



# Pharmaseal® Ducted Ceiling Module

All-Welded, Pressure Tested, Roomside HEPA Module



Unique components allow quick access and fast filter change and certification using one service person



Universal tool-less filter holding clamps, filter retaining clips and quick disconnects along with a quick access hinged grille facilitate easy one person unit service.

The Camfil Pharmaseal ceiling module is designed for all aspects of Life Science facilities including critical applications, cGMP, continuous manufacturing, biotechnology, and medical device manufacturing where clean space is a requirement. The Pharmaseal is for clients seeking guaranteed performance and risk-free compliance.

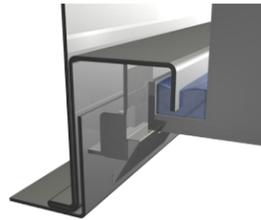
Its unique roomside replaceable filter design minimizes downtime and ensures repeatable room air cleanliness following filter service. The Camfil Pharmaseal:

- Is constructed of 0.063" aluminum with welded seams on the roomside to eliminate leak paths and ensure structural rigidity. It is also available constructed of fully-welded 16-gauge stainless steel. Each unit is pressure tested to 3.00" w.g.
- Includes universal support brackets that allow for easy integration into T-bar or plaster ceilings.
- May be ordered with a guillotine, radial bow tie, or 100% shut-off isolation damper for decontamination applications.
- Includes an all metal air aerosol distribution system with a quick disconnect roomside port for uniform dispersion across the entire face of the filter.
- Includes a quick disconnect static pressure port for evaluating filter pressure drop or sampling of the upstream aerosol concentration during filter scan testing. This allows fast easy service from the roomside for filter change, airflow adjustment and filter scan testing.
- Includes a raised-rib inlet collar for easy connection to a flexible HVAC air duct supply. It includes a 12" round inlet for connection to air supply on full size modules and a 10" round inlet connection on half size modules. The Pharmaseal may be selected with top inlet or side inlet.
- Includes a quick access hinged, flush-mounted face grille for unit service. The grille is optimized to promote uniform airflow.
- Hood height may be 9", 12-1/4" or 18" based upon selected hood construction materials of 0.063" aluminum, 16-gauge or 304 stainless steel.
- Accepts Camfil Megalam gel seal filters in depths of 53 mm, 70 mm or 100 mm that may be selected for optimum airflow and/or energy savings.
- Filters are available in efficiencies from 95% at 0.3 micron to 99.9995% (U15) at most penetrating particle size.

Camfil's flexible fabrication capabilities can supply the Pharmaseal with virtually any option to address any cleanroom requirement.

## Camfil Pharmaseal HEPA Ducted Ceiling Module

The Pharmaseal is a fully customizable module that can include significant features specific to your application. To customize your Pharmaseal please seek the assistance of your Camfil representative. Common options include specialized dampers, face grille or trim variations, alternate materials of construction, air inlet location (top or side), housing support methods and seismic secure components.



### Spring Loaded Filter Guide and Filter Retainer Clip

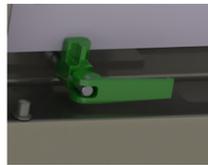
An auto-centering, spring loaded filter guide ensures that the HEPA filter fits properly to the gel-sealing knife-edge of the housing. The filter snaps into place creating a uniform gel penetration and leak free filter perimeter seal. The filter is then secured into place with tool-less filter clamps.

### Gel-Penetrating Knife-Edge

The Pharmaseal includes a gel-penetrating knife-edge that affects a positive seal between the housing and the filter. The corner joints of knife-edge junctures are continuously welded to eliminate leak paths. The controlled depth knife-edge design ensures that filter will not bottom out in the track eliminating metal to metal contact and the most common location for potential bypass.

### Tool-Less Filter Clamps

No tools are needed to remove the filter from the module. Four tool-less clamps securely hold the filter in place and easily release for filter service.



