

# AIRLINE

LOUVERS  
A NYSTROM BUILDING PRODUCTS COMPANY

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## LSA7CDD WIND-DRIVEN RAIN RESISTANT STATIONARY LOUVER

### EXTRUDED ALUMINUM

#### STANDARD CONSTRUCTION

##### FRAME

Double frame design produced from 6063T5 extruded aluminum with .081" (2.1) nominal wall thickness. Exterior frame depth is 4" (102) and interior frame depth is 3" (76). Overall combined frame depth is 7" (178) nominal.

##### BLADES

Sight-proof double blade design produced from 6063T5 extruded aluminum with .081" (2.1) nominal wall thickness. Exterior blades are 4" (102) deep, positioned at 37 1/2° angle and spaced at approximately 4 3/4" (121) center to center. Interior blades are 3" deep (76) and positioned at approximately 2 3/8" (60) center to center.

##### SCREEN

5/8" x .040" (16 x 1) expanded, flattened aluminum bird screen in removable frame. Screen adds approximately 1/2" (13) to louver depth.

##### EXTENDED SILL

.081" (2.1) formed aluminum with end dams. Not provided with front flange frame.

##### FINISH

Mill.

##### MINIMUM SIZE

12"w x 12"h (305 x 305).

##### APPROXIMATE SHIPPING WEIGHT

8 lbs. per sq. ft. (39 kg/m<sup>2</sup>)

##### MAXIMUM FACTORY ASSEMBLY SIZE

Standard LSA7CDD--Shall be 37 1/2 sq. ft. (3.5m<sup>2</sup>) per section, not to exceed 90"w x 60"h (2286 x 1524) or 60"w x 90"h (1524 x 2286). Exterior 4" Deep Frame & Blade Only - shall be 75 sq. ft. (7m<sup>2</sup>) per section, not to exceed 120"w x 90"h (3048 x 2286) or 90"w x 120"h (2286 x 3048).

Louvers larger than the maximum factory assembly size will require field assembly of smaller sections.

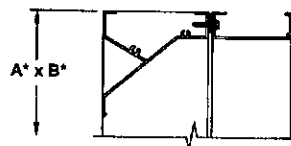
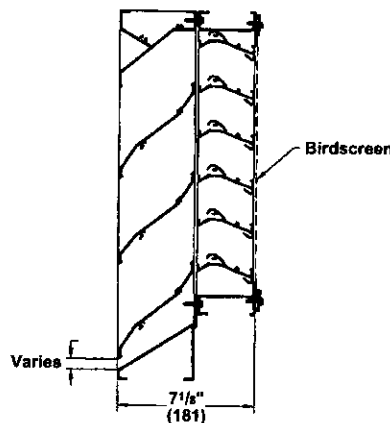
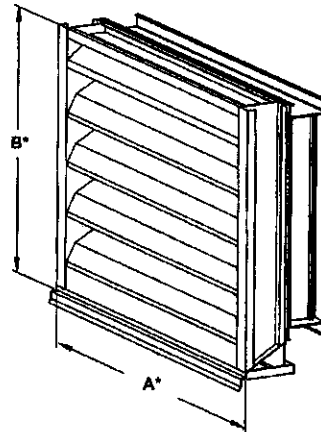
##### SUPPORTS

Louvers may be provided with rear mounted blade supports that increase overall louver depth depending on louver size, assembly configuration or windload.

Consult Airline for additional information.

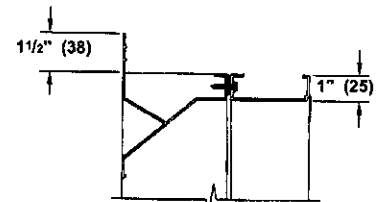
Dimensions in Inches, parenthesis ( ) indicate millimeters.

\*Units furnished 1/4" (6) smaller than given opening dimensions.



