

**MODEL 1605WD
EXTRUDED ALUMINUM LOUVER
WIND-DRIVEN RAIN RESISTANT**

Nailor Model 1605WD Wind-Driven Rain Horizontal Drainable Blade Louver provides superior weather protection in severe weather design conditions. The drainable "Inverted Y" blade design, combined with a drainable head, diverts collected water down concealed side downspouts and out through the sill, effectively preventing water infiltration. Blades are reinforced with full length integral bosses for superior strength. Suitable for use in exhaust and medium to high velocity intake applications in extreme weather. Available in channel, flanged, or glazing adapter type, the 5" (127) deep frame installs easily in most common wall configurations. Nailor Model 1605WD is AMCA Licensed for Wind-Driven Rain, Water Penetration and Air Performance.



Model 1605WD



Model 1604Y

**MODEL 1604Y
EXTRUDED ALUMINUM LOUVER
SIGHTPROOF, Y BLADE**

Nailor Model 1604Y utilizes "Inverted Y" style blades to achieve an architecturally styled sightproof louver that provides protection against general weather conditions. The sightproof blade design features a center water baffle that performs under the most enduring conditions. Reinforcing bosses run the full length of each blade for superior strength. Available in channel, flanged, or glazing adapter type, the 4" (102) deep frame installs easily in most common wall configurations. Suitable for use in exhaust and low to medium velocity intake applications, providing additional protection against vandalism in ground level applications.

**MODELS 1604AD, 1606AD & 1606CDAF
EXTRUDED ALUMINUM LOUVERS
ADJUSTABLE BLADE & COMBINATION LOUVERS**

Nailor Models 1604AD and 1606AD Adjustable Drainable Blade Louvers combine superior weather protection and pleasing aesthetics with airflow control. Nailor Model 1606CDAF is a combination louver and damper that incorporates front stationary drainable blades and rear adjustable airfoil blades, all within a single frame. Low torque, concealed linkage blade control can be operated manually or with an actuator to provide tight shut-off when desired. Suitable for use in exhaust and low to medium velocity intake applications. Available in channel or flanged type, the 4" (102) or 6" (152) deep frame installs easily in most common wall configurations. Nailor Models 1604AD, 1606AD and 1606CDAF are AMCA Licensed for Water Penetration and Air Performance.



Models 1604AD, 1606AD (w/ Concealed Actuator) and 1606CDAF

APPLICATIONS AND SIZING GUIDE

Selection of a louver for a specific application is determined by many variables including: aesthetic requirements, wall type/depth, pressure loss criteria and water penetration criteria. After determining the relative importance of each variable, a louver style and model can be selected by comparing individual design details and performance data, all included within this catalog. Use the following Applications Guide to assist in determining the appropriate louver type for your application:

Louver Application	Louver Type	Model
EXTRUDED ALUMINUM - 1600 Series Louvers by Application		
Decorative, A/C units, Curtain wall, Ventilation, Exhaust, Low to medium velocity intake	Thinline Frame Louver	1602J, 1602K
Decorative, Specialty Shapes, Ventilation, Exhaust, Low to medium velocity intake	Architectural Blade Louver	1604J, 1606J
Light to moderate rain, Ventilation, Exhaust, Low to medium velocity intake	Drainable Head, Architectural J Blade Louver	1604JD, 1606JD
Light to moderate rain w/ light wind, Exhaust, Low to medium velocity intake	Drainable Head, K Blade Louver	1604KD, 1606KD
Light to moderate rain, Exhaust, Low to medium velocity intake, Low pressure loss	Drainable Blade Louver	1602D, 1604D, 1606D
Moderate to heavy rain, Exhaust, Medium to high velocity intake, Low pressure loss	Dual Drainable Blade Louver	1604DD, 1606DD
Moderate to high winds w/ moderate to heavy rain, Exhaust, Higher velocity intake	Wind Driven Rain Louver	1605WD
Air Control & Shut-off, Light to moderate rain, Exhaust, Low to medium velocity intake	Combination & Adjustable, Drainable Blade Louver	1606CDAF, 1604AD, 1606AD
Sound control, Ventilation, Exhaust, Low to medium velocity intake	Acoustical Louver	1612QS
Visual screen, Vandalism concerns, Ventilation, Exhaust, Low to medium velocity intake	Sightproof Louver	1604Y
Foundation, Crawl space & utility area ventilation, Exhaust, Low to medium velocity intake	Brick Vent	16BVC, 16BVE, 16BVF
FORMED STEEL - 1700 Series Louvers by Application		
Decorative, General weather conditions, Ventilation, Exhaust, Low to medium velocity intake	Architectural Blade Louver	1704J, 1706J
Decorative, Light to moderate rain, Exhaust, Low to medium velocity intake	Drainable Head, Architectural Blade Louver	1704JD, 1706JD
Light to moderate rain, Exhaust, Low to medium velocity intake	Drainable Blade Louver	1704D, 1706D
Light to moderate rain, Exhaust, High velocity intake	Drainable Blade High Performance Louver	1704DHP, 1706DHP
Air Control, Ventilation, Exhaust, Intake	Adjustable, Drainable Blade Louver	1704AD, 1706AD

HOW TO SIZE LOUVERS

The prime factor involved in sizing a louver is the velocity of the air through its free area. The free area is the actual unobstructed area of a louver through which air can travel. Other factors such as pressure drop and amount of water penetration are dependent upon the free area velocity and can be determined by using the respective performance charts provided for each specific louver model.

1. Select Model:

Choose the louver model that is the best suited for the specific application. Use the Applications Guide and 'Quick-Select' Model Guide to assist in making a selection, if so desired.

2. Select Free area Velocity:

Select optimum free area velocity for the specific application, checking Pressure Drop and Water Penetration charts for acceptable performance. For 'exhaust only' applications, water penetration data generally does not need to be considered. For extra weather protection, select a free air velocity that is below the beginning point of water penetration.

As a rule of thumb, ASHRAE suggests 400 fpm (122 m/min.) for intake applications and 500 fpm (152 m/min.) for exhaust applications.

3. Determine Required Louver Free Area:

Divide given AIRFLOW (cfm) by the selected FREE AREA VELOCITY (fpm) to determine the required louver free area. Using the Free Area Chart for the specific louver model chosen, select a louver size that provides the required Free Area. If, in the application, the louver size is given, the maximum practical airflow can be determined by working backwards from the free area chart.

SIZING EXAMPLES:

Example A:
AIRFLOW GIVEN: DETERMINE LOUVER SIZE

- Determine required louver free area by dividing AIRFLOW by acceptable FREE AREA VELOCITY. (Use performance charts to assist in selecting Free Area Velocity):
 $\text{_____ cfm} \div \text{_____ fpm} = \text{_____ sq. ft. Free Area.}$
- Using the Free Area Chart for chosen model; select a louver size with at least the required free area:
 $\text{_____ wide} \times \text{_____ high} = \text{_____ sq. ft. Free Area.}$

Example B:
LOUVER SIZE GIVEN: DETERMINE MAXIMUM AIRFLOW

- Given louver size: _____ W x _____ H. Use the Free Area Chart for chosen model to determine the area.
- Multiply FREE AREA x acceptable FREE AREA VELOCITY to determine maximum airflow:
 $\text{_____ sq. ft.} \times \text{_____ fpm} = \text{_____ cfm maximum airflow.}$
- Using the Pressure Drop Chart for chosen model; check the pressure drop at the determined airflow rate and resulting free area velocity.

