DIFFUSION

Features:

- Specific Fan Power of 0.42 to 0.54 at NR35
- Designed to operate below NR35 at External Static Pressures of up to 50Pa
- 33 speed Fan adjustment
- Ceiling, Wall and Underfloor installation
- Black Heat electric element
- Low Maintenance

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Highline 260i Airside Fan Coil Unit

Highline 260i Airside Fan Coil Unit

Fan Coil Unit
The most popular airside control fan coil unit in the UK for the past 15 years, recently updated with improved fans having low Specific Fan Power. Initially designed to be fitted into a ceiling void, the flexibility also allows the unit to be installed underfloor, vertically as a ducted unit, or behind architectural casing. Furthermore an alternative to the standard design is the Highline 260d, which incorporates a detachable discharge plenum, which enables a more flexible discharge arrangement.

Chassis
Units are manufactured from 1.0 - 1.6mm hot dipped galvanised steel and are constructed without the use of self tapping screws. All thermal and acoustic lining is CFC and HCFC free and class '0' fire rated. All bearings and moving surfaces will operate without requiring further lubrication. All electrical components and electrical wiring comply with the current edition of the I.E.E. regulations. Each unit is factory tested to ensure that it will continue to meet its specified performance with the minimum of maintenance, throughout its life.

Fans
Each fan and motor assembly is fitted with a high output permanent split-capacitor continuously rated motor, with built in thermal overload protection, complying with BS2048 1961 part 1 and BS5000 1973 part 2. The motor frame is totally enclosed and fitted with maintenance free sealed for life sleeve bearings. All motors are insulated to BS2757 class F. The fan scrolls are double inlet, double width centrifugal, manufactured from galvanised steel, with galvanised steel or aluminium impellers. All fan and motor assemblies are statically and dynamically balanced to prevent the transmission of vibration.

Transformer
The speed control will be by variation of the voltage onto the motors via a multi-tapped transformer. Each fan coil unit is fitted with an on/off switch, a 3 position speed switch and a trimming switch having 3 volt increments for fine adjustment. A separately fused 24V AC output is also fitted.

Heat Exchangers
Coils are manufactured from 0.35 mm thick solid drawn copper tubes, mechanically expanded into accurately pre-formed collars in rippled aluminium fins. The coils are arranged for single or multi-circuit operation via headers. Each coil is fitted with a manual air vent and drain point. All coils are factory tested to a minimum of 35 bar and are suitable for operating pressures of up to 12 bar static head. Coils are fitted with 15 mm o/d plain copper tails.

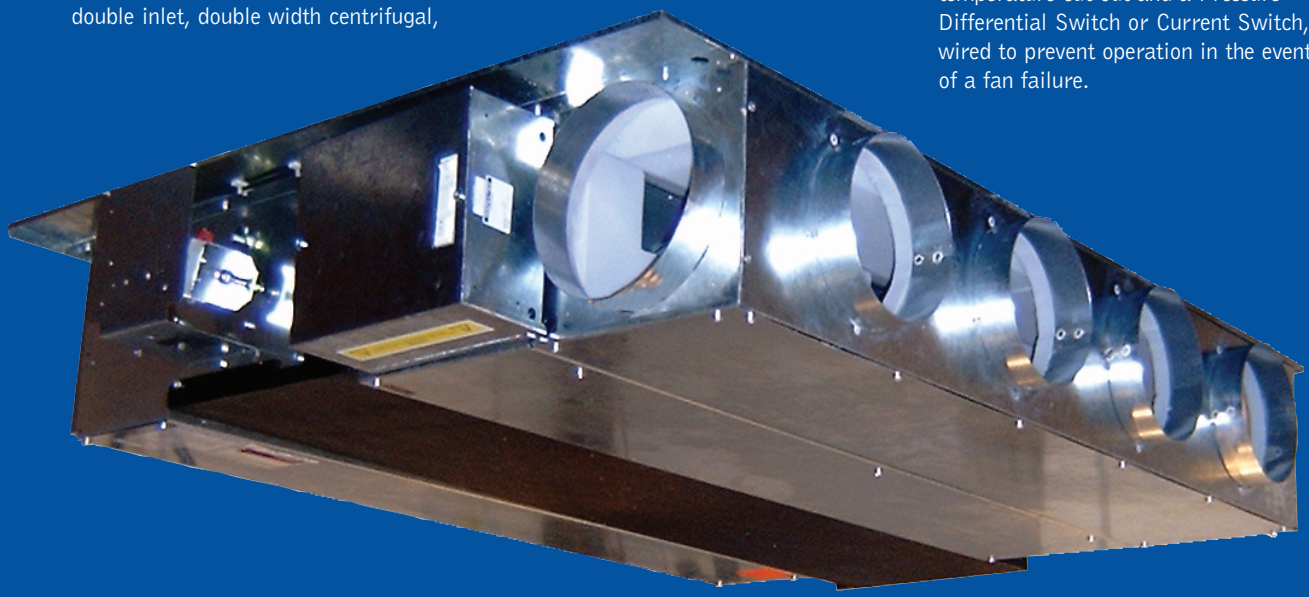
Condensate Drip Tray
The condensate drip tray is manufactured from hot dipped galvanised steel, welded at each corner. The tray is then degreased before anti-condensation insulation is applied to all internal and external surfaces. The tray is fitted with 15 mm o/d plain brass connection (22 mm o/d optional). The tray has a built in gradient to ensure correct drainage of condensate.

