

# Mixed Flow Roof Fans (RMH)

## Features and Benefits

- **Motors protected to IP44**
- **Motor insulation Class 'B'**
- **Maximum operating temperature 40 °C**
- **Standard Thermal Overload Protection IP65**
- **P65 service isolator**
- **Guard included as standard**
- **All models speed controllable**
- **Performance tested to BS 848 parts 1 & 2**
- **Manufacture controlled to BS EN ISO 9001**
- **2 Year Guarantee**

Specially designed for use when medium pressure characteristics are required, the Vent-Axia Mixed Flow Roof range is delivered on-site fully assembled and ready for installation. To meet COSHH requirements, a service isolator is fitted and pre-wired as standard. Equally suitable for flat or inclined roofs, the range is suitable for kerb or purlin box mounting and boasts a wide range of accessories to suit many different industrial applications. There are five sizes available with duties ranging from 0.606m<sup>3</sup>/s to 3.63m<sup>3</sup>/s (2182m<sup>3</sup>/h to 13068m<sup>3</sup>/h) with pressure development available up to 600 Pa.

The mounting plate is moulded with a fixed integral bellmouth to ensure optimum efficiency and precise alignment. The weather-cowl is also moulded to produce a smooth, internal surface and a tough, stable UV resistant finish. Colour: BS 10A07. Alternative colours available on request.

Vent-Axia mixed flow roof fans are designed for either kerb or inclined fixing (maximum angle 30°).

## Electrical

Single phase 220-240V 50 Hz. Capacitor start and run. Three phase 380-415V 50Hz. A service isolator switch is provided for local isolation and the enclosure is protected to IP65 according to BS EN 60529. All motors are fitted with Standard Thermal Overload Protection (S.T.O.P.), which for three phase fans should be wired into all controller circuits and into starter contactors. Most models are available with 4 and 6 pole motors.

## Motors

The Mixed Flow roof range features a proven external rotor motor and backward curved mixed flow glass reinforced polyamide impeller selected for performance and non-overloading characteristics. The assembly is dynamically balanced to VDI 2060. The motors in this range are rated IP44 according to BS EN 60529. Ball



bearings are greased for life and are designed to run at any angle. Insulation is Class 'B' (from -30 °C to +40 °C). Manufacture is controlled to BS EN ISO 9001 standards.

## Sound Levels

Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2 x 10<sup>-5</sup>Pa (20 micro-Pascal). The sound power level spectra figures are dB with a reference level of 10<sup>-12</sup> Watts (1 pico-watt).

## Performance

Tested to BS 848 Parts 1 & 2.

## Accessories

### Purlin boxes

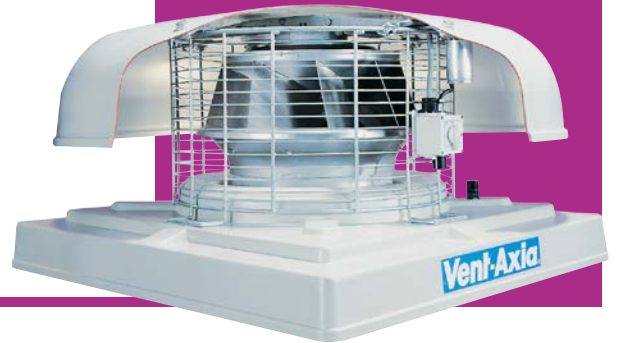
Available in sizes to suit all models and should be used to support the fan in conjunction with a soaker flange sheet.

### Roof attenuators

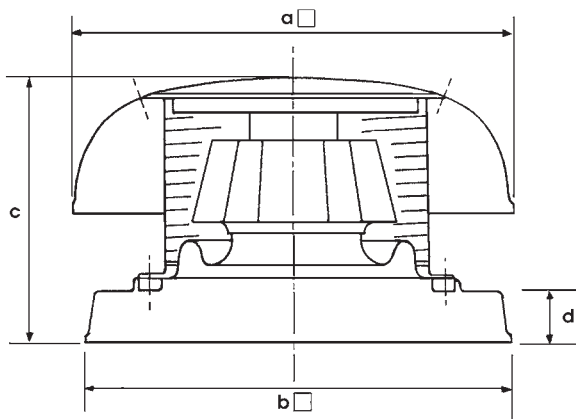
Available in all sizes to cover the range of Mixed Flow Roof fans in three lengths: 600, 900 or 1200mm according to the attenuation required.

