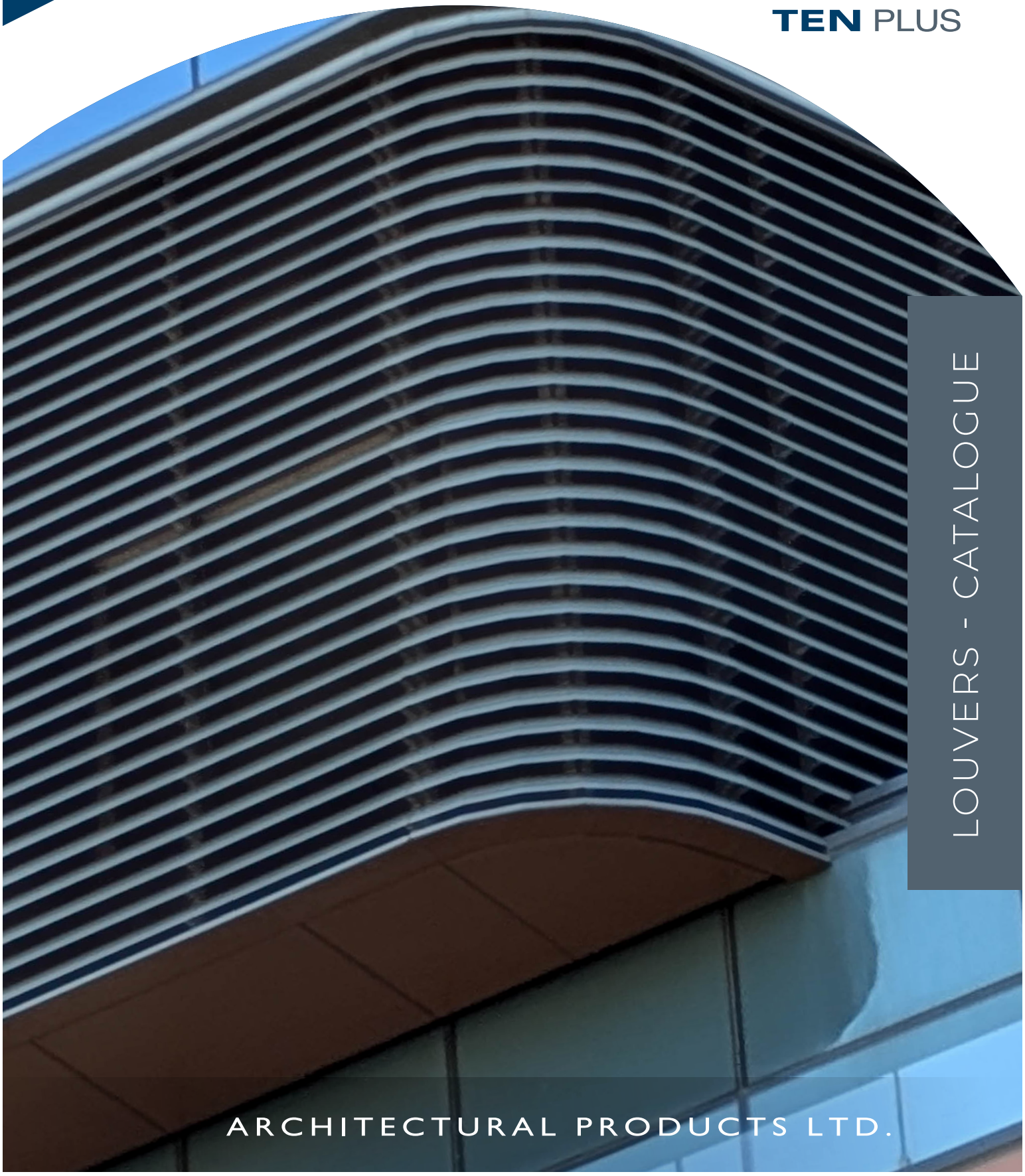
L-CAT-0625

TEN PLUS



LOUVERS - CATALOGUE

ARCHITECTURAL PRODUCTS LTD.

TEN PLUS

TABLE OF COTENTS

LOUVER SELECTION CHART

MODEL	CLASSIFICATION	DEPTH	FREE AREA	VELOCITY AT POINT OF BEGINNING WATER PENETRATION	PRESSURE DROP AT POINT OF BEGINNING WATER PENETRATION	MAXIMUM FREE AREA VELOCITY WITH "A" EFFECTIVENESS CLASSIFICATION
RV3255	STORM RESISTANT	3" [76 mm]	54.8%	1250 FPM (6.35 m/s)	0.32 in. H^2O (79.7 Pa)	1623 FPM (8.25 m/s)
R5255	STORM RESISTANT	5" [127 mm]	54.6%	1250 FPM (6.35 m/s)	0.44 in. H^2O (109.6 Pa)	1304 FPM (6.6m/s)
R7435	STORM RESISTANT	7" [120 mm]	50.4%	1175 FPM (5.97 m/s)	0.41 in. H^2O (101.6 Pa)	1389 FPM (7.1 m/s)
R7355	STORM RESISTANT	7" [120 mm]	50.3%	759 FPM (3.86 m/s)	0.25 in H^2O (62.3 Pa)	342 FPM (1.7 M/S)
R4455	STORM RESISTANT	4" [102 mm]				
RV4455	STORM RESISTANT	4" [102 mm]				
R5405	STORM RESISTANT	5" [127 mm]				
RV5404	STORM RESISTANT	5" [127 mm]				
R5455	STORM RESISTANT	5" [127 mm]	49.4%	1016 FPM (5.16 m/s)	0.32 in. H^2O (79.6 Pa)	981 FPM (5.0 m/s)
R9455	STORM RESISTANT	9" [229 mm]	49.4%	1011 FPM (5.14 m/s)	0.48 in. H^2O (119.4 Pa)	1339 FPM (6.80 m/s)
D2403	DRAINABLE BLADE	2" [51 mm]	54.9%	742 FPM (3.77 m/s)	0.072 in. H^2O (17.9 Pa)	N.A.
D4493	DRAINABLE BLADE	4" [102 mm]	48%	1033.2 FPM (5.25 m/s)	0.25 in.H^20 (62.3 Pa)	N.A.
D6403	DRAINABLE BLADE	6" [152 mm]	56.3%	969.9 FPM (4.93 m/s)	0.16 in.H^20 (39.5 Pa)	N.A.
H2451	STORM BLADE	2" [51 mm]	54.9%	742 FPM (3.77 m/s)	0.072 in. H^2O (17.9 Pa)	N.A.
H4451	STORM BLADE	4" [102 mm]	51%	658 FPM (3.34 m/s)	0.077 in H^2O (19.18 Pa)	N.A.
P4451	LOUVERED PENTHOUSE	4" [102 mm]	51%	658 FPM (3.34 m/s)	0.077 in H^2O (19.18 Pa)	N.A.
H6451	STORM BLADE	6" [152 mm]	47.1%	653 FPM (3.32 m/s)	0.067 in H^2O (16.69 Pa)	N.A.
A6457	ACOUSTICAL BLADE	6" [152 mm]	27%	766 fpm (3.89 m/s)	0.063" H^20 (15.7 Pa)	N.A.
A8457	ACOUSTICAL BLADE	8" [203 mm]	29%	Not tested	Not tested	N.A.
A12457	ACOUSTICAL BLADE	12" [305]	21.6%	949 FPM (4.82 m/s)	0.078 in. H^2O (19.4 Pa)	N.A.
V4454	SIGHTPROOF BLADE	4" [102 mm]	24%	Not tested	Not tested	N.A.
S1452	THINELINE BLADE	1.125" [29 mm]	53.7%	Not tested	Not tested	N.A.
T1300	THINLINE BLADE	1.25" [32 mm]	76%	Not tested	Not tested	N.A.
B4450	BLOCK VENT	4" [102 mm]	54%	Not tested	Not tested	N.A.
S4522	VISION SCREEN	4" [102 mm]	36%	Not tested	Not tested	N.A.
S4454	VISION SCREEN	4" [102 mm]	24%	Not tested	Not tested	N.A.

LOUVER SELECTING GUIDELINES

TEN PLUS

Selecting the right louver for your application is critical to achieving optimal performance, whether your priority is resistance to water penetration or minimizing static pressure drop. Our Storm Resistant Louvers offer unparalleled protection and efficiency, making them the superior choice for most applications.

FREE AREA

The free area of a louver is the unobstructed space through which air can pass freely. This parameter, along with the total air volume, determines the air velocity through the louver. Free area velocity directly influences critical factors such as static pressure drop and water penetration, which are key to louver performance.

SIZING LOUVERS

Follow these steps to select the ideal louver for your needs:

1. Prioritize resistance to water penetration. For applications where water ingress is a concern, we strongly recommend selecting a model from our Storm Resistant Louver line. These louvers are engineered and “wind-driven rain” tested to deliver superior performance in even the most demanding conditions.
2. Consider static pressure drop. If minimizing static pressure drop is the primary goal, explore our Conventional Louver line for models that balance airflow with performance.
3. Identify the best louver model for your application. Choose a louver that aligns with your specific aesthetical and operational needs.
4. Determine the airflow volume. Calculate the total volume of air in cubic feet per minute (CFM), or cubic meters per second or (m^3/s) that will pass through the louver.
5. Define your design priorities. Establish the most important design criteria by selecting from the following:

- Resistance to Water Penetration: If avoiding water penetration is paramount, select a louver model with a velocity below the threshold shown on the water penetration chart.
- Static Pressure Drop: If minimizing pressure drop is critical, choose a velocity consistent with the pressure drop chart.
- Balanced Priorities: If both water resistance and static pressure drop are equally important, opt for the lower of the two velocities.

6. Calculate the required free area. Divide the total air volume (CFM or m^3/s) by the selected free area velocity (FPM or m/s) to determine the total free area needed.
7. Select the louver dimensions. Match the required free area to the dimensions on the louver’s free area chart to Finalize the overall size of the louver.

LOUVER CATEGORIES

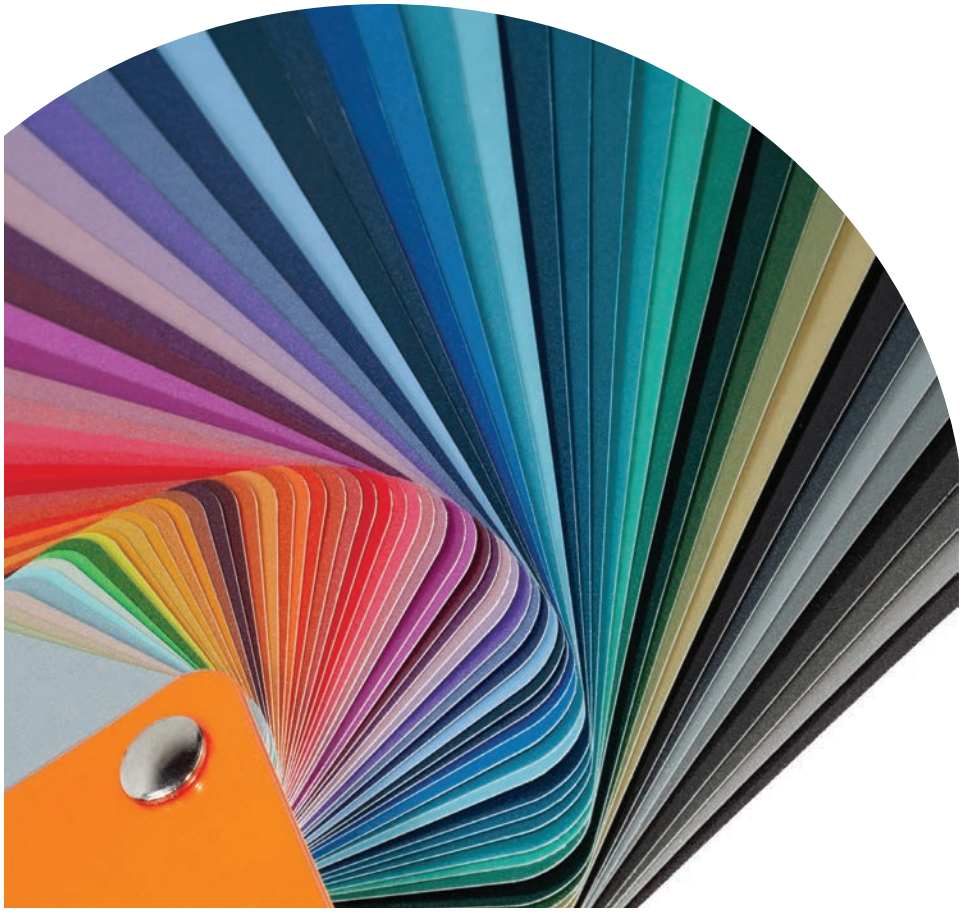
CONVENTIONAL LOUVERS	ACOUSTICAL LOUVERS	STORM RESISTANT LOUVERS	PENTHOUSE LOUVERS	LOUVERED SCREENS
				

Feel free to contact us for assistance on proper louver sizing.