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

'QUICK-SELECT' MODEL GUIDE

Model	Depth	Blade Style/Angle	Free Area Sq. Ft. (Sq. Meters)	Free Area %	Beginning Point of Water Penetration
Extruded Aluminum • Stationary • Non-Drainable • Thinline Frame					
1602J	2" (51)	J/30°	7.14 (0.66)	45%	549 fpm (167 m/min.)
1602K	2" (51)	K/30°	7.55 (0.70)	47%	401 fpm (122 m/min.)
Extruded Aluminum • Stationary • Architectural Blade					
1604J	4" (102)	J/37°	8.62 (0.80)	54%	722 fpm (220 m/min.)
1606J	6" (152)	J/37°	8.13 (0.76)	51%	1029 fpm (314 m/min.)
Extruded Aluminum • Stationary • Drainable Head					
1604JD	4" (102)	J/37°	8.57 (0.80)	54%	961 fpm (293 m/min.)
1606JD	6" (152)	J/37°	7.45 (0.69)	47%	1250 fpm (381 m/min.)
1604KD	4" (102)	K/37°	7.51 (0.70)	47%	892 fpm (272 m/min.)
1606KD	6" (152)	K/37°	7.93 (0.74)	50%	1017 fpm (310 m/min.)
Extruded Aluminum • Stationary • Drainable Head & Drainable Blade					
1602D	2" (51)	Drainable/45°	6.91 (0.64)	43%	1123 fpm (342 m/min.)
1604D	4" (102)	Drainable/37°	8.26 (0.77)	52%	906 fpm (272 m/min.)
1606D	6" (152)	Drainable/37°/45°	7.99 (0.74)	50%	1195 fpm (364 m/min.)
1604DD	4" (102)	Dual Drainable/37°	8.14 (0.76)	51%	1000 fpm (305 m/min.)
1606DD	6" (152)	Dual Drainable/37°	7.92 (0.74)	50%	1193 fpm (364 m/min.)
Extruded Aluminum • Stationary • Wind-Driven Rain Resistant					
1605WD	5" (127)	Drainable/30°	8.64 (0.80)	54%	1025 fpm (313 m/min.)
Extruded Aluminum • Adjustable • Drainable Blade					
1604AD	4" (102)	Adjustable, Drainable/37 1/2°	7.10 (0.66)	44%	953 fpm (290 m/min.)
1606AD	6" (152)	Adjustable, Drainable/37 1/2°	8.15 (0.76)	51%	970 fpm (296 m/min.)
Extruded Aluminum • Combination Louver/Damper • Drainable Blade					
1606CDAF	6" (152)	Airfoil, Drainable/45°	6.89 (0.64)	43%	1142 fpm (348 m/min.)
Extruded Aluminum • Stationary • Sightproof					
1604Y	4" (102)	Inverted Y/45°	4.67 (0.43)	29%	—
Formed Aluminum (or Steel) • Acoustical					
1612QS	12" (305)	Insulated, J Sightproof/45°	4.72 (0.44)	30%	826 fpm (252 m/min.)
Formed Steel • Stationary • Architectural Blade					
1704J	4" (102)	J/45°	8.53 (0.79)	53%	869 fpm (265 m/min.)
1706J	6" (152)	J/45°	8.53 (0.79)	53%	938 fpm (286 m/min.)
Formed Steel • Stationary • Drainable Head					
1704JD	4" (102)	J/45°	8.38 (0.78)	52%	1123 fpm (342 m/min.)
1706JD	6" (152)	J/45°	7.85 (0.73)	49%	1250 fpm (381 m/min.)
Formed Steel • Stationary • Drainable Blade					
1704D	4" (102)	Drainable/45°	8.44 (0.78)	53%	976 fpm (298 m/min.)
1706D	6" (152)	Drainable/45°	8.02 (0.75)	50%	1250 fpm (381 m/min.)
1704DHP	4" (102)	Drainable/37 1/2°	8.55 (0.79)	53%	896 fpm (273 m/min.)
1706DHP	6" (152)	Drainable/37 1/2°	9.05 (0.84)	56%	988 fpm (301 m/min.)
Formed Steel • Adjustable • Drainable Blade					
1704AD	4" (102)	Adjustable, Drainable/37 1/2°	8.03 (0.75)	50%	991 fpm (302 m/min.)
1706AD	6" (152)	Adjustable, Drainable/37 1/2°	8.80 (0.82)	55%	977 fpm (298 m/min.)

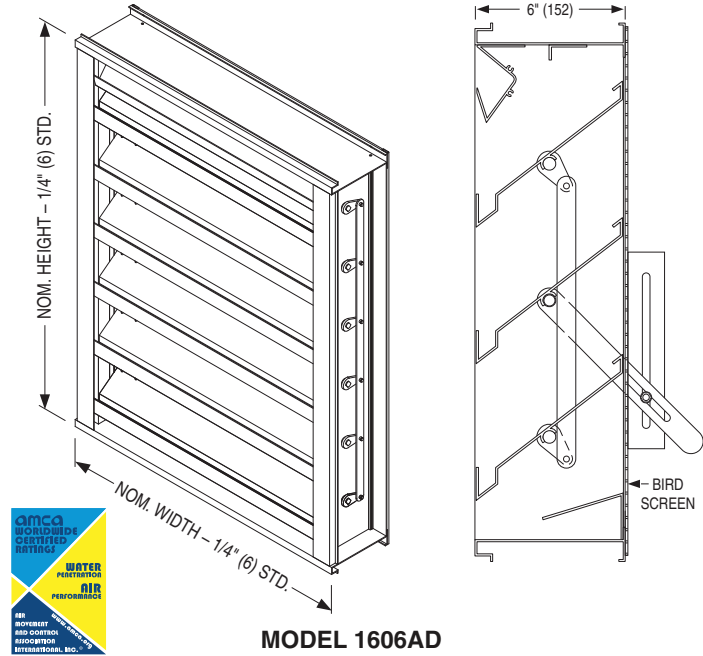
- Dimensions are in inches (mm).
- Free Area shown are for 48" x 48" (1219 x 1219).
- Beginning point of Water Penetration: 0.01 oz./sq. ft. (3 ml/sq. m), 15 minute test duration.

Model 1606AD

Model 1606AD Adjustable Drainable Blade Type Louver combines effective weather protection and pleasing aesthetics with airflow control, featuring operable drainable blades that provide positive airflow shutoff when closed and protection against water penetration when open. The drainable design utilizes rain gutters in the head member and each blade that divert collected water through concealed side downspouts and out the sill, effectively preventing water from infiltrating the space when the blades are in the open position. Low torque, concealed linkage blade control can be operated manually or with a variety of factory mounted electric or pneumatic actuators to provide tight shut-off when desired. Suitable for use in exhaust and low to medium velocity intake applications where water penetration is a concern and airflow control is desired. Available in channel or flanged type, the 6" (152) deep frame installs easily in most common wall configurations. Model 1606AD is AMCA Licensed for Water Penetration and Air Performance.

STANDARD CONSTRUCTION:

- Frame:** 6" (152) deep, Type 6063-T5 extruded aluminum, .080" (2.03) nominal wall thickness. Integral downspouts and caulking slot provided.
- Blades:** Type 6063-T5 extruded aluminum, .080" (2.03) nominal wall thickness, with reinforcing bosses.
- Blade Spacing:** Approximately 6" (152) on centers, at 37 1/2° angle (fully open).
- Jamb Seals:** Compression type cambered metal.
- Axles:** 1/2" (13) dia. plated steel.
- Bearings:** 1/2" (13) dia. stainless steel sleeve type.
- Linkage:** Plated steel. Concealed in frame.
- Screen:** 3/4" x .051 (19 x 1.3) expanded, flattened alum. bird screen in removable frame, inside (rear) mount (adds approx. 3/8" [10] to louver depth).
- Actuator:** Hand locking louver quadrant.
- Finish:** Mill.
- Minimum Size:** 12" W x 12" H (305 x 305).
- Maximum Single Section Size:** 48" W x 96" H (1219 x 2438) (With Blade and/or Jamb Seals). 60" W x 96" H (1524 x 2438) (Without Seals). Larger sizes will be manufactured in sections with visible mullion side frame (downspouts are concealed) for field assembly.

