LAMINAR FLOW DIFFUSER

LFD SERIES

APPLICATION

LFD model is designed to be used in clean space environments such as medical facilities (pharmaceutical / biotechnology industry), research industries (semiconductors, aerospace industries), hospital operating and clean rooms.
LFD have low aspiration characteristics resulting in rapid temperature and velocity equalization of air mass into the zone of occupancy.

FEATURED STANDARD CONSTRUCTION

- **OUTER FRAME**
  - Constructed from 20 Ga galvanized steel sheets with punched corners.

- **FACE**
  - Constructed from 4 mm hole diameter perforated galvanized steel sheets.

- **FILTER FIXATION**
  - Normal Steel Clamp.

- **SIZES**
  - Available sizes are: 24" x 24" or 600mm x 600mm; 36" x 24" or 900mm x 600mm; 48" x 24" or 1200mm x 600mm

- **FINISH**
  - RAL 9010 White Finish.

OPTIONS

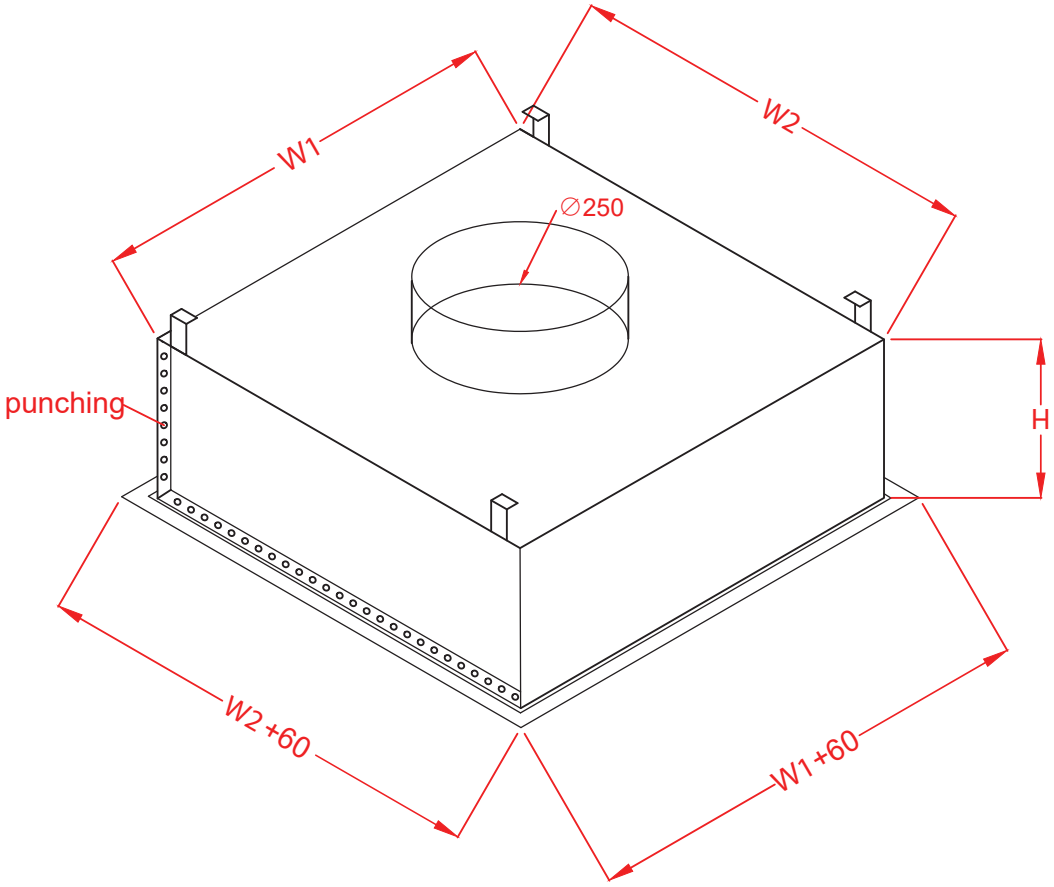
- 16 Ga Galvanized Steel construction.
- 1 and 1.5 mm Stainless Steel 304 construction.
- 1 and 1.5 mm Stainless Steel 316 construction.
- 1 and 1.5 mm Aluminum construction.
- Aluminum, Stainless Steel 304 and Stainless Steel 316 perforated sheets for the face.
- 3 cm extruded Aluminum flange for Aluminum and Galvanized construction for T-bar mount.
- 3 cm Stainless Steel duct flange for Stainless Steel construction for T-bar mount.
- HEPA filter H13 (99.95% degree of arrestance) or H14 (99.995% degree of arrestance) grade.
- Stainless Steel handle for filter fixation.

