

Mirage Air Curtain



Features:

- ▶ Compact Design
- ▶ Available in electric, LPHW or ambient
- ▶ Hinged Grille for easy maintenance
- ▶ Energy Saving Controls option available



Mirage

Air Curtain

Application

The Diffusion Mirage air curtain has been designed, with its compact shape, to harmoniously integrate into the aesthetics of modern entrances. The unit is supplied as standard with a drop down hinged grille to allow for easy maintenance. The unit can be supplied in water heating, electric heating or ambient. The unit comes in standard lengths of 1200, 1500, 1800, 2000 & 2500mm. The unit can also be provided with a casing to match the grille to allow for surface mounting. For optimum performance the Mirage units are recommended to be mounted at a maximum height of 3 metres above the floor level.

Chassis

The chassis shall be manufactured from heavy gauge galvanised mild steel sheet, with burr free edges and a natural finish, formed and strengthened to provide a rigid and distortion free construction. Maintenance access shall be via the removable return air filter.

Fans Assembly

The unit shall be fitted with a high output permanent split phase capacitor, continuously rated and complete with a built in thermal overload protection, complying with BS 2048 1961 part 1 and BS5000. The fans shall be double inlet, double width centrifugal type dynamically balanced in two planes according to DIN standards BS ISO 1940. The motors shall be insulated to BS 2757 (class B).

Heat Exchanger (LPHW Version)

Heat exchanger matrixes shall be manufactured from solid drawn copper tubes; mechanically expanded into accurately pre-formed collars in rippled plate type aluminium fins. Multi circuit designs shall be incorporated ensuring maximum thermal performance efficiency, headers unifying the circuits shall terminate in plain tail connections on 40mm centres. Heat exchanger headers shall incorporate manually operated key pattern air vents and drains. Heat exchangers shall be suitable for operating at system pressures up to 12 bar, tested to 30 bar dry air / nitrogen at manufacture, and subsequently leak tested again when fitted with valve sets at our works.

Electric Elements

Electric heating elements shall be manufactured from 8mm fully sheathed stainless steel rods, with spiral fin on a 4mm pitch. A manual re-set high temperature cut-out shall be fitted in accordance with standard safety requirements.

The element construction shall comply with BS7351 – 1990.

Filters (Optional)

The Diffusion "eco" filter shall be made of a fine woven mesh manufactured from galvanised steel wire, welded to a rigid galvanised steel support frame; retained on the unit via thumb screws. The "eco" filter shall be capable of being vacuum cleaned whilst fitted to the unit and removable for cleaning elsewhere if required.

Quality Testing

When fully assembled each unit shall be subjected to thorough mechanical examination, be run tested and function tested where possible; and need to have passed a series of electrical compliance checks prior to being QC approved in accordance with our BS EN ISO 9001:2000 quality standards; ready for packing and dispatch.

Function Tests

Each unit shall be function tested at our factory to ensure correct operation. All electrical components shall be tested to ensure each unit and its associated wiring complies with the 17th edition of IEE. The unit shall be manufactured in accordance with BS EN ISO 9001:2000 quality standards.

Standard Controls

Electric version: Supplied with a remote control plate housing on/off, speed high/low, heat off, low and high, finished in satin chrome as standard, suitable for fitting onto a standard two gang, recessed or surface mount, electrical back box. The unit can be used in ambient mode, by using the fans only setting.

LPHW version: Supplied with a remote control plate housing 4 speeds/off, finished in satin chrome as standard, suitable for fitting onto a standard two gang, recessed or surface mount, electrical back box.

Energy Controls (Optional)

Our award winning energy saving controls system offers state of the art technology that allows the end user closer control of the equipment. The controls function by using an off coil sensor which will restrict the leaving air temperature (solid state relays on electric & 2 or 3 port valves on LPHW) to a set value (40°C as standard but this is adjustable). Return and outside temperature sensors can be added into the system making it fully automatic, thus not needing manual changeover of summer/winter operation.

The controller also offers as standard inputs for remote BMS monitoring, common fault signal, BMS on/off, BMS summer/winter, BMS speed control, occupancy sensor/door switch and high heat temperature trip. The LCD remote control plate houses speeds, on/off control, plus fault indications.

