



Australian Patent No 2002313921

INFFUSER™ IDS60i

Technical Data

600 x 600mm Square Louvered Face Grill
4-Way Blow with Internal Entrainment

Release V.2 July 2009

INFFUSER

Table 1: Zone Sensible Capacity [W]

Floor Area [m ²]	Zone Load [W/m ²]																		
	15	30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	160	180	200
8	120	240	280	320	360	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1440	1600
10	150	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000
12	180	360	420	480	540	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2160	2400
14	210	420	490	560	630	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100	2240	2520	2800
16	240	480	560	640	720	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400	2560	2880	3200
18	270	540	630	720	810	900	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700	2880	3240	3600
20	300	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3600	4000
22	330	660	770	880	990	1100	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300	3520	3960	4400
24	360	720	840	960	1080	1200	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600	3840	4320	4800
26	390	780	910	1040	1170	1300	1560	1820	2080	2340	2600	2860	3120	3380	3640	3900	4160	4680	5200
28	420	840	980	1120	1260	1400	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200	4480	5040	5600
30	450	900	1050	1200	1350	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800	5400	6000

Table 2: Primary Air Flow [L/s]

Sensible Capacity [W]	Temperature Differential (room air - primary air)										
	7	8	9	10	11	12	13	14	15	16	17
3000	353	309	275	247	225	206	190	177	165	155	145
2800	330	289	256	231	210	192	178	165	154	144	136
2600	306	268	238	214	195	179	165	153	143	134	126
2400	283	247	220	198	180	165	152	141	132	124	116
2200	259	227	202	181	165	151	140	130	121	113	107
2000	236	206	183	165	150	137	127	118	110	103	97
1900	224	196	174	157	142	131	120	112	104	98	92
1800	212	185	165	148	135	124	114	106	99	93	87
1700	200	175	156	140	127	117	108	100	93	88	82
1600	188	165	147	132	120	110	101	94	88	82	78
1500	177	155	137	124	112	103	95	88	82	77	73
1400	165	144	128	115	105	96	89	82	77	72	68
1300	153	134	119	107	97	89	82	77	71	67	63
1200	141	124	110	99	90	82	76	71	66	62	58
1100	130	113	101	91	82	76	70	65	60	57	53
1000	118	103	92	82	75	69	63	59	55	52	48
900	106	93	82	74	67	62	57	53	49	46	44
800	94	82	73	66	60	55	51	47	44	41	39
700	82	72	64	58	52	48	44	41	38	36	34
600	71	62	55	49	45	41	38	35	33	31	29
500	59	52	46	41	37	34	32	29	27	26	24
400	47	41	37	33	30	27	25	24	22	21	19
300	35	31	27	25	22	21	19	18	16	15	15
250	29	26	23	21	19	17	16	15	14	13	12

Figures in blue indicated pressures greater than 65Pa for the highest number of nozzles

Quick Selection Procedure

1. If the actual zone sensible load is unknown then use table 1 for a nominated zone load and floor area.
2. When the sensible capacity is known use table 2 to achieve a primary air flow for the designed temperature difference.
3. Table 3 can be used to determine the required total supply air flow for the required air circulation rate.
4. Use table 4 to select the nozzle configuration that best satisfies your criteria.
5. Table 5 & 6 can be used to check the mixed supply air temperature delivered to the zone.
6. Check heating requirements using tables 2, 4 and 6.