PHONE: 905-363-2306 | TOLL FREE: 1(888) 850-3878 | EMAIL: info@tenplus-online.com

ACCESSORIES

Bird and insect screens	• Standard: 16 mm (5/8”) flat, expanded aluminum mesh • 12 x 12 mm (1/2”) inter-crimped 1.6 mm (14 ga) al. wire (optional) • 16 x 18 aluminum mesh insect screen (optional) • Stainless steel screens available
Blank-off panels	• Non-insulated sheet blank-off panels in aluminum or galvanized steel • Insulated panels to desired thickness and R-value
Sill Flashings	Formed aluminum sheet
Structural support design	Min. 960 Pa (20 psf) wind load or as otherwise specified
Finish	• Mill finish • Three coat 70% PVDF thermal setting resin to AAMA 2605 standard • Two coat 70% PVDF thermal setting resin to AAMA 2605 standard • Four coat 70% PVDF thermal setting resin to AAMA 2605 standard • Color anodic AA-M12C22A44, Class I • Clear anodic AA-M10C22A41, Class I • Clear anodic AA-10C22A31, Class II
Options	• Flange frame • Glazing flange • Mitered corners • Hinged doors and access panels • Pipe / service penetrations
Assembly Fasteners	• Stainless steel



FINISHES

TEN PLUS

THREE
COAT SYSTEM

Superior performance three coat system (primer/color coat/clear coat) including thermal setting application of 70% fluoropolymer resin minimum, PVDF with added color pigment finish exceeding or meeting AAMA 2605 requirements. Ensure fluoropolymer-baked resins form a continuous physically locked finish during the manufacturing process. Apply fluoropolymer finish after multistage chemical treatment cleaning, providing a corrosion resistant surface ready to receive primer. Acceptable Product: Duranar XL by PPG Industries or equivalent by Valspar.

TWO
COAT SYSTEM

A high-performance two coat system with a 70% fluoropolymer resin finish, meeting or exceeding AAMA 2605 requirements. Apply after multistage chemical cleaning for corrosion resistance. Acceptable Product: By PPG Industries or equivalent by Valspar.

POWDER
COAT FINISH

The powder coat system must meet AAMA 2605 requirements, with a minimum adhesion rating of 9 (ASTM D-3359), corrosion resistance of at least 5 (ASTM B-117), and gloss level of 20 (Gloss Meter). It must withstand weather, UV radiation, and chemical exposure while maintaining a smooth, even finish. Acceptable Product: by PPG Industries or equivalent by Valspar.

COLOR
ANODIZED FINISH

Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

CLEAR
ANODIZED FINISH

Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M10C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-10C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

STORM RESISTANT BLADE LOUVER
Model **RV3255**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model RV3255 – 76 mm [3”] deep, storm resistant, vertical blade louver. All framing members consist of extruded aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes horizontal mullions at 1500 [60”] centers or continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous line
Louver depth	76 mm (3”)
Blade angle	200
Free area 1220 x 1220 (48”x48”) Unit	8.76 sq. ft. (0.814 m²) 54.8%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1250 FPM (6.35 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	10897 CFM (5.14 m³/s)
Pressure drop at beginning point of water penetration	0.32 in. H_2O (79.7 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 3” (76 mm) deep, storm resistant louver Model RV3255. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.06” (1.52 mm) 6063-T5 aluminum alloy and include integral gutters to lead water to the sill. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 8.76 sq. ft. (0.814 m2) / 54.8%

Free area velocity at point of beginning water penetration = 1250 FPM (6.35 m/s)

Intake pressure drop at beginning point of water penetration = 0.32 in. H_2O (79.6 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

For superior performance, 3 coat PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

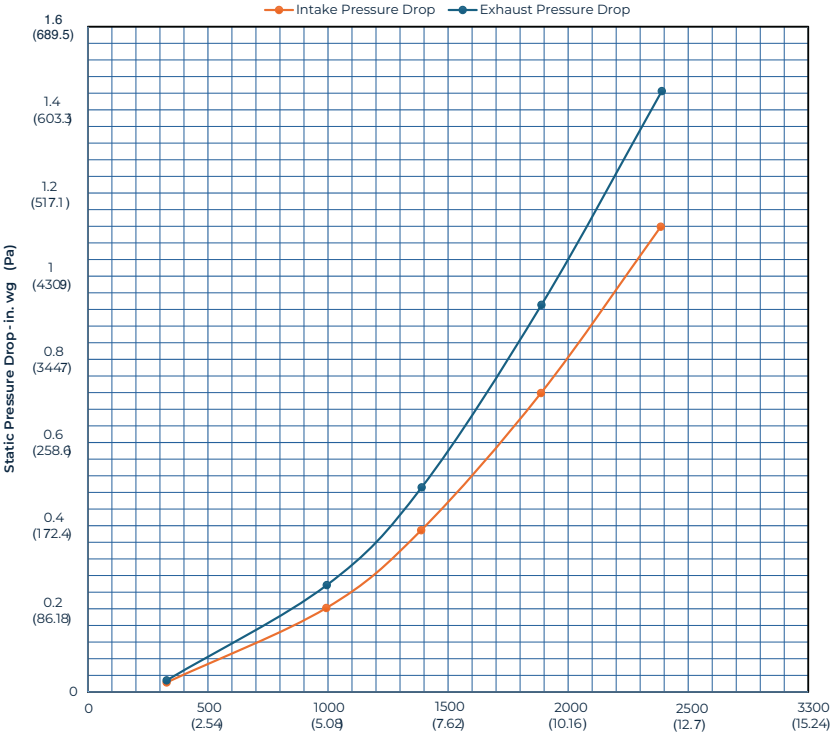
TEN PLUS

Model **RV3255**

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL RV3255 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.42	0.92	1.41	1.91	2.41
305	0.04	0.09	0.13	0.18	0.22
24	0.92	2.02	3.11	4.21	5.30
610	0.09	0.19	0.29	0.39	0.49
36	1.42	3.12	4.81	6.50	8.19
914	0.13	0.29	0.45	0.60	0.76
48	1.93	4.22	6.51	8.76	11.08
1219	0.18	0.39	0.60	0.81	1.03
60	2.43	5.32	8.20	11.09	13.98
1524	0.23	0.49	0.76	1.03	1.30
72	2.93	6.42	9.90	13.39	16.87
1829	0.27	0.60	0.92	1.24	1.57
84	3.43	7.52	11.60	15.68	19.76
2134	0.32	0.70	1.08	1.46	1.84
96	3.94	8.62	13.30	17.98	22.65
2438	0.37	0.80	1.24	1.67	2.11
108	4.44	9.72	14.99	20.27	25.54
2743	0.41	0.90	1.39	1.88	2.37
120	4.94	10.82	16.69	22.57	28.43
3048	0.46	1.01	1.55	2.10	2.64
132	5.44	11.92	18.39	24.86	31.33
3353	0.51	1.11	1.71	2.31	2.91
144	5.95	13.02	20.09	27.16	34.22
3658	0.55	1.21	1.87	2.52	3.18

Ten Plus Architectural Products Ltd. certifies that louver model RV3255 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal RV3255 September 20, 2024.

Model RV3255 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Core Velocity - m/s (fpm)	0.00	1.95 (383.60)	2.42 (476.7)	2.94 (579.22)	3.39 (666.71)	3.86 (758.97)	4.36 (857.99)	4.84 (951.68)
Free Area Velocity - m/s (fpm)	0.00	3.32 (654)	4.13 (813)	5.02 (988)	5.78 (1,137)	6.58 (1,295)	7.43 (1,463)	8.25 (1,623)
Effectiveness Classification						A	A	A
Effectiveness Ratio						99.9	99.8	99.7

STORM RESISTANT BLADE LOUVER
Model **R5255**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model R5255 – 127 mm [5”] deep, storm resistant, horizontal blade louver. All framing members consist of extruded aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers or continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous line
Louver depth	127 mm (5”)
Blade angle	40^0
Free area 1220 x 1220 (48”x48”) Unit	8.73 sq. ft. (0.811 m^2) 54.6%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1250 FPM (6.35 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	10849 CFM (5.12 m^3/s)
Pressure drop at beginning point of water penetration	0.44 in. H_2O (109.6 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 5” (127 mm) deep, storm resistant louver Model R5255. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.06” (1.52 mm) 6063-T5 aluminum alloy and include integral horizontal gutters to lead water to the vertical gutters in the mullions and jambs. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 8.73 sq. ft. (0.811 m2) 54.6%

Free area velocity at point of beginning water penetration = 1250 FPM (6.35 m/s)

Intake pressure drop at beginning point of water penetration = 0.44 in. H_2O (109.6 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

For superior performance, 3 coat PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (ColorAnodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

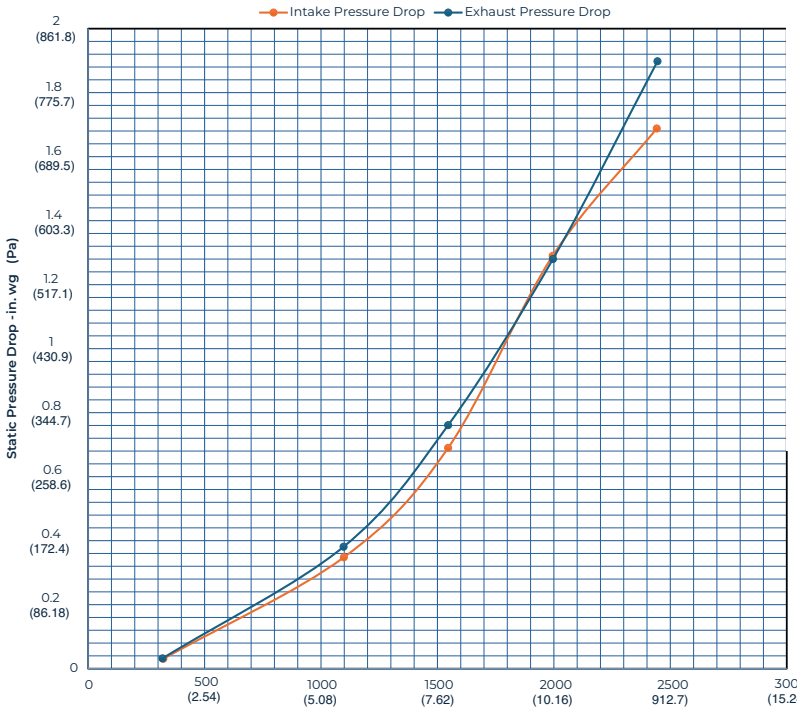
OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL R5255 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.39	0.86	1.33	1.80	2.27
305	0.04	0.08	0.12	0.17	0.21
24	0.91	1.99	3.08	4.17	5.25
610	0.08	0.19	0.29	0.39	0.49
36	1.38	3.03	4.68	6.33	7.98
914	0.13	0.28	0.43	0.59	0.74
48	1.90	4.18	6.45	8.73	11.01
1219	0.18	0.39	0.60	0.81	1.02
60	2.41	5.30	8.19	11.08	13.97
1524	0.22	0.49	0.76	1.03	1.30
72	2.93	6.45	9.96	13.48	17.00
1829	0.27	0.60	0.93	1.25	1.58
84	3.44	7.57	11.70	15.84	19.97
2134	0.32	0.70	1.09	1.47	1.86
96	3.93	8.64	13.35	18.06	22.77
2438	0.36	0.80	1.24	1.68	2.12
108	4.44	9.77	15.10	20.43	25.77
2743	0.41	0.91	1.40	1.90	2.39
120	4.91	10.81	16.71	22.61	28.50
3048	0.46	1.00	1.55	2.10	2.65
132	5.44	11.96	18.48	25.00	31.52
3353	0.51	1.11	1.72	2.32	2.93
144	5.95	13.10	20.24	27.39	34.53
3658	0.55	1.22	1.88	2.55	3.21

Ten Plus Architectural Products Ltd. certifies that louver model R5255 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal R5255 February 26, 2025.