N.B: A 0.5 cm clearance is deducted from your order size.
For more information please consult our engineers.

Tests Conducted in accordance with ASHRAE Standard 70-2006 in ETL-ETS USA
Leakage tests were conducted in accordance with AMCA Standard 500-D-2012 entitled, "*Laboratory Methods for Testing Dampers for Rating"* **ETL-ETS USA.**

ILLUSTRATIONS

Non-Welded



All Older Sizes	Number of Inlet	Round Neck (mm)	H (mm) LFDW200	H (mm) LFDW100
	1	250	200	150

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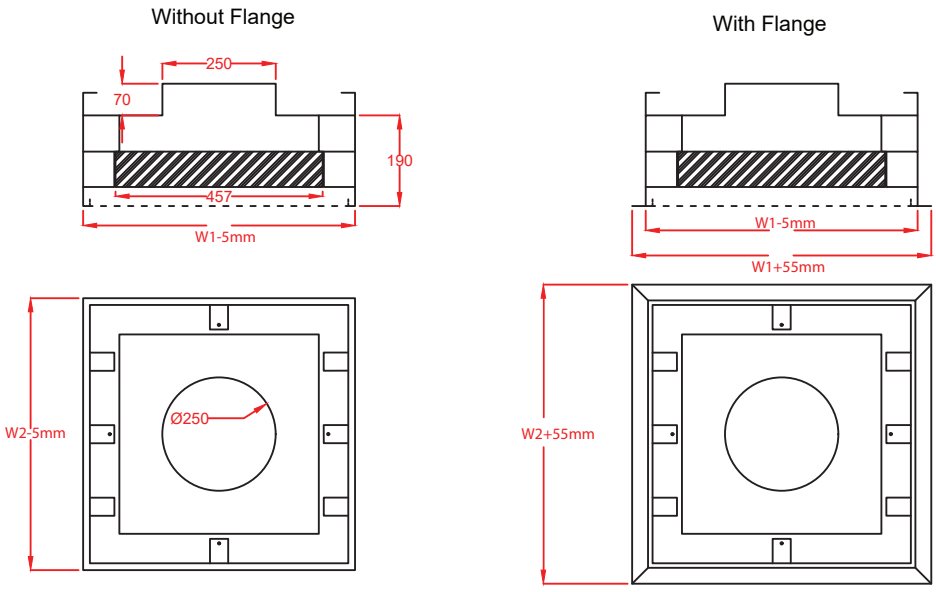
ILLUSTRATIONS

