



**EXTRUDED ALUMINUM STATIONARY HYBRID LOUVER**  
**MIAMI-DADE QUALIFIED • FLORIDA PRODUCT APPROVED**  
**HIGH VELOCITY WIND-DRIVEN RAIN AND IMPACT RESISTANT**  
**9" (229) DEEP • HORIZONTAL AND VERTICAL BLADE**  
**MODEL: 1609HM**

**QUALIFICATIONS:**

- Miami-Dade County 23-0823.05
- Florida Product Approval 41947.1
- Tested in accordance with: TAS-100A (Wind-Driven Rain Test), TAS-201 (Large Missile Impact Test), TAS-202 (Uniform Static Air Pressure Test), TAS-203 (Cyclic Wind Pressure Loading Test).
- AMCA 500-L (Wind-Driven Rain, Water Penetration, Air Performance).
- AMCA 540 (Wind-Borne Debris Impact Test [Enhanced "Level E" Protection]).
- AMCA 550 (High Velocity Wind-Driven Rain Resistance Test).
- Wind load rating +/- 160 PSF.

**STANDARD CONSTRUCTION:**

**FRAME:** **Front:** 4" (102) deep, Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness. Integral caulking slot provided.

**Rear:** 5" (127) deep, Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness. Integral downspouts provided.

**BLADES:** **Front:** Horizontal Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness, with reinforcing bosses. J style. Fixed at 37 degrees.

**Rear:** Vertical Type 6063-T6 extruded aluminum, .060" (1.52) nominal wall thickness, with reinforcing bosses.

**BLADE SPACING:** **Front:** Approx. 4" (102) on centers.  
**Rear:** Approx. 1 1/2" (38) on centers.

**BLADE SUPPORT:** **Front:** Concealed type, factory installed on rear of louver on maximum 60" (1524) centers.

**Rear:** 2.5" (64) strap every 60" (1524) or less in height.

**SCREEN:** 3/4" x .050 (19 x 1.3) expanded, flattened aluminum bird screen in removable frame, inside (rear) mount (adds approximately 3/8" [10] to louver depth).

**SILL PAN:** Aluminum sill pan with end dams. (louver width undersized an additional 1/4" (6) to accommodate sill pan).

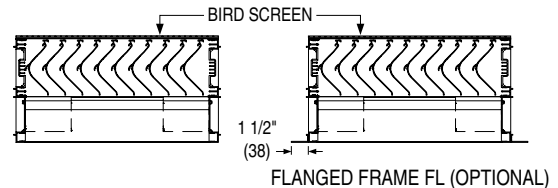
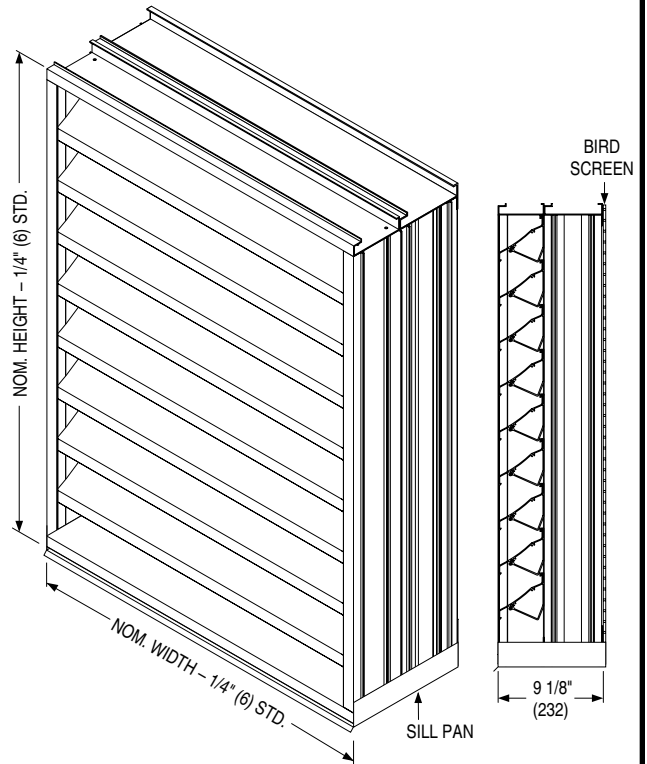
**FINISH:** Mill.