<b>camfil</b>		200 Creekside Dr. Washington, NC 27689 Phone: 252-975-1141 Fax: 252-976-1041
<b>Pharmaseal Hood</b>		
MODEL NO.: PH2-25D25D12DFG12RTSSCOCURQ		
FILTER SIZE: 21 3/4" X 20"		
MAX. FILTER PACK DEPTH: 100mm		
CUSTOMER PO. NO.: PHARMASEAL-L&L		
CAMFIL ORDER NO.: E84395		
P/N:	S/N:	
MADE IN THE U.S.A.		

### Full Product Detail on Unit Labels

Serial numbers are assigned to each hood after leak testing. This allows testing traceability.

### Quick Grille Fasteners

Quick access grille fasteners require no tools to access the Pharmaseal for servicing. Maintenance can be performed by a single service person.



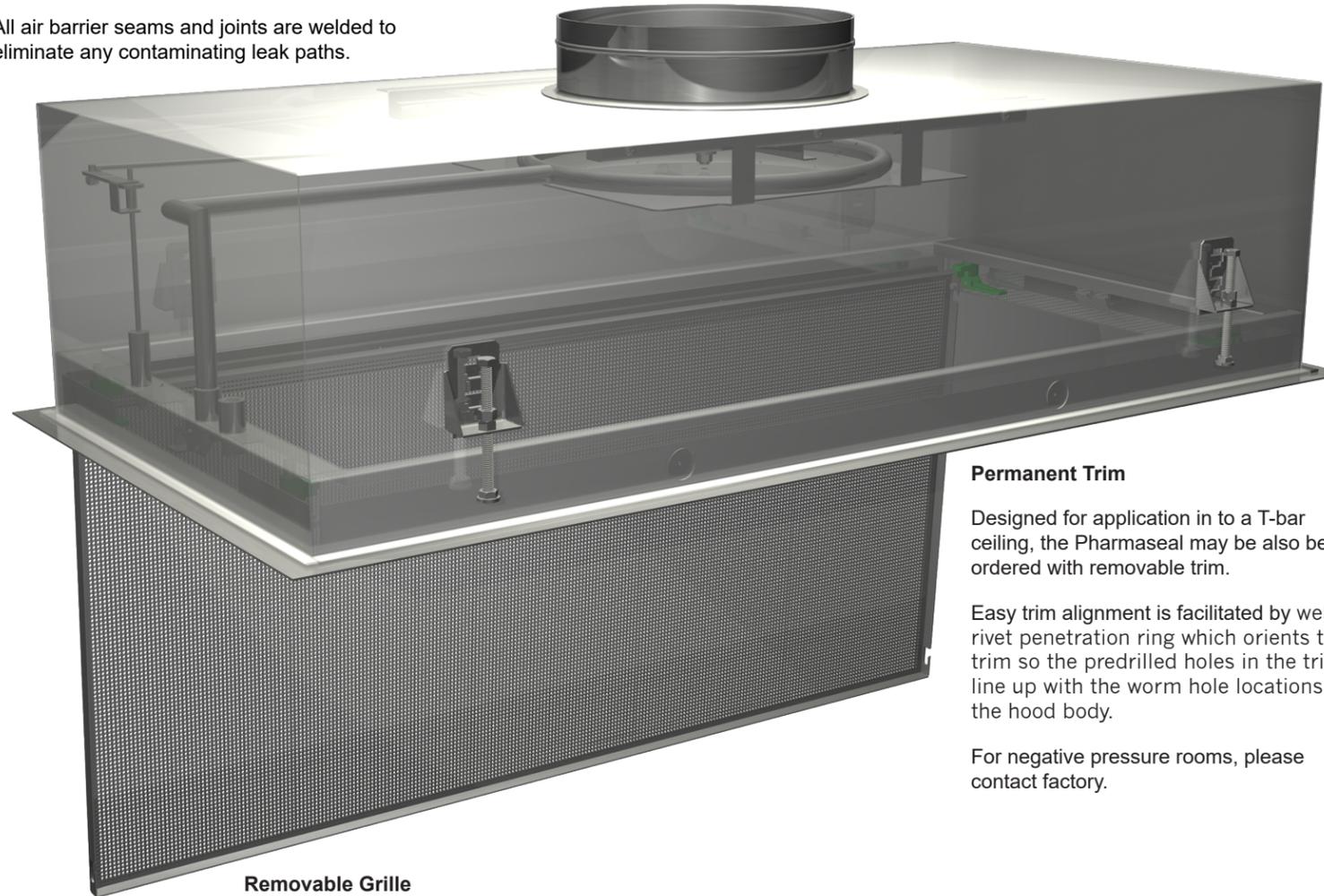
A Camfil Quick Access Card is provided with every module.