Temperature Controls (AIRSIDE)
The temperature controls will operate at 230/24v through a transformer. Units are supplied as standard with a Siemens actuator, arranged to modulate the damper blades in the necessary sequence to maintain the required air temperature set. Optional temperature control components comprise a controller and a return air or room sensor.

Air Filter Options
- Mesh Filter - The filter is permanent and is manufactured from a fine woven mesh of galvanised steel wire, welded to a rigid galvanised steel frame. It can be vacuum cleaned in-situ, or periodically removed for washing when necessary
- Media type filter - Filters are EU2 to Eurovent 4/5 and manufactured from synthetic media secured to a wire metal frame and fitted with handles for ease of cleaning and replacement.

Discharge/ Inlet Plenum
The discharge and inlet plenums are attenuated and thermally lined with a CFC and HCFC free class 'o' fire retardant non-migratory foam, which is both vermin and rot proof. The density of the foam is 11 kg/m^3 thereby helping to reduce the total weight of the fan coil unit.

Electric Heat Element (if required)
The element is manufactured from stainless steel sheath with spiral wound stainless steel fins to minimise surface temperature. It is located upstream of the fan(s) to evenly distribute the heat to the final discharge spigots. Each unit shall incorporate a manual reset high temperature cut out and a Pressure Differential Switch or Current Switch, wired to prevent operation in the event of a fan failure.



