

# Sentinel D-Box Twin Fan

- Duct Sizes 100 – 500mm
- Performance - Airflow 0.01 to 1.3m<sup>3</sup>/s, Pressure up to 650Pa
- Sentinel demand ventilation fan controller with lockable isolator
- Latest energy saving EC/DC motors
- Aluzinc construction suitable for internal or external mounting
- Manufactured controlled to BS EN ISO 9001
- Performance tested to BS848 Part 1 & 2



The Sentinel twin in-line duct fans are as supplied from Vent-Axia Ltd. Manufactured from Aluzinc, Sentinel fan units are internally treated with an 'O' class rated, BS476 part 6 & 7, acoustic foam which offers the benefits of high sound absorption, good thermal insulation properties in addition to self extinguishing properties and resistant to ignition.

Weatherproof external units incorporate an additional controller shroud.

The housing is designed to be as compact as possible for concealed false ceiling applications and Sentinel casings are specially designed to allow the unit to be mounted via its unique mounting bracket, ensuring a quick and easy solution to installation.

The unit is suitable for ceiling or floor mounting, non-return dampers can be easily rotated on site to suit.

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## Impellers

All Sentinel units feature a low energy, Class 1, EC/DC external rotor motor and backward curved impeller assembly specifically chosen for performance and non-overloading characteristics. The assembly is dynamically balanced to DIN ISO 1940 Grade 6.3, duct size 500mm rated IP54, all other sizes, IP44 according to BS EN 60529. Ball bearings are greased for life. Insulation is Class 'B' (from -25°C to +60°C).

All models incorporate internal electronic overload protection and soft start function.

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## Electrical

Every Sentinel unit is fitted with a purpose designed common PCB controller incorporating a 16-character backlit alphanumeric x 2 line display with 4 button membrane keypad for fan status & commissioning set up. The enclosure is fitted with a 4-pole 10A isolator that is suitable for fitting a locking device to prevent accidental operation.

The twin unit controller features automatic 6hr duty/share and run/standby in the event of motor failure.

Motors are single phase 230V +/- 10% / 50/60Hz / 1ph (size 100-400mm) or 400V +/- 10% / 50/60Hz / 3ph (size 500mm), (4 wire systems only).

24V DC power is provided from the controller for powering the matched range of Sentinel switches and sensors.

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## Performance/Sound

Extensively tested to BS848 parts 1 & 2. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at reference level of  $2 \times 10^{-5}$  Pa. The inlet/outlet sound power level spectra figures are dB with a reference of  $10^{-12}$  Watts.

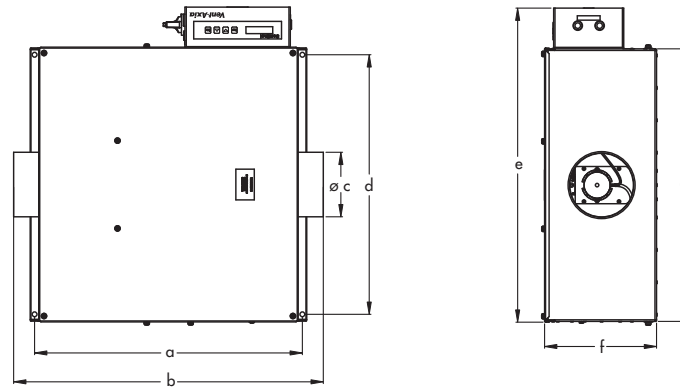
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## Accessories

For duct accessories see Ducting and Fitting Section.

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## Fan Dimensions (mm)



Hierarchy Model	Constant Pressure Model	Duct Diameter mm				Weight Kg			
		a	b	c	d				
SENT100T	SENT100T/CP	610	705	100	591	717	256	622	26
SENT125T	SENT125T/CP	610	705	125	591	717	256	622	26
SENT150T	SENT150T/CP	610	705	150	591	717	256	622	26
SENT200T	SENT200T/CP	801	896	200	703	830	343	734	39
SENT250T	SENT250T/CP	925	1020	250	798	925	354	829	48
SENT315T	SENT315T/CP	1255	1353	315	1145	1272	536	1176	88
SENT400T	SENT400T/CP	1255	1353	400	1145	1272	536	1176	90
SENT500T	SENT500T/CP	1492	1590	500	1533	1661	675	1564	175

