Technical Catalogue

UNIVERSAL INDUSTRIES™

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South Asia
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AIR DISTRIBUTION PRODUCT - GRILLES

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FACTORY FABRICATED LINEAR BAR GRILLES

LINEAR FIXED BAR GRILLES

APPLICATION

Air supply or air return in Air-conditioning, Ventilating and Heating systems.

MOUNTING

Overlapped in sidewall or in false ceiling by means of hidden fixing systems as well as for continuous grilles fixing by means of concealed bridge type fixing.

IMPLEMENTATION

Extruded aluminium construction. Frames with flat frontal face of 16mm, 20 mm, 25 mm or 30 mm and inner blades of0°, 15°, 30° or 45° deflections. Available with or without end flanges as well as for standard or non standard sizes. Optional mittered corners available.

The models available in Linear Fixed Bar Grilles are One way type /Two way type, Curved Grilles and Removable Core Grilles.

STANDARD FINISHES

Natural Aluminium, Anodized or Powder coated in standard RAL white colours.

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FACTORY FABRICATED LINEAR BAR GRILLES

PERFORMANCE FOR SUPPLY AIR GRILLES 0° DEF

Area Factor	Face Velocity in FPM	400	500	600	700	800	900	1000
50mm Width 0.040	CFM	172	216	257	300	343	383	428
	Ps in MM H2o	0.14	0.18	0.19	0.23	0.29	0.36	0.46
	Throw in M	2.7-4.1 -5.6	3.5-4.4 -6.2	4.1-5.1 -7.1	4.6-5.6 -7.9	4.9-5.6 -8.3	5.4-6.4 -9.3	5.5-6.8 -9.8
	NC	< 15	< 15	< 15	17	22	25	31
100mm Width 0.06.5	CFM	278	348	418	482	556	626	692
	Ps in MM H2o	0.14	0.19	0.19	0.28	0.35	0.46	0.56
	Throw in M	3.5-4.7 -7.1	4.1-5.3 -7.8	4.8-6.0 -8.6	5.6-6.4 -9.3	5.9-7.2 -10	6.4-8.1 -11.3	6.8-8.6 -12.4
	NC	< 15	< 15	15	18	23	27	32
150mm Width 0.088	CFM	375	468	561	654	747	840	933
	Ps in MM H2o	0.14	0.19	0.23	0.33	0.42	0.53	0.65
	Throw in M	4.1-5.6 -8.2	4.7-6.2 -9	5.4-6.9 -10	7.1-8.5 -12.3	7.9-9.5 -13.1	8.4-10.4 -14.5	9.0-11.0 -15.8
	NC	< 15	16	17	21	26	32	36
200mm Width 0.111	CFM	471	591	705	826	942	1061	1179
	Ps in MM H2o	0.16	0.19	0.19	0.28	0.35	0.46	0.56
	Throw in M	4.6-6.0 -8.7	5.2-6.8 -10	6.0-7.5 -11	7.5-9.0 -12.5	8.5-10.5 -14.5	9.0-10.5 -15	9.5-11.5 -16.5
	NC	< 15	16	17	21	26	33	36
250mm Width 0.134	CFM	567	709	853	994	1136	1280	1423
	Ps in MM H2o	0.19	0.23	0.31	0.39	0.52	0.71	0.86
	Throw in M	5.0-6.8 -10	5.6-7.8 -11	6.7-8.6 -12.1	7.8-9.5 -13.3	9.0-11.0 -15.9	9.5-11.9 -17.4	10.0-12.5 -19
	NC	< 15	16	21	27	31	35	40
300mm Width 0.162	CFM	688	858	1032	1201	1373	1546	1720
	Ps in MM H2o	0.19	0.28	0.33	0.44	0.59	0.78	0.94
	Throw in M	6.2-8.4 -11.9	7.3-9.6 -13	8.4-10.5 -14.3	9.2-11.2 -15.4	9.6-12.2 -17	10.2-12.3 -18.6	12.0-14.0 -22
	NC	< 15	18	25	30	33	37	42

- Data based on one metre length of the grille.
- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20

- Throw values are in metre, based on minimum to terminal velocity of 150 FPM middle to 100 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED LINEAR BAR GRILLES

