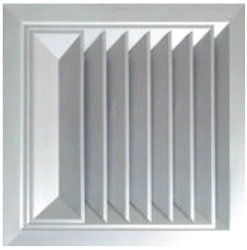
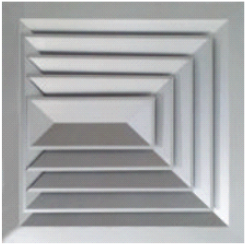
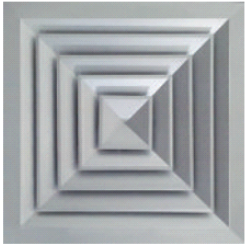
AIR CONTROL INDUSTRY

CEILING DIFFUSERS







QUALITY ASSURANCE

An ISO 9001:2015 certified company
Product tested and approved by ETL testing laboratories USA

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CEILING DIFFUSERS

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Air Control multi-directional ceiling diffusers are a popular, versatile choice for many HVAC applications. There is a style, size, pattern to fit every conceivable installation and shape and size of space to be conditioned. The diffuser directional pattern can be selected to deliver the appropriate amount of conditioned air in to the areas, where it is needed.

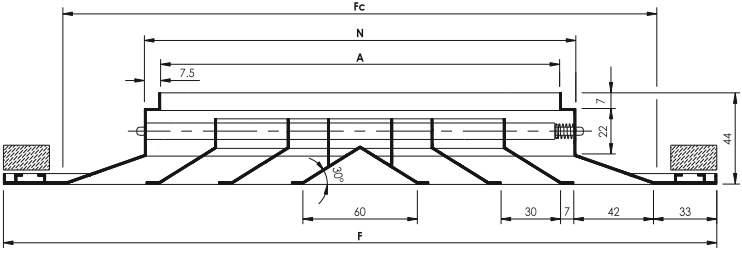
Air Control ceiling diffusers can supply large volumes of conditioned air at acceptable sound levels and pressure drops. The excellent performance is completed by a pleasing appearance that harmonizes with various architectural details, especially in modular ceiling systems.

DESIGN & KEY FEATURES

- Air Control diffusers is manufactured from high quality extruded aluminium profile made of 6063 alloy.
- Flush mounted with different pattern arrangements. Available in both square and rectangular shapes.
- Core is available in one way, two way, three way and four way discharge .
- Core is fixed to the frame by the action of spring loaded pins, It is Easily removable to allow for maximum flexibility in installation, maintenance, damper adjustment and pattern Exchange.
- Supply diffuser have opposed blade dampers for minimum disturbance of air stream.
- Powder coated to standard RAL codes – 9010 (off white) & 9016 (white).
- Rear dampers and ancillaries are of aluminium mill finish. Available with black matt finish in colour on request.
- Foam gasket provided on request.

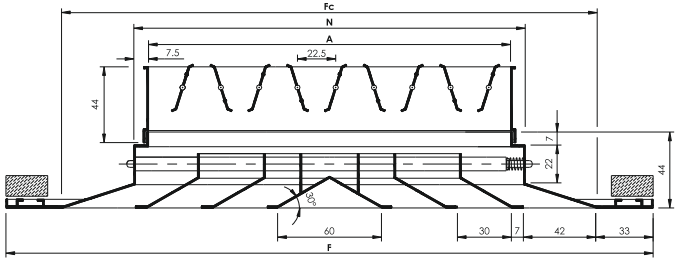
AVAILABLE MODELS FOR CEILING DIFFUSER

AC-RAD 4W (STANDARD)

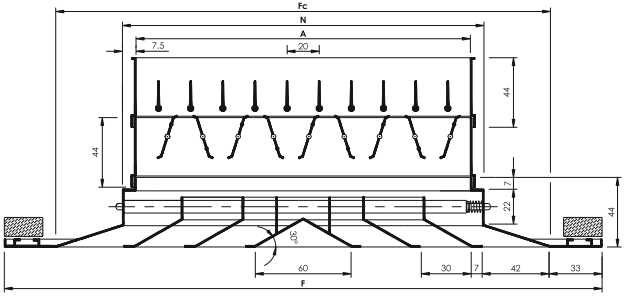


AC-SAD 4W (STANDARD)

- Supply air diffuser, with opposed blade damper (OBD).
- This model is accompanied by a key operated opposed blade damper. The damper can be operated with a screw driver after removing the internal core, which is used as a supply air terminal.