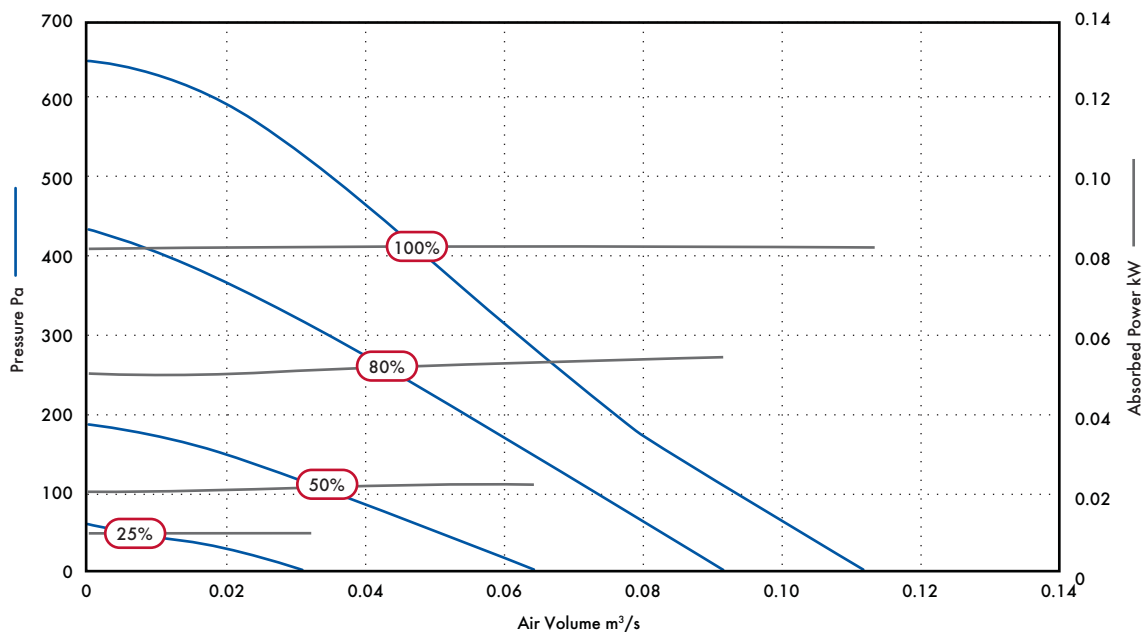
## Accessories

Hierarchy Model	Model	Anti-Vibration	Duct air heater Stock Ref.	Filter cassette Stock Ref.	Bag filter cassette Stock Ref.	* Duct
		mounts Stock Ref.				attenuator 600mm Stock Ref.
SENT100T	SENT100T/CP	68MP033G 68MP033G	10531100T1	10532100A	10533100	10535100
SENT125T	SENT125T/CP	68MP033G	10531125T1	10532125A	10533125	10535125
SENT150T	SENT150T/CP	68MP033G	10531150T1	10532150A	10533150	10535150
SENT200T	SENT200T/CP	68MP033G	10531200T1	10532200A	10533200	10535200
SENT250T	SENT250T/CP	68MP033G	10531250T1	10532250A	10533250	10535250
SENT315T	SENT315T/CP	68MP033G	10531315T1	10532315A	10533315	10535315
SENT400T	SENT400T/CP	68MP033G	10531400T3	10532400A	10533400	10535400
SENT500T	SENT500T/CP	68MP133G	10531500T3	10532500A	10533500	10536500*

\*For alternative attenuator lengths, refer to Accessories and Controllers section

# Performance Guide

## Sentinel 100 Twin Fan



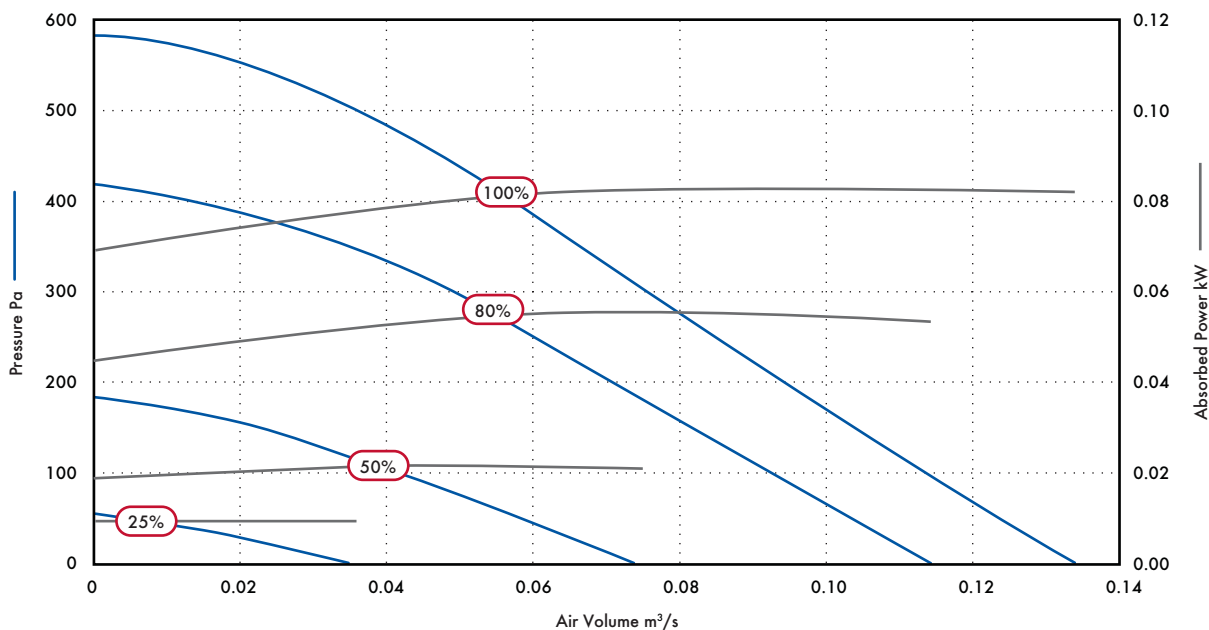
Speed	Motor Phase	Airflow, m³/s @ Pa								F.LC Amps
		0	50	100	200	300	400	500		
25	1	m³/s	0.03	0.01						
		SFP	0.30	0.90						0.08
		kW	0.01	0.01						
50	1	m³/s	0.06	0.05	0.04					
		SFP	0.38	0.44	0.53					0.16
		kW	0.02	0.02	0.02					
80	1	m³/s	0.09	0.08	0.07	0.05	0.03	0.01		
		SFP	0.61	0.69	0.79	1.08	1.70	4.90		0.50
		kW	0.06	0.06	0.06	0.05	0.05	0.05		
100	1	m³/s	0.11	0.10	0.09	0.08	0.06	0.05	0.04	
		SFP	0.75	0.83	0.92	1.04	1.38	1.66	2.08	0.69
		kW	0.08	0.08	0.08	0.08	0.08	0.08	0.08	

### Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	45	39	35	27	25	23	23	30	17
	Inlet	45	38	41	29	25	21	22	29	18
	Outlet	43	39	34	28	24	22	23	28	17
50	Breakout	47	55	47	35	28	24	24	29	23
	Inlet	48	50	43	37	32	28	22	28	22
	Outlet	47	52	46	42	38	35	26	29	25
80	Breakout	55	64	58	45	38	35	32	32	32
	Inlet	54	58	54	51	44	40	31	30	32
	Outlet	51	61	59	56	50	49	40	34	37
100	Breakout	65	69	61	50	42	40	37	36	36
	Inlet	55	63	56	53	49	45	38	34	35
	Outlet	53	65	59	58	54	55	48	39	40

# Performance Guide

## Sentinel 125 Twin Fan



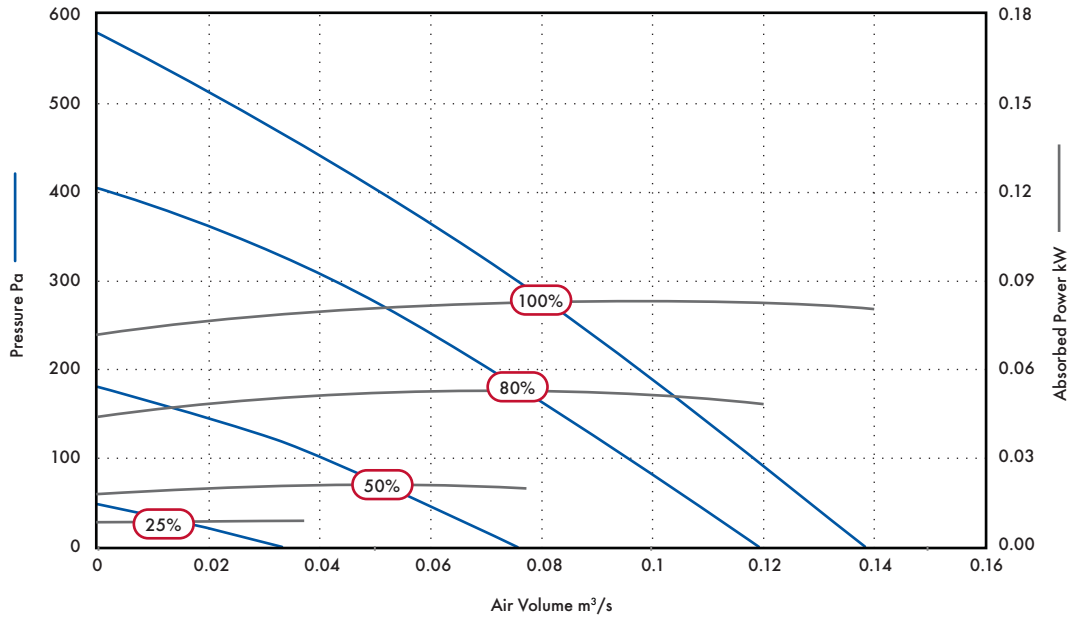
Speed	Motor Phase	Airflow, m³/s @ Pa								F.L.C Amps
		0	50	100	200	300	400	500		
25	1	m³/s	0.04							
		SFP	0.25							0.09
		kW	0.01							
50	1	m³/s	0.07	0.06	0.04					
		SFP	0.31	0.37	0.55					0.18
		kW	0.02	0.02	0.02					
80	1	m³/s	0.12	0.10	0.09	0.07	0.05	0.02		
		SFP	0.45	0.54	0.61	0.79	1.06	2.45		0.51
		kW	0.05	0.05	0.06	0.06	0.05	0.05		
100	1	m³/s	0.13	0.12	0.11	0.09	0.08	0.06	0.03	
		SFP	0.63	0.68	0.75	0.92	1.04	1.35	2.60	0.72
		kW	0.08	0.08	0.08	0.08	0.08	0.08	0.08	

### Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	48	39	35	28	25	23	24	30	18
	Inlet	46	41	34	27	24	21	22	29	17
	Outlet	44	41	36	29	25	21	22	28	17
50	Breakout	49	56	48	35	33	25	25	30	25
	Inlet	49	56	50	40	34	31	23	29	26
	Outlet	49	60	56	45	40	37	27	29	30
80	Breakout	56	66	59	45	35	31	31	32	33
	Inlet	48	60	56	51	44	40	31	30	33
	Outlet	53	66	61	56	52	51	45	34	39
100	Breakout	59	72	64	52	41	36	35	36	39
	Inlet	52	66	66	56	51	47	38	39	39
	Outlet	54	69	64	61	57	57	52	43	44

# Performance Guide

Sentinel 150 Twin Fan



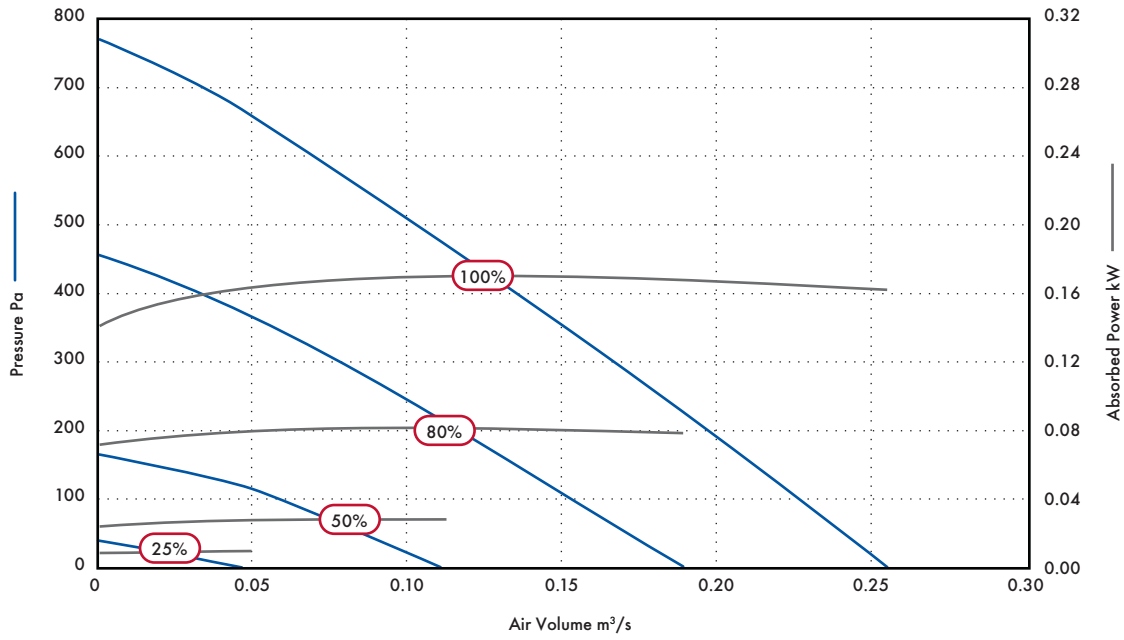
Speed	Motor Phase	Airflow, m³/s @ Pa								F.L.C Amps
		0	50	100	200	300	400	500		
25	1	m³/s	0.04							
		SFP	0.23							0.08
		kW	0.01							
50	1	m³/s	0.08	0.06	0.04					
		SFP	0.25	0.35	0.53					0.17
		kW	0.02	0.02	0.02					
80	1	m³/s	0.12	0.11	0.09	0.07	0.04			
		SFP	0.40	0.45	0.58	0.76	1.30			0.48
		kW	0.05	0.05	0.05	0.05	0.05			
100	1	m³/s	0.14	0.13	0.12	0.10	0.08	0.05	0.02	
		SFP	0.58	0.63	0.69	0.83	1.03	1.60	3.85	0.71
		kW	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

## Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	46	40	35	27	26	23	23	29	17
	Inlet	45	39	36	28	27	24	22	29	18
	Outlet	47	43	36	30	26	23	22	28	21
50	Breakout	48	52	49	37	31	26	23	29	24
	Inlet	47	55	48	41	33	30	23	29	25
	Outlet	49	59	56	44	42	40	32	29	30
80	Breakout	55	58	58	49	45	41	38	32	33
	Inlet	54	62	64	52	45	41	33	32	36
	Outlet	55	67	66	57	53	53	47	38	41
100	Breakout	60	63	62	59	51	47	42	41	39
	Inlet	58	66	66	59	50	46	39	36	40
	Outlet	60	71	67	64	61	61	55	49	47

# Performance Guide

Sentinel 200 Twin Fan



Airflow, m³/s @ Pa

Speed	Motor Phase		0	50	100	200	300	400	500	600	700	F.L.C Amps	
25	1	m³/s	0.05										
		SFP	0.20										0.09
		kW	0.01										
50	1	m³/s	0.11	0.08	0.06								
		SFP	0.25	0.35	0.47								0.2
		kW	0.03	0.03	0.03								
80	1	m³/s	0.19	0.17	0.15	0.11	0.07	0.04					
		SFP	0.42	0.47	0.54	0.74	1.16	2.00					1.07
		kW	0.08	0.08	0.08	0.08	0.08	0.08					
100	1	m³/s	0.25	0.24	0.23	0.20	0.17	0.13	0.10	0.07	0.04		
		SFP	0.64	0.68	0.72	0.83	0.98	1.29	1.69	2.39	4.03		1.4
		kW	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	

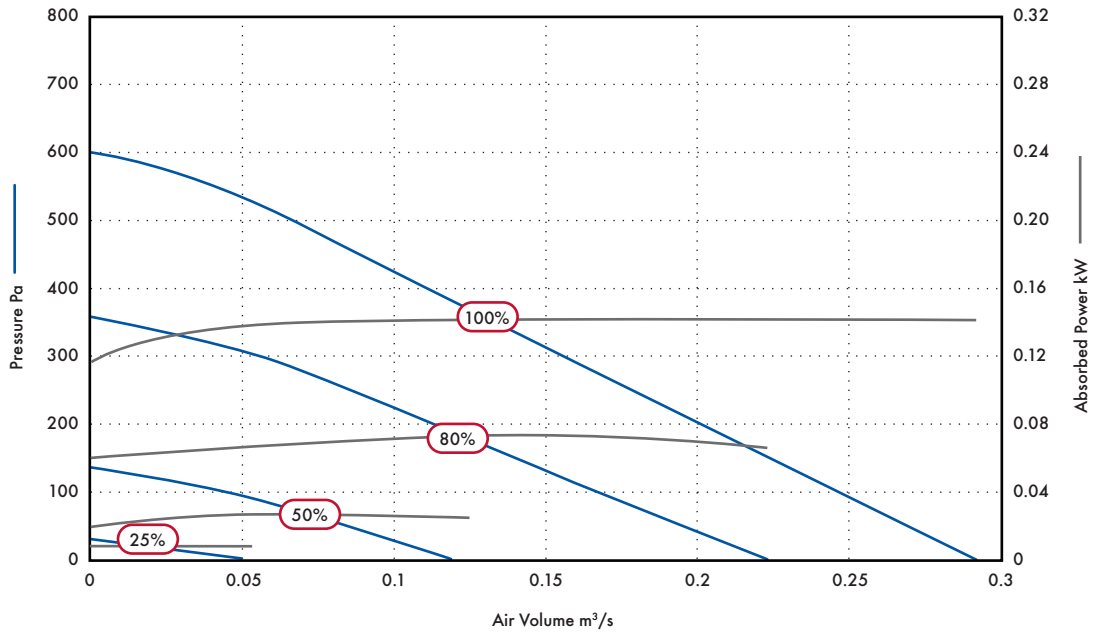
## Sound Data

Octave Band Frequency SWL

Speed	Test Mode	63	125	250	500	1k	2k	4k	8k	dB(A) @ 3m
25	Breakout	47	45	37	40	37	32	25	31	23
	Inlet	44	48	36	36	32	25	22	29	21
	Outlet	47	49	37	37	33	36	23	30	23
50	Breakout	52	54	54	43	38	41	26	32	29
	Inlet	56	59	56	49	41	34	34	31	31
	Outlet	52	61	54	53	47	46	41	33	34
80	Breakout	62	64	60	58	45	43	32	35	37
	Inlet	55	64	59	64	54	47	42	38	42
	Outlet	62	70	61	69	61	58	55	51	48
100	Breakout	67	69	64	63	51	45	38	40	42
	Inlet	58	70	63	68	62	55	51	49	47
	Outlet	68	75	65	80	67	67	64	60	58

