CD50CE

High Performance Extruded Aluminum Airfoil for Coastal Environments

Class 1A Leakage Rated

RUSKIN
AUTHORITY IN AIR CONTROL

APPLICATION

Designed for coastal regions and other corrosive environments, the CD50CE is a low leak, extruded aluminum damper designed with standard corrosion resistant features that facilitate harsh environments. The damper includes airfoil blades for higher velocity and pressure HVAC systems. It meets the leakage requirements of the International Energy Conservation Code by leaking less than 3 cfm/sq. ft. at 1" of static pressure and is AMCA licensed as a Class 1A damper. Damper comes standard with stainless steel linkage and anodized aluminum blades and frame.

STANDARD CONSTRUCTION

Frame	5" x 1" x 6063T6 high yield extruded aluminum hat channel with .125" minimum wall thickness (127 x 25 x 3.2). Low profile, 5" x 1/2" (127 x 13) top and bottom frames on dampers 12" (305) high and less. 215-R1 clear anodize finish.
Blades	6" (152) wide, 6063T6 high yield heavy gage extruded aluminum, airfoil shape, 215-R1 clear anodize finish.
Blade Seals	Santoprene™ Extruded.
Jamb Seals	301 Stainless Steel compression type.
Bearings	Lexan™
Linkage	304 Stainless Steel (concealed in frame).
Axles	1/2" (13) stainless steel hex.
Maximum Size	Single section – 60"w x 72"h (1524 x 1829). Multiple section assembly – Unlimited size.
Minimum Size	Single blade – 6"w x 5"h (152 x 127). Two blades, parallel or opposed action: 6"w x 9"h (152 x 229).
Temperature Limits	-72°F (-58°C) and +275°F (+135°C) .

FEATURES

- Airfoil blade design for low pressure drop and less noise generation.
- Positive lock axles, noncorrosive bearings and shake proof linkage for low maintenance operation.
- Blade edge seals mechanically lock into the blade for superior sealing.
- Anodized finish with stainless linkage for coastal applications.

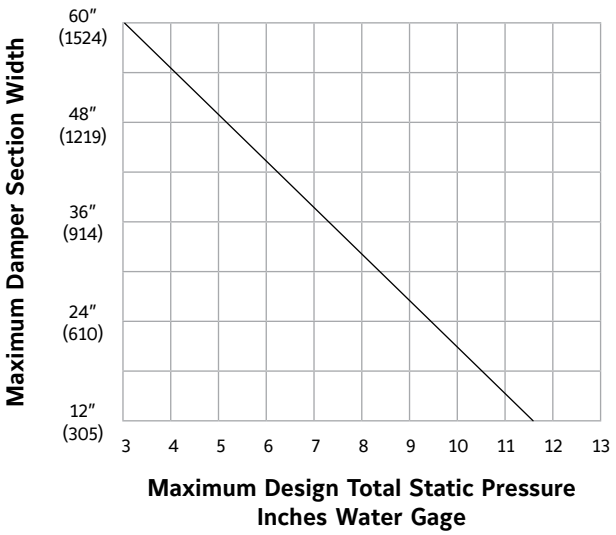
OPTIONS

- Factory-installed, pneumatic and electric actuators.
- SP100 Switch Package to remotely indicate damper blade position.
- Front, rear or double flange frame with or without bolt holes.

NOTES:
- Values shown in parentheses ( ) are millimeters unless otherwise indicated.
- Refer to Installation Instructions for additional details.
- Units furnished approximately 1/4" (6mm) smaller than given opening dimensions when standard frame is ordered.

AMCA LICENSED PERFORMANCE DATA

PRESSURE LIMITATIONS



The CD50CE may be used in systems with total pressures exceeding 3.5″ by reducing damper section width as indicated. Example: Maximum design total pressure of 8.5″ w.g. would require CD50CE damper with maximum section width of 36″ (914).

Pressure limitations shown above allow maximum blade deflection of 1/180 of span on 60″ (1524) damper widths. Deflections in other damper widths (less than 48″ [1219]) at higher pressures shown will result in blade deflection substantially less than 1/180 of span.