Model **R5255**

Model R5255 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph)								
Core Velocity - m/s (fpm)	0.00	0.9 (180.26)	1.8 (358.41)	2.8 (541.19)	3.3 (662.74)	3.9 (770.06)	4.4 (867.89)	4.8 (950.35)
Free Area Velocity - m/s (fpm)	0.00	1.6 (306)	3.1 (609)	4.7 (920)	5.7 (1122)	6.6 (1304)	7.47 (1470)	8.1 (1609)
Effectiveness Classification					A	A	B	B
Effectiveness Ratio					100%	99.6%	98.1%	95.9%

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph).

STORM RESISTANT BLADE LOUVER
Model **R7435**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model R7435 – 179 mm [7”] deep, storm resistant, horizontal blade louver. All framing members consist of extruded aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers or continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous line
Louver depth	179 mm (7”)
Blade angle	45º
Free area 1220 x 1220 (48”x48”) Unit	8.07 sq. ft. (0.749 m²) 50.4%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1175 FPM (5.97 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	9486 CFM (4.47 m³/s)
Pressure drop at beginning point of water penetration	0.41 in. H_2O (101.6 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 7” (179 mm) deep, storm resistant louver Model R7435. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.08” (2.0 mm) and 0.06” (1.52 mm) 6063-T5 aluminum alloy and include integral vertical gutters to lead water to the sill. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 8.07 sq. ft. (0.749 m2) 50.4%

Free area velocity at point of beginning water penetration = 1175 FPM (5.97 m/s)

Intake pressure drop at beginning point of water penetration = 0.41 in. H_2O (101.6 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

For superior performance, 3 coat PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

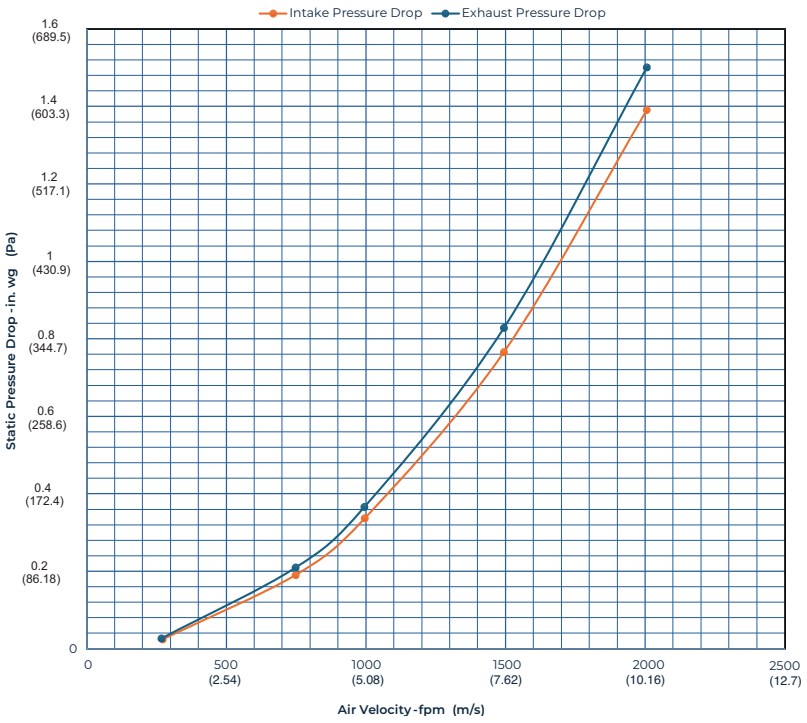
TEN PLUS

Model **R7435**

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL R7435 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.32	0.71	1.10	1.49	1.87
305	0.03	0.07	0.10	0.14	0.17
24	0.78	1.71	2.65	3.59	4.53
610	0.07	0.16	0.25	0.33	0.42
36	1.30	2.88	4.45	6.02	7.59
914	0.12	0.27	0.41	0.56	0.71
48	1.75	3.86	5.97	8.07	10.18
1219	0.16	0.36	0.55	0.75	0.95
60	2.28	5.04	7.80	10.56	13.32
1524	0.21	0.47	0.72	0.98	1.24
72	2.77	6.12	9.47	12.82	16.17
1829	0.26	0.57	0.88	1.19	1.50
84	3.27	7.21	11.15	15.09	19.04
2134	0.30	0.67	1.04	1.40	1.77
96	3.77	8.33	12.88	17.44	21.99
2438	0.35	0.77	1.20	1.62	2.04
108	4.25	9.37	14.50	19.63	24.76
2743	0.39	0.87	1.35	1.82	2.30
120	4.77	10.53	16.29	22.06	27.82
3048	0.44	0.98	1.51	2.05	2.59
132	5.23	11.54	17.85	24.17	30.48
3353	0.49	1.07	1.66	2.25	2.83
144	5.77	12.74	19.70	26.67	33.64
3658	0.54	1.18	1.83	2.48	3.13

Ten Plus Architectural Products Ltd. certifies that louver model R7435 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal R7435 March 26, 2025

Model R7435 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph)

Core Velocity - m/s (fpm)	0.00	0.9 (180.26)	1.8 (358.41)	2.8 (541.19)	3.2 (621.92)	3.7 (726.57)	4.2 (816.73)	4.7 (924.21)
Free Area Velocity - m/s (fpm)	0.00	1.6 (306)	3.1 (609)	4.7 (920)	5.4 (1057)	6.3 (1235)	7.1 (1389)	8.0 (1571)
Effectiveness Classification					A	A	A	B
Effectiveness Ratio					99.9%	99.7%	99.3%	97.8%

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph).

STORM RESISTANT BLADE LOUVER
Model **R7355**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model R7355 – 178 mm [7”] deep, storm resistant blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous Line
Louver depth	178 mm (7”)
Blade angle	35º
Free area 1220 x 1220 (48”x48”) Unit	8.03 sq. ft. (0.75 m^2) 50.2%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	800.4 FPM (4.07 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	6427 CFM (3.0 m^3/s)
Pressure drop at beginning point of water penetration	0.25 in H_2O (62.3 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 7” (178 mm) deep, storm resistant horizontal blade louver Model R7355. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.065” (1.65 mm) 6063-T5 aluminum alloy and include an integral vertical gutter to lead water to the sill pan. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 8.03 sq. ft. (0.75 m2)

Free area velocity at point of beginning water penetration = 800.4 FPM (3.86 m/s)

Intake pressure drop at beginning point of water penetration = 0.25 in H_2O (62.3 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

For superior performance, 3 coat PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

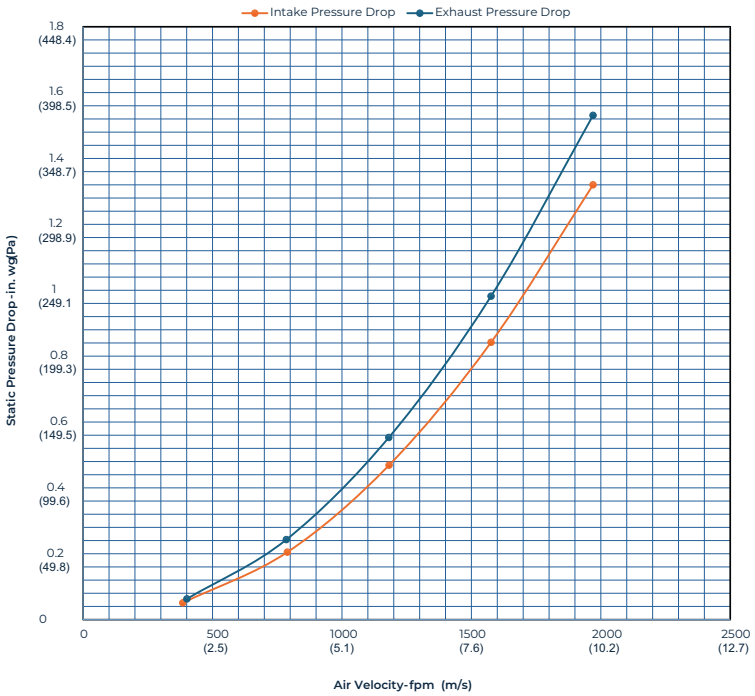
TEN PLUS

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL R7355 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.30	0.69	1.07	1.46	1.84
305	0.03	0.06	0.10	0.14	0.17
24	0.76	1.72	2.69	3.65	4.61
610	0.07	0.16	0.25	0.34	0.43
36	1.22	2.76	4.30	5.84	7.38
914	0.11	0.26	0.40	0.54	0.69
48	1.68	3.79	5.91	8.03	10.15
1219	0.16	0.35	0.55	0.75	0.94
60	2.13	4.83	7.52	10.22	12.91
1524	0.20	0.45	0.70	0.95	1.20
72	2.59	5.86	9.14	12.41	15.68
1829	0.24	0.54	0.85	1.15	1.46
84	3.05	6.90	10.75	14.60	18.45
2134	0.28	0.64	1.00	1.36	1.71
96	3.51	7.93	12.36	16.79	21.22
2438	0.33	0.74	1.15	1.56	1.97
108	3.96	8.97	13.97	18.98	23.98
2743	0.37	0.83	1.30	1.76	2.23
120	4.42	10.00	15.58	21.17	26.75
3048	0.41	0.93	1.45	1.97	2.49
132	4.88	11.04	17.20	23.36	29.52
3353	0.45	1.03	1.60	2.17	2.74
144	5.33	12.07	18.81	25.55	32.28
3658	0.50	1.12	1.75	2.37	3.00

Ten Plus Architectural Products Ltd. certifies that louver model R7355 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal R7355 January 12, 2014

Model **R7355**

Model R7355 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph)

Core Velocity - m/s (fpm)	0 (0)	0.6 (126)	1.0 (196)	1.4 (280)	1.9 (377)	2.4 (476)	3 (588)	3.5 (680)
Free Area Velocity - m/s (fpm)	0 (0)	1.1 (220)	1.7 (342)	2.5 (490)	3.4 (659)	4.2 (832)	5.2 (1027)	6.0 (1188)
Effectiveness Classification	A	A	A	B	B	C	C	D
Effectiveness Ratio	99.8%	99.4%	99.0%	98.3%	96.3%	90.4%	83.6%	68.2%

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph).