Optional Extras

Low water temperature cut out: Provides automatic shutdown of the fan/motor when boilers have been switched off (standard controls only).

Summer/Winter switch (manual): Used in conjunction with the room thermostat and/or low water temperature cut out, this will allow the fan only to run for air movement (standard controls only).

Remote thermostat: Available in adjustable or tamperproof (standard & Energy saving controls).

BMS interface relay: 24vac relay and base (standard controls only).

Fault indication relay: current sensitive relay to indicate fault alarm from unit (standard controls only).

2 or 3 port valves: (standard controls only).

Return air sensor: Mounted integral to the unit (energy controls only).

Outside temperature sensor: To detect outside conditions (energy controls only).

PIR Sensor: To offer automatic on/off control of the unit (energy controls only).

BMS Fault Signal Relay: 12VDC relay and base to indicate fault alarm from unit (energy controls only).

*Please note that if our energy controller is utilized on our electric units, the above noise levels can be significantly reduced, as the air volumes can be lowered.

Performance Details

Mirage LPHW

Model Reference	Speed Setting / Airflow / dB(A) / Guide NR				Heating Performance Data 'A'				Heating Performance Data 'B'				Electrical & Mechanical Data					
	Fan Speed Setting	Air Volume	Noise level at 3 meters	Individual Unit Acoustic Guide	Heating Output	LPHW Flow & Return Temperatures °C	Hot Water Flow Rate	Hot Water Hydraulic Pressure Drop	Heating Output	LPHW Flow & Return Temperatures °C	Hot Water Flow Rate	Hot Water Hydraulic Pressure Drop	Electrical Supply	Motor Power	Maximum Start Run Current	Operating / Full Load Current	Specific Fan Power	Unit Weight
	L/M/H/B	l/s	dB(A)	NR	kWatts	°F / R	l/s	kPa	kWatts	°F / R	l/s	kPa	V/ph/Hz	Watts	Amps	Amps	W/l/s	kg
1200W Standard Capacity	Low	160	28	37	6.1	82/71	0.14	2.9	5.1	80/60	0.06	1.0	230/1/50	67	0.9	0.3	0.42	42
	Medium	225	37	45	7.6	82/71	0.17	4.3	6.4	80/60	0.08	1.2		117	1.6	0.5	0.52	
	High	300	43	50	9.3	82/71	0.21	6.3	7.8	80/60	0.09	1.5		182	2.4	0.8	0.61	
	Boost	400	51	55	11.4	82/71	0.25	9.0	9.5	80/60	0.12	2.2		306	4.1	1.4	0.77	
1200W High Capacity	Low	160	28	37	6.5	70/50	0.08	1.0	3.8	60/40	0.05	0.6	230/1/50	67	0.9	0.3	0.42	42
	Medium	225	37	45	8.5	70/50	0.10	1.5	5.3	60/40	0.06	0.8		117	1.6	0.5	0.52	
	High	300	43	50	10.5	70/50	0.13	2.2	6.8	60/40	0.08	1.0		182	2.4	0.8	0.61	
	Boost	400	51	55	13.1	70/50	0.16	3.2	8.6	60/40	0.10	1.6		306	4.1	1.4	0.77	
1500W Standard Capacity	Low	280	33	40	10.5	82/71	0.23	6.0	9.0	80/60	0.11	1.6	230/1/50	124	1.6	0.5	0.44	59
