



# PRODUCT HANDBOOK

LOUVERS • DAMPERS • SCREENS



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# FIRE DAMPERS

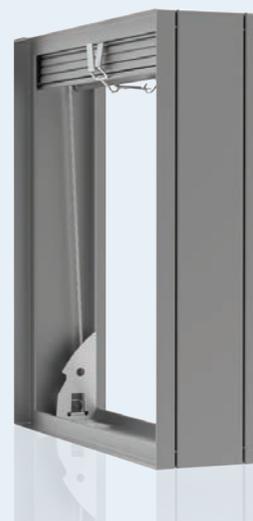
## Series FD & FDD



The **FD and FDD** series of 1-1/2 & 3 hour rated fire dampers are UL, ULC and California State Fire Marshal listed dampers, available for either vertical or horizontal mount. The FD series are static rated dampers for use in duct systems or penetrations where there is no or negligible airflow when the damper closes (i.e. Fans Off Systems).

The FDD series are dynamic rated dampers and are approved for use in HVAC systems where the air handling units will stay running during a fire (i.e. Fans On Systems).

- Available with a full range of factory sleeves including integral sleeved models.
- Can be provided with a full offering of duct transitions including Type B (blades out of airstream) and Type C with Round or Oval transitions for 100% free area.
- Slim Line and Ultra Slim Line models available (Models FD(D)-A-SL & FD-A-U-SL) available for transfer applications and space constrained applications.
- Flanged sleeve and “out of wall” grille mount versions available.
- FDD-MB Multiblade dampers offer large dynamic ratings without actuators.
- True round models available (Models FD-RD & FDD-RD).



FD-HA

### STATIC FIRE DAMPERS (UL555 STATIC FIRE RATED) - FOR “FANS OFF” SYSTEMS

FD Model & Description	MAXIMUM SIZES		Single Angle Installation	“No Angle” Flanged Sleeve Installation	Out of Wall/ Floor - Grille Access	Free Area
	Vertical (Walls)	Horizontal (Floors)				
<b>FD-A</b> / 1.5 Hr / Type A	120 x 120	96 x 48 or 120 x 40	108 x 108 (max. 36 ft <sup>2</sup> )	42 x 48		75 - 85%
<b>FD-A</b> / 3 Hr / Type A	48 x 48 or 80 x 40	80 x 40				75 - 85%
<b>FD-A-S</b> / 1.5 Hr / Integral Sleeve	48 x 48	40 x 40	48 x 48	42 x 48		75 - 85%
<b>FD-A-SL</b> / 1.5 Hr / Slimline Type A	120 X 120	96 X 48 or 120 x 40	108 x 108 (max. 36 ft <sup>2</sup> )	42 x 48		75 - 85%
<b>FD-A-SL</b> / 3 Hr / Slimline Type A	48 x 48 or 80 x 40	80 x 40				75 - 85%
<b>FD-A-U-SL</b> / 1.5 or 3 Hr / “Ultra” Slimline / Type A	48 x 48					75 - 85%
<b>FD-B</b> / 1.5 Hr / Type B	120 x 115	96 x 43 or 120 x 36	108 x 108 (max. 36 ft <sup>2</sup> )	42 x 48		80-90%
<b>FD-B</b> / 3 Hr / Type B	48 x 43 or 80 x 36	80 x 36				80-90%
<b>FD-B-S</b> / 1.5 Hr / Integral Sleeve	48 x43	40 x 36	48 x 43	42 x 43		80-90%

FD Model & Description	MAXIMUM SIZES		Single Angle Installation	"No Angle" Flanged Sleeve Installation	Out of Wall/ Floor - Grille Access	Free Area
	Vertical (Walls)	Horizontal (Floors)				
FD-B-SL / 1.5 Hr / Slimline Type B	120 x 115	96 x 43 or 120 x 36	108 x 108 (max. 36 ft <sup>2</sup> )	42 x 48		80-90%
FD-B-SL / 3 Hr / Slimline Type B	48 x 43 or 80 x 36	80 x 36				80-90%
FD-C / 1.5 Hr / Type C	119 x 114	119 x 35 or 90 x 42	108 x 108 (max. 36 ft <sup>2</sup> )	42 x 48		95-100%
FD-C / 3 Hr / Type C	79 x 35 or 47 x 42	79 x 35				95-100%
FD-C-S / 1.5 Hr / Integral Sleeve / Type C	47 x 42	39 x 35	47 x 42			95-100%
FD-MB-3V / 1.5 Hr / 3V Multiblade	108 x 96	72 x 96	108 x 96	42 x 48		65-75%
FD-MB-3V / 3 Hr / 3V Multiblade	72 x 96	72 x 96				65-75%
FD-MB-AF / 1.5 Hr / Airfoil Multiblade	108 x 96	36 x 48	108 x 96 (max. 36 ft <sup>2</sup> )	42 x 48		65-75%
FD-MB-AF / 3 Hr / Airfoil Multiblade	72 X 96	36 X 48				65-75%
FD-OW / 1.5 Hr / Out of Wall Assembly	36 x 48	36 x 48			36 x 48	75-85%
FD-RD / 1.5 Hr / True Round	24 Dia.	24 Dia.	24 Dia.			80-90%

NOTE: All dimensions are maximum allowable sizes listed width x height in inches.

