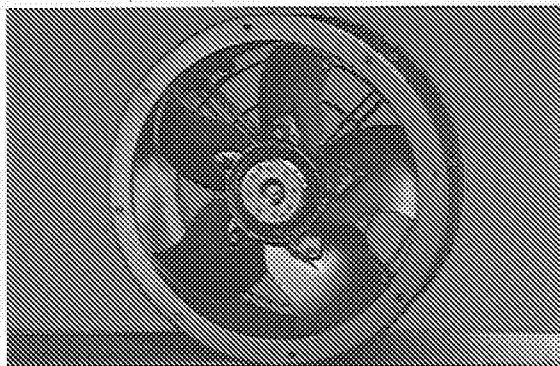


VENT-AXIA BLACK SABRE SLIM CASE SICKLE FANS (BSC)



BLACK SABRE CASE MOUNTED SICKLE FANS

Black Sabre Sickle bladed fans are the latest addition to the Vent-Axia range offering improved pressure characteristics over axial units and lower sound levels. The advanced blade design and purpose built motor ensure excellent reliability and speed control.

CONSTRUCTION

The Black Sabre range share the same case lengths as the Cased axial range making them fully interchangeable and total compatibility with the full range of Vent-Axia Accessories. The strong and compact short case is constructed from rolled steel plate, electro welded and protected with a tough, epoxy paint finish. Casing dimensions are to DIN 24151 and flange dimensions are to ISO 6580. Manufacture is controlled to BS EN ISO 9001. The compact motor/impeller unit is robustly supported within the casing by electro-welded and epoxy-coated steel rod mounting supports for ease of installation and service access. Suitable for all weather outdoor environments.

IMPELLERS

The motors and impellers are factory matched, statically and dynamically balanced to VDI 2060 Quality Class G.6.3.

MOTORS

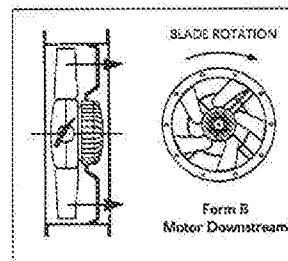
The external rotor motors are specifically designed and styled for this range of fan. Ball bearings are greased for life. Sizes 250-710 motors are

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 Standard Thermal Overload Protection (S.T.O.P.) which should be wired into all controller circuits and into starter contactors to prevent motor damage due to overloading / overheating. Three phase 380-415V 50Hz units, from 450 to 710 diameter are fitted as standard with 2 speed Delta/Star connection motors. Most units are suitable for speed control by either electronic, voltage reduction or frequency inverters where permissible.

FORM OF RUNNING



- ✓ Sizes 250 to 710 dia are protected to IP54.
- ✓ Motor insulation Class F up to +70°C
- ✓ 450 to 710 dia, 3 phase motors, 2 speed as standard.
- ✓ All weather epoxy paint finish.
- ✓ Standard Thermal Overload Protection (S.T.O.P.).
- ✓ Performance tested to BS 848 Part 1.
- ✓ 5 Year Guarantee.

Cased mounted fans (ex-stock) are supplied for extract use (Form 'B' running).

TERMINAL BOX

An IP65 terminal box is supplied with all models with 20mm and PGII entry offering protection against dust and water jets from any angle.

PERFORMANCE

The fan performance is in accordance with tests to BS 848 Part 1.

SOUND LEVELS

Fan sound levels, measured in a reverberant chamber in accordance with BS 848 Part 2. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at a reference level of 2×10^{-12} Pa (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.

ACCESSORIES

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

Electronic Speed Controllers.
Auto Transformer Speed Controllers.
Inverter Speed Controller, where permissible.
D.O.L. Starters.
Ancillary Packs.
Flexible Connections.
Mounting Feet.
Coupling Flanges.
Anti-Vibration Mounts.
Attenuators.