- Also available with Equalizing grid on request, model AC-SAD EQ 4W (below drawing).
- The assembly of equalizing grid provides uniform air flow and over the neck of the diffuser which ensures reduction in pressure losses, noise level and turbulence.



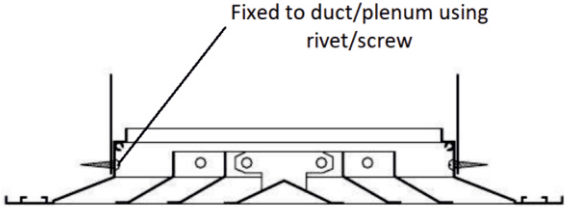
AC-SAD 4W (WITH EQUALIZING GRID)

CEILING DIFFUSERS DIMENSION

(N) Nominal / Listed Size		(A) Actual neck size	(F) Outer frame size	(Fc) False ceiling opening
mm	Inch	mm	mm	mm
150x150	6”x6”	135x135	295x295	230x230
225x225	9”x9”	210x210	370x370	306x306
300x300	12”x12”	285x285	445x445	381x381
375x375	15”x15”	360x360	520x520	456x456
450x450	18”x18”	435x435	595x595	531x531

*All Dimensions have a tolerance of ±1mm.
*Other sizes are available on request.

CEILING DIFFUSER FIXING DETAILS



- ► Insert the frame of all Air Control model diffusers into the duct or plenum box.
- ► Using rivet or screw fix the frame to the plenum box/duct .
- ► The inner core can be removed by pushing the spring laterally and pulling out the other side for fixing the frame and maintenance.

