

HPL-LAMINAR FLOW DIFFUSER WITH GEL-SEAL HEPA FILTER



DESCRIPTION:

Laminar Flow Diffusers have been engineered to provide a vertical projection of low velocity supply air. The laminar flow diffuser introduces clean supply air without the entrainment of contaminated air in the space due to its low velocity..

CONSTRUCTION:

Available in aluminum, cold-rolled steel or stainless steel construction

APPLICATION:

Laminar Flow - With Gel Seal HEPA Filter Cell

The HPL-GS is engineered to supply air in critical environments. The HPL-GS provides a means of controlling particle contamination within the room by providing a unidirection vertical "piston" of conditioned air. Applications include clean room, laboratories, hospital operating rooms, and patient isolation rooms.

FINISHING:

Stainless Steel AISI 304 or Painted Electrostatic Powder manufacturing can be made.

ACCESSORIES:

VAV



CAV



DUCT TYPE ELECTRO- HEATER



SOUND ATTENUATOR



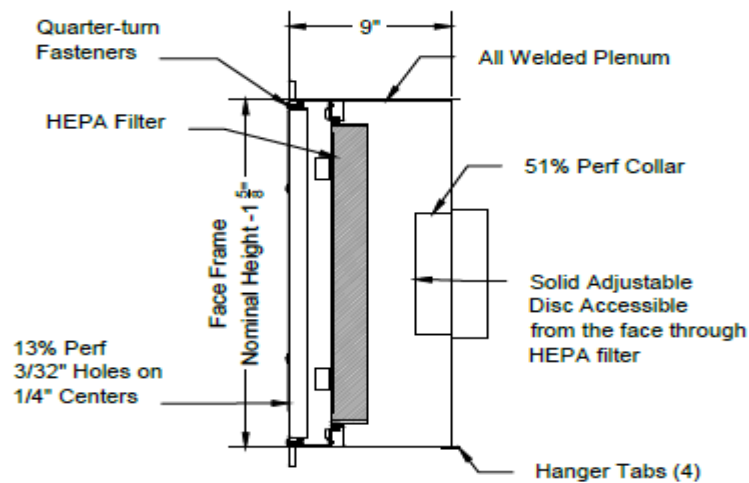
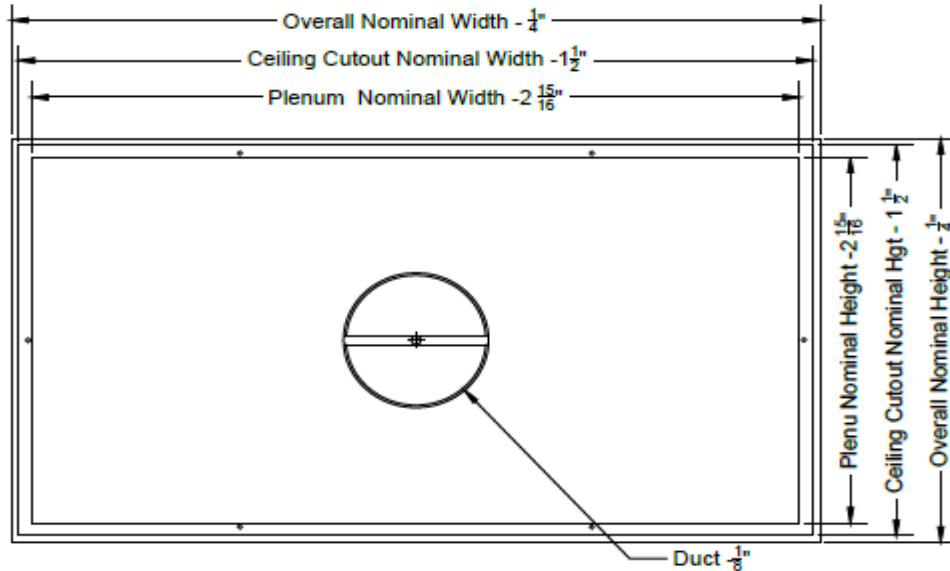
GMCAIR HVAC SYSTEM&EQUIPMENT LLC

www.gmcair.co.uk - sales@gmcair.co.uk

2 **HPL-LAMINAR FLOW DIFFUSER WITH GEL-SEAL HEPA FILTER**



STANDARD SIZES:



TYPE HPL-GS AVAILABLE SIZES (in.)		
NOMINAL SIZE		
24"x24"	36"x24"	48"x24"
X	X	X



SERIES HPL-GS HOSPITAL DIFFUSER PERFORMANCE DATA

8" Diameter Inlet												
Nominal Size	Airflow, CFM	100	120	140	160	180	200	220	240	260	280	295
24" x 24" Module	Pt	0.17	0.24	0.32	0.42	0.54	0.66	0.8	0.95	1.12	1.3	1.44
	Ps	0.16	0.23	0.31	0.41	0.52	0.64	0.77	0.92	1.08	1.25	1.39
	NC	-	17	19	22	25	27	29	31	34	35	37
	Throw (feet)	0-1-2	0-1-3	1-2-4	1-2-4	2-3-5	2-4-6	3-4-6	3-5-7	3-5-8	4-6-8	5-6-9
36" x 24" Module	Pt	0.07	0.1	0.14	0.18	0.23	0.29	0.35	0.41	0.48	0.56	0.62
	Ps	0.07	0.1	0.13	0.17	0.21	0.26	0.32	0.38	0.45	0.52	0.58
	NC	-	15	18	21	24	26	28	30	33	34	36
	Throw (feet)	0-1-2	0-1-2	0-1-3	1-2-4	1-2-5	2-3-5	2-3-6	2-4-6	3-5-7	3-5-8	3-5-8
48" x 24" Module	Pt	0.05	0.07	0.09	0.12	0.15	0.18	0.22	0.27	0.31	0.36	0.4
	Ps	0.04	0.06	0.08	0.1	0.13	0.16	0.2	0.24	0.28	0.32	0.36
	NC	-	-	17	20	23	25	27	30	32	33	35
	Throw (feet)	0-1-2	1-1-2	1-1-3	1-2-3	1-2-4	1-2-5	2-3-5	2-3-6	2-4-7	2-5-7	3-5-7

10" Diameter Inlet												
Nominal Size	Airflow, CFM	160	180	200	220	240	260	280	300	320	340	360
36" x 24" Module	Pt	0.14	0.18	0.22	0.27	0.32	0.37	0.43	0.5	0.56	0.64	0.71
	Ps	0.14	0.17	0.21	0.26	0.3	0.36	0.41	0.48	0.54	0.61	0.69
	NC	15	18	20	21	23	26	28	30	32	34	36
	Throw (feet)	1-2-4	1-2-5	2-3-5	2-3-6	2-4-6	3-4-7	3-5-8	3-5-8	4-6-9	4-6-9	5-7-10
48" x 24" Module	Pt	0.08	0.1	0.13	0.15	0.18	0.21	0.25	0.28	0.32	0.37	0.41
	Ps	0.08	0.1	0.12	0.14	0.17	0.2	0.23	0.27	0.3	0.34	0.38
	NC	-	15	18	19	22	25	27	29	31	33	35
	Throw (feet)	1-1-3	1-2-4	1-2-5	2-3-5	2-3-6	2-4-7	2-5-7	3-5-7	3-5-8	4-6-9	5-7-9

12" Diameter Inlet												
Nominal Size	Airflow, CFM	230	260	290	315	345	375	400	430	460	490	520
48" x 24" Module	Pt	0.16	0.2	0.25	0.29	0.35	0.42	0.48	0.55	0.63	0.71	0.8
	Ps	0.15	0.19	0.24	0.28	0.34	0.4	0.46	0.53	0.61	0.69	0.78
	NC	15	18	21	22	25	28	30	32	35	38	42
	Throw (feet)	1-2-6	2-3-7	2-4-7	3-5-8	4-6-8	5-6-9	5-7-9	6-8-10	6-8-11	7-9-12	7-9-12

PERFORMANCE NOTES FOR SERIES HPL-GS

All data is tested in accordance with ANSI/ASHRAE 70-2006

DEFINITION OF UNITS

Ps Static pressure loss through the diffuser and does not include velocity pressure. Measured in inches w.g.

Pt Total pressure = Static Pressure + Velocity Pressure

NC Based on Lw re: 10⁻¹² watt, includes 10dB room attenuation and a maximum inlet velocity of 500fpm

CFM Cubic Feet per Minute (air)

Throw Non-isothermal horizontal throw (supply air temperature 10°F colder than average room temperature); values are for 150, 100 and 50fpm velocities

HEPA Filter HEPA filter is high efficiency filter with 99.97% efficiency on particles with diameters of 0.3 microns

HPL-LAMINAR FLOW DIFFUSER WITH GEL-SEAL HEPA FILTER



The manufacturer shall provide published performance data. Data has been tested in accordance to ANSI/ASHRAE Standard 70-2006.

