LH-1250 Wind-Driven-Rain-Resistant Stationary Louver (Miami-Dade Approved)

Product Bulletin

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Since 1905, Johnson Controls® has developed and refined air control products by providing the highest quality control dampers that fit your application and size requirements. Now, we are including louvers in our product offering.

LH-1250 louvers feature:

- a vertical 0.081 in. (2.1 mm) nominal wall thickness aluminum blade.
- 1/8 in. (3 mm) thick formed aluminum Universal Installation Channels
- 1/2 in. mesh bird screen in a removable frame

Figure 1: LH-1250 Wind-Driven-Rain-Resistant Stationary Louver

Table 1: Features and Benefits

Feature	Benefit
Large Missile Impact Resistance per Miami-Dade PA-201 Test Protocol (Miami-Dade County, Florida Notice of Acceptance Number: 12-1115.05 [Expires 1/28/2017])	Provides ability to resist flying objects during a hurricane
Approved for Use in Open Structures with Provisions to Manage Weather Infiltration (Wet Rooms)	Allows use in multiple applications
Maximum Windload +160 PSF (7.66 KPa), -140 PSF (-6.70 KPa)	Resists effects of high-velocity winds

Applications

LH-1250 Wind-Driven-Rain-Resistant Stationary Louvers are designed to meet heavy duty application and environmental requirements meeting the Miami-Dade County Florida PA-201 Missile Impact Resistant Test Protocol:

Miami-Dade Approved
Miami-Dade County, Florida
Notice of Acceptance Number: 12-1115.05
(Expires 1/28/2017)

Published free area and pressure drop performance ratings are based on testing in accordance with Air Movement and Control Association (AMCA) Publication 500-L.

IMPORTANT: The LH-1250 Wind-Driven-Rain-Resistant Stationary Louvers must be installed per the appropriate installation detail. It is the responsibility of the installing contractor to properly install the louver per the appropriate details found in the installation instructions.

Suggested Specifications

Furnish and install louvers as specified here where shown on plans or described in schedules.

Louvers shall be stationary aluminum vertical blades with a maximum windload of +160 psf (7.66 KPa), -140 psf (-6.70 KPa).

Louvers shall have a minimum of 42% free area, based on a 48 x 48 in. (1219 x 1219 mm) size.

Blades shall be contained within a 6 in. (152 mm) deep, aluminum frame.

Louvers are tested at an AMCA Certified Laboratory using instrumentation and procedures in accordance with AMCA Standard No. 500-L, Test Methods for Louvers, Dampers, and Shutters.

Standard Construction

Louver frame is 6 in. (152 mm) deep, 6063T5 extruded aluminum with 0.125 in. (3.2 mm) nominal wall thickness.

Louver blades are 6063T5 extruded aluminum 0.081 in. (2.1 mm) nominal wall thickness. Blades are mounted vertically.

The bird screen is a 1/2 x 0.063 in. (13 x 1.6 mm) square mesh aluminum bird screen in a removable frame. The screen adds approximately 1/2 in. (13 mm) to louver depth.

The louvers are provided with 1/8 in. (3 mm) thick formed-aluminum Universal Installation Channels, enabling the LH-1250 Wind-Driven-Rain-Resistant Stationary Louver to be installed in most wall systems. The standard channel depth is 8-1/4 in. (209 mm) for Concrete Masonry Unit (CMU) block wall system. The channels may be ordered in various depths to accommodate other wall systems.

The louver comes with a standard mill finish..