Model R4455
Horizontal blade, storm resistant louver

TO COME

Model R4455
Horizontal blade, storm resistant louver

TO COME

STORM RESISTANT BLADE LOUVER
Model **RV4455**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model RV4455 – 102 mm [4”] deep, storm resistant vertical blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD

AMCA Standard 500L

Louver type	Mullion
Louver depth	102 mm (4”)
Blade angle	40^0
Free area 1220 x 1220 (48”x48”) Unit	7.57 sq.ft. (0.704 m^2) 47.3%
Free area velocity at beginning point of water penetration (0.01 oz / ft^2)	Not tested
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	Not tested
Pressure drop at beginning point of water penetration	Not tested
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4” (102 mm) deep, storm resistant vertical blade louver Model RV4455. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.065” (1.65 mm) 6063-T5 aluminum alloy and include an integral vertical gutter to lead water to the sill pan. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 7.57 sq.ft. (0.704 m2)

Free area velocity at point of beginning water penetration = Not tested

Intake pressure drop at beginning point of water penetration = Not tested

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

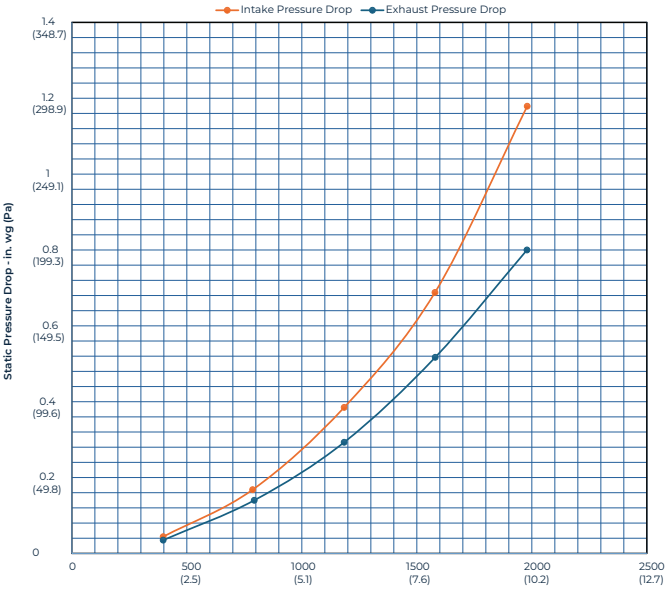
LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL RV4455 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.39	0.78	1.24	1.70	2.12
305	0.04	0.07	0.12	0.16	0.20
24	0.86	1.72	2.73	3.73	4.67
610	0.08	0.16	0.25	0.35	0.43
36	1.33	2.66	4.23	5.77	7.22
914	0.12	0.25	0.39	0.54	0.67
48	1.80	3.60	5.72	7.57	9.76
1219	0.17	0.33	0.53	0.70	0.91
60	2.27	4.54	7.21	9.84	12.31
1524	0.21	0.42	0.67	0.91	1.14
72	2.74	5.48	8.70	11.88	14.86
1829	0.25	0.51	0.81	1.10	1.38
84	3.21	6.42	10.19	13.92	17.40
2134	0.30	0.60	0.95	1.29	1.62
96	3.68	7.36	11.68	15.95	19.95
2438	0.34	0.68	1.09	1.48	1.85
108	4.15	8.30	13.18	17.99	22.50
2743	0.39	0.77	1.22	1.67	2.09
120	4.62	9.24	14.67	20.03	25.04
3048	0.43	0.86	1.36	1.86	2.33
132	5.09	10.18	16.16	22.06	27.59
3353	0.47	0.95	1.50	2.05	2.56
144	5.56	11.12	17.65	24.10	30.14
3658	0.52	1.03	1.64	2.24	2.80

Ten Plus Architectural Products Ltd. certifies that louver model RV4455 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal RV4455 September 20, 2024.

Model **RV4455**

TEN PLUS

Model RV4455 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph)

Core Velocity - m/s (fpm)	0 (0)	0.5 (99)	1.0 (198)	1.5 (297)	2.0 (393)	2.5 (494)	3 (585)	3.5 (690)	4.0 (790)	4.5 (886)	5.0 (986)
Free Area Velocity - m/s (fpm)	0 (0)	1.00 (197)	2.0 (393)	3.0 (590)	4.0 (781)	5.0 (982)	5.9 (1164)	7.0 (1372)	8.0 (1571)	9.0 (1762)	10.0 (1961)
Effectiveness Classification	A	A	A	A	A	A	A	A	A	C	D
Effectiveness Ratio							100.0%	99.9%	99.4%	92.0%	65.0%

Rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph)

Core Velocity - m/s (fpm)	0 (0)	0.5 (96)	1.0 (197)	1.5 (28)	2.0 (396)	2.5 (482)	3 (587)	3.5 (694)	4.0 (791)	4.5 (886)	5.0 (982)
Free Area Velocity - m/s (fpm)	0 (0)	1.00 (191)	2.0 (392)	2.9 (572)	4.0 (787)	4.9 (959)	5.9 (1167)	7.0 (1380)	8.0 (1573)	9.0 (1762)	9.9 (1953)
Effectiveness Classification	A	A	A	A	A	A	A	A	A	B	C
Effectiveness Ratio							99.5%	99.3%	99.2%	98.3%	93.7%

Discharge Loss Coefficient Class (Intake) = 3

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph), and at a rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph). The above table shows the effectiveness against water penetration at each corresponding ventilation airflow rate.

Model R5405
Horizontal blade, storm resistant louver

TO BE APPROVED

Model R5405
Horizontal blade, storm resistant louver

TO BE APPROVED

STORM RESISTANT BLADE LOUVER
Model **R5455**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model R5455 – 127 mm [5”] deep, storm resistant blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD

Louver type	Mullion
Louver depth	127 mm (5”)
Blade angle	45^0
Free area 1220 x 1220 (48”x48”) Unit	7.9 sq.ft. (0.734 m^2) 49.4%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1016 FPM (5.16 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	8026 CFM (3.79 m^3/s)
Pressure drop at beginning point of water penetration	0.32 in. H_2O (79.6 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 5” (127 mm) deep, storm resistant louver Model R5455. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.08” (2.0 mm) 6063-T5 aluminum alloy and include integral horizontal gutters to lead water to the vertical gutters in the mullions and jambs. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 7.9 sq. ft. (0.734 m2)

Free area velocity at point of beginning water penetration = 1016 FPM (5.16 m/s)

Intake pressure drop at beginning point of water penetration = 0.32 in. H2O (79.6 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

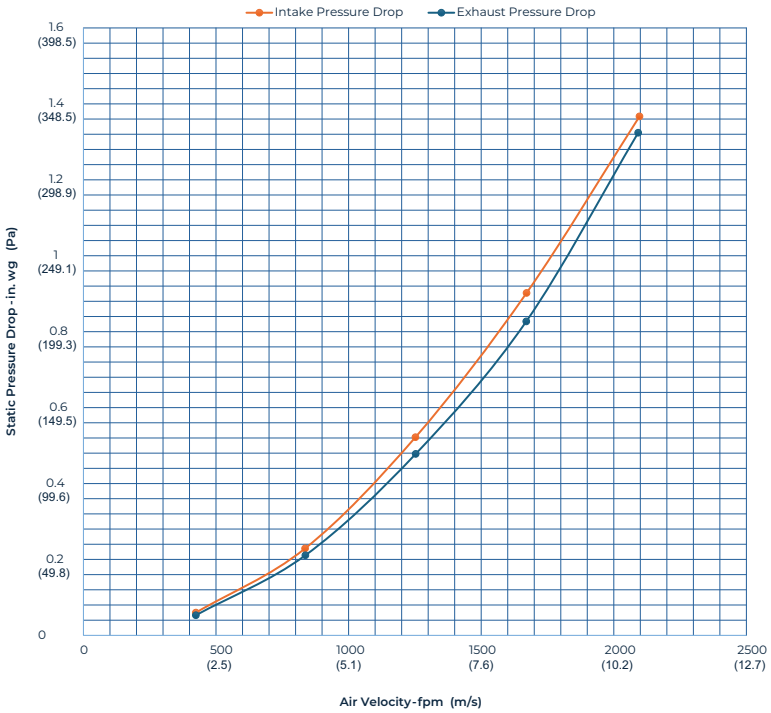
OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL R4455 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.27	0.59	0.90	1.22	1.54
305	0.02	0.05	0.08	0.11	0.14
24	0.72	1.58	2.44	3.30	4.16
610	0.07	0.15	0.23	0.31	0.39
36	1.18	2.59	4.00	5.41	6.82
914	0.11	0.24	0.37	0.50	0.63
48	1.70	3.73	5.77	7.81	9.84
1219	0.16	0.35	0.54	0.73	0.91
60	2.08	4.57	7.06	9.55	12.04
1524	0.19	0.42	0.66	0.89	1.12
72	2.52	5.54	8.57	11.59	14.62
1829	0.23	0.52	0.80	1.08	1.36
84	2.96	6.51	10.06	13.61	17.17
2134	0.28	0.61	0.94	1.27	1.60
96	3.39	7.47	11.54	15.61	19.69
2438	0.32	0.69	1.07	1.45	1.83
108	3.85	8.47	13.09	17.72	22.34
2743	0.36	0.79	1.22	1.65	2.08
120	4.32	9.50	14.68	19.86	25.05
3048	0.40	0.88	1.36	1.85	2.33
132	4.77	10.49	16.22	21.94	27.66
3353	0.44	0.98	1.51	2.04	2.57
144	5.21	11.46	17.71	23.96	30.21
3658	0.48	1.07	1.65	2.23	2.81

Ten Plus Architectural Products Ltd. certifies that louver model R5455 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal R5455 January l 2, 2014.

Model **R5455**

Model R5455 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph)								
Core Velocity - m/s (fpm)	0 (0)	0.5 (98)	1.0 (197)	1.5 (295)	2.0 (394)	2.5 (493)	3 (591)	3.5 (689)
Free Area Velocity - m/s (fpm)	0 (0)	1.00 (194)	2.0 (392)	3.0 (587)	4.0 (784)	5.0 (981)	6.0 (1175)	7.0 (1370)
Effectiveness Classification	A	A	A	A	A	A	B	C
Effectiveness Ratio				99.9%	99.8%	99.4%	96.6%	84.4%

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph)

STORM RESISTANT BLADE LOUVER
Model **R9455**

GENERAL DESCRIPTION

Ten Plus Model R9455 – 229 mm [9”] deep, storm resistant blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L	
Louver type	Mullion / Continuous Line
Louver depth	9” (229 mm)
Blade angle	45º
Free area 1220 x 1220 (48”x48”) Unit	7.9 sq. ft. (0.734 m²) 49.4%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1011 FPM (5.14 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	7987 CFM (3.77 m³/s)
Pressure drop at beginning point of water penetration	0.48 in. H_2O (119.4 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 9” (229 mm) deep, storm resistant horizontal blade louver Model R9455. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.08” (2.0 mm) 6063-T5 aluminum alloy and include an integral vertical gutter to lead water to the sill pan. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 7.9 sq. ft. (0.734 m2)

Free area velocity at point of beginning water penetration = 1011 FPM (5.14 m/s)

Intake pressure drop at beginning point of water penetration = 0.48 in. H2O (119.4 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) E nsure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

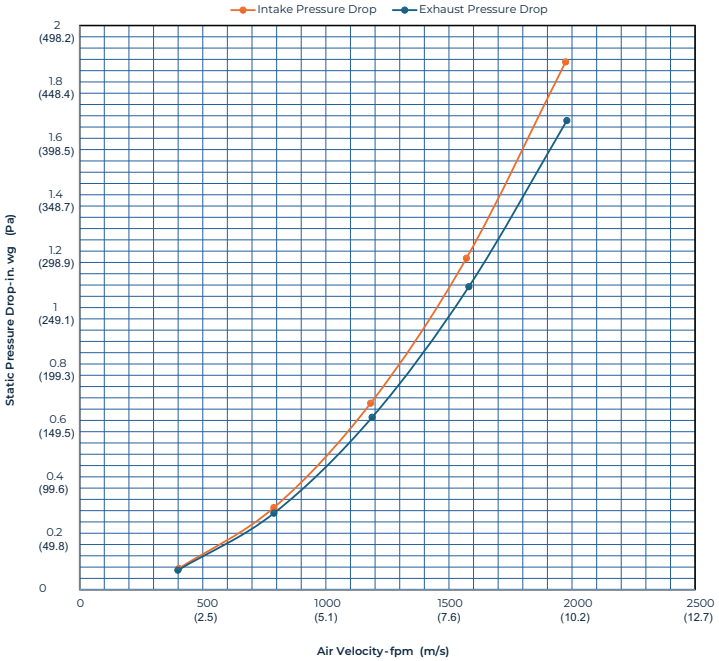
TEN PLUS

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL R9455 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.36	0.82	1.29	1.72	2.21
305	0.03	0.08	0.12	0.16	0.21
24	0.79	1.81	2.83	3.78	4.86
610	0.07	0.17	0.26	0.35	0.45
36	1.23	2.80	4.37	5.84	7.52
914	0.11	0.26	0.41	0.54	0.70
48	1.66	3.79	5.91	7.90	10.17
1219	0.15	0.35	0.55	0.73	0.94
60	2.09	4.77	7.46	9.96	12.82
1524	0.19	0.44	0.69	0.93	1.19
72	2.52	5.76	9.00	12.02	15.47
1829	0.23	0.54	0.84	1.12	1.44
84	2.96	6.75	10.54	14.08	18.13
2134	0.27	0.63	0.98	1.31	1.68
96	3.39	7.74	12.08	16.14	20.78
2438	0.31	0.72	1.12	1.50	1.93
108	3.82	8.72	13.63	18.20	23.43
2743	0.36	0.81	1.27	1.69	2.18
120	4.25	9.71	15.17	20.26	26.08
3048	0.40	0.90	1.41	1.88	2.42
132	4.69	10.70	16.71	22.32	28.74
3353	0.44	0.99	1.55	2.07	2.67
144	5.12	11.46	17.71	24.38	30.21
3658	0.48	1.07	1.65	2.27	2.81

Ten Plus Architectural Products Ltd. certifies that louver model R9455 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 Sealapplies only to Air Performance, Water Penetration and Wind Driven Rain ratings. Submittal R9455 January l 2, 2014.