**DYNAMIC FIRE DAMPERS (UL555 DYNAMIC FIRE RATED) - FOR "FANS ON" SYSTEMS**

FDD Model & Description	MAXIMUM SIZES		Single Angle Installation	"No Angle" Flanged Sleeve Installation	Out of Wall/ Floor - Grille Access	Free Area
	Vertical (Walls)	Horizontal (Floors)				
FDD-A / 1.5 Hr or 3 Hr / Type A	72 x 36 or 36 x 72	36 x 36	72 x 36 or 36 x 72	42 x 48		75 - 85%
FDD-A-S / 1.5 Hr / Integral Sleeve	36 x 36	24 x 24	36 x 36	36 x 36		75 - 85%
FDD-A-SL / 1.5 Hr or 3 Hour / Slimline Type A	72 x 36 or 36 x 72	36 x 36	72 x 36 or 36 x 72	42 x 36		75 - 85%
FDD-B / 1.5 or 3 Hr / Type B	72 x 32 or 36 x 68	36 x 32	72 x 32 or 36 x 68	42 x 32		80-90%
FDD-B-S / 1.5 Hr / Integral Sleeve / Type B	36 x 32	24 x 21	36 x 32	36 x 32		80-90%
FDD-B-SL / 1.5 or 3 Hr / Slimline Type B	72 x 32 or 36 x 68	36 x 32	72 x 32 or 36 x 68	42 x 32		80-90%
FDD-C / 1.5 or 3 Hr / Type C	71 x 31 or 35 x 67	35 x 32	71 x 31 or 35 x 67	41 x 31		95-100%
FDD-C-S / 1.5 Hr / Integral Sleeve / Type C	35 x 31	23 x 20	35 x 31			95-100%
FDD-MB-3V / 1.5 Hr / 3V Multiblade	108 x 96	72 x 96	108 x 96	42 x 48		65-75%
FDD-MB-3V / 3 Hr / 3V Multiblade	72 x 96	72 x 96	72 x 96			65-75%
FDD-MB-AF / 1.5 Hr / Airfoil Multiblade	108 x 96	36 x 48	108 x 96	42 x 48		65-75%
FDD-MB-AF / 3 Hr / Airfoil Multiblade	72 x 96	36 x 48	72 x 96			65-75%
FDD-OW / 1.5 Hr / Out of Wall Assembly	36 x 36	36 x 36	36 x 36		36 x 36	75-85%
FDD-RD / 1.5 Hr / True Round	24 Dia.	24 Dia.	24 Dia.			80-90%

\*Dampers rated at 2000 FPM & 4" w.g. NOTE: All dimensions are maximum allowable sizes listed width x height in inches.

# CEILING RADIATION DAMPERS

## Series CD & CFS



**The CD series** offers a complete range of UL, ULC and California State Fire Marshal listed butterfly blade ceiling radiation dampers. The CD series is suitable for application in surface mount (steel duct drop) and lay-in applications. When provided with the optional adjustable volume control, NCA's CD series can double as a volume control damper.

**The CFS Series** are thermal fabric blade curtain-type ceiling radiation dampers, ideal for compact design requirements.

- Available in Square/Rectangular or True Round shapes.
- Optional adjustable volume control allows damper to double as volume damper.
- Optional factory square to round adapters available for easy duct connection (Model CD-RD-T).
- CFS Series fabric style dampers available in standard (CFS) and slimline (CFS-2F) Square/Rectangular frame styles.



CD-RD

### CEILING RADIATION DAMPERS (UL 555C RATED)

Model & Description	MAXIMUM SIZES		Volume Adjuster	Wood Construction (See Submittal)	Square to Round Transition
	Round	Rectangular			
<b>CD-RD</b> / Round Butterfly	18				
<b>CD-RD-A</b> / Round Butterfly	18		Yes		
<b>CD-S/R</b> / Square/Rectangular		22 x 22			
<b>CD-S/R-A</b> / Square/Rectangular		22 x 22	Yes		
<b>CD-RD-T</b> / Round Butterfly with Transition		22 x 22			18
<b>CD-RD-A/T</b> / Round Butterfly with Transition		22 x 22	Yes		18
<b>CD-S/R-HC</b> / Wood Truss				16 x 12	
<b>CFS</b> / Fabric Curtain		24 x 24			
<b>CFS-2F</b> / Low Profile Fabric Curtain		24 x 24			
<b>CFSR</b> / Fabric Curtain with Round Transition		24 x 24			22

NOTE: All dimensions are maximum allowable sizes listed width x height in inches.

# SMOKE DAMPERS

## Series SSD-3V, SSD-AF & SSD-RD



The **SSD series** are UL, ULC and California State Fire Marshal listed as a UL555S smoke damper. The SSD series is available with UL555S Class I or Class II leakage ratings and a variety of electric and pneumatic actuators.