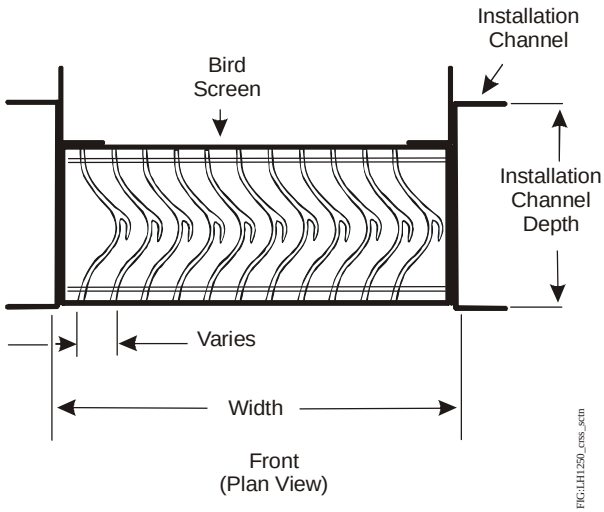

Figure 2: LH-1250 Louver Cross-Section

Dimensions

When ordering, provide width and height dimensions from the outside edges of the rough opening.

Unless ordered as actual size, the installation channels will be 1/4 in. (6 mm) smaller than the height and width dimensions provided. To allow clearance for the installation channels, louver width and height will be 3/4 in. (19 mm) less than the rough opening dimensions.

Installation channels for louvers ordered as **exact size** will not be undersized.

Order acknowledgements for actual size orders or orders with engineering drawings may show actual louver frame dimensions less installation channel thickness.

The LH-1250 louver is available in optional finishes at an additional cost.

Ordering

IMPORTANT: All Johnson Controls® louvers are built to order and cannot be returned due to ordering errors. All louvers are backed by a 3-year warranty, which covers defects in materials or workmanship. Refer to terms and conditions of sale for specifics.

Use Table to order your louver.

LH-1250 Wind-Driven-Rain-Resistant Louver Selector[1]

	Ordering Code Number	L	F	H	N	N	-	w	w	w	x	h	h	h		
Product Type	L = Louver															
Operation	F = Fixed Blade															
Rating	H = Hurricane Rating															
Seals/Bearings	N = None															
Actuators	N = None															
Separator	Not Applicable															
Width[2]	012 to 999															
Separator	Not Applicable															
Height[2]	012 to 096															
Options	B = Baked Enamel C = Color Match E = Exact Size K = Kynar®[3] Finish R = Rear Security Bars S = Security Bars, Front															

1. Not all combinations are available. Check the selector tool for valid combinations.
2. Actual louver size is 3/4-inch (19 mm) less than nominal.
3. Kynar® is a type of polyvinylidene difluoride (PVDF), a highly non-reactive and pure thermoplastic fluoropolymer used in applications requiring the highest purity, strength, and resistance to solvents, acids, bases and heat, as well as in applications requiring low smoke generation during a fire event. A fine powder grade PVDF is used as the principal ingredient of high-end paints for metals. These paints have extremely good gloss and color retention. These paints are in use on many prominent buildings around the world, as well as on commercial and residential metal roofing.

Note: Louvers wider than the maximum single section width will be shipped in multiple sections and will require field assembly by others.

Note: Installation channels are shipped loose.

Miami-Dade County, Florida Test Performance

Table 2: PA 100(A) Wind Driven Rain Resistance Test (Louver Only)

Wind Velocity, mph (kph)	Rain Fall Rate, in./hr. (mm/hr.)	Allowable Penetration, oz. (mL)	Actual Penetration, oz. (mL)
35 (56)	8.8 (224)	0	0
70 (113)	8.8 (224)	0	1.01 (30)
90 (145)	8.8 (224)	7.68 (227) total	1.76 (52)
110 (177)	8.8 (224)		1.08 (32)

Table 3: PA 100(A) Wind Driven Rain Resistance Test (Louver with Optional VD-1250 Damper)

Wind Velocity, mph (kph)	Rain Fall Rate, in./hr. (mm/hr.)	Allowable Penetration, oz. (mL)	Actual Penetration, oz. (mL)
35 (56)	8.8 (224)	0	0
70 (113)	8.8 (224)	0	0
90 (145)	8.8 (224)	7.68 (227) total	0
110 (177)	8.8 (224)		0.01 (0.3)

Table 4: PA201-94 Large Missile Impact Test[1]