Vent-Axia

BLACK SABRE SLIM CASE SICKLE FANS PERFORMANCE GUIDE

4 POLE

		m³/s at Pa																		
Die	Motor	Ref. No	Speed	Rating	0	25	50	75	100	125	150	175	200	225	250	300	350	Motor	SC	FLC
																		kW	Amps	Amps
315	1 phase	BSC315-14	1400	IP54	0.581	0.532	0.483	0.381	0.292	0.217	0.153	0.107						0.12	2.17	0.53
	3 phase	BSC315-24	1420	IP54	0.584	0.535	0.485	0.382	0.293	0.158	0.123	0.087						0.13	2.76	0.46
	1 phase	BSC355-14	1400	IP54	0.784	0.721	0.638	0.504	0.453	0.238	0.188	0.138						0.12	2.20	0.55
	3 phase	BSC355-24	1420	IP54	0.835	0.770	0.682	0.582	0.488	0.282	0.228	0.178	0.093					0.15	2.52	0.56
400	1 phase	BSC400-14	1380	IP54	1.555	1.458	1.281	1.062	0.902	0.465	0.362							0.32	6.40	1.60
	3 phase	BSC400-24	1380	IP54	1.552	1.458	1.291	1.062	0.903	0.465	0.363							0.36	4.40	1.70
450	1 phase	BSC450-14	1280	IP54	1.902	1.889	1.720	1.602	1.439	1.290	0.880	0.763	0.640	0.388	0.283	0.114		0.63	11.20	2.80
	3 phase	BSC450-24	1340	IP54	1.878	1.881	1.781	1.667	1.514	1.326	0.896	0.768	0.649	0.508	0.382	0.113		0.59	7.90	1.30
500	1 phase	BSC500-14	1350	IP54	2.687	2.575	2.463	2.301	2.140	1.845	1.682	1.271	1.087	0.819	0.785	0.480	0.328	0.85	15.20	3.80
	3 phase	BSC500-24	1370	IP54	2.708	2.615	2.500	2.336	2.173	1.875	1.708	1.288	1.104	0.838	0.798	0.482	0.322	0.87	11.40	1.90
560	1 phase	BSC560-14	1300	IP54	3.472	3.337	3.178	3.021	2.840	2.615	2.344	2.029	1.698	1.378	1.174	0.748	0.582	1.30	24.00	6.00
	3 phase	BSC560-24	1340	IP54	3.578	3.442	3.277	3.114	2.928	2.696	2.477	2.092	1.846	1.477	1.289	0.789	0.585	1.40	15.00	2.50
630	1 phase	BSC630-14	1325	IP54	3.982	3.843	3.657	3.449	3.212	2.963	2.689	2.440	2.176	1.902	1.581	1.048	0.809	1.30	22.00	5.70
	3 phase	BSC630-24	1330	IP54	3.988	3.858	3.672	3.463	3.231	2.975	2.710	2.450	2.185	1.903	1.587	1.052	0.812	1.40	15.00	2.60

6 POLE

480	3 phase	BSC480-36	1050	IP54	1.570	1.480	1.374	1.261	1.114	0.928	0.735	0.588	0.418					0.73	3.42	0.57
500	3 phase	BSC500-36	980	IP54	2.236	2.185	2.045	1.884	1.720	1.487	1.282	0.913	0.668	0.382				0.77	3.72	0.62
560	3 phase	BSC560-36	860	IP54	3.091	2.928	2.777	2.580	2.370	2.139	1.859	1.571	1.292	0.943	0.648			0.45	5.40	0.90
630	3 phase	BSC630-36	880	IP54	3.485	3.277	3.088	2.813	2.554	2.224	2.045	1.720	1.386	0.913	0.658			0.74	5.00	1.50
710	1 phase	BSC710-16	860	IP54	4.211	4.012	3.752	3.259	2.845	2.396	1.936	1.382	1.027	0.788	0.538			0.80	16.00	4.00
	3 phase	BSC710-24	920	IP54	4.244	4.137	3.756	3.370	2.928	2.580	1.968	1.571	1.266	0.798	0.584			1.60	15.00	3.60

8 POLE

770	3 phase	BSC770-36	670	IP54	3.280	2.987	2.671	2.110	1.808	1.280								0.48	1.80	1.20
																		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).
DELTA Δ (HIGH SPEED)
STAR ★ (LOW SPEED)

ONLY SELECT THE FANS TYPED IN RED WHEN CONFIDENT OF YOUR SYSTEM RESISTANCE DATA.