THERMAL PERFORMANCE

ELECTRIC DATA/ FAN PERFORMANCE

Model & Size	Air Vol. l/s	Speed	Sens. Duty Watts	Total Duty Watts	CHW Flow Rate l/s	Hyd. Res kPa	Heat Duty Watts	LPHW Flow Rate l/s	Hyd. Res. kPa	Starting Current (A)	Running Current (A)	Power Absorbed (W)	Specific Fan Power (SFP) W/l/s
HIGHLINE 260i AH6CH	105	Extra low	1350	1688	0.069	8.05	809	0.02	0.17	2.12	0.73	74	0.70
	130	Low	1692	2121	0.087	12.03	960	0.023	0.24		0.72	81	0.62
	148	Low +	1901	2364	0.096	14.56	1051	0.026	0.28		0.67	84	0.57
	164	Medium	2076	2558	0.104	16.76	1141	0.028	0.33		0.61	89	0.54
	170	Medium +	2141	2632	0.107	17.62	1171	0.028	0.35		0.57	95	0.56
	174	High	2184	2681	0.109	18.2	1191	0.029	0.36		0.56	109	0.63
HIGHLINE 260i AH9CH	149	Extra low	1875	2323	0.096	6.32	1330	0.032	0.53	2.12	0.86	94	0.63
	191	Low	2448	3046	0.125	10.17	1593	0.039	0.74		0.87	104	0.54
	230	Low +	2872	3523	0.143	13.17	1801	0.044	0.93		0.83	110	0.48
	266	Medium	3259	3962	0.161	16.22	1978	0.048	1.11		0.75	117	0.44
	271	Medium +	3313	4022	0.163	16.66	2002	0.049	1.13		0.71	119	0.44
	285	High	3463	4192	0.17	17.94	2064	0.05	1.2		0.67	131	0.46
HIGHLINE 260i AH12CH	184	Extra low	2413	3043	0.125	11.51	1694	0.041	0.93	2.12	0.89	107	0.58
	221	Low	2934	3713	0.151	16.36	1937	0.047	1.19		0.89	117	0.53
	256	Low +	3359	4218	0.171	20.52	2122	0.052	1.41		0.87	124	0.48
	286	Medium	3697	4601	0.187	23.95	2293	0.056	1.63		0.84	130	0.45
	301	Medium +	3864	4790	0.194	25.73	2370	0.058	1.73		0.8	132	0.44
	330	High	4180	5146	0.208	29.24	2518	0.061	1.93		0.75	147	0.45
HIGHLINE 260i AH13CH	217	Extra low	2789	3473	0.142	8.2	2062	0.05	1.49	2.30	0.85	95	0.44
	248	Low	3218	4020	0.164	10.64	2287	0.056	1.81		0.86	105	0.42
	271	Low +	3539	4431	0.18	12.66	2417	0.059	2		0.86	115	0.42
	303	Medium	3911	4861	0.197	14.94	2593	0.063	2.28		0.85	129	0.43
	316	Medium +	4056	5024	0.203	15.85	2662	0.065	2.4		0.84	136	0.43
	347	High	4399	5414	0.219	18.12	2848	0.069	2.71		0.85	159	0.46
HIGHLINE 260i AH15CH	270	Extra low	3456	4289	0.175	8.42	2617	0.064	2.66	2.63	1.15	142	0.53
	312	Low	4038	5032	0.204	11.21	2926	0.071	3.27		1.19	158	0.51
	358	Low +	4631	5759	0.233	14.3	3192	0.078	3.84		1.19	173	0.48
	385	Medium	4931	6097	0.246	15.85	3340	0.081	4.17		1.18	185	0.48
	408	Medium +	5187	6389	0.258	17.25	3493	0.085	4.53		1.17	195	0.48
	447	High	5617	6883	0.278	19.73	3706	0.09	5.05		1.16	230	0.51

Based on following Design Condition:

Return Air Temperature(summer): 23°C db and 16.4°C wb
Chilled Water Temperature: 6/12 °C
Return Air Temperature(winter): 21°C
LPHW Temperature: 65/55 °C
External Static Pressure: 30Pa

The above duties include for the cross-over

Electric heat is available on all units. For further information please contact us.