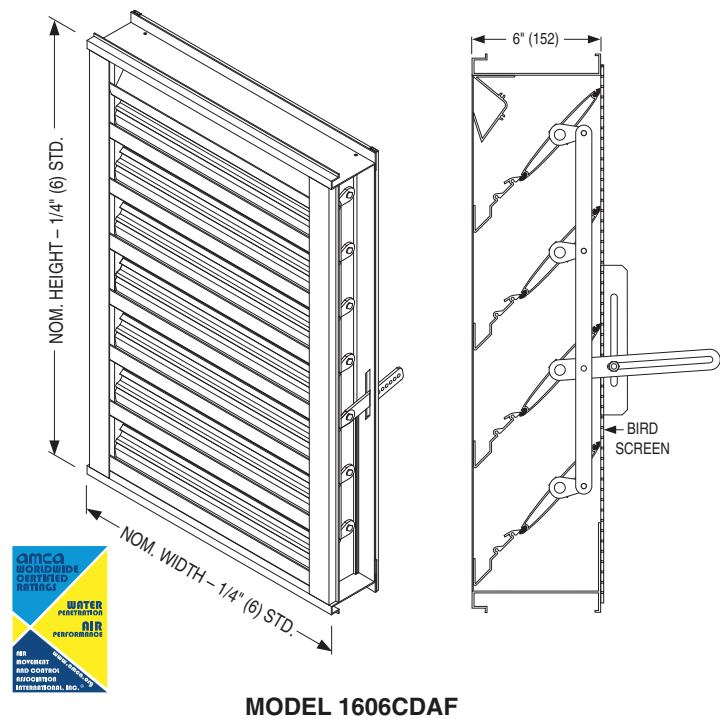


Model 1606CDAF

Model 1606CDAF is a combination louver and damper that incorporates a drainable head, front stationary drainable blades and integral rear adjustable high performance airfoil blades, all within a single frame, to provide excellent protection against water penetration when open and positive airflow shutoff when closed. The drainable blade design utilizes rain gutters that divert collected water through concealed side downspouts and out the sill, effectively preventing water from infiltrating the space when the blades are in the open position. Low torque, concealed linkage blade control can be operated manually or with a variety of factory mounted electric or pneumatic actuators to provide tight shut-off when desired. Suitable for use in exhaust and low to medium velocity intake applications. Available in channel or flanged type, the 6" (152) deep frame installs easily in most common wall configurations. Model 1606AD is AMCA Licensed for Water Penetration and Air Performance.

STANDARD CONSTRUCTION:

- Frame:** 6" (152) deep type 6063-T5 extruded aluminum, .125" (3.18) nominal wall thickness. Integral downspouts and caulking slot provided.
- Blades:** Front stationary blades: drainable style, type 6063-T5 extruded aluminum, .080" (2.03) nominal wall thickness. Rear operable blades: Airfoil style, type 6063-T5 extruded aluminum.
- Blade Angle:** Front blades fixed at 45 degrees.
- Blade Spacing:** Approximately 5 1/2" (140) on centers.
- Blade Seals:** Silicone. Mechanically locked in place.
- Jamb Seals:** Cambered stainless steel.
- Axles:** 1/2" (13) dia. plated steel double bolted to blades.
- Bearings:** 1/2" (13) dia. Oilite® self-lubricating bronze.
- Linkage:** Concealed in frame.
- Screen:** 3/4" x .051 (19 x 1.3) expanded, flattened alum. bird screen in removable frame, inside (rear) mount (adds approx. 3/8" [10] to louver depth).
- Actuator:** Hand locking louver quadrant.
- Finish:** Mill.
- Minimum Size:** 12" W x 12" H (305 x 305).
- Maximum Single Section Size:** 60" W x 96" H (1524 x 2438). Larger sizes will be manufactured in sections with visible mullion side frame (downspouts are concealed) for field assembly.



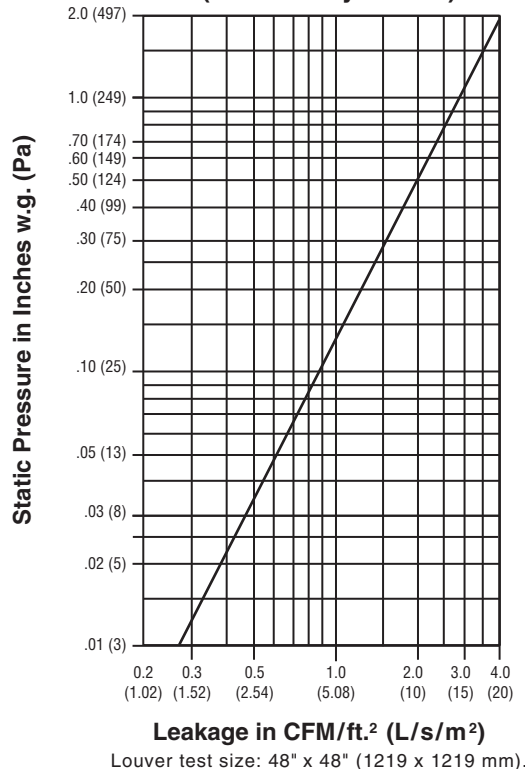
PERFORMANCE DATA:

MODEL: 1606CDAF

FREE AREA in Square Feet and Square Meters

		Width in Inches and Meters									
		12	18	24	30	36	42	48	54	60	
Height in Inches and Meters	12	0.27	0.44	0.61	0.78	0.95	1.12	1.28	1.45	1.62	
	0.30	0.03	0.04	0.06	0.07	0.09	0.10	0.12	0.14	0.15	
	18	0.48	0.78	1.09	1.39	1.69	1.99	2.29	2.59	2.90	
	0.46	0.04	0.07	0.10	0.13	0.16	0.18	0.21	0.24	0.27	
	24	0.69	1.13	1.56	2.00	2.43	2.87	3.30	3.73	4.17	
	0.61	0.06	0.10	0.15	0.19	0.23	0.27	0.31	0.35	0.39	
	30	0.95	1.54	2.13	2.72	3.31	3.91	4.50	5.09	5.68	
	0.76	0.09	0.14	0.20	0.25	0.31	0.36	0.42	0.47	0.53	
	36	1.19	1.93	2.68	3.42	4.17	4.91	5.66	6.40	7.15	
	0.91	0.11	0.18	0.25	0.32	0.39	0.46	0.53	0.59	0.66	
	42	1.33	2.16	2.99	3.83	4.66	5.49	6.32	7.16	7.99	
	1.07	0.12	0.20	0.28	0.36	0.43	0.51	0.59	0.66	0.74	
	48	1.58	2.56	3.55	4.53	5.52	6.50	7.33	8.47	9.46	
	1.22	0.15	0.24	0.33	0.42	0.51	0.60	0.68	0.79	0.88	
	54	1.79	2.91	4.02	5.14	6.26	7.38	8.50	9.62	10.73	
	1.37	0.17	0.27	0.37	0.48	0.58	0.69	0.79	0.89	1.00	
60	2.03	3.30	4.58	5.85	7.12	8.39	9.66	10.93	12.21		
1.52	0.19	0.31	0.43	0.54	0.66	0.78	0.90	1.02	1.13		
66	2.28	3.70	5.13	6.55	7.98	9.40	10.83	12.25	13.68		
1.68	0.21	0.34	0.48	0.61	0.74	0.87	1.01	1.14	1.27		
72	2.52	4.10	5.68	7.26	8.84	10.42	11.99	13.57	15.15		
1.83	0.23	0.38	0.53	0.67	0.82	0.97	1.11	1.26	1.41		
78	2.60	4.23	5.86	7.49	9.11	10.74	12.37	14.00	15.63		
1.98	0.24	0.39	0.54	0.70	0.85	1.00	1.15	1.30	1.46		
84	2.81	4.57	6.33	8.10	9.86	11.62	13.38	15.14	16.90		
2.13	0.26	0.42	0.59	0.75	0.92	1.08	1.24	1.41	1.57		
90	3.03	4.92	6.81	8.70	10.60	12.49	14.38	16.28	18.17		
2.29	0.28	0.46	0.63	0.81	0.98	1.16	1.34	1.51	1.69		
96	3.45	5.61	7.77	9.92	12.08	14.24	16.40	18.56	20.72		
2.44	0.32	0.52	0.72	0.92	1.12	1.32	1.52	1.72	1.92		

AIR LEAKAGE (blades fully closed)

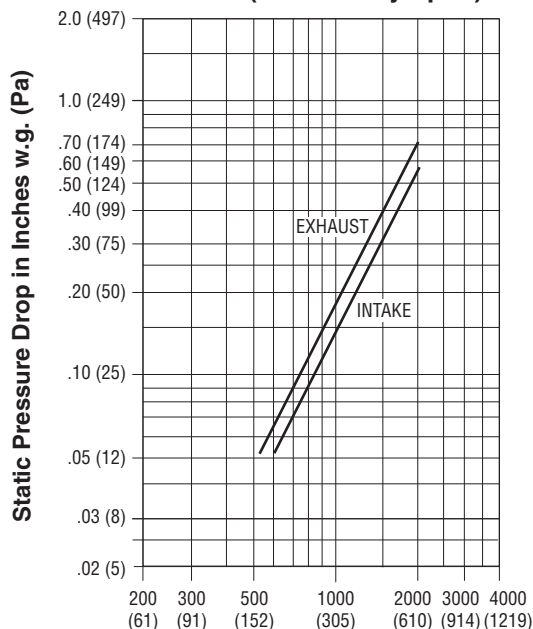


AIRFLOW/WATER PENETRATION DATA for 48" x 48" (1219 x 1219) Louver Size

Model	1606CDAF
Free Area %	46%
Free Area sq. ft. (sq. m.)	7.34 (0.68)
Free Area Velocity at Point of Beginning Water Penetration at .01 oz./sq. ft. (3 ml/sq. m) (15 min. test duration)	1144 fpm (349 m/min.)
Air Volume at Free Area Velocity shown	8397 cfm (3963 l/s)
Pressure Drop at Free Area Velocity shown	.19 in. w.g. (47 Pa)

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

PRESSURE DROP (blades fully open)



Nailor Industries Inc. certifies the Model 1606CDAF 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. Seal applies to air performance ratings and water penetration ratings.