ACI

SUPPLY AIR DIFFUSER AIR FLOW DATA

MODEL - AC-SAD 4W

SIZE		A eff.	V_n FPM (m/s)	200 (1.0)	250 (1.25)	300 (1.5)	350 (1.75)	400 (2.0)	450 (2.25)	500 (2.5)	550 (2.75)	600 (3.0)	650 (3.25)	700 (3.5)
mm	Inch	(m^2)	ΔP_t Inwg (Pa)	0.019 (5)	0.031 (8)	0.047 (12)	0.063 (16)	0.082 (21)	0.094 (24)	0.129 (33)	0.141 (36)	0.184 (47)	0.207 (53)	0.250 (64)
150 x 150	6" x 6"	0.007 S 0.007 R	L/S (CFM)	23 (48)	29 (61)	34 (73)	40 (85)	46 (97)	51 (109)	57 (121)	63 (133)	69 (145)	74 (157)	80 (170)
			Th. (m)	0.6-0.9-1.6	0.7-1.0-2.2	0.9-1.2-2.8	1.0-1.3-3.1	1.1-1.5-3.5	1.2-1.7-3.6	1.4-2.1-3.8	1.5-2.4-4.0	1.7-2.9-4.3	1.9-3.1-4.4	2.3-3.5-4.6
			Noise Level	<15	<15	<15	<15	16	19	21	24	26	28	31
200 x 200	8" x 8"	0.013 S 0.011 R	L/S (CFM)	41 (86)	51 (108)	61 (129)	71 (151)	81 (172)	91 (194)	102 (215)	112 (237)	122 (258)	132 (280)	142 (301)
			Th. (m)	0.8-1.3-2.2	0.9-1.4-2.4	1.0-1.5-2.6	1.2-1.6-3.2	1.5-1.8-3.8	1.6-2.0-4.0	1.7-2.1-4.4	1.8-2.4-4.6	1.9-2.8-5.0	2.1-3.1-5.1	2.4-3.6-5.2
			Noise Level	<15	<15	<15	15	17	20	22	25	27	29	32
225 x 225	9" x 9"	0.017 S 0.015 R	L/S (CFM)	51 (109)	64 (136)	77 (163)	90 (191)	103 (218)	116 (245)	129 (272)	141 (300)	154 (327)	167 (354)	180 (381)
			Th. (m)	0.7-1.7-3.2	0.9-1.8-3.4	1.3-1.9-3.6	1.5-2.0-4.0	1.7-2.2-4.5	1.8-2.3-4.6	1.9-2.4-4.7	2.0-2.9-5.0	2.2-3.6-5.3	2.4-3.8-5.4	2.9-4.2-5.6
			Noise Level	<15	<15	<15	15	18	21	24	28	31	33	35
300 x 300	12"x12"	0.032 S 0.026 R	L/S (CFM)	91 (194)	114 (242)	137 (291)	160 (339)	183 (388)	206 (436)	229 (484)	251 (533)	274 (581)	297 (630)	320 (678)
			Th. (m)	1.1-1.7-3.3	1.4-2.0-3.8	1.7-2.3-4.5	1.8-2.4-4.6	2.0-2.5-4.8	2.2-3.0-5.1	2.4-3.7-5.5	2.7-4.0-5.7	3.2-4.4-6.0	3.4-4.5-6.4	3.6-4.7-6.6
			Noise Level	<15	<15	<15	15	19	23	27	30	34	36	37
375 x 375	15"x15"	0.050 S 0.039 R	L/S (CFM)	143 (303)	179 (378)	214 (454)	250 (530)	286 (605)	321 (681)	357 (757)	393 (832)	429 (908)	464 (984)	500 (1095)
			Th. (m)	1.5-2.0-3.8	1.7-2.4-4.2	2.0-2.8-4.7	2.2-3.2-5.1	2.5-3.9-5.6	2.9-4.0-5.8	3.1-4.3-6.1	3.5-4.5-6.4	3.9-4.8-6.8	4.2-5.1-7.1	4.5-5.3-7.5
			Noise Level	<15	<15	17	22	26	31	35	39	40	41	42
450 x 450	18"x18"	0.074 S 0.055 R	L/S (CFM)	206 (436)	257 (545)	309 (654)	360 (763)	411 (872)	463 (981)	514 (1090)	566 (1199)	617 (1308)	669 (1417)	720 (1526)
			Th. (m)	1.7-2.3-4.5	1.9-2.8-4.9	2.2-3.5-5.4	2.6-4.0-5.7	3.2-4.5-6.3	3.4-4.6-6.5	3.7-4.8-6.7	4.0-5.1-7.1	4.4-5.4-7.5	4.5-5.5-7.7	4.7-5.6-8.0
			Noise Level	<15	19	24	29	33	34	38	40	41	43	45
500 x 500	20"x20"	0.089 S 0.070 R	L/S (CFM)	254 (538)	318 (673)	381 (807)	445 (942)	508 (1077)	572 (1211)	635 (1346)	699 (1480)	762 (1615)	826 (1749)	889 (1884)
			Th. (m)	1.8-2.4-4.8	2.1-2.5-5.2	2.4-2.6-5.6	2.7-2.8-5.8	3.3-3.4-6.2	3.5-4.7-6.6	3.9-5.0-6.9	4.2-5.2-7.3	4.5-5.5-7.7	4.6-5.7-7.9	4.9-6.0-8.3
			Noise Level	<15	19	24	29	35	37	39	41	44	46	49
525 x 525	21"x21"	0.102 S 0.074 R	L/S (CFM)	281 (595)	351 (744)	421 (893)	492 (1042)	562 (1191)	632 (1339)	702 (1488)	773 (1637)	843 (1786)	913 (1935)	983 (2084)
			Th. (m)	1.9-2.9-4.8	2.3-3.2-5.2	2.8-3.6-5.6	3.1-4.0-6.0	3.6-4.7-6.5	3.9-4.9-6.7	4.3-5.2-7.2	4.5-5.4-7.5	4.7-5.6-8.0	4.8-5.9-8.3	5.1-6.3-8.7
			Noise Level	<15	20	24	30	36	38	41	43	45	48	50
600 x 600	24"x24"	0.135 S 0.095 R	L/S (CFM)	366 (775)	457 (969)	549 (1163)	640 (1356)	732 (1550)	823 (1744)	914 (1938)	1006 (2131)	1097 (2325)	1189 (2519)	1280 (2713)
			Th. (m)	2.3-3.2-5.0	2.6-3.8-5.9	3.3-4.5-6.3	3.6-4.7-6.6	4.2-5.1-7.2	4.4-5.3-7.3	4.6-5.5-7.6	4.8-5.7-8.0	5.0-5.9-8.7	5.1-6.2-9.1	5.3-6.6-9.5
			Noise Level	17	22	27	31	36	39	41	44	46	49	52