Missile Type	Velocity, ft/sec. (m/sec.)	Impacts
9 lb. (4 kg) Southern Pine 2 x 4 in. (51 x 102 mm)	50 (15.24)	6

1. Louver allowed no inboard missile penetration during impacts.

Table 5: PA 202-94 Uniform Static Air Pressure Test

Load, lb/sq. ft. (kPa)	Load Duration	Louver/Damper Recovery
+120 (+5.7)	30 seconds	100%
-120 (-5.7)	30 seconds	100%
+160 (+7.7)	30 seconds	100%
-140 (-6.7)	30 seconds	100%
+240 (+11.5)	30 seconds	100%
-210 (-10.1)	30 seconds	100%

Table 6: PA 203-94 Cyclic Wind Pressure Test

Cycles	Load, lb/sq. ft. (kPa)	Load Duration Cycle	Louver Recovery
600	+80 (+3.83)	1 to 3 seconds	100%
600	-70 (-4.35)	1 to 3 seconds	100%
70	+96 (+4.60)	1 to 3 seconds	100%
70	-84 (-4.02)	1 to 3 seconds	100%
1	+208 (+9.96)	1 to 3 seconds	100%
1	-182 (-8.71)	1 to 3 seconds	100%

Wind Driven Rain Performance

Table 7: Free Area Guide, 12 to 60 in. Width

Height, in. (mm)	Width, in. (m)								
	12 (0.30)	**18 (0.46)**	**24 (0.61)**	**30 (0.76)**	**36 (0.91)**	**42 (1.07)**	**48 (1.22)**	**54 (1.37)**	**60 (1.52)**
12 (0.30)	0.11 (0.01)	0.18 (0.02)	0.25 (0.02)	0.32 (0.03)	0.39 (0.04)	0.45 (0.04)	0.52 (0.05)	0.59 (0.06)	0.66 (0.06)
18 (0.46)	0.33 (0.03)	0.54 (0.05)	0.74 (0.07)	0.95 (0.09)	1.16 (0.11)	1.36 (0.13)	1.57 (0.15)	1.78 (0.17)	1.98 (0.18)
24 (0.61)	0.55 (0.05)	0.89 (0.08)	1.24 (0.12)	1.58 (0.15)	1.93 (0.18)	2.27 (0.21)	2.62 (0.24)	2.96 (0.28)	3.31 (0.31)
30 (0.76)	0.77 (0.07)	1.25 (0.12)	1.73 (0.16)	2.22 (0.21)	2.70 (0.25)	3.18 (0.30)	3.66 (0.34)	4.15 (0.39)	4.63 (0.43)
36 (0.91)	0.99 (0.09)	1.61 (0.15)	2.23 (0.21)	2.85 (0.27)	3.47 (0.32)	4.09 (0.38)	4.71 (0.44)	5.33 (0.50)	5.95 (0.55)
42 (1.07)	1.21 (0.11)	1.97 (0.18)	2.73 (0.25)	3.48 (0.32)	4.24 (0.39)	5.00 (0.46)	5.76 (0.54)	6.52 (0.61)	7.27 (0.68)
48 (1.22)	1.43 (0.13)	2.32 (0.22)	3.22 (0.30)	4.12 (0.38)	5.01 (0.47)	5.91 (0.55)	6.80 (0.63)	7.70 (0.72)	8.60 (0.80)
54 (1.37)	1.65 (0.15)	2.68 (0.25)	3.72 (0.35)	4.75 (0.44)	5.78 (0.54)	6.82 (0.63)	7.85 (0.73)	8.88 (0.83)	9.92 (0.92)
60 (1.52)	1.87 (0.17)	3.04 (0.28)	4.21 (0.39)	5.38 (0.50)	6.55 (0.61)	7.73 (0.68)	8.90 (0.83)	10.07 (0.94)	11.24 (1.05)
66 (1.68)	2.09 (0.19)	3.40 (0.32)	4.71 (0.44)	6.02 (0.56)	7.33 (0.68)	8.64 (0.80)	9.94 (0.92)	11.25 (1.05)	12.56 (1.17)
72 (1.83)	2.31 (0.21)	3.76 (0.35)	5.20 (0.48)	6.65 (0.62)	8.10 (0.75)	9.54 (0.89)	10.99 (1.02)	12.44 (1.16)	13.89 (1.29)
78 (1.98)	2.53 (0.24)	4.11 (0.38)	5.70 (0.53)	7.28 (0.68)	8.87 (0.82)	10.45 (0.97)	12.04 (1.12)	13.62 (1.27)	15.21 (1.41)
84 (2.13)	2.75 (0.26)	4.47 (0.42)	6.19 (0.58)	7.92 (0.74)	9.64 (0.90)	11.36 (1.06)	13.08 (1.22)	14.81 (1.38)	16.53 (1.54)
90 (2.29)	2.97 (0.28)	4.83 (0.45)	6.69 (0.62)	8.55 (0.80)	10.41 (0.97)	12.27 (1.14)	14.13 (1.31)	15.99 (1.49)	17.85 (1.66)

