

المال للمنتجات الهندسية
AL MULLA ENGINEERING PRODUCTS



VENTUM
by AL MULLA GROUP

Volume Control Damper (VCD) Back Draft Damper (BDD)



Al Mulla Air Movement Solutions

Air Duct and Air Movement Products (AD&) manufacturing facilities of Al Mulla Group are located in Kuwait.

Al Mulla Industries (AMI) covers the Kuwait market requirements through a reliable transport network.

Promoted by Al Mulla Engineering Products and Al Mulla International General Trading of Equipment & Machinery Co. W.L.L. on behalf of Al Mulla Industries, with manufacturing facilities in Kuwait



is a registered trade mark of Al Mulla Group

Why Do Customers Choose Us

The greatest strengths of Al Mulla Industries are its skilled and experienced workforce, in addition to the use of latest design software, codes, and QHSE (Quality, Health, Safety, and Environment) standards that conform to ISO 9001, 14001 and 18001. In addition to Airduct and Air Movement Products, Al Mulla Industries is also a leading manufacturer and fabricator of quality steel products that cater to a wide variety of industries and clients in Kuwait such as Oil & Gas, Logistics, Chemical Industry, Construction, Cleaning and the Military.

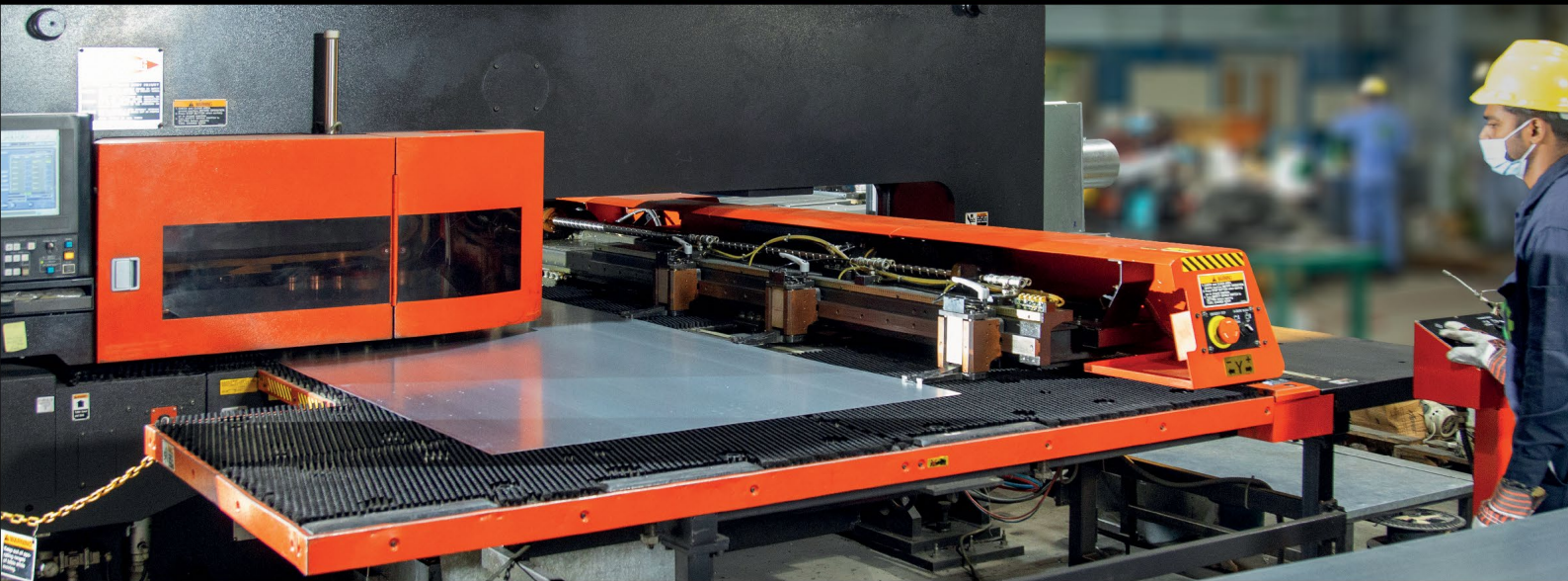
The Company's manufacturing units are located in Kuwait. The plant in Kuwait has a total work-area of over 13,000 sq m. The Company has a team of highly skilled and trained work force, and is equipped with modern machinery as per latest standards in order to meet environmental requirements.



Dampers

Al Mulla Industries manufactures a wide range of Dampers that cater to a variety of specialized HVAC applications. Robust design and sturdy construction ensure that our customers enjoy a product line that is safe, reliable, durable, and hassle-free.

- Volume Control Damper - Manual
- Volume Control Damper - Motorized
- Back Draft Damper



Volume Control Dampers

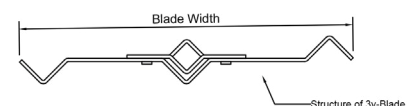
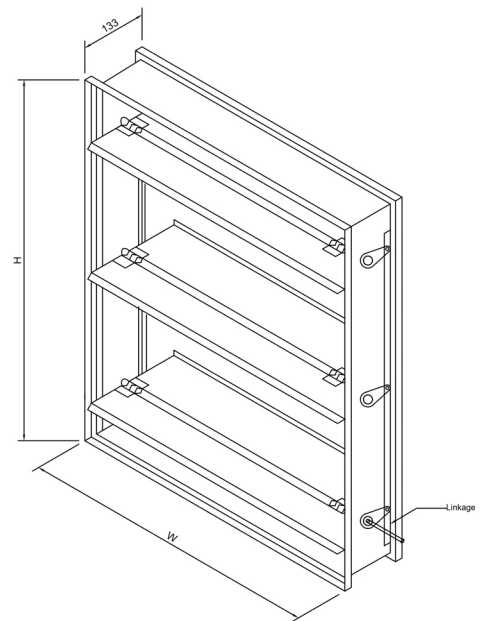
AM-VCD-3V-P / AM-VCD-3V-O (Manual)
AM-VCDM-3V-P / AM-VCDM-3V-O (Motorized)



This series of Volume Control Dampers are designed and tested to provide reliable and cost effective solution where **tight sealing is not of primary importance**. These dampers are available in parallel or opposed blade construction, with optional blade seals that ensure minimum leakage through the blades.

