

Vent-Axia Sabre® Sickle Roof Fans (VSR)

Features and Benefits

- **High performance roof sickle fan**
- **Fully assembled cowl.**
- **Optional backdraught shutters and birdguard**
- **Moulded from recyclable polymeric material, optional coloured units available**
- **One shot die cast aluminium impeller dynamically balanced for smooth operation**
- **All sizes resistant to UV light**
- **All models speed controllable and can be wired for reverse running**
- **Thermal Overload Protection for motor protection**
- **2 Year Guarantee**

The high pressure industrial sickle roof fans have been developed around a new advanced, aerodynamically shaped sickle blade, for high efficiency, maximum performance, reliability and excellent speed controllability.

All cowl and roof mounting plates are moulded from specially formulated polymeric materials, which are high impact resistant and provide a rigid profile against strong winds and are resistant to UV light. Standard Colour BS00A05.

Alternative colours available on request. Suitable for flat or inclined roofs (max. angle 30°). Sickle Roof Fans are designed for either kerb or purlin box mounting. All sizes are fitted with inlet wire guards, giving protection to BS 848 part 5. Bird guards are available as optional accessories.

The Sabre range is available in 27 models with extract performances ranging from 0.12m³/s up to 4.12m³/s with pressure characteristics of up to 150Pa.

Impellers

The motors and impellers are factory matched, statically and dynamically balanced to ISO 1940, part 1 Quality Class G.6.3

Motors

The external rotor motors are specifically designed and styled for this range of fan. Ball bearings are greased for life. Sizes 315 - 710 are protected to IP54, against dust and moisture complying with BS EN 60529. They have ribbed aluminium body castings for efficient cooling with Motor insulation to Class 'F' (from -40°C to + 70°C). Speed controlled sizes 450 to 710, 6 & 8 pole motors are only suitable for operating temperatures of up to 40°C.

Electrical

The Sabre range is available for either single phase 220-240V 50 Hz capacitor start and run or three phase 380-415V 50Hz. Motors are fitted with Thermal Overload Protection which should be wired into all controller circuits and into starter contactors to prevent motor damage due to overloading / overheating. Units are suitable for speed control by either electronic, voltage reduction or frequency inverters where permissible.

Terminal Box

An IP54 terminal box is supplied with all models with M20 x 1.5mm gland entry offering protection against dust and water.

Performance

The fan performance, is in accordance with tests to ISO 5801.

Sound Levels

Fan sound levels, measured in a reverberant chamber in accordance with ISO 3744 Part 1. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2 x 10⁻⁵Pa (20 micro-Pascal). The sound power level spectra figures are dB with a reference level of 10⁻¹² Watts (1 pico-watt). To ensure minimum noise levels during speed control, an auto transformer speed control is recommended.

Packing

Sabre sickle roof fans consist of two elements - a boxed cowl assembly and a plate mounted fan.

Fan & cowl are supplied separately to assist with transportation.

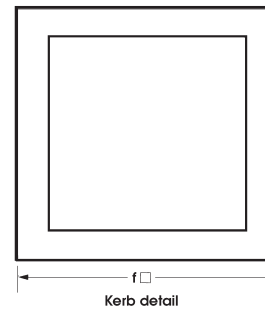
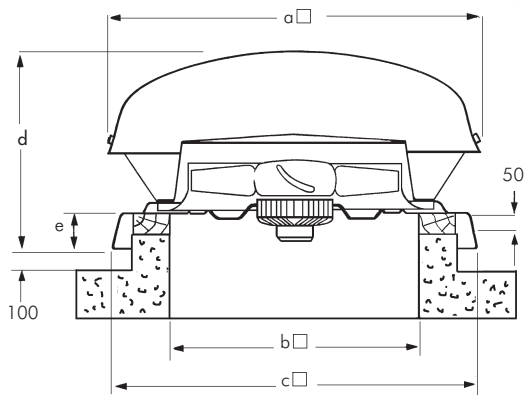
Accessories

A full range of accessories is available with the Sabre Sickle Roof fans:

Electronic Speed Controllers
Auto Transformer Speed Controllers D.O.L.
Starters
Soaker Flanges
Purlin Boxes
Backdraught Shutters
Bird Guards
Roof Attenuators