### Shutters

Robust construction, designed to fit beneath the fan using the fittings provided. Airflow operated, manual or motorised shutter. A minimum distance of half the attenuator width is required between an airflow shutter and a roof attenuator for satisfactory operation.



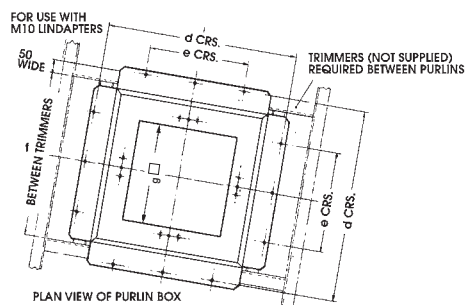
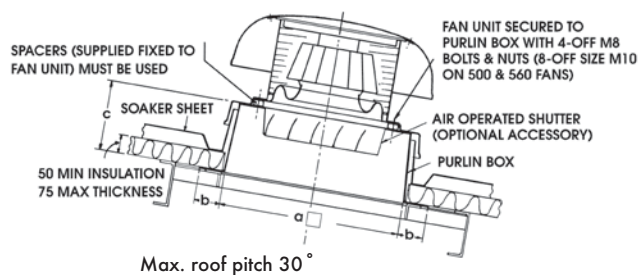
### Fan Dimensions (mm)



Fan size	a □	b □	c	d	Weight Kg
250	500	500	280	90	16
315	700	680	410	83	16
355 / 400	800	780	480	83	24/27
450	950	930	575	103	45
500 / 560	1230	1055	630	103	48 / 64

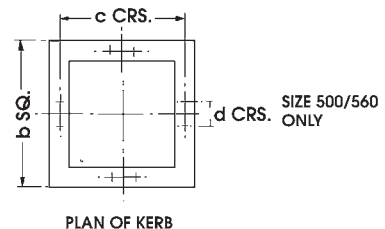
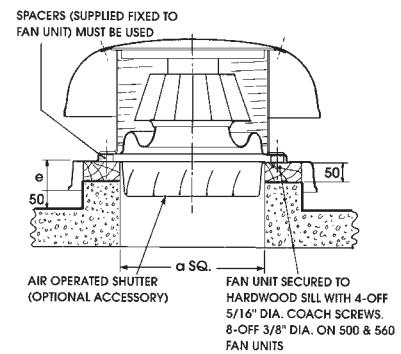
### Details for Purlin Mounting

(Manufactured from 1.5mm pre-galv. mild steel).



Fan size	a □	b	c	d	e	f	g □
315	625	90	240	765	400	653	400
355 / 400	725	90	240	865	500	753	500
450	890	70	250	990	650	878	650
500 / 560	1030	75	250	1140	760	1028	790