Table 3: Total Supply Air Flow [L/s]

Floor Area [m ²]	Air Circulation Rate [L/s/m ²]															
	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5	6	7	8	9	10	12.5	15	20
8	12	16	20	24	28	32	36	40	48	56	64	72	80	100	120	160
10	15	20	25	30	35	40	45	50	60	70	80	90	100	125	150	200
12	18	24	30	36	42	48	54	60	72	84	96	108	120	150	180	240
14	21	28	35	42	49	56	63	70	84	98	112	126	140	175	210	280
16	24	32	40	48	56	64	72	80	96	112	128	144	160	200	240	320
18	27	36	45	54	63	72	81	90	108	126	144	162	180	225	270	360
20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400
22	33	44	55	66	77	88	99	110	132	154	176	198	220	275	330	440
24	36	48	60	72	84	96	108	120	144	168	192	216	240	300	360	480
26	39	52	65	78	91	104	117	130	156	182	208	234	260	325	390	520
28	42	56	70	84	98	112	126	140	168	196	224	252	280	350	420	560
30	45	60	75	90	105	120	135	150	180	210	240	270	300	375	450	600

Table 4: IDS60i Performance Data

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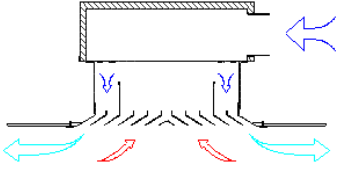
IDS60i (Internal Entrainment)												
												
Nozzles	32		48		60		76		96		116	
Spigot Size	150mm		150mm		150mm		200mm		200mm		200mm	
Pressure [Pa]	Primary Air [L/s]	Supply Air [L/s]	Primary Air [L/s]	Supply Air [L/s]	Primary Air [L/s]	Supply Air [L/s]	Primary Air [L/s]	Supply Air [L/s]	Primary Air [L/s]	Supply Air [L/s]	Primary Air [L/s]	Supply Air [L/s]
5	8	20	11	25	14	28	18	30	23	33	27	35
10	11	28	16	35	20	39	25	42	32	46	38	49
15	13	34	19	42	24	47	30	52	38	56	46	60
20	15	39	22	49	28	54	35	59	44	64	53	69
25	16	43	25	54	31	61	39	66	49	72	59	76
30	18	47	27	59	34	66	43	72	54	78	65	83
35	19	51	29	64	36	71	46	78	58	85	70	90
40	21	54	31	68	39	76	49	83	62	90	75	96
45	22	57	33	72	41	81	52	88	65	95	79	101
50	23	60	34	76	43	85	54	92	69	100	83	107
55	24	63	36	79	45	89	57	97	72	105	87	112
60	25	66	38	83	47	93	59	101	75	110	91	117
65	26	68	39	86	49	96	62	105	78	114	94	121
70	27	71	40	89	51	100	64	108	81	118	98	126
75	28	73	42	92	52	103	66	112	84	122	101	130
80	29	76	43	95	54	106	68	116	86	126	104	134
85	30	78	44	98	56	109	70	119	89	130	107	138
90	30	80	46	101	57	113	72	123	91	133	110	142
95	31	82	47	103	59	116	74	126	94	137	113	146
100	32	84	48	106	60	118	76	129	96	140	116	149

Table 5: IDS60i Supply Air Temp (Cooling)

Nozzle Config.	Primary Air Temp [°C]	Room Air Temperature [°C]			
		22	23	24	25
32	8	16.7	17.3	18.0	18.6
	9	17.1	17.7	18.3	19.0
	10	17.5	18.1	18.7	19.3
	11	17.8	18.5	19.1	19.7
	12	18.2	18.8	19.5	20.1
	13	18.6	19.2	19.8	20.5
48	8	15.7	16.3	16.8	17.4
	9	16.2	16.7	17.3	17.8
	10	16.6	17.2	17.7	18.3
	11	17.1	17.6	18.2	18.7
	12	17.5	18.1	18.6	19.2
	13	18.0	18.5	19.1	19.6
60	8	15.0	15.5	16.0	16.5
	9	15.5	16.0	16.5	17.0
	10	16.0	16.5	17.0	17.5
	11	16.5	17.0	17.5	18.0
	12	17.0	17.5	18.0	18.5
	13	17.5	18.0	18.5	19.0
76	8	13.8	14.2	14.6	15.0
	9	14.4	14.8	15.2	15.6
	10	14.9	15.4	15.8	16.2
	11	15.5	15.9	16.4	16.8
	12	16.1	16.5	16.9	17.4
	13	16.7	17.1	17.5	17.9
96	8	12.5	12.8	13.1	13.4
	9	13.2	13.5	13.8	14.1
	10	13.8	14.2	14.5	14.8
	11	14.5	14.8	15.2	15.5
	12	15.2	15.5	15.8	16.2
	13	15.9	16.2	16.5	16.8
116	8	11.1	11.4	11.6	11.8
	9	11.9	12.1	12.4	12.6
	10	12.7	12.9	13.1	13.4
	11	13.5	13.7	13.9	14.1
	12	14.2	14.5	14.7	14.9
	13	15.0	15.2	15.5	15.7

