

Wind Driven Rain Resistant Louver in 6" thick design Model WDL-06

Design Features – High performance patented vertical blade design with multiple functions such as: weather protection, vision proof and wind-driven rain resistant design . Rain Test modeled after Miami-Dade County PA-100(A).

STANDARD CONSTRUCTION

ALL MATERIAL – EXTRUDED ALUMINUM 6063-T5 (KB-45)

FRAME

WDL-06 – 6" deep (152), .125" (3.01) wall thickness extruded aluminum in style #3.

BLADES

WDL-06 – 6" deep (152), .081" (2.06) wall thickness extruded aluminum and spaced approx. 1-1/2" (38) on center.

MAXIMUM SIZE

Unlimited, with mullions, structural bracing supplied by SAFE-AIR/DOWCO

MAXIMUM FACTORY ASSEMBLY SIZE

96" x 96" (2438 x 2438)

MINIMUM SIZE

12" x 12" (305 x 305)

UNDERSIZED

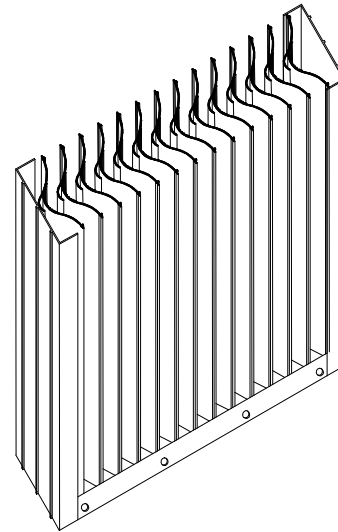
1/4" (6.35) under ordered size unless specified Exact or Actual

SCREEN

3/4" x .051" (19 x 1.3) flattened expanded aluminum birdscreen in extruded aluminum frame.

FINISH

Mill



OPTIONAL CONSTRUCTION

SCREEN - Many styles available please consult screen listing

FINISH – Air-dry primer, polyurethane, epoxy, or enamel, baked epoxy or enamel, Kynar, or Powder coat.

MULLION – Invisible for architectural preference

Combined with Model ECO-06 control damper in common sleeve (under separate submittal sheet)

SPECIAL PURPOSE CONSTRUCTION

Special shapes: Triangle, Round, Trapezoid, etc.

Fully welded construction

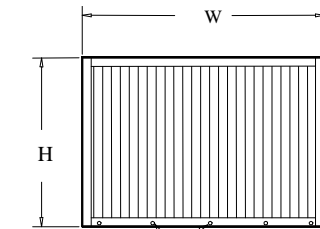
Security bars

Hinged as walk through door or swing out access

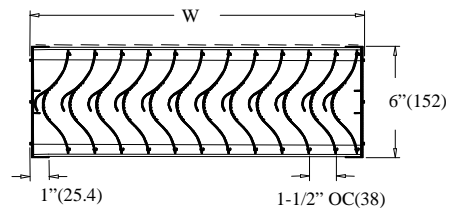
Filter racks

Sleeved for ductwork connection

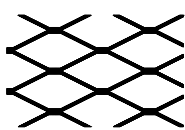
** Consult SAFE-AIR/DOWCO for additional technical information.



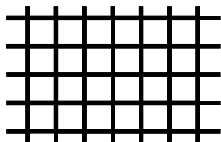
Drain Holes



TYPICAL SCREEN STYLES



Expanded Aluminum Standard



Wire Mesh

PERFORMANCE

Rainfall in/Hr: 8" (203mm)
Wind Velocity: 50mph (80.45 kph)
Efficiency: 99.90 %
Free Area: 51% - 48 x 48 unit (1219 x 1219)
Pressure Drop: 0.08" w.g. @ 1000 fpm
 (2.03mm wg. @ 5.08 mps)

| | | | | |
|---------|-----------|---|---|-------------|
| DATE | ARCHITECT | | | CUSTOMER |
| PROJECT | | | | |
| ITEM | QTY | W | H | DESCRIPTION |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



DEPENDABLE PRODUCTS SINCE 1955

SAFE-AIR OF ILLINOIS INC.