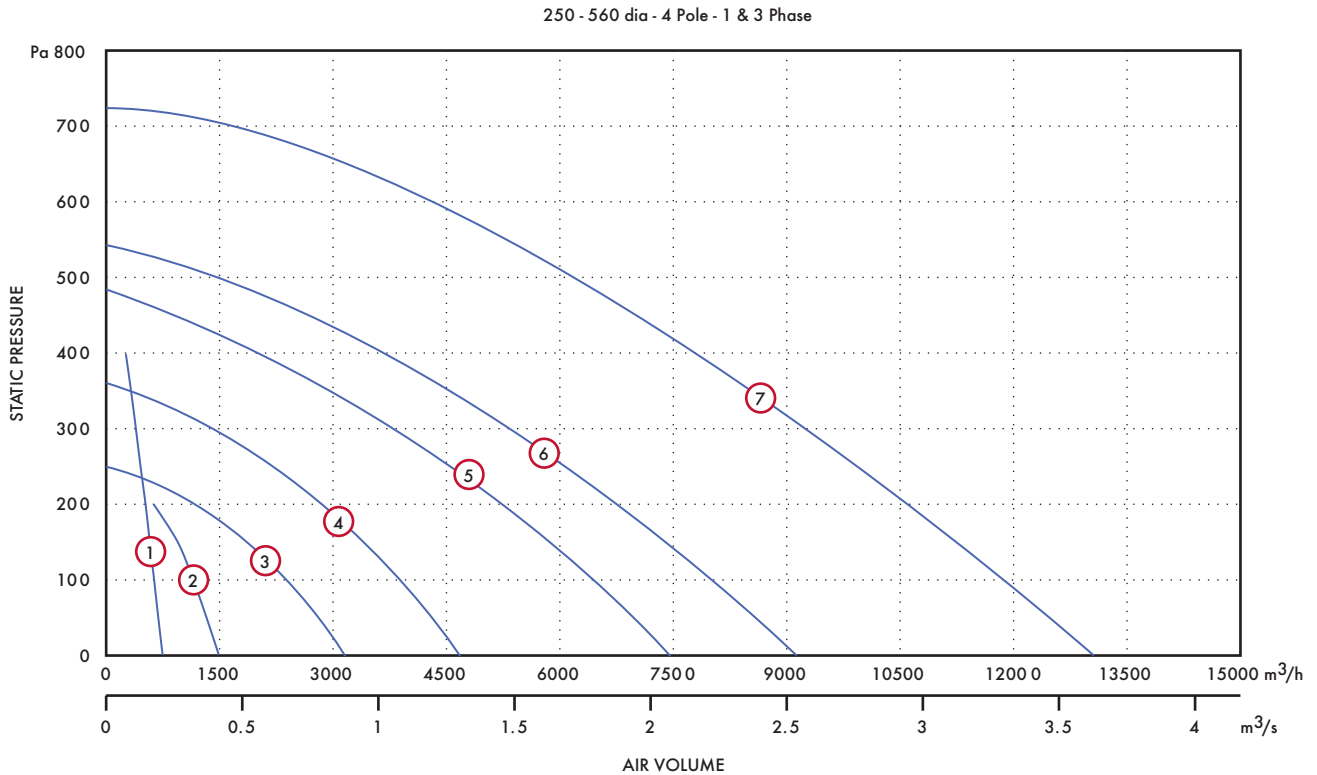
### Details for Kerb Mounting



Fan size	a □	b □	c	d	e
250	500	500	280	90	16
315	700	680	410	83	16
355 / 400	500	700	570	-	83
450	650	850	690	-	103
500 / 560	790	990	842	100	103