HOW TO SPECIFY

MODEL 1606CDAF

EXTRUDED ALUMINUM COMBINATION LOUVER/AIRFOIL BLADE DAMPER

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and/or schedules, extruded aluminum louvers meeting or exceeding the following criteria: Frame shall be 6" (152) deep channel type (**or specifier to select:** flanged type **or** glazing adapter type), 1/4" (6.3) undersize (**or specifier to select:** exact size **or** 3/8" [9.5] undersize **or** 1/2" [12.7] undersize), with integral caulking slots (and **specifier to select, if required:** extended sill), constructed from ASTM B211 Alloy 6063-T5 extruded aluminum of .125" (3.18) nominal wall thickness with a drainable head feature. Front blades shall be stationary drainable style with a drain gutter in each blade, constructed from type 6063-T5 extruded aluminum of .080" (2.03) nominal wall thickness, fixed at 45 degrees on approximately 5 1/2" (140) centers. Rear airfoil style operable blades, constructed from type 6063-T5 extruded aluminum with silicone blade seal mechanically locked in place. Concealed downspouts in jambs to drain water from louver for minimum water cascade from blade to blade, compression type cambered stainless steel jamb seals. Plated steel axles double bolted to blades, concealed linkage in frame with self-lubricating bronze bearings. Manufacturer to provide hand locking louver quadrant (**or specifier to select:** electric actuator **or** pneumatic actuator). Factory assembled louver components to be mechanically fastened (**or specifier to select:** welded construction). Large louvers that require multiple sections for shipping shall be constructed with visible frames with downspouts when installed together on site. Louvers shall be equipped with removable 3/4" x .051 (19 x 1.3) expanded, flattened aluminum bird screen (**or specifier to select:** type 304 stainless steel bird screen **and/or** aluminum insect screen **and/or** type 304 stainless steel insect screen **or** no screen).

Finish shall be standard mill (**or specifier to select:** prime coat **or** 204-R1 clear anodized to a min. depth of 0.4 mil, with 1 year warranty **or** 215-R1 clear anodized to a min. depth of 0.7 mil, with 5 year warranty **or** color anodized; color to be selected from standard Nailor anodizing colors **or** AAMA 2603 thermosetting polyester powder coat, with 1 year warranty; color to be (**specifier to select:** selected from Nailor standard color chart **or** custom color) **or** AAMA 2604 high performance polyester powder coat, with 5 year warranty; color to be (**specifier to select:** selected from Nailor standard color chart **or** custom color) **or** AAMA 2605 FEVE fluoropolymer powder coat, with 10 year warranty; color to be (**specifier to select:** selected from Nailor standard color chart **or** custom color) **or** Kynar 500/Hylar 5000 70% PVDF coating, with 5 year warranty; color to be (**specifier to select:** selected from Nailor standard color chart **or** custom color) **or** Kynar 500/Hylar 5000 50% PVDF coating, with 10 year warranty; color to be (**specifier to select:** selected from Nailor standard color chart **or** custom color).

Performance data must be licensed by AMCA under the AMCA 511 Certified Ratings Program and shall bear the AMCA Certified Ratings seal for water penetration and air performance. Free area, water penetration, leakage and pressure drop data submitted shall be equal to or better than specified model. Standard of acceptance: Nailor Industries, Inc. Model 1606CDAF.

HOW TO ORDER

MODELS: 1604AD, 1606AD AND 1606CDAF

EXTRUDED ALUMINUM ADJUSTABLE BLADE AND COMBINATION LOUVERS

EXAMPLE: 1606CDAF - 48x36 - U25 - CH - BSA - MI - HLLQ

1. Models

- 1604AD 4" (102) Deep, Adjustable, Drainable Blade
- 1606AD 6" (152) Deep, Adjustable, Drainable Blade
- 1606CDAF 6" (152) Deep, Combination Drainable Blade, Airfoil Damper

2. Nominal Width x Height

inches (mm's)

3. Sizing

- U00 Exact Size
- U25 Undersize 1/4" (6.3) (default)
- U38 Undersize 3/8" (9.5)
- U50 Undersize 1/2" (12.7)

4. Frame

- CH Channel (default)
- FL Flanged

5. Blade Seals (1604AD/1606AD only)

- None (default)
- BPV PVC

6. Jamb Seals (1604AD/1606AD only)

- JSM Metallic (default)
- JSN None

7. Bird Screen

- BSA Aluminum (default)
- BSG Galvanized Steel
- BSSS Type 304 Stainless Steel
- BSN None

8. Insect Screen

- None (default)
- ISA Aluminum
- ISSS Type 304 Stainless Steel

9. Finish

- MI Mill Finish (default)
- PC3S Powder Coat, Standard Color
- PC3C Powder Coat, Custom Color
- PC4S H. P. Powder Coat, Standard Color
- PC4C H. P. Powder Coat, Custom Color
- PC5S Fluoropolymer Powder Coat, Standard Color
- PC5C Fluoropolymer Powder Coat, Custom Color
- PPC Prime Coat
- AN04 Anodized, Clear 204-R1
- AN15 Anodized, Clear 215-R1
- ANLB Anodized, Light Bronze
- ANMB Anodized, Medium Bronze
- ANDB Anodized, Dark Bronze
- ANBK Anodized, Black

OPTIONS & ACCESSORIES:

10. Welded Construction

- None (default)
- WE Welded Construction

11. Sill Extensions

- None (default)
- ESI Extended Sill

12. Filter Rack

- None (default)
- FR1 1" (25) Filter rack
- FR2 2" (51) Filter rack

13. Actuator/Operator

- HLLQ Hand Locking Louver Quadrant (default)
- HRCO Hand Rotary Crank Operator
- PCOI Pull Chain Operator (internal)
- ACT Actuator
- CACT Concealed Actuator

14. Chain Operator

- None (default)
- PCE External
- PCI Internal

15. Chain

- CH Chain Length (specify ft.)

16. Actuator Selected By

- AUTO Least Cost (Auto-select) (default)
- BEL Belimo
- HON Honeywell
- MAN Manually Select
- N/A Not Applicable
- SIE Siemens

17. Power Requirement

- 120 120 VAC
- 230 230 VAC
- 24 24V AC
- PNU Pneumatic

18. Spring Return

- NSPR Non-Spring Return
- SPR Spring Return

19. Control Type

- 2POS Two Position
- FL Floating
- FMZS Float and Module, 0/Span
- MOD Modulating
- MODF Float and Modulating

20. Fail Position (Spring Only)

- None
- CL Close
- OP Open

21. Auxiliary Switch Package

- None
- 300 Nailor MLS-300 Position Indicator
- AUXS On Electric Actuator

22. Actuator

Electric:

- 411 ML4115 120 VAC
- 811 ML8115 24 VAC
- 412 MS4120F10 120 VAC
- 812 MS8120F10 24 VAC
- MS4 MS4X09F 120 VAC
- MS8 MS8X09F 120 VAC
- F12 FSNF120 120 VAC
- F24 FSNF24 24 VAC
- FA12 FSAF120 120 VAC
- FA24 FSAF24 24 VAC
- FL12 FSLF120 120 VAC
- FL24 FSLF24 24 VAC

Pneumatic:

- 296 331-2961
- 306 331-3060
- 482 331-4826

23a. Sleeve

- None (default)
- SGLV Galvanized Steel
- SALU Aluminum
- S304 Type 304 Stainless Steel

23b. Sleeve Length

- SL = Specify**
- 12" (305) standard (default)
- 8" - 28" (203 - 711)

23c. Sleeve Gauge

- None (default)
- 20G 20 Ga.
- 18G 18 Ga.
- 16G 16 Ga.
- 14G 14 Ga.
- 10G 10 Ga.

