm by 1295 mm)Inside Clearance: 33.8 inches by 36 inches by 46.6 inches (859 mm by 914 mm by 1118 mm)

* + 1. Fire Rated CleanSeam Pass-Through Chambers: Single wall stainless steel construction with continuous-seam welds that are ground smooth for easy cleaning and disinfection. Includes mechanical interlock.
			1. With Fire-Rated Viewing Window: Insulated fire-rated door with window on one side of chamber. Fire-rated window10 inch by 10 inch (254 mm by 254 mm) clear, polished fire-rated ceramic glass.
				1. Cat. # 2641-11A

 Outside Dimensions including hardware: 24.13 inches by 25 inches by 18.75 inches (613 mm by 635 mm by 476 mm)

 Inside Clearance: 21.5 inches by 17.88 inches by 15.38 inches (546 mm by 454 mm by 391 mm)

* + - * 1. Cat. # 2641-12

 Outside Dimensions including hardware: 24.75 inches by 31 inches by 24.13 inches (628 mm by 787 mm by 612 mm)

 Inside Clearance: 21.38 inches by 23.88 inches by 21.5 inches (543 mm by 606 mm by 546 mm)

* + - * 1. Cat. # 2641-13

 Outside Dimensions including hardware: 24.75 inches by 31 inches by 48.13 inches (628 mm by 787 mm by 1222 mm)

 Inside Clearance: 21.38 inches by 23.88 inches by 45.5 inches (543 mm by 606 mm by 1155 mm)

* + - * 1. Cat. # 2641-14

 Outside Dimensions including hardware: 36.75 inches by 43 inches by 36.13 inches (933 mm by 1092 mm by 917 mm)

 Inside Clearance: 33.38 inches by 35.88 inches by 33.5 inches (848 mm by 911 mm by 851 mm)

* + - * 1. Cat. # 2641-15

 Outside Dimensions including hardware: 36.75 inches by 43 inches by 48.13 inches (933 mm by 1092 mm by 1222 mm)

 Inside Clearance: 33.38 inches by 35.88 inches by 45.5 inches (848 mm by 911 mm by 1155 mm)

* + - 1. Without Fire-Rated Viewing Window: Insulated fire-rated door on one side of chamber.
				1. Cat.#1993-77A

 Outside Dimensions: 15 inches by15 inches by 15 inches (381 mm by 381 mm by 381 mm)

 Inside Clearance: 9.8 inches by 12 inches by 10.6 inches (249 mm by 305 mm by 269 mm)

* + - * 1. Cat.#1993-78A

 Outside Dimensions: 21 inches by 21 inches by 27 inches (533 mm by 533 mm by 686 mm)

 Inside Clearance: 15.8 inches by 18 inches by 22.6 inches (401 mm by 457 mm by 574 mm)

* + - * 1. Cat.#1993-79A

 Outside Dimensions: 27 inches by 27 inches by27 inches (686 mm by 686 mm by 686 mm)

 Inside Clearance: 21.8 inches by 24 inches by 22.6 inches (558 mm by 610 mm by 574 mm)

* + - * 1. Cat.#1993-80A

 Outside Dimensions: 27 inches by 27 inches by 51 inches (686 mm by 686 mm by 1295 mm)

 Inside Clearance: 21.8 inches by 24 inches by 46.6 inches (558 mm by 610 mm by 1118 mm)

* + - * 1. Cat.#1993-81A

 Outside Dimensions: 39 inches by 39 inches by 39 inches (990 mm by 990 mm by 990 mm)

 Inside Clearance: 33.8 inches by 36 inches by 34.6 inches (859 mm by 914 mm by 879 mm)

* + - * 1. Cat.#1993-82A

 Outside Dimensions: 39 inches by 39 inches by 51 inches (990 mm by 990 mm by 1295 mm)

 Inside Clearance: 33.8 inches by 36 inches by 46.6 inches (859 mm by 914 mm by 1118 mm)

* + 1. Fire-Rated CleanMount CleanSeam Pass-Through Chambers: Double-wall 316L stainless steel construction with continuous-seam welds, flush-mount wall bracket, and mechanical interlock.
			1. With Fire-Rated Viewing Window: Insulated fire-rated door with window on one side of chamber. Fire-rated window10 inch by 10 inch (254 mm by 254 mm) clear, polished fire-rated ceramic glass.
				1. Cat. # 2638-75B-2-316-FR

 Outside Dimensions: 29.5 inches by 27 inches by 26.5 (749 mm by 686 mm by 673 mm)

 Inside Clearance: 24 inches by 24 inches by 24 (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. # 2638-76B-2-316-FR