Technical Details:

Component	Specification
Model No.	AM-VCD-3V-P / AM-VCD-3V-O (Manual) AM-VCDM-3V-P / AM-VCDM-3V-O (Motorized)
Sizes: (W x H) Minimum Size	6" x 6" (152 mm x 152 mm)
Maximum Size	• Single Section: 36" x 48" (914 mm x 1219 mm) • Max. Single Section: 48" x 72" (1219 mm x 1829 mm) • Max. Multiple Section: Unlimited
Frame	Roll formed Galvanized Steel Hat Section, 20/16 GA
Blades	16Ga - 3V Type - Roll Formed Galvanized Steel. Min. Width 5.25", Max Width 7.25"
Bearings	Nylon / Bronze Oilite, press-fit into frame
Axies	Square, plated steel
Linkage	12 GA galvanized steel Linkage Bars, concealed in the frame
Finish	Mill galvanised
Sleeve Thickness	Various length and gauges
Mounting Type	Slip in / Flange Type / Pocket Joints
Actuators	Honeywell / Belimo/ Siemens/ Rotork
Optional Features	1) Available in Low Leakage I 2) Factory Mounted Actuators 3) Factory fabricated retaining angles



Volume Control Dampers

AM-VCD-3V-P-L / AM-VCD-3V-O-L (Manual)

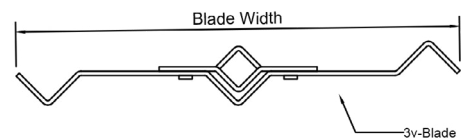
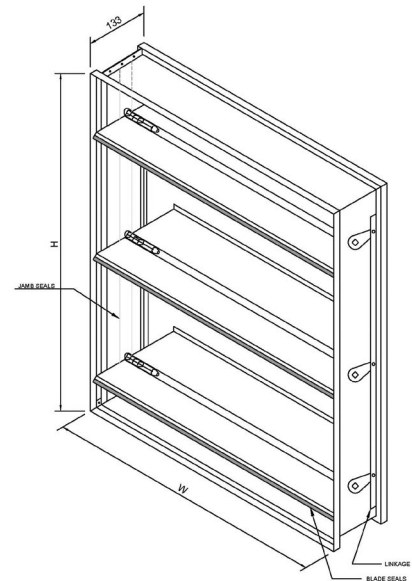
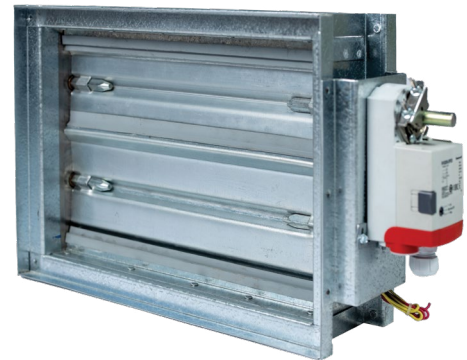
AM-VCDM-3V-P-L / AM-VCDM-3V-O-L (Motorized)



This series of low leakage Volume Control Dampers are designed and tested to provide reliable and cost effective solution where **tight sealing is of primary importance**. These dampers are available in parallel or opposed blade construction, with blade seals that ensure minimum leakage through the blades.

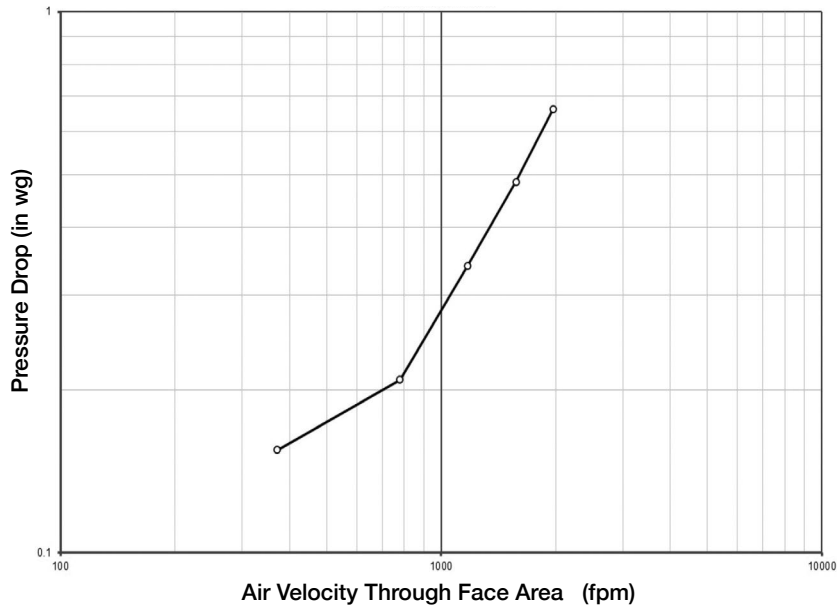
Technical Details:

Component	Specification
Model No.	AM-VCD-3V-P-L / AM-VCD-3V-O-L (Manual) AM-VCDM-3V-P-L / AM-VCDM-3V-O-L (Motorized)
Sizes: (W x H) Minimum Size	Minimum Size (WT x HT): 6" x 6" (152 mm x 152 mm)
Maximum Size	• Single Section: 36" x 48" (914 mm x 1219 mm) • Max. Single Section: 48" x 72" (1219 mm x 1829 mm) • Max. Multiple Section: Unlimited
Frame	Roll formed Galvanized Steel Hat Section, 20/16 GA
Blades	16Ga - 3V Type - Roll Formed Galvanized Steel. Min. Width 5.25", Max Width 7.25"
Bearings	Nylon / Bronze Oilite, press-fit into frame
Seals	Pressure sensitive blade seals and flexible metal jamb seals
Axies	Square, plated steel
Linkage	12 GA galvanized steel Linkage Bars, concealed in the frame
Finish	Mill galvanised
Sleeve Thickness	Various length and gauges
Mounting Type	Slip in / Flange Type / Pocket Joints
Actuators	Honeywell / Belimo/ Siemens/ Rotork
Optional Features	1) Factory Mounted Actuators 2) Factory fabricated retaining angles



AIR PERFORMANCE

Model Name : Volume Control Damper
 Model Number : AM-VCD-3V-O-L
 Size : 12 x 12 Inch Square
 Blade Position : Opposed
 Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_D (in wg.)	V (fpm)
1	0.16	371
2	0.21	779
3	0.34	1172
4	0.49	1573
5	0.66	1965



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-3V-O-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

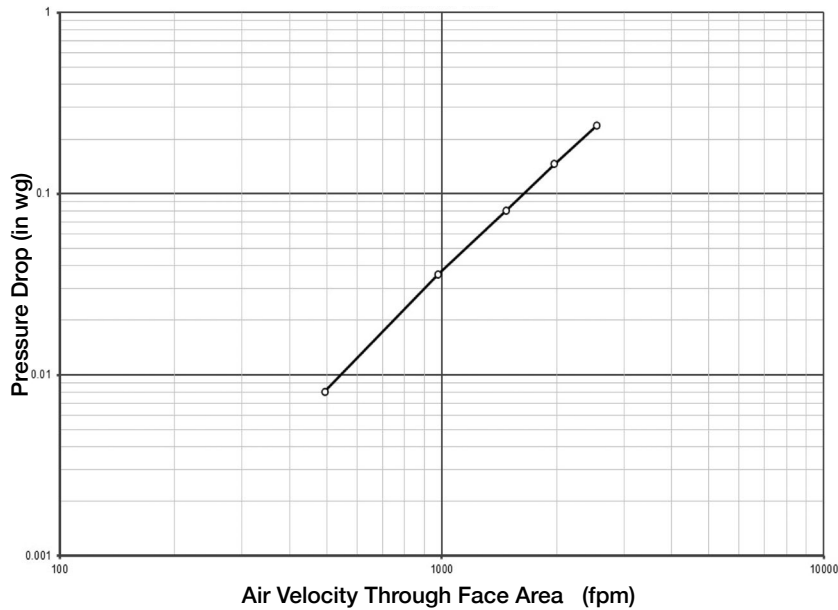
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F
 Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR PERFORMANCE

Model Name : Volume Control Damper
Model Number : AM-VCD-3V-P
Size : 24 x 24 Inch Square
Blade Position : Parallel
Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_s (in wg.)	V (fpm)
1	0.008	494
2	0.04	979
3	0.08	1478
4	0.15	1973
5	0.24	2542



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-3V-P. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

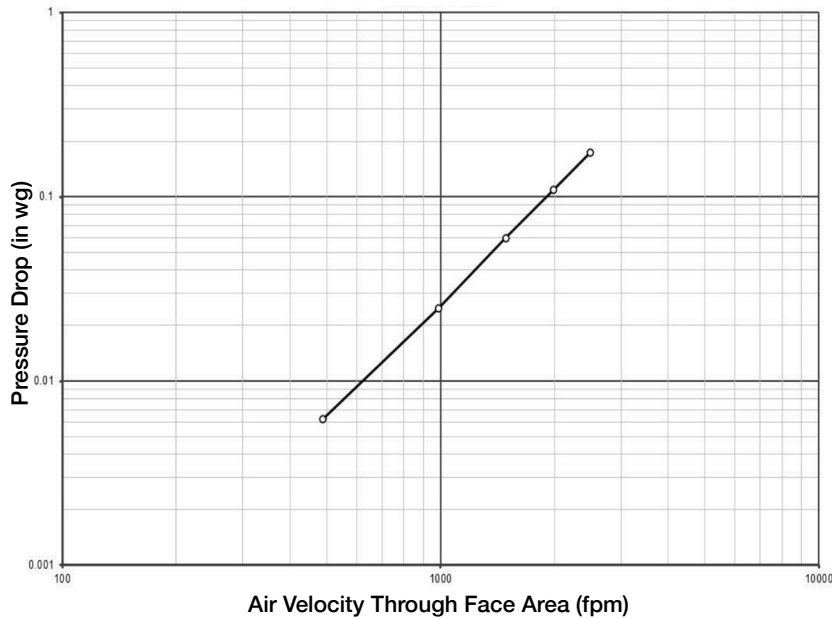
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR PERFORMANCE

Model Name : Volume Control Damper
 Model Number : AM-VCD-3V-O-L
 Size : 36 x 36 Inch Square
 Blade Position : Opposed
 Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_d (in wg.)	V (fpm)
1	0.006	488
2	0.03	988
3	0.06	1486
4	0.11	1988
5	0.18	2488



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-3V-O-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