STANDARD

#### FRAME CONSTRUCTION



INTEGRAL FLANGE

#### FEATURES

- Two-piece horizontal blade design provides protection from wind-driven rain penetration, reducing damage and additional operating expenses.
- 4" (102) deep exterior blades are continuous style without visible mullions.
- May be ordered without interior blades and frames at areas that are inactive or do not need wind-driven rain protection.
- Tested in the AMCA 500-L Wind-Driven Rain Penetration Test.
- Published performance ratings based on testing in accordance with AMCA Publication 500L.
- 49% Free Area.
- Aluminum construction for low maintenance and high resistance to corrosion.

#### VARIATIONS

- Insulated or sheet blank-off panels.
- Front or rear security bars.
- Filter racks.
- Installation angles.
- A variety of bird and insect screens.
- Selection of finishes: prime coat, baked enamel (modified fluoropolymer), epoxy, Pearledize 50 & 70, Kynar, clear and color anodize. (Some variation in anodize color consistency is possible).

Consult Airline for other special requirements.

| TAG                                | QTY. | SIZE    |                          | FRAME | VARIATIONS |
|------------------------------------|------|---------|--------------------------|-------|------------|
|                                    |      | A*-WIDE | B*-HIGH                  |       |            |
|                                    |      |         |                          |       |            |
|                                    |      |         |                          |       |            |
|                                    |      |         |                          |       |            |
|                                    |      |         |                          |       |            |
| PROJECT ARCH./ENGR. REPRESENTATIVE |      |         | LOCATION CONTRACTOR DATE |       |            |

LSA7CDD  
JUNE 2009

ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.

## SUGGESTED SPECIFICATION

Furnish and install louvers as hereinafter specified where shown on plans or as described in schedules. Louvers shall possess stationary horizontal blades designed to prevent the penetration of wind-driven rain. Louver blades shall be contained within a 7" (178) frame. Extended sill shall be provided to capture and drain water to exterior of building. Louver components (heads, jambs, sill and blades) shall be factory assembled by the louver manufacturer. Louver sizes too large for shipping shall be built up by the contractor from factory assembled louver sections to provide overall sizes required. Louver design shall have continuous blades without visible mullions and shall withstand a wind load of 20 lbs. per sq. ft. (.96 kPa) (equivalent of a 90 mph wind [145 kph] - specifier may substitute any loading required).

Louvers shall be Airline Model LSA7CDD extruded 6063T5 aluminum alloy construction as follows:

|                |   |
|----------------|---|
| Frame:         | .081" (2.1) wall thickness, caulking surfaces provided.   |
| Blades:        | .081" (2.1) wall thickness, exterior 4" deep blades positioned at 37 1/2° and spaced at approximately 4 3/4" (121) c-c. Interior blades are 3" deep (76) and positioned at approximately 2 3/8" (60) centers. |
| Extended Sill: | .081" (2.1) wall thickness, with upturned side panels to prevent water leakage.   |
| Screen:        | 5/8" x .040" (16 x 1) expanded, flattened aluminum bird screen in removable frame.  |
| Finish:        | Select finish specification from Airline Color Chart.   |

## WIND-DRIVEN RAIN PERFORMANCE – AMCA 500-L WIND-DRIVEN RAIN TEST

Test size is: 457/8" x 431/4" (1.16m x 1.10m) core area, 48" x 48" (1.22 x 1.22) nominal. Free Area of test louver is 7.87 ft.<sup>2</sup> (.73m<sup>2</sup>).

| Wind Velocity<br>mph (kph) | Rainfall Rate<br>in./hr. (mm/hr.) | Core Velocity<br>fpm (m/sec) | Airflow<br>cfm (m <sup>3</sup> /min) | Free Area<br>Velocity,<br>fpm (m/sec) | Effectiveness<br>Ratio | Class, | Discharge<br>Loss Class,<br>Intake |
|----------------------------|-----------------------------------|------------------------------|--------------------------------------|---------------------------------------|------------------------|--------|------------------------------------|
| 29 (46.4)                  | 3 (76)                            | 0                            | 0                                    | 0                                     | 99.4%                  | A      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 102 (.5)                     | 1406 (40)                            | 179 (.9)                              | 99.3%                  | A      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 205 (1)                      | 2825 (80)                            | 360 (1.8)                             | 98.5%                  | B      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 294 (1.5)                    | 4051 (115)                           | 517 (2.6)                             | 98.2%                  | B      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 394 (2)                      | 5429 (154)                           | 693 (3.5)                             | 98.0%                  | B      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 497 (2.5)                    | 6849 (194)                           | 874 (4.4)                             | 96.2%                  | B      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 593 (3)                      | 8172 (231)                           | 1042 (5.3)                            | 86.3%                  | C      | 2                                  |
| 29 (46.4)                  | 3 (76)                            | 665 (3.5)                    | 9164 (260)                           | 1169 (5.9)                            | 74.3%                  | D      | 2                                  |