PERFORMANCE FOR RETURN AIR GRILLES 0° DEF

Grille height in mm							
50mm	CFM	342	425	510	594	677	762
	Ps in MM H2o	0.017	0.027	0.039	0.054	0.072	0.087
	NC	< 15	18	22	31	34	38
100mm	CFM	425	510	594	677	762	846
	Ps in MM H2o	0.017	0.026	0.035	0.045	0.058	0.07
	NC	< 15	19	24	31	34	40
150mm	CFM	510	594	677	762	846	1004
	Ps in MM H2o	0.017	0.025	0.032	0.041	0.05	0.072
	NC	15	20	27	32	34	40
200mm	CFM	594	677	762	846	1004	1175
	Ps in MM H2o	0.017	0.025	0.026	0.036	0.055	0.071
	NC	17	23	28	32	36	42
250mm	CFM	677	762	846	1004	1175	1338
	Ps in MM H2o	0.017	0.022	0.026	0.037	0.05	0.066
	NC	19	24	28	33	36	44
300mm	CFM	762	846	1004	1175	1338	1507
	Ps in MM H2o	0.017	0.023	0.027	0.039	0.052	0.067
	NC	22	27	30	34	38	44

- Data based on one metre length of the grille.
- Face velocity is measured in FPM
- (-)Ps - Static pressure loss in mm of H20
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED LINEAR BAR GRILLES

PERFORMANCE FOR SUPPLY AIR GRILLES 15° DEF

Area Factor	Face Velocity in FPM	400	500	600	700	800	900	1000
50mm Width 0.040	CFM	170	213	256	299	342	385	428
	Ps in MM H2o	0.14	0.19	0.21	0.25	0.31	0.39	0.5
	Throw in M	2.7-4.1 -5.6	3.5-4.4 -6.2	4.1-5.1 -7	4.5-5.4 -7.7	4.8-5.8 -8.1	5.1-6.1 -8.9	5.2-6.4 -9.3
	NC	< 15	< 15	< 15	17	22	25	31
100mm Width 0.06.5	CFM	276	346	416	486	556	626	696
	Ps in MM H2o	0.14	0.19	0.21	0.3	0.38	0.5	0.6
	Throw in M	3.5-4.7 -7.1	4.1-5.3 -7.8	4.7-5.9 -8.4	5.4-6.2 -9	5.8-7.0 -9.7	6.1-7.7 -10.8	6.4-8.1 -11.7
	NC	< 15	< 15	<15	18	23	27	32
150mm Width 0.088	CFM	374	467	560	653	746	839	932
	Ps in MM H2o	0.14	0.19	0.25	0.36	0.45	0.57	0.7
	Throw in M	4.1-5.6 -8.2	4.7-6.2 -9	5.4-6.9 -10	6.0-7.6 -10.6	6.7-8.4 -11.4	7.0-8.9 -12.5	7.4-9.3 -13.3
	NC	< 15	<15	16	18	24	29	34
200mm Width 0.111	CFM	469	588	707	826	945	1064	1183
	Ps in MM H2o	0.18	0.21	0.31	0.39	0.52	0.65	0.9
	Throw in M	4.6-6.2 -9	5.3-6.9 -10	6.2-7.8 -11.2	6.9-8.3 -11.9	7.7-9.2 -12.7	8.9-9.0 -13.8	8.5-10.4 -14.5
	NC	< 15	16	17	21	26	32	36
250mm Width 0.134	CFM	566	708	850	992	1135	1276	1416
	Ps in MM H2o	0.2	0.23	0.33	0.42	0.56	0.77	0.93
	Throw in M	5.0-6.8 -10	5.6-7.8 -11	6.6-8.4 -11.9	7.6-9.2 -12.9	8.4-10.0 -14	8.6-10.5 -15.1	9.0-11.3 -16.4
	NC	< 15	16	21	27	31	35	40
300mm Width 0.162	CFM	688	857	1032	1201	1376	1546	1719
	Ps in MM H2o	0.19	0.28	0.33	0.44	0.59	0.78	0.84
	Throw in M	5.3-7.5 -10.9	6.2-8.4 -11.9	7.2-9.4 -12.8	8.2-10.2 -13.9	8.9-10.2 -13.9	8.9-10.9 -15	9.6-12.3 -17.6
	NC	< 15	18	25	30	33	37	42

- Data based on one metre length of the grille.
- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20

- Throw values are in metre, based on minimum to terminal velocity of 150 FPM middle to 100 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED LINEAR BAR GRILLES