Model 4WS

Noise level values are based on 10 dB room attenuation.

S : Supply Air (Damper is fully open).
R : Return Air.
Aeff. : Effective Area.
Vn : Neck Velocity.
ΔPt : Total Pressure Drop.
Th. : Throw distance measured at Terminal Velocity Vt = 0.75, 0.50 & 0.25 m/s respectively.

Correction Multipliers and Values :

Damper Opening Position	Noise Level (Additional)	Pressure Drop ΔPt (Multiplier)
25 % open	+ 10 dB	x 2.4
50 % open	+ 5 dB	x 1.4
100 % open	+ 0 dB	x 1.0

ACI

RETURN AIR DIFFUSER AIR FLOW DATA

MODEL - AC-RAD 4W

- Noise criteria (NC) based on a room attenuation of 10 db.
- Neck velocity is measured in m/s.
- Static pressure (Ps) loss across the diffuser in mm of H_2O.

SIZE		A_{eff}	V_k FPM (m/s)	200 (1.0)	250 (1.25)	300 (1.5)	350 (1.75)	400 (2.0)	450 (2.25)	500 (2.5)	550 (2.75)	600 (3.0)	650 (3.25)	700 (3.5)
mm	Inch	(m^2)	$\Delta P_{t\,keq\,(Pa)}$	0.019 (5)	0.031 (8)	0.047 (12)	0.063 (16)	0.082 (21)	0.094 (24)	0.129 (33)	0.141 (36)	0.184 (47)	0.207 (53)	0.250 (64)
225 x 150	9" x 6"	0.010 S 0.009 R	L/S (CFM)	35 (74)	43 (91)	52 (110)	60 (127)	70 (148)	79 (167)	91 (193)	95 (201)	103 (218)	111 (235)	120 (254)
			Th. (m)	1.1-1.6-4.2	1.3-2.5-4.3	1.6-3.7-4.6	2.3-3.9-5.0	3.2-4.1-5.5	3.4-4.2-5.6	3.6-4.3-6.2	3.8-4.4-6.3	4.1-4.8-6.5	4.2-5.0-6.8	4.3-5.3-7.2
			Noise Level	<15	<15	15	17	20	23	26	28	31	34	37
300 x 150	12"x 8"	0.014 S 0.010 R	L/S (CFM)	47 (100)	49 (104)	70 (148)	82 (174)	95 (201)	105 (222)	120 (254)	130 (275)	143 (303)	156 (330)	168 (356)
			Th. (m)	1.4-1.9-4.5	1.7-2.4-4.7	2.1-3.9-5.0	2.7-4.2-5.5	3.6-4.5-6.0	3.7-4.6-6.5	3.9-4.7-7.0	4.2-4.8-7.1	4.5-5.0-7.3	4.6-5.3-7.5	4.7-5.7-7.9
			Noise Level	<15	<15	16	19	22	25	28	31	34	36	37
375 x 150	15"x 6"	0.018 S 0.015 R	L/S (CFM)	60 (127)	75 (159)	90 (191)	105 (222)	120 (254)	135 (286)	150 (318)	165 (350)	180 (381)	195 (413)	210 (445)
			Th. (m)	1.6-2.4-4.7	1.9-3.2-5.1	2.3-4.1-5.4	2.9-4.4-5.8	3.6-4.7-6.3	3.8-4.8-6.6	3.9-4.9-7.2	4.3-5.1-7.3	4.7-5.4-7.5	4.8-5.6-7.7	4.9-6.0-8.1
			Noise Level	<15	<15	16	20	22	26	28	31	34	36	38
450 x 150	18"x 6"	0.022 S 0.019 R	L/S (CFM)	70 (148)	87 (184)	105 (222)	123 (261)	140 (297)	157 (333)	175 (371)	192 (407)	210 (445)	223 (473)	245 (519)
			Th. (m)	1.7-2.5-4.7	2.1-3.3-5.1	2.5-4.1-5.6	3.2-4.4-6.1	3.9-4.8-6.6	4.0-4.9-7.0	4.1-5.0-7.5	4.5-5.3-7.6	4.9-5.7-7.8	5.0-6.0-8.1	5.1-6.3-8.5
			Noise Level	<15	<15	16	20	23	27	30	33	35	37	40