- Available with either UL Class I or Class II leakage.
- Available for both vertical and horizontal mount.
- Full range of factory sleeve gauges and lengths available.
- Available with 24VAC, 120VAC or 230VAC externally or internally mounted electric actuators or pneumatic actuators.
- Other options include: auxiliary switches, Momentary Test Switch (MTS), factory mounted smoke detectors (SL-2000) and Remote Control Boxes (RCB).



### SMOKE DAMPERS (UL555S LEAKAGE RATED)

SSD Model & Description	MAXIMUM SIZES		Round Duct	Smoke Detector
	Vertical (Walls)	Horizontal (Floors)		
<b>SSD-3V-201</b> / Class I / 3V Blade	144 x 96	144 x 96		✓
<b>SSD-3V-202</b> / Class II / 3V Blade	144 x 96	144 x 96		✓
<b>SSD-AF-201</b> / Class I / Airfoil Blade	144 x 96	144 x 96		✓
<b>SSD-AF-202</b> / Class II / Airfoil Blade	144 x 96	144 x 96		✓
<b>SSD-RD-201</b> / Class I / True Round	24 Dia.	24 Dia.	24	Consult Factory
<b>SSD-RD-202</b> / Class II / True Round	24 Dia.	24 Dia.	24	Consult Factory

NOTE: All dimensions are maximum allowable sizes listed width x height in inches.



# COMBINATION FIRE/SMOKE DAMPERS

## Series FSD-3V, FSD-AF & FSD-RD

The **FSD series** are UL, ULC and California State Fire Marshal listed as both a UL555 fire and UL555S smoke damper. Available in both 1-1/2 and 3 hour fire ratings, the FSD series is available with UL555S Class I or Class II leakage ratings and a variety of electric and pneumatic actuators.

- Available in 1-1/2 or 3 Hour fire ratings, with either UL Class I or Class II leakage ratings.
- Available for both vertical and horizontal mount.
- FSD-AF damper feature airfoil shaped blades for superior pressure drop performance.
- True round dampers available (Series FSD-RD).
- Full range of factory sleeve gauges and lengths available.
- Available with 24VAC, 120VAC or 230VAC internally or externally mounted electric actuators or pneumatic actuators.
- Provided with a resettable heat responsive thermostat (O/R). Dual thermostat override available (DTO/R).
- Other options include: auxiliary switches, Momentary Test Switch (MTS), factory mounted smoke detector (SL-2000) and Remote Control Boxes (RCB).

FSD-AF-211



**COMBINATION FIRE & SMOKE DAMPERS (UL555 FIRE & UL555S LEAKAGE RATED)**

FSD Model & Description	MAXIMUM SIZES		Single Angle Installation	"No Angle" Flanged Sleeve Installation	Out of Wall/Floor - Grille Access	Round Duct	Tunnel/Corridor	Factory Smoke Detector
	Vertical (Walls)	Horizontal (Floors)						
<b>FSD-3V-211 /</b> 1.5 Hr / Class I / 3V Blade	108 x 96	72 x 96	108 x 96 (max. 36 ft <sup>2</sup> )	42 x 48		94"		✓
<b>FSD-3V-212 /</b> 1.5 Hr / Class II / 3V Blade	108 x 96	72 x 96	108 x 96 (max. 36 ft <sup>2</sup> )	42 x 48		94"		✓
<b>FSD-3V-231 /</b> 3 Hr / Class I / 3V Blade	72 x 96	72 x 96				70"		✓
<b>FSD-3V-232 /</b> 3 Hr / Class II / 3V Blade	72 x 96	72 x 96				70"		✓
<b>FSD-3V-OW-211 /</b> 1.5 Hr / Class I / 3V Blade					36 x 48			
<b>FSD-3V-OW-212 /</b> 1.5 Hr / Class II / 3V Blade					36 x 48			
<b>FSD-3V-FA-211 /</b> 1.5 Hr / Class I / 3V Blade					36 x 48			
<b>FSD-3V-FA-212 /</b> 1.5 Hr / Class II / 3V Blade					36 x 48			
<b>FSD-AF-211 /</b> 1.5 Hr / Class I / Airfoil	108 x 96	36 x 48	108 x 96 (max. 36 ft <sup>2</sup> )	42 x 48		94"(V) 34"(H)		✓
<b>FSD-AF-212 /</b> 1.5 Hr / Class II / Airfoil	108 x 96	36 x 48	108 x 96 (max. 36 ft <sup>2</sup> )	42 x 48		94"(V) 34"(H)		✓
<b>FSD-AF-231 /</b> 3 Hr / Class I / Airfoil	72 x 96	36 x 48				70"(V) 34"(H)		✓
<b>FSD-AF-232 /</b> 3 Hr / Class II / Airfoil	72 x 96	36 x 48				70"(V) 34"(H)		✓
<b>FSD-AF-OW-211 /</b> 1.5 Hr / Class I / Airfoil					36 x 48			
<b>FSD-AF-OW-212 /</b> 1.5 Hr / Class II / Airfoil					36 x 48			
<b>FSD-AF-FA-211 /</b> 1.5 Hr / Class I / Airfoil					36 x 48			
<b>FSD-AF-FA-212 /</b> 1.5 Hr / Class II / Airfoil					36 x 48			
<b>FSD-RD-211 /</b> 1.5 Hr / Class I / True Round	24 Dia.	24 Dia.	24 Dia.			24		Consult Factory
<b>FSD-RD-212 /</b> 1.5 Hr / Class II / True Round	24 Dia.	24 Dia.	24 Dia.			24		Consult Factory
<b>FSD-3V-CR-211 /</b> 1.5 Hr / Class I / Tunnel Corridor	24 x 24	24 x 24		24 x 24			24 x 24	Consult Factory
<b>FSD-3V-CR-212 /</b> 1.5 Hr / Class II / Tunnel Corridor	24 x 24	24 x 24		24 x 24			24 x 24	Consult Factory