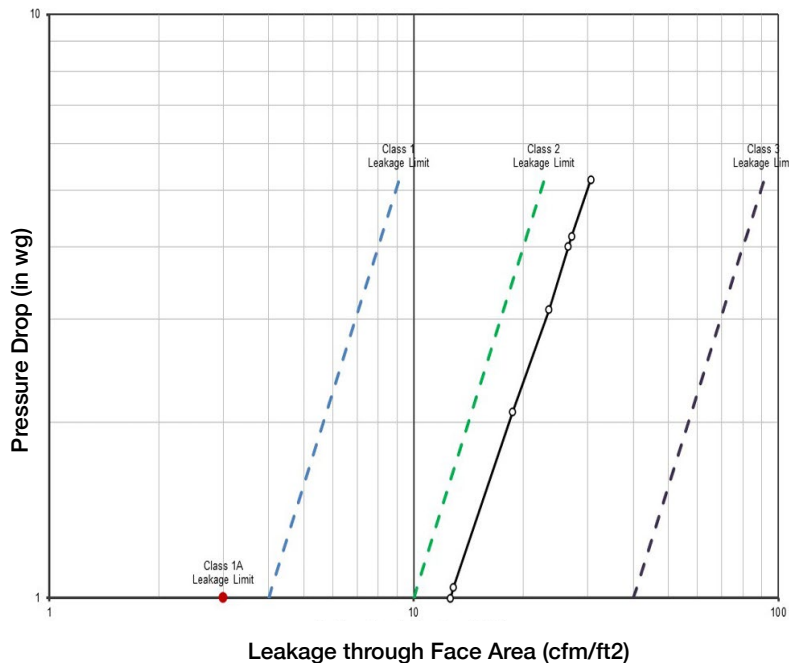
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F. Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR LEAKAGE

Model Name : Volume Control Damper
Model Number : AM-VCD-3V-P-L
Size : 24x24 inch square
Blade Position : Closed
Flow Direction : Exhaust
Torque : Data are based on a torque of 132 lb-in applied to close and seat the damper during the test.



Device Test Results at Standard Air:

Det. No.	ΔP_d (in wg.)	Q_d/A (cfm/ft²)
1	5.204	29.5
2	4.164	26.0
3	3.124	21.7
4	2.086	17.0
5	1.045	11.7



Al Mulla Industries certifies that the Low leakage volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-3V-P-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F
Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



■ Volume Control Dampers

AM-VCD-AF-P / AM-VCD-AF-O (Manual)
AM-VCDM-AF-P / AM-VCDM-AF-O (Motorized)

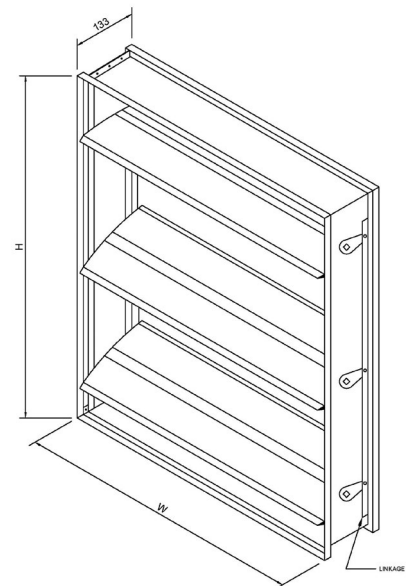
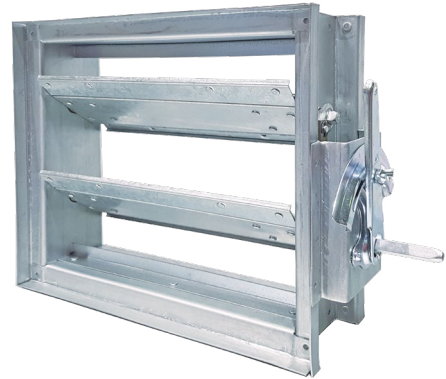


Al Mulla VCD series control dampers are designed & tested to provide a reliable cost effective control damper where tight sealing is not of primary importance.

These dampers are available in parallel or opposed blade construction with blade seals to ensure minimum leakage through the blades.

Technical Details:

Component	Specification
Model No.	AM-VCD-AF-P / AM-VCD-AF-O (Manual) AM-VCDM-AF-P / AM-VCDM-AF-O (Motorized)
Sizes: (W x H) Minimum Size	8"w x 8"h (203mm x 203mm)
Maximum Size	• Single Section: 48"w x 72"h (1219mm x 1829mm) • Max. Multiple Section: Unlimited
Frame	Roll formed Galvanized Steel Hat Section, 20/16 GA
Blades	Airfoil Shaped, double skin galvanized steel of roll formed construction, mechanically joined to form construction equivalent to 16Ga steel
Bearings	Nylon / Bronze Oilite, press-fit into frame.
Axies	Square, plated steel.
Linkage	Concealed in frame. Linkage bars are 12ga galvanized steel.
Extended Shaft	Removable, 6"long , ½"Dia
Finish	Mill galvanised
Sleeve Thickness	Various Length & Gauges
Mounting Type	Slip in / Flange Type / Pocket Joints
Optional Features	1) Bronze Oilite 2) Factory Mounted Actuators 3) Factory fabricated retaining Angles



Volume Control Dampers

AM-VCD-AF-P-L / AM-VCD-AF-O-L (Manual)

AM-VCDM-AF-P-L / AM-VCDM-AF-O-L (Motorized)

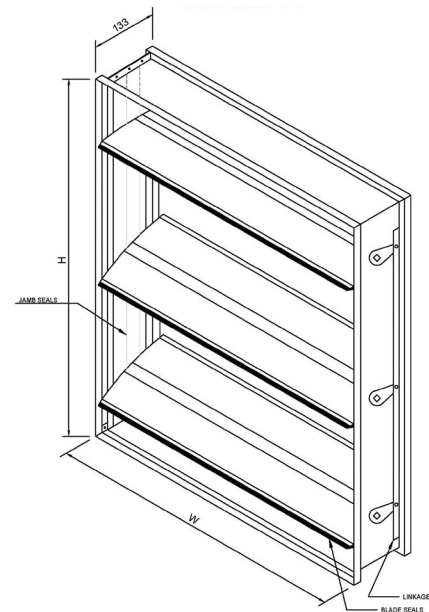


Al Mulla VCD series control dampers are designed & tested to provide a reliable cost effective control damper where tight sealing is of primary importance.

These dampers are available in parallel or opposed blade construction with blade seals to ensure minimum leakage through the blades.