Engineering and General Offices

1855 South 54th Avenue, Cicero, Illinois 60804

Phone 708-652-9100 FAX 708-652-9158

FREE AREA CALCULATIONS IN SQUARE FEET / SQUARE METERS

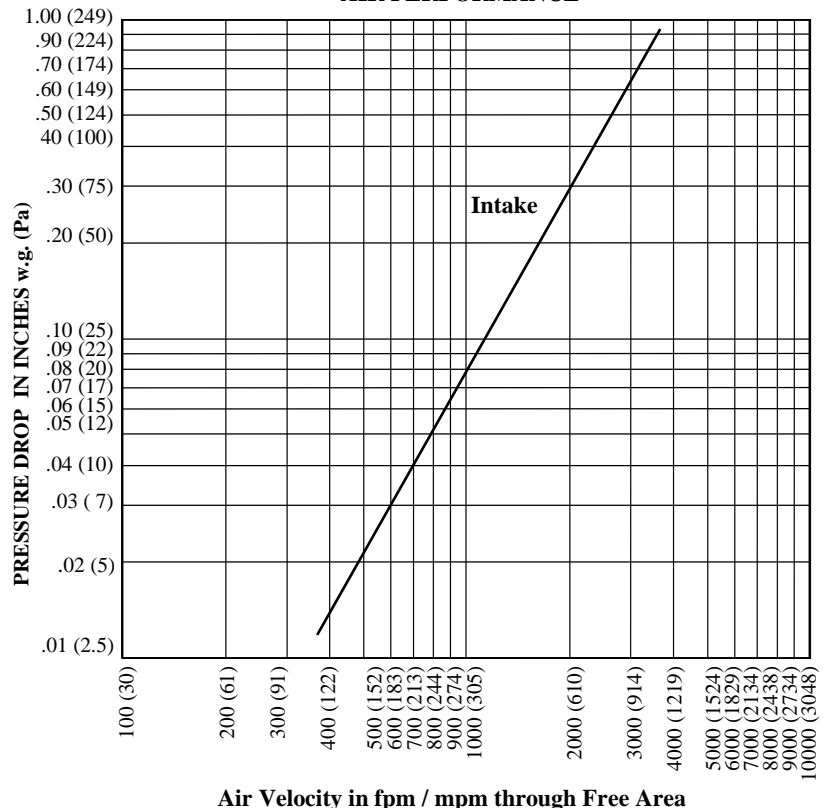
| | | Width - Inches / Meters | | | | | | | | | | | | | | | | | | |
|-----|------|-------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 |
| | | 0.31 | 0.46 | 0.61 | 0.77 | 0.92 | 1.07 | 1.22 | 1.38 | 1.53 | 1.68 | 1.83 | 1.99 | 2.14 | 2.29 | 2.44 | 2.6 | 2.75 | 2.9 | 3.05 |
| 12 | 0.31 | 0.26 | 0.47 | 0.68 | 0.9 | 1.11 | 1.32 | 1.53 | 1.74 | 1.95 | 2.16 | 2.37 | 2.58 | 2.79 | 3 | 3.21 | 3.42 | 3.63 | 3.84 | 4.06 |
| 18 | 0.46 | 0.04 | 0.08 | 0.11 | 0.14 | 0.18 | 0.21 | 0.24 | 0.28 | 0.31 | 0.34 | 0.38 | 0.41 | 0.44 | 0.48 | 0.51 | 0.55 | 0.58 | 0.61 | 0.65 |
| 24 | 0.61 | 0.06 | 0.11 | 0.16 | 0.2 | 0.25 | 0.3 | 0.35 | 0.39 | 0.44 | 0.49 | 0.54 | 0.58 | 0.63 | 0.68 | 0.73 | 0.77 | 0.82 | 0.87 | 0.92 |
| 30 | 0.77 | 0.08 | 0.14 | 0.2 | 0.26 | 0.32 | 0.39 | 0.45 | 0.51 | 0.57 | 0.63 | 0.69 | 0.76 | 0.82 | 0.88 | 0.94 | 1 | 1.06 | 1.12 | 1.19 |
| 36 | 0.92 | 1.02 | 1.83 | 2.65 | 3.46 | 4.28 | 5.09 | 5.9 | 6.72 | 7.53 | 8.35 | 9.16 | 9.98 | 10.79 | 11.61 | 12.42 | 13.23 | 14.05 | 14.86 | 15.68 |
| 42 | 1.07 | 0.11 | 0.2 | 0.29 | 0.38 | 0.47 | 0.56 | 0.65 | 0.74 | 0.83 | 0.92 | 1.01 | 1.1 | 1.19 | 1.28 | 1.37 | 1.46 | 1.55 | 1.64 | 1.73 |
| 48 | 1.22 | 1.4 | 2.51 | 3.63 | 4.74 | 5.86 | 6.98 | 8.09 | 9.21 | 10.33 | 11.44 | 12.56 | 13.67 | 14.79 | 15.91 | 17.02 | 18.14 | 19.26 | 20.37 | 21.49 |
| 54 | 1.38 | 0.15 | 0.26 | 0.38 | 0.5 | 0.62 | 0.74 | 0.85 | 0.97 | 1.09 | 1.21 | 1.32 | 1.44 | 1.56 | 1.68 | 1.8 | 1.91 | 2.03 | 2.15 | 2.27 |