Notes:

1. Standard color powder coat paint finishes require a color selection from the 21 color finishes on the "Nailor Louver Finishes and Color Guide".

Codes: LF00 Color to follow, LF01 Slate Blue, LF02 Medium Bronze, LF03 Sandstone, LF04 Light Gray, LF05 Charcoal, LF06 Bone White, LF07 Western Tan, LF08 Architectural Bronze, LF09 Regal Blue, LF10 Forest Green, LF11 Surrey Beige, LF12 Royal Brown, LF13 Barn Red, LF14 Burgandy, LF15 Clay, LF16 Almond, LF17 Coastal White, LF18 Vista Green, LF19 Black, LF20 Gloss Black, LF21 Campus Green.

2. Custom color powder coat paint finishes require color matching. A suitable paint chip must be supplied and Nailor will select or mix and formulate a powder coat paint that matches as closely as possible. We will forward a sample for approval.

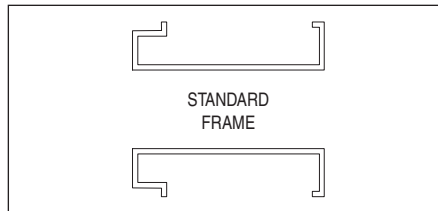
Codes: LF00 Color to follow. You may alternatively enter a unique code and description.

Options and Accessories

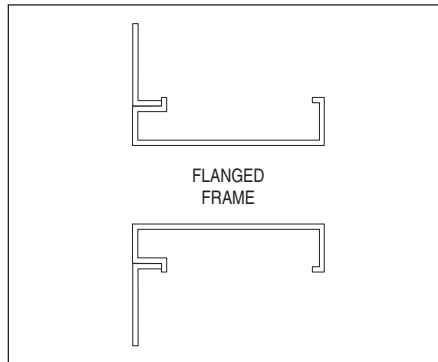
Nailor extruded aluminum and formed steel louvers are available with a variety of options and accessories to suit design specific applications. Selecting the proper accessories and options can save time and labor as well as enhance the visual aesthetics of a louver. Contact your Nailor representative for more information on Nailor custom louver manufacturing capabilities and additional features for your job specific requirements.

FRAME OPTIONS:

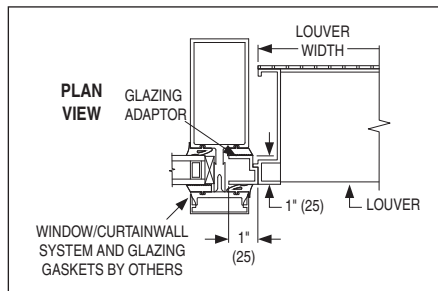
OPTION CODE **CH**
STANDARD CHANNEL FRAME



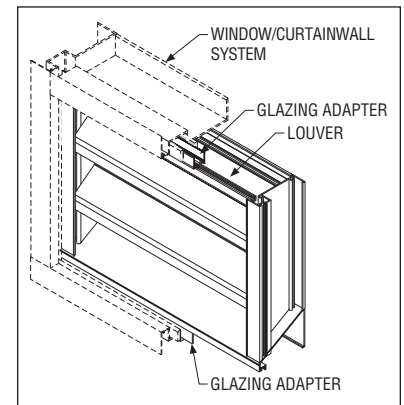
OPTION CODE **FL**
FLANGED FRAME



OPTION CODE **GA**
GLAZING ADAPTOR (SIDE VIEW)

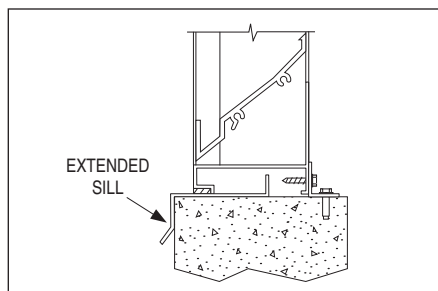


All Nailor extruded aluminum and formed steel louver models come standard with channel type frames and are available with an optional flanged frame. Nailor 2", 4", 5" and 6" (51, 102, 127 and 152) deep extruded aluminum louvers are also available with an optional glazing adaptor frame for easy installation into windows or curtain wall systems. When ordered, the flanged and glazing adaptor type frames are factory mounted using mechanical fasteners.



EXTENDED SILL:

OPTION CODE **ESI**
EXTENDED SILL



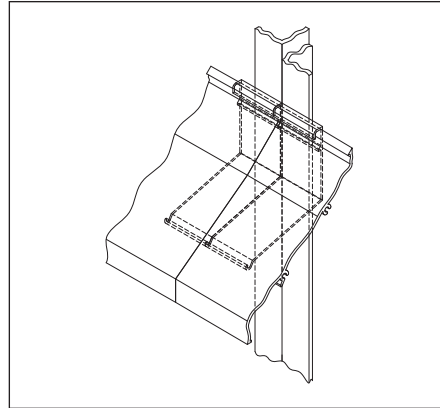
Sill extensions are available on all Nailor extruded aluminum and formed steel louver models and can provide additional deflection of water from the louver opening. An extended sill option may also provide a transition between the louver and adjacent structures. The material and finish of the sill extension will match the frame and blades of the louver. When ordered, sill extensions are shipped loose for field installation.

Note: All louver options are available at an additional cost.

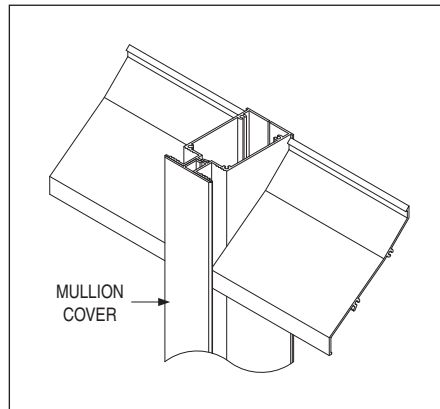
Options and Accessories

MULLION TYPES:

ARCHITECTURAL CONCEALED MULLION DETAIL



VISIBLE MULLION DETAIL



Architectural Concealed Mullions are available on all Nailor stationary non-drainable aluminum louvers, providing a continuous blade appearance without size limitations. Mullions are constructed of the same material as the louver.

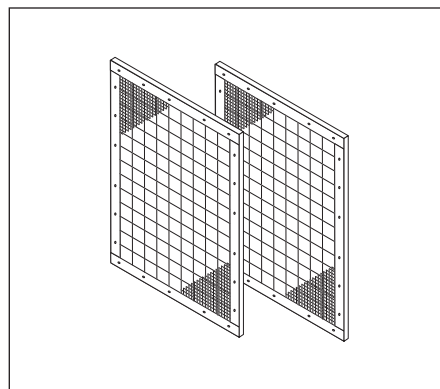
Nailor stationary and adjustable/combination drainable blade louvers feature concealed mullions up to 120" (3048) wide, with larger assemblies requiring separate visible frames with downspouts. Visible Mullions are provided with a Mullion Cover to enhance the architectural appearance of the louver. Mullions are constructed of the same material as the louver and finished to match.

FALSE MULLIONS

False mullions, an architectural feature simulating a mullion, are also available where required visually. They may be shipped loose for mounting to the louver at the installation site, or can be an integral extension of the louver frame, factory mounted. Mullions are constructed of the same material as the louver and finished to match.

SCREEN TYPES:

OPTION CODE **BSG**
 BIRD SCREEN - GALV. STEEL (D)
 OPTION CODE **BSA**
 BIRD SCREEN - ALUMINUM
 OPTION CODE **BSSS**
 BIRD SCREEN - TYPE 304 STAINLESS STEEL
 OPTION CODE **BSN**
 BIRD SCREEN - NONE
 OPTION CODE **00**
 INSECT SCREEN - NONE (DEFAULT)
 OPTION CODE **ISA**
 INSECT SCREEN - ALUMINUM
 OPTION CODE **ISSS**
 BIRD SCREEN - TYPE 304 STAINLESS STEEL



Bird and Insect screens prevent the passage of undesirable elements through the louver while maintaining maximum airflow. All Nailor louvers come standard with a bird screen, either 3/4" x .051 (19 x 1.3) wire expanded and flattened aluminum or 1/2" mesh x 19 ga. (13 x 1.1) wire galvanized, dependent on louver construction, unless ordered otherwise. A variety of screen options are available to suit most applications: 1/2" mesh x 18 ga. (13 x 1.3) wire Type 304 stainless steel bird screens, 18 - 16 mesh, .011 (.30) wire aluminum insect screens and 18 - 16 mesh 0.11" (.30) wire Type 304 stainless steel insect screens may be ordered for all louver types.