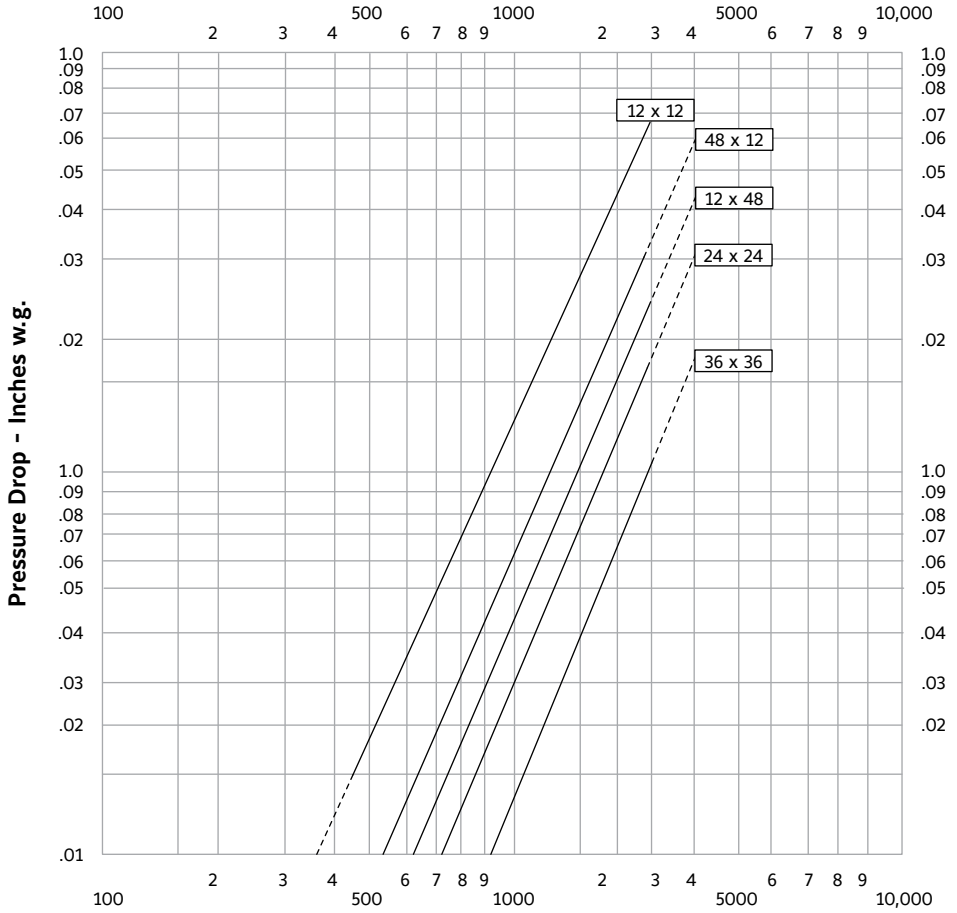
Ruskin Company certifies that the CD50CE shown herein is licensed to bear the AMC A Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA International Certified Ratings Seal applies to Air Performance and Air Leakage.

Pressure/Class	Leakage, L/s/m² (ft³/min/ft²)			
	Required Rating		Extended Ranges (Opt.)	
	1" (0.25 kPa)	4" (1.0 kPa)	8" (2.0 kPa)	12" (3.0 kPa)
1A	3 (15.2)	N/A	N/A	N/A
1	4 (20.3)	8 (40.6)	11 (55.9)	14 (71.1)
2	10 (50.8)	20 (102)	28 (142)	35 (178)
3	40 (203)	80 (406)	112 (569)	140 (711)

Damper Width (Inches)	1 IN. W.G.	4 IN. W.G.	8 IN. W.G.
12" (305)	IA	I	II
24" (610)	IA	I	II
36" (914)	IA	I	NA
48" (1219)	IA	I	NA
60"(1524)	IA	I	NA

Leakage testing conducted in accordance with AMCA Standard 500-D-18. Torque applied holding damper closed, 5 in. lbs./sq. ft. on opposed blade dampers and 7 in. lbs./sq. ft. on parallel blade dampers. Air leakage is based on operation between 50°F to 104°F. All data corrected to represent standard air density 0.075 lbs/ft³.

