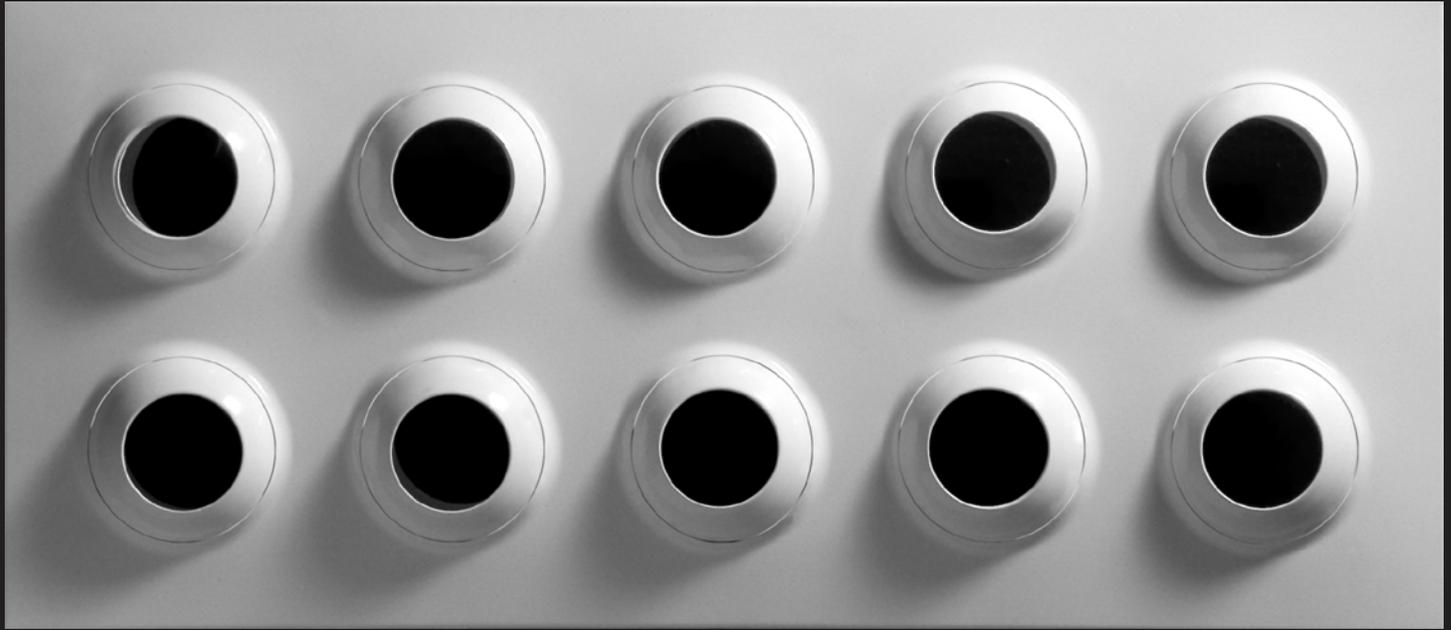




KOO



KOO

Adjustable Long Throw Multi-Nozzle Jet Diffusers

EFFECTIVE  TM

July 19 2022

KOO SERIES

Long Throw Multi-Jet Nozzle Diffusers



KOO
by **MADEL®**

PATENTED

-  Each jet nozzle can be adjusted manually
-  Long throw ideal for large rooms or high ceilings
-  Also possibility of wide spread to cover large windows from a distance
-  Architecturally appealing lines and finish
-  Clip mounting system available with PLRX plenum, great for drywall mounting without apparent screws
-  IEK adaptor available for direct mounting on round duct
-  Nozzles constructed from aluminium and panel from galvanised steel
-  Seal of rotation made of immutable material, classified M1 and F2 as regards fire and smoke safety

KOO Long Throw Multi-Jet Nozzle Diffusers by EffectiV HVAC™ and MADEL® are designed to be used in air conditioning, ventilation and heating systems at a temperature differential up to 22°F (12°C). They can be mounted in the wall or the ceiling.

KOO diffusers respond to different functional and architectural requirements, thanks to their manually adjustable nozzles in all directions. Two nozzle jet diameters are available. Depending on the size of the rectangular panel, the integrated nozzles diameter can either be 3 5/32" (80 mm) or 4 59/64" (125 mm).

Thanks to its long throw and flexibility of direction of the air pattern, KOO is suitable for air diffusion in all kinds of different architectures. It provides a high induction air rate level, reducing stratification.

The KOO Long Throw Multi-Jet Nozzle Diffusers represent a vanguard in design of air diffusers. Integrating one or two rows of jet nozzles into a long panel, the outcome is a smooth and homogeneous surface reducing the visual impact on interior architecture.