Options and Accessories

WELDED CONSTRUCTION:

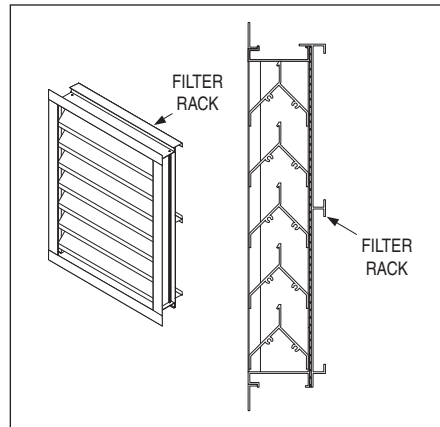
OPTION CODE **WE**

All Nailor louvers are mechanically fastened to provide a clean visual appearance when painted or anodized. Optional welded construction is available on all Nailor stationary louvers for applications that may be subject to vibration damage, i.e. when located in proximity to an air handler. Welded construction is not available when anodized finish is ordered.

FILTER RACK:

OPTION CODE **FR1**
1" (25) FILTER RACK

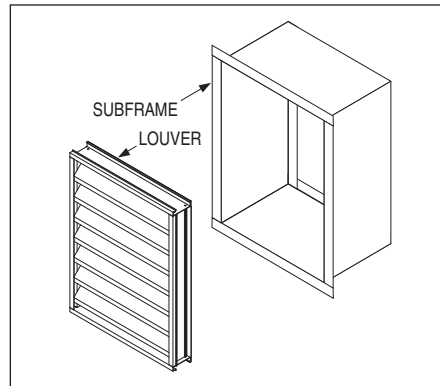
OPTION CODE **FR2**
2" (51) FILTER RACK



For applications where air filtration is required, Nailor offers 1" (25) or 2" (51) filter racks for standard filters, filters by others. Filters are easily accessible with a slide and lock in style design for quick service. Filter racks are constructed of the same material as the louver and factory installed with mechanical fasteners. All Nailor louvers are available with optional filter racks. Consult your Nailor representative for specific details and dimensional drawings for specific louver applications.

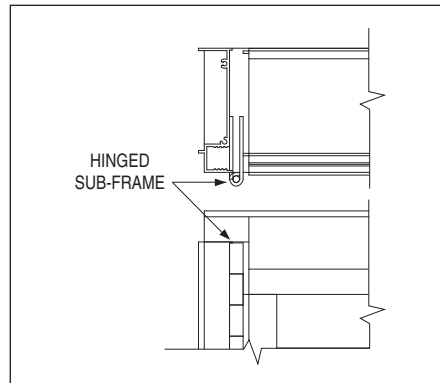
CHANNEL SUB-FRAME AND HINGES:

OPTION CODE **CSUB**
CHANNEL SUB-FRAME



Sub-frames are used as an auxiliary frame around a louver and by adding additional hardware you can enable a louver to be removable, hinged, latched, and for certain applications, restrained. All Nailor extruded aluminum stationary louvers are available with optional channel sub-frames; contact your Nailor representative for sub-frame requirements for steel stationary louvers.

OPTION CODE **HB**
HINGED BOTTOM
OPTION CODE **HL**
HINGED LEFT
OPTION CODE **HR**
HINGED RIGHT
OPTION CODE **HT**
HINGED TOP

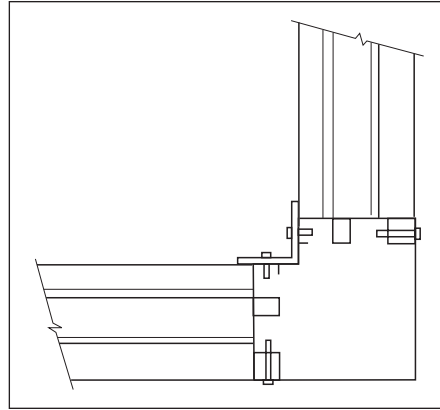


Some applications require access behind a louver for service and maintenance of other system components. When ordered with a channel sub-frame, hinges allow a louver to become an access door, providing easy access behind the louver. Hinges are available on top, bottom, and left or right orientations. Standard piano style hinges are factory mounted when ordered. All Nailor extruded aluminum stationary louvers are available with optional hinges; contact your Nailor representative for hinge requirements for steel stationary louvers.

Options and Accessories

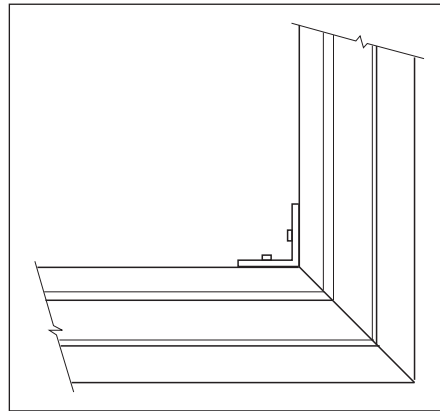
CORNER CONSTRUCTION:

OPTION CODE **SBCC**
BOX CORNER DETAIL



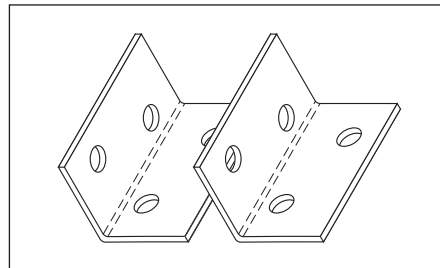
Louvers that follow the architectural line of a building's exterior around a corner may have either mitered or boxed corners, depending on the blade style of the louver selected. All Nailor extruded aluminum stationary J and K non-drainable louvers are available with optional mitered corners providing a desirable continuous look, and all Nailor extruded aluminum stationary drainable louvers are available with optional box corners for corner requirements for steel stationary louvers.

OPTION CODE **SMCC**
MITERED CORNER DETAIL



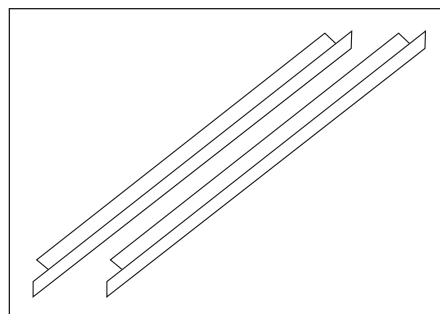
INSTALLATION ANGLES:

OPTION CODE **PACA**
MOUNTING CLIPS



Mounting clips and continuous angles are utilized to anchor a louver to an opening and provide a clean, easy, and speedy installation. When ordered, mounting clips and continuous angles are shipped loose for field assembly. All Nailor extruded aluminum stationary louvers are available with optional mounting clips and continuous angles; contact your Nailor representative for installation angle and mounting clip requirements for steel stationary louvers.

OPTION CODE **PAAA**
CONTINUOUS ANGLES



Options and Accessories

BLANK-OFF PANELS:

OPTION CODE BA

.040" ALUMINUM

OPTION CODE BAI1

.040" ALUMINUM W/1" (25) INSUL.

OPTION CODE BAI2

.040" ALUMINUM W/2" (51) INSUL.

OPTION CODE BG

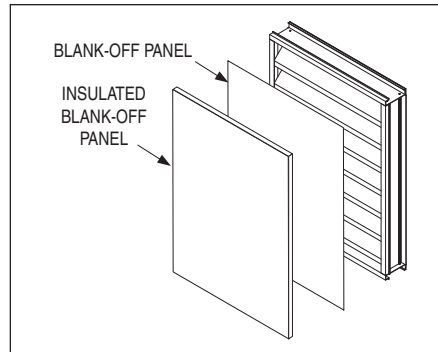
20 GA. GALVANIZED STEEL

OPTION CODE BGI1

20 GA. GALVANIZED STEEL WITH
1" (25) INSULATION

OPTION CODE BGI2

20 GA. GALVANIZED STEEL WITH
2" (51) INSULATION



Certain louver applications may require that the airflow be controlled with a blank-off panel while still maintaining the louver's architectural appearance and aesthetic appeal. Blank-off panels can be a plain sheet of either galvanized steel or aluminum or a sandwich type panel in which 1" (25) or 2" (51) insulation attached. All Nailor extruded aluminum stationary louvers are available with blank-off panels; contact your Nailor representative Industries for steel stationary louvers.