PERFORMANCE FOR RETURN AIR GRILLES 15° DEF

Grille height in mm							
50mm	CFM	330	415	502	586	667	750
	Ps in MM H2o	0.018	0.028	0.04	0.056	0.074	0.091
	NC	< 15	18	25	30	34	36
100mm	CFM	415	502	586	667	748	830
	Ps in MM H2o	0.018	0.028	0.038	0.052	0.061	0.074
	NC	< 15	19	24	31	34	38
150mm	CFM	502	586	667	750	830	990
	Ps in MM H2o	0.018	0.026	0.038	0.054	0.053	0.073
	NC	15	20	27	30	33	38
200mm	CFM	586	667	750	830	990	1156
	Ps in MM H2o	0.017	0.025	0.03	0.039	0.054	0.073
	NC	17	23	25	30	34	40
250mm	CFM	667	750	830	990	1156	1320
	Ps in MM H2o	0.017	0.026	0.03	0.04	0.054	0.0728
	NC	19	22	24	30	36	42
300mm	CFM	750	830	990	1156	1320	1490
	Ps in MM H2o	0.018	0.027	0.032	0.042	0.056	0.073
	NC	19	23	25	30	37	44

- Data based on one metre length of the grille.
- Face velocity is measured in FPM
- (-)Ps - Static pressure loss in mm of H20
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED LINEAR BAR GRILLES

PERFORMANCE FOR SUPPLY AIR GRILLES 30° DEF

Area Factor	Face Velocity in FPM	400	500	600	700	800	900	1000
50mm Width 0.040	CFM	170	213	256	299	342	385	428
	Ps in MM H2o	0.14	0.19	0.21	0.25	0.31	0.39	0.5
	Throw in FT	6.0-14.0	9.0-19.4	9.5-19.5	Oct-24	Dec-23	13.5-24	14.5-26
	NC	< 15	< 15	< 15	17	22	25	31
100mm Width 0.06.5	CFM	276	346	416	486	556	626	696
	Ps in MM H2o	0.14	0.19	0.21	0.3	0.38	0.5	0.6
	Throw in FT	9.0-22	12.0-26	15.0-32	17.0-33	18-34.0	20-36	23-40
	NC	< 15	< 15	<15	18	23	27	32
150mm Width 0.088	CFM	374	467	560	653	746	839	932
	Ps in MM H2o	0.14	0.19	0.25	0.36	0.45	0.57	0.7
	Throw in FT	12.0-23.0	13.0-27.0	16.0-33.0	18.0-34.0	20.0-36.0	22.0-38.0	25.0-42.0
	NC	< 15	<15	16	18	24	29	34
200mm Width 0.111	CFM	469	588	707	826	945	1064	1183
	Ps in MM H2o	0.18	0.21	0.31	0.39	0.52	0.65	0.9
	Throw in FT	14-26	16-28	18-34	20-36	22-38	24-40	26-44
	NC	< 15	16	17	21	26	32	36
250mm Width 0.134	CFM	566	708	850	992	1135	1276	1416
	Ps in MM H2o	0.2	0.23	0.33	0.42	0.56	0.77	0.93
	Throw in FT	16-28	18-34	21-37	23-39	25-40	26-44	30-46
	NC	< 15	16	21	27	31	35	40
300mm Width 0.162	CFM	688	857	1032	1201	1376	1546	1719
	Ps in MM H2o	0.2	0.3	0.36	0.47	0.64	0.84	0.02
	Throw in FT	18-30	20-36	22-38	25-41	27-44	29-46	32-48
	NC	< 15	18	25	30	33	37	42

- Data based on one metre length of the grille.
- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20

- Throw values are in metre, based on minimum to terminal velocity of 150 FPM middle to 100 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED ROUND GRILLES

ROUND GRILLES

APPLICATION

Air supply or air return in Air-conditioning, Ventilating and Heating systems.

MOUNTING

Overlapped in false ceiling by means of hidden fixing systems or directly on to the visible circular ducts.

IMPLEMENTATION

Circular frame with flat frontal face of 20 mm and inner blades are cut to match the circular area. Available in 0°, 15°, 30° or 45° deflections as well as in one way or two way types. Removable cores are also made on request. For air supply screw operated butterfly dampers will be fixed on the rear side of the grille. Constructed in high grade aluminium. The models available in Linear Fixed Bar Grilles are One way type /Two way type, Curved Grilles and Removable Core Grilles.