Table 6: IDS60i Supply Air Temp (Heating)

Nozzle Config.	Primary Air Temp [°C]	Room Air Temperature [°C]			
		20	21	22	23
32	28	23.0	23.6	24.3	24.9
	30	23.8	24.4	25.0	25.6
	32	24.5	25.2	25.8	26.4
	34	25.3	25.9	26.5	27.2
	36	26.0	26.7	27.3	27.9
	38	26.8	27.4	28.0	28.7
48	28	23.6	24.1	24.7	25.2
	30	24.5	25.0	25.6	26.1
	32	25.4	25.9	26.5	27.0
	34	26.3	26.8	27.4	27.9
	36	27.2	27.7	28.3	28.8
	38	28.1	28.6	29.2	29.7
60	28	24.0	24.5	25.0	25.5
	30	25.0	25.5	26.0	26.5
	32	26.0	26.5	27.0	27.5
	34	27.0	27.5	28.0	28.5
	36	28.0	28.5	29.0	29.5
	38	29.0	29.5	30.0	30.5
76	28	24.7	25.1	25.5	25.9
	30	25.9	26.3	26.7	27.1
	32	27.1	27.5	27.9	28.3
	34	28.2	28.6	29.1	29.5
	36	29.4	29.8	30.2	30.6
	38	30.6	31.0	31.4	31.8
96	28	25.4	25.8	26.1	26.4
	30	26.8	27.1	27.4	27.8
	32	28.2	28.5	28.8	29.1
	34	29.5	29.8	30.2	30.5
	36	30.9	31.2	31.5	31.8
	38	32.2	32.6	32.9	33.2
116	28	26.2	26.4	26.7	26.9
	30	27.8	28.0	28.2	28.4
	32	29.3	29.5	29.8	30.0
	34	30.9	31.1	31.3	31.5
	36	32.4	32.6	32.9	33.1
	38	34.0	34.2	34.4	34.6

Table 7: IDS60i Acoustic Data

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Nozzle Configuration	Primary Air Pressure [Pa]	Sound Power Level [dB]								dB[A]	NC	NR
		Octave Band Frequency [Hz]										
		63	125	250	500	1000	2000	4000	8000			
32	20	-	12	2	17	12	11	13	12	21	-	-
	40	1	15	7	16	15	13	13	12	22	8	10
	60	3	20	10	17	14	10	12	12	23	15	16
	80	7	18	16	22	20	16	13	12	26	18	21
	100	17	17	18	24	23	19	14	12	29	21	23
48	20	7	18	7	15	13	11	13	12	23	13	14
	40	8	18	16	20	15	11	12	12	24	16	19
	60	11	19	19	22	20	15	13	12	27	19	21
	80	6	14	13	28	22	16	13	12	30	26	27
	100	11	22	25	28	29	22	17	12	34	28	29
60	20	3	4	7	13	9	8	12	12	19	-	-
	40	2	16	9	14	12	10	13	12	21	10	11
	60	16	16	15	20	17	12	12	12	25	16	19
	80	15	17	19	26	22	17	14	12	29	23	25
	100	8	18	22	28	25	21	15	12	31	26	27
76	20	10	22	7	13	10	9	12	12	24	17	18
	40	4	12	15	17	11	8	12	12	22	8	12
	60	5	17	21	24	17	12	12	12	27	21	23
	80	7	18	24	27	21	16	13	12	30	25	27
	100	8	22	27	30	25	20	15	12	33	28	29
96	20	10	16	12	20	13	8	12	12	23	16	19
	40	9	18	20	27	26	16	13	12	31	25	26
	60	12	21	25	32	28	22	16	12	35	30	31
	80	15	25	29	36	33	28	22	13	39	35	35
	100	18	28	32	39	37	32	27	14	42	33	38
116	20	10	16	12	20	13	8	12	12	23	16	19
	30	9	18	20	27	26	16	13	12	31	25	26
	40	12	21	25	32	28	22	16	12	35	30	31
	50	15	25	29	36	33	28	22	13	39	35	35