Some Applications



Large Pools and Aquatic Centers



Restaurants, Bars, Hotels, Lobbies



Stores and Outlets



Libraries



Theaters



Gymnasiums & Training Facilities



Hallways



Large spaces or high ceilings



Available Models

3 5/32" (80 mm) Nozzle Diameter

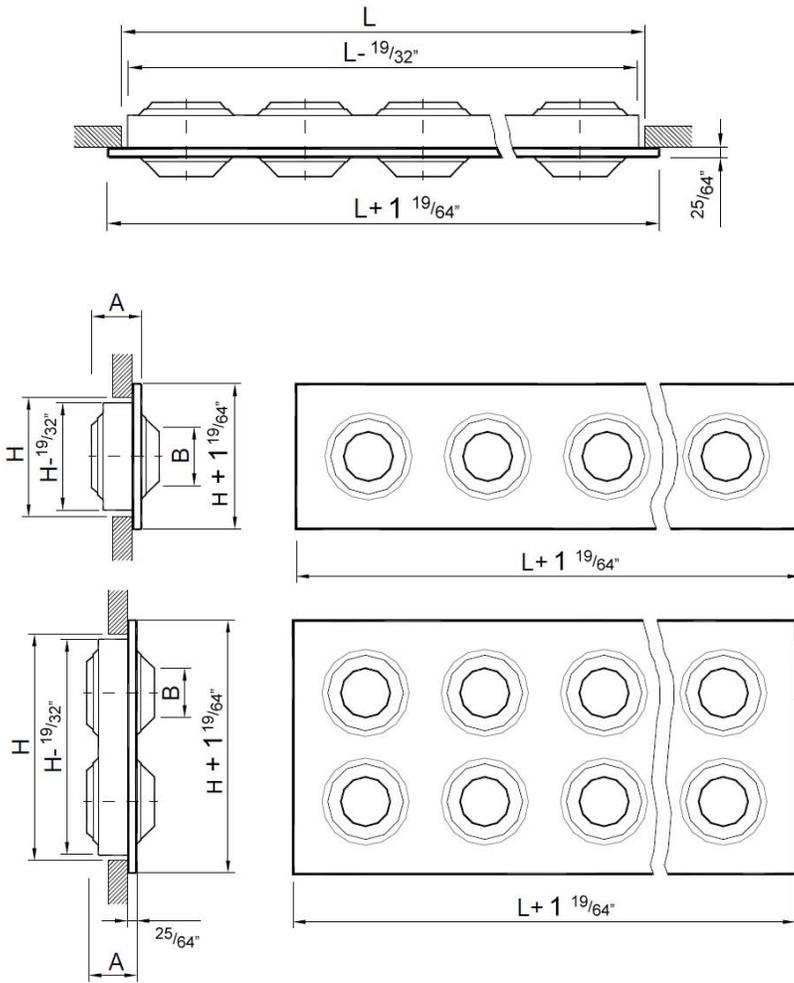
Imperial List Size	Metric List Size	Nozzles Qty	Free Area (sqf)	Min cfm	Max cfm
8 x 4	200 x 100	2 x 1	0.03	15	82
12 x 4	300 x 100	3 x 1	0.046	23	124
16 x 4	400 x 100	4 x 1	0.061	30	159
20 x 4	500 x 100	5 x 1	0.078	38	194
24 x 4	600 x 100	6 x 1	0.093	45	221
28 x 4	700 x 100	7 x 1	0.108	53	247
32 x 4	800 x 100	8 x 1	0.123	61	273
36 x 4	900 x 100	9 x 1	0.139	68	300
40 x 4	1000 x 100	10 x 1	0.155	76	326
8 x 8	200 x 200	2 x 2	0.061	30	156
12 x 8	300 x 200	3 x 2	0.093	45	235
16 x 8	400 x 200	4 x 2	0.123	61	306
20 x 8	500 x 200	5 x 2	0.155	76	376
24 x 8	600 x 200	6 x 2	0.185	91	423
28 x 8	700 x 200	7 x 2	0.215	106	468
32 x 8	800 x 200	8 x 2	0.237	116	512
36 x 8	900 x 200	9 x 2	0.278	136	559
40 x 8	1000 x 200	10 x 2	0.31	152	603

4 59/64" (125 mm) Nozzle Diameter

Imperial List Size	Metric List Size	Nozzles Qty	Free Area (sqf)	Min cfm	Max cfm
12 x 6	300 x 150	2 x 1	0.06	29	147
18 x 6	450 x 150	3 x 1	0.09	45	218
24 x 6	600 x 150	4 x 1	0.121	59	291
30 x 6	750 x 150	5 x 1	0.151	74	347
36 x 6	900 x 150	6 x 1	0.181	89	400
42 x 6	1050 x 150	7 x 1	0.211	104	453
48 x 6	1200 x 150	8 x 1	0.241	119	506
12 x 12	300 x 300	2 x 2	0.121	59	256
18 x 12	450 x 300	3 x 2	0.181	89	382
24 x 12	600 x 300	4 x 2	0.241	119	512
30 x 12	750 x 300	5 x 2	0.301	148	650
36 x 12	900 x 300	6 x 2	0.362	178	788
42 x 12	1050 x 300	7 x 2	0.422	208	926
48 x 12	1200 x 300	8 x 2	0.482	237	1065

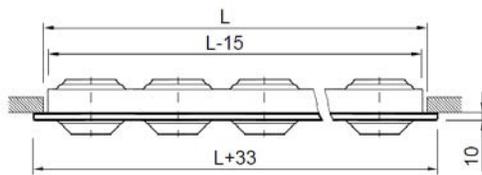
Min cfm and Max cfm are recommended minimum and maximum in general. Products can perform well below and above recommended cfm, depending on the Pressure Loss, NC and Throws that are acceptable for your application.