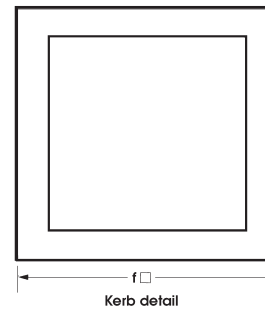
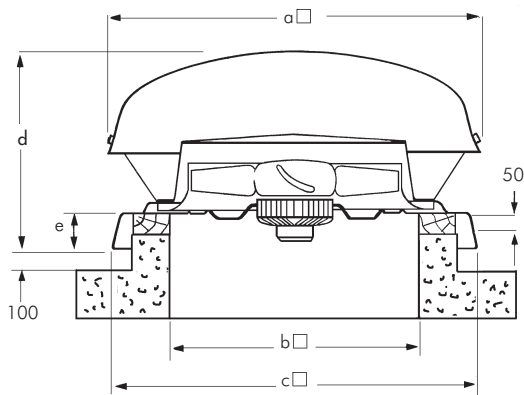
Fan Dimensions (mm)



Dia	a	b	c	d	e	f	Kg max Kerb detail
250	700	475	737	411	97	675	11.7
315	700	475	737	411	97	675	12.8
355	700	475	737	411	97	675	13.8
400	800	575	830	466	97	775	19.2
450	800	575	830	466	97	775	24.8
500	950	715	1000	579	100	915	30.3
560	950	715	1000	579	100	915	37
630	1230	840	1100	731	105	1040	64
710	1230	840	1100	731	105	1040	50



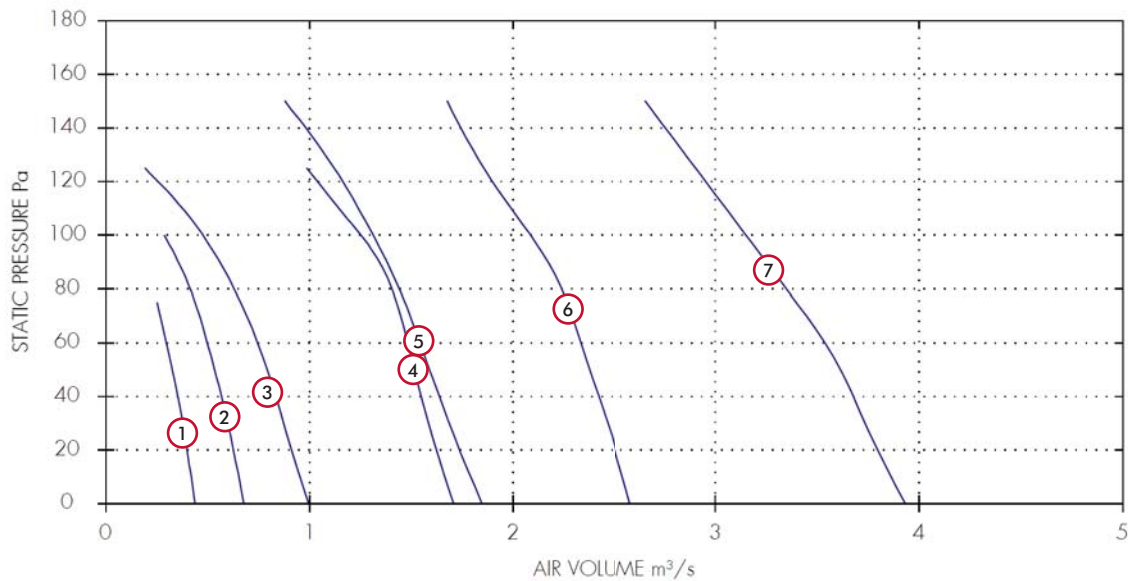
Fan Dimensions (mm)



Dia	a	b	c	d	e	f	Kg max Kerb detail
250	700	475	737	411	97	675	11.7
315	700	475	737	411	97	675	12.8
355	700	475	737	411	97	675	13.8
400	800	575	830	466	97	775	19.2
450	800	575	830	466	97	775	24.8
500	950	715	1000	579	100	915	30.3
560	950	715	1000	579	100	915	37
630	1230	840	1100	731	105	1040	64
710	1230	840	1100	731	105	1040	50