ACOUSTIC
SOUND PERFORMANCE

Model & Size	Air Volume l/s	Speed	Acoustic Measuring Position	OCTAVE BAND FREQUENCY							NR
				63	125	250	500	1K	2K	4K	
HIGHLINE 260i AH6CH	105	Extra low	INLET CASE RADIATED	49	46	45	41	35	30	26	28
			DISCHARGE	49	48	41	34	30	25	21	
	130	Low	INLET CASE RADIATED	50	48	47	44	37	33	29	31
			DISCHARGE	52	53	44	34	31	27	25	
	148	Low +	INLET CASE RADIATED	50	50	49	46	41	36	32	33
			DISCHARGE	53	54	46	35	33	29	28	
	164	Medium	INLET CASE RADIATED	53	53	51	47	42	38	35	35
			DISCHARGE	55	57	48	36	35	31	31	
	170	Medium +	INLET CASE RADIATED	54	53	52	48	43	39	36	36
			DISCHARGE	56	58	49	38	36	32	32	
	174	High	INLET CASE RADIATED	53	54	53	49	44	39	37	37
			DISCHARGE	57	59	50	38	36	32	32	
HIGHLINE 260i AH9CH	149	Extra low	INLET CASE RADIATED	50	45	43	40	35	28	23	27
			DISCHARGE	48	49	41	33	29	23	20	
	191	Low	INLET CASE RADIATED	48	48	45	42	40	32	27	29
			DISCHARGE	50	51	43	34	30	24	23	
	230	Low +	INLET CASE RADIATED	50	50	47	44	41	34	30	32
			DISCHARGE	52	54	46	36	32	27	27	
	266	Medium	INLET CASE RADIATED	54	53	50	47	44	38	34	35
			DISCHARGE	55	57	48	38	34	29	30	
	271	Medium +	INLET CASE RADIATED	55	53	51	48	45	39	35	36
			DISCHARGE	55	58	49	38	35	30	31	
	285	High	INLET CASE RADIATED	56	55	52	49	45	40	37	38
			DISCHARGE	56	59	51	39	36	31	33	
HIGHLINE 260i AH12CH	184	Extra low	INLET CASE RADIATED	48	48	44	42	33	27	23	27
			DISCHARGE	49	49	41	33	29	22	20	
	221	Low	INLET CASE RADIATED	48	49	45	45	36	30	26	30
			DISCHARGE	49	52	43	34	31	24	23	
	256	Low +	INLET CASE RADIATED	49	50	47	46	38	33	29	32
			DISCHARGE	52	54	45	35	33	26	26	
	286	Medium	INLET CASE RADIATED	51	52	49	47	40	35	32	34
			DISCHARGE	53	56	47	36	35	28	29	
	301	Medium +	INLET CASE RADIATED	52	53	50	49	42	37	34	36
			DISCHARGE	54	58	48	37	36	29	30	
	330	High	INLET CASE RADIATED	54	56	52	50	44	39	36	38
			DISCHARGE	57	59	50	39	38	31	33	
HIGHLINE 260i AH13CH	217	Extra low	INLET CASE RADIATED	52	49	45	42	37	31	26	28
			DISCHARGE	50	50	42	34	30	24	22	
	248	Low	INLET CASE RADIATED	50	50	47	44	39	33	28	30
			DISCHARGE	50	52	43	35	31	26	25	
	271	Low +	INLET CASE RADIATED	51	51	48	46	40	35	30	32
			DISCHARGE	51	54	45	36	33	27	27	
	303	Medium	INLET CASE RADIATED	53	53	51	48	43	38	33	35
			DISCHARGE	53	57	48	38	35	30	30	
	316	Medium +	INLET CASE RADIATED	54	54	51	49	44	39	34	36
			DISCHARGE	53	57	48	39	36	31	31	
	347	High	INLET CASE RADIATED	55	56	53	51	46	40	36	38
			DISCHARGE	55	59	50	40	38	33	33	
HIGHLINE 260i AH15CH	270	Extra low	INLET CASE RADIATED	49	47	45	42	34	29	23	28
			DISCHARGE	47	49	41	33	28	22	19	
	312	Low	INLET CASE RADIATED	50	49	47	44	37	32	26	30
			DISCHARGE	51	51	43	34	29	23	22	
	358	Low +	INLET CASE RADIATED	53	51	49	46	39	34	29	33
			DISCHARGE	52	55	46	36	31	26	26	
	385	Medium	INLET CASE RADIATED	54	52	51	48	41	37	32	34
			DISCHARGE	54	56	47	37	33	27	28	
	408	Medium +	INLET CASE RADIATED	53	53	52	50	42	38	33	36
			DISCHARGE	56	58	49	38	35	29	30	
	447	High	INLET CASE RADIATED	56	55	53	51	44	40	35	39
			DISCHARGE	57	60	51	40	37	31	32	

	OCTAVE BAND FREQUENCY						
	63	125	250	500	1K	2K	4K
CORRECTIONS FOR DISCHARGE INDUCT	8	4	1	0	0	0	0

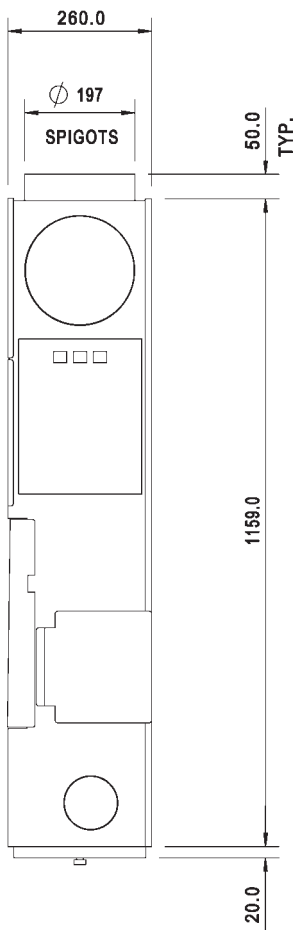
The discharge sound power levels shown above are based on all front spigots connected to an unlined plenum/ grilles and measurements taken 1.5m from grille at 45°.