### NOTES

- Core area is the open area of the louver face (face area less louver frames). Core Velocity is the airflow velocity through the Core Area of the louver (1m x 1m).
- Free Area of test size is calculated per AMCA standard 500-L.
- Wind-Driven Rain Penetration Classes:

| Class | Effectiveness |
|-------|---------------|
| A     | 1 to .99      |
| B     | 0.989 to .095 |
| C     | 0.949 to 0.80 |
| D     | Below 0.8     |

- 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.

Discharge Loss Classes:

| Class | Discharge Loss Coefficient |
|-------|----------------------------|
| 1     | 0.4 and above              |
| 2     | 0.3 to 0.399               |
| 3     | 0.2 to 0.299               |
| 4     | 0.199 and below            |

(The higher the coefficient, the less resistance to airflow.)



Airline Louvers certifies that the louver 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 Program. The AMCA Certified Ratings Seal applies to air performance ratings and wind-driven rain ratings only.

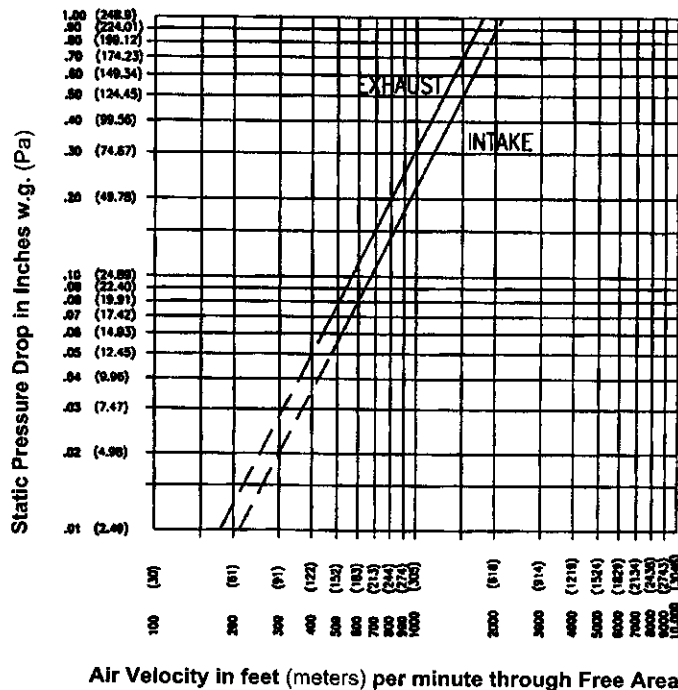
## FREE AREA GUIDE

Free Area Guide shows free area in ft<sup>2</sup> and m<sup>2</sup> for various sizes of LSA7CDD.