SLEEVE TYPES:

OPTION CODE S304

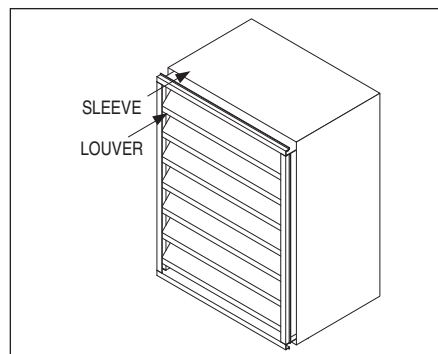
TYPE 304 STAINLESS STEEL

OPTION CODE SALV

ALUMINUM

OPTION CODE SGLV

GALVANIZED STEEL

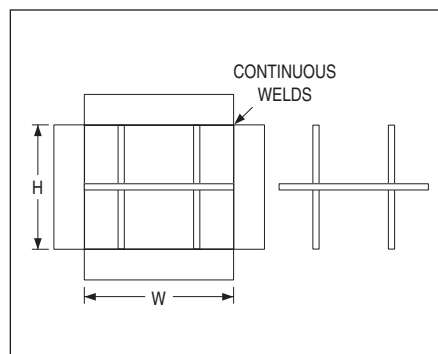


A factory installed louver sleeve allows the units to ship directly to jobsite ready for installation, saving time, money and costly field fabrication and mounting, as well as helping to ensure proper installation. Sleeves are available in a variety of construction and thickness: Galvanized steel sleeve (20 ga. [1.0], 18 ga. [1.3], 16 ga. [1.6], 14 ga. [2.0], 12 ga. [2.7] or 10 ga. [3.5]), Aluminum sleeve (16 ga. [1.6], 14 ga. [2.0], 10 ga. [3.5]) or Type 304 stainless steel sleeve (20 ga. [1.0], 18 ga. [1.3], 16 ga. [1.6], 14 ga. [2.0], 12 ga. [2.7] or 10 ga. [3.5]). All Nailor louvers are available with factory installed sleeves.

SECURITY BARS:

OPTION CODE SECB

SECURITY BARS



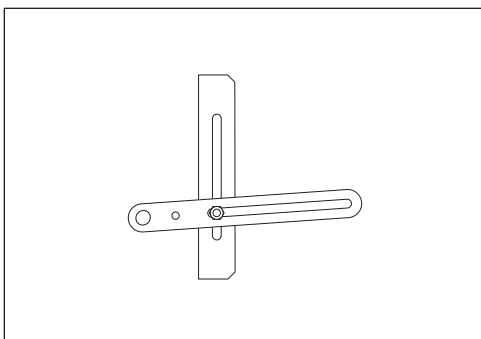
When combined with a sleeve, security bars provide maximum protection for installations where penetration through a wall needs to be secure. Available in a 2" (51) flat steel frame welded continuously at the corners, a variety of bar designs, bar material, construction types and bar spacing is available. Contact your Nailor representative for security bar requirements for all Nailor louvers.

Operator and Actuator Selection Guide for Louvers

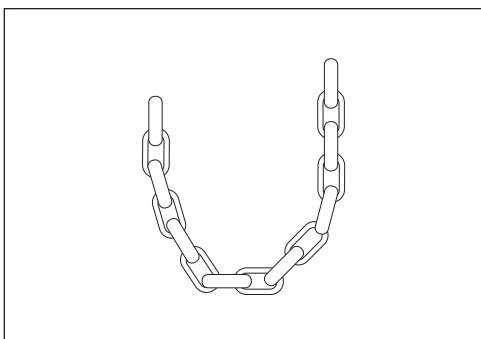
The blades of an adjustable or combination louver can be operated by a variety of mechanisms. A standard hand locking louver quadrant crank operator is supplied for all Nailor adjustable and combination louvers unless otherwise ordered. Optional hand rotary louver quadrant operator, pull chain operator, and electric or pneumatic actuators are also available. Special actuator mounting options are available, contact your Nailor representative for details.

OPERATORS/ACTUATORS:

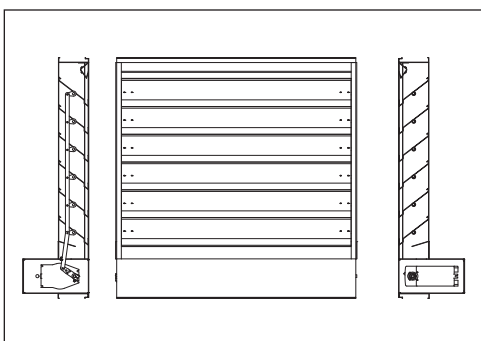
OPTION CODE **HLLQ**
HAND LOCKING LOUVER QUADRANT
(STANDARD)



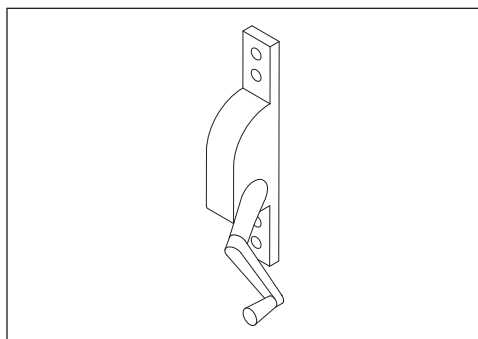
OPTION CODE **PCOI**
PULL CHAIN OPERATOR (INTERNAL)



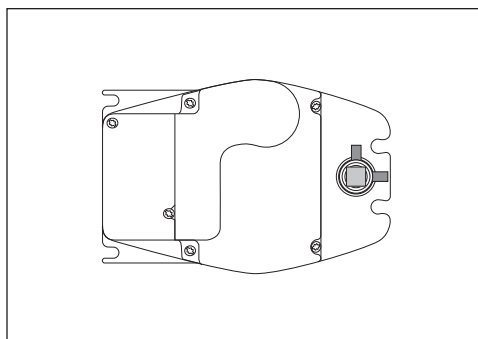
OPTION CODE **CACT**
CONCEALED ACTUATOR



OPTION CODE **HRCO**
HAND ROTARY CRANK OPERATOR



OPTION CODE **ACT**
ACTUATOR



Operator Codes & Standard Factory Mounting Locations:

Code	Description	Application	Standard Factory Mounted Position
HLLQ	Hand Locking Louver Quadrant	Manual Shut-off/ Balancing	External, Right hand, Out of air stream
HRCO	Hand Rotary Crank Operator	Manual Shut-off/ Balancing	Internal, Right hand, In air stream
PCOI	Pull Chain Operator	Inaccessible Installation	Internal, Right Hand, Includes 6 ft. (1.8 m) chain drop below louver
ACT	Actuator	Electric or Pneumatic Operation	Internal, Left hand, In air stream
CACT	Concealed Actuator	Electric or Pneumatic Operation	Concealed in enclosed box below louver, Left hand, Out of air stream

Actuator Selection Guide for Louvers

Electric - 2 Position Spring Return:

Maximum Damper ft. ² (m ²)		Application	Code	Manufacturer and Model No.	Voltage and Description
Without Blade and/or Jamb Seals	With Blade and/or Jamb Seals				
12 (1.11)	6 (0.56)	For LOW Torque Operations	411	Honeywell ML4115	120 VAC, FATPA
12 (1.11)	6 (0.56)		FL12	Belimo FSLF120	120 VAC
12 (1.11)	6 (0.56)		811	Honeywell ML8115	24 VAC, FATPA
12 (1.11)	6 (0.56)		FL24	Belimo FSLF24	24 VAC
20 (1.86)	10 (0.93)	For MEDIUM Torque Operations	F12	Belimo FSNF120	120 VAC
20 (1.86)	10 (0.93)		F24	Belimo FSNF24	24 VAC
24 (2.23)	12 (1.11)		MS4	Honeywell MS4X09	120 VAC, FATPA
24 (2.23)	12 (1.11)		MS8	Honeywell M8X09F	24 VAC, FATPA
60 (5.57)	40 (3.72)	For HIGH Torque Operations	FA12	Belimo FSAF120	120 VAC
60 (5.57)	40 (3.72)		FA24	Belimo FSAF24	24 VAC
60 (5.57)	40 (3.72)		412	Honeywell MS4120F10	120 VAC, FATPA
60 (5.57)	40 (3.72)		812	Honeywell MS8120F10	24 VAC, FATPA