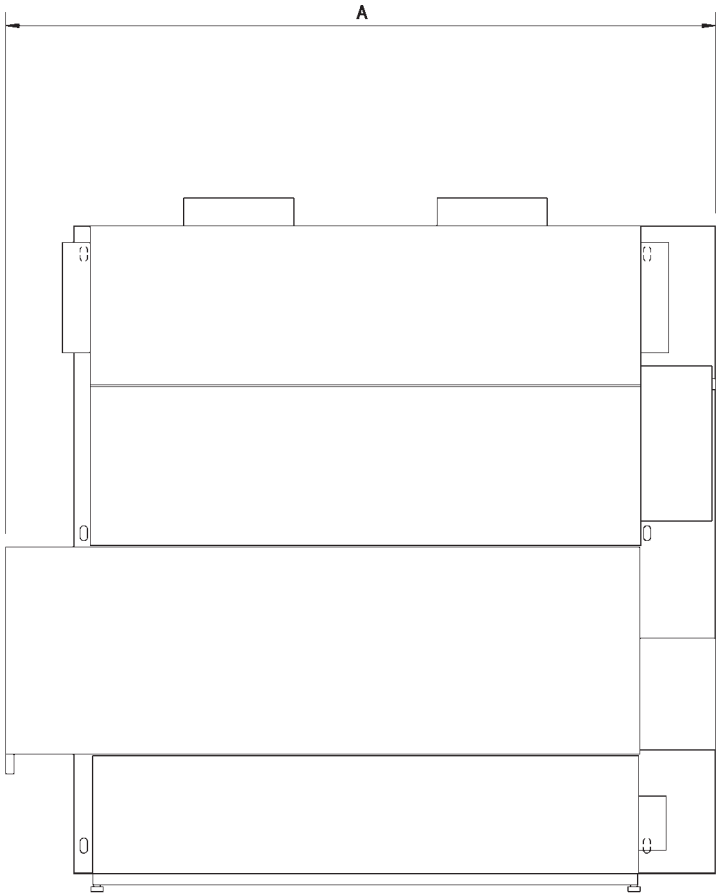
Add correction to convert to Discharge Induct.

The NR levels shown above are a guide only and are based on a typical office layout. We would recommend that advice is taken from an acoustic consultant to verify actual project noise levels.

To achieve guide NR35 it is recommended that a maximum velocity of 2.5m/s per outlet is not exceeded.

Highline 260i Airside Fan Coil Unit





UNIT	A	SPIGOTS (No OFF)
6	897	4
9	1117	5
12	1272	5
13	1450	5
15	1697	6

RECTANGULAR SPIGOTS ALSO AVAILABLE.

Options

- Vertical installation available (Highline 260i AV)
- Underfloor installation available (Highline 260i AUF)
- Electric Heat (Stainless Steel sheathed element) with Thermal Cut-out
- Differential Pressure Switch for heating element protection (Standard)
- Current Switch for heating element protection (Optional)

DIFFUSION Unit Coding System

UNIT MODEL	CONTROL	APPLICATION	OPTIONS	UNIT SIZE	CH
HIGHLINE 260i	**A** - Airside	**H** - Horizontal	**E** - ELECTRIC	**06**	**Chassis**
	W - Waterside	**V** - Vertical	**CO** - COOLING ONLY	**09**	
		UF - Underfloor		**12**	
				13	
				15	

e.g.

HIGHLINE 260i-A-H-09-CH
HiGHLINE 260i Airside Horizontal, 4 pipe, size 9, chassis

HIGHLINE 260i-A-UF-CO-09-CH
HiGHLINE 260i Airside Underfloor, Cooling Only, size 9, chassis

HIGHLINE 260i-A-H-E-09-CH
HiGHLINE 260i Airside Horizontal, 2 pipe, Electric Heat, size 9, chassis

“Established in 1960, Diffusion has over 40 years experience in producing environmental solutions via the manufacture of heating, air conditioning and ventilating products.”

DIFFUSION

Diffusion Environmental Systems
47 Central Avenue, West Molesey, Surrey KT8 2QZ
Tel: (+44) 020 8783 0033 Fax: (+44) 020 8783 0140
Email: diffusion@etenv.co.uk www.diffusion-group.co.uk

Diffusion Environmental Systems have a policy of continuous development. We therefore reserve the right to alter information contained in this leaflet, without prior notice.

CE

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