Performance Curve

315 - 630 dia. - 4 Pole - 3 Phase



Performance Guide

Motor		Stock		IP	Curve	m³/s at Pa							Motor	S.C.	F.L.C.	dBA @	
Dia.	Phase	Pole	Ref. No.	r.p.m.	Rating	Ref.	0	25	50	75	100	125	150	kW	Amps	Amps	3m
315	3	4	VSR31534	1410	IP54	①	0.44	0.39	0.33	0.25				0.12	1	0.29	48
355	3	4	VSR35534	1360	IP54	②	0.68	0.61	0.53	0.44	0.29			0.18	1	0.35	48
400	3	4	VSR40034	1250	IP54	③	0.99	0.89	0.79	0.66	0.48	0.19		0.17	1.35	0.47	52
450	3*	4	VSR45034	1360	IP54	④	1.71	1.6	1.52	1.43	1.25	0.99		0.38	4	1.05	57
500	3*	4	VSR50034	1330	IP54	⑤	1.85	1.71	1.59	1.47	1.31	1.12	0.88	0.49	5.2	1.45	58
560	3*	4	VSR56034	1280	IP54	⑥	2.58	2.49	2.38	2.27	2.08	1.86	1.68	0.65	7	2.4	63
630	3*	4	VSR63034	1380	IP54	⑦	3.93	3.77	3.61	3.4	3.15	2.9	2.66	1.15	9	3.1	66

S.C. = STARTING CURRENT F.L.C. = FULL LOAD CURRENT

NOTE: All * models are supplied with 2 speed connection motors as standard. (Sizes 450-630 dia. are 4/6 pole, 710 are 6/8 pole).

For details of sizes above 710mm please consult www.vent-axia.com or call 0844 856 0595