	Medium	360	41	47	12.4	82/71	0.28	8.1	10.5	80/60	0.13	2.1		200	2.7	0.9	0.56	
	High	460	47	52	14.6	82/71	0.32	11.4	12.4	80/60	0.15	2.8		298	4.0	1.3	0.65	
	Boost	600	52	56	17.6	82/71	0.39	15.5	14.9	80/60	0.18	3.9		454	6.0	2.0	0.76	
1500W High Capacity	Low	280	33	40	10.5	70/50	0.13	1.9	6.9	60/40	0.08	1.0	230/1/50	124	1.6	0.5	0.44	59
	Medium	360	41	47	12.7	70/50	0.15	2.6	8.5	60/40	0.10	1.3		200	2.7	0.9	0.56	
	High	460	47	52	15.2	70/50	0.18	3.7	10.3	60/40	0.12	1.9		298	4.0	1.3	0.65	
	Boost	600	52	56	18.4	70/50	0.22	5.1	12.8	60/40	0.15	2.7		454	6.0	2.0	0.76	
1800W Standard Capacity	Low	310	31	39	11.9	82/71	0.27	5.5	10.2	80/60	0.12	1.4	230/1/50	135	1.8	0.6	0.44	72
	Medium	460	42	48	15.6	82/71	0.35	8.8	13.3	80/60	0.16	2.2		276	3.6	1.2	0.60	
	High	600	49	54	18.7	82/71	0.42	12.6	15.9	80/60	0.19	3.2		412	5.4	1.8	0.69	
	Boost	750	53	56	21.9	82/71	0.49	16.8	18.5	80/60	0.23	4.1		619	8.2	2.7	0.83	
1800W High Capacity	Low	310	31	39	11.8	70/50	0.14	1.3	7.1	60/40	0.09	0.5	230/1/50	135	1.8	0.6	0.44	72
	Medium	460	42	48	15.9	70/50	0.19	2.2	10.3	60/40	0.13	1.0		276	3.6	1.2	0.60	
	High	600	49	54	19.3	70/50	0.23	3.0	12.8	60/40	0.16	1.5		412	5.4	1.8	0.69	
	Boost	750	53	56	22.7	70/50	0.28	4.1	15.3	60/40	0.19	2.1		619	8.2	2.7	0.83	
2000W Standard Capacity	Low	320	32	39	12.6	82/71	0.28	6.6	10.9	80/60	0.13	1.7	230/1/50	133	1.7	0.6	0.42	74
	Medium	480	49	42	16.7	82/71	0.37	11.5	14.4	80/60	0.18	2.8		277	3.6	1.2	0.58	
	High	630	51	55	20.1	82/71	0.45	15.7	17.2	80/60	0.21	4.0		458	6.0	2.0	0.73	
	Boost	750	56	59	22.7	82/71	0.51	18.9	19.4	80/60	0.24	4.9		614	8.1	2.7	0.82	
2000W High Capacity	Low	320	32	39	12.5	70/50	0.15	1.5	8.0	60/40	0.10	0.7	230/1/50	133	1.7	0.6	0.42	74
	Medium	480	49	42	17.1	70/50	0.21	2.7	11.5	60/40	0.14	1.3		277	3.6	1.2	0.58	
	High	630	51	55	20.8	70/50	0.25	3.9	14.2	60/40	0.17	1.9		458	6.0	2.0	0.73	
	Boost	750	56	59	23.7	70/50	0.29	4.8	16.3	60/40	0.20	2.5		614	8.1	2.7	0.82	
2500W Standard Capacity	Low	475	33	39	17.9	82/71	0.40	7.1	15.4	80/60	0.40	1.9	230/1/50	210	2.7	0.9	0.44	85
	Medium	660	42	47	22.3	82/71	0.50	10.6	19.1	80/60	0.23	2.7		352	4.7	1.6	0.53	
	High	850	48	53	26.5	82/71	0.59	14.2	22.6	80/60	0.28	3.7		552	7.3	2.4	0.65	
	Boost	1050	53	57	30.7	82/71	0.68	18.6	26.1	80/60	0.32	4.8		783	10.2	3.4	0.75	
2500W High Capacity	Low	475	33	39	20.2	70/50	0.25	4.3	14.3	60/40	0.17	2.4	230/1/50	210	2.7	0.9	0.44	85
	Medium	660	42	47	25.9	70/50	0.31	6.9	18.5	60/40	0.22	3.8		352	4.7	1.6	0.53	
	High	850	48	53	31.3	70/50	0.38	9.6	22.2	60/40	0.27	5.3		552	7.3	2.4	0.65	
	Boost	1050	53	57	36.7	70/50	0.45	12.7	26.0	60/40	0.32	7.0		783	10.2	3.4	0.75	