**MINIMUM SIZE:** 12" W x 12" H (305 x 305).

**MAXIMUM SINGLE:** 60" W x 120" H (1524 x 3048). 50 sq. ft.

**SECTION SIZE:** (4.6 m<sup>2</sup>). Larger louvers will require field assembly of smaller sections.

**MAXIMUM SIZE:** Unlimited Width x 120" H (3048).



**OPTIONS:**

- BSSS** Type 304 S. S. Bird Screen.
- BSN** No Bird Screen.
- ISSS** Type 304 S. S. Insect Screen.
- ISA** Aluminum Insect Screen.
- FL15** Flanged Frame, 1 1/2" (38).
- FL20** Flanged Frame, 2" (51).
- Other: \_\_\_\_\_ .

**OPTIONAL FINISHES:**

- PC3** Powder Coat AAMA 2603. Color: \_\_\_\_\_ .
- PC4** High Performance Powder Coat AAMA 2604 (Equivalent to 50% Kynar®). Color: \_\_\_\_\_ .
- PC5** Fluoropolymer Powder Coat AAMA 2605 (Equivalent to 70% Kynar®). Color: \_\_\_\_\_ .
- PCC** Prime Coat.
- AN04** Clear Anodized 204-R1.
- AN15** Clear Anodized 215-R1.

|                       |
|-----------------------|
| <b>SCHEDULE TYPE:</b> |
| <b>PROJECT:</b>       |
| <b>ENGINEER:</b>      |
| <b>CONTRACTOR:</b>    |

Page 1 of 3  
 Dimensions are in inches (mm).

| DATE        | B SERIES | SUPERSEDES | DRAWING NO. |
|-------------|----------|------------|-------------|
| 4 - 12 - 24 | 1600M    | NEW        | 1609HM      |



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**FREE AREA in Square Feet and Square Meters**