DELTA = HIGH SPEED

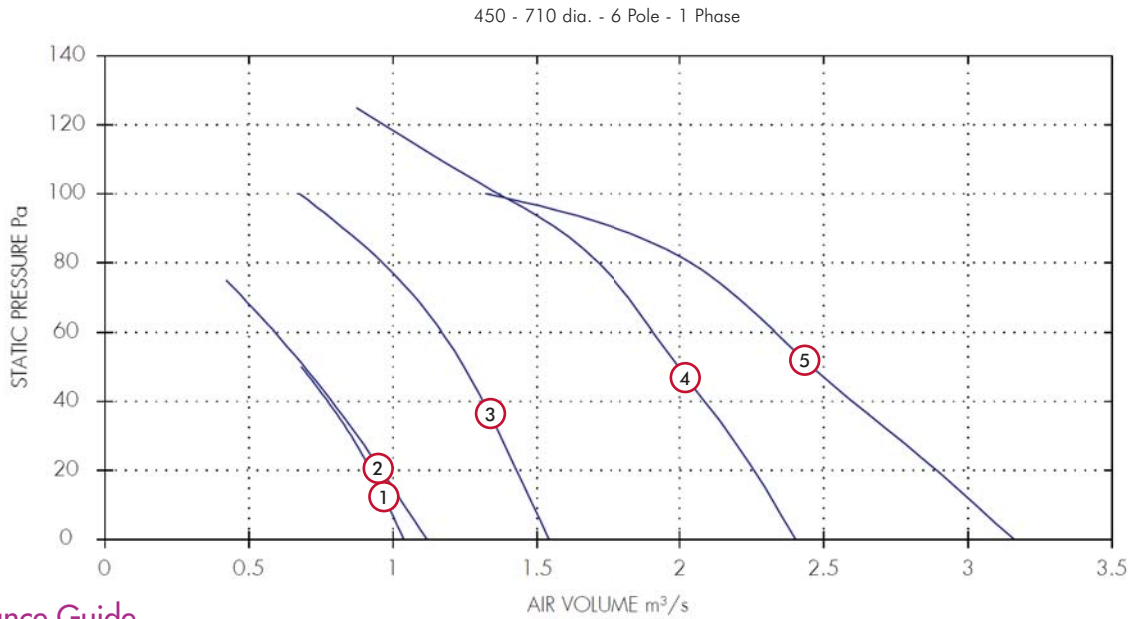
STAR = LOW SPEED

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Stock Ref	Dia	Phase	Poles	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
VSR31534	315	3	4	67	68	63	60	60	60	56	49	48
VSR35534	355	3	4	65	68	63	62	63	63	60	54	48
VSR40034	400	3	4	64	72	64	66	66	63	62	53	52
VSR45034	450	3	4	73	68	65	64	65	63	56	48	51
VSR50034	500	3	4	72	71	69	68	71	68	60	53	53
VSR56034	560	3	4	77	70	67	65	68	64	57	49	53
VSR63034	630	3	4	72	80	80	76	77	75	70	62	63

Vent-Axia Sabre Sickle Roof Fans (VSR)

Performance Curve



Performance Guide

Dia.	Phase	Pole	Stock Ref. No.	r.p.m.	IP Rating	Curve Ref.	m³/s at Pa							Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
							0	25	50	75	100	125	150				
450	1	6	VSR45016	910	IP54	1	1.04	0.89	0.68	-	-	-	-	0.19	1.95	0.84	50
500	1	6	VSR50016	890	IP54	2	1.12	0.92	0.69	0.42	-	-	-	0.29	2.5	1.25	47
560	1	6	VSR56016	920	IP54	3	1.54	1.4	1.25	1.02	0.68	-	-	0.51	5.3	2.3	58
630	1	6	VSR63016	900	IP54	4	2.4	2.22	2	1.77	1.37	0.87	-	0.78	3.5	7.5	58
710	1	6	VSR71016	790	IP54	5	3.16	2.82	2.46	2.12	1.32	-	-	0.76	10	3.4	59

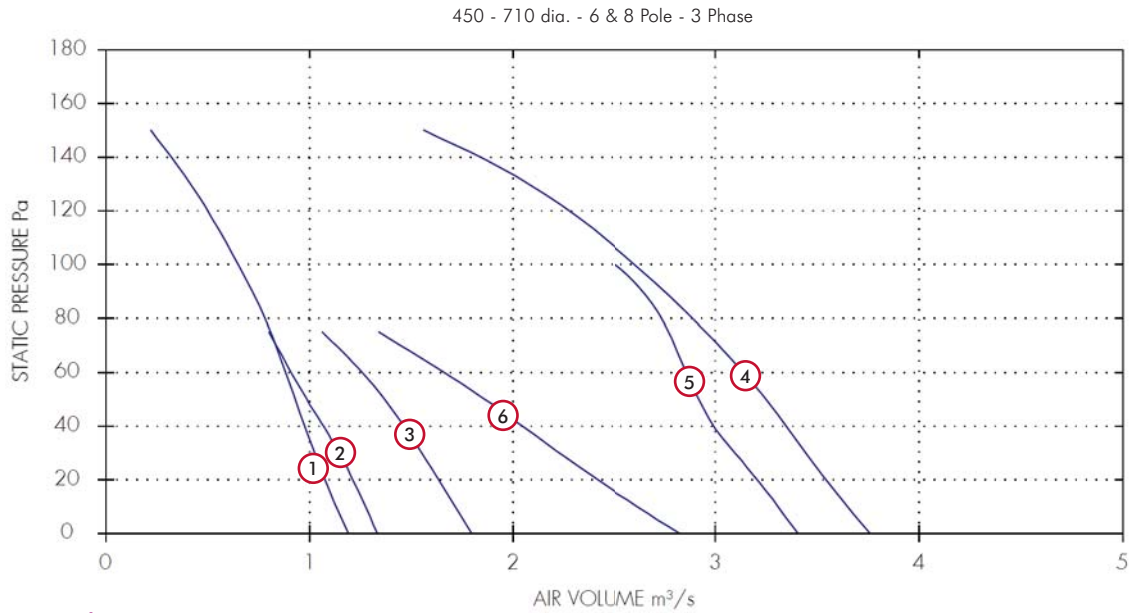
S.C. = STARTING CURRENT

F.L.C. = FULL LOAD CURRENT

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Stock Ref	Dia	Phase	Poles	63	125	250	500	1k	2k	4k	8k	dBA@ 3m
VSR45016	450	1	6	64	72	64	62	64	61	54	48	50
VSR50016	500	1	6	64	67	66	64	63	61	56	48	47
VSR56016	560	1	6	77	75	74	71	71	69	64	56	58
VSR63016	630	1	6	63	70	64	66	69	64	56	49	58
VSR71016	710	1	6	71	76	76	73	73	69	63	55	59