Mirage ELECTRIC

Model Reference	Speed Setting / Airflow / dB(A) / Guide NR				Electrical & Mechanical Data							
	Fan Speed Setting	Air Volume	Noise level at 3 meters	Individual Unit Acoustic Guide	Heating Output	Electrical Supply	Motor Power	Maximum Start Run Current	Fans Only / Full Load Current	Heating Element / Full Load Current per Phase	Specific Fan Power	Unit Weight
	L/M/H/B	l/s	dB(A)	NR	kWatts	V/ph/Hz	Watts	Amps	Amps	Amps	W/l/s	kg
1200E (Single Phase)	Low	160	28	37	6	230/1/50	67	0.9	0.3	26.3	0.42	45
	Medium	225	37	45	6		117	1.6	0.5	26.5	0.52	
	High	300	43	50	6		182	2.4	0.8	26.8	0.61	
	Boost	400	51	55	6		306	4.1	1.4	27.4	0.77	
1200E	Low	160	28	37	9	415/3/50	67	0.9	0.3	12.8	0.42	47
	Medium	225	37	45	9		117	1.6	0.5	13.0	0.52	
	High	300	43	50	9		182	2.4	0.8	13.3	0.61	
	Boost	400	51	55	9		306	4.1	1.4	13.9	0.77	
1500E	Low	280	33	40	12	415/3/50	124	1.6	0.5	17.2	0.44	64
	Medium	360	41	47	12		200	2.7	0.9	17.6	0.56	
	High	460	47	52	12		298	4.0	1.3	18.0	0.65	
	Boost	600	52	56	12		454	6.0	2.0	18.7	0.76	
1800E	Low	310	31	39	18	415/3/50	135	1.8	0.6	25.7	0.44	74
	Medium	460	42	48	18		276	3.6	1.2	26.3	0.60	
	High	600	49	54	18		412	5.4	1.8	26.9	0.69	
	Boost	750	53	56	18		619	8.2	2.7	27.8	0.83	
2000E	Low	320	32	39	18	415/3/50	133	1.7	0.6	25.7	0.42	76
	Medium	480	49	42	18		277	3.6	1.2	26.3	0.58	
	High	630	51	55	18		458	6.0	2.0	27.1	0.73	
	Boost	750	56	59	18		614	8.1	2.7	27.8	0.82	
2500E	Low	475	33	39	24	415/3/50	210	2.7	0.9	34.3	0.44	87
	Medium	660	42	47	24		352	4.7	1.6	35.0	0.53	
	High	850	48	53	24		552	7.3	2.4	35.8	0.65	
	Boost	1050	53	57	24		783	10.2	3.4	36.8	0.75	

dB(A) Figure Qualification

The dB(A) figures quoted are calculated by applying the A-weighting adjustment to the sound power (LW) levels; at frequencies from 63Hz to 8kHz which have been determined by measurement in reverberant rooms, at each speed setting.

The resultant figures are then adjusted for a distance of 3 meters to the listener:- dB(A) at 3 meters..

NR Guide Qualification

Calculations detailed in the CIBSE Guide for Sound Control are used to model the combined Inlet (and Case Radiated where applicable) sound power levels and Discharge sound power levels for each unit and speed setting; providing a Guide NR rating for the units when installed in a typical manner.

- ▶ Room size based on a heating load of: 100Watts per square metre.
- ▶ Room acoustic characteristics: Medium Live.
- ▶ Distance to listener: 1.5 metres.

*Please note that our NR figure should be considered as a guide only.

There are many factors which influence the actual resultant NR level within a given space; thus we would recommend that for a more accurate prediction of the resultant NR level an independent acoustic specialist be employed.

Please note with standard controls a two speed remote switch plate will be supplied and this will be wired to High & Boost speeds.