Model **R9455**

Model R9455 Static Pressure Drop



WIND-DRIVEN RAIN PERFORMANCE

Discharge Loss Coefficient Class (Intake) = 3

Rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph)											
Core Velocity - m/s (fpm)	0 (0)	0.5 (99)	1.0 (198)	1.5 (297)	2.0 (393)	2.5 (494)	3 (590)	3.5 (692)	4.0 (792)	4.5 (885)	5.0 (982)
Free Area Velocity - m/s (fpm)	0 (0)	0.97 (192)	1.95 (383)	2.92 (575)	3.86 (761)	4.86 (956)	5.80 (1142)	6.80 (1339)	7.79 (1573)	8.70 (1713)	9.66 (1900)
Effectiveness Classification								A	B	C	D
Effectiveness Ratio								100.0%	98.4%	92.9%	79.3%
Rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph)											
Core Velocity - m/s (fpm)	0 (0)	0.5 (96)	1.0 (197)	1.5 (288)	2.0 (398)	2.5 (478)	3 (591)	3.5 (688)	4.0 (791)	4.5 (883)	5.0 (983)
Free Area Velocity - m/s (fpm)	0 (0)	0.94 (186)	1.94 (381)	2.83 (557)	3.91 (770)	4.70 (925)	5.81 (1144)	6.77 (1332)	7.78 (1531)	8.68 (1709)	9.67 (1902)
Effectiveness Classification					A	A	B	B	B	C	D
Effectiveness Ratio					100.0%	99.3%	97.6%	96.6%	95.4%	90.0%	75.2%

The louver test is based on a 1 m x 1 m (39.37" x 39.37") louver core size, at a rainfall rate of 76 mm/hr. (3 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 13 m/s (29 mph), and at a rainfall rate of 203 mm/hr. (8 in/hr.), with wind driven rain applied to the face of the louver at a velocity of 23.3 m/s (50 mph). The above table shows the effectiveness against water penetration at each corresponding ventilation airflow rate.

DRAINABLE BLADE LOUVER
Model **D2403**

GENERAL DESCRIPTION

Ten Plus Model D2403 – 51 mm [2”] deep, drainable blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	51 mm (2”)
Blade angle	40^0
Free area 1220 x 1220 (48”x48”) Unit	8.78 sq.bft. (0.816 m^2) 54.9%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	742 FPM (3.77 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	6515 CFM (3.08 m^3/s)
Pressure drop at beginning point of water penetration	0.072 in. H_2O (17.9 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on the drawings, supply and install 2” (51 mm) deep, drainable louver Model D2403. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.080” (2.0 mm) 6063-T5 aluminum alloy and include an integral horizontal gutter to lead water to the vertical gutters in the mullions and jambs. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 7.68 sq. ft. (0.714 m2)

Free area velocity at the point of beginning water penetration = 1033.2 FPM (5.25 m/s)

Intake pressure drop at beginning point of water penetration = 0.25 in.H20 (62.3 Pa)

Louvers shall be fabricated with mill finish aluminum, and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin

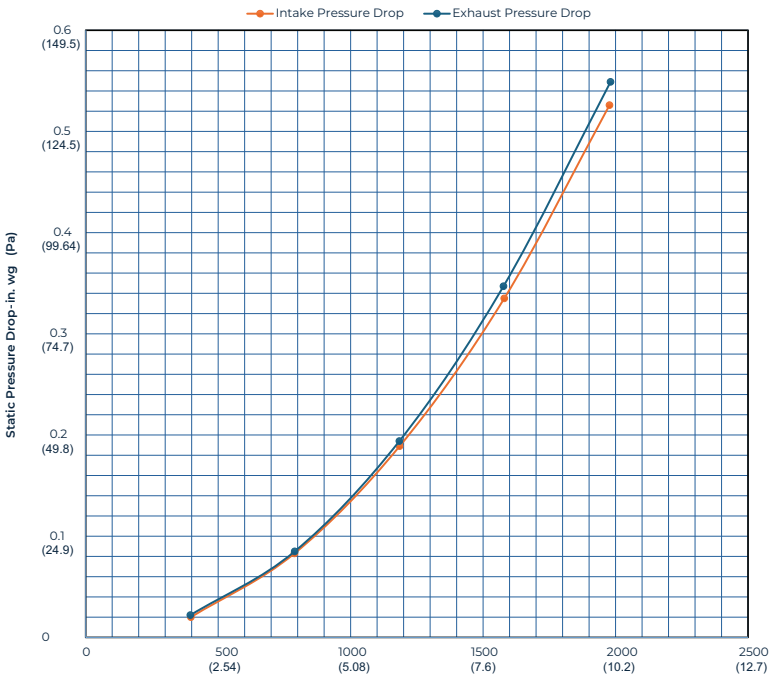
OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL D2403 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.39	0.86	1.33	1.80	2.27
305	0.04	0.08	0.12	0.17	0.21
24	0.91	1.99	3.08	4.17	5.25
610	0.08	0.19	0.29	0.39	0.49
36	1.38	3.03	4.68	6.33	7.98
914	0.13	0.28	0.43	0.59	0.74
48	1.91	4.20	6.49	8.78	11.06
1219	0.18	0.39	0.60	0.82	1.03
60	2.41	5.30	8.19	11.08	13.97
1524	0.22	0.49	0.76	1.03	1.30
72	2.93	6.45	9.96	13.48	17.00
1829	0.27	0.60	0.93	1.25	1.58
84	3.44	7.57	11.70	15.84	19.97
2134	0.32	0.70	1.09	1.47	1.86
96	3.93	8.64	13.35	18.06	22.77
2438	0.36	0.80	1.24	1.68	2.12
108	4.44	9.77	15.10	20.43	25.77
2743	0.41	0.91	1.40	1.90	2.39
120	4.91	10.81	16.71	22.61	28.50
3048	0.46	1.00	1.55	2.10	2.65
132	5.44	11.96	18.48	25.00	31.52
3353	0.51	1.11	1.72	2.32	2.93
144	5.95	13.10	20.24	27.39	34.53
3658	0.55	1.22	1.88	2.55	3.21

Model D2403 Static Pressure Drop



Model **D2403**

DRAINABLE BLADE LOUVER
Model **D4493**

GENERAL DESCRIPTION

Ten Plus Model D4493 – 102 mm [4"] deep, drainable blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60"] centers.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	102 mm (4")
Blade angle	49^0
Free area 1220 x 1220 (48"x48") Unit	7.68 sq.ft. (0.714 m^2) 48%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1033.2 FPM (5.25 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48"x48") Unit – 15 minute test duration	7935 cfm (3.75 m^3/s)
Pressure drop at beginning point of water penetration	0.25 in.H_20 (62.3 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4" (102 mm) deep, drainable louver Model D4493. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080" (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.080" (2.0 mm) 6063-T5 aluminum alloy and include an integral horizontal gutter to lead water to the vertical gutters in the mullions and jambs. Louvers shall be supplied with a 5/8" (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10' (3 m) high, will require a horizontal girt, at mid span by others. The louver manufacturer shall submit data, on a 4' x 4' (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the "Certified Ratings Program" licensed to bear the AMCA seal:

Free area = 7.68 sq. ft. (0.714 m2)

Free area velocity at point of beginning water penetration = 1033.2 FPM (5.25 m/s)

Intake pressure drop at beginning point of water penetration = 0.25 in.H20 (62.3 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

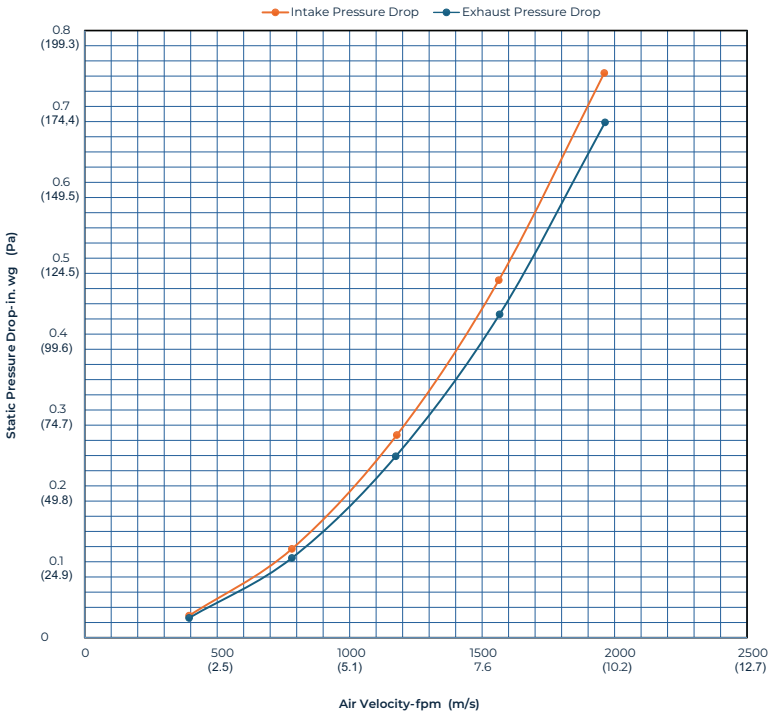
OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

TEN PLUS

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL D4493 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.30	0.67	1.05	1.42	1.79
305	0.03	0.06	0.10	0.13	0.17
24	0.70	1.57	2.44	3.30	4.17
610	0.07	0.15	0.23	0.31	0.39
36	1.23	2.74	4.25	5.76	7.27
914	0.11	0.25	0.39	0.54	0.68
48	1.62	3.62	5.61	7.60	9.60
1219	0.15	0.34	0.52	0.71	0.89
60	2.15	4.80	7.45	10.10	12.75
1524	0.20	0.45	0.69	0.94	1.19
72	2.55	5.68	8.82	11.95	15.08
1829	0.24	0.53	0.82	1.11	1.40
84	2.94	6.56	10.18	13.80	17.42
2134	0.27	0.61	0.95	1.28	1.62
96	3.47	7.75	12.02	16.29	20.57
2438	0.32	0.72	1.12	1.51	1.91
108	3.87	8.62	13.38	18.14	22.90
2743	0.36	0.80	1.24	1.69	2.13
120	4.57	10.20	15.83	21.45	27.08
3048	0.42	0.95	1.47	1.99	2.52
132	4.79	10.69	16.59	22.49	28.38
3353	0.45	0.99	1.54	2.09	2.64
144	5.19	11.57	17.96	24.34	30.72
3658	0.48	1.08	1.67	2.26	2.86

Model **D4493**

Model D4493 Static Pressure Drop



DRAINABLE BLADE LOUVER
Model **D6403**

TEN PLUS

L-C-D6403-0425

GENERAL DESCRIPTION

Ten Plus Model D6403 – 152 mm [6”] deep, drainable blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	152 mm (6”)
Blade angle	40^0
Free area 1220 x 1220 (48”x48”) Unit	9.01 sq. ft. (0.837 m^2) 56.3%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	969.9 FPM (4.93 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	8739 cfm (4.12 m^3/s)
Pressure drop at beginning point of water penetration	0.16 in.H_2 0 (39.5 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 6” (152 mm) deep, drainable louver Model D6403. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a minimum thickness of 0.080” (2.0 mm) 6063-T5 aluminum alloy.