Performance Curve



Performance Guide

Dia.	Motor		Stock Ref. No.	r.p.m.	IP Rating	Curve Ref.	m³/s at Pa							Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m		
	Phase	Pole					0	25	50	75	100	125	150						
450	3	6	VSR45036	1030	IP54	①	1.33	1.18	0.99	0.8						0.38	1.35	0.68	51
500	3	6	VSR50036	980	IP54	②	1.19	1.05	0.93	0.81	0.65	0.46	0.22	0.49	1.85	0.89	53		
560	3	6	VSR56036	880	IP54	③	1.8	1.59	1.37	1.06					0.65	2.3	1.25	53	
630	3	6	VSR63036	1140	IP54	④	3.76	3.49	3.25	2.96	2.6	2.18	1.56	1.15	6	2	63		
710	3	6	VSR71036	900	IP54	⑤	3.41	3.15	2.92	2.77	2.51			0.76	6.1	1.65	59		
710	3	8	VSR71038	690	IP54	⑥	2.82	2.32	1.86	1.34				0.62	2	1.05	58		

S.C. = STARTING CURRENT

F.L.C. = FULL LOAD CURRENT

NOTE: All * models are supplied with 2 speed connection motors as standard. (Sizes 450-630 dia. are 4/6 pole, 710 are 6/8 pole).

For details of sizes above 710mm please consult www.vent-axia.com or call 0844 856 0595

DELTA = HIGH SPEED

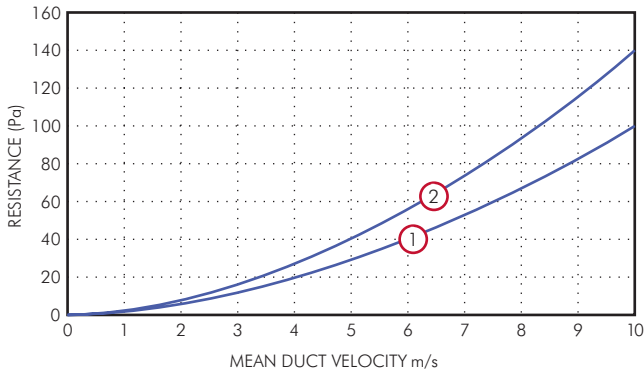
STAR = LOW SPEED

Sound Power Level Spectra dB (ref 10⁻¹² Watts)

Stock Ref	Dia	Phase	Poles	63	125	250	500	1k	2k	4k	8k	dBA@ 3m
VSR45036	450	3	6	63	76	67	68	69	70	66	59	57
VSR50036	500	3	6	76	77	74	73	75	72	65	58	58
VSR56036	560	3	6	83	80	74	74	77	75	70	61	63
VSR63036	630	3	6	84	83	78	77	79	79	74	67	66
VSR71036	710	3	6	72	69	66	64	66	64	56	48	58
VSR71038	710	3	8	69	81	76	71	75	70	64	57	59

Vent-Axia Sabre Sickle Roof Fans (VSR)

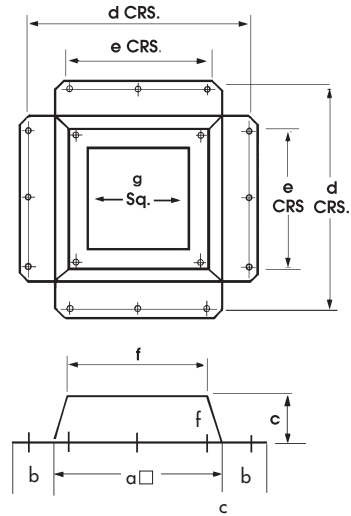
Pressure Drop For Industrial Roof Cowl Used For Intake With Remote Fan