Table 8: Free Area Guide, 66 to 120 in. Width (Part 1 of 2)

Height, in. (mm)	Width, in. (mm)									
	66 (1.68)	**72 (1.83)**	**78 (1.98)**	**84 (2.13)**	**90 (2.29)**	**96 (2.44)**	**102 (2.59)**	**108 (2.74)**	**114 (2.90)**	**120 (3.05)**
12 (0.30)	0.73 (0.07)	0.80 (0.07)	0.87 (0.08)	0.94 (0.09)	1.01 (0.09)	1.07 (0.10)	1.14 (0.11)	1.21 (0.11)	1.28 (0.12)	1.35 (0.13)
18 (0.46)	2.19 (0.20)	2.40 (0.22)	2.60 (0.24)	2.81 (0.26)	3.02 (0.28)	3.22 (0.30)	3.43 (0.32)	3.64 (0.34)	3.84 (0.36)	4.05 (0.38)
24 (0.61)	3.65 (0.34)	4.00 (0.37)	4.34 (0.40)	4.68 (0.44)	5.03 (0.47)	5.37 (0.50)	5.72 (0.53)	6.06 (0.56)	6.41 (0.60)	6.75 (0.63)
30 (0.76)	5.11 (0.48)	5.59 (0.52)	6.08 (0.57)	6.56 (0.61)	7.04 (0.65)	7.52 (0.70)	8.01 (0.74)	8.49 (0.79)	8.97 (0.83)	9.45 (0.88)
36 (0.91)	6.57 (0.61)	7.19 (0.67)	7.81 (0.73)	8.43 (0.78)	9.05 (0.84)	9.67 (0.90)	10.29 (0.96)	10.91 (1.01)	11.53 (1.07)	12.15 (1.13)
42 (1.07)	8.03 (0.75)	8.79 (0.82)	9.55 (0.89)	10.31 (0.96)	11.06 (1.03)	11.82 (1.10)	12.58 (1.17)	13.34 (1.24)	14.10 (1.31)	14.85 (1.38)

Table 8: Free Area Guide, 66 to 120 in. Width (Part 2 of 2)