# Performance Guide

## Sentinel 250 Twin Fan



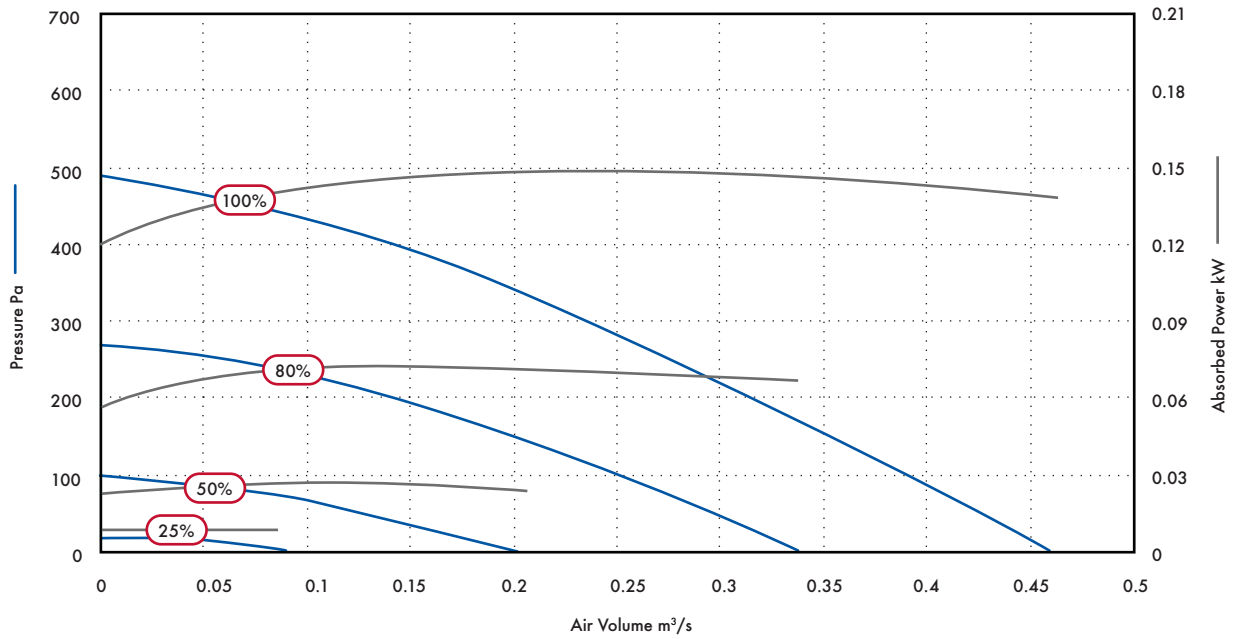
Speed	Motor Phase	Airflow, m³/s @ Pa									F.L.C Amps	
		0	50	100	200	300	400	500	600			
25	1	m³/s	0.05									0.09
		SFP	0.18									
		kW	0.01									
50	1	m³/s	0.12	0.09	0.05							0.2
		SFP	0.21	0.30	0.54							
		kW	0.03	0.03	0.03							
80	1	m³/s	0.23	0.20	0.17	0.11	0.06					0.92
		SFP	0.29	0.35	0.43	0.66	1.10					
		kW	0.07	0.07	0.07	0.07	0.07					
100	1	m³/s	0.30	0.27	0.25	0.20	0.15	0.11	0.07	0.01		1.4
		SFP	0.47	0.53	0.57	0.69	0.91	1.26	2.01	12.10		
		kW	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.12	

## Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	45	41	34	28	26	24	25	31	18
	Inlet	47	41	35	33	27	23	24	31	19
	Outlet	45	42	36	34	32	25	23	30	20
50	Breakout	49	51	50	39	31	28	25	31	25
	Inlet	50	53	51	48	41	33	29	31	29
	Outlet	51	55	49	54	45	43	33	31	33
80	Breakout	56	59	58	51	42	36	30	32	33
	Inlet	59	62	58	62	52	43	42	36	40
	Outlet	58	63	59	67	60	58	53	46	46
100	Breakout	61	64	61	60	49	42	36	35	39
	Inlet	64	68	61	69	60	50	50	47	47
	Outlet	63	69	62	78	66	67	61	57	56

Performance Guide

Sentinel 315 Twin Fan



Speed	Motor Phase	Airflow, m³/s @ Pa							
		0	50	100	200	300	400	F.L.C Amps	
25	1	m³/s	0.09						
		SFP	0.11						0.09
		kW	0.01						
50	1	m³/s	0.21	0.13	0.01				
		SFP	0.12	0.22	2.40				0.2
		kW	0.03	0.03	0.02				
80	1	m³/s	0.34	0.29	0.25	0.14			
		SFP	0.20	0.23	0.28	0.51			0.6
		kW	0.07	0.07	0.07	0.07			
100	1	m³/s	0.46	0.43	0.39	0.32	0.24	0.14	
		SFP	0.30	0.33	0.36	0.46	0.62	1.04	1.4
		kW	0.14	0.14	0.14	0.15	0.15	0.15	