Stock Ref. No.	Free area m ²	Resistance curve	Cowl only weight kg
RCZ300	0.099	①	7.5
RCZ400	0.159	②	9
RCZ500	0.246	②	13
RCZ630	0.396	②	19

Purlin Box

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



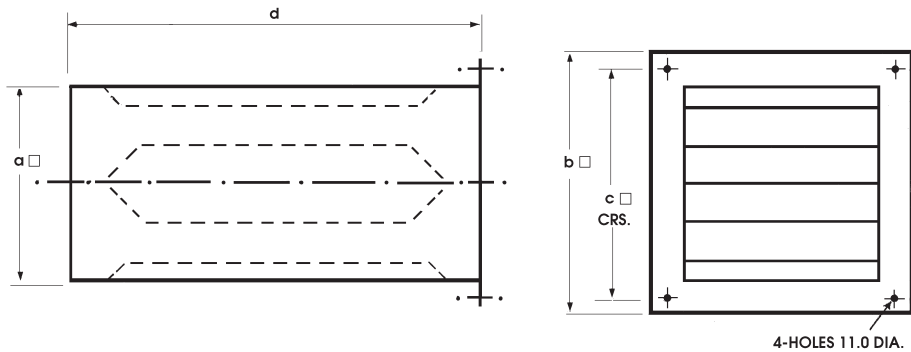
size	a	b	c	d	e	f	g
250/315/355	625	90	240	765	400	590	460
400/450	725	90	240	865	500	705	565
500	890	70	250	990	650	864	640
560	890	70	250	990	650	864	700
630	1030	75	250	1140	760	985	775
710	1030	75	250	1140	760	985	840

Vertical Backdraught Shutters

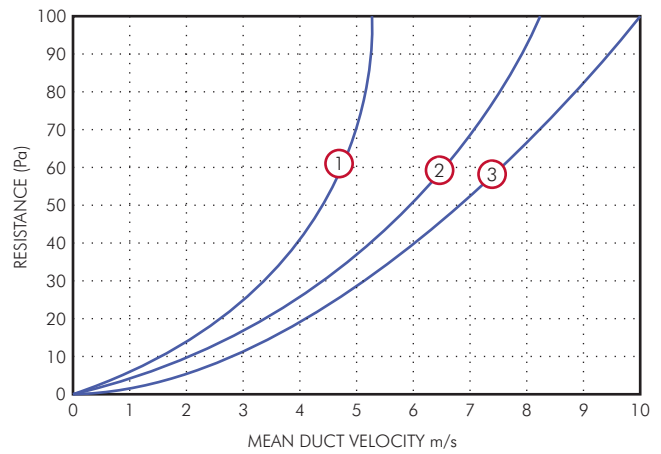
Size	Percentage reduction in performance at 4 pole speeds
315	7%
355	12%
400	10%
450	*3%
500	*4%
560	*6%
630	*3%
710	*7%

* For 6 and 8 pole fans, reduce percentages by ratio of fan speeds.