 Outside Dimensions:29.5 inches by 39 inches by 26.5 (749 mm by 991 mm by 673 mm)

 Inside Clearance: 24 inches by 36 inches by 24 (610 mm by 914 mm by 610 mm)

* + - * 1. Cat. # 2638-78B-2-316-FR

 Outside Dimensions: 29.5 inches by 27 inches by 38.5 (749 mm by 686 mm by 978 mm)

 Inside Clearance: 24 inches by 24 inches by 36 (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. # 2638-80B-2-316-FR

 Outside Dimensions: 23.5 inches by 21 inches by 20.5 (597 mm by 533 mm by 521 mm)

 Inside Clearance: 18 inches by 18 inches by 18 (457 mm by 457 mm by 457 mm)

* + - * 1. Cat. # 2638-87B-2-316-FR

 Outside Dimensions:35.5 inches by 33 inches by 32.5 (902 mm by 838 mm by 826 mm)

 Inside Clearance:30 inches by 30 inches by 30 (914 mm by 914 mm by 914 mm)

* + 1. Fire-Rated Smart CleanMount CleanSeam Pass-Through Chambers: Double-wall insulated 316L stainless steel construction with continuous-seam welds and mechanical interlock.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + - 1. With Fire-Rated Viewing Window: Insulated fire-rated door with window on one side of chamber. Fire-rated window10 inch by 10 inch (254 mm by 254 mm) clear, polished fire-rated ceramic glass.
				1. Cat. # 2635-07B-2-316-FR

 Inside Dimensions: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* + - * 1. Cat. # 2635-10B-2-316-FR

 Inside Dimensions: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610)

* + - * 1. Cat. # 2635-11B-2-316-FR

 Inside Dimensions: 24 inches by 36 inches by 24 inches (610 mm by 914 mm by 610)

* + - * 1. Cat. # 2635-13B-2-316-FR

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm 610 mm 914 mm)

* + - * 1. Cat. # 2635-17B-2-316-FR

 Inside Dimensions: 24 inches by 24 inches by 36 inches (610 mm by 610 mm by 914 mm)

* + - * 1. Cat. # 2635-21B-2-316-FR

 Inside Dimensions: 30 inches by 30 inches by 30 inches (762 mm by 762 mm by 762 mm)

* + 1. Fire-Rated Smart CleanMount CleanSeam Pass-Through Chambers with Recirculating HEPA Filtration; Double wall 316L stainless steel chamber with continuous-seam welds and mechanical interlock. Insulated fire-rated door with window on one side of chamber. Fire-rated window 10 inch by 10 inch (254 mm by 254 mm) clear, polished fire-rated ceramic glass.
			1. Standard Features:
				1. Seamless stainless steel design eliminates cracks for easy cleaning, sterilization.
				2. HEPA filter removes particles of 0.3 &micro;m or larger at 99.99% efficiency.
				3. Air Return slots at bottom of chamber circulate air back through filter.
				4. Speed control knob allows adjustment of blower RPM
				5. Adjustable vent on door allows for selection of recirculation or single-pass air flow
				6. Flush mounting on clean side reduces surfaces that collect particles
				7. Brushless DC fan motor
				8. Isolated interlock prevents both doors from being open simultaneously

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Power Requirements:

 120VAC, 60Hz.

 240VAC, 60Hz.

* + - * 1. Replacement HEPA Filters
			1. Fire-Rated Smart CleanMount CleanSeam Pass-Through Chambers with Recirculating HEPA Filtration, Wall Mount, With Fire Rated Viewing Window, 120VAC 60 Hz

\*\* NOTE TO SPECIFIER \*\* Select the Chamber required from the following paragraphs and delete the one not required..

* + - * 1. Cat. # 6705-72-316-FR

 Inside Clearance: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. # 6705-79-316-FR

 Inside Clearance: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* 1. ROLL-UP PASS-THROUGH CHAMBERS
		1. Roll-Up Pass-Through: 304 Stainless Steel Floor Mount. Includes Ramps.
			1. Standard Features:
				1. Segmented roll-up access doors, powder-coated insulated aluminum.
				2. Powered door with bi-directional motor and disk brake.
				3. Doors roll into a stainless steel housing at the top of the unit.
				4. Side viewing window.
				5. Oversized ergonomic pushbuttons.
				6. Electronic key-switch interlock.
				7. Safety circuit to stops door motion if path is obstructed.

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Power Requirements:

 115VAC, 60Hz.

 220VAC, 60Hz.