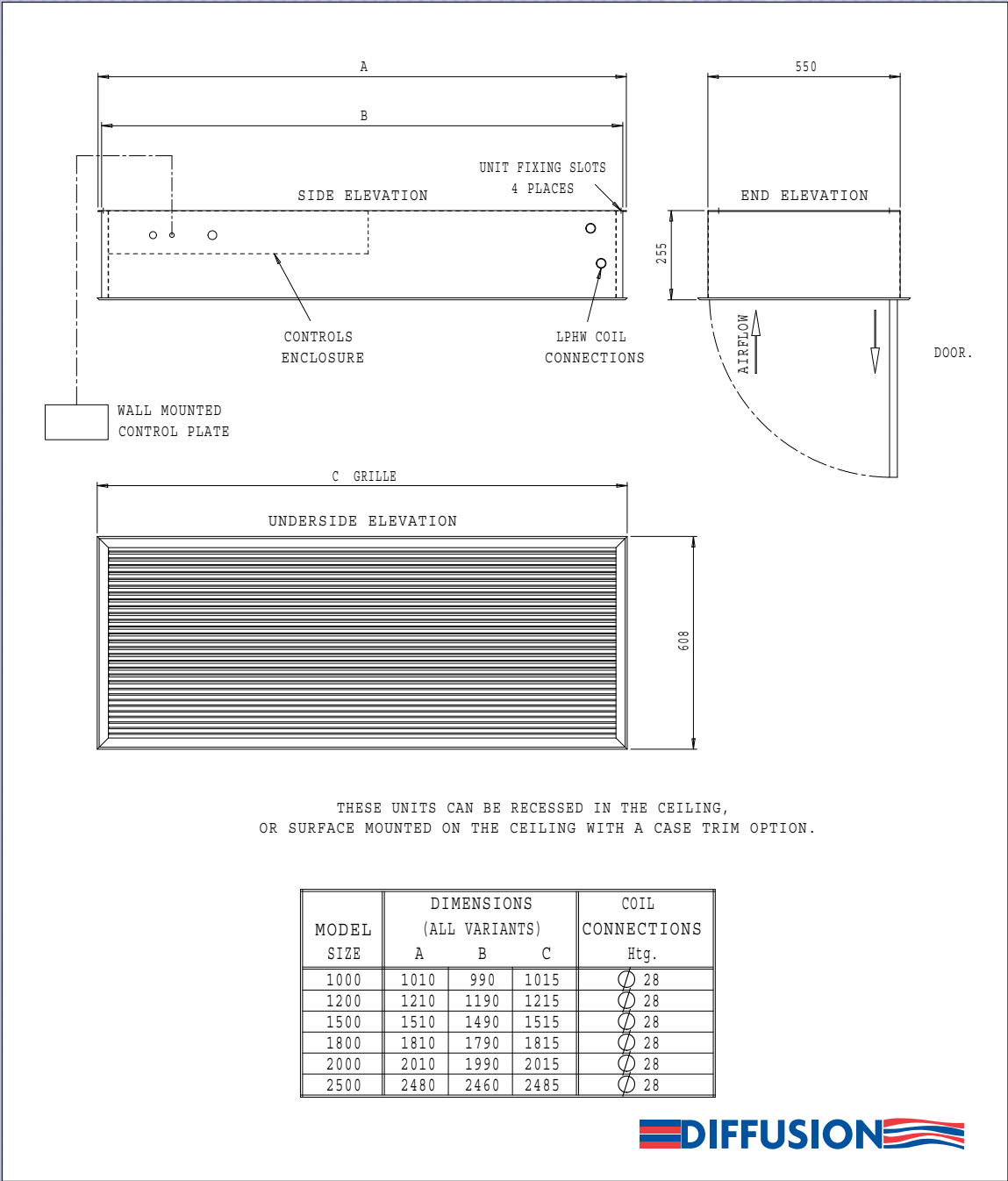
Should you require the lower noise ratings of Low or Medium speed then the optional energy saving controls will need to be purchased.

Coils Tails: 22mm plain copper



- ▶ The Mirage comes with a hinged Grille for easy maintenance.

Mirage - LPHW Standard Capacity and High Capacity, Electric and Ambient General Arrangement Details



“ Established in 1960,
Diffusion has over 50 years
experience in producing
environmental solutions
via the manufacture of heating,
air conditioning and
ventilating products. ”



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