Non-Welded

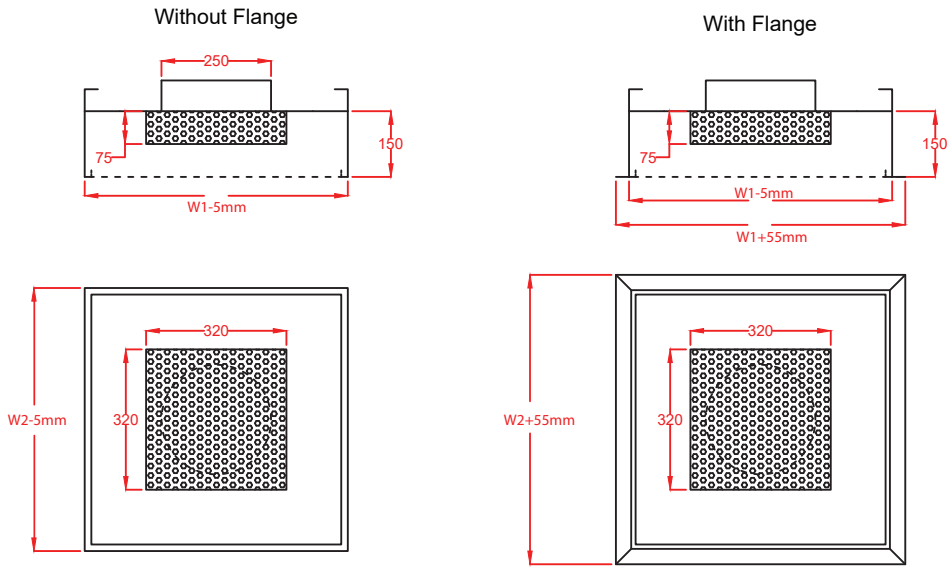
24”x24” or 600mm x 600mm

LFD200: Construction of LFD with filter support

Note: Fit for KBE proposed hepa filters only



LFD100: Construction of Diffuser without filter support



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ILLUSTRATIONS

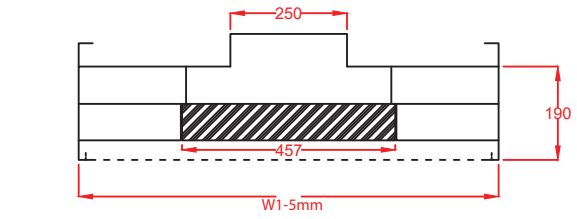
Non-Welded

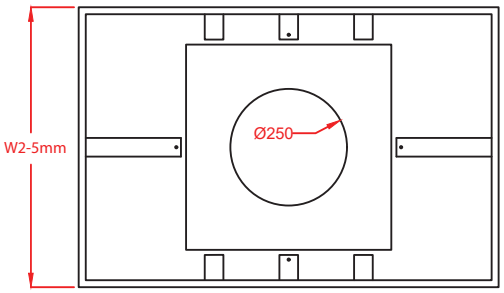
36”x24” or 900mm x 600mm

LFD200: Construction of LFD with filter support

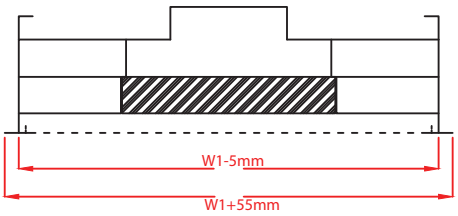
Note: Fit for KBE proposed hepa filters only

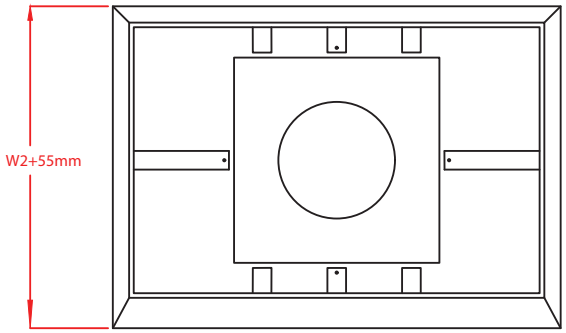
Without Flange





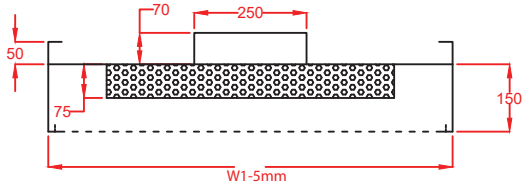
With Flange

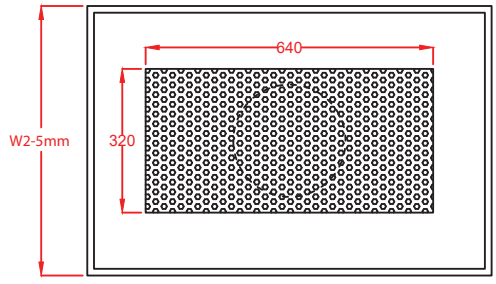




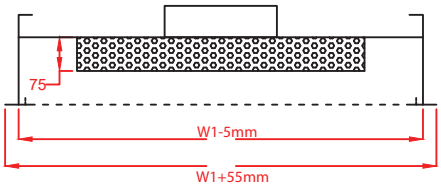
LFD100: Construction of Diffuser without filter support