* + - * 1. Iris reader or security card system available for operational security.
				2. HEPA air shower: When door is closed, unit activates the blower, that forces intake air through an ULPA filter into dual vertical stainless steel exhaust manifolds inside the pass-through chamber. Air exits the Pass-Through through exhaust vents on the "dirty" side. A time delay maintains air shower operation for 60 seconds after the door is closed.

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Roll-Up Pass-Through Models:
			1. Roll-Up Pass-Through: Cat. # 6705-10C
				1. Inside Clearance: 52.75 inches by 48 inches by 69 inches (1340 mm by 1219 mm by 1753 mm)
				2. Corresponding Air Shower: Cat. #6705-10C-AS
			2. Roll-Up Pass-Through: Cat. # 6705-12C
				1. Inside Clearance: 29 inches by 28 inches by 44 inches (737 mm by 711 mm by 1118 mm)
				2. Corresponding Air Shower: Cat. #6705-12C-AS
			3. Roll-Up Pass-Through: Cat. # 6705-13C
				1. Inside Clearance: 68 inches by 48 inches by 61.25 inches (1727 mm by 1219 mm by 1556 mm)
				2. Corresponding Air Shower: Cat. #6705-13C-AS
			4. Roll-Up Pass-Through: Cat. # 6705-30C
				1. Inside Clearance: 52.75 inches by 48 inches by 84 inches (1340 mm by 1219 mm by 2135 mm)
				2. Corresponding Air Shower: Cat. #6705-30C-AS
			5. Roll-Up Pass-Through: Cat. # 6705-31C
				1. Inside Clearance: 72 inches by 48 inches by 84 inches (1830 mm by 1219 mm by 2135 mm)
				2. Corresponding Air Shower: Cat. #6705-31C-AS
	1. SMART RECIRCULATING PASS-THROUGH CHAMBERS
		1. Smart Recirculating Pass-Throughs with HEPA Filtration: 316L Stainless Steel with Static-Dissipative PVC Windows, Floor Mount. Includes Ramp.
			1. Standard Features:
				1. Seamless stainless steel design eliminates cracks for easy cleaning, sterilization.
				2. HEPA filter removes particles of 0.3 &micro;m or larger at 99.99% efficiency.
				3. Air Return slots at bottom of chamber circulate air back through filter.
				4. Speed control knob allows adjustment of blower RPM
				5. Adjustable vent on door allows for selection of recirculation or single-pass air flow
				6. Flush mounting on clean side reduces surfaces that collect particles
				7. Brushless DC fan motor
				8. Isolated interlock prevents both doors from being open simultaneously

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Power Requirements:

 120VAC, 60Hz.

 240VAC, 60Hz.

* + - * 1. Replacement HEPA Filters

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + 1. Wall Mount
			1. Smart Recirculating Pass-Through, Wall Mount, 120VAC 60 Hz:
				1. Cat. # 6705-72-316

 Outside Dimensions including hardware: 31 inches by 26 inches by 45 inches (787 mm by 660 mm by 1143 mm)

 Inside Clearance: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - * 1. Cat. # 6705-79-316

 Outside Dimensions including hardware: 25 inches by 20 inches by 39 inches (635 mm by 508 mm by 991 mm)

 Inside Clearance: 18 inches by 18 inches by 18 inches (457 mm by 457 mm by 457 mm)

* + 1. Floor Mount:
			1. Smart Recirculating Pass-Through, Floor Mount, 120VAC 60 Hz:
				1. Cat. # 6705-68-316

 1Outside Dimensions including hardware: 37 inches by 48 inches by 72 inches (787 mm by 1219 mm by 1829 mm)

 Inside Clearance: 30 inches by 48 inches by 60 inches (762 mm by 1219 mm by 1524 mm)

* 1. AIR SHOWER PASS-THROUGH CHAMBERS
		1. Air Shower Pass-Throughs with HEPA Filtration:
			1. Standard Features:
				1. Adjustable nozzles direct high velocity streams of filtered air to cleanse carts in transfer
				2. HEPA filter removes particles of 0.3 &micro;m or larger at 99.99% efficiency.
				3. Air Return slots at bottom of chamber and in hollow walls circulate air back through filter.
				4. PLC panel controls interlocked doors and air shower strength and duration
				5. Flush mounting on clean side reduces surfaces that collect particles
				6. Brushless DC fan motor
				7. Isolated interlock prevents both doors from being open simultaneously; automatically open in event of power failure

\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs; coordinate with the Accessories paragraph and Schedule in this Specification.

* + - 1. Options:
				1. Power Requirements:

 120VAC, 60Hz.

 240VAC, 60Hz.