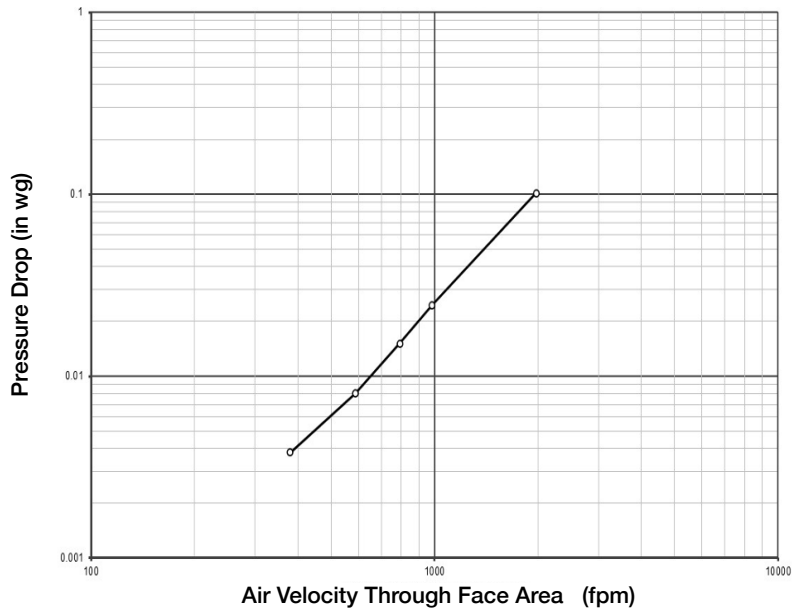
Technical Details:

Component	Specification
Model No.	AM-VCD-AF-P-L / AM-VCD-AF-O-L (Manual) AM-VCDM-AF-P-L / AM-VCDM-AF-O-L (Motorized)
Sizes: (W x H) Minimum Size	8"w x 8"h (203mm x 203mm)
Maximum Size	• Single Section: 48"w x 72"h (1219mm x 1829mm) • Multiple Section: Unlimited
Frame	Roll formed Galvanized Steel Hat Section, 20/16 GA
Blades	Airfoil Shaped, double skin galvanized steel of roll formed construction, mechanically joined to form construction equivalent to 16Ga steel
Bearings	Nylon / Bronze Oilite, press-fit into frame.
Seals	Pressure sensitive blade seals and flexible metal jamb seals
Axies	Square, plated steel.
Linkage	Concealed in frame. Linkage bars are 12ga galvanized steel.
Extended Shaft	Removable, 6"long , ½"Dia
Finish	Mill galvanised
Sleeve Thickness	Various length and gauges
Mounting Type	Slip in / Flange Type / Pocket Joints
Optional Features	1) Bronze Oilite 2) Factory Mounted Actuators 3) Factory fabricated retaining Angles



AIR PERFORMANCE

Model Name : Volume Control Damper
 Model Number : AM-VCD-AF-P-L
 Size : 12x48 inch square
 Blade Position : Open
 Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_D (in wg.)	V (fpm)
1	0.102	1978
2	0.025	984
3	0.015	792
4	0.008	587
5	0.004	380



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-AF-P-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

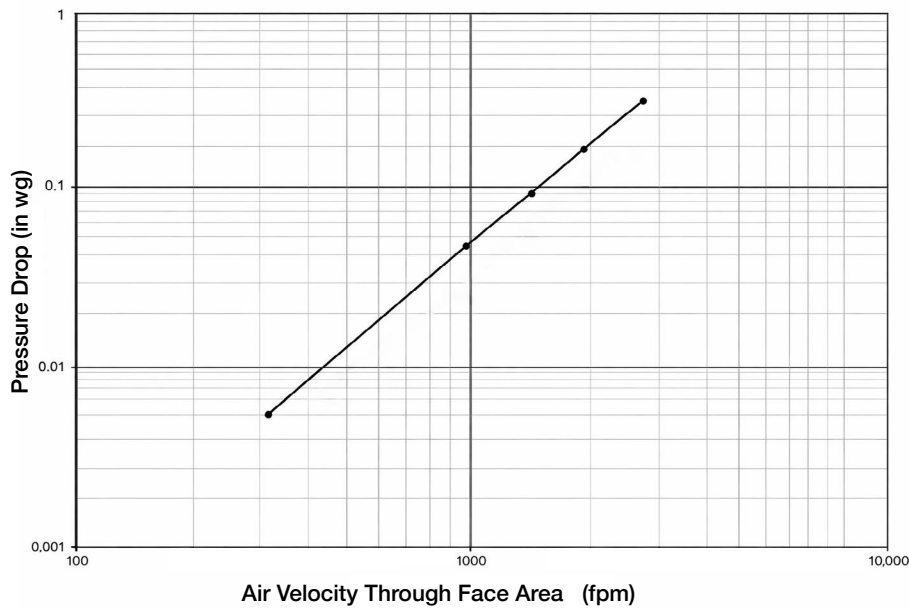
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F
 Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR PERFORMANCE

Model Name : Volume Control Damper
Model Number : AM-VCD-AF-O
Size : 24 x 24 Inch Square
Blade Position : Open
Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_D (in wg.)	V (fpm)
1	0.327	2653
2	0.181	1964
3	0.096	1471
4	0.046	975
5	0.005	343



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-AF-O. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