K00 Imperial Dimensions

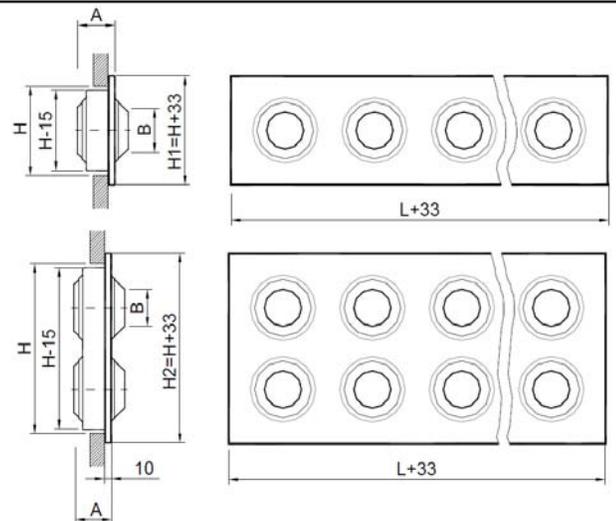


Imperial List Size	L	H	A	B
8 x 4	7 7/8"	3 15/16"	1 3/8"	1 47/64"
12 x 4	11 13/16"	3 15/16"	1 3/8"	1 47/64"
16 x 4	15 3/4"	3 15/16"	1 3/8"	1 47/64"
20 x 4	19 11/16"	3 15/16"	1 3/8"	1 47/64"
24 x 4	23 5/8"	3 15/16"	1 3/8"	1 47/64"
28 x 4	27 9/16"	3 15/16"	1 3/8"	1 47/64"
32 x 4	31 1/2"	3 15/16"	1 3/8"	1 47/64"
36 x 4	35 7/16"	3 15/16"	1 3/8"	1 47/64"
40 x 4	39 3/8"	3 15/16"	1 3/8"	1 47/64"
8 x 8	7 7/8"	7 7/8"	1 3/8"	1 47/64"
12 x 8	11 13/16"	7 7/8"	1 3/8"	1 47/64"
16 x 8	15 3/4"	7 7/8"	1 3/8"	1 47/64"
20 x 8	19 11/16"	7 7/8"	1 3/8"	1 47/64"
24 x 8	23 5/8"	7 7/8"	1 3/8"	1 47/64"
28 x 8	27 9/16"	7 7/8"	1 3/8"	1 47/64"
32 x 8	31 1/2"	7 7/8"	1 3/8"	1 47/64"
36 x 8	35 7/16"	7 7/8"	1 3/8"	1 47/64"
40 x 8	39 3/8"	7 7/8"	1 3/8"	1 47/64"
12 x 6	11 13/16"	5 29/32"	2 1/4"	2 13/32"
18 x 6	17 23/32"	5 29/32"	2 1/4"	2 13/32"
24 x 6	23 5/8"	5 29/32"	2 1/4"	2 13/32"
30 x 6	29 17/32"	5 29/32"	2 1/4"	2 13/32"
36 x 6	35 7/16"	5 29/32"	2 1/4"	2 13/32"
42 x 6	41 11/32"	5 29/32"	2 1/4"	2 13/32"
48 x 6	47 1/4"	5 29/32"	2 1/4"	2 13/32"
12 x 12	11 13/16"	11 13/16"	2 1/4"	2 13/32"
18 x 12	17 23/32"	11 13/16"	2 1/4"	2 13/32"
24 x 12	23 5/8"	11 13/16"	2 1/4"	2 13/32"
30 x 12	29 17/32"	11 13/16"	2 1/4"	2 13/32"
36 x 12	35 7/16"	11 13/16"	2 1/4"	2 13/32"
42 x 12	41 11/32"	11 13/16"	2 1/4"	2 13/32"
48 x 12	47 1/4"	11 13/16"	2 1/4"	2 13/32"

Metric Dimensions



H	A	B
100	35	44
150	61	57
200	35	44
300	61	57



K00 Performance Data - Straight Air Flow - Smaller Nozzles - 1 Row

8 x 4 (200 x 100)	CFM	15	30	45	60	75	90	115	130
	Pressure Loss (in.w.g.)	0.025	0.078	0.158	0.257	0.378	0.512	0.783	0.961
	NC	-	-	18	26	33	38	45	48
	Throw (ft) - Coanda Effect	6-10-15	12-19-29	17-29-43	22-37-56	28-46-69	33-54-82	41-69-103	46-77-115
	Throw (ft) - No Ceiling Effect	5-8-12	9-15-22	13-21-32	17-28-42	21-35-52	25-41-61	31-52-77	35-58-87
12 x 4 (300 x 100)	CFM	20	40	60	80	100	120	140	160
	Pressure Loss (in.w.g.)	0.018	0.058	0.117	0.191	0.28	0.382	0.497	0.625
	NC	-	-	15	23	29	34	39	42
	Throw (ft) - Coanda Effect	6-10-16	12-20-30	18-29-44	23-39-58	29-48-72	34-57-85	39-65-98	45-74-111
	Throw (ft) - No Ceiling Effect	5-8-12	9-15-23	13-22-33	17-29-44	21-36-54	25-42-64	29-49-74	33-56-84
16 x 4 (400 x 100)	CFM	25	50	75	100	125	150	175	200
	Pressure Loss (in.w.g.)	0.02	0.064	0.128	0.208	0.306	0.416	0.543	0.68
	NC	-	-	18	24	29	32	35	38
	Throw (ft) - Coanda Effect	7-11-17	13-22-32	19-32-48	25-42-62	31-51-77	37-61-91	42-71-106	48-80-120
	Throw (ft) - No Ceiling Effect	5-9-13	10-16-24	14-24-36	19-31-47	23-39-58	27-46-68	32-53-79	36-60-90
20 x 4 (500 x 100)	CFM	30	60	90	120	150	180	210	240
	Pressure Loss (in.w.g.)	0.018	0.059	0.117	0.192	0.281	0.384	0.5	0.628
	NC	-	-	18	24	29	33	37	40
	Throw (ft) - Coanda Effect	7-12-18	14-23-35	21-34-52	27-45-68	33-56-83	40-66-99	46-76-114	52-77-130
	Throw (ft) - No Ceiling Effect	5-9-14	11-18-26	15-26-39	20-34-51	25-42-62	30-49-74	34-57-86	39-57-97
24 x 4 (600 x 100)	CFM	40	80	120	160	200	240	280	320
	Pressure Loss (in.w.g.)	0.018	0.058	0.116	0.189	0.277	0.378	0.493	0.619
	NC	-	-	21	28	33	37	40	43
	Throw (ft) - Coanda Effect	10-16-24	18-31-46	27-45-68	35-59-88	44-73-109	52-86-130	60-100-150	68-113-170
	Throw (ft) - No Ceiling Effect	7-12-18	14-23-35	20-34-51	27-44-66	33-55-82	39-65-97	45-75-112	51-85-127
28 x 4 (700 x 100)	CFM	50	100	150	200	250	300	350	400
	Pressure Loss (in.w.g.)	0.02	0.064	0.129	0.21	0.308	0.42	0.547	0.688
	NC	-	17	26	32	37	41	44	47
	Throw (ft) - Coanda Effect	10-17-26	20-33-50	29-48-73	38-63-95	47-78-117	56-93-139	64-107-161	73-122-183
	Throw (ft) - No Ceiling Effect	8-13-19	15-25-37	22-36-54	29-48-71	35-59-88	42-70-104	48-80-121	55-91-137
32 x 4 (800 x 100)	CFM	60	120	180	240	300	360	420	480
	Pressure Loss (in.w.g.)	0.02	0.065	0.13	0.213	0.312	0.426	0.554	0.696
	NC	-	17	26	32	37	41	44	47
	Throw (ft) - Coanda Effect	11-19-28	21-36-54	31-52-79	41-69-103	51-85-127	60-101-151	70-116-174	79-132-198
	Throw (ft) - No Ceiling Effect	8-14-21	16-27-40	24-39-59	31-51-77	38-64-95	45-75-113	52-87-131	59-99-148
36 x 4 (900 x 100)	CFM	60	120	180	240	300	360	420	480
	Pressure Loss (in.w.g.)	0.016	0.053	0.106	0.173	0.253	0.346	0.45	0.566
	NC	-	15	24	30	35	39	42	45
	Throw (ft) - Coanda Effect	10-17-25	19-32-48	28-47-70	37-61-92	45-75-113	54-90-134	62-104-155	70-117-176
	Throw (ft) - No Ceiling Effect	7-12-19	14-24-36	21-35-52	28-46-69	34-57-85	40-67-101	47-78-117	53-88-132
40 x 4 (1000 x 100)	CFM	70	140	210	280	350	420	490	560
	Pressure Loss (in.w.g.)	0.018	0.057	0.114	0.187	0.274	0.375	0.488	0.613
	NC	-	16	25	32	37	41	44	47
	Throw (ft) - Coanda Effect	12-19-29	22-37-55	32-54-81	42-71-106	52-87-131	62-104-155	72-120-180	81-136-204
	Throw (ft) - No Ceiling Effect	9-14-22	17-28-41	24-40-61	32-53-80	39-65-98	47-78-117	54-90-135	61-102-153