VELOCITY VS. PRESSURE DROP



Face Velocity - Feet/Minute AMCA Fig. 5.3

CD50CE sizes 12 x 12, 24 x 24, 48 x 12, 12 x 48, 36 x 36 (305 x 305, 610 x 610, 1219 x 305, 305 x 1219, 914 x 914)

All data corrected to represent standard air at a density of 0.075 lbs/ft^3.

SOUND RATINGS

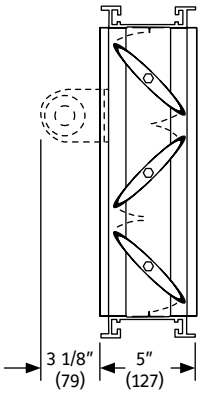
Damper Size	Damper Full Open		Damper 75% Open		Damper 50% Open		Damper 25% Open	
	CFM	NC	CFM	NC	CFM	NC	CFM	NC
12 x 12 (305 x 305)	2000	17	1500	11	1000	11	500	*
	3000	28	2250	22	1500	19	750	*
	4000	35	3000	29	2000	24	1000	*
18 x 18 (457 x 457)	2250	17	1688	10	1125	21	563	*
	4500	33	3375	26	2250	32	1125	*
	6750	43	5063	37	3375	40	1688	15
24 x 24 (610 x 610)	4000	11	3000	10	2000	26	1000	*
	8000	32	6000	30	4000	38	2000	21
	12000	43	9000	42	6000	46	3000	31

NC = Noise criteria in Decibels is based on 10db room effect and 10db of room attenuation.

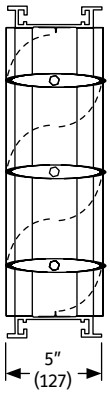
* = Less than 10 NC

See ASHRAE Handbook (1977 Fundamentals, Chapter 7) for explanation of NC Ratings.

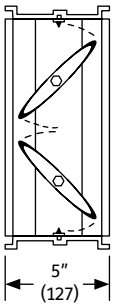
DIMENSIONAL INFORMATION



OPPOSED BLADE



PARALLEL BLADE



LOW PROFILE
Standard construction for higher free area on dampers 12" (305) high and less.

SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans, or in accordance with schedules, Low leakage dampers shall meet the following minimum construction standards: Frames shall be 5" x 1" x .125" (minimum thickness) (127 x 25 x 3.2) 6063T6 high yield extruded aluminum hat channel with hat mounting flanges on both sides of the frame. Each corner shall be reinforced with two die formed internal braces and machine staked for maximum rigidity. Blades shall be airfoil type 6063T6 high yield extruded aluminum (maximum 6" (152) depth) with integral structural reinforcing tube running full length of each blade.

Blade edge seals shall be extruded double edge design with inflatable pocket which enables air pressure from either direction to assist in blade to blade seal off. Blades seals shall be mechanically locked in extruded blade slots, yet shall be easily replaceable in field. Adhesive or clip-on type blade seals are not acceptable. Bearings shall be non-corrosive molded synthetic. Axles shall be stainless steel hexagonal (round not acceptable) to provide positive locking connection to blades and linkage. Linkage shall be stainless steel concealed in frame. Submittal must include leakage, maximum air flow and maximum pressure ratings based on AMCA Publication 500-D. Damper shall be tested and licensed in accordance with AMCA 511 for Air Performance and Air Leakage. Damper widths from 12" to 60" (305 to 1524) wide shall not leak any greater than 8 cfm sq. ft. @ 4" w.g. and a maximum of 3 CFM sq. ft. @ 1" w.g. Dampers shall be in all respects equivalent to Ruskin Model CD50CE.

LINKS TO IMPORTANT DOCUMENTS

Document Title
Limited Warranty Document

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