HPL-GS WITHOUT HEPA FILTER

CFM Per Square Foot	23% Free Area		40% Free Area		51% Free Area	
	Ps	NC	Ps	NC	Ps	NC
20	.010	<15	.008	<15	.008	<15
30	.024	<15	.019	<15	.018	<15
40	.042	19	.033	21	.033	20
50	.060	21	.051	27	.050	24
60	.076	29	.072	33	.070	30
70	.101	35	.096	38	.090	35

HPL-GS WITH GEL SEAL HEPA FILTER

CFM Per Square Foot	23% Free Area		40% Free Area		51% Free Area	
	Ps	NC	Ps	NC	Ps	NC
40	.300	18	.285	18	.290	18
60	.449	20	.440	20	.423	20
80	.632	26	.604	26	.595	26
100	.792	30	.768	30	.750	30

PERFORMANCE NOTES FOR SERIES HPL-GS

All data is tested in accordance with ANSI/ASHRAE 70-2006

DEFINITION OF UNITS

Ps Static pressure loss through the diffuser and does not include velocity pressure

NC Based on Lw re: 10-12 watt, includes 10dB room attenuation and a maximum inlet velocity of 500fpm

HEPA filter is a 3" deep filter, with an efficiency of 99.97% on D-3 micron particles

CFM Cubic Feet per Minute (air)