NOTE: The above tabulated noise data are based on tests taken in The University of Adelaide's Reverberation Chamber. Please contact DADANCO for further information on the parameters under which the noise data are measured.

Table 8: Throw Data

INFFUSER™ IDS60i Diffuser Performance				
Supply Air Qty [L/s]	L/s per Side	Throw in Meters at Isothermal		
		0.25 m/s	0.50 m/s	0.75 m/s
69	17.3	1.8	1.2	N/A
96	24.0	2.3	1.9	1.0
118	29.5	2.9	2.3	1.6
135	33.8	3.6	2.7	2.1
151	37.8	4.4	2.9	2.4

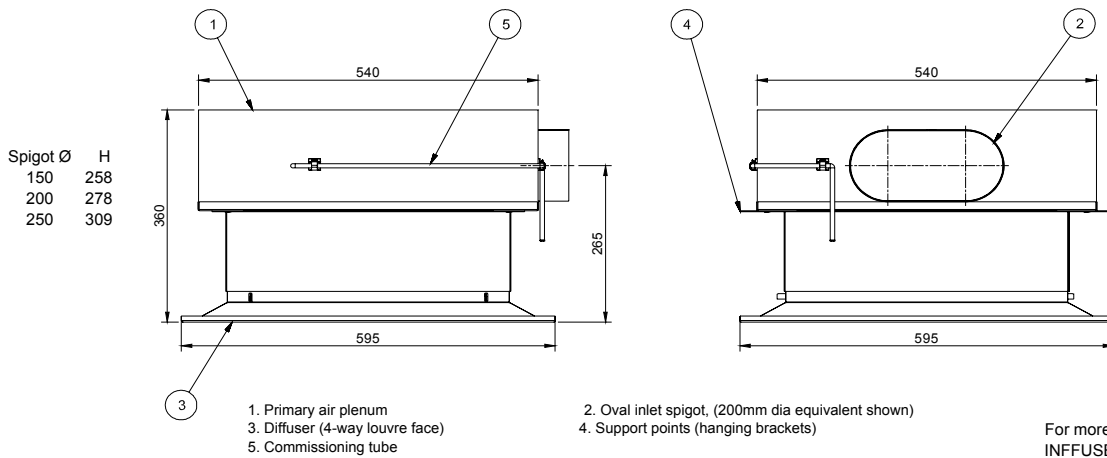
Air Diffuser Performance

The air from the entrainment area is to discharge through the 4 – way diffuser, achieving the required Coanda effect across the ceiling. The INFFUSER™ IDS60i is designed so the airflow 'hugs' the ceiling ("Coanda effect") and so discharges the supply air into the space gently and uniformly. The Coanda effect is maintained even when the primary air volume is reduced to below 50% of the design peak load value.

INFFUSER™ IDS60i diffuser performance is expressed in meters of throw per side of the diffuser for isothermal air at given velocities for the range of applicable total supply air quantities.

1) To determine throw for a given INFFUSER™ IDS60i, determine the total supply air quantity from the performance selection table for the design primary air quantity and static pressure required to satisfy the design cooling load

2) From the left hand vertical column of Table 8 (total supply air quantity), read horizontally



Approximate Unit Weight: 6kg

For more information on INFFUSERS™, or other Dadanco solutions delivery, products, contact:



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