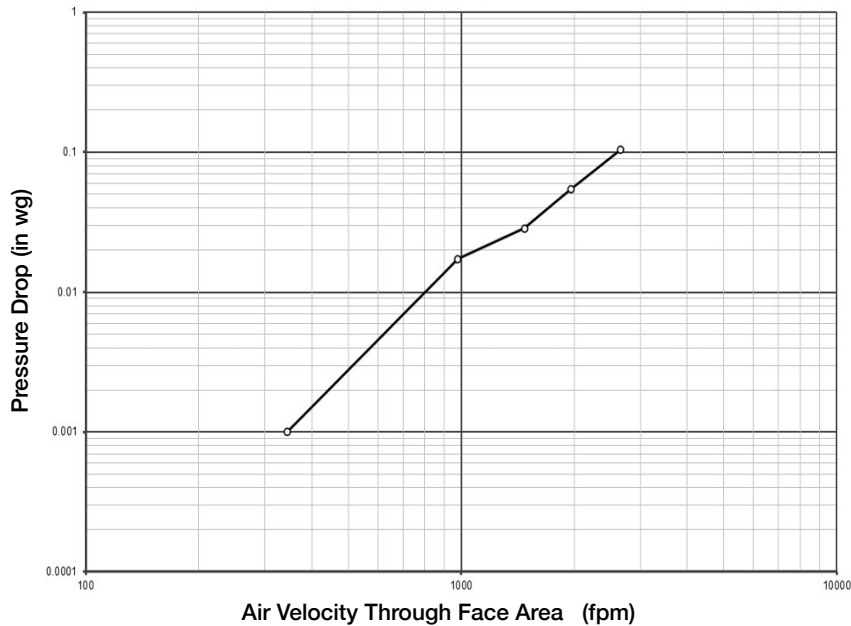
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F
Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR PERFORMANCE

Model Name : Volume Control Damper
 Model Number : AM-VCD-AF-P
 Size : 24x24 inch square
 Blade Position : Open
 Flow Direction : Exhaust



Device Test Results at Standard Air:

Det. No.	ΔP_d (in wg.)	V (fpm)
1	0.104	2652
2	0.055	1964
3	0.029	1471
4	0.017	978
5	0.001	343



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-AF-P. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

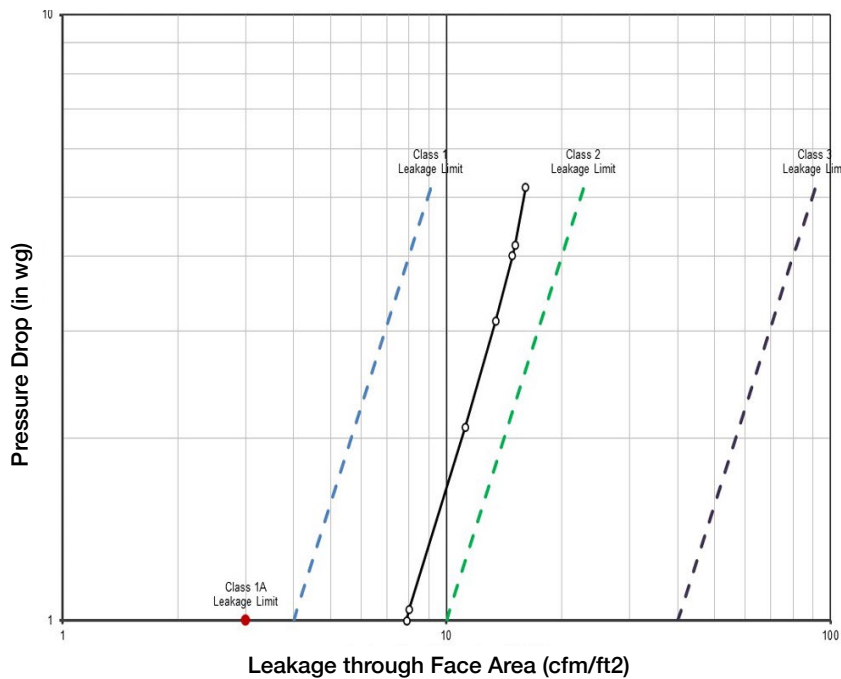
The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR LEAKAGE

Model Name : Volume Control Damper
Model Number : AM-VCD-AF-P-L
Size : 12x48 inch square
Blade Position : Closed
Flow Direction : Exhaust
Torque : Data are based on a torque of 67.5 lb-in applied to close and seat the damper during the test



Device Test Results at Standard Air:

Det. No.	ΔP_d (in wg.)	Q_d/A (cfm/ft²)
1	5.198	16.1
2	4.159	15.1
3	3.120	13.4
4	2.083	11.2
5	1.041	8.0



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCD-AF-P. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F. Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



■ Volume Control Dampers

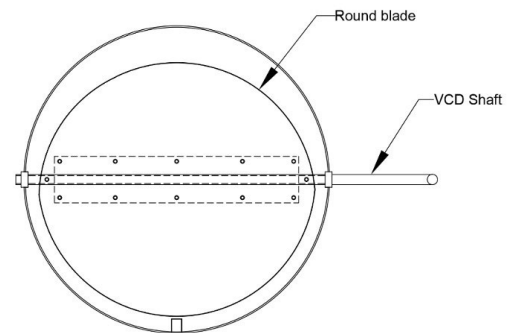
AM-VCRD / AM-VCRD-L (Manual)
AM-VCRDM / AM-VCRDM-L (Motorized)



Al Mulla VCDRD series of Control Dampers are designed and tested to provide reliable as well as cost effective damper solutions.