- NC value based on 10 db room attenuation

- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

K00 Performance Data - Straight Air Flow - Smaller Nozzles - 2 Rows

8 x 8 (200 x 200)	CFM	30	60	90	120	150	180	210	240
	Pressure Loss (in.w.g.)	0.027	0.089	0.178	0.291	0.426	0.581	0.757	0.951
	NC	-	-	20	28	35	40	44	48
	Throw (ft) - Coanda Effect	8-13-20	15-26-39	23-38-56	30-49-74	37-61-91	43-72-108	50-84-125	57-95-142
	Throw (ft) - No Ceiling Effect	6-10-15	12-19-29	17-28-42	22-37-56	27-46-68	33-54-81	38-63-94	43-71-107
12 x 8 (300 x 200)	CFM	40	80	120	160	200	240	280	320
	Pressure Loss (in.w.g.)	0.018	0.058	0.116	0.189	0.277	0.378	0.493	0.619
	NC	-	-	21	27	32	35	39	41
	Throw (ft) - Coanda Effect	8-13-19	15-24-37	21-36-54	28-47-70	35-58-87	41-69-103	48-79-119	54-90-135
	Throw (ft) - No Ceiling Effect	6-10-14	11-18-27	16-27-40	21-35-53	26-43-65	31-51-77	36-59-89	40-67-101
16 x 8 (400 x 200)	CFM	50	100	150	200	250	300	400	500
	Pressure Loss (in.w.g.)	0.014	0.047	0.093	0.153	0.224	0.305	0.499	0.731
	NC	-	-	20	26	31	35	41	46
	Throw (ft) - Coanda Effect	9-16-24	18-30-45	26-44-66	35-58-87	43-71-107	51-85-127	67-111-166	82-137-205
	Throw (ft) - No Ceiling Effect	7-12-18	14-23-34	20-33-50	26-43-65	32-53-80	38-64-95	50-83-125	62-103-154
20 x 8 (500 x 200)	CFM	60	120	180	240	300	400	500	600
	Pressure Loss (in.w.g.)	0.013	0.044	0.088	0.144	0.211	0.345	0.506	0.45
	NC	-	-	20	26	31	37	42	46
	Throw (ft) - Coanda Effect	10-17-25	19-32-48	28-47-70	37-61-92	45-75-113	59-99-148	73-122-183	87-145-217
	Throw (ft) - No Ceiling Effect	7-12-19	14-24-36	21-35-52	28-46-69	34-57-85	45-74-111	55-92-137	65-109-163
24 x 8 (600 x 200)	CFM	70	140	210	280	350	420	500	600
	Pressure Loss (in.w.g.)	0.015	0.05	0.1	0.163	0.238	0.326	0.439	0.599
	NC	-	-	20	27	32	36	40	44
	Throw (ft) - Coanda Effect	10-17-25	19-32-48	28-47-70	37-62-92	46-76-114	54-90-135	64-106-159	76-126-189
	Throw (ft) - No Ceiling Effect	8-13-19	14-24-36	21-35-53	28-46-69	34-57-85	41-68-101	48-80-120	57-95-142
28 x 8 (700 x 200)	CFM	80	160	240	320	400	500	600	700
	Pressure Loss (in.w.g.)	0.019	0.062	0.125	0.204	0.299	0.439	0.599	0.78
	NC	-	-	21	27	32	37	41	45
	Throw (ft) - Coanda Effect	11-19-28	22-36-55	32-53-80	42-70-105	52-86-129	64-106-159	76-126-189	88-146-219
	Throw (ft) - No Ceiling Effect	9-14-21	16-27-41	24-40-60	31-52-79	39-65-97	48-80-120	57-95-142	66-109-164
32 x 8 (800 x 200)	CFM	100	200	300	400	500	600	700	800
	Pressure Loss (in.w.g.)	0.019	0.064	0.127	0.208	0.305	0.416	0.542	0.681
	NC	-	15	23	30	35	39	42	45
	Throw (ft) - Coanda Effect	13-21-32	25-41-61	36-60-90	47-79-118	58-97-145	69-115-173	80-133-200	91-151-226
	Throw (ft) - No Ceiling Effect	10-16-24	18-31-46	27-45-67	35-59-88	44-73-109	52-86-129	60-100-150	68-113-170
36 x 8 (900 x 200)	CFM	100	200	300	400	500	600	700	800
	Pressure Loss (in.w.g.)	0.016	0.051	0.102	0.167	0.244	0.334	0.434	0.546
	NC	-	-	21	27	32	36	40	43
	Throw (ft) - Coanda Effect	11-19-29	22-36-55	32-53-80	42-70-105	52-86-130	62-103-154	71-119-178	81-134-202
	Throw (ft) - No Ceiling Effect	9-14-21	16-27-41	24-40-60	32-53-79	39-65-97	46-77-115	53-89-133	61-101-151
40 x 8 (1000 x 200)	CFM	125	250	375	500	600	700	800	1000
	Pressure Loss (in.w.g.)	0.019	0.061	0.122	0.2	0.273	0.355	0.446	0.653
	NC	-	16	25	31	35	39	42	46
	Throw (ft) - Coanda Effect	13-21-31	24-40-60	35-59-88	46-77-115	55-91-137	63-106-159	72-120-180	89-148-222
	Throw (ft) - No Ceiling Effect	9-16-24	18-30-45	26-44-66	35-58-87	41-69-103	48-79-119	54-90-135	67-111-166