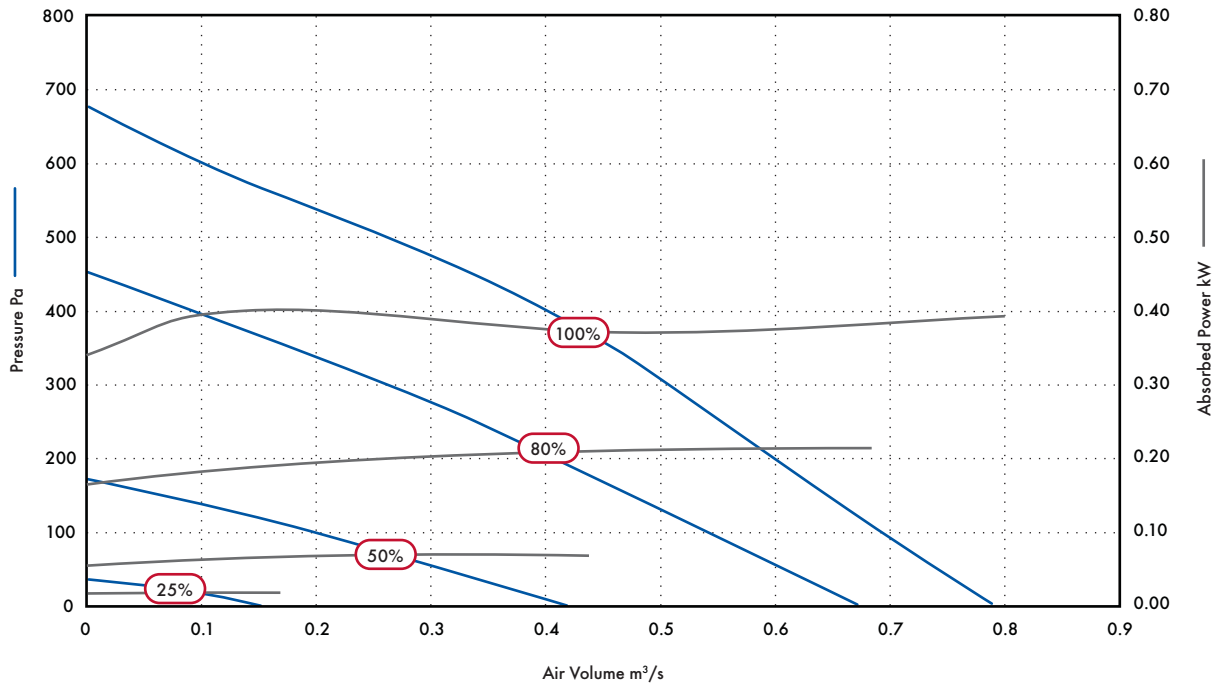
Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	48	42	37	30	27	25	24	30	19
	Inlet	44	42	34	28	23	22	22	29	17
	Outlet	47	40	35	32	27	24	23	29	18
50	Breakout	57	50	44	42	30	26	25	30	24
	Inlet	53	53	42	40	34	28	24	30	24
	Outlet	54	56	47	58	42	38	29	30	35
80	Breakout	61	66	55	44	37	33	27	30	32
	Inlet	58	72	56	52	45	39	35	32	37
	Outlet	61	79	61	60	55	53	44	40	45
100	Breakout	66	72	71	51	44	38	36	32	43
	Inlet	63	74	65	59	52	46	43	40	42
	Outlet	66	76	68	69	63	61	53	45	49