Jambs and Mullions shall have integral, vertical gutters to direct water to the bottom of the exterior face of the louver and away from the building. Blades shall be 0.080” (2.0 mm) 6063-T5 aluminum alloy and include an integral horizontal gutter to lead water to the vertical gutters in the mullions and jambs. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 9.01 sq. ft. (0.837 m2)

Free area velocity at point of beginning water penetration = 969.9 FPM (4.93 m/s)

Intake pressure drop at beginning point of water penetration = 0.16 in. H_20 (39.5 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select desired finish from the following:

For superior performance, 3 coat PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR High performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

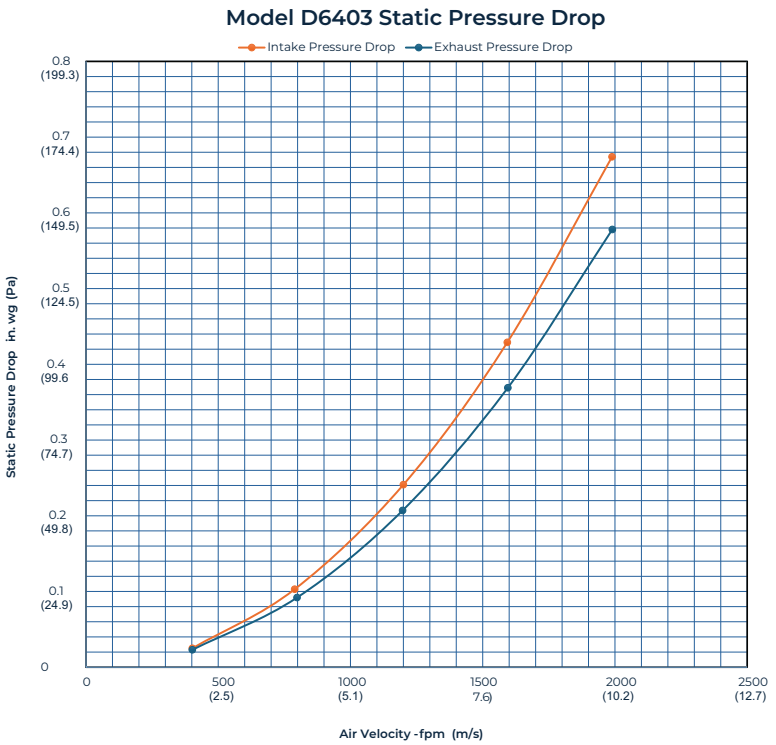
OR (Color Anodized) Ensure aluminum finish is colour anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by consultant.

OR (Clear Anodized) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

TEN PLUS

Model **D6403**

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	304.8	609.6	914.4	1219.2	1524
MODEL D6403 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.30	0.67	1.04	1.40	1.77
305	0.03	0.06	0.10	0.13	0.16
24	0.78	1.75	2.71	3.67	4.64
610	0.07	0.16	0.25	0.34	0.43
36	1.38	3.07	4.76	6.46	8.15
914	0.13	0.29	0.44	0.60	0.76
48	1.86	4.15	6.44	8.72	11.02
1219	0.17	0.39	0.60	0.81	1.02
60	2.45	5.47	8.49	11.51	14.52
1524	0.23	0.51	0.79	1.07	1.35
72	2.94	6.55	10.17	13.78	17.40
1829	0.27	0.61	0.94	1.28	1.62
84	3.42	7.63	11.84	16.05	20.27
2134	0.32	0.71	1.10	1.49	1.88
96	4.01	8.95	13.89	18.84	23.78
2438	0.37	0.83	1.29	1.75	2.21
108	4.50	10.03	15.57	21.11	26.64
2743	0.42	0.93	1.45	1.96	2.48
120	4.98	11.11	17.25	23.38	29.51
3048	0.46	1.03	1.60	2.17	2.74
132	5.58	12.44	19.30	26.16	33.02
3353	0.52	1.16	1.79	2.43	3.07
144	6.06	13.52	20.98	28.43	35.89
3658	0.56	1.26	1.95	2.64	3.34



STORM BLADE LOUVER
Model **H2451**

GENERAL DESCRIPTION

Ten Plus Model H2451 – 51 mm [2”] deep, storm blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion / Continuous line
Louver depth	51 mm (2”)
Blade angle	45^0
Free area 1220 x 1220 (48”x48”) Unit	7.25 sq. ft. (0.674 m^2) 45.3%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	468 FPM (2.37 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	3393 CFM (1.6 m^3/s)
Pressure drop at beginning point of water penetration	0.037 in. H_2O (9.2 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 2” (51 mm) deep, storm blade louver Model H2451. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.062” (1.57 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.062” (1.57 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4’ x 4’ (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the “Certified Ratings Program” licensed to bear the AMCA seal:

Free area = 7.25 sq. ft. (0.674 m2)

Free area velocity at point of beginning water penetration = 468 FPM (2.37 m/s)

Intake pressure drop at beginning point of water penetration = 0.037 in. H2 0 (9.2 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

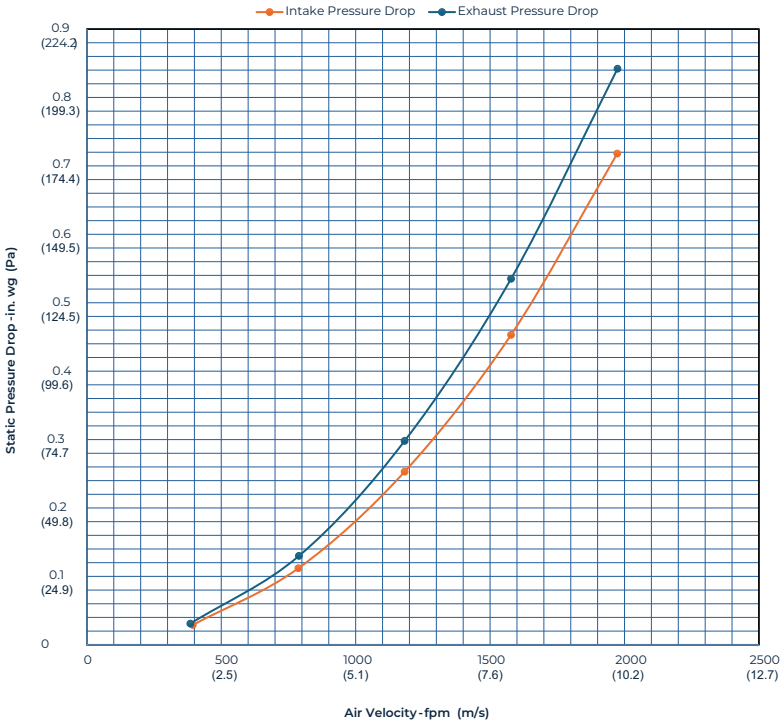
OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

TEN PLUS

Model **H2451**

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL H2451 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.37	0.79	1.21	1.65	2.05
305	0.03	0.07	0.11	0.15	0.19
24	0.79	1.69	2.59	3.52	4.39
610	0.07	0.16	0.24	0.33	0.41
36	1.21	2.59	3.97	5.39	6.72
914	0.11	0.24	0.37	0.50	0.62
48	1.63	3.48	5.34	7.26	9.06
1219	0.15	0.32	0.50	0.67	0.84
60	2.05	4.38	6.72	9.13	11.39
1524	0.19	0.41	0.62	0.85	1.06
72	2.46	5.28	8.10	11.00	13.73
1829	0.23	0.49	0.75	1.02	1.28
84	2.88	6.18	9.47	12.87	16.06
2134	0.27	0.57	0.88	1.20	1.49
96	3.30	7.08	10.85	14.74	18.40
2438	0.31	0.66	1.01	1.37	1.71
108	3.72	7.97	12.23	16.61	20.73
2743	0.35	0.74	1.14	1.54	1.93
120	4.14	8.87	13.60	18.48	23.07
3048	0.38	0.82	1.26	1.72	2.14
132	4.56	9.77	14.98	20.35	25.40
3353	0.42	0.91	1.39	1.89	2.36
144	4.98	10.67	16.36	22.22	27.74
3658	0.46	0.99	1.52	2.07	2.58

Model H2451 Static Pressure Drop



STORM BLADE LOUVER
Model **H4451**

GENERAL DESCRIPTION

Ten Plus Model H4451 – 102 mm [4"] deep, storm blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60"] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion / Continuous line
Louver depth	102 mm (4")
Blade angle	45^0
Free area 1220 x 1220 (48"x48") Unit	8.12 sq. ft. (0.755 m^2) 51%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	658 FPM (3.34 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48"x48") Unit – 15 minute test duration	5343 CFM (2.52 m^3/s)
Pressure drop at beginning point of water penetration	0.077 in H_2 O (19.18 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4" (102 mm) deep, storm blade louvered penthouse Model H4451. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.08" (2.0 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.08" (2.0 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8" (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10' (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4' x 4' (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the "Certified Ratings Program" licensed to bear the AMCA seal:

Free area = 8.12 sq. ft. (0.755 m2)

Free area velocity at point of beginning water penetration = 658 FPM (3.34 m/s)

Intake pressure drop at beginning point of water penetration = 0.077 in H2 O (19.18 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

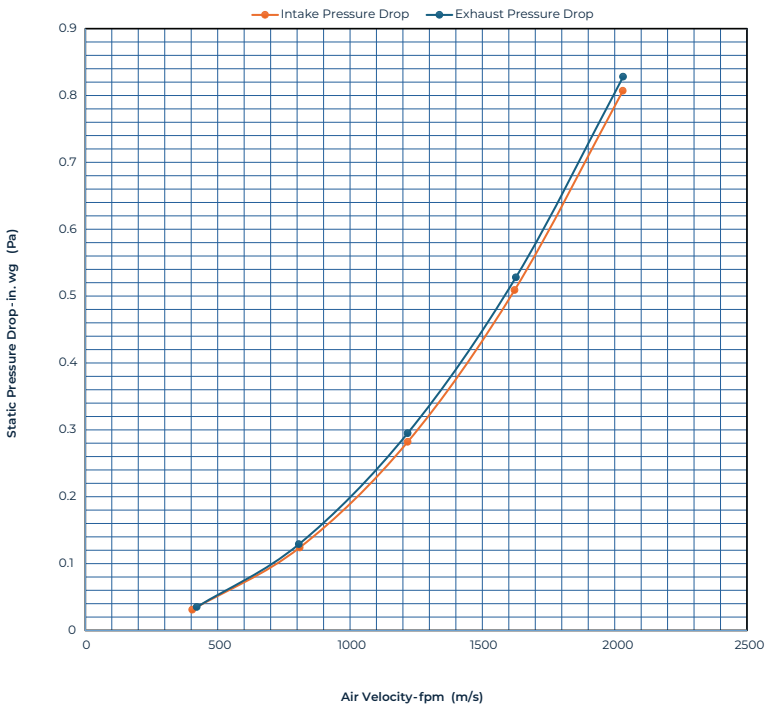
OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL H4451 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.22	0.48	0.74	1.00	1.27
305	0.02	0.04	0.07	0.09	0.12
24	0.79	1.73	2.68	3.62	4.56
610	0.07	0.16	0.25	0.34	0.42
36	1.27	2.80	4.32	5.85	7.38
914	0.12	0.26	0.40	0.54	0.69
48	1.79	3.94	6.09	8.25	10.40
1219	0.17	0.37	0.57	0.77	0.97
60	2.23	4.90	7.57	10.25	12.92
1524	0.21	0.46	0.70	0.95	1.20
72	2.78	6.12	9.46	12.80	16.14
1829	0.26	0.57	0.88	1.19	1.50
84	3.24	7.13	11.02	14.91	18.80
2134	0.30	0.66	1.02	1.39	1.75
96	3.78	8.31	12.84	17.38	21.91
2438	0.35	0.77	1.19	1.62	2.04
108	4.24	9.32	14.41	19.49	24.58
2743	0.39	0.87	1.34	1.81	2.28
120	4.78	10.52	16.26	22.00	27.73
3048	0.44	0.98	1.51	2.04	2.58
132	5.24	11.53	17.82	24.11	30.40
3353	0.49	1.07	1.66	2.24	2.83
144	5.79	12.73	19.67	26.62	33.56
3658	0.54	1.18	1.83	2.47	3.12

Model H4451 Static Pressure Drop



Model **H4451**

STORM BLADE LOUVERED PENTHOUSE
Model **P4451**

GENERAL DESCRIPTION

Ten Plus Model P4451 – 102 mm [4"] deep, storm blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60"] centers or no mullions for continuous line construction. Penthouses are available with any other blade profile in the catalogue.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	127 mm (5")
Blade angle	45^0
Free area 1220 x 1220 (48"x48") Unit	7.9 sq.ft. (0.734 m^2) 49.4%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	1016 FPM (5.16 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48"x48") Unit – 15 minute test duration	8026 CFM (3.79 m^3/s)
Pressure drop at beginning point of water penetration	0.32 in. H_2O (79.6 Pa)
Notes	Tested Without Bird Screens Penthouse is available in all blade profiles in the catalogue.