- NC value based on 10 db room attenuation

- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

K00 Performance Data - Straight Air Flow - Larger Nozzles - 1 Row

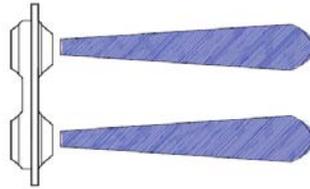


12 x 6 (300 x 150)	CFM	25	50	75	100	125	150	175	200
	Pressure Loss (in.w.g.)	0.012	0.042	0.09	0.152	0.231	0.323	0.431	0.551
	NC	-	-	20	26	31	35	39	42
	Throw (ft) - Coanda Effect	6-10-14	12-20-30	19-32-48	26-43-65	33-55-83	40-67-101	48-80-120	55-92-138
	Throw (ft) - No Ceiling Effect	4-7-11	9-15-23	14-24-36	19-32-49	25-41-62	30-50-76	36-60-90	41-69-104
18 x 6 (450 x 150)	CFM	40	80	120	160	200	240	280	320
	Pressure Loss (in.w.g.)	0.012	0.045	0.095	0.162	0.245	0.344	0.458	0.587
	NC	-	-	21	27	32	36	40	43
	Throw (ft) - Coanda Effect	7-12-17	15-25-37	23-38-57	31-52-78	40-67-100	49-81-122	58-96-145	67-111-167
	Throw (ft) - No Ceiling Effect	5-9-13	11-18-28	17-29-43	24-39-59	30-50-75	37-61-92	43-72-108	50-84-125
24 x 6 (600 x 150)	CFM	50	100	150	200	250	300	400	500
	Pressure Loss (in.w.g.)	0.012	0.042	0.089	0.152	0.23	0.322	0.55	0.833
	NC	-	-	21	27	32	36	42	47
	Throw (ft) - Coanda Effect	7-11-17	15-24-36	23-38-57	31-52-78	40-66-99	48-81-121	66-110-166	85-141-211
	Throw (ft) - No Ceiling Effect	5-9-13	11-18-27	17-28-43	23-39-58	30-50-74	36-60-91	50-83-124	63-106-158
30 x 6 (750 x 150)	CFM	60	120	180	240	300	400	500	600
	Pressure Loss (in.w.g.)	0.013	0.045	0.097	0.165	0.25	0.426	0.645	0.905
	NC	-	-	20	27	32	38	43	47
	Throw (ft) - Coanda Effect	7-12-17	15-25-37	23-38-58	32-53-79	40-67-101	55-92-138	70-117-176	86-143-214
	Throw (ft) - No Ceiling Effect	5-9-13	11-19-28	17-29-43	24-39-59	30-50-75	41-69-103	53-88-132	64-107-161
36 x 6 (900 x 150)	CFM	70	140	210	280	350	420	500	600
	Pressure Loss (in.w.g.)	0.013	0.046	0.097	0.166	0.252	0.353	0.488	0.685
	NC	-	-	21	27	32	36	40	44
	Throw (ft) - Coanda Effect	7-12-17	15-25-37	23-39-58	32-53-79	41-68-101	49-82-124	60-100-150	73-122-183
	Throw (ft) - No Ceiling Effect	5-9-13	11-19-28	17-29-44	24-40-60	30-51-76	37-62-93	45-75-112	55-91-137
42 x 6 (1050 x 150)	CFM	80	160	240	320	400	500	600	700
	Pressure Loss (in.w.g.)	0.012	0.043	0.092	0.157	0.238	0.36	0.506	0.673
	NC	-	-	21	27	32	37	41	44
	Throw (ft) - Coanda Effect	7-12-18	15-25-38	23-39-58	32-53-80	41-68-102	52-87-130	64-106-159	75-125-188
	Throw (ft) - No Ceiling Effect	5-9-13	11-19-28	18-29-44	24-40-60	31-51-77	39-65-98	48-80-119	56-94-141
48 x 6 (1200 x 150)	CFM	100	200	300	400	500	600	700	800
	Pressure Loss (in.w.g.)	0.013	0.046	0.098	0.167	0.252	0.354	0.471	0.604
	NC	-	15	23	30	35	39	42	45
	Throw (ft) - Coanda Effect	9-15-22	19-32-48	30-50-75	41-68-102	52-87-130	64-106-159	75-125-188	87-145-218
	Throw (ft) - No Ceiling Effect	7-11-17	14-24-36	22-37-56	31-51-77	39-65-98	48-80-119	56-94-141	65-109-163