|                             |      | Width in Inches and Meters |       |       |       |       |       |       |       |       |
|-----------------------------|------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                             |      | 12                         | 18    | 24    | 30    | 36    | 42    | 48    | 54    | 60    |
| Height in Inches and Meters | 12   | 0.21                       | 0.39  | 0.56  | 0.73  | 0.90  | 1.07  | 1.24  | 1.41  | 1.58  |
|                             | 0.30 | 0.02                       | 0.04  | 0.05  | 0.07  | 0.08  | 0.10  | 0.12  | 0.13  | 0.15  |
|                             | 18   | 0.42                       | 0.76  | 1.10  | 1.44  | 1.78  | 2.12  | 2.46  | 2.80  | 3.13  |
|                             | 0.46 | 0.04                       | 0.07  | 0.10  | 0.13  | 0.17  | 0.20  | 0.23  | 0.26  | 0.29  |
|                             | 24   | 0.63                       | 1.14  | 1.65  | 2.15  | 2.66  | 3.17  | 3.67  | 4.18  | 4.69  |
|                             | 0.61 | 0.06                       | 0.11  | 0.15  | 0.20  | 0.25  | 0.29  | 0.34  | 0.39  | 0.44  |
|                             | 30   | 0.84                       | 1.52  | 2.19  | 2.87  | 3.54  | 4.21  | 4.89  | 5.56  | 6.24  |
|                             | 0.76 | 0.08                       | 0.14  | 0.20  | 0.27  | 0.33  | 0.39  | 0.45  | 0.52  | 0.58  |
|                             | 36   | 1.05                       | 1.89  | 2.74  | 3.58  | 4.42  | 5.26  | 6.10  | 6.95  | 7.79  |
|                             | 0.36 | 0.10                       | 0.18  | 0.25  | 0.33  | 0.41  | 0.49  | 0.57  | 0.65  | 0.72  |
|                             | 42   | 1.26                       | 2.27  | 3.28  | 4.29  | 5.30  | 6.31  | 7.32  | 8.33  | 9.34  |
|                             | 1.07 | 0.12                       | 0.21  | 0.30  | 0.40  | 0.49  | 0.59  | 0.68  | 0.77  | 0.87  |
|                             | 48   | 1.47                       | 2.65  | 3.83  | 5.00  | 6.18  | 7.36  | 8.53  | 9.71  | 10.89 |
|                             | 1.22 | 0.14                       | 0.25  | 0.36  | 0.46  | 0.57  | 0.68  | 0.79  | 0.90  | 1.01  |
|                             | 54   | 1.68                       | 3.03  | 4.37  | 5.72  | 7.06  | 8.41  | 9.75  | 11.09 | 12.44 |
|                             | 1.37 | 0.16                       | 0.28  | 0.41  | 0.53  | 0.66  | 0.78  | 0.91  | 1.03  | 1.16  |
|                             | 60   | 1.89                       | 3.40  | 4.92  | 6.43  | 7.94  | 9.45  | 10.97 | 12.48 | 13.99 |
|                             | 1.52 | 0.18                       | 0.32  | 0.46  | 0.60  | 0.74  | 0.88  | 1.02  | 1.16  | 1.30  |
|                             | 66   | 2.10                       | 3.78  | 5.46  | 7.14  | 8.82  | 10.50 | 12.18 | 13.86 | 15.54 |
|                             | 1.68 | 0.20                       | 0.35  | 0.51  | 0.66  | 0.82  | 0.98  | 1.13  | 1.29  | 1.44  |
| 72                          | 2.31 | 4.16                       | 6.01  | 7.85  | 9.70  | 11.55 | 13.40 | 15.24 | 17.09 |       |
| 1.83                        | 0.21 | 0.39                       | 0.56  | 0.73  | 0.90  | 1.07  | 1.24  | 1.42  | 1.59  |       |
| 78                          | 2.52 | 4.53                       | 6.55  | 8.57  | 10.58 | 12.60 | 14.61 | 16.63 | 18.64 |       |
| 1.98                        | 0.23 | 0.42                       | 0.61  | 0.80  | 0.98  | 1.17  | 1.36  | 1.54  | 1.73  |       |
| 84                          | 2.73 | 4.91                       | 7.10  | 9.28  | 11.46 | 13.64 | 15.83 | 18.01 | 20.19 |       |
| 2.13                        | 0.25 | 0.46                       | 0.66  | 0.86  | 1.06  | 1.27  | 1.47  | 1.67  | 1.88  |       |
| 90                          | 2.94 | 5.29                       | 7.64  | 9.99  | 12.34 | 14.69 | 17.04 | 19.39 | 21.75 |       |
| 2.29                        | 0.27 | 0.49                       | 0.71  | 0.93  | 1.15  | 1.36  | 1.58  | 1.80  | 2.02  |       |
| 96                          | 3.15 | 5.67                       | 8.19  | 10.70 | 13.22 | 15.74 | 18.26 | 20.78 | 23.30 |       |
| 2.44                        | 0.29 | 0.53                       | 0.76  | 0.99  | 1.23  | 1.46  | 1.70  | 1.93  | 2.16  |       |
| 102                         | 3.36 | 6.04                       | 8.73  | 11.42 | 14.10 | 16.79 | 19.47 | 22.16 | 24.85 |       |
| 2.59                        | 0.31 | 0.56                       | 0.81  | 1.06  | 1.31  | 1.56  | 1.81  | 2.06  | 2.31  |       |
| 108                         | 3.57 | 6.42                       | 9.27  | 12.13 | 14.98 | 17.84 | 20.69 | 23.54 | 26.40 |       |
| 2.74                        | 0.33 | 0.60                       | 0.86  | 1.13  | 1.39  | 1.66  | 1.92  | 2.19  | 2.45  |       |
| 114                         | 3.78 | 6.80                       | 9.82  | 12.84 | 15.86 | 18.88 | 21.91 | 24.93 | 27.95 |       |
| 2.90                        | 0.35 | 0.63                       | 0.91  | 1.19  | 1.47  | 1.75  | 2.04  | 2.32  | 2.60  |       |
| 120                         | 3.99 | 7.18                       | 10.36 | 13.55 | 16.74 | 19.93 | 23.12 | 26.31 | 29.50 |       |
| 3.05                        | 0.37 | 0.67                       | 0.96  | 1.26  | 1.56  | 1.85  | 2.15  | 2.44  | 2.74  |       |