STANDARD AVAILABLE SIZES

Available in sizes from 0100 to 0500mm in 50 mm increments.

STANDARD FINISHES

Natural Aluminium, Anodized or Powder coated in standard RAL white colours.

Neck Size	Outer Size	Flange	Depth
A	B	C	D
0 100	0 140	25	70
0 150	0 190	25	70
0 200	0 240	25	70
0 250	0 290	25	70
0 300	0 340	25	70
0 350	0 390	25	70
0 400	0 444	27	70
0 450	0 494	27	70
0 500	0 544	27	70

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 0° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 100	CFM	15	20	25	30	35	40	45	50
	Ps in inches H2o	0.006	0.007	0.008	0.01	0.015	0.04	0.032	0.037
	Throw in Ft	02-10	03-12	05-15	07-17	09-18	11-20	13-22	14-24
	NC	< 15	< 15	< 15	15	20	24	28	32
Ø 150	CFM	45	61	76	91	106	122	137	152
	Ps in inches H2o	0.007	0.008	0.01	0.015	0.021	0.027	0.032	0.044
	Throw in Ft	05-14	07-17	08-18	10-20	11-21	13-23	14-24	15-25
	NC	< 15	< 15	15	20	24	29	34	38
Ø 200	CFM	81	108	135	162	190	217	243	270
	Ps in inches H2o	0.009	0.01	0.018	0.027	0.033	0.041	0.049	0.059
	Throw in Ft	06-16	08-17	09-18	10-20	11-21	12-22	15-25	17-27
	NC	< 15	< 15	20	23	28	31	34	40
Ø 250	CFM	126	177	211	254	296	338	380	422
	Ps in inches H2o	0.012	0.014	0.019	0.026	0.043	0.051	0.06	0.07
	Throw in Ft	07-18	08-19	10-20	11-22	12-23	13-24	15-26	17-28
	NC	< 15	< 15	20	23	29	32	38	41
Ø 300	CFM	182	243	305	366	426	487	548	609
	Ps in inches H2o	0.016	0.019	0.026	0.043	0.05	0.072	0.087	0.102
	Throw in Ft	08-20	10-22	11-23	12-24	13-26	14-27	16-28	18-30
	NC	< 15	< 15	20	25	30	34	38	44
Ø 350	CFM	249	331	414	498	580	663	746	829
	Ps in inches H2o	0.018	0.02	0.029	0.05	0.062	0.082	0.087	0.112
	Throw in Ft	09-22	10-24	12-26	13-27	14-28	15-29	20-30	21-32
	NC	< 15	15	20	25	31	36	42	49

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 0° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 400	CFM	325	433	542	650	758	866	974	1082
	Ps in inches H2o	0.018	0.019	0.026	0.042	0.05	0.074	0.087	0.102
	Throw in Ft	10-26	13-28	16-29	17-30	18-32	20-35	22-36	24-38
	NC	<15	15	20	25	29	34	41	50
Ø 450	CFM	411	548	685	822	958	1096	1233	1346
	Ps in inches H2o	0.019	0.022	0.026	0.046	0.052	0.076	0.087	0.112
	Throw in Ft	11-28	14-29	18-30	19-32	22-34	23-36	25-38	26-40
	NC	<15	15	20	26	30	34	42	50
Ø 500	CFM	507	677	834	1000	1170	1353	1522	1691
	Ps in inches H2o	0.02	0.026	0.029	0.05	0.062	0.082	0.102	0.132
	Throw in Ft	11-28	14-29	18-30	19-32	22-34	23-36	25-38	26-40
	NC	<15	15	20	26	30	34	42	50

- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20
- Throw values are in feet, based on minimum to terminal velocity of 150 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 15° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 100	CFM	15	20	25	30	35	40	45	50
	Ps in inches H2o	0.006	0.007	0.008	0.01	0.015	0.04	0.032	0.037
	Throw in Ft	02-08	03-10	05-11	07-12	08-13	09-15	10-16	11-17
	NC	< 15	< 15	< 15	15	20	24	28	32
Ø 150	CFM	46	61	76	91	106	122	137	152
	Ps in inches H2o	0.007	0.008	0.01	0.015	0.021	0.027	0.032	0.044
	Throw in Ft	04-10	05-12	06-13	07-14	08-16	09-17	10-18	11-19
	NC	< 15	< 15	15	20	24	29	34	38
Ø 200	CFM	81	108	135	162	190	217	243	270
	Ps in inches H2o	0.009	0.01	0.018	0.027	0.033	0.041	0.049	0.059
	Throw in Ft	04-11	06-13	07-14	08-16	09-17	10-18	11-19	12-20
	NC	< 15	< 15	20	23	28	31	34	40
Ø 250	CFM	126	177	211	254	296	338	380	422
	Ps in inches H2o	0.012	0.014	0.019	0.026	0.043	0.051	0.06	0.07
	Throw in Ft	05-12	06-14	07-15	08-17	09-18	10-19	11-20	13-22
	NC	< 15	< 15	20	23	29	32	38	41
Ø 300	CFM	182	243	305	366	426	487	548	609
	Ps in inches H2o	0.016	0.019	0.026	0.043	0.05	0.072	0.087	0.102
	Throw in Ft	06-20	08-16	09-18	10-19	11-22	12-23	13-24	14-25
	NC	< 15	< 15	20	25	30	34	38	44
Ø 350	CFM	249	331	414	498	580	663	746	829
	Ps in inches H2o	0.018	0.02	0.029	0.05	0.062	0.082	0.087	0.112
	Throw in Ft	07-15	8-18	10-19	11-22	12-23	13-25	14-26	16-28
	NC	< 15	15	20	25	31	36	42	49

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 15° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 400	CFM	325	433	542	650	758	866	974	1082
	Ps in inches H2o	0.018	0.019	0.026	0.042	0.05	0.074	0.087	0.102
	Throw in Ft	09-20	09-22	10-24	12-25	13-26	15-30	17-32	20-35
	NC	<15	15	20	25	29	34	41	50
Ø 450	CFM	411	548	685	822	958	1096	1233	1346
	Ps in inches H2o	0.019	0.022	0.026	0.046	0.052	0.076	0.087	0.112
	Throw in Ft	09-22	10-24	12-25	13-26	15-30	17-32	20-35	22-36
	NC	<15	15	20	26	30	34	42	50
Ø 500	CFM	507	677	834	1000	1170	1353	1522	1691
	Ps in inches H2o	0.02	0.026	0.029	0.05	0.062	0.082	0.102	0.132
	Throw in Ft	10-24	12-25	13-26	15-30	17-32	20-35	22-36	24-40
	NC	<15	15	20	26	30	34	42	50

- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20
- Throw values are in feet, based on minimum to terminal velocity of 150 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 30° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 100	CFM	15	20	25	30	35	40	45	50
	Ps in inches H2o	0.006	0.007	0.008	0.01	0.015	0.04	0.032	0.037
	Throw in Ft	02-05	03-06	04-08	04-09	05-11	06-12	07-13	08-14
	NC	< 15	< 15	< 15	15	20	24	28	32
Ø 150	CFM	46	61	76	91	106	122	137	152
	Ps in inches H2o	0.007	0.008	0.01	0.015	0.021	0.027	0.032	0.044
	Throw in Ft	03-08	04-09	04-10	06-11	06-12	07-13	08-14	09-15
	NC	< 15	< 15	15	20	24	29	34	38
Ø 200	CFM	81	108	135	162	190	217	243	270
	Ps in inches H2o	0.009	0.01	0.018	0.027	0.033	0.041	0.049	0.059
	Throw in Ft	03-10	04-11	05-12	06-13	07-14	08-14	09-15	10-16
	NC	< 15	< 15	20	23	28	31	34	40
Ø 250	CFM	126	177	211	254	296	338	380	422
	Ps in inches H2o	0.012	0.014	0.019	0.026	0.043	0.051	0.06	0.07
	Throw in Ft	04-10	05-12	06-13	07-14	08-15	10-16	11-18	11-19
	NC	< 15	< 15	20	23	29	32	38	41
Ø 300	CFM	182	243	305	366	426	487	548	609
	Ps in inches H2o	0.016	0.019	0.026	0.043	0.05	0.072	0.087	0.102
	Throw in Ft	05-12	06-14	07-17	08-18	09-19	10-20	11-22	12-23
	NC	< 15	< 15	20	25	30	34	38	44

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FACTORY FABRICATED ROUND GRILLES