Width – Inches and Meters

|      | 12   | 18   | 24   | 30   | 36    | 42    | 48    | 54    | 60    | 66    | 72    | 78    | 84    | 90    | 96    | 102   | 108   | 114   | 120   |
|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 0.30 | 0.46 | 0.61 | 0.76 | 0.91  | 1.07  | 1.22  | 1.37  | 1.52  | 1.68  | 1.83  | 1.98  | 2.13  | 2.29  | 2.44  | 2.59  | 2.74  | 2.90  | 3.05  |
| 12   | 0.27 | 0.47 | 0.68 | 0.88 | 1.08  | 1.28  | 1.49  | 1.69  | 1.89  | 2.10  | 2.30  | 2.60  | 2.71  | 2.91  | 3.11  | 3.31  | 3.52  | 3.72  | 3.92  |
| 0.30 | 0.03 | 0.04 | 0.06 | 0.08 | 0.10  | 0.12  | 0.14  | 0.16  | 0.18  | 0.19  | 0.21  | 0.23  | 0.25  | 0.27  | 0.29  | 0.31  | 0.33  | 0.35  | 0.36  |
| 18   | 0.49 | 0.85 | 1.21 | 1.58 | 1.94  | 2.31  | 2.67  | 3.04  | 3.40  | 3.77  | 4.13  | 4.49  | 4.86  | 5.22  | 5.59  | 5.95  | 6.32  | 6.68  | 7.04  |
| 0.46 | 0.05 | 0.08 | 0.11 | 0.15 | 0.18  | 0.21  | 0.25  | 0.28  | 0.32  | 0.35  | 0.38  | 0.42  | 0.45  | 0.49  | 0.52  | 0.55  | 0.59  | 0.62  | 0.66  |
| 24   | 0.64 | 1.11 | 1.59 | 2.08 | 2.54  | 3.02  | 3.49  | 3.97  | 4.45  | 4.92  | 5.40  | 5.88  | 6.35  | 6.83  | 7.31  | 7.78  | 8.26  | 8.74  | 9.21  |
| 0.61 | 0.06 | 0.10 | 0.15 | 0.19 | 0.24  | 0.28  | 0.32  | 0.37  | 0.41  | 0.46  | 0.50  | 0.55  | 0.59  | 0.64  | 0.68  | 0.72  | 0.77  | 0.81  | 0.86  |
| 30   | 0.85 | 1.49 | 2.13 | 2.76 | 3.40  | 4.04  | 4.68  | 5.32  | 5.95  | 6.59  | 7.23  | 7.87  | 8.51  | 9.16  | 9.78  | 10.42 | 11.06 | 11.70 | 12.34 |
| 0.76 | 0.08 | 0.14 | 0.20 | 0.26 | 0.32  | 0.38  | 0.44  | 0.49  | 0.55  | 0.61  | 0.67  | 0.73  | 0.79  | 0.85  | 0.91  | 0.97  | 1.03  | 1.09  | 1.15  |
| 36   | 1.07 | 1.87 | 2.67 | 3.46 | 4.26  | 5.06  | 5.86  | 6.66  | 7.46  | 8.26  | 9.06  | 9.86  | 10.66 | 11.46 | 12.26 | 13.06 | 13.86 | 14.66 | 15.46 |
| 0.91 | 0.10 | 0.17 | 0.25 | 0.32 | 0.40  | 0.47  | 0.55  | 0.62  | 0.69  | 0.77  | 0.84  | 0.92  | 0.99  | 1.07  | 1.14  | 1.21  | 1.29  | 1.36  | 1.44  |
| 42   | 1.28 | 2.24 | 3.20 | 4.16 | 5.13  | 6.09  | 7.05  | 8.01  | 8.97  | 9.93  | 10.89 | 11.85 | 12.81 | 13.77 | 14.74 | 15.70 | 16.66 | 17.62 | 18.58 |
| 1.07 | 0.12 | 0.21 | 0.30 | 0.39 | 0.48  | 0.57  | 0.66  | 0.74  | 0.83  | 0.92  | 1.01  | 1.10  | 1.19  | 1.28  | 1.37  | 1.46  | 1.55  | 1.64  | 1.73  |
| 48   | 1.43 | 2.60 | 3.58 | 4.65 | 5.72  | 6.80  | 7.87  | 8.94  | 10.02 | 11.09 | 12.16 | 13.24 | 14.31 | 15.38 | 16.46 | 17.53 | 18.60 | 19.67 | 20.75 |