NOTE: All dimensions are maximum allowable sizes listed width x height in inches.

# CONTROL AND BALANCING DAMPERS

## Series ACD, SCD, PBD, OBD & MBD

**The ACD series** of control dampers are fabricated of heavy gauge 6063-T6 extruded aluminum. Featuring an airfoil shaped blade design, the ACD series demonstrate superior pressure drop performance (tested to the AMCA 500-D standard) and are available in a wide variety of leakage levels.



**The SCD series** of control dampers have been designed and tested to provide a reliable and cost effective control damper. Fabricated of roll-formed galvanized steel frames and blades, the SCD series features concealed linkage and is available in either parallel or opposed blade operation.

**The PBD and OBD series** (PBD with parallel blades, OBD with opposed blades) are high quality dampers with 'in the airstream' linkage. Available in a wide variety of finishes, leakage ratings and materials (12-16 gauge galvanized steel, .080 aluminum or 304 stainless), the PBD and OBD series are ideally suited as a control damper where hidden linkages could present service issues (ex: built up AHU or rooftop units).

**The MBD series** are galvanized steel dampers designed and built to provide a cost effective and reliable damper for reduced volume control. The MBD series is not intended for positive shut off or automatic operation; an ACD or SCD series control damper would be the appropriate choice in those applications.

### CONTROL DAMPERS

Model	MATERIAL DESCRIPTION		Blade Operation	Seals	Single Section Limits	Maximum System Pressure (in w.g.)*	Maximum Velocity (FPM)*	Leakage (CFM/Sq. Ft. @ 1" w.g.)	Temperature Range
	Frame	Blade							
<b>ACD-44</b>	4" Extr. Alum.	4" Airfoil Extr. Alum.	Parallel or Opposed	Std.	60" x 72"	7.0	6,000	1.6	-40°F to 250°F
<b>ACD-54</b>	5" Extr. Alum.	4" Airfoil Extr. Alum.	Parallel or Opposed	Std.	60" x 72"	7.0	6,000	1.6	-40°F to 250°F
<b>ACD-56</b>	5" Extr. Alum.	6" Airfoil Extr. Alum.	Parallel or Opposed	Std.	60" x 72"	7.0	6,000	1.0	-40°F to 250°F
<b>ACD-56-I</b>	5" Extr. Alum. Insulated	6" Airfoil Extr. Alum. Insulated	Parallel or Opposed	Std.	60" x 72"	7.0	6,000	1.0	-40°F to 250°F
<b>OBD-106</b>	3.5" x 16ga. Galv.	6" x 16ga. Galv.	Opposed	Opt.	48" x 72"	5.0	3,000	3.1**	15°F to 250°F
<b>OBD-106R</b>	2" x 12ga. Round Galv.	16ga. Galv.	Opposed	Opt.	14" Dia. Min. 40" Dia. Max.	5.0	3,000		15°F to 250°F

\*Maximum pressure and velocity will depend on blade width - see submittals.

\*\*Blade & Jamb seals required to achieve leakage performance.