SUPPLY AIR PERFORMANCE FOR ROUND GRILLES 30° DEFLEECTION

Grille Size in mm	Face Velocity	300	400	500	600	700	800	900	1000
Ø 350	CFM	249	331	414	498	580	663	746	829
	Ps in inches H2o	0.018	0.02	0.029	0.05	0.062	0.082	0.087	0.112
	Throw in Ft	06-13	06-16	07-18	09-19	10-20	11-21	12-24	13-25
	NC	< 15	15	20	25	31	36	42	49
Ø 400	CFM	325	433	542	650	758	866	974	1082
	Ps in inches H2o	0.018	0.019	0.026	0.042	0.05	0.074	0.087	0.102
	Throw in Ft	07-16	08-18	09-20	10-22	11-24	13-25	14-28	15-30
	NC	<15	15	20	25	29	34	41	50
Ø 450	CFM	411	548	685	822	958	1096	1233	1346
	Ps in inches H2o	0.019	0.022	0.026	0.046	0.052	0.076	0 .087	0.112
	Throw in Ft	08-18	09-20	10-22	11-24	13-25	14-28	15-30	16-32
	NC	<15	15	20	26	30	34	42	50
Ø 500	CFM	507	677	834	1000	1170	1353	1522	1691
	Ps in inches H2o	0.02	0.026	0.029	0.05	0.062	0.082	0.102	0.132
	Throw in Ft	09-20	10-22	11-24	13-25	14-28	15-30	16-32	18-36
	NC	<15	15	20	26	30	34	42	50

- Face velocity is measured in FPM
- Ps - Static pressure loss in mm of H20
- Throw values are in feet, based on minimum to terminal velocity of 150 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED SINGLE/ DOUBLE DEFLECTION ADJUSTABLE GRILLES

SINGLE/ DOUBLE DEFLECTION ADJUSTABLE GRILLES

APPLICATION

Air supply or air return in Air-conditioning, Ventilating and Heating systems.

MOUNTING

Overlapped in sidewall or in false ceiling by means of hidden fixing systems.

IMPLEMENTATION

Extruded aluminium construction. Frames with flat frontal face of 20 mm or 30 mm and individually adjustable blades to regulate the throw of air in the pitch of 20 mm gap. Available in front horizontal back side vertical bars, both side adjustable louvers. Front horizontal with fixed bars and rear vertical with adjustable blades also available. For single deflection grille blades available horizontally or vertically in front side only. All standard or non standard sizes, with or without collar dampers can be made.

STANDARD FINISHES

Natural Aluminium, Anodized or Powder coated in standard RAL white colours.

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FACTORY FABRICATED SINGLE/ DOUBLE DEFLECTION ADJUSTABLE GRILLES

SUPPLY AIR PERFORMANCE FOR SINGLE/ DOUBLE DEFLEECTION GRILLES

Face Velocity in FPM			300	400	500	600	700	800
Grille Sizes / Area / AK	Ps in mm H2o	0	0.254	0.254	0.508	0.508	0.762	1.016
		22.5	0.254	0.508	0.762	1.016	1.524	1.778
		45°	0.508	0.762	1.016	1.524	2.286	2.794
200x100 0.216 0.140	CFM		42	56	70	84	98	112
	Throw in Ft	0	05-14	07-17	08-18	10-20	11-21	13-23
		22.5	04-10	05-12	06-13	07-14	08-16	09-17
		45°	03-08	04-09	04-10	06-11	06-12	07-13
	NC		< 15	15	18	20	22	24
200x150 0.32 0.208	CFM		62	83	104	125	146	166
	Throw in Ft	0	06-16	08-18	10-20	12-22	15-25	17-27
		22.5	04-11	06-14	07-15	09-16	10-19	12-20
		45°	03-10	05-11	06-12	07-14	08-15	09-15
	NC		< 15	15	19	21	22	26
200x200 0.43 0.28	CFM		84	112	140	168	196	224
	Throw in Ft	0	07-20	10-20	12-22	13-24	17-27	20-30
		22.5	05-12	07-15	08-17	10-18	11-20	13-22
		45°	04-10	06-13	07-13	08-15	10-17	11-16
	NC		< 15	15	20	22	23	27
300x150 0.484 0.315	CFM		94	126	157	189	220	252
	Throw in Ft	0	08-22	11-24	13-26	14-28	18-30	20-32
		22.5	06-14	08-16	09-19	11-20	12-22	14-24
		45°	04-12	06-14	07-15	09-16	10-18	12-20
	NC		< 15	15	20	22	24	28
250x250 0.673 0.437	CFM		131	175	219	262	306	350
	Throw in FT	0	09-25	12-27	14-28	15-29	20-32	22-34
		22.5	06-16	09-20	10-22	12-23	13-25	15-26
		45°	May-13	Jul-17	Aug-18	Sep-18	Oct-19	Dec-22
	NC		< 15	15	22	23	25	29