Height, in. (mm)	Width, in. (mm)									
	66 (1.68)	**72 (1.83)**	**78 (1.98)**	**84 (2.13)**	**90 (2.29)**	**96 (2.44)**	**102 (2.59)**	**108 (2.74)**	**114 (2.90)**	**120 (3.05)**
48 (1.22)	9.49 (0.88)	10.39 (0.97)	11.28 (1.05)	12.18 (1.13)	13.08 (1.22)	13.97 (1.30)	14.87 (1.38)	15.76 (1.47)	16.66 (1.55)	17.56 (1.63)
54 (1.37)	10.95 (1.02)	11.99 (1.11)	13.02 (1.21)	14.05 (1.31)	15.09 (1.40)	16.12 (1.50)	17.15 (1.60)	18.19 (1.79)	19.22 (1.79)	20.26 (1.88)
60 (1.52)	12.41 (1.15)	13.58 (1.26)	14.76 (1.37)	15.93 (1.48)	17.10 (1.59)	18.27 (1.70)	19.44 (1.81)	20.61 (1.92)	21.79 (2.03)	22.96 (2.13)
66 (1.68)	13.87 (1.29)	15.18 (1.41)	16.49 (1.53)	17.80 (1.66)	19.11 (1.78)	20.42 (1.90)	21.73 (2.02)	23.04 (2.14)	24.35 (2.26)	25.66 (2.39)
72 (1.83)	15.33 (1.43)	16.78 (1.56)	18.23 (1.70)	19.67 (1.83)	21.12 (1.96)	22.57 (2.10)	24.02 (2.23)	25.46 (2.37)	26.91 (2.50)	28.36 (2.64)
78 (1.98)	16.79 (1.56)	18.36 (1.71)	19.96 (1.86)	21.55 (2.00)	23.13 (2.15)	24.72 (2.30)	26.30 (2.45)	27.89 (2.59)	29.47 (2.74)	31.06 (2.89)
84 (2.13)	18.25 (1.70)	19.98 (1.86)	21.70 (2.02)	23.42 (2.18)	25.15 (2.34)	26.87 (2.50)	28.59 (2.66)	30.31 (2.82)	32.04 (2.98)	33.76 (3.14)
90 (2.29)	19.71 (1.83)	21.57 (2.01)	23.44 (2.18)	25.30 (2.35)	27.16 (2.53)	29.02 (2.70)	30.88 (2.87)	32.74 (3.04)	34.60 (3.22)	36.46 (3.39)

Table 9: AMCA 500-L Wind-Driven Rain Test[1]

Wind Velocity, mph (kph)	Rain Fall Rate, in./hr (mm/hr)	Core Velocity[2], fpm (m/s)	Airflow, cfm (m^3/min.)	Free Area Velocity[3], fpm (m/sec)	Effectiveness Ratio	Class[4]	Discharge Loss Class[5] Intake
29 (46.4	3 (76)	970 (5)	10,444 (295)	2,149 (10.9)	100%	A	2
50 (80.5)	8 (203)	982 (5)	10,570 (298)	2,175 (11.0)	99.8%	A	2

1. The test size is 1 x 1 m. (39 x 39 in.) core area, 1.05 x 1.05 m (41-1/4 x 42-5/16 in.) nominal. Free area of test louver is 0.45 m^2 (4,86 ft^2).
2. The core area is the open area of the louver face (face area less louver frames).
3. The free area of the test size is calculated per AMCA standard 500-L.
4. Class A Wind-Driven Rain Penetration requires 99% to 100% effectiveness. The LH-1250 louver provides Class A performance at all velocities, up to and including 5 m/s core velocity.
5. Discharge loss coefficient is calculated by dividing a louver's actual airflow rate vs. a theoretical airflow for the opening. It provides an indication of the louver's airflow characteristics. (The higher the coefficient, the less resistance to airflow). Class 2 requires a discharge loss coefficient of 0.3 to 0.399.