### CONTROL DAMPERS

Model	MATERIAL DESCRIPTION		Blade Operation	Seals	Single Section Limits	Maximum System Pressure (in w.g.)*	Maximum Velocity (FPM)*	Leakage (CFM/Sq. Ft. @ 1" w.g.)	Temperature Range
	Frame	Blade							
PBD-100	3.5" x 16ga. Galv.	6" x 16ga. Galv.	Parallel	Opt.	48" x 72"	5.0	3,000	3.1**	15°F to 250°F
PBD-100-INS	3.5" x 16ga. Galv.	6" x 16ga. Galv. Insul.	Parallel	Std.	48" x 72"	5.0	3,000	3.1	15°F to 250°F
PBD-100RM	2" x 12ga. Round Galv.	6" x 16ga. Galv.	Parallel	Opt.	14" Dia. Min. 40" Dia. Max.	5.0	3,000		15°F to 250°F
PBD-100RS	8" x 18-20ga. Round Galv.	16ga. Galv.	Single Blade	Opt.	36" Dia.	5.0	3,000		15°F to 250°F
SCD-57	5" x 20ga. Galv.	4.25" to 7.25" x 16ga. Galv.	Parallel or Opposed	Opt.	48" x 72"	5.0	3,000	N/A	-40°F to 250°F
SCD-AF	5" x 20ga. Galv.	5" to 7" x 14ga. <sup>1</sup> Airfoil Galv.	Parallel or Opposed	Std.	48" x 72"	8.0	4,000	3.0	-40°F to 250°F
SCD-IB	5" x 20ga. Galv.	6" Airfoil Extr. Alum. Insul.	Parallel or Opposed	Std.	60" x 72"	7.0	6,000	1.0	-40°F to 250°F
SCD-LL-57	5" x 20ga. Galv.	4.25" to 7.25" x 16ga. Galv.	Parallel or Opposed	Std.	48" x 72"	5.0	3,000	3.0	-40°F to 250°F
SCD-LL-HD-57	5" x 12ga. <sup>1</sup> Galv.	4.25" to 7.25" x 10ga. <sup>1</sup> Galv.	Parallel or Opposed	Std.	48" x 72"	7.0	5,000	3.0	-40°F to 250°F
SCD-RD-88	10" x 18-22ga. Round Galv.	Galv.	Single Blade	Opt.	24" Dia.	4.0	3,000	N/A	15°F to 250°F
SCD-RD-LL-88	10" x 18-22ga. Round Galv.	Galv.	Single Blade	Std.	24" Dia.	4.0	3,000	1.0	15°F to 250°F
ZMD-3V	6" x 16ga. Galv.	5.25" x 16ga. Galv.	Parallel	Std.				6.0	
ZMD-AF	6" Extr. Alum.	6" Airfoil Extr. Alum.	Parallel	Std.				6.0	

### BALANCING DAMPERS (not intended for use with actuators)

Model	MATERIAL DESCRIPTION		Blade Operation	Seals	Single Section Limits	Maximum System Pressure (in w.g.)*	Maximum Velocity (FPM)*	Leakage (CFM/Sq. Ft. @ 1" w.g.)	Temperature Range
	Frame	Blade							
MBD-57	5" x 20ga. Galv.	4.25" to 7.25" x 16ga. Galv.	Parallel or Opposed	N/A	48" x 72"	5.0	3,000	N/A	-40°F to 250°F
MBD-RD-88	10" x 18-22ga. Round Galv.	Galv.	Single Blade	N/A	24" Dia.	4.0	2,000	N/A	15°F to 250°F
PBD-20	3" x 18ga. Galv.	4" to 12" x 18ga. Galv.	Single Blade	N/A	36" x 12"	1.0	2,000	N/A	
PBD-20RS	8" x 20ga. Round Galv.	18ga. Galv.	Single Blade	N/A	20" Dia.	1.0	2,000	N/A	

<sup>1</sup>Equivalent gauge - Material is composed of multiple layers of material to form equivalent gauges.

\*Maximum pressure and velocity will depend on blade size - see submittals.

\*\*Blade & Jamb seals required to achieve leakage performance.

# BACKDRAFT & BAROMETRIC DAMPERS

## Series XABD, CBD, HBD, FBD & BDD-SS

The **XABD series** are high-quality extruded aluminum backdraft dampers. The dampers are available in a variety of frame styles (channel, front flange or rear flange) and can be provided with a variety of counterweights (assist or retard) or electric actuators to aid in operation.



The **CBD** counter balance damper or barometric damper is designed to act primarily as an up or down blast damper but can be mounted vertically as well. The CBD includes blade-mounted, adjustable steel counterweights that allow for field control of the first point of opening and full open limits.

The **HDB series** of heavy duty backdraft dampers are designed for higher pressure, velocity or temperature environments. Dampers are fabricated of heavy gauge galvanized steel standard; these dampers are capable of operating up to 250°F and up to 3,000 fpm (HBD-H).

The **FBD** features neoprene coated fiberglass ‘blades’ in a galvanized steel frame. Appropriate for use up to a maximum velocity of 1,000 fpm, the FBD’s nonmetallic blades offer quiet operation with no metallic noises and long-term operation due to no mechanical pivots.

The **BDD-SS** is fabricated of 304 stainless steel frame and blades with stainless axles and linkage, making this damper ideally suited for use in corrosive environments. Available with channel or flanged frame, the BDD-SS is rated for use up to 1,500 fpm and 1.5" w.g.