|                       |   |                 |                   |                    |
|-----------------------|---|-----------------|-------------------|--------------------|
| <b>SCHEDULE TYPE:</b> | Page 2 of 3<br>Dimensions are in inches (mm). |                 |                   |                    |
| <b>PROJECT:</b>       |   |                 |                   |                    |
| <b>ENGINEER:</b>      | <b>DATE</b>                                   | <b>B SERIES</b> | <b>SUPERSEDES</b> | <b>DRAWING NO.</b> |
| <b>CONTRACTOR:</b>    | 4 - 12 - 24                                   | 1600M           | NEW               | 1609HM             |



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**PERFORMANCE DATA**  
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**AIRFLOW/WATER PENETRATION DATA**  
**for 48" x 48" (1219 x 1219) Louver Size**

|                            |  |                       |
|----------------------------|--|-----------------------|
| Free Area %                | 53%  |                       |
| Free Area sq. ft. (sq. m.) | 8.53 (0.79)  |                       |
| I<br>N<br>T<br>A<br>K<br>E | Free Area Velocity at Point of Beginning Water Penetration at .01 oz./sq. ft. (3 ml/sq. m) (15 min. test duration) | 1011 fpm (308 m/min.) |
|                            | Air Volume at 1011 fpm   | 8,624 cfm (4070 l/s)  |
|                            | Free Area Velocity   |                       |
|                            | Pressure Drop @ 1011 fpm   | .34 in. w.g. (85 Pa)  |

**NOTE:** To minimize water penetration when sizing intake louvers, select a Free Area Velocity that is **below** the beginning point of water penetration.

**WIND DRIVEN RAIN PERFORMANCE**

|                         |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Core Ventilation        | 0      | 99     | 198    | 297    | 393    | 494    | 590    | 690    | 789    | 889    | 985    |
| Rate in fpm (m/s)       | (0.00) | (0.50) | (1.01) | (1.51) | (2.00) | (2.51) | (3.00) | (3.51) | (4.01) | (4.52) | (5.00) |
| Free Area Ventilation   | 0      | 174    | 348    | 522    | 690    | 868    | 1036   | 1212   | 1386   | 1561   | 1730   |
| Rate in fpm (m/s)       | (0.00) | (0.88) | (1.77) | (2.65) | (3.51) | (4.41) | (5.26) | (6.16) | (7.04) | (7.93) | (8.79) |
| Effectiveness Ratio (%) | 100    | 100    | 100    | 100    | 100    | 100    | 100    | 100    | 100    | 100    | 99.9   |
| Penetration Class       | A      | A      | A      | A      | A      | A      | A      | A      | A      | A      | A      |

Test was based on a 39.375" x 39.375" (1.0 m x 1.0 m) core area louver tested at a rainfall rate of 3" per hour (76 mm/hour) with a wind velocity of **29 mph (13 m/s)**.