Vent-Axia

VENT-AXIA BLACK SABRE SLIM CASE SICKLE FANS ACCESSORIES



Stock Ref. No.	Electronic controller Stock Ref. No.	Auto transformer Stock Ref. No.	D.O.L. starters & overload Stock Ref. No.	Mounting feet Stock Ref. No.	Inlet wire guard Stock Ref. No.	Coupling flange Stock Ref. No.	Axial ancillary pack Stock Ref. No.	Cased axial attenuator Stock Ref. No.	Cased axial attenuator pod Stock Ref. No.	Anti-vibration mount Stock Ref. No.
BSC215-14	W103 09 102M	103 14 101	103 11 240 + 103 12 007	105 03 315	105 05 515	105 06 315	105 13 315	105 14 315	105 15 315	105 23 033
BSC215-34	-	103 14 301	103 11 415 + 103 12 007	105 03 315	105 05 515	105 06 315	105 13 315	105 14 315	105 15 315	105 23 033
BSC355-14	W103 09 102M	103 14 103	103 11 240 + 103 12 007	105 03 355	105 05 555	105 06 355	105 13 355	105 14 355	105 15 355	105 23 033
BSC355-34	-	103 14 301	103 11 415 + 103 12 007	105 03 355	105 05 555	105 06 355	105 13 355	105 14 355	105 15 355	105 23 033
BSC400-14	W103 09 102M	103 14 103	103 11 240 + 103 12 007	105 03 400	105 05 400	105 06 400	105 13 400	105 14 400	105 15 400	105 23 033
BSC400-34	-	103 14 301	103 11 415 + 103 12 011	105 03 400	105 05 400	105 06 400	105 13 400	105 14 400	105 15 400	105 23 033
BSC450-14	W103 09 102A	103 14 103	103 11 240 + 103 12 040	105 03 450	105 05 450	105 06 450	105 13 450	105 14 450	105 15 450	105 23 033
BSC450-34	-	103 14 301	103 11 415 + 103 12 018	105 03 450	105 05 450	105 06 450	105 13 450	105 14 450	105 15 450	105 23 033
BSC500-14	W103 09 106A	103 14 105	103 11 240 + 103 12 070	105 03 500	105 05 500	105 06 500	105 13 500	105 14 500	105 15 500	105 23 033
BSC500-34*	-	103 14 304	103 11 415 + 103 12 027	105 03 500	105 05 500	105 06 500	105 13 500	105 14 500	105 15 500	105 23 033
BSC560-14	-	-	103 11 240 + 103 12 105	105 03 560	105 05 560	105 06 560	105 13 560	105 14 560	105 15 560	105 23 033
BSC560-34*	-	-	103 11 415 + 103 12 040	105 03 560	105 05 560	105 06 560	105 13 560	105 14 560	105 15 560	105 23 033
BSC630-14	-	-	103 11 240 + 103 12 070	105 03 630	105 05 630	105 06 630	105 13 630	105 14 630	105 15 630	105 23 033
BSC630-34*	-	-	103 11 415 + 103 12 040	105 03 630	105 05 630	105 06 630	105 13 630	105 14 630	105 15 630	105 23 033
BSC450-36*	-	103 14 301	103 11 415 + 103 12 007	105 03 450	105 05 450	105 06 450	105 13 450	105 14 450	105 15 450	105 23 033
BSC500-36*	-	103 14 301	103 11 415 + 103 12 011	105 03 500	105 05 500	105 06 500	105 13 500	105 14 500	105 15 500	105 23 033
BSC560-36*	-	103 14 301	103 11 415 + 103 12 011	105 03 560	105 05 560	105 06 560	105 13 560	105 14 560	105 15 560	105 23 033
BSC630-36*	-	103 14 301	103 11 415 + 103 12 018	105 03 630	105 05 630	105 06 630	105 13 630	105 14 630	105 15 630	105 23 033
BSC710-14	W103 09 106A	103 14 105	103 11 240 + 103 12 070	105 03 710A	105 05 710	105 06 710A	105 13 710A	105 14 710A	105 15 710A	105 23 043
BSC710-36*	-	103 14 301	103 11 415 + 103 12 040	105 03 710A	105 05 710	105 06 710A	105 13 710A	105 14 710A	105 15 710A	105 23 043
BSC 710-36*	-	103 14 304	103 11 415 + 103 12 018	105 03 710A	105 05 710	105 06 710A	105 13 710A	105 14 710A	105 15 710A	105 23 043



AN INVERTER SPEED CONTROL KIT IS AVAILABLE FOR:

BSC 560-34 - 103 20 302 08

BSC 630-34 - 103 20 302 09

NOTE:- When speed control is required a 5-step auto transformer is recommended to ensure low noise levels.