Roof Attenuators

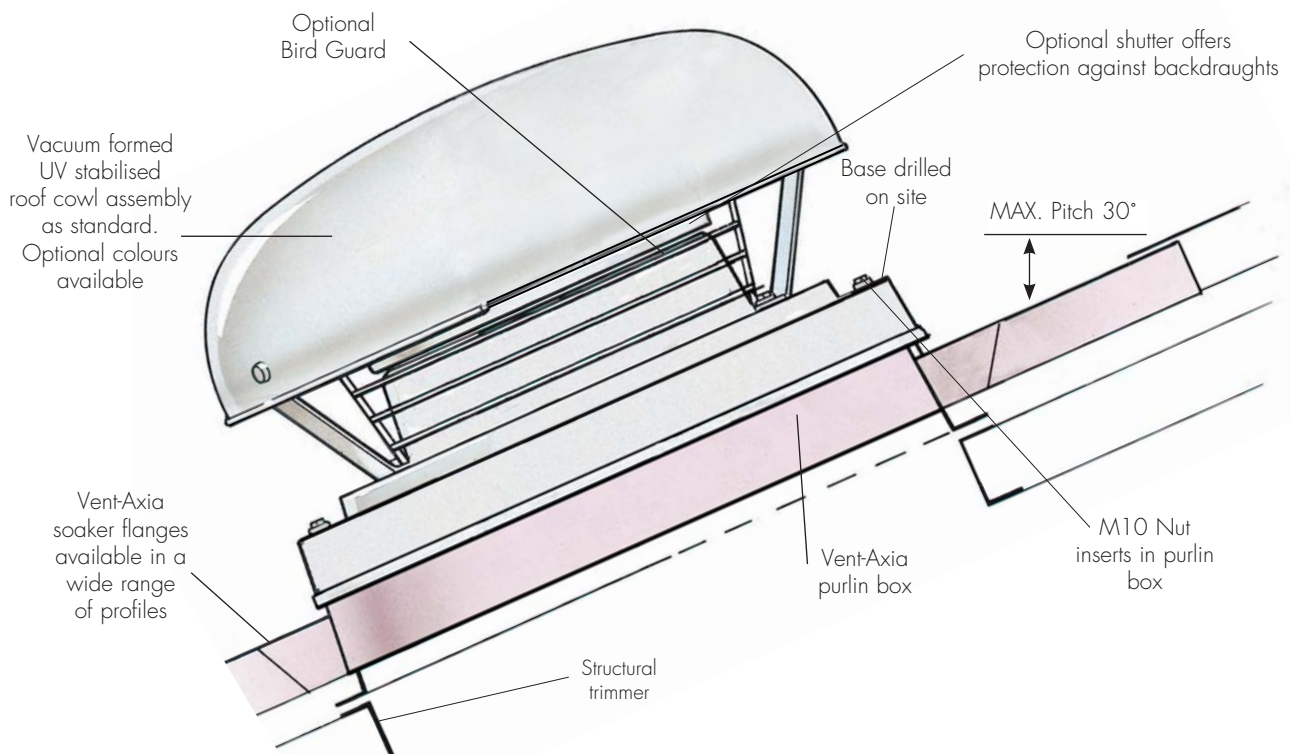


Stock Ref. No.	a	b	c	d	Kg approx	Free area m ²	Resistance curve
RAZ300600	455	535	505	600	18	0.156	①
RAZ400600	555	635	605	600	22	0.245	②
RAZ500600	635	790	745	600	31	0.416	②
RAZ600600	770	935	890	600	44	0.616	③
RAZ300900	455	535	505	900	21	0.156	①
RAZ400900	555	635	605	900	28	0.245	②
RAZ500900	635	790	745	900	39	0.416	②
RAZ600900	770	935	890	900	52	0.616	③
RAZ3001200	455	535	505	1200	25	0.156	①
RAZ4001200	555	635	605	1200	35	0.245	②
RAZ5001200	635	790	745	1200	48	0.416	②
RAZ6001200	770	935	890	1200	61	0.616	③



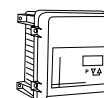
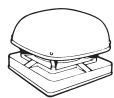
* Recommended maximum duty velocity 10m/s

Typical Installation



Vent-Axia Sabre Sickle Roof Fans (VSR)

