

Application

Model OFSD-311 is an 'out of wall' high performance combination fire smoke damper with Class I leakage. The OFSD-311 is approved for use in walls, partitions, and floors with fire resistance ratings less than 3 hours. Removal of wall grille allows access to the actuator and other components. High strength airfoil blades insure the lowest resistance to airflow in HVAC systems with velocities up to 4,000 fpm (20.3 m/s) and pressures up to 8 in. wg (2 kPa). Model OFSD-311 shall be installed vertically (with blades running horizontal) or horizontally and rated for airflow and leakage in either direction.

UL555 Fire Resistance Ratings

Fire Rating

1½ hours in walls

Dynamic Closure

Actual ratings are size dependent

Maximum Velocity

Up to 4,000 fpm (20.3 m/s)

Maximum Pressure

Up to 8 in. wg (2 kPa) - differential pressure

UL555S Leakage Ratings

Leakage Class

I

Operational Rating

Actual ratings are size dependent

Maximum Velocity

Up to 4,000 fpm (20.3 m/s)

Maximum Temperature

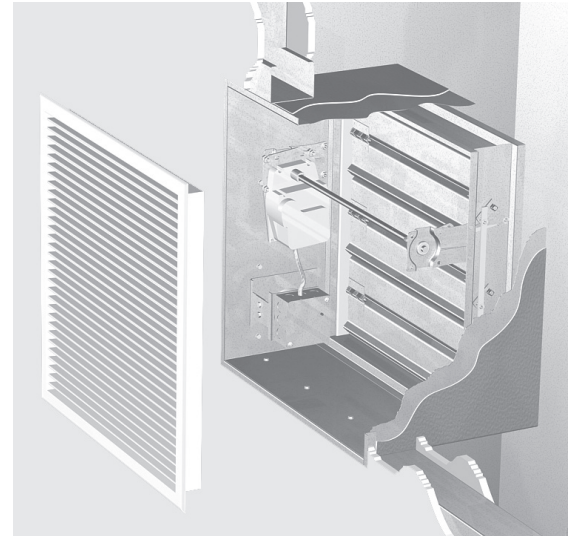
350°F (177°C) - actuator dependent

Size Limitations

WxH	Minimum Size	Maximum Size	
		Single Section	Multiple Section
Inches	8 x 8	32 x 30	36 x 36
mm	203 x 203	813 x 762	914 x 914

Features:

- Frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432mm).
- Blades are double skin airfoil with full length structural reinforcement.



Grille is not provided.

W & H dimensions furnished approximately ¼ in. (6mm) undersize. Add blanket thickness (½ in. 3mm) and sleeve thickness for overall sleeved damper dimension.

Oversize wall opening as follows: Nominal damper size plus ¾ in. (9.5mm).

Model OFSD-311 meets the requirements for fire dampers, smoke dampers and combination fire smoke dampers established by:

National Fire Protection Association
 NFPA Standards 80, 90A, 92, 101 & 105

IBC International Building Codes

CSFM California State Fire Marshal
 Fire Damper Listing (#3225-0981:103)
 Leakage (Smoke) Damper Listing (#3230-0981:104)



See complete marking on product.

UL 555 and UL 555S
 Classification R13317

Construction

	Standard	Optional
Frame Material	Galvanized Steel	-
Frame Thickness	16 ga. (1.5mm)	-
Frame Type	5 in. x 1in. (127mm x 25mm) hat channel	-
Blade Material	Galvanized Steel	-
Blade Thickness	14 ga. (2mm) equivalent	-
Blade Type	Airfoil	-
Linkage	Plated steel out of air-stream, concealed in jamb	316SS
Axle Bearings	316SS	-
Axle Material	Plated Steel	316SS
Blade Seals	Silicone	-
Jamb Seals	Stainless Steel	-
Closure Device	RRL	RRL/OCI, TOR, Fusible Link
Closure Temperature	165°F (74°C)	212°F (100°C), 250°F (121°C), 286°F (141°C), 350°F (177°C)