fpm Velocity of air stream in Feet per Minute

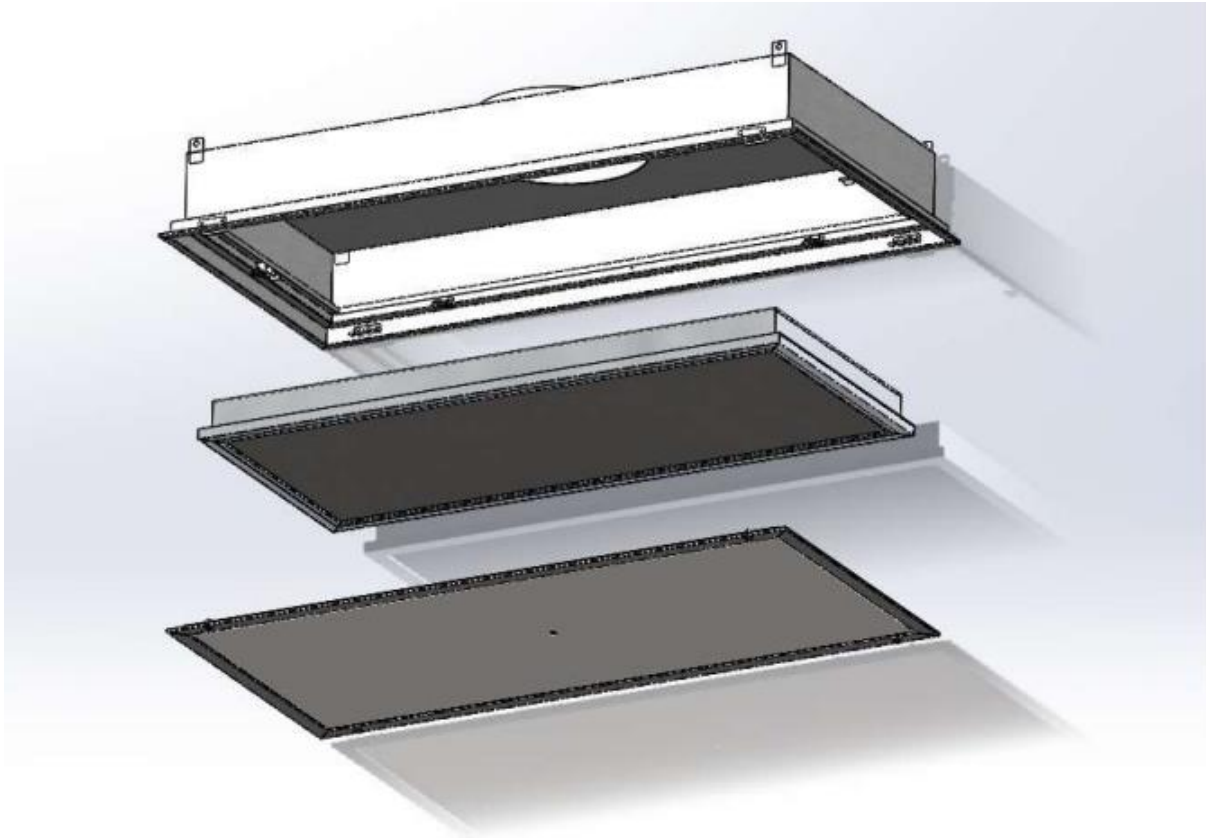
Gasket Type

EPDM Flat, Pu Foam or Gel Gasket can be use on Filter





MOUNTING DETAILS

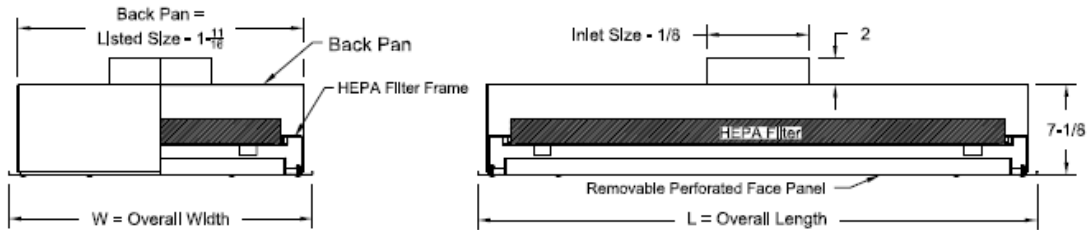


Replacement of HEPA Filter with Gel Seal

HPL-LAMINAR FLOW DIFFUSER WITH GEL-SEAL HEPA FILTER

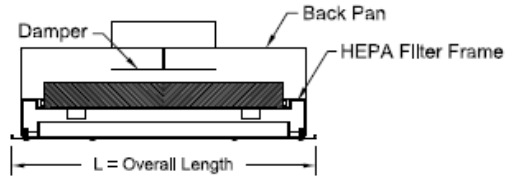
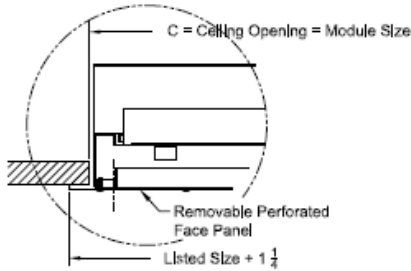


Model: HPL-GS

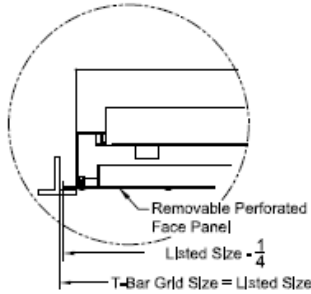


Option: HPL-GS With Damper

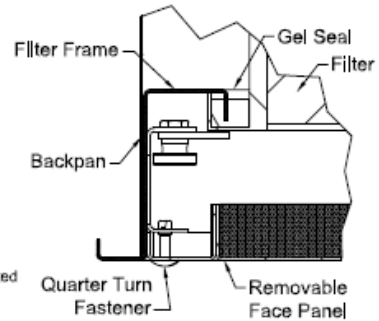
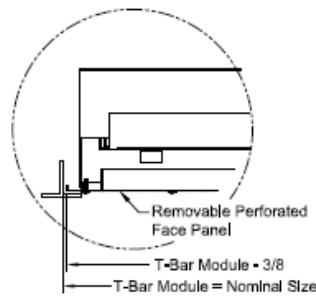
Model: HPL-GS Border 1 (Surface Mount)



Model: HPL-GS Border 6 (Standard Lay-In T-Bar)



Model: HPL-GS Border 6M (Standard Lay-In T-Bar)



Nominal Size	Frame 1			Frame 6		Frame 6M		Filter Size	
	C	L	W	L	W	L	W	L	W
24 x 24	24 x 24	25 1/4	25 1/4	23 3/4	23 3/4	23 5/8	23 5/8	20 1/8	20 1/8
24 x 48	24 x 48	49 1/4	25 1/4	47 3/4	23 3/4	47 5/8	23 5/8	20 1/8	44 1/8

Inlet Size
6
8
10
12
14

HPL-LAMINAR FLOW DIFFUSER WITH GEL-SEAL HEPA FILTER



ORDER PARAMETERS

HPL-GS	24"x24"	01	RAL9010	Si	D 6"
		Case Type			
24" x 24"					Ø: inlet Size (in)
36" x 24"					Si: Side inlet
48" x 24"					Ti: Top inlet
01: Aluminum				00: No coating	
02: cold-rolled steel				3 0 4 :Stainless steel (AISI 304)	
03: Stainless Steel				RAL----: Colour Code	