### BACKDRAFT & BAROMETRIC DAMPERS

Model	MATERIAL DESCRIPTION		Blade Operation	Seals	Single Section Limits	Maximum System Pressure (in w.g.)*	Maximum Velocity (FPM)*	Leakage (CFM/Sq. Ft. @ 1" w.g.)	Temperature Range
	Frame	Blade							
<b>XABD-1</b>	2.5" Extr. Alum.	5" Formed Alum.	Parallel	Std.	36" x 52"	1.0	1,500	5.1	-40°F to 180°F
<b>XABD-2</b>	2.5" Extr. Alum.	5" Extr. Alum.	Parallel	Std.	40" x 52"	2.0	2,500	4.5	-40°F to 180°F
<b>CBD-112</b>	3-3/8" x 16ga. Galv.	Formed Alum.	Parallel	Opt.	48" x 72"	1.5	1,000		-40°F to 180°F
<b>HDB-M</b>	3.5" x 16ga. Galv.	6" x 18ga. Galv.	Parallel	Opt.	48" x 72"	2.5	2,500		-40°F to 250°F
<b>HDB-H</b>	8" x 12 ga. Galv.	6" x 16ga. Galv.	Parallel	Opt.	48" x 72"	4.0	3,000		-40°F to 250°F
<b>FBD</b>	2" to 4" x 18ga. Galv.	Coated Fiberglass	N/A	N/A	36" x 24"	1.0	1,000	N/A	-20°F to 200°F
<b>BDD-SS</b>	18ga. 304 Stainless	26ga. 304 Stainless	Parallel	Std.	30" x 72"	1.5	1,500		-40°F to 200°F

\*Consult factory for values exceeding listed limits.



# EXTRUDED ALUMINUM LOUVERS

## Series XA & WDR



The **XA series** of louvers are available in a wide variety of blade styles and angles to meet every application. Fabricated of extruded .081" (6063-T6) aluminum frames and blades, the XA series can be provided with channel frames, sill extensions or flanged frames, expanded aluminum bird screen (standard) and exposed or hidden mullion options for multi-unit assemblies. An extensive choice of finishing options is offered including: epoxy/prime coat, AAMA 2604 powder coat, AAMA 2605 (Kynar 500® equivalent) powder coat and anodized finishes.

- A wide variety of blades shapes are available within the extruded louver line:
  - XAJ Series** – Non-drainable ‘straight’ blade louvers.
  - XAL Series** – J/K or Z step blades for improved water penetration performance.
  - XAD series** – Drainable blade louvers for excellent water penetration protection.
  - The XADV** incorporates a chevron style blade offering a sight-proof option.
- Many models within the XA series are AMCA certified for both water and air performance.



XAJ-4



The **WDR series** are AMCA certified sight-proof louvers with exceptional prevention of water penetration. Fabricated of .081" (6063-T6) extruded aluminum, these have been evaluated at AMCA for wind-driven rain performance up to 50 mph and 8 in/hr. An extensive choice of finishing options is offered including: epoxy/prime coat, AAMA 2604 powder coat, AAMA 2605 (Kynar 500® equivalent) powder coat and anodized finishes.

- All WDR Louvers offer sight-proof construction and AMCA ratings for water penetration up to 50 mph and 8 in/hr.
- Available in 4" (WDR-4) & 6" (WDR-6) deep frames with horizontal blades and a 6" deep vertical blade configuration (WDRV-6).



WDR-4

Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)

**EXTRUDED NON-DRAINABLE LOUVERS**

XAJ-4*	4"	J	No	45°	46%	690	5,085
XAJ-4-GL*	4"	J	Yes	45°	49%	995	7,771
XAL-2-GL*	2"	Thinline J/K	Yes	45°	48%	797	6,153
XAL-4*	4"	J/K	Yes	37.5°	59%	865	8,183
XAL-6*	6"	J/K	Yes	37.5°	62%	911	8,973
XAZ-4-30-GL	4"	Step - J/K	Yes	30°	52%	983	8,159

**EXTRUDED DRAINABLE LOUVERS**

XAD-2-45-GL*	2"	Drainable	Yes	45°	43%	1,100	7,590
XAD-4*	4"	Drainable	No	37.5°	53%	1,088	9,183
XAD-4-45*	4"	Drainable	No	45°	51%	1,062	8,615
XAD-4-45-GL*	4"	Drainable	Yes	45°	51%	939	7,606
XAD-6-GL*	6"	Drainable	Yes	37.5°	55%	1,250+	11,013+
XADD-4-45-GL*	4"	Double Drainable	Yes	45°	44%	1,213	8,552
XADV-4	4"	Chevron	No	60°	33%	749	3,910
XAD-4-IE	4"	Drainable	No	45° / 90°	53% / 71%	898	Variable

**HURRICANE LOUVERS**

XAD-6-MD*	6"	Drainable	Yes	37.5°		1,250+	11,013+
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Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)

**WIND-DRIVEN RAIN LOUVERS**

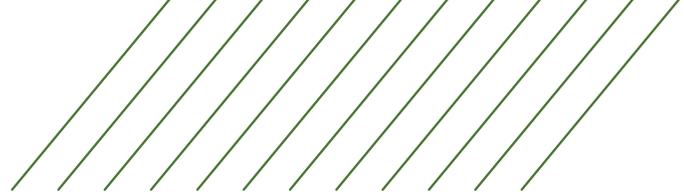
WDR-4*	4"	Horizontal	No	55°	46%	Variable	Variable
WDR-6*	6"	Horizontal	Yes	22°	50%	Variable	Variable
WDRV-6*	6"	Vertical	No	34°	54%	Variable	Variable

Velocity and Air Volume data is the first point of water penetration as tested in accordance with AMCA Standard 500-L.