Options

- Electric actuators
- Clean Wrap
- Test Switches
 - [Greenheck test switches \(GTS-1,-2, -3, -4\)](#)
 - [Momentary test switches](#)
- [POC retaining angles](#)
- Sealed transitions and sleeves
- [Smoke detectors](#)
- Transitions: R, C, O

Document Links



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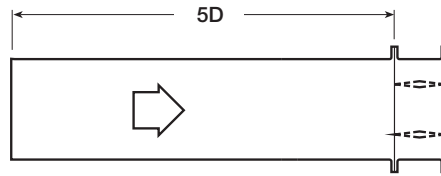
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Pressure Drop

AMCA Figure 5.2



12 in. x 12 in. (305mm x 305mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.11
1500	0.24
2000	0.42
2500	0.66
3000	0.95
3500	1.30
4000	1.70

24 in. x 24 in. (610mm x 610mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.12
2000	0.22
2500	0.34
3000	0.49
3500	0.67
4000	0.87

36in. x 36 in. (914mm x 914mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.05
1500	0.12
2000	0.21
2500	0.32
3000	0.47
3500	0.63
4000	0.83

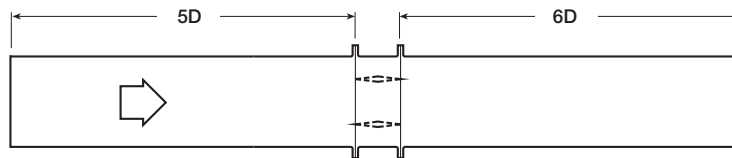
12in. X 48 in. (305mm x 1219mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.05
1500	0.12
2000	0.21
2500	0.33
3000	0.48
3500	0.65
4000	0.85

48 in. x 12 in. (1219mm x 305mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.02
1000	0.08
1500	0.18
2000	0.33
2500	0.51
3000	0.74
3500	1.00
4000	1.31

AMCA Figure 5.3



12 in. x 12 in. (305mm x 305mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.13
2000	0.23
2500	0.37
3000	0.53
3500	0.73
4000	0.95

24 in. x 24 in. (610mm x 610mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.06
2000	0.10
2500	0.16
3000	0.23
3500	0.32
4000	0.42

36in. x 36 in. (914mm x 914mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.05
2000	0.09
2500	0.14
3000	0.21
3500	0.29
4000	0.38

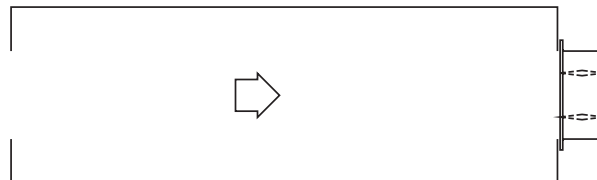
12in. X 48 in. (305mm x 1219mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.11
2500	0.18
3000	0.25
3500	0.34
4000	0.45

48 in. x 12 in. (1219mm x 305mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.04
1500	0.10
2000	0.18
2500	0.29
3000	0.42
3500	0.57
4000	0.74

AMCA Figure 5.5



12 in. x 12 in. (305mm x 305mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.04
1000	0.18
1500	0.42
2000	0.75
2500	1.17
3000	1.68
3500	2.29
4000	2.09

24 in. x 24 in. (610mm x 610mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.13
1500	0.29
2000	0.52
2500	0.81
3000	1.17
3500	1.60
4000	2.14

36in. x 36 in. (914mm x 914mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.27
2000	0.48
2500	0.75
3000	1.08
3500	1.48
4000	1.93

12in. X 48 in. (305mm x 1219mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.27
2000	0.49
2500	0.77
3000	1.11
3500	1.51
4000	1.97

48 in. x 12 in. (1219mm x 305mm)