* + - * 1. Replacement HEPA Filters

\*\* NOTE TO SPECIFIER \*\* Select the Construction and Dimension for the pass-through(s) required from the following paragraphs. Custom sizes are available, contact the manufacturer for additional information. When multiple sizes/finishes/options are required use the schedule at the end of this Section to identify each pass-through and its location on the project. Note that Dimensions: are noted as W by D by H. Add .5 inch (13 mm) to W x H for cut-out.

* + - 1. Air Shower Pass-Through, Powder-Coated Steel, 120VAC 60 Hz
				1. Cat. # 6705-70

 Outside Dimensions including hardware: 31 inches by 26 inches by 45 inches (787 mm by 660 mm by 1143 mm)

 Inside Clearance: 24 inches by 24 inches by 24 inches (610 mm by 610 mm by 610 mm)

* + - 1. Air Shower Pass-Through, 304 Stainless Steel, 120VAC 60 Hz:
				1. Cat. # 6705-71

 Outside Dimensions including hardware: 37 inches by 48 inches by 72 inches (787 mm by 1219 mm by 1829 mm)

 Inside Clearance: 30 inches by 48 inches by 60 inches (762 mm by 1219 mm by 1524 mm)

* 1. VALUE LINE PASS-THROUGH CHAMBERS
		1. Value Line Pass-Through Chambers:
			1. Standard Features:
				1. Standard Wall Mount with Brackets.
				2. Access Doors: Stainless steel stiffener and closed-cell non-contaminating gasket.
				3. Work Surface: Stainless steel.
				4. Door Latches: Dual expansion latches type.
				5. Mechanical Interlock: 304 stainless steel mechanical interlock.
		2. Models:
			1. Cat. # 2634-42A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches D, 12 inches H (305 mm by 305 mm by 305 mm).
			2. Cat. # 2634-11A
				1. Material: Black Acrylic
				2. Chamber Size: 12 inches W, 12 inches D, 12 inches H (305 mm by 305 mm by 305 mm).
			3. Cat. # 2634-01A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 12 inches W, 12 inches D, 12 inches H (305 mm by 305 mm by 305 mm).
			4. Cat. # 2634-43A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches D, 24 inches H (305 mm by 305 mm by 611 mm).
			5. Cat. # 2634-12A
				1. Material: Black Acrylic
				2. Chamber Size: 12 inches W, 12 inches D, 24 inches H (305 mm by 305 mm by 611 mm)..
			6. Cat. # 2634-02A
				1. Material: Polyproplyene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 12 inches W, 12 inches D, 24 inches H (305 mm by 305 mm by 611 mm).
			7. Cat. # 2634-44A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 18 inches W, 18 inches D, 16 inches H (457 mm by 457 mm by 406 mm).
			8. Cat. # 2634-13A
				1. Material: Black Acrylic
				2. Chamber Size: 18 inches W, 18 inches D, 16 inches H (457 mm by 457 mm by 406 mm).
			9. Cat. # 2634-03A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 18 inches W, 18 inches D, 16 inches H (457 mm by 457 mm by 406 mm).
				3. Weight: 29 lbs
			10. Cat. # 2634-45A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 18 inches W, 18 inches D, 18 inches H (457 mm by 457 mm by 457 mm).
			11. Cat. # 2634-14A
				1. Material: Black Acrylic
				2. Chamber Size: 18 inches W, 18 inches D, 18 inches H (457 mm by 457 mm by 457 mm).
			12. Cat. # 2634-04A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 18 inches W, 18 inches D, 18 inches H (457 mm by 457 mm by 457 mm).
			13. Cat. # 2634-46A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 18 inches W, 18 inches D, 24 inches H (457 mm by 457 mm by 610 mm).
			14. Cat. # 2634-15A
				1. Material: Black Acrylic
				2. Chamber Size: 18 inches W, 18 inches D, 24 inches H (457 mm by 457 mm by 610 mm).
			15. Cat.# 2634-05A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 18 inches W, 18 inches D, 24 inches H (457 mm by 457 mm by 610 mm).
			16. Cat. # 2634-47A
				1. Material: 304 Stainless Steel
				2. Chamber Size: 24 inches W, 24 inches D, 16 inches H (610 mm by 610 mm by 406 mm).
			17. Cat.# 2634-16A
				1. Material: Black Acrylic
				2. Chamber Size: 24 inches W, 24 inches D, 16 inches H (610 mm by 610 mm by 406 mm).
			18. Cat. # 2634-06A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 24 inches W, 24 inches D, 16 inches H (610 mm by 610 mm by 406 mm).
			19. Cat. # 2634-48A
				1. Material: Steel
				2. Chamber Size: 24 inches W, 24 inches D, 24 inches H (610 mm by 610 mm by 610 mm).
			20. Cat. # 2634-17A
				1. Material: Black Acrylic
				2. Chamber Size: 24 inches W, 24 inches D, 24 inches H (610 mm by 610 mm by 610 mm).
			21. Cat. # 2634-07A
				1. Material: Polypropylene (FM 4910 flame-retardant polypropylene available)