Performance reported is at standard air density of 0.075 lbs/ft3. Water Penetration Test is based upon 15 minute exposure.

Performance data does not include the effects of bird or insect screens.

**\*AMCA Certified Data**



# FORMED METAL & ACOUSTICAL LOUVERS

## Series SL & ACS

The **SL series** of formed louvers are fabricated of galvanized steel frames and blades. They can be fabricated with channel frames, flange frames and sill extensions and are available in 2", 4" & 6" deep frame styles. An extensive choice of finishing options is offered including: epoxy/prime coat, AAMA 2604 powder coat and AAMA 2605 (Kynar 500® equivalent) powder coat.

- A wide variety of blades shapes are available within the formed metal louver line:
  - **SLJ Series** – Non-drainable ‘straight’ blade louvers.
  - **SLZ Series** – Z (step) blades for improved water penetration performance.
  - **SLD Series** – Drainable blade louvers for excellent water penetration protection.
  - **SLV Series** – Chevron shaped blades provide sight proof performance.
- Many models within the SL series are AMCA certified for both water and air performance.

SLZ-4-30



Recommended for installation in noisy environments, **the ACS series** of acoustical louvers include insulated blades to lower sound transmission through the louver. These galvanized steel louvers are available in straight blade (ACSLJ) and airfoil blade (ACSLJAF) designs and range in frame depth from 6" to 12" deep.

- Frame constructed of 16 ga. galvanized steel and blades constructed of 20 ga. galvanized steel.
- Available in straight blade frame depths of 6", 8" and 12" and airfoil blade design with a 12" frame depth, each with a variety of frame styles; channel frame, flanged frame, sill extensions.
- Acoustical performance tested to ASTM E 90-97 and E 413-87.

ACSLJAF-12



## FORMED STEEL LOUVERS

Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)
SLD-4-45-GL	4"	Drainable	Yes	45°	45%	1,250+	9,088+
SLD-4-GL	4"	Drainable	Yes	37.5°	55%	1,104	9,682
SLD-6-45-GL*	6"	Drainable	Yes	45°	53%	1,250+	10,675+
SLD-6-GL*	6"	Drainable	Yes	37.5°	58%	1,084	9,984
SLJ-2	2"	J	No	45°	44%	625	4,350
SLJ-4	4"	J	No	45°	44%	775	5,425
SLJ-4-30	4"	J	No	30°	50%	708	5,607
SLJ-6	6"	J	No	45°	48%	845	6,515
SLV-4	4"	Chevron	No	60°	31%	703	3,480
SLV-6	6"	Chevron	No	60°	33%	743	3,901
SLZ-4*	4"	Step - J/K	Yes	45°	44%	891	6,317
SLZ-4-30	4"	Step - J/K	No	30°	42%	736	4,968
SLZ-6	6"	Step - J/K	Yes	45°	48%	893	6,787

\*AMCA Certified Data

## ACOUSTICAL LOUVERS

Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)
ACSLJ-6	6"	Straight	No	45°	25%	970	3,851
ACSLJ-8	8"	Straight	No	45°	22%	1,060	3,784
ACSLJ-12	12"	Straight	No	45°	22%	1,208	4,204
ACSLJAF-12	12"	Airfoil	No	45°	21%	1,250+	4,200+

Velocity and Air Volume data is the first point of water penetration as tested in accordance with AMCA Standard 500-L.

Performance reported is at standard air density of 0.075 lbs/ft<sup>3</sup>. Water Penetration Test is based upon 15 minute exposure.

Performance data does not include the effects of bird or insect screens.



## ADJUSTABLE & COMBINATION LOUVERS

### Series A-XA, A-SL & CA-X

**The A-XA series** of extruded aluminum louvers provide all the features and benefits of the fixed blade versions of the XA series louvers, but include the added feature of adjustable blades. The adjustable (operable) louvers allow for the weather protection of a louver when open and can provide positive shut-off when no airflow is required.

- Frame and blades constructed of .081" (6063-T6) extruded aluminum (.125" frames available as option).
- Available in 4" and 6" deep frames with drainable or "J" type blades.
- The A-XAD-4-45-GL louver is AMCA licensed with certified air performance and water penetration data.



**The A-SL series** of formed steel louvers provide all the features and benefits of the fixed blade versions of the SL series louvers, but include the added feature of adjustable blades. The adjustable (operable) louvers allow for the weather protection of a louver when open and can provide positive shut off when no airflow is required.

- Frame and blades constructed of 20 ga. galvanized steel.
- Available in 4" and 6" deep frames with drainable or "J" type blades.

**The CA-X series** of extruded aluminum louvers provide the features and benefits of the XA series of louvers while including the benefits of an operable louver. The CA-X series feature fixed front blades for weather protection and a consistent appearance, and feature operable rear blades to allow for flow control and shut off when desired.

- Frame and blades constructed of extruded aluminum (6063-T6).
- Available in 4" and 6" deep frames with drainable or "J" type blades.
- Several CA-X series louvers are AMCA licensed with certified air performance and water penetration data.
- Specialized use models integrate backdraft dampers to provide directional control of airflow (CE-X for exhaust and CI-X for intake).