- NC value based on 10 db room attenuation

- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

K00 Performance Data - Straight Air Flow - Larger Nozzles - 2 Rows

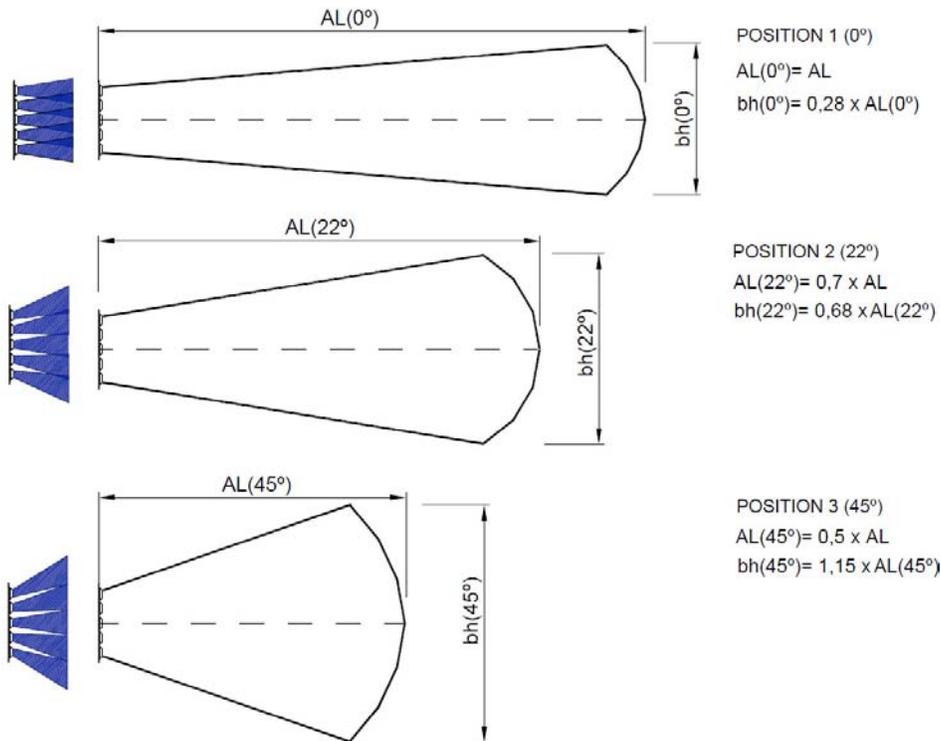
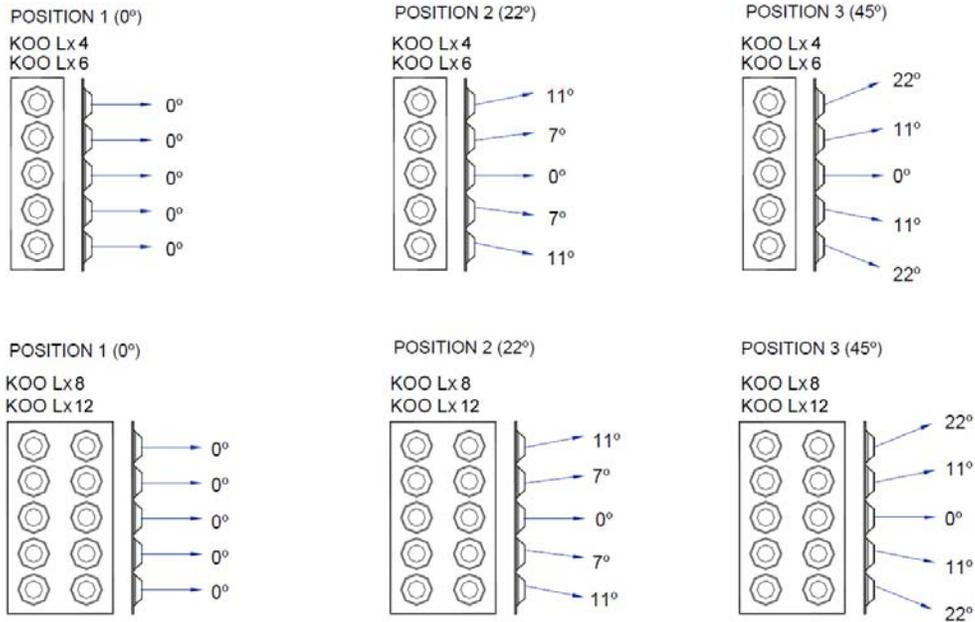


12 x 12 (300 x 300)	CFM	40	80	120	160	200	250	300	350
	Pressure Loss (in.w.g.)	0.008	0.028	0.059	0.1	0.152	0.23	0.322	0.429
	NC	-	-	19	25	30	35	39	42
	Throw (ft) - Coanda Effect	7-12-17	15-25-37	23-38-57	31-52-78	40-67-100	51-85-128	62-104-156	74-123-184
	Throw (ft) - No Ceiling Effect	5-9-13	11-18-28	17-29-43	24-39-59	30-50-75	38-64-96	47-78-117	55-92-138
18 x 12 (450 x 300)	CFM	75	150	225	300	375	450	525	600
	Pressure Loss (in.w.g.)	0.014	0.052	0.111	0.189	0.286	0.401	0.535	0.685
	NC	-	-	23	30	35	39	42	45
	Throw (ft) - Coanda Effect	9-15-22	19-31-47	29-49-74	40-67-101	51-86-128	63-104-157	74-124-185	86-143-214
	Throw (ft) - No Ceiling Effect	7-11-17	14-24-35	22-37-55	30-50-75	39-64-96	47-78-117	56-93-139	64-107-161
24 x 12 (600 x 300)	CFM	80	160	240	320	400	480	560	640
	Pressure Loss (in.w.g.)	0.008	0.03	0.064	0.11	0.167	0.234	0.311	0.399
	NC	-	-	17	23	28	32	35	38
	Throw (ft) - Coanda Effect	10-16-24	20-34-51	32-53-79	43-72-108	55-92-138	67-112-168	80-133-199	92-153-230
	Throw (ft) - No Ceiling Effect	7-12-18	15-25-38	24-39-59	32-54-81	41-69-103	50-84-126	60-99-149	69-115-173
30 x 12 (750 x 300)	CFM	100	200	300	400	500	600	700	800
	Pressure Loss (in.w.g.)	0.01	0.035	0.074	0.127	0.193	0.27	0.36	0.461
	NC	-	-	18	25	29	33	37	40
	Throw (ft) - Coanda Effect	9-15-22	19-32-48	30-50-75	41-68-102	52-87-130	64-106-159	75-125-188	87-145-218
	Throw (ft) - No Ceiling Effect	7-11-17	14-24-36	22-37-56	31-51-77	39-65-98	48-80-119	56-94-141	65-109-163
36 x 12 (900 x 300)	CFM	125	250	375	500	625	750	875	1000
	Pressure Loss (in.w.g.)	0.011	0.038	0.082	0.139	0.211	0.296	0.394	0.505
	NC	-	-	19	25	30	34	38	41
	Throw (ft) - Coanda Effect	9-15-23	19-32-49	30-50-76	41-69-103	53-88-132	64-107-161	76-127-191	88-147-221
	Throw (ft) - No Ceiling Effect	7-11-17	15-24-36	23-38-57	31-52-78	40-66-99	48-81-121	57-95-143	66-110-165
42 x 12 (1050 x 300)	CFM	150	300	450	600	750	900	1050	1200
	Pressure Loss (in.w.g.)	0.012	0.042	0.089	0.152	0.23	0.322	0.429	0.55
	NC	-	-	19	26	31	35	38	41
	Throw (ft) - Coanda Effect	11-19-28	24-40-59	37-61-92	51-84-126	64-107-161	79-131-197	93-155-233	108-179-269
	Throw (ft) - No Ceiling Effect	8-14-21	18-30-44	28-46-69	38-63-95	48-81-121	59-98-147	70-116-175	81-135-202
48 x 12 (1200 x 300)	CFM	200	400	600	800	1000	1200	1400	1600
	Pressure Loss (in.w.g.)	0.017	0.061	0.129	0.22	0.333	0.467	0.622	0.798
	NC	-	-	22	29	33	38	41	44
	Throw (ft) - Coanda Effect	14-23-34	29-48-72	45-75-113	62-103-154	79-131-197	96-160-240	113-189-284	131-219-329
	Throw (ft) - No Ceiling Effect	10-17-25	22-36-54	34-56-84	46-77-116	59-98-147	72-120-180	86-142-213	99-164-246