- Face velocity is measured in FPM
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- Throw values are in feet, based on minimum to terminal velocity of 150 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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FACTORY FABRICATED SINGLE/ DOUBLE DEFLECTION ADJUSTABLE GRILLES

SUPPLY AIR PERFORMANCE FOR SINGLE/ DOUBLE DEFLEECTION GRILLES

Face Velocity in FPM			300	400	500	600	700	800	800
350x200 0.753 0.489	CFM		147	196	245	294	343	392	112
	Throw in FT	0	10-26	13-28	16-29	17-33	22-35	24-38	13-23
		22.5	07-18	09-22	12-24	14-27	15-27	17-29	09-17
		45°	06-14	07-18	09-20	11-20	12-20	13-24	07-13
	NC		< 15	15	22	24	26	30	24
350x300 0.753 0.489	CFM		189	252	315	378	441	504	166
	Throw in FT	0	12-28	15-30	18-32	20-36	24-37	26-42	17-27
		22.5	08-20	10-24	13-26	15-30	17-32	20-35	12-20
		45°	07-16	08-20	10-22	13-25	14-28	15-30	09-15
	NC		< 15	18	24	26	29	32	26
400x250 1.076 0.7	CFM		210	280	350	420	490	560	224
	Throw in FT	0	12-29	16-32	20-24	22-38	24-40	26-44	20-30
		22.5	09-22	12-26	10-24	16-32	18-34	22-38	13-22
		45°	07-18	09-22		12-26	14-28	16-30	11-16
	NC		< 15	18	24	27	30	34	27
550x200 1.184 0.77	CFM		231	308	385	462	539	616	252
	Throw in FT	0	12-32	18-34	21-36	24-40	26-42	28-48	20-32
		22.5	09-24	14-28	16-30	18-32	10-36	24-40	14-24
		45°	07-20	10-24	12-26	14-28	16-30	18-32	12-20
	NC		< 15	18	24	28	32	36	28

- Face velocity is measured in FPM
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- Throw values are in feet, based on minimum to terminal velocity of 150 FPM and maximum to 50FPM
- NC Values are based on a room attenuation of 10dB

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South Asia
ISO 9001 : 2015
Certificate No. 99 100 22850

CPWD APPROVED RECTANGULAR DUCT

भारत सरकार
GOVERNMENT OF INDIA
केन्द्रीय लोक निर्माण विभाग
CENTRAL PUBLIC WORKS DEPARTMENT
e-mail: kereesme1-ppz@cpwd.gov.in

कार्यपालक अभियंता और वरिष्ठ प्रबंधक (विद्युत)-I का कार्यालय पालक्काड परियोजना क्षेत्र, भा.प्रौ.सं. कैंपस पश्चिम कन्जिककोड़, पालक्काड - 678 623	OFFICE OF THE EXECUTIVE ENGINEER & SENIOR MANAGER (ELECTRICAL)-I PALAKKAD PROJECT ZONE, IIT CAMPUS KANJIKODE WEST, PALAKKAD – 678 623
No.23(5)/E/EE&SM(E)-I/PPZ/2021/388	Dated: 15/09/2021

To
The Project Manager,
M/s Shapoorji Pallonji and Company Private Limited,
C/o IIT Palakkad Permanent Campus,
Malampuzha Road,Near Gramalakshmi Mudralayam,
Pudussery Villege,Kanjikode West
Palakkad,Kerala-678 623.

Name of the Work: Construction of Permanent Campus for Indian Institute of Technology Palakkad Phase I A (Package I) at Pudussery Village, Kanjikode West, District Palakkad, Kerala.
Agt. No. 02/CE&ED/EE&SM(C)-I/PPZ/2019-20.