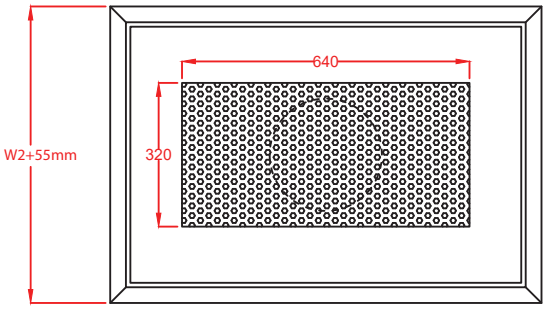
Without Flange





With Flange





N.B: A 0.5 cm clearance is deducted from your order size.

For more information please consult our engineers.

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ILLUSTRATIONS

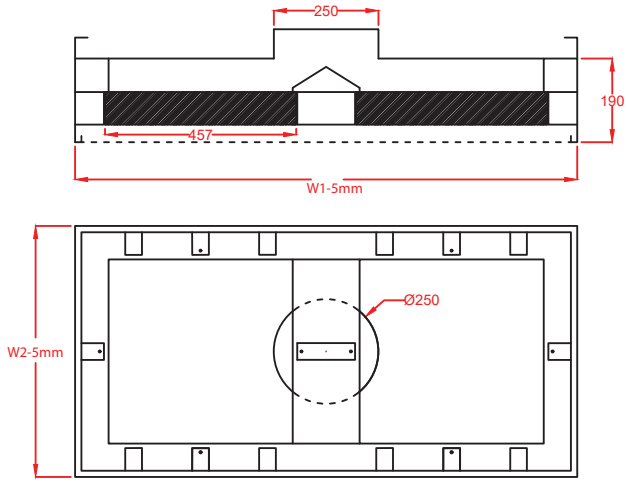
Non-Welded

48”x24” or 1200mm x 600mm

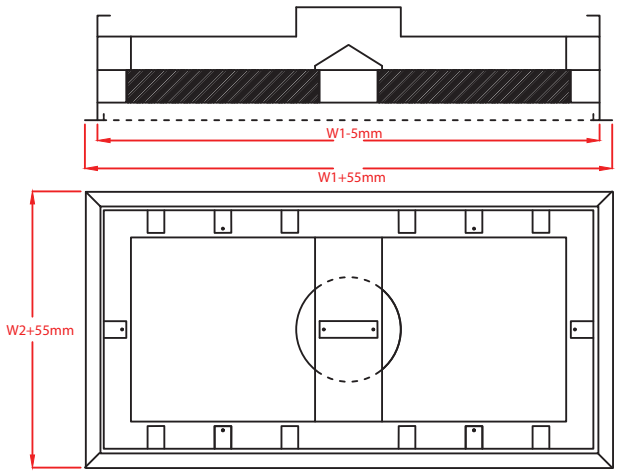
LFD200 : Construction of LFD with filter support