NOTE:- All models are supplied with 2 speed delta/star connection motors, as standard. (Sizes 450 to 630 are 4/6 Pole).

When speed control is required on all other models a 5 step auto transformer speed controller is recommended, to ensure low noise levels.

Guards: Some installations may occur where additional safety parts are needed, to ensure safety in operation. For example, the unit may be fitted at the inlet or outlet end of a ducted ventilation system, thereby exposing the impeller/motor to unguarded access. In this event, the installer must fit a safety guard complying to current regulations. These guards are available as an optional extra.

Vent-Axia

BLACK SABRE SLIM CASE SICKLE FANS SOUND DATA

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

4 POLE

dB	63	125	250	500	1K	2K	4K	8K	dBA @ 3m
BSC315/4	Inlet	77	73	68	63	60	56	46	47
	Outlet	77	72	65	63	60	56	46	47
BSC325/4	Inlet	78	73	67	64	60	58	50	49
	Outlet	78	73	67	64	60	58	50	49
BSC400/4	Inlet	79	76	70	66	64	57	50	52
	Outlet	79	75	70	65	68	57	50	52
BSC450/4	Inlet	79	78	71	68	70	58	54	54
	Outlet	79	78	71	68	70	58	54	54
BSC500/4	Inlet	80	79	76	72	75	68	61	59
	Outlet	80	79	76	72	75	68	61	59
BSC560/4	Inlet	82	81	80	79	79	77	74	65
	Outlet	82	81	80	79	79	77	74	65
BSC630/4	Inlet	83	85	82	83	84	80	79	67
	Outlet	83	85	82	83	84	80	79	67

6 POLE

BSC450/6	Inlet	76	68	64	63	62	55	45	46
	Outlet	76	68	64	63	62	55	45	46
BSC500/6	Inlet	79	70	69	66	66	61	52	48
	Outlet	79	70	69	66	66	61	52	48
BSC560/6	Inlet	80	71	75	73	70	65	56	54
	Outlet	80	71	75	73	70	65	56	54
BSC630/6	Inlet	81	71	80	79	73	67	56	51
	Outlet	81	71	80	79	73	67	56	51
BSC710/6	Inlet	81	72	81	80	76	69	58	50
	Outlet	81	72	81	80	76	69	58	50

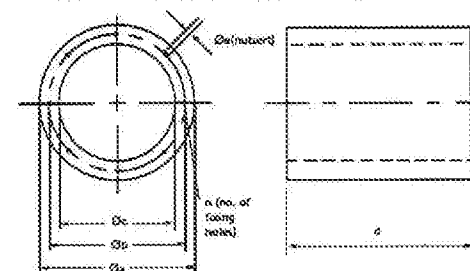
8 POLE

BSC710/8	Inlet	75	70	70	69	68	58	53	50
	Outlet	75	70	70	69	68	58	53	50

Note: The above Sound Power Level Spectra is for B-form Running Fans.

Published dBA figures, are free field sound levels at 3m, with spherical propagation at a reference level of 2 x 10⁻¹² Pa. The sound power level spectra figure, are dB with reference of 10⁻¹² Watts.

To ensure minimum noise levels during speed control, an auto transformer speed controller is recommended.



CASED AXIAL ATTENUATOR

Stock	Ref. No.	Da	Do	Ds	Dp	Dc	Da*	n	kg approx.	Fitted with pod kg approx.	Free area m ² without pod
	105 14 315	415	350	315	475	M8	8	22	32		0.07793
	105 14 355	455	375	355	540	M8	8	30	44		0.09898
	105 14 400	500	400	400	600	M10	8	41	60		0.12366
	105 14 450	550	500	450	675	M10	8	50	75		0.15804
	105 14 500	600	550	500	750	M10	12	59	87		0.19635
	105 14 560	660	620	560	840	M10	12	70	102		0.24520
	105 14 630	730	690	630	940	M10	12	82	120		0.31172
	105 14 710A	814	770	710	1050	M10	15	100	132		0.39587

*Threaded hole to take bolt.