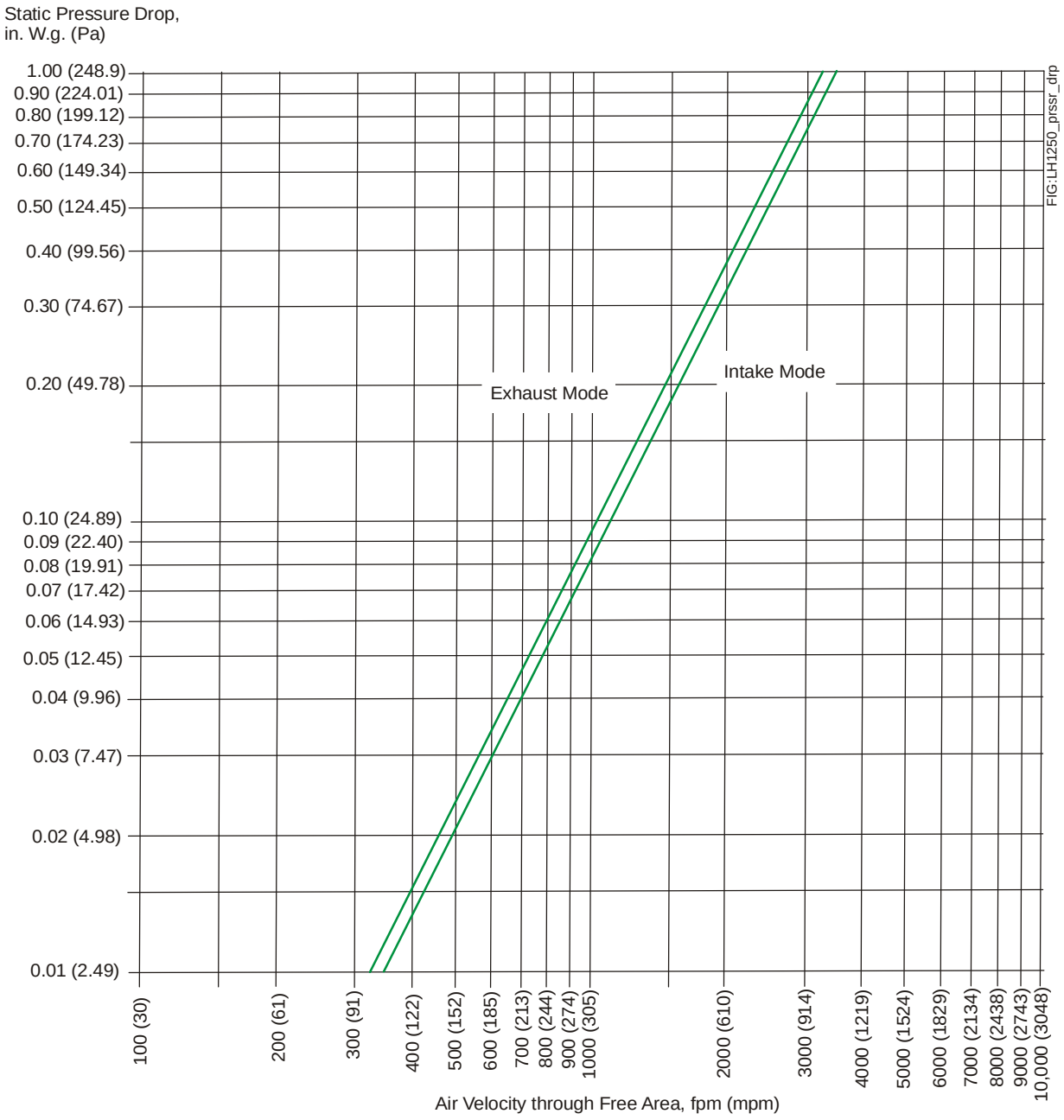

Figure 3: Pressure Drop

Repair Information

If the LH-1250 Louver fails to operate within specifications, replace the unit. For a replacement louver, contact the nearest Johnson Controls representative.

Maintenance

Johnson Controls LH-1250 Louvers have no components that require routine scheduled maintenance.

Technical Specifications

LH-1250 Wind-Driven-Rain-Resistant Stationary Louver

Louver Material	Extruded aluminum
Louver Blades	6063T5 extruded aluminum 0.081 in. (2.1 mm) nominal wall thickness
Bird Screen	1/2 x 0.063 in. (13 x 1.6 mm) square mesh aluminum bird screen in a removable frame
Minimum Single Section Size	12 in. w x 12 in. h (305 mm w x 305 mm h)
Maximum Single Section Size	48 in. w x 96 in. h (1,219 mm w x 2,438 mm h)
Maximum Overall Field-Assembled Size	999 in. w x 96 in. h (2,5375 mm w x 2,286 mm h)
Weight	12 lb./ sq. ft. (58.6 kg/m^2)

Building Efficiency
507 E. Michigan Street, Milwaukee, WI 53202