| 1.22 | 0.13 | 0.23 | 0.33 | 0.43 | 0.53  | 0.63  | 0.73  | 0.83  | 0.93  | 1.03  | 1.13  | 1.23  | 1.33  | 1.43  | 1.53  | 1.63  | 1.73  | 1.83  | 1.93  |
| 54   | 1.65 | 2.88 | 4.12 | 5.36 | 6.58  | 7.82  | 9.05  | 10.29 | 11.52 | 12.76 | 13.99 | 15.23 | 16.46 | 17.70 | 18.93 | 20.17 | 21.40 | 22.64 | 23.87 |
| 1.37 | 0.15 | 0.27 | 0.38 | 0.50 | 0.61  | 0.73  | 0.84  | 0.96  | 1.07  | 1.19  | 1.30  | 1.42  | 1.53  | 1.65  | 1.76  | 1.88  | 1.99  | 2.11  | 2.22  |
| 60   | 1.86 | 3.28 | 4.65 | 6.05 | 7.45  | 8.84  | 10.24 | 11.63 | 13.03 | 14.43 | 15.82 | 17.22 | 18.62 | 20.01 | 21.41 | 22.80 | 24.20 | 25.60 | 26.99 |
| 1.52 | 0.17 | 0.30 | 0.43 | 0.56 | 0.69  | 0.82  | 0.95  | 1.08  | 1.21  | 1.34  | 1.47  | 1.60  | 1.73  | 1.86  | 1.99  | 2.12  | 2.25  | 2.38  | 2.51  |
| 66   | 2.08 | 3.63 | 5.19 | 6.75 | 8.31  | 9.87  | 11.42 | 12.98 | 14.54 | 16.10 | 17.65 | 19.21 | 20.77 | 22.33 | 23.88 | 25.44 | 27.00 | 28.56 | 30.11 |
| 1.66 | 0.19 | 0.34 | 0.48 | 0.63 | 0.77  | 0.92  | 1.06  | 1.21  | 1.35  | 1.50  | 1.64  | 1.79  | 1.93  | 2.08  | 2.22  | 2.37  | 2.51  | 2.66  | 2.80  |
| 72   | 2.23 | 3.90 | 5.57 | 7.24 | 8.91  | 10.58 | 12.25 | 13.92 | 15.58 | 17.25 | 18.92 | 20.59 | 22.26 | 23.93 | 25.60 | 27.27 | 28.94 | 30.61 | 32.28 |
| 1.83 | 0.21 | 0.36 | 0.52 | 0.67 | 0.83  | 0.98  | 1.14  | 1.29  | 1.45  | 1.60  | 1.76  | 1.92  | 2.07  | 2.23  | 2.38  | 2.54  | 2.69  | 2.85  | 3.00  |
| 78   | 2.44 | 4.27 | 6.10 | 7.94 | 9.77  | 11.60 | 13.43 | 15.26 | 17.09 | 18.92 | 20.76 | 22.59 | 24.42 | 26.25 | 28.08 | 29.91 | 31.74 | 33.57 | 35.41 |
| 1.98 | 0.23 | 0.40 | 0.57 | 0.74 | 0.91  | 1.08  | 1.25  | 1.42  | 1.59  | 1.76  | 1.93  | 2.10  | 2.27  | 2.44  | 2.61  | 2.78  | 2.95  | 3.12  | 3.29  |
| 84   | 2.66 | 4.65 | 6.64 | 8.64 | 10.63 | 12.62 | 14.61 | 16.61 | 18.60 | 20.59 | 22.59 | 24.58 | 26.57 | 28.56 | 30.55 | 32.55 | 34.54 | 36.53 | 38.53 |
| 2.13 | 0.25 | 0.43 | 0.62 | 0.80 | 0.99  | 1.17  | 1.36  | 1.54  | 1.73  | 1.92  | 2.10  | 2.29  | 2.47  | 2.66  | 2.84  | 3.03  | 3.21  | 3.40  | 3.58  |
| 90   | 2.87 | 5.03 | 7.18 | 9.34 | 11.49 | 13.64 | 15.80 | 17.95 | 20.11 | 22.26 | 24.42 | 26.57 | 28.72 | 30.88 | 33.03 | 35.19 | 37.34 | 39.50 | 41.65 |
| 2.29 | 0.27 | 0.47 | 0.67 | 0.87 | 1.07  | 1.27  | 1.47  | 1.67  | 1.87  | 2.07  | 2.27  | 2.47  | 2.67  | 2.87  | 3.07  | 3.27  | 3.47  | 3.67  | 3.87  |

## PRESSURE DROP



Ratings do not include the effect of a bird screen.