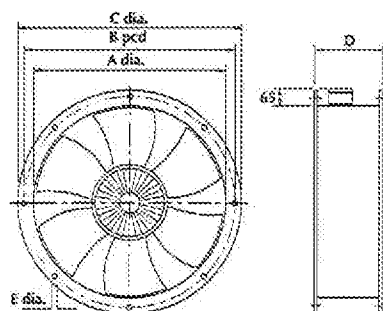
For Insertion Losses see page 49.

BLACK SABRE SLIM CASE SICKLE FANS (BSO)

Vent-Axia

VENT-AXIA **BLACK SABRE SLIM CASE SICKLE FANS** **DIMENSIONS (mm)**

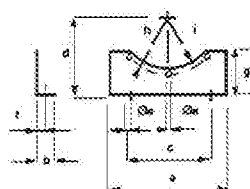
DIMENSIONS (mm)



Stock Ref. No.	ØA	ØB	ØC	D	ØE	No. Holes	Weight kg
BSC 315	315	355	386	170	10	8	16.5
BSC 355	355	395	426	170	10	8	13
BSC 400	400	450	497	170	12	8	15.5
BSC 450	450	500	537	180	12	8	20.5
BSC 500	500	560	595	180	12	12	32
BSC 560	560	620	655	240	12	12	31
BSC 630	630	690	725	240	12	12	38
BSC 710/4	710	770	806	350	12	16	85
BSC 710/6	710	770	806	240	12	16	69

Please note *Dimension D is 240mm on 6-pole & 350mm on 4-pole version.

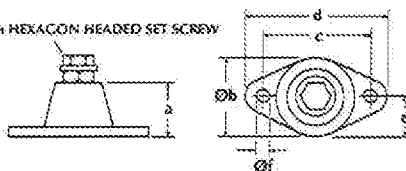
ACCESSORY DIMENSIONS (mm)



MOUNTING FEET

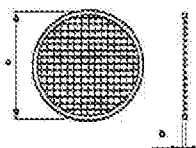
Stock Ref. No.	a	b	c	d	Øa	f	g	h	i
105 03 315	215	24	224	224	30	14	115	177.5	187
105 03 355	303	24	258	258	30	14	126	187.5	187
105 03 400	345	24	280	280	32	14	135	225	213
105 03 450	384	24	315	315	32	14	159	230	238
105 03 500	425	24	319	319	32	14	135	280	258
105 03 560	575	24	355	355	32	14	136	310	288
105 03 630	520	24	400	400	32	14	175	345	323
105 03 710A	710	40	610	435	32	18	240	395	365

HEXAGON HEADED SET SCREW



ANTI-VIBRATION MOUNTS

Stock Ref. No.	a	Øb	c	d	e	Øf	g	h	Max load kg
105 23 032	27	37	54	57	18.5	7	M8	23	
105 23 055	27	37	54	57	18.5	7	M8	26	
105 23 133	35	57	75	95	28.5	10.5	M12	91	

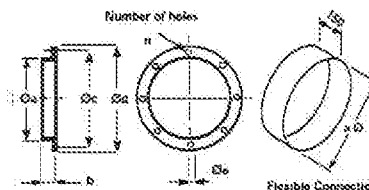


INLET WIRE GUARD

'K' factor loss 0.25

Stock Ref. No.	Øa	b
105 05 315	380	3
105 05 355	470	3
105 05 400	475	3
105 05 450	525	3
105 05 500	530	3
105 05 560	655	3
105 05 630	725	3
105 05 710	784	3