DISCHARGE LOSS COEFFICIENT CLASS (INTAKE): 3. (Discharge Loss Coefficient Classification is as follows: 1=0.4 and above, 2=0.3 to 0.399, 3 = 0.2 to 0.299, 4 = 0.199 and below.)

|                         |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Core Ventilation        | 0      | 96     | 197    | 288    | 396    | 482    | 593    | 691    | 793    | 894    | 988    |
| Rate in fpm (m/s)       | (0.00) | (0.49) | (1.00) | (1.46) | (2.01) | (2.45) | (3.01) | (3.51) | (4.03) | (4.54) | (5.02) |
| Free Area Ventilation   | 0      | 169    | 346    | 506    | 696    | 847    | 1042   | 1214   | 1393   | 1570   | 1735   |
| Rate in fpm (m/s)       | (0.00) | (0.86) | (1.76) | (2.57) | (3.54) | (4.30) | (5.29) | (6.17) | (7.08) | (7.98) | (8.81) |
| Effectiveness Ratio (%) | 100    | 100    | 100    | 100    | 100    | 100    | 99.8   | 99.6   | 99.1   | 98.5   | 97.9   |
| Penetration Class       | A      | A      | A      | A      | A      | A      | A      | A      | A      | B      | B      |

Test was based on a 39.375" x 39.375" (1.0 m x 1.0 m) core area louver tested at a rainfall rate of 8" per hour (203 mm/hour) with a wind velocity of **50 mph (22 m/s)**.

DISCHARGE LOSS COEFFICIENT CLASS (INTAKE): 3. (Discharge Loss Coefficient Classification is as follows: 1=0.4 and above, 2=0.3 to 0.399, 3 = 0.2 to 0.299, 4 = 0.199 and below.)

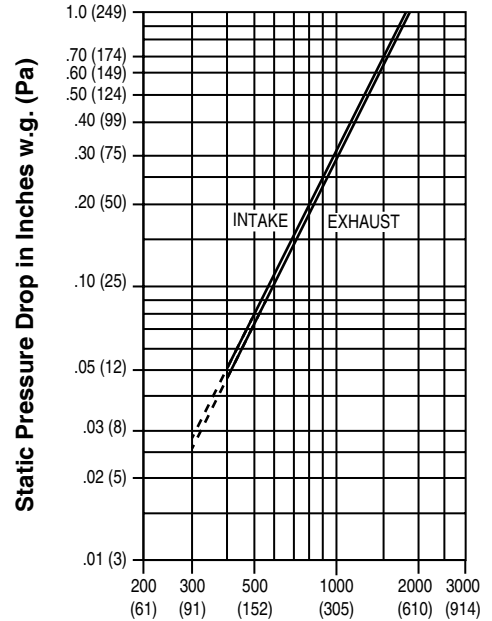


Nailor Industries Inc. certifies that the Model 1609HM shown herein is licensed to bear the AMCA Certified Ratings Program seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Program seal applies to air performance, water penetration and wind driven rain performance ratings.

Louvers were tested in accordance with AMCA Standard 500-L.



**PRESSURE DROP**



**Air Velocity in Feet (Meters) Per Minute Through Free Area**

Louver test size: 48" x 48" (1219 x 1219 mm).  
 Standard air density @ 0.075 lbs/ft³.  
 Tested to AMCA Fig. 5.5 – 6.5.



Nailor Industries Inc. certifies that the 1609HM shown herein is approved to bear the AMCA International Listing Label. The ratings shown are based on tests and procedures performed in accordance with AMCA publications and comply with the requirements of the AMCA International Listing Label program. The AMCA International Listing Label applies to pressure cycle tested wind borne debris impact resistant louvers rated for 'Enhanced Protection' and +/- 160PSF with a minimum blade span of 12 in. (305mm) and a maximum unsupported blade span of 59 in. (1499 mm) and to High Velocity Wind-Driven Rain Resistant Louvers tested in the fully open position that permits airflow through a louver.

|                       |             |                 |                   |                    |
|-----------------------|-------------|-----------------|-------------------|--------------------|
| <b>SCHEDULE TYPE:</b> |             |                 |                   |                    |
| <b>PROJECT:</b>       |             |                 |                   |                    |
| <b>ENGINEER:</b>      | <b>DATE</b> | <b>B SERIES</b> | <b>SUPERSEDES</b> | <b>DRAWING NO.</b> |
| <b>CONTRACTOR:</b>    | 4 - 12 - 24 | 1600M           | NEW               | 1609HM             |