### Secure Connection to HVAC System

Duct connection collar is ribbed to ensure a secure flexible duct connection. It is also available with duct grips to prevent flexible duct blow off.

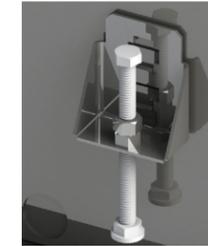
### Completely Weld Sealed to Prevent Leaks

All air barrier seams and joints are welded to eliminate any contaminating leak paths.



### Universal Support Brackets

The Pharmaseal comes standard with universal support brackets that allow accurate filter leveling and securely support the module during operation. The hood may be suspended with wires, rods, or you can compress or clamp the hood to ceiling substrate.



### Permanent Trim

Designed for application in to a T-bar ceiling, the Pharmaseal may be also be ordered with removable trim.

Easy trim alignment is facilitated by welded rivet penetration ring which orients the trim so the predrilled holes in the trim line up with the worm hole locations on the hood body.

For negative pressure rooms, please contact factory.

### Removable Grille

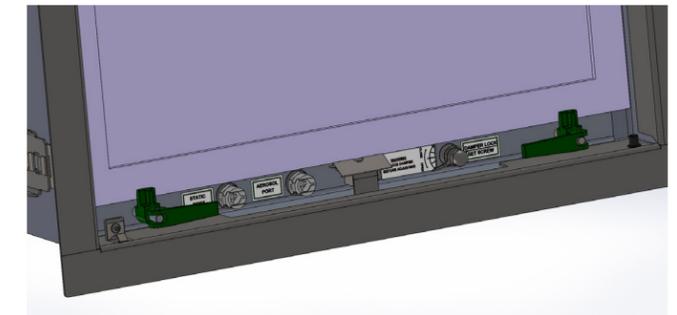
The Pharmaseal comes with a hinged grille constructed of stainless steel. The grille ensures protection of the filter and internal housing components and has a 40% open area face screen with a 2B finish. The grille has a solid border with no sharp edges. Heavy duty butt hinges ensure permanent frame alignment and even distribution of grille weight along the length of the housing.

## Camfil Pharmaseal HEPA Ducted Ceiling Module

### Uniform Aerosol Injection Ring and Dispersion Plate

An integrated aerosol injection ring distributes testing aerosol throughout the housing.

A distribution plate, located below the injection ring, ensures uniform dispersion across the entire filter area to allow for accurate filter scan testing.



### Damper Adjustment & Service Ports

A labeled damper mechanism is mechanically fastened to the hood, allowing adjustment of air across the filter from 0 to 100% depending on damper type selection. The damper has a position indicator to assist with room rebalancing. Percentage of isolation damper open position is shown on an easy to read gauge from the roomside.

A labeled quick disconnect aerosol injection port is standard for uniform aerosol distribution throughout the housing and convenient, expedient unit testing.

A labeled quick disconnect static pressure port for measuring the pressure drop across the installed filter is standard. This port may also be used to measure the upstream aerosol concentration during validation testing.

Each of the above housing penetrations are sealed to prevent leaks to the filter gel seal assembly.