Note: Fit for KBE proposed hepa filters only

Without Flange

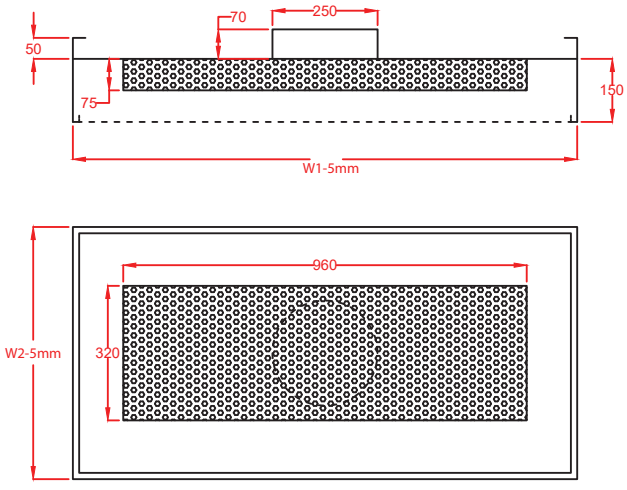


With Flange

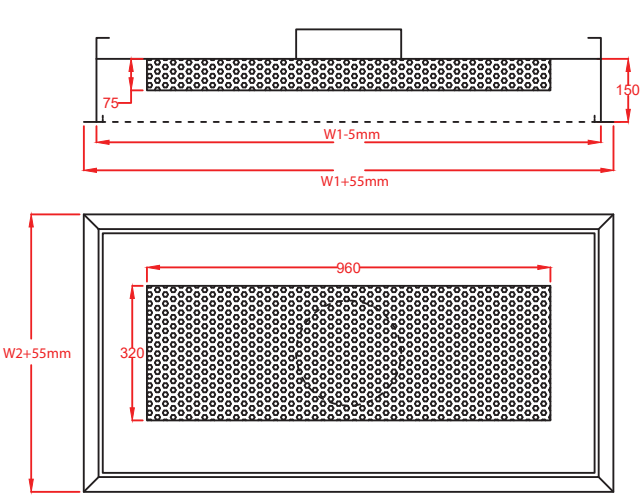


LFD100 : Construction of Diffuser without filter support

Without Flange



With Flange



N.B: A 0.5 cm clearance is deducted from your order size.

For more information please consult our engineers.

Tests Conducted in accordance with ASHRAE Standard 70-2006 in ETL-ETS USA
Leakage tests were conducted in accordance with AMCA Standard 500-D-2012 entitled, “*Laboratory Methods for Testing Dampers for Rating”* **ETL-ETS USA.**

PERFORMANCE DATA

Unit Size (In.)	Ak Factor (Ft^2)	Velocity (Cfm/ft^2)	20	30	40	50	60	70	80
24x 24 Neck Size Diam 10''	2.03	**Airflow**	**80**	**120**	**160**	**200**	**240**	**280**	**320**
		SP.	0.001	0.003	0.005	0.008	0.012	0.016	0.021
		NC	<15	<15	<15	<15	<15	<15	<15
		A.V (Fpm)	30	44	58	71	82	92	101
36 x 24 Neck Size Diam 10''	2.95	**Airflow**	**120**	**180**	**240**	**300**	**360**	**420**	**480**
		SP.	0.002	0.005	0.008	0.013	0.019	0.026	0.034
		NC	<15	<15	<15	<15	<15	16	22
		A.V (Fpm)	31	42	56	68	79	88	99
48 x 24 Neck Size Diam 10''	3.45	**Airflow**	**160**	**240**	**320**	**400**	**480**	**560**	**640**
		SP.	0.003	0.007	0.012	0.018	0.028	0.036	0.047
		NC	<15	<15	<15	<15	20	24	31
		A.V (Fpm)	31	43	56	65	78	87	97

Notes:

1- Leakage tests were conducted in accordance with AMCA Standard 500-D-2012 entitled, " Laboratory Methods for Testing Dampers for Rating" ETL-ETS USA.
2- Tests Conducted in accordance with ASHREA Standard 70-2006 (sound tests are conducted at Isothermal conditions).
3- Ak: Free area in ft^2
4- Airflow in Cfm
5- S.P: Static pressure is in Inch of Water. SP was measured at 1.5 duct diameters upstream of the inlet of the Diffuser.
6- Cfm/Ft^2: Airflow rate through diffuser per square foot of overall face area.
7- NC: Noise Criteria is based on a 10db room attenuation.
8- A.V: Average Velocity at 6 feet below ceiling.
9- Test data shown is for a temperature difference DT of 5°F between the supply air temperature and the average room air temperature.
10- Test Room Dimensions: 18'x24'x9'