- NC value based on 10 db room attenuation

- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

KOO Performance Data - Airflow Spread Correction Factors

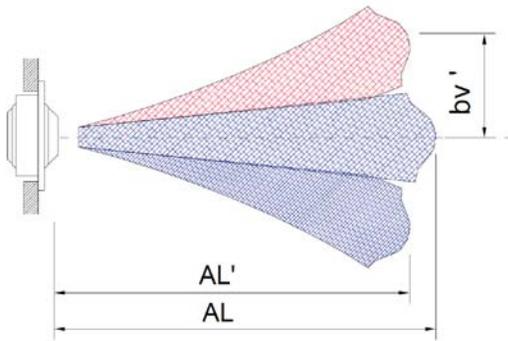


Calculation Example

We need to calculate the throw and spread for a KOO 48 12 configured at 45°, installed in the sidewall (no ceiling effect) and supplying 600 cfm of air.

Throw at 40 fpm terminal velocity: AL = 84 ft
Corrected throw for 45° angle: AL(45) = 84 x 0.5 = 42 ft
Spread for 45° angle: bh(45) = 42 x 1.15 = 48.3 ft

K00 Performance Data - Temperature Correction Factors



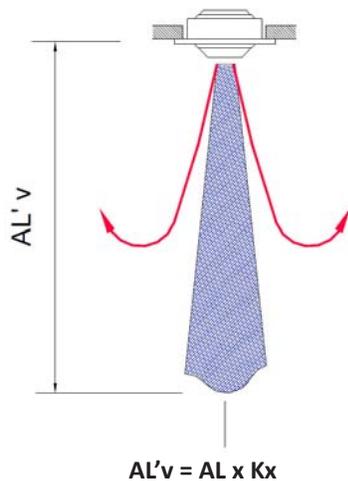
$$AL' = AL \times Kh$$

$$bv' = AL \times Kv$$

Kh = Throw Correction Factor
 Kv = Correction Factor for Vertical Diffusion
 AL = Throw

Delta T Correction Factors					
Δ T (F)	Kh	Kv1	Kv2	Kv3	Kv4
-25	0.84	-0.38	-0.49	-0.67	-0.79
-20	0.87	-0.36	-0.4	-0.505	-0.645
-15	0.91	-0.23	-0.295	-0.375	-0.48
-10	0.935	-0.16	-0.2	-0.26	-0.33
-5	0.97	-0.075	-0.1	-0.115	-0.155
0	1	0	0	0	0
5	0.97	0.075	0.1	0.115	0.155
10	0.935	0.16	0.2	0.26	0.33
15	0.91	0.23	0.295	0.375	0.48
20	0.87	0.36	0.4	0.505	0.645
25	0.84	0.38	0.49	0.67	0.79

Kv Factor Selection Based on Dimension			
Kv1	Kv2	Kv3	Kv4
8 x 4 (200x100)	20 x 4 (500x100)	32 x 4 (800x100)	28 x 4 (700x800)
12 x 4 (300x100)	24 x 4 (600x100)	36 x 4 (900x100)	32 x 8 (800x200)
16 x 4 (400x100)	28 x 4 (700x100)	40 x 4 (1000x100)	36 x 8 (900x200)
8 x 8 (200x200)	12 x 8 (300x200)	16 x 8 (400x200)	40 x 8 (1000x200)
12 x 6 (300x150)	18 x 6 (450x150)	20 x 8 (500x200)	42 x 6 (1050x150)
	24 x 6 (600x150)	24 x 8 (600x200)	48 x 6 (1200x150)
	12 x 12 (300x300)	30 x 6 (750x150)	24 x 12 (600x300)
		36 x 6 (900x150)	30 x 12 (750x300)
		18 x 12 (450x300)	36 x 12 (900x300)
			42 x 12 (1050x300)
			48 x 12 (1200x300)