Number of holes



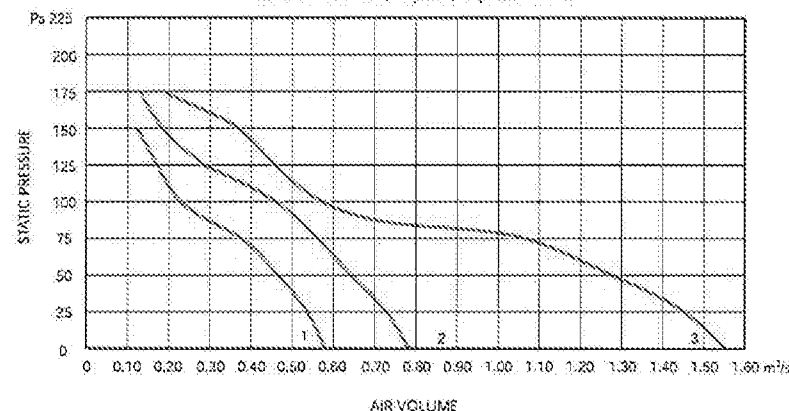
COUPLING FLANGE

Stock Ref. No.	Øa	b	Øc	Ød	Øe	n
105 06 315	366	30	355	315	10	8
105 06 355	426	45	395	355	10	8
105 06 400	497	45	450	400	12	8
105 06 450	537	60	500	450	12	8
105 06 500	595	60	560	500	12	8
105 06 560	655	75	620	560	12	12
105 06 630	725	75	690	630	12	12
105 06 710A	803	40	770	710	12	16

Vent-Axia

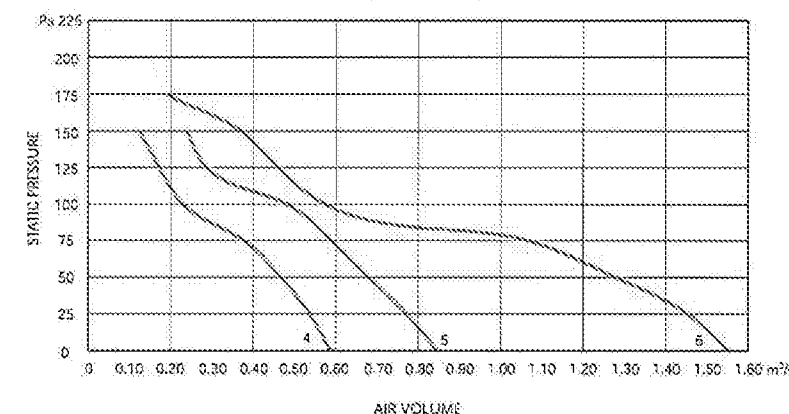
BLACK SABRE SLIM CASE SICKLE FANS **PERFORMANCE CURVES**