LEAKAGE DATA

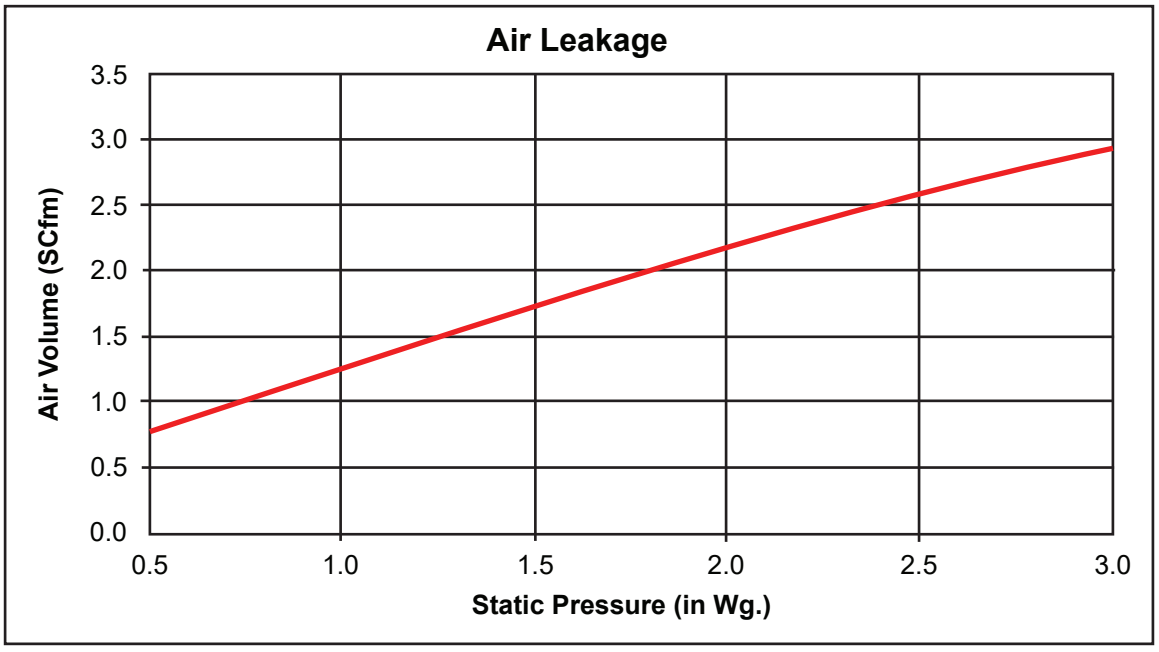
The purpose of test was to define the leakage of the Filter gasket and the Laminar casing when filter is block by Dust. The perimeter seal and casing around the filter was the leakage component.
Leakage tests were conducted in accordance with AMCA Standard 500-D-2012 entitled, "Laboratory Methods for Testing Dampers for Rating". The test samples were not dampers but filters with the outlet side blocked with cardboard and taped.
Air Volume was measured employing metering stations containing appropriately sized orifice plates.
Test conducted at Intertek Lab under report No. 103197431.

AIR LEAKAGE RESULT:

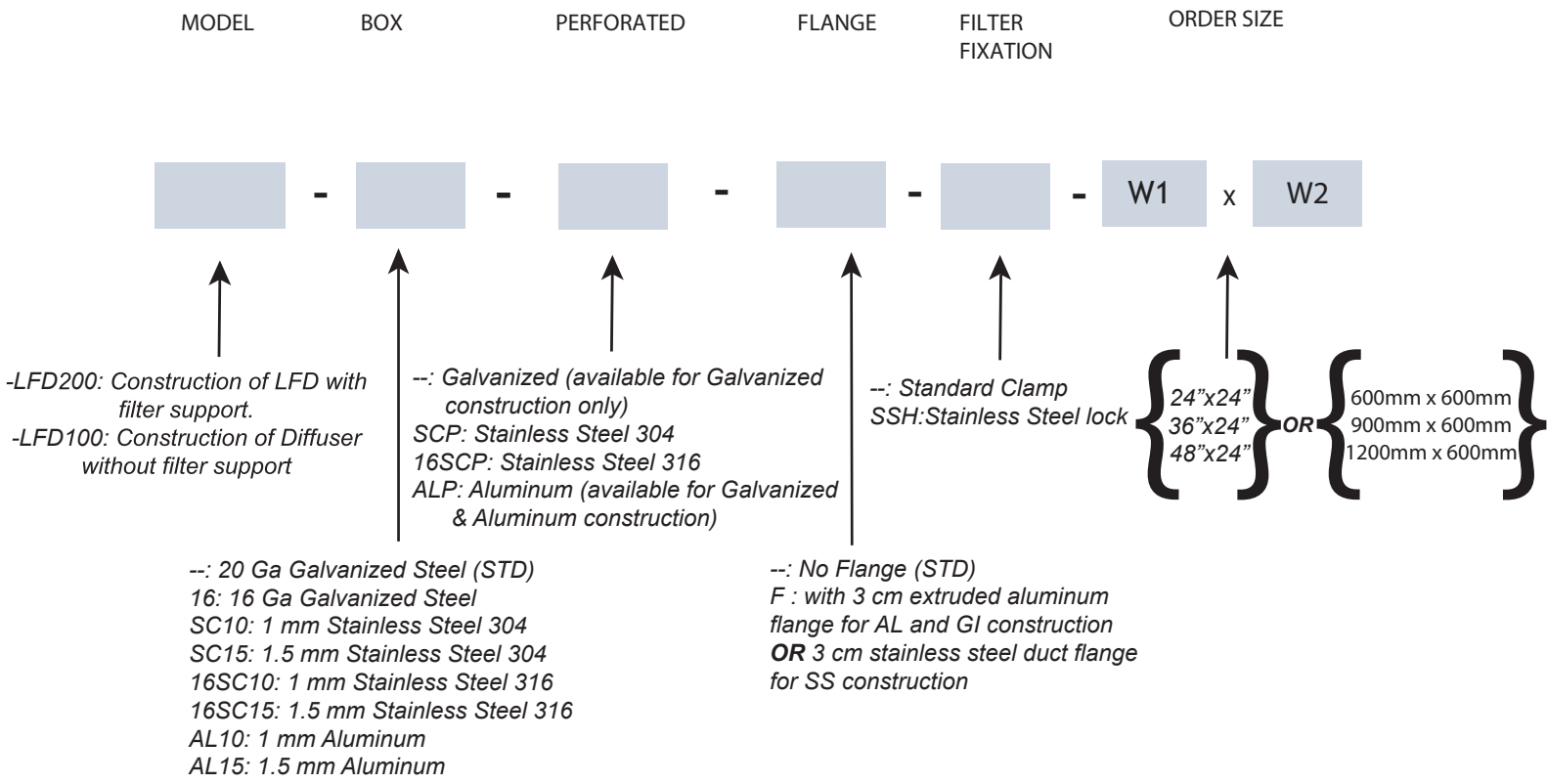
MODEL LFD200-24x24, HEPA Filter H14

Pressure Drop Across Blocked Sample		Air Volume	
in. Wg.	kPa	SCFM	L/s
0.5	0.124	0.8	0.4
1.0	0.249	1.3	0.6
1.5	0.373	1.8	0.8
2.0	0.498	2.2	1.0
2.5	0.622	2.6	1.2
3.0	0.747	2.9	1.4

GRAPHICAL TEST RESULTS



ORDER INFORMATION



N.B: A 0.5 cm clearance is deducted from width and height order size.
For more information, please check the submittal sheet.

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