| 60 | 1.53 | 1.77 | 3.19 | 4.61 | 6.03 | 7.45 | 8.86 | 10.28 | 11.7 | 13.12 | 14.54 | 15.95 | 17.37 | 18.79 | 20.21 | 21.63 | 23.05 | 24.46 | 25.88 | 27.3 |
| 66 | 1.68 | 1.96 | 3.53 | 5.1 | 6.67 | 8.24 | 9.81 | 11.38 | 12.95 | 14.51 | 16.08 | 17.65 | 19.22 | 20.79 | 22.36 | 23.93 | 25.5 | 27.07 | 28.64 | 30.21 |
| 72 | 1.83 | 2.15 | 3.87 | 5.59 | 7.31 | 9.03 | 10.75 | 12.47 | 14.19 | 15.91 | 17.63 | 19.35 | 21.07 | 22.79 | 24.51 | 26.23 | 27.95 | 29.67 | 31.39 | 33.11 |
| 78 | 1.99 | 2.34 | 4.21 | 6.08 | 7.95 | 9.82 | 11.69 | 13.56 | 15.44 | 17.31 | 19.18 | 21.05 | 22.92 | 24.79 | 26.66 | 28.53 | 30.4 | 32.27 | 34.15 | 36.02 |
| 84 | 2.14 | 2.53 | 4.55 | 6.57 | 8.59 | 10.62 | 12.64 | 14.66 | 16.68 | 18.7 | 20.72 | 22.75 | 24.77 | 26.79 | 28.81 | 30.83 | 32.86 | 34.88 | 36.9 | 38.92 |
| 90 | 2.29 | 2.72 | 4.89 | 7.06 | 9.23 | 11.41 | 13.58 | 15.75 | 17.93 | 20.1 | 22.27 | 24.44 | 26.62 | 28.79 | 30.96 | 33.14 | 35.31 | 37.48 | 39.65 | 41.83 |
| 96 | 2.44 | 2.9 | 5.23 | 7.55 | 9.88 | 12.2 | 14.52 | 16.85 | 19.17 | 21.5 | 23.82 | 26.14 | 28.47 | 30.79 | 33.11 | 35.44 | 37.76 | 40.09 | 42.41 | 44.73 |
| 102 | 2.6 | 3.09 | 5.57 | 8.04 | 10.52 | 12.99 | 15.47 | 17.94 | 20.42 | 22.89 | 25.37 | 27.84 | 30.32 | 32.79 | 35.27 | 37.74 | 40.21 | 42.69 | 45.16 | 47.64 |
| 108 | 2.75 | 3.28 | 5.91 | 8.53 | 11.16 | 13.78 | 16.41 | 19.04 | 21.66 | 24.29 | 26.91 | 29.54 | 32.16 | 34.79 | 37.42 | 40.04 | 42.67 | 45.29 | 47.92 | 50.54 |
| 114 | 2.9 | 3.47 | 6.25 | 9.02 | 11.8 | 14.58 | 17.35 | 20.13 | 22.91 | 25.68 | 28.46 | 31.24 | 34.01 | 36.79 | 39.57 | 42.34 | 45.12 | 47.9 | 50.67 | 53.45 |
| 120 | 3.05 | 3.66 | 6.59 | 9.51 | 12.44 | 15.37 | 18.3 | 21.22 | 24.15 | 27.08 | 30.01 | 32.94 | 35.86 | 38.79 | 41.72 | 44.65 | 47.57 | 50.5 | 53.43 | 56.36 |