315 to 400 dia, 4 pole, 1 phase units



Size	315	355	400
	1	2	3

315 to 400 dia, 4 pole, 3 phase units

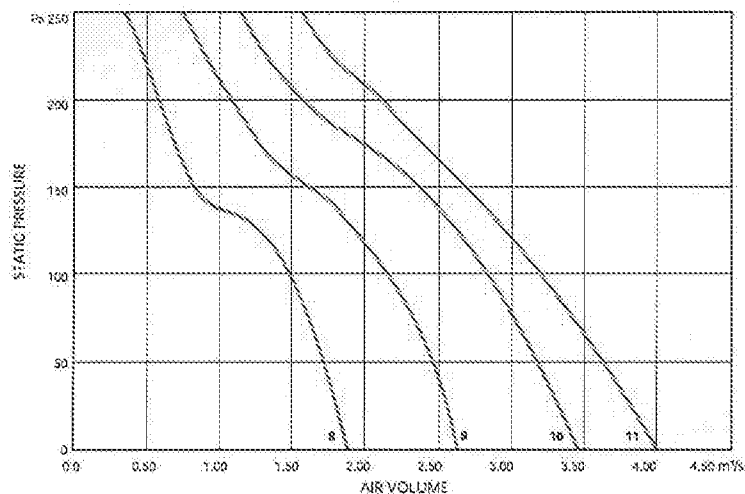


Size	315	355	400
	4	5	5

Vent-Axia

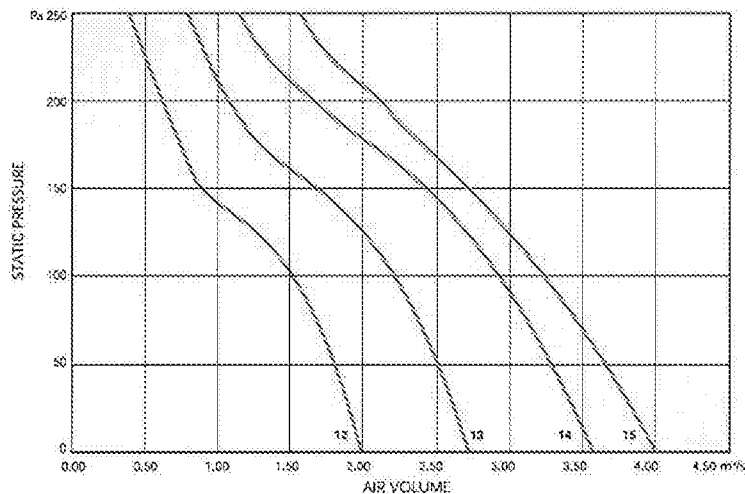
VENT-AXIA **BLACK SABRE SLIM CASE SICKLE FANS** **PERFORMANCE CURVES**

450 to 630 dia, 4 pole, 1 phase units



Size	450/1ph	500/1ph	560/1ph	630/1ph
	8	9	10	11

450 to 630 dia, 4 pole, 3 phase units

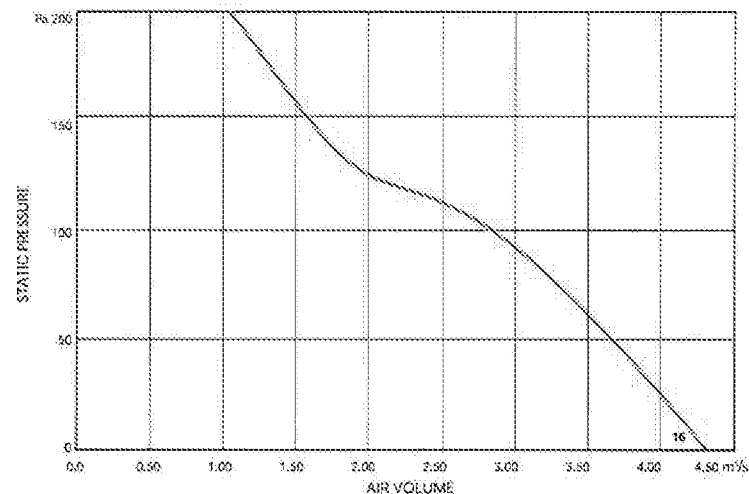


Size	450/3ph	500/3ph	560/3ph	630/3ph
	12	13	14	15

Vent-Axia

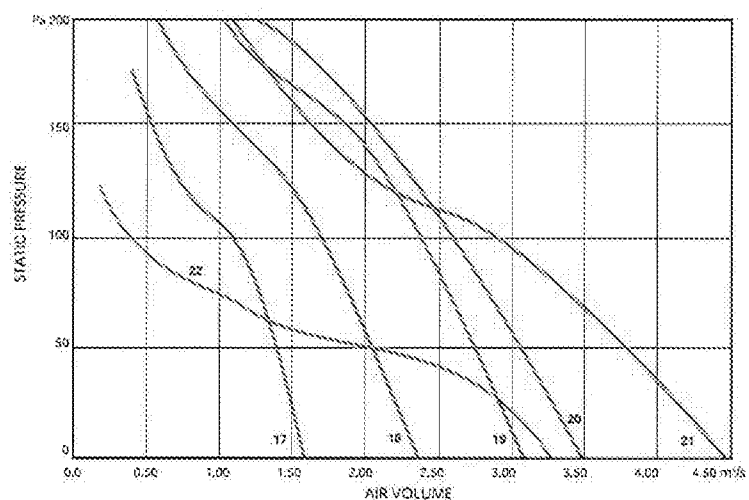
BLACK SABRE SLIM CASE SICKLE FANS **PERFORMANCE CURVES**

710 dia, 6 pole, 1 phase units



Size	710/1ph
	16

450 to 710 dia, 6 pole 3 phase & 710 dia 8 pole 3 phase units



Size	450/3ph	500/3ph	560/3ph	630/3ph	710/6 Pole/3ph	710/8 Pole/3ph
	17	18	19	20	21	22

Vent-Axia