300 x 225	12"x 9"	0.022 S 0.019 R	L/S (CFM)	70 (148)	87 (184)	105 (222)	123 (261)	140 (297)	157 (333)	175 (371)	192 (407)	210 (445)	223 (473)	245 (519)
			Th. (m)	1.8-2.5-4.8	2.2-3.3-5.2	2.6-4.2-5.7	3.2-4.5-6.2	3.9-4.8-6.6	4.0-4.9-7.1	4.2-5.1-7.6	4.6-5.4-7.7	5.0-5.8-7.9	5.1-6.2-8.2	5.2-6.4-8.6
			Noise Level	<15	<15	16	20	23	27	30	33	35	37	40
375 x 225	15"x 9"	0.028 S 0.023 R	L/S (CFM)	87 (184)	110 (233)	131 (278)	156 (331)	177 (375)	199 (422)	220 (466)	243 (515)	265 (562)	287 (608)	310 (657)
			Th. (m)	1.9-2.9-5.1	2.3-3.6-5.4	2.8-4.4-5.9	3.4-4.8-6.4	4.1-5.1-6.9	4.3-5.2-7.3	4.5-5.4-7.8	4.7-5.7-8.1	5.1-6.0-8.4	5.2-6.3-8.6	5.3-6.6-9.0
			Noise Level	<15	<15	18	21	24	27	31	34	37	39	41
450 x 225	18"x 9"	0.034 S 0.026 R	L/S (CFM)	105 (222)	132 (280)	160 (339)	186 (394)	213 (451)	240 (509)	267 (566)	294 (623)	320 (678)	328 (695)	375 (795)
			Th. (m)	2.3-3.3-5.1	2.7-3.9-5.7	3.3-4.5-6.3	3.7-4.9-6.7	4.2-5.1-7.2	4.5-5.4-7.6	4.8-5.7-8.1	4.9-5.9-8.2	5.1-6.3-8.4	5.3-6.6-9.0	5.6-6.9-9.7
			Noise Level	<15	<15	18	22	25	28	32	34	37	40	42
525 x 225	21"x 9"	0.040 S 0.032 R	L/S (CFM)	125 (265)	157 (333)	190 (403)	221 (468)	253 (536)	285 (604)	317 (672)	350 (742)	381 (807)	413 (875)	445 (943)
			Th. (m)	2.4-3.5-5.3	3.0-4.1-5.8	3.5-4.7-6.5	3.9-5.0-6.9	4.4-5.4-7.4	4.7-5.7-7.8	5.0-6.0-8.3	5.1-6.2-8.5	5.3-6.5-8.9	5.4-6.7-9.4	5.6-7.1-10
			Noise Level	<15	<15	19	22	26	29	33	35	38	40	43
375 x 300	15"x12"	0.039 S 0.030 R	L/S (CFM)	113 (239)	143 (303)	174 (369)	204 (432)	235 (498)	265 (562)	296 (627)	326 (691)	357 (756)	387 (820)	418 (886)
			Th. (m)	2.4-3.5-5.3	2.9-4.0-5.7	3.5-4.7-6.3	3.9-5.0-6.8	4.4-5.4-7.4	4.5-5.6-7.8	4.8-5.7-8.3	5.1-5.9-8.6	5.3-6.2-8.9	5.4-6.5-9.3	5.6-6.9-9.8
			Noise Level	<15	15	20	22	26	29	33	35	38	40	43
450 x 300	18"x12"	0.047 S 0.037 R	L/S (CFM)	140 (297)	175 (371)	210 (445)	245 (519)	280 (593)	315 (667)	350 (742)	385 (816)	420 (890)	455 (964)	490 (1038)
			Th. (m)	2.5-3.9-5.7	3.2-4.3-6.2	3.9-4.8-6.9	4.1-5.2-7.4	4.4-5.7-7.9	4.7-5.9-8.3	5.1-6.2-8.7	5.4-6.6-9.0	5.8-7.0-9.4	5.9-7.1-9.8	6.0-7.2-10.4
			Noise Level	<15	15	20	22	26	30	33	36	39	41	44
525 x 300	21"x12"	0.056 S 0.043 R	L/S (CFM)	163 (345)	205 (434)	252 (534)	290 (615)	330 (699)	374 (793)	415 (879)	460 (975)	500 (1060)	542 (1148)	585 (1240)
			Th. (m)	3.0-4.3-5.7	3.7-4.7-6.2	4.2-5.2-6.9	4.5-5.3-7.4	4.8-5.7-8.0	5.1-6.1-8.5	5.5-6.4-9.0	5.6-6.7-9.5	5.8-7.0-10.1	6.1-7.2-10.4	6.4-7.5-10.7
			Noise Level	<15	16	20	24	27	31	34	37	40	42	45