Accessories



Unit Code Stock Ref.	Electronic Controller Stock Ref.	Auto Transformer Stock Ref.	D.O.L. Starter & Overload Stock Ref.	**eDemand Controller	
				Voltage Control Stock Ref.	3 Phase Inverter Stock Ref.
VSR25012	W10303102M	10314103	444744 + 444699	444164	-
VSR25014	W10303102M	10314103	444744 + 444697	444164	-
VSR31514	W10303102M	10314103	444744 + 444699	444164	-
VSR31534	-	10314301	444747 + 444697	444166	444172
VSR35514	W10303102M	10314103	444744 + 444700	444164	-
VSR35534	-	10314301	444747 + 444697	444166	444172
VSR40014	W10303102M	10314103	444744 + 444700	444164	-
VSR40034	-	10314301	444747 + 444698	444166	444172
VSR45014	10303103A	10314103	444744 + 444702	444164	-
VSR45034*	-	10314301	444744 + 444699	444166	444172
VSR50014	10303106A	10314105	444747 + 444700	444164	-
VSR50034*	-	10314304	444747 + 444699	444166	444172
VSR56014	10303106A	10314107	444744 + 444702	444164	-
VSR56034*	-	10314304	444744 + 444700	444166	444172
VSR63014	-	10314113	444747 + 444701	444165	-
VSR63034*	-	-	444747 + 444699	444166	444173
VSR45016	W10303102M	10314103	444744 + 444703	444164	-
VSR45036*	-	10314301	444744 + 444702	444166	444172
VSR50016	W10303102M	10314103	444747 + 444702	444164	-
VSR50036*	-	10314301	444747 + 444700	444166	444172
VSR56016	10303103A	10314103	444744 + 444705	444164	-
VSR56036*	-	10314301	444744 + 444705	444166	444172
VSR63016	10303106A	10314105	444747 + 444702	444164	-
VSR63036*	-	10314304	444747 + 444701	444166	444172
VSR71016	10303106A	10314105	444744 + 444702	444164	-
VSR71036*	-	10314304	444747 + 444701	444166	444172
VSR71038*	-	10314304	444747 + 444700	444166	444172

NOTE:

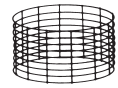
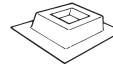
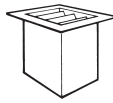
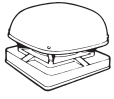
** For full range of speed controller options, see Accessories & Controllers Section

*Three phase models are supplied with 2 speed delta/star connection motors, as standard. (Sizes 450 to 630 are 4/6 Pole, 710 are 6/8 pole).

When low noise levels are required on all other models 5 a step auto transformer speed controller is recommended.

Optional coloured Cowls and Bases available on request.

Accessories



Unit Code	**Roof Attenuator			Purlin Boxes	Shutter	Bird guard
	600mm Stock Ref.	900mm Stock Ref.	1200mm Stock Ref.			
VSR25012	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR25014	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR31514	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR31534	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR35514	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR35534	RAZ300600	RAZ300900	RAZ3001200	PBZ300	RSZ300	BGZ300
VSR40014	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR40034	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR45014	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR45034*	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR50014	RAZ500600	RAZ500900	RAZ5001200	PBZ500	RSZ500	BGZ500
VSR50034*	RAZ500600	RAZ500900	RAZ5001200	PBZ500	RSZ500	BGZ500
VSR56014	RAZ500600	RAZ500900	RAZ5001200	PBZ560	RSZ500	BGZ500
VSR56034*	RAZ500600	RAZ500900	RAZ5001200	PBZ560	RSZ500	BGZ500
VSR63014	RAZ630600	RAZ630900	RAZ6301200	PBZ630	RSZ630	BGZ630
VSR63034*	RAZ630600	RAZ630900	RAZ6301200	PBZ630	RSZ630	BGZ630
VSR45016	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR45036*	RAZ400600	RAZ400900	RAZ4001200	PBZ400	RSZ400	BGZ400
VSR50016	RAZ500600	RAZ500900	RAZ5001200	PBZ500	RSZ500	BGZ500
VSR50036*	RAZ500600	RAZ500900	RAZ5001200	PBZ500	RSZ500	BGZ500
VSR56016	RAZ500600	RAZ500900	RAZ5001200	PBZ560	RSZ500	BGZ500
VSR56036*	RAZ500600	RAZ500900	RAZ5001200	PBZ560	RSZ500	BGZ500
VSR63016	RAZ630600	RAZ630900	RAZ6301200	PBZ630	RSZ630	BGZ630
VSR63036*	RAZ630600	RAZ630900	RAZ6301200	PBZ630	RSZ630	BGZ630
VSR71016	RAZ630600	RAZ630900	RAZ6301200	PBZ710	RSZ630	BGZ630
VSR71036*	RAZ630600	RAZ630900	RAZ6301200	PBZ710	RSZ630	BGZ630
VSR71038*	RAZ630600	RAZ630900	RAZ6301200	PBZ710	RSZ630	BGZ630