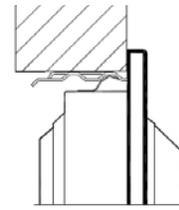


$$AL'v = AL \times Kx$$

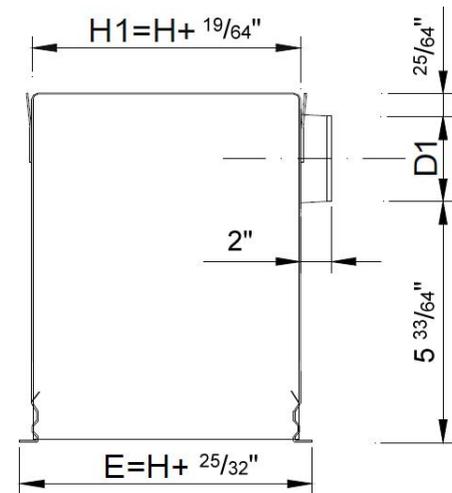
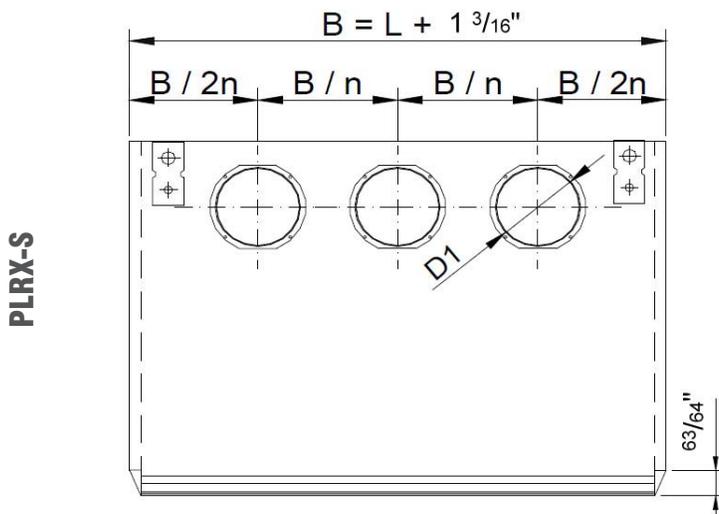
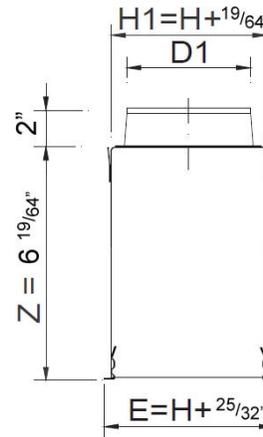
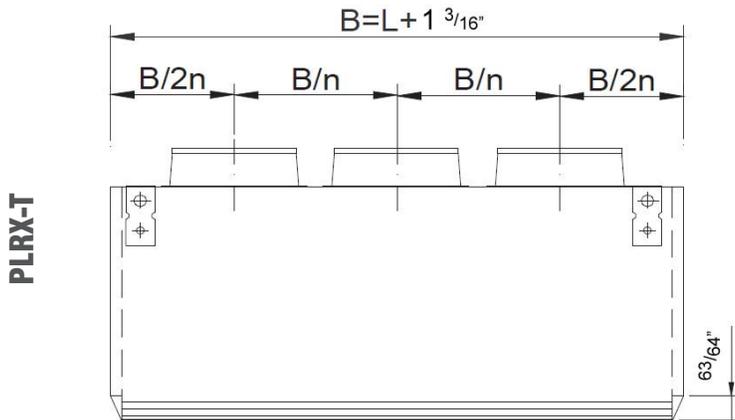
Delta T Correction Factor For Vertical Throw	
Δ T (F)	Kx
-25	1.445
-20	1.355
-15	1.27
-10	1.18
-5	1.09
0	1
5	0.915
10	0.82
15	0.73
20	0.645
25	0.555

K00 Spring Clips Mounting

Invisible fixing by means of pressure clips with security hooks for ceiling installation. Requires PLRX plenum or CM mounting frame.

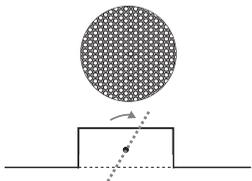


PLRX Plenum



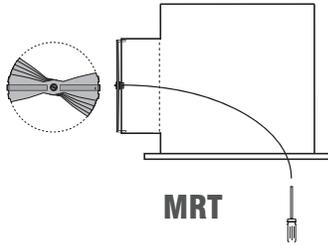
Neck Diameter and Quantity					
L	< 24"	< 36"	< 40"	< 48"	>= 48"
H	4"	1x 4"D	2x 4"D	2x 4"D	3x 4"D
	6"	1x 5"D	2x 5"D	2x 5"D	3x 5"D
	8"	1x 8"D	1x 8"D	2x 8"D	2x 8"D
	12"	1x 10"D	1x 10"D	1x 10"D	2x 10"D

Integrated Air Volume Dampers



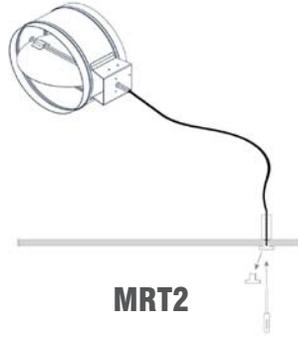
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Perforated damper + air equalizer



MRT

Manually operated damper, cable inside the plenum, adjustment through face



MRT2

Manually operated damper, cable through drywall with termination fixture



EB

Battery operated electro-balance damper with remote control, cable through face



EB2

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 8" and 12").

How to Specify KOO Series

Supply and mounting of model KOO adjustable long throw multi-jet nozzle diffuser. Each nozzle rotates independently to adjust direction of the airflow. Constructed from spun aluminum nozzles with galvanized steel face, powder coated in white M9016. Supply with PLRX plenum and concealed mounting clips. By EffectiV HVAC / MADEL.

How to Order KOO Series

KOO	-S	48	6	/M9016	+ PLRX-S-R 48 6
			Finish	/M9006	Metalllic Grey (RAL 9006 White Aluminum)
				/M9016	White (RAL 9016 Traffic White)
		Height	4, 6, 8, 12		
	Width	8, 12, 16, 18, 20, 24, 28, 30, 32, 36, 40, 42, 48			
Mounting	S	Invisible fixing by means of pressure clips			
	T	Visible screws			