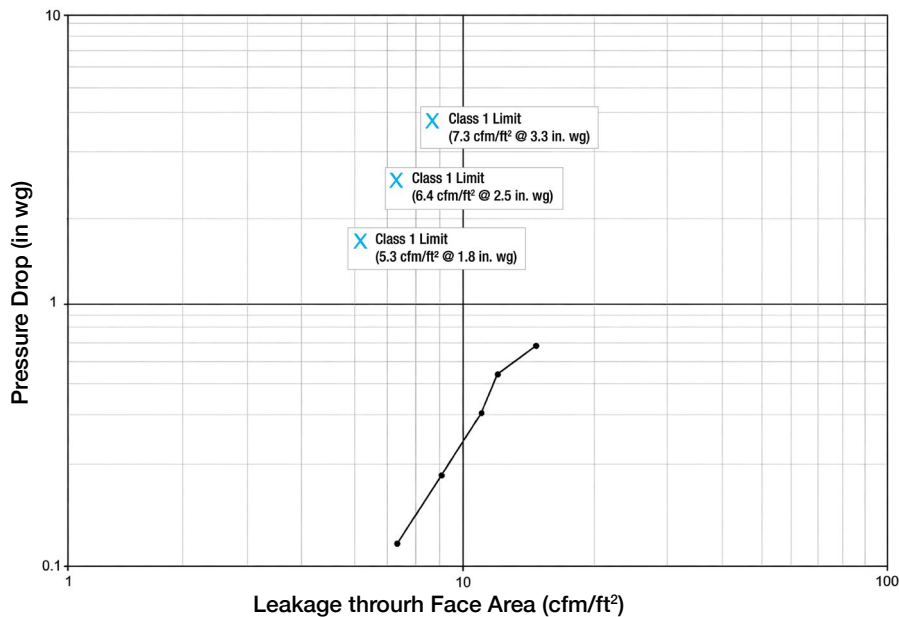
Technical Details:

Component	Specification
Model No.	AM-VCRD / AM-VCRD-L (Manual) AM-VCRDM / AM-VCRDM-L (Motorized)
Sizes: (W x H) Minimum Size	Minimum: 8" Diameter (204 mm)
Maximum Size	Maximum: 24" Diameter (610 mm)
Frame	Roll formed Galvanized
Blades	Galvanized steel with welded channel reinforcement
Bearings	Nylon/ Bronze Oilite, press-fit into frame
Axies	Square, plated steel
Finish	Mill galvanized
Mounting Type	Slip in/ Flange Type/ Pocket Joints



AIR LEAKAGE

Model Name : Volume Control Damper
Model Number : AM-VCRD-L
Size : 24 inch Dia.
Blade Position : Closed
Flow Direction : Exhaust
Torque : Data are based on a torque of 132 lb-in applied to close and seat the damper during the test



Device Test Results at Standard Air:

Det. No.	ΔP_D (in. wg)	Q_D / A (cfm/ft²)
1	0.654	15.5
2	0.529	12.3
3	0.391	11.2
4	0.235	8.9
5	0.119	6.5



Al Mulla Industries certifies that the round volume control damper shown herein is licensed to bear the AMCA seal for model AM-VCRD-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

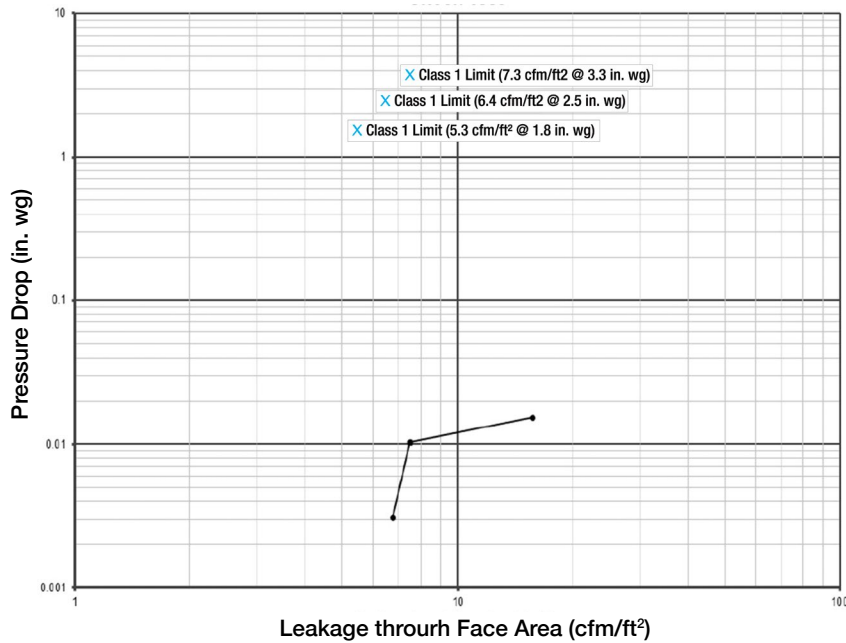
Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F.

Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. Fig.5.6 A. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



AIR LEAKAGE

Model Name : Volume Control Damper
 Model Number : AM-VCRD-L
 Size : 24 Inch Dia.
 Blade Position : Close
 Flow Direction : Intake
 Torque : Data are based on a torque of 132 lb-in applied to close and seat the damper during the test



Device Test Results at Standard Air:

Det. No.	ΔP_d (in. wg)	Q_d / A (cfm/ft ²)
1	0.016	15.6
2	0.010	7.5
3	0.010	8.4
4	0.010	8.8
5	0.003	6.7



Al Mulla Industries certifies that the volume control damper shown herein is licensed to bear the AMCA seal for model # AM-VCRD-L. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information: Air Leakage is based on operation between 32 Degree F and 120 Degree F
 Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate. Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.3.



Extruded Aluminum Back Draft Dampers



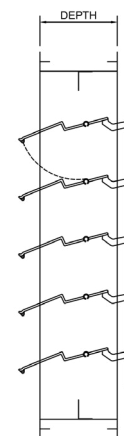
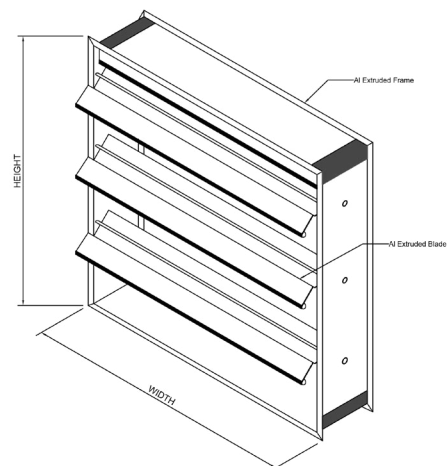
Model: AM-BDD-EX

AM-BDD-EX is a commercial Back Draft Damper that is designed to allow air flow only in one direction and prevents back flow. The frame and blades are manufactured with extruded aluminum, making them rugged and suitable for velocities up to 2500 FPM.