				2. Chamber Size: 24 inches W, 24 inches D, 24 inches H (610 mm by 610 mm by 610 mm).
	2. PASS-THROUGH SWING DOOR CONVENIENCE WINDOWS
		1. Pass-Through Swing Door Convenience Windows:
			1. Standard Features:
				1. Wall Mounting Position
				2. Tempered Glass Windows
				3. Frame Material: Stainless steel
				4. Door Style: Swing
				5. Wall Thickness: 4.5” to 5”
		2. Models:
			1. Cat. # 1702-71A
				1. Material: Stainless Steel
				2. Chamber Size: 18 inches W, 24 inches H
			2. Cat. # 1704-70A
				1. Material: Stainless Steel
				2. Chamber Size: 15 inches W, 15 inches H
			3. Cat. # 1702-73A
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 36 inches H
			4. Cat. # 1704-81A
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 24 inches H
			5. Cat. # 1702-72A
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 24 inches H
			6. Cat. # 1702-70A
				1. Material: Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches H
			7. Cat. # 1704-79A
				1. Material: Stainless Steel
				2. Chamber Size: 18 inches W, 24 inches H
			8. Cat. # 1704-78A
				1. Material: Stainless Steel
				2. Chamber Size: 15 inches W, 15 inches H
			9. Cat. # 1704-82A
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 36 inches H
			10. Cat. # 1704-77A
				1. Material: Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches H
	3. POLYPROPYLENE HORIZONTAL SLIDING CONVENIENCE WINDOWS
		1. Polypropylene Horizontal Sliding Convenience Windows:
			1. Standard Features:
				1. Wall Mounting Position
				2. Frame Material: Polypropylene
				3. Door Style: Horizontal Sliding
				4. Wall Thickness: Up to 4", Up to 4.875"
		2. Models:
			1. Cat. # 1702-81A
				1. Material: Stainless Steel
				2. Chamber Size: 18 inches W, 24 inches H
			2. Cat. # 1702-83A
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 36 inches H
			3. Cat. # 1702-82
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 24 inches H
			4. Cat. # 1702-79
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 36 inches H
			5. Cat. # 1702-76
				1. Material: Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches H
			6. Cat. # 1702-80A
				1. Material: Stainless Steel
				2. Chamber Size: 12 inches W, 12 inches H
			7. Cat. # 1702-77
				1. Material: Stainless Steel
				2. Chamber Size: 18 inches W, 24 inches H
			8. Cat. # 1702-78
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 24 inches H
	4. VERTICAL SLIDING PASS-THROUGH CONVENIENCE WINDOWS
		1. Vertical Sliding Pass-Through Convenience Windows:
			1. Standard Features:
				1. Window Material: SDPVC
				2. Frame Material: Stainless Steel
				3. Door Style: Vertical Sliding
				4. Wall Thickness: 3" to 5"
		2. Models:
			1. Cat. # 1702-98
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 32 inches H
			2. Cat. # 1702-87
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 32 inches H
			3. Cat. # 1702-86
				1. Material: Stainless Steel
				2. Chamber Size: 12 inches W, 32 inches H
			4. Cat. # 1702-99
				1. Material: Stainless Steel
				2. Chamber Size: 24 inches W, 32 inches H
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until openings and substrates have been properly prepared.
		2. Verify exact location of clean room pass-throughs for installation.
		3. Verify that rough openings and surfaces are ready to receive work.
		4. If opening and substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
		3. Provide templates and rough-in measurements as required.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
		2. Install pass-throughs, plumb and level. Seal the perimeter of both sides of the opening as required.
		3. Upon completion of installation operate unit and make necessary adjustments.

\*\* NOTE TO SPECIFIER \*\* Select the following paragraphs if required. Delete if not required.

* + 1. Connect mechanical services as specified under Division 15.
		2. Connect electrical services as specified in Division 16.
	1. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.
	2. SCHEDULES

\*\* NOTE TO SPECIFIER \*\* Retain Paragraph below if required to suit project requirements. Identify products by name on the Drawings or use this paragraph to define the location of each type of material to be used. The following are some examples of schedule references. Edit as required to suit project or delete and identify products on the Drawings.

* + 1. :
		2. :

END OF SECTION