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4" (102 mm) deep, storm blade louvered penthouse Model P4451. Submit all details to the consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.08" (2.0 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.08" (2.0 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8" (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa) unless specified otherwise. Any Louver opening greater than 10' (3 m) high will require a horizontal girt at mid-span by others.

The louver manufacturer shall submit data, on a 4' x 4' (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511 and comply with the "Certified Ratings Program" licensed to bear the AMCA seal:

Free area = 8.12 sq. ft. (0.755 m2)

Free area velocity at the point of beginning water penetration = 658 FPM (3.34 m/s)

Intake pressure drop at beginning point of water penetration = 0.077 in H2 O (19.18 Pa)

Louvers shall be fabricated with mill finish aluminum, and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **P4451**

STORM BLADE LOUVER
Model **H6451**

GENERAL DESCRIPTION

Ten Plus Model H6451 – 152 mm [6"] deep, storm blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60"] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion / Continuous line
Louver depth	152 mm (6")
Blade angle	45^0
Free area 1220 x 1220 (48"x48") Unit	7.53 sq. ft. (0.7 m^2) 47.1%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	653 FPM (3.32 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48"x48") Unit – 15 minute test duration	4917 cfm (2.32 m^3/s)
Pressure drop at beginning point of water penetration	0.067 in H_2O (16.69 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 6" (152 mm) deep, storm blade louver Model H6451. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.08" (2.0 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.08" (2.0 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8" (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10' (3 m) high, will require a horizontal girt, at mid span by others.

The louver manufacturer shall submit data, on a 4' x 4' (1.2m x1.2m) unit, showing that the louver performs to the following criteria, based on tests and procedures performed in accordance with the AMCA Publication 511, and comply with the "Certified Ratings Program" licensed to bear the AMCA seal:

Free area = 7.53 sq. ft. (0.7 m2)

Free area velocity at point of beginning water penetration = 653 FPM (3.32 m/s)

Intake pressure drop at beginning point of water penetration = 0.067 in H2 O (16.69 Pa)

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

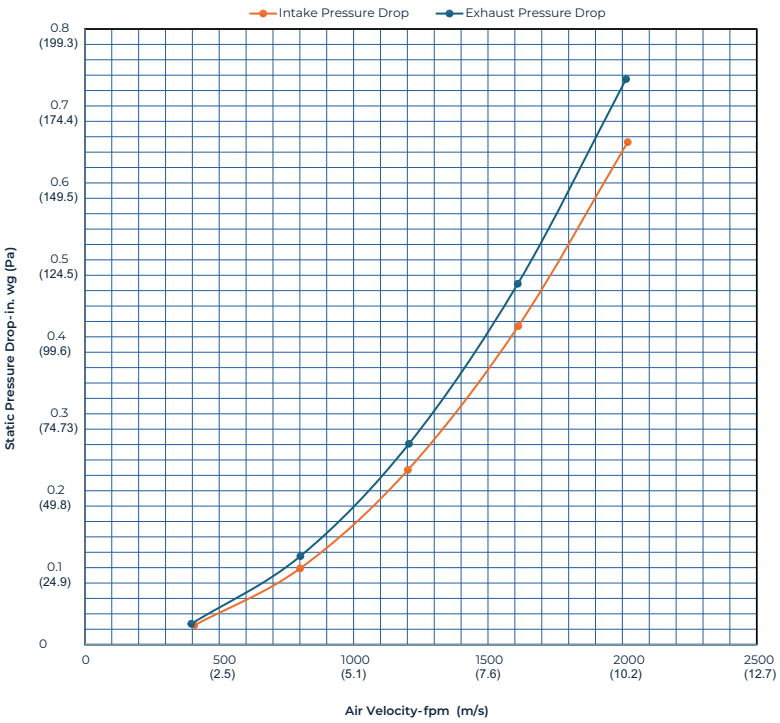
OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL H6451 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.30	0.67	1.04	1.40	1.77
305	0.03	0.06	0.10	0.13	0.16
24	0.78	1.75	2.71	3.67	4.64
610	0.07	0.16	0.25	0.34	0.43
36	1.38	3.07	4.76	6.46	8.15
914	0.13	0.29	0.44	0.60	0.76
48	1.86	4.15	6.44	8.73	11.02
1219	0.17	0.39	0.60	0.81	1.02
60	2.45	5.47	8.49	11.51	14.52
1524	0.23	0.51	0.79	1.07	1.35
72	2.94	6.55	10.17	13.78	17.40
1829	0.27	0.61	0.94	1.28	1.62
84	3.42	7.63	11.84	16.05	20.27
2134	0.32	0.71	1.10	1.49	1.88
96	4.01	8.95	13.89	18.84	23.78
2438	0.37	0.83	1.29	1.75	2.21
108	4.50	10.03	15.57	21.11	26.64
2743	0.42	0.93	1.45	1.96	2.48
120	4.98	11.11	17.25	23.38	29.51
3048	0.46	1.03	1.60	2.17	2.74
132	5.58	12.44	19.30	26.16	33.02
3353	0.52	1.16	1.79	2.43	3.07
144	6.06	13.52	20.98	28.43	35.89
3658	0.56	1.26	1.95	2.64	3.34

Model H6451 Static Pressure Drop



Model **H6451**

ACOUSTICAL BLADE LOUVER
Model **A6457**

TEN PLUS

L-C-A6457-1224

GENERAL DESCRIPTION

Ten Plus Model A6457 – 152 mm [6”] deep, acoustical blade louver. Head blades and sill cavities are filled with acoustical insulation. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60’]centers.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	152 mm (6”)
Blade angle	45^0
Free area 1220 x 1220 (48”x48”) Unit	4.31sq. ft. (0.401 m^2) 27%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	766 FPM (3.89 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	3302 CFM (1.56 m^3/s)
Pressure drop at beginning point of water penetration	0.063 in. H_2O (15.7 Pa)
Notes	Tested without bird screens

ABBREVIATED SPECIFICATION

Where indicated on the drawings, supply and install Model A6457, 6” (152 mm) deep, acoustical louver. Submit all details to consultant for approval prior to fabrication. Blades, head, sill, jambs and mullions shall have a nominal thickness of 0.080” (1.57 mm) formed aluminum sheet. All blades, head and sill cavities shall be packed with acoustical insulation.

Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa) unless specified otherwise. Any Louver opening greater than 10’ (3 m) high will require a horizontal girt at mid-span by others.

Louvers shall be fabricated with mill finish aluminum, and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin. OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure the aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation.

AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL A6457 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.13	0.29	0.45	0.62	0.78
305	0.01	0.03	0.04	0.06	0.07
24	0.40	0.88	1.36	1.85	2.33
610	0.04	0.08	0.13	0.17	0.22
36	0.67	1.47	2.27	3.08	3.88
914	0.06	0.14	0.21	0.29	0.36
48	0.94	2.06	3.18	4.31	5.43
1219	0.09	0.19	0.30	0.40	0.50
60	1.20	2.65	4.09	5.54	6.99
1524	0.11	0.25	0.38	0.51	0.65
72	1.47	3.24	5.00	6.77	8.54
1829	0.14	0.30	0.47	0.63	0.79
84	1.74	3.83	5.91	8.00	10.09
2134	0.16	0.36	0.55	0.74	0.94
96	2.01	4.42	6.82	9.23	11.64
2438	0.19	0.41	0.63	0.86	1.08
108	2.27	5.00	7.73	10.46	13.19
2743	0.21	0.47	0.72	0.97	1.23
120	2.54	5.59	8.64	11.70	14.75
3048	0.24	0.52	0.80	1.09	1.37
132	2.81	6.18	9.55	12.93	16.30
3353	0.26	0.57	0.89	1.20	1.51
144	3.08	6.77	10.46	14.16	17.85
3658	0.29	0.63	0.97	1.32	1.66

Model **A6457**

MODEL A6457 TRANSMISSION LOSS (dB)

Tested in accordance with ASTM E90

OCTAVE BAND	1	2	3	4	5	6	7	8
FREQUENCY	63	125	250	500	1000	2000	4000	8000
TRANSMISSION LOSS (Db)	N/A	10	10	13	18	20	18	N/A

MODEL A6457 FIELD NOSIE REDUCTION (dB)

Tested in accordance with ASTM E90

OCTAVE BAND	1	2	3	4	5	6	7	8
FREQUENCY	63	125	250	500	1000	2000	4000	8000
TRANSMISSION LOSS (Db)	N/A	10	10	13	18	20	18	N/A

ACOUSTICAL BLADE LOUVER
Model **A8457**

GENERAL DESCRIPTION

Ten Plus Model A8457 – 203 mm [8”] deep, acoustical blade louver. Head blades and sill cavities are filled with acoustical insulation. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD

Louver type	Mullion	
Louver depth	203 mm (8”)	
Blade angle	45^0	
Free area 1220 x 1220 (48”x48”) Unit	4.61 sq. ft. (0.43 m^2)	29%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	Not tested	
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	Not tested	
Pressure drop at beginning point of water penetration	Not tested	
Notes		

ABBREVIATED SPECIFICATION

Where indicated on the drawings, supply and install Model A8457, 8” (203 mm) deep, acoustical louver. Submit all details to consultant for approval prior to fabrication. Blades, head, sill, jambs and mullions shall have a nominal thickness of 0.080” (1.57 mm) formed aluminum sheet. All blades, head and sill cavities shall be packed with acoustical insulation.

Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa) unless specified otherwise. Any Louver opening greater than 10’ (3 m) high will require a horizontal girt at mid-span by others.

Louvers shall be fabricated with mill finish aluminum, and the finish shall be applied after assembly.

Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin. OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation.

AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL A8457 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.00	0.00	0.00	0.00	0.00
305	0.00	0.00	0.00	0.00	0.00
24	0.37	0.82	1.27	1.71	2.16
610	0.03	0.08	0.12	0.16	0.20
36	0.75	1.65	2.55	3.45	4.35
914	0.07	0.15	0.24	0.32	0.40
48	1.00	2.21	3.41	4.61	5.82
1219	0.09	0.21	0.32	0.43	0.54
60	1.35	2.98	4.60	6.22	7.84
1524	0.13	0.28	0.43	0.58	0.73
72	1.60	3.52	5.45	7.37	9.29
1829	0.15	0.33	0.51	0.68	0.86
84	1.95	4.30	6.64	8.99	11.33
2134	0.18	0.40	0.62	0.84	1.05
96	2.20	4.85	7.49	10.14	12.78
2438	0.20	0.45	0.70	0.94	1.19
108	2.56	5.62	8.69	11.75	14.82
2743	0.24	0.52	0.81	1.09	1.38
120	2.81	6.17	9.54	12.91	16.27
3048	0.26	0.57	0.89	1.20	1.51
132	3.16	6.94	10.73	14.52	18.31
3353	0.29	0.65	1.00	1.35	1.70
144	3.41	7.50	11.59	15.67	19.76
3658	0.32	0.70	1.08	1.46	1.84

Model **A8457**

ACOUSTICAL BLADE LOUVER
Model **A12457**

GENERAL DESCRIPTION

Ten Plus Model A12457 – 305 mm [12”] deep, acoustical blade louver. Head blades and sill cavities are filled with acoustical insulation. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly includes vertical mullions at 1500 [60”] centers.

PERFORMANCE RATING STANDARD: AMCA STANDARD 500L

Louver type	Mullion
Louver depth	305 mm (12”)
Blade angle	45^0
Free area 1220 x 1220 (48”x48”) Unit	3.46 sq.ft. (0.322 m^2) 21.6%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	949 FPM (4.82 m/s)
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	3285 CFM (1.55 m^3/s)
Pressure drop at beginning point of water penetration	0.078 in. H_2O (19.4 Pa)
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install Model A12457, 12” (305 mm) deep, acoustical louver as manufactured by Ten Plus Architectural Products Ltd. Submit all details to consultant for approval prior to fabrication. Blades, head, sill, jambs and mullions shall have a nominal thickness of 0.080” (1.57 mm) formed aluminum sheet. All blades, head and sill cavities shall be packed with acoustical insulation.