# Mixed Flow Roof Fans (RMH)

## Performance Curve



## Performance Guide

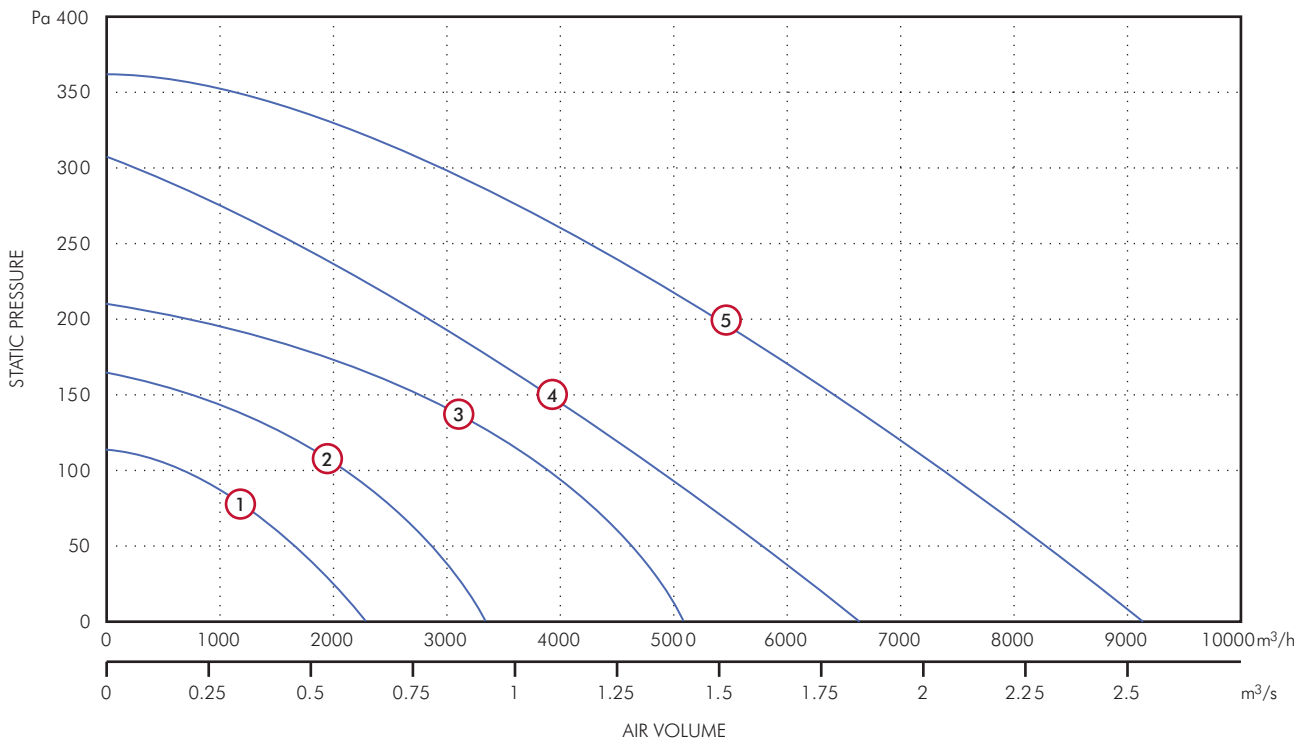
Dia.	Phase	Stock Model	Ref.	Pole	rpm	Curve Ref.	m <sup>3</sup> /s at Pa							Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m		
							0	50	100	150	200	250	300					350	400
250	1	RMH25012		2	2720	1	0.248	0.229	0.211	0.192	0.174	0.152	0.132	0.111	0.088	0.16	2.1	0.7	62
315	1	RMH31514		4	1400	2	0.493	0.439	0.381	0.314	0.21					0.17	1.4	0.8	52
355	1	RMH35514		4	1410	3	0.868	0.77	0.652	0.51	0.333					0.31	4	1.45	56
400	1	RMH40014		4	1340	4	1.297	1.187	1.069	0.947	0.795	0.595	0.365			0.52	6	2.4	58
400	3	RMH40034		4	1340	4	1.297	1.187	1.069	0.947	0.795	0.595	0.365			0.54	4.2	1.05	58
450	1	RMH45014		4	1380	5	2.053	1.916	1.77	1.618	1.451	1.256	1.045	0.82	0.57	0.96	10.5	4.7	64
450	3	RMH45034		4	1380	5	2.053	1.916	1.77	1.618	1.451	1.256	1.045	0.82	0.57	0.89	5.9	1.65	64
500	1	RMH50014		4	1370	6	2.508	2.35	2.18	2.023	1.83	1.64	1.435	1.22	0.99	1.45	16	6.6	69
500	3	RMH50034		4	1370	6	2.508	2.18	2.023	1.83	1.64	1.435	1.22	0.99		1.35	10	2.4	69
560	3	RMH56034		4	1380	7	3.631	3.458	3.305	3.13	3	2.817	2.589	2.45	2.24	2.4	22	4.7	70

## Sound Power Level Spectra dB (re 10<sup>-12</sup>Watts)

Diameter	Pole	63	125	250	500	1k	2k	4k	8k
250	2	69	75	80	78	76	74	73	66
315	4	64	75	77	70	60	63	63	51
355	4	65	68	75	73	73	70	59	53
400	4	66	73	79	77	73	72	68	61
450	4	71	76	84	83	83	80	77	65
500	4	73	82	87	84	84	82	76	68
560	4	75	83	90	87	85	85	82	73