Technical Details:

Component	Specification
Model No.	AM-BDD-EX
Sizes: (W x H) Minimum Size	Minimum Size: 6" x 6" (152 mm x 152 mm)
Maximum Size	Maximum Size: 36" x 40" (914 mm x 1219 mm)
Frame	Extruded Aluminum
Blades	Extruded Aluminum
Bearings	Aluminum
Axles	Aluminum
Blade Seals	Vinyl Blade Seals
Linkage	Heavy gauge Aluminum brackets with Aluminum linkage bar
Finish	Mill Aluminum
Optional Features	1) Counterweight 2) Flange Frame, front or rear 3) Horizontal Mount (Up blast only)

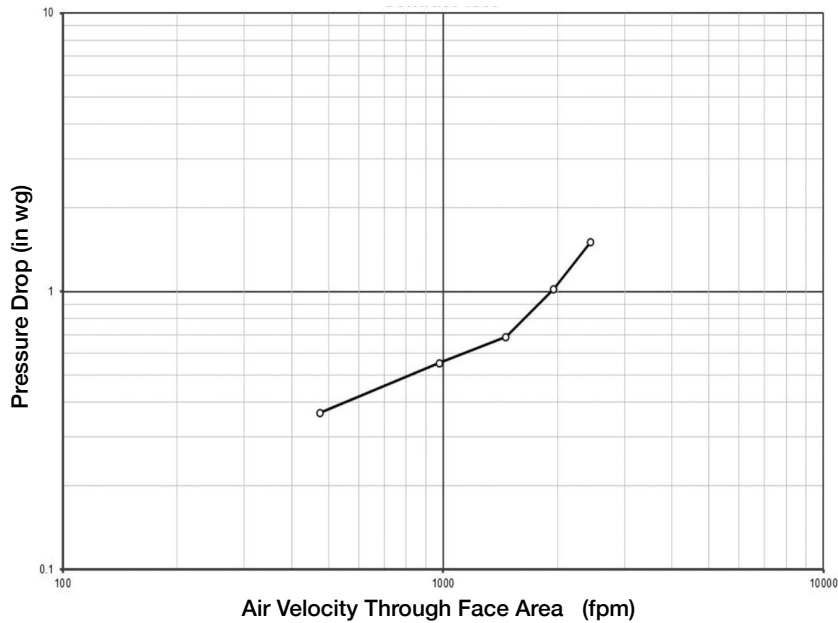


Blade Opening



AIR PERFORMANCE

Model Name : Back Draft Damper
 Model Number : AM-BDD
 Size : 24 x 24 Inch Square
 Blade Position : N/A
 Flow Direction : Intake



Device Test Results at Standard Air:

Det. No.	ΔP_D (in wg.)	V (fpm)
1	1.51	2441
2	1.02	1955
3	0.69	1463
4	0.55	977
5	0.37	475



Al Mulla Industries certifies that the back draft damper shown herein is licensed to bear the AMCA seal for model # AM-BDD. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings and Air Leakage rating.

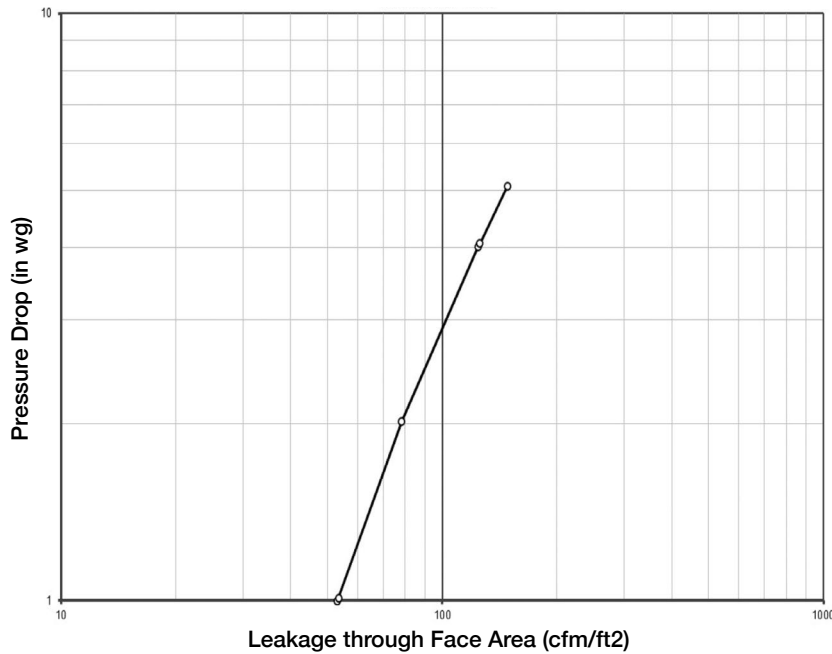
Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.5.

Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate.



AIR LEAKAGE

Model Name : Back Draft Damper
Model Number : AM-BDD
Size : 24 x 24 Inch Square
Blade Position : Close
Flow Direction : Intake



Device Test Results at Standard Air:

Det. No.	ΔP_D (in wg.)	Q_D/A (cfm/ft²)
1	5.08	148.2
2	4.06	125.4
3	2.02	78.2
4	1.01	53.4



Al Mulla Industries certifies that the back draft damper shown herein is licensed to bear the AMCA seal for model # AM-BDD. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings and Air Leakage rating.

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-D-18(Pressure Drop), Fig. 5.5.

Tested for air leakage in accordance with ANSI/AMCA Standard 500-D-18(leakage), Fig. 5.4 Alternate.





المك للمنتجات الهندسية
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