Model 4WS

ACI

LOUVRED FACE, MULTI DIRECTIONAL WITH REMOVABLE CORE

Ordering Data

- **Available Surface Finishes For Diffusers :**
  - Natural / Matt Silver Anodized .
  - Powder Coating (Standard Colors are white RAL 9010 / 9016, other optional colors if required to be provided in RAL - No. only and charged extra).
  - Aluminium in Mill Finish.
  - Other Special Finishes (on request if available).
- **Available Surface Finishes For Opposed Blade Dampers & Equalizing Grids :**
  - Aluminium in Mill Finish (standard).
  - Matt Black Powder Coating (optional).
- **Ordering Specifications :**

Specify :

1 . Diffuser Description (Supply, Return, Extract, Exhaust, Dummy, Fresh Air , ...etc.).
2 . Model / Type (Specify Pattern Arrangement).
3 . Shape (Square or Rectangular).
4 . Opposed Blade Damper Surface Finish (only mention if required in Black color).
5 . Nominal / Neck size.
6 . Quantity.
7 . Diffuser Surface Finish.
8 . RAL - No. (only mention if powder coating surface finish is required).
9 . Optional Accessories (Equalizing Grid, Gasket, Adaptor,..... or others).

Example 1 :

1	2	3	4	5	6	7	8	9
SAD	4W	S	BD	12" x 12" 300 x 300 (mm)	10	Powder Coating	9016	With Rubber Gasket

Example 2 :

1	2	3	4	5	6	7	8	9
SAD	3W	R	–	18" x 9" 450 x 225 (mm)	5	Silver Anodized	–	–

Example 3 :

1	2	3	4	5	6	7	8	9
RAD	4W	S	–	18" x 18" 450 x 450 (mm)	15	Powder Coating	7045 (Optional)	–

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