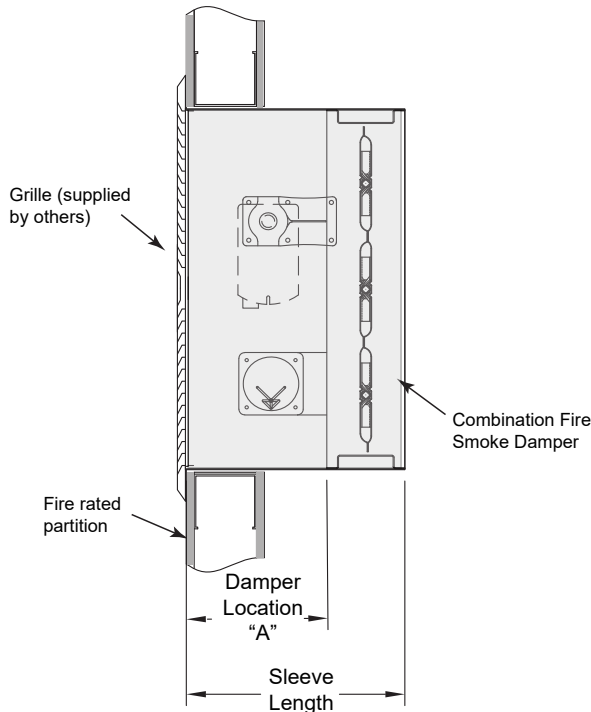
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.14
1500	0.32
2000	0.57
2500	0.89
3000	1.28
3500	1.75
4000	2.29



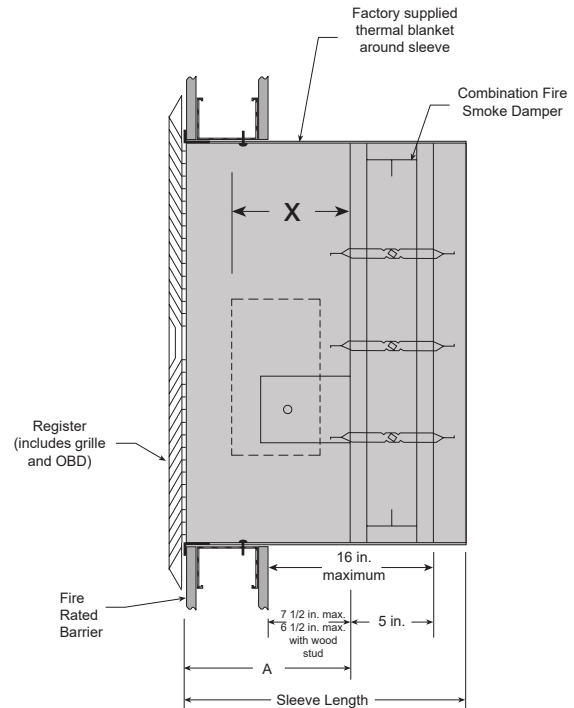
Greenheck Fan Corporation certifies that the model OFSD-311 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Seal applies to air performance ratings only.

Actuator Space Envelopes

The drawing below and corresponding table show the minimum dimensions required for internal actuator mounting on OFSD-311. The standard mounting locations provide enough space for the mounting of actuators and controls plus allowing space for a grille.



OFSD's that don't require a breakaway connection



OFSD's that require a breakaway connection

Actuator Type/Model	'X' Dimension
FSLF24-S, 120, 230-S Belimo	7½ in (191mm)
FSNF24, 120, 230-S Belimo	7¾ in. (187mm)
FSTF24, 120, 230-S Belimo	7½ in (181mm)
MSXX09 Series Honeywell	7½ in (191mm)
MSXX04 Series Honeywell	7½ in (191mm)
MSXX20 Series Honeywell	7½ in (191mm)

Sleeve Information

Sleeve length is dependent on actuator, grille depth, OBD depth, and damper height and whether or not a breakaway connection is required on the side opposite the actuator.

'Sleeve Gauge' = 16 ga. or 20 ga. (1.5mm or 1mm)

Wall Opening Sizing

To accommodate for sleeve and thermal blanket thickness, the wall opening must be oversized by 3/8 in. (9.5mm) as shown.

For example:

If the nominal damper size required is 18 in. x 14 in. (457mm x 356mm), the wall opening size needs to be 18 3/8 in. x 14 3/8 in. (467mm x 365mm).

The damper itself is undersized a 1/4 in. (6mm) on each dimension for an actual size of 17 3/4 in. x 13 3/4 in. (451mm x 349mm). This is also the inside dimension of the sleeve (for grille considerations).