## Performance Curve

355 - 560 dia - 6 Pole - 1 & 3 Phase



## Performance Guide

Dia.	Phase	Model	Stock Ref.	Pole	rpm	Curve Ref.	m³/s at Pa					Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m	
							0	25	50	100	150					200
355	1	RMH35516		6	920	1	0.606	0.55	0.466	0.16		0.09	1.1	0.44	47	
355	3	RMH35536		6	920	1	0.606	0.55	0.466	0.16		0.1	0.57	0.25	47	
400	3	RMH40036		6	910	2	0.919	0.863	0.794	0.588	0.204	0.39	1.4	0.67	49	
450	1	RMH45016		6	920	3	1.417	1.35	1.288	1.067	0.728	0.149	0.4	5.1	2.3	55
450	3	RMH45036		6	920	3	1.417	1.35	1.288	1.067	0.728	0.149	0.59	2	0.96	55
500	1	RMH50016		6	910	4	1.831	1.716	1.6	1.34	1.047	0.731	0.43	4.1	2.1	60
500	3	RMH50036		6	910	4	1.831	1.716	1.6	1.34	1.047	0.731	0.88	4.4	1.45	60
560	1	RMH56016		6	870	5	2.556	2.425	2.324	2.074	1.821	1.541	0.68	7.1	3.3	61
560	3	RMH56036		6	870	5	2.556	2.425	2.324	2.074	1.821	1.541	0.67	4.1	1.55	61

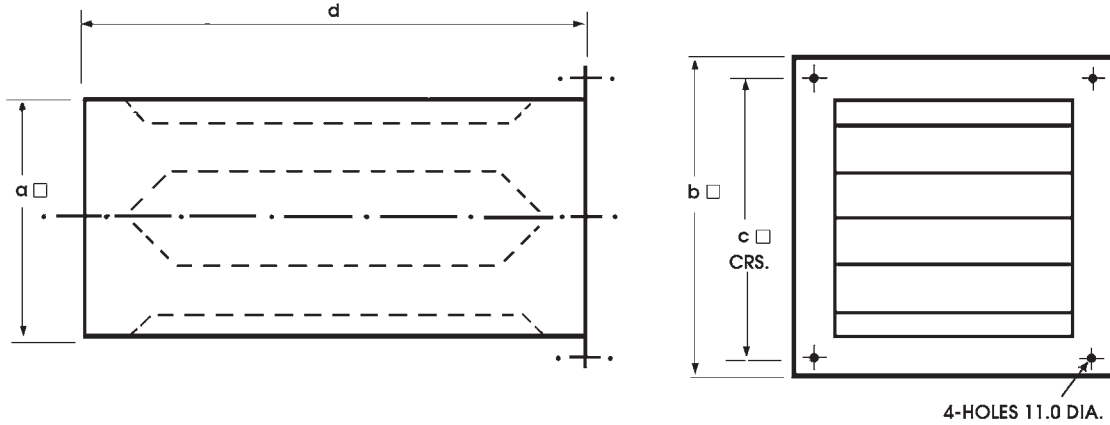
## Sound Power Level Spectra dB (re 10<sup>-12</sup>Watts)

Diameter	Pole	63	125	250	500	1k	2k	4k	8k
355	6	59	60	66	63	63	61	50	46
400	6	60	63	69	77	64	62	59	52
450	6	65	67	75	73	72	70	68	55
500	6	67	73	77	75	75	72	67	59
560	6	68	73	80	78	76	75	73	64

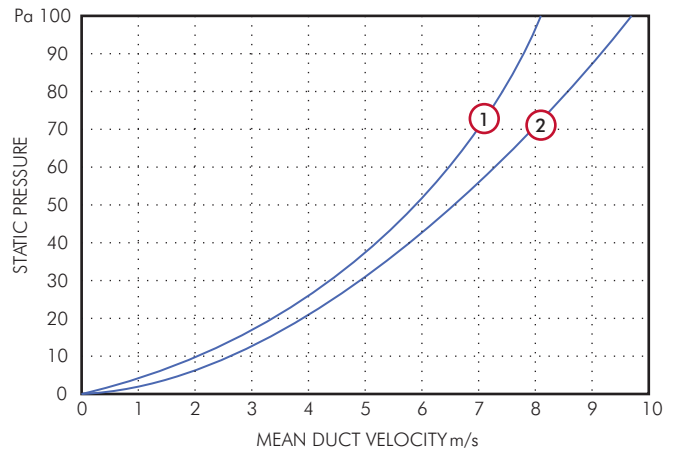
# Mixed Flow Roof Fans (RMH)