Electric - 2 Position Spring Return with Auxiliary Switch(es):

Maximum Damper ft. ² (m ²)		Application	Code	Manufacturer and Model No.	Voltage and Description
Without Blade and/or Jamb Seals	With Blade and/or Jamb Seals				
12 (1.11)	6 (0.56)	For LOW Torque Operations	411S	Honeywell ML4115	120 VAC, FATPA with MLS300H*
12 (1.11)	6 (0.56)		FL1S	Belimo FSLF120-S**	120 VAC with Auxiliary Switch
12 (1.11)	6 (0.56)		811S	Honeywell ML8115	24 VAC, FATPA with MLS300H
12 (1.11)	6 (0.56)		FL2S	Belimo FSLF24-S	24 VAC with Auxiliary Switch
20 (1.86)	10 (0.93)	For MEDIUM Torque Operations	F12S	Belimo FSNF120-S	120 VAC with Auxiliary Switch
20 (1.86)	10 (0.93)		F24S	Belimo FSNF24-S	24 VAC with Auxiliary Switch
24 (2.23)	12 (1.11)		MS4S	Honeywell MS4X09F	120 VAC, FATPA with MLS300H
24 (2.23)	12 (1.11)		MS8S	Honeywell M8X09F	24 VAC, FATPA with MLS300H
60 (5.57)	40 (3.72)	For HIGH Torque Operations	FA1S	Belimo FSAF120-S	120 VAC with Auxiliary Switch
60 (5.57)	40 (3.72)		FA2S	Belimo FSAF24-S	24 VAC with Auxiliary Switch
60 (5.57)	40 (3.72)		412S	Honeywell MS4120F12	120 VAC, FATPA with MLS300H
60 (5.57)	40 (3.72)		812S	Honeywell MS8120F12	24 VAC, FATPA with MLS300H

Note: * MLS300H = Honeywell Auxiliary Switch Pack. ** -S = Belimo Auxiliary Switches.

Pneumatic - 2 Position Spring Return:

Air Pressure		Application	Maximum Damper ft. ² (m ²)		Code	Manufacturer and Model No.
Minimum PSI (kPa)	Maximum PSI (kPa)		Without Blade and/or Jamb Seals	With Blade and/or Jamb Seals		
20 (138)	30 (207)	For LOW Torque Operations	20 (1.86)	10 (0.93)	482	Siemens #3
20 (138)	30 (207)	For MEDIUM Torque Operations	50 (4.65)	25 (2.32)	296	Siemens #4
20 (138)	30 (207)	For HIGH Torque Operations	84 (7.80)	42 (3.90)	306	Siemens #6

Note: Only Nailor Industries Inc. MLS300 Position Indicator Switch Pack available.

Available Louver Finishes

Nailor offers 21 standard paint colors for architectural exterior use which meet or exceed AAMA specifications and performance requirements for color retention, chalk resistance, gloss retention, erosion, corrosion and chemical resistance as well as dry film thickness and hardness. Our state-of-the-art powder coat system provides an environment friendly finishing solution with more uniform coverage and coating thickness. The result is an exceptional finish that better resists scratching, fading and general wear. Additional liquid coat facilities for special requirements complete our ability to provide unmatched beauty and durability for any application. Nailor also offers 6 standard anodized finishes. Custom color matching is also available upon request. Contact your local Nailor representative.

See inside cover for available louver finishes color chart.

Note: Due to the printing process, colors shown approximate as closely as possible to the actual paint colors.

FINISH TYPE:	DESCRIPTION:
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Fluoropolymer Powder Coat

AAMA 2605 - Superior Finish
(AKA: Powdura® 5000,
Corafon® Powder,
Interpon® D3000-Fluoromax)

"Ultimate" - A next generation hyper durable powder coating, based on FEVE fluoropolymer resins and ceramic pigmentation that the industry has acknowledged as the foundation for superior performance coatings. They provide a hard surface that is resistant to scratching and scuffing, with superior color and gloss retention, when applied to a variety of exterior architectural applications. This technology represents the "ultimate" in environmentally friendly finishes, with Zero-VOC emissions.

A new alternative to traditional 70% Kynar 500®/Hylar 5000® PVDF fluoropolymer liquid coatings.

High Performance Powder Coat

AAMA 2604 - High Performance Finish
(AKA: Powdura® 4000,
Envirocron® Ultra Durable Powder,
Dynadure™ 400, Interpon® D2000)

"Better" - A high performance polyester powder coating, based on "super durable" resins that utilize infrared reflective pigments, which provides excellent resistance to outdoor weathering. A harder and more environmentally friendly coating than other liquid paint counterparts and with Zero-VOC emissions.

A good alternative to 50% Kynar 500®/Hylar 5000® liquid coatings.

Durable Powder Coat

AAMA 2603 - Pigmented Organic Coatings
(AKA: Powdura® 3000,
Envirocron® Durable Powder,
Dynadure™ 300, Interpon® D1000)

"Good" - A durable powder coat based on thermosetting polyester resin technology. Provides a good economical combination of physical and chemical resistance properties. Environmentally superior to liquid spray paints and Zero - VOC emissions.

Clear Anodize 215-R1

AA-M10C22A41 (0.7 mil. min.)

Architectural Class I. Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack. Recommended for severely corrosive and abrasive atmospheric exposure.

Clear Anodize 204-R1

AA-M10C22A31 (0.4 - 0.7 mil.)

Architectural Class II. Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack. Recommended for normal weather exposure.

Color Anodize

AA-M10C22A44 (0.7 mil. min.)

Architectural Class I. "Two-step" aluminum coating process. Following a standard anodizing procedure, a second electrolytic process deposits colored metallic pigments which penetrate the aluminum oxide pores, producing a corrosion resistant, colorfast finish. Available in light, medium, dark bronze and black.

Prime Coat

Prime coat provides a stable base for painting of louvers in the field. Surface pretreatment includes degreasing and a chemical cleaning before an epoxy prime coat is applied. Finish coat should be field applied as soon as possible for best adhesion, after a thorough cleaning for dust etc. that can contaminate the final finish and cause premature flaking or peeling.

Contact your local representative for Color Guide and paint warranty information. Paint finish warranties are not applicable to steel products. Powdura® is a registered trademark of The Sherwin-Williams Company. Corafon® and Envirocron® are registered trademarks of PPG Industries Ohio, Inc. Interpon® is a registered trademark of Akzo Nobel Powder Coatings Ltd. Kynar 500® is a registered trademark of Arkema, Inc. Hylar 5000® is a registered trademark of Solvay Solexis, Inc.



Slate Blue LF01



Medium Bronze LF02



Sandstone LF03



Light Gray LF04



Charcoal LF05



Bone White LF06



Western Tan LF07



Architectural Bronze LF08



Legal Blue LF09



Forest Green LF10



Surrey Beige LF11



Royal Brown LF12



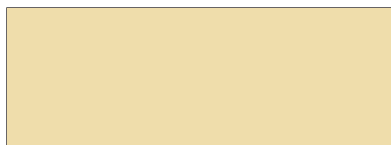
Barn Red LF13



Burgundy LF14



Clay LF15



Almond LF16



Coastal White LF17



Vista Green LF18



Black LF19



Gloss Black LF20



Campus Green LF21

Nailor offers 21 standard paint colors selected for architectural exterior use which meet or exceed AAMA specifications and performance requirements for color retention, chalk resistance, gloss retention, erosion, corrosion and chemical resistance as well as dry film thickness and hardness. Our state-of-the-art powder coat system provides an environment friendly finishing solution with more uniform coverage and coating thickness. The result is an exceptional finish that better resists scratching, fading and general wear. Additional liquid coat facilities for special requirements complete our ability to provide unmatched beauty and durability for any application.

Custom color matching is also available upon request. Contact your local Nailor representative.

Note: Due to the printing process, colors shown approximate as closely as possible to the actual paint colors.