Performance Guide

Sentinel 400 Twin Fan



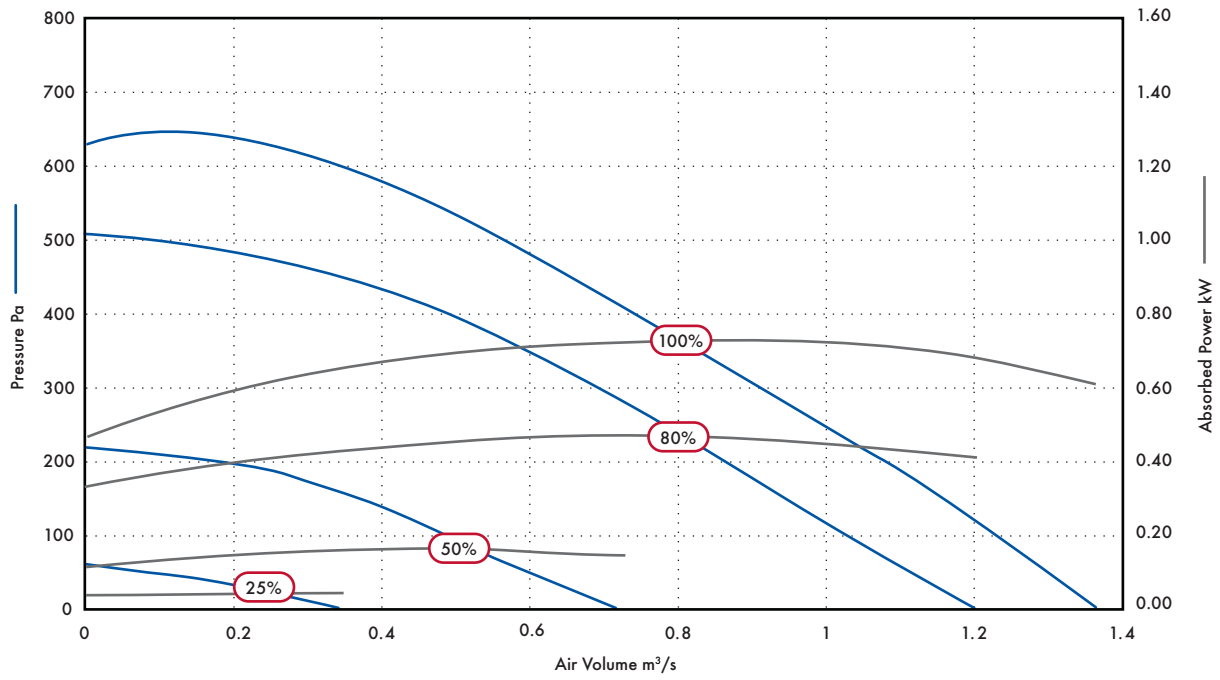
Curve Ref.	Motor Phase	Airflow, m³/s @ Pa									
		0	50	100	200	300	400	500	600	F.L.C Amps	
25	1	m³/s	0.16								
		SFP	0.13								0.19
		kW	0.02								
50	1	m³/s	0.44	0.34	0.21						
		SFP	0.16	0.21	0.34						0.77
		kW	0.07	0.07	0.07						
80	1	m³/s	0.69	0.60	0.54	0.43	0.27	0.10			
		SFP	0.31	0.35	0.39	0.50	0.73	1.81			2.02
		kW	0.21	0.21	0.21	0.22	0.20	0.18			
100	1	m³/s	0.80	0.73	0.68	0.59	0.50	0.40	0.27	0.10	
		SFP	0.49	0.53	0.56	0.63	0.73	0.93	1.46	3.93	2.86
		kW	0.39	0.39	0.38	0.37	0.36	0.37	0.39	0.39	

Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	56	41	41	31	27	25	24	31	20
	Inlet	46	44	41	35	27	22	23	29	20
	Outlet	48	45	41	38	32	24	24	29	21
50	Breakout	65	62	55	44	38	31	26	30	30
	Inlet	60	66	55	50	46	38	30	31	33
	Outlet	64	67	59	57	53	48	41	35	39
80	Breakout	74	75	68	56	49	43	38	40	42
	Inlet	69	80	67	62	57	50	45	41	46
	Outlet	72	81	72	71	66	62	55	48	52
100	Breakout	78	77	75	61	55	48	46	41	48
	Inlet	73	82	73	66	62	53	50	45	50
	Outlet	75	85	78	77	73	69	63	55	58

Performance Guide

Sentinel 500 Twin Fan



Speed	Motor Phase	Airflow, m³/s @ Pa									
		0	50	100	200	300	400	500	600	F.L.C Amps	
25	3	m³/s	0.36	0.10							0.32
		SFP	0.12	0.40							
		kW	0.04	0.04							
50	3	m³/s	0.73	0.61	0.49	0.20					0.5
		SFP	0.20	0.25	0.33	0.75					
		kW	0.14	0.15	0.16	0.15					
80	3	m³/s	1.20	1.11	1.02	0.86	0.69	0.50	0.08		0.9
		SFP	0.34	0.39	0.44	0.54	0.69	0.92	4.40		
		kW	0.41	0.43	0.44	0.46	0.48	0.46	0.36		
100	3	m³/s	1.37	1.30	1.24	1.09	0.92	0.75	0.57	0.35	1.2
		SFP	0.45	0.49	0.54	0.66	0.79	0.97	1.25	1.88	
		kW	0.61	0.64	0.67	0.71	0.73	0.73	0.71	0.66	

Sound Data

Speed	Test Mode	Octave Band Frequency SWL								dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
25	Breakout	59	45	45	34	29	24	25	30	22
	Inlet	49	45	43	38	33	23	24	31	22
	Outlet	48	42	45	42	37	27	25	31	24
50	Breakout	66	64	54	48	39	32	26	32	32
	Inlet	60	63	58	54	45	40	35	40	35
	Outlet	66	60	64	60	54	51	39	41	41
80	Breakout	72	75	66	59	50	43	37	40	42
	Inlet	67	75	70	65	57	51	47	50	46
	Outlet	75	74	76	73	66	61	53	51	53
100	Breakout	74	79	69	62	54	46	40	41	46
	Inlet	69	80	74	70	61	55	51	51	50
	Outlet	78	78	82	78	70	65	60	54	58