## Accessories Dimensions (mm)

### Roof Attenuators



Stock Ref.	a □	b □	c □	d	kg approx	Face Area m <sup>2</sup>	Curve Ref
10520315	395	495	445	600	18	0.156	2
10520400	495	595	545	600	22	0.245	1
10520500	645	745	695	600	31	0.416	1
10520630	785	885	835	600	44	0.616	2
10521315	395	495	445	900	21	0.156	2
10521400	495	595	545	900	28	0.245	1
10521500	645	745	695	900	39	0.416	1
10521630	785	885	835	900	52	0.616	2
10522315	395	495	445	1200	25	0.156	2
10522400	495	595	545	1200	35	0.245	1
10522500	645	745	695	1200	48	0.416	1
10522630	785	885	835	1200	61	0.616	2



### Roof Attenuator, Insertion Losses

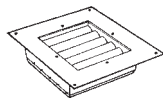
Stock Ref.	Length mm	63	125	250	500	1k	2k	4k	8k
105 20 315	600	2	4	9	16	20	22	18	14
105 20 400	600	2	4	8	15	18	20	17	13
105 20 500	600	2	4	9	16	20	22	18	14
105 20 630	600	2	4	8	15	18	20	17	13
105 21 315	900	3	6	13	22	30	31	22	17
105 21 400	900	2	6	12	20	25	27	20	16
105 21 500	900	3	6	13	22	30	31	22	17
105 21 630	900	2	6	12	20	25	27	20	16
105 22 315	1200	4	9	16	28	34	35	23	19
105 22 400	1200	4	8	15	26	32	33	21	18
105 22 500	1200	4	9	16	28	34	35	23	19
105 22 630	1200	4	8	15	26	32	33	21	18

### Accessories

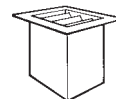


\*eDemand Controller

Fan	Electronic Controller	Auto Transformer	Starter	Overload	Voltage Control	1/3 Phase Inverter	3 Phase Inverter
Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.
RMH25012	W10303102M	10314103	444744	444699	444164	-	-
RMH31514	W10303102M	10314103	444744	444699	444164	-	-
RMH35514	W10303102M	10314103	444744	444701	444164	-	-
RMH35516	W10303102M	10314103	444744	444698	444164	-	-
RMH35536	-	10314301	444747	444697	444166	444177	444172
RMH40014	10303103	10314103	444744	444702	444164	-	-
RMH40034	-	10314301	444747	444700	444166	444177	444172
RMH40036	-	10314301	444747	444699	444166	444177	444172
RMH45014	10303106	10314105	444744	444703	444164	-	-
RMH45034	-	10314304	444747	444701	444166	444177	444172
RMH45016	10303103	10314103	444744	444702	444164	-	-
RMH45036	-	10314301	444747	444700	444166	444177	444172
RMH50014	10303110	10314107	444744	444702	444165	-	-
RMH50034	-	10314304	444747	444702	444166	444177	444173
RMH50016	W10303102M	10314103	444744	444701	444164	-	-
RMH50036	-	10314304	444747	444701	444166	444177	444172
RMH56034	-	10314307	444747	444703	444166	-	444173
RMH56016	10303106	10314105	444744	444702	444164	-	-
RMH56036	-	10314304	444744	444702	444166	444177	444172



Air Operated Shutters †



Roof Attenuators



Purlin Boxes

Size	600mm †	900mm †	1200mm †	Boxes
Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.	Stock Ref.
315	10517315	10520315	10521315	10516315
355	10517315	10520315	10521315	10516315
400	10517400	10520400A	10521400	10516400
450	10517400	10520400A	10521400	10516400
500	-	10520500	10521500	10516500
560	-	10520500	10521500	10516500
630	-	10520630	10521630	10516630

† Air Operated Shutters and manual/motorisable Shutters are not suitable for use in combination with Roof Attenuators. Special manual/motorisable Shutters can be fitted to the bottom of the Roof Attenuator - Supplied by others

\* For full range of speed controller options, see Accessories & Controllers Section