AIR PERFORMANCE

The Pressure Drop test performed in accordance with AMCA Standard 500 per figure 5.5. All free area calculations are based on AMCA standards.

Calculation Pressure Loss

Based upon a give flow rate in (CFM), the flowing pressure loss may be determined from the "air performance" graph, knowing the sq. ft. or sq. meters of free area of the louver. Alternately, the free area may be determined based upon a volumetric flow rate and a maximum pressure loss. Utilizing the "air performance" graph.



Air Velocity in fpm / mpm through Free Area

All tests performed by independent laboratory approved by Miami-Dade County, Florida and modeled after the European (HEVAC) Wind Driven Rain Testing Method.

PA 100(A) WIND DRIVEN RAIN TEST

| Wind Velocity mph (kph) | Rain Fall Rate in./hr. (mm/hr.) | Allowable Penetration oz. (ml) | Actual Penetration oz. (ml) |
|----------------------------|------------------------------------|-----------------------------------|--------------------------------|
| 35 (56.32) | 8.8 (223.50) | 0 | 0 |
| 70 (112.63) | 8.8 (223.50) | 0 | 0 |
| 90 (144.81) | 8.8 (223.50) | 1.44 (42.6) | 0.51 (15) |
| 110 (177) | 8.8 (223.50) | 0.48 (14.2) | 0.17 (5) |

PA 201-94 LARGE MISSILE IMPACT TEST

| Missile Type | Velocity in Ft/Sec (M/Sec) | Impacts |
|--|----------------------------|---------|
| 9 lb (4 kg) Southern Pine 2" x 4" (51 x 102) | 50 (15.24) | 6 |

Louver allowed no inboard missile penetration during impacts

PA 203-94 CYCLIC WIND PRESSURE TEST

| Cycles | Load in PSF (KPa) | Load Duration Cycle | Louver Recovery |
|--------|-------------------|---------------------|-----------------|
| 600 | +80 (+3.83) | 1 to 3 seconds | 100% |
| 600 | -70 (-3.35) | 1 to 3 seconds | 100% |
| 70 | +95 (+4.55) | 1 to 3 seconds | 100% |
| 70 | -85 (-4.07) | 1 to 3 seconds | 100% |
| 1 | +210 (+10.05) | 1 to 3 seconds | 100% |
| 1 | -185 (-8.86) | 1 to 3 seconds | 100% |

WIND DRIVEN RAIN WATER PENETRATION TEST

AMCA Standard 500-L-99, Figure 5.11

| Wind Velocity mph (kph) | Rainfall Rate inch/hr. (mm/hr) | Core Velocity fpm (m/min) | Water Flow gph (lph) | Water Penetration gph (lph) | Water Penetration Classification |
|----------------------------|-----------------------------------|------------------------------|-------------------------|--------------------------------|-------------------------------------|
| 50 (80.45) | 8 (203.2) | 690 (210.3) | 111.89 (424) | .367 (.139) | A |
| 50 (80.45) | 8 (203.2) | 558 (170.07) | 118.55 (449) | .179 (0.68) | A |
| 50 (80.45) | 8 (203.2) | 497 (151.48) | 122.53 (464) | .147 (.056) | A |
| 50 (80.45) | 8 (203.2) | 406 (123.74) | 124.71 (472) | .140 (0.53) | A |
| 50 (80.45) | 8 (203.2) | 303 (92.35) | 133.37 (505) | .117 (0.44) | A |
| 50 (80.45) | 8 (203.2) | 214 (65.22) | 136.37 (516) | .106 (0.40) | A |
| 50 (80.45) | 8 (203.2) | 115 (35.05) | 143.04 (541) | .038 (0.14) | A |