Subject: Submission of Technical Data Sheet of HVAC Duct & Solar hot water system-for additional make approval-Reg.
Ref 1: - SPCL Letter No. SPCPL/CHN/IIT-PKD-IA/CPWD/2021-22/456 Dt: 26/08/2021
Ref 2: - SPCL Letter No. SPCPL/CHN/IIT-PKD-IA/CPWD/2021-22/464 Dt: 04/09/2021

Sir,

With reference to the above subject, the Technical Data Sheet of the subject items are duly verified and hereby approved for work at IIT Palakkad Project subject to agreement conditions and comments.

SL NO	ITEM DESCRIPTION	MAKE
1	HVAC Duct	Universal Industries
2	Solar Hot Water System	V Guard

Comments :
1. Detailed technical specification shall be got approved separately before procurement.

Yours Faithfully

(Manu Varkey)
Executive Engineer & Senior Manager (E) - I

ISO 9001 : 2015

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD South Asia

CERTIFICATE

The Certification Body
of TÜV SÜD South Asia Private Limited
certifies that

Universal Industries
DP-58, 1st Main Road, SIDCO Industrial Estate,
Kattur, Thirumullaivoyal, Chennai - 600062, Tamil Nadu, India

has implemented Quality Management System
in accordance with **ISO 9001:2015**
for the scope of

Manufacture and Supply of
HVAC Ducts, Grilles & Diffusers, Pre Insulated Pipes & Accessories

The certificate is valid from **2022-12-12** until **2025-12-11**
Subject to successful completion of annual periodic audits
The present status of this certificate can be obtained through TUV SUD website by scanning below QR code and by entering the certificate number (without spaces) on web page. Further clarifications regarding the status & scope of this certificate may be obtained by consulting the certification body at info.in@tuvsud.com

Certificate Registration No. **99 100 22850**
Date of Initial certification: **2022-12-12**
Issue Date: **2022-12-12** Rev. **00**

Rahul Kale
Head of Certification Body
of TÜV SÜD South Asia Private Limited,
Mumbai
Member of TÜV SÜD Group

TÜV SÜD South Asia Pvt. Ltd. ● TÜV SÜD House ● Saki Naka ● Andheri (East) ● Mumbai – 400072 ● Maharashtra ● India

CIPET TEST CERTIFICATE

सिपेट : इंस्टिट्यूट ऑफ प्लास्टिक्स टेक्नोलॉजी
(रसायन एवं उर्वरक मंत्रालय, भारत सरकार)
गिण्डी, चेन्नै - 600 032.
फोन : 91-44-2225 4701-6 फैक्स : 91-44-22254707
ई-मेल : chennai@cipet.gov.in वेबसाइट : www.cipet.gov.in

CIPET : INSTITUTE OF PLASTICS TECHNOLOGY
(Ministry of Chemicals & Fertilizers, Govt. of India)
Guindy, Chennai - 600 032.
Tel : 91-44-2225 4701-6 Fax : 91 - 44 - 22254707
E-mail : chennai@cipet.gov.in Website : www.cipet.gov.in

परीक्षण रिपोर्ट / TEST REPORT

रिपोर्ट सं / REPORT NO. : 69320 क्र.सं / Sl. No. 29246
दिनांक / Date : 11-05-2022
Test Duration: 27-04-2022 To 11-05-2022 भाग - ग / PART - C

परीक्षण परिणाम / TEST RESULTS

S.no.	Test Name	Test Method / Standard	Unit	Test Value Obtained
1	Compression strength at 10% deformation	IS: 11239 Part 11	MPa	0.162
2	Density	IS: 11239 Part 12	kg/m³	46.0

REMARKS
Part-D
1. This Test report/Certificate is issued only for the samples submitted to CIPET
2. The Results stated above related only to the items tested.
3. The Quality of the subsequent production lot has to be ensured by the purchaser.
4. This report, in full or part, shall not be reproduced, published, advertised, used for any legal action, Unless prior permission has been secured.
5. Selection of samples for individual test has been done in accordance with respective clauses of IS.
6. Details of test sub-contracted: Nil

End Of Report*

2 of 2

AUTHORISED SIGNATORY AUTHORISED SIGNATORY

Factory : DP-58, 1st Main Road, Sidco Industrial Estate, Kattur, Thirumullaivoyal, Chennai - 600 062

For Enquires Contact :
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Hyderabad : 98403 98484
Bangalore : 98410 16272
Cochin : 73056 91444