Louvers shall be supplied with a 1/2” (12 mm),19 gauge (1 mm) welded and regalvanized wire mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa) unless specified otherwise. Any Louver opening greater than 10’ (3 m) high will require a horizontal girt at mid-span by others.

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10’ (3 m) high will require a horizontal girt, at mid-span by others.

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly.

Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Class I, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class II, minimum 0.01 mm (0.4 mils) thick for interior applications.

LOUVER HEIGHT	LOUVER WIDTH				
INCHES	12	24	36	48	60
MM	305	610	914	1219	1524
MODEL A12457 FREE AREA - SQUARE FEET / SQUARE METERS					
12	0.00	0.00	0.00	0.00	0.00
305	0.00	0.00	0.00	0.00	0.00
24	0.26	0.56	0.86	1.15	1.45
610	0.02	0.05	0.08	0.11	0.13
36	0.52	1.12	1.71	2.31	2.90
914	0.05	0.10	0.16	0.21	0.27
48	0.78	1.67	2.57	3.46	4.35
1219	0.07	0.16	0.24	0.32	0.40
60	1.04	2.23	3.42	4.62	5.81
1524	0.10	0.21	0.32	0.43	0.54
72	1.30	2.79	4.28	5.77	7.26
1829	0.12	0.26	0.40	0.54	0.67
84	1.56	3.35	5.14	6.92	8.71
2134	0.15	0.31	0.48	0.64	0.81
96	1.82	3.91	5.99	8.08	10.16
2438	0.17	0.36	0.56	0.75	0.94
108	2.08	4.47	6.85	9.23	11.61
2743	0.19	0.42	0.64	0.86	1.08
120	2.34	5.02	7.70	10.38	13.06
3048	0.22	0.47	0.72	0.97	1.21
132	2.61	5.58	8.56	11.54	14.52
3353	0.24	0.52	0.80	1.07	1.35
144	2.87	6.14	9.42	12.69	15.97
3658	0.27	0.57	0.88	1.18	1.48

Model **A12457**

MODEL A12457 TRANSMISSION LOSS (dB)LOSS

Tested in accordance with ASTM E90

OCTAVE BAND	1	2	3	4	5	6	7	8
FREQUENCY	63	125	250	500	1000	2000	4000	8000
TRANSMISSION LOSS (Db)	N/A	7	8	11	15	15	12	N/A

MODEL A12457 FIELD NOSIE REDUCTION (dB)

Tested in accordance with ASTM E90

OCTAVE BAND	1	2	3	4	5	6	7	8
FREQUENCY	63	125	250	500	1000	2000	4000	8000
TRANSMISSION LOSS (Db)	N/A	13	14	17	21	27	18	N/A

STANDARD BLADE THINLINE LOUVER
Model **S1452**

GENERAL DESCRIPTION

Ten Plus Model S1452 – 28 mm [1 1/8”] deep standard blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to fit directly into glazing mullions or to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous Line
Louver depth	28 mm (1 1/8”)
Blade angle	45°
Free area 1220 x 1220 (48”x48”) Unit	8.59 sq. ft. (0.798 m^2) 53.7%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	Not tested
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	Not tested
Pressure drop at beginning point of water penetration	Not tested
Notes	Tested Without Bird Screens

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 1 1/8” (28 mm) deep, storm blade louver Model S1452. Submit all details to the consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.062” (1.57 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.08” (2.0 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8” (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc-plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid-span by others.

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **S1452**

STANDARD BLADE THINLINE LOUVER
Model **T1300**

TEN PLUS

GENERAL DESCRIPTION

Ten Plus Model T1300 – 32 mm [1 1/4"] deep standard blade louver. All framing members consist of formed aluminum profiles. Perimeter framing is designed to fit directly into glazing mullions or to accommodate rope and caulk sealant applications. Assembly may include vertical or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion
Louver depth	32 mm (1 1/4")
Blade angle	45^{0}
Free area 1220 x 1220 (48"x48") Unit	12.14 sq. ft. (1.13 m^{2}) 76%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	Not tested
Air volume at beginning of water penetration 1220 x 1220 (48"x48") Unit – 15 minute test duration	Not tested
Pressure drop at beginning point of water penetration	Not tested
Notes	Tested Without Bird Screens

The T1300, by TEN Plus Architectural, is a high-free area with an extruded aluminum thinline louver. This model is ideal for small openings, PTAC applications, and decorative and interior applications.

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 1 1/4" (32 mm) deep, storm blade louver Model T1300. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and mullions shall have a nominal thickness of 0.062" (1.57 mm) 6063-T5 aluminum alloy.

Blades shall be continuous, 0.08" (2.0 mm) thick 6063-T5 aluminum alloy. Louvers shall be supplied with a 5/8" (16 mm), flat expanded aluminum mesh in a mill finish, aluminum frame. Fasteners shall be standard zinc plated steel or stainless steel.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa) unless specified otherwise. Any Louver opening greater than 10' (3 m) high will require a horizontal girt at mid-span by others.

Louvers shall be fabricated with mill finish aluminum, and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

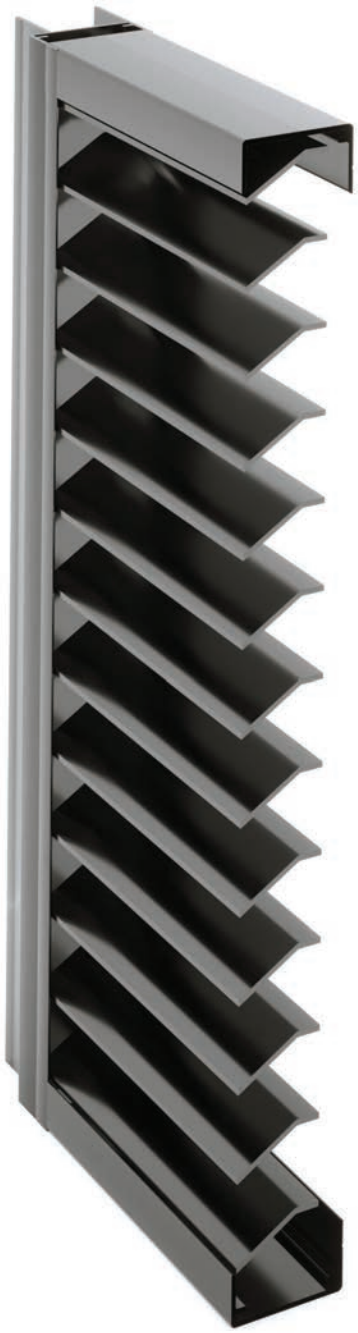
OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **T1300**



BRICK VENT
Model B4450

GENERAL DESCRIPTION

Ten Plus Model B4450 – 102 mm [4”] deep, standard blade vent. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications.

PERFORMANCE RATING STANDARD

Louver type	Mullion or continuous line with concealed supports
Louver depth	102 mm (4”)
Blade angle	45°
Free area 1220 x 1220 (48”x48”) Unit	8.64 Sq. ft. (0.8 m^2) 54%
Free area velocity at beginning point of water penetration (0.01 oz / ft2)	Not tested
Air volume at beginning of water penetration 1220 x 1220 (48”x48”) Unit – 15 minute test duration	Not tested
Pressure drop at beginning point of water penetration	Not tested
Notes	Tested Without Bird Screens

The B4450, by TEN Plus Architectural, is a heavy duty extruded aluminum block vent. The aluminum construction makes it resistant to the corrosive environment of foundation walls and chimneys. The blocked vent comes with an insect screen and features both an extended head and sill to provide a drip edge for water to travel around the opening. The sill has an integral water stop at the back to prevent any water flowing into the building.

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4” (102 mm) deep Model B4450 heavy duty, extruded aluminum block vents with extended head and sill and integral water stop. Blades, head, sill and jambs shall have a minimum thickness of 2.0 mm (0.080”) 3003 and 3005 Aluminum alloy. Block vents shall be supplied with standard 1 6 x 1 8 aluminum mesh insect screen.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Block vents shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **B4450**

STANDARD BLADE LOUVERED SCREEN
Model **S4522**

GENERAL DESCRIPTION

Ten Plus Model S4522 – 102 mm [4”] deep, standard blade louvered screen. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion / Continuous line	
Louver depth	102 mm (4”)	
Blade angle	45^0	
Free area 1220 x 1220 (48”x48”) Unit	5.8 sq. ft. (0.54 m^2)	36%

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4” (102 mm) deep, standard blade vision screen Model S4451. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and blades shall have a nominal thickness of 0.08” (2.0 mm) 6063-T5 aluminum alloy.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the Louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any Louver opening greater than 10’ (3 m) high, will require a horizontal girt, at mid span by others.

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association

Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **S4522**

SIGHT PROOF BLADE LOUVERED SCREEN
Model **S4454**

GENERAL DESCRIPTION

Ten Plus Model S4455 – 102 mm [4”] deep, sight proof blade, louvered screen. All framing members consist of formed aluminum profiles. Perimeter framing is designed to accommodate rope and caulk sealant applications. Assembly may include vertical mullions at 1500 [60”] centers, or no mullions for continuous line construction.

PERFORMANCE RATING STANDARD

Louver type	Mullion	
Louver depth	102 mm (4”)	
Blade angle	45^0	
Free area 1220 x 1220 (48”x48”) Unit	3.8 sq. ft (0.36 m^2)	24%

ABBREVIATED SPECIFICATION

Where indicated on drawings, supply and install 4” (102 mm) deep sight proof, louvered vision screen Model S4454. Submit all details to consultant for approval prior to fabrication. Head, sill, jambs and blades shall have a minimum thickness of 0.080” (2. mm) 6063-T5 aluminum alloy.

Materials Manufacturer:

Ten Plus Architectural Products Ltd.,
5 - 2333 Millrace Court, Mississauga,
Ontario, Canada,
L5N 1W2;

Phone: 905-363-2306, Toll free: 1(888) 850-3878;
Email: info@tenplus-online.com;
URL: www.tenplus-online.com

Structural supports shall be designed and furnished by the louver manufacturer to support a wind load of 20 psf (958 Pa), unless specified otherwise. Any louver opening greater that 10’ (3 m) high, will require a horizontal girt, at mid span by others.

Louvers shall be fabricated with mill finish aluminum and the finish shall be applied after assembly. Select the desired finish from the following:

For superior performance, a 3 coat PVDF system includes a thermal setting application of 70% fluoropolymer resin.

OR High-performance 2 coat, PVDF system including a thermal setting application of 70% fluoropolymer resin.

OR Powder coat finish system to meet AAMA 2605 requirements.

OR (Color Anodize) Ensure the aluminum finish is color anodized in accordance with Aluminum Association Finish Designation AA-M12C22A44, Class I, minimum 0.018 mm (0.7 mils) thick finish. Color to be selected by the consultant.

OR (Clear Anodize) Ensure aluminum finish is clear anodized in accordance with Aluminum Association Finish Designation AA-M12C22A41, Classi, minimum 0.018 mm (0.7 mils) thick for exterior applications and AA-12C22A31, Class I, minimum 0.01 mm (0.4 mils) thick for interior applications.

Model **S4454**

TEN PLUS

TEN Plus owes its success to the simple business philosophy of providing quality products, great service, and an unwavering commitment to customer satisfaction.

We accomplish our goals by investing in people and technology. We strive to improve productivity and optimize the use of our resources through investment in state-of-the-art equipment, training and the use of innovative design principles. Rigorous quality control and workplace safety practices ensure the well-being of our employees and business partners.

Our technical representatives possess comprehensive louver knowledge and extensive field experience. Each one is capable of assisting you through the design and engineering stage, as well as overcoming the unforeseen field conditions.

We trust that this catalogue will prove to be a useful aid and resource to selecting your louvers. However, should you have any questions or unique conditions requiring greater detail, please feel free to call us for assistance. Our staff is attentive to your needs and eager to serve you. We look forward to your call.

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