***This combination of features allows filter service, filter certification and system analysis from the roomside by one person.***

### Optional External Insulation

Pharmaseal modules are available with either external foil-back insulation or closed-cell elastomer insulation. Unit may be insulated on the top, sides, or both.

To select features specific to your application, please contact Camfil Washington at Sales-WA@camfil.com for assistance or see Pharmaseal Model Number Reference Guide available from your local Camfil representative or online in the Camfil File Archive.

### Lifetime Warranty

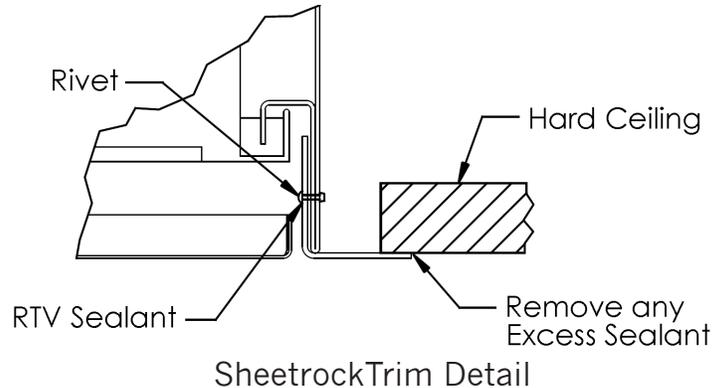
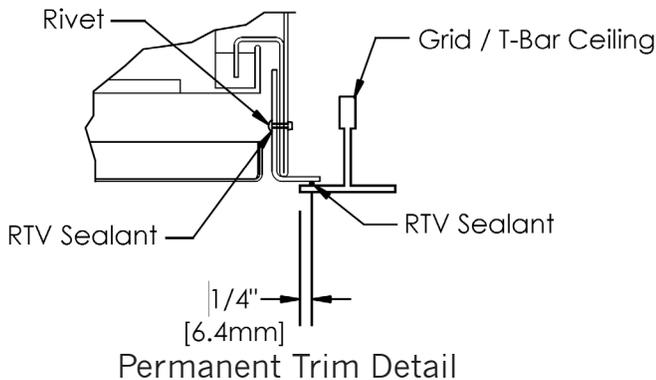
The Pharmaseal is lifetime warranted to the original purchaser against leaks or manufacturers defects.



# Pharmaseal® Ducted Ceiling Module

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Multiple roomside trim options are available, such as negative pressure room applications. For further information, please contact factory for assistance. Drawings are not to scale.



Standard Pharmaseals include a guillotine damper where airflow can be regulated between 10% and 98%. A radial blade bow tie damper or a 100% shut-off isolation damper are also available.



**Guillotine Damper** - This damper facilitates room balancing and airflow control. It is easily adjusted using the 1/4-turn rotary mechanism attached to a robust mechanical linkage and heavy-duty blades. The damper assembly is welded to the hood body to increase rigidity and eliminates "binding" of damper blades common in pop-riveted units.



**Isolation Damper** - This damper facilitates complete isolation of housing allowing for change out of filters without risk of contamination to the cleanroom. It is designed to reduce production downtime during filter change and room decontamination. The damper is adjustable from fully open to fully closed in 15 revolutions (approximate). It can eliminate the need for full room decontamination during filter replacement depending on the application. The damper has a fluid seal channel that mates with a knife edge in the hood. Positive stops on the damper adjustment mechanism eliminate twisting of the stainless steel flexible cable, providing high-cycle life. Cable failure is greatly reduced. The damper includes a fully-welded inlet collar.



**Radial Bow tie Damper** - Facilitates accurate airflow modulation and control using a linkage that is tight and vibration free. It has low torque operation through the entire range of adjustment. This damper is riveted to the Pharmaseal housing.



For detailed specifications please consult your local Camfil Distributor or Representative or [www.camfil.com](http://www.camfil.com). Camfil has a policy of uninterrupted research, development and product improvement. We reserve the right to change designs and specifications without notice.



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[www.camfil.com](http://www.camfil.com)