### EXTRUDED OPERABLE LOUVERS

A-XA Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)
A-XAD-4	4"	Drainable	No	37.5°	47%	920	6,983
A-XAD-4-45-GL*	4"	Drainable	Yes	45°	41%	969	6,328
A-XAD-6	6"	Drainable	No	37.5°	49%	976	7,662
A-XAD-46	6"	Drainable	No	45° / 90°	41% / 72%	976	6,403
A-XAJ-4	4"	J	No	45°	41%	920	6,008

### FORMED STEEL OPERABLE LOUVERS

A-SL Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)
A-SLD-4	4"	Drainable	No	37.5°	45%	1,011	7,219
A-SLD-4-45-GL	4"	Drainable	Yes	45°	41%	1,007	6,656
A-SLD-6	6"	Drainable	No	37.5°	53%	1,011	8,614
A-SLJ-4	4"	J	No	45°	39%	696	4,315
A-SLJ-6	6"	J	No	45°	45%	707	5,062

### EXTRUDED COMBINATION LOUVERS

CA-X Model	Blade Depth	Blade Style	Drainable Head	Blade Angle	AIR PERFORMANCE & WATER PENETRATION DATA (for 48" x 48" test unit only)		
					Free Area	Maximum Free Area Velocity (FPM)	Maximum Air Volume (CFM)
CA-XAD-4-45-GL*	4"	Drainable	Yes	45°	47%	1,102	8,353
CA-XAD-6*	6"	Drainable	No	37.5°	48%	840	6,451
CA-XAD-6-45-GL*	6"	Drainable	Yes	45°	48%	1,113	8,481
CA-XAJ-6	6"	J	No	37.5°	47%	760	5,746
CE-XAD-4	4"	Drainable	No	37.5°	47%	N/A	N/A
CE-XAJ-4	4"	J	No	45°	40%	N/A	N/A
CI-XAD-4	4"	Drainable	No	37.5°	41%	950	6,166
CI-XAJ-4	4"	J	No	45°	37%	690	4,106

Velocity and Air Volume data is the first point of water penetration as tested in accordance with AMCA Standard 500-L. Performance reported is at standard air density of 0.075 lbs/ft<sup>3</sup>. Water Penetration Test is based upon 15 minute exposure. Performance data does not include the effects of bird or insect screens.

**\*AMCA Certified Data**



# EQUIPMENT SCREENS

## Series ES

The **ES series** of equipment screens offer an effective and economical means to hide and protect equipment. The ES series are fabricated of extruded aluminum (6063-T6) and are designed to provide an attractive appearance with hidden blade supports to prevent sagging and bows. They are provided with post corners as a standard part of the design, but can be optionally provided with mitered corners if architecturally desired.

- The ESH series are provided with horizontally mounted blades and are available in 2", 4" and 6" deep frames and horizontally mounted standard, reversed or sight proof blades.
- The ESV series features vertically mounted sight-proof blades and are available in 2-5/8" and 4" deep frames.



ES Model	Blade Depth	Blade Style	Drainable Head	Blade Angle
ESHX-2	2"	Horizontal Inverted-J	---	45°
ESHX-4	4"	Horizontal Inverted-J	---	45°
ESHX-6	6"	Horizontal Inverted-J	---	45°
ESHX-R-4	4"	J	---	45°
ESHX-R-6	6"	J	---	45°
ESHX-V-4	4"	Chevron	---	60°
ESVX-T	2-5/8"	Vertical Cladding	---	90°
ESVX-V-4	4"	Vertical Chevron	---	60°

# PENTHOUSES & GRAVITY HOODS

## Series XPH, FPH, ARV & GRV

Available with virtually all of the blade options from our louvers, our penthouses can be fabricated to meet a wide variety of job needs. Available with post or mitered corners, hinged roofs, insulated roofs and anti-condensate coatings, the **XPH and FPH series** can accommodate virtually any job requirement.

- The XPH series of extruded aluminum (6063-T6) penthouses can be fabricated with virtually any of the blade options found in the XA series of louvers.
- The FPH series of galvanized steel penthouses can be fabricated with virtually any of the blade options found in the SL series of louvers.



**The ARV series** (Aluminum) and **GRV Series** (Galvanized Steel) hoods feature a low-profile design available for supply (ARV-S/GRV-S) and exhaust (ARV-E/GRV-E) applications. Various screens and finishes are available with this durable unit that includes all structural support angles and a fully welded, fully mitered base. Also available with optional insulated and hinged roofs, special bases for existing curbs.



**NCA is a leading manufacturer** of AMCA certified louvers, penthouses, screens, control dampers, backdraft dampers and UL-listed fire, smoke and fire/smoke dampers. We are a team of professionals committed to maintaining our position as the leader in the industry in customer service and quick delivery of high quality and high performance engineered products.

NCA is part of the Metal Industries, Inc. family of brands, which was founded in 1947 and has been focused on providing the highest quality products to the HVAC industry and doing so with respect for our customers, our employees and the environment.

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