

POWERDUCT



Square Cased
In-Line Fans

Powerduct SPD – Square Cased Features & Benefits



The Powerduct SPD range of duct mounted square cased in-line centrifugal fans is a robust unit designed around high performance, low noise characteristics, and suitable for extract or supply for a wide variety of applications.

- Fan units are light in weight and can be mounted at any angle.
- Backward curved centrifugal impeller.
- 6 standard sizes from 400mm to 700mm.
- Air volume flow rates of up to 3.07 m³/sec.
- Static pressures of up to 800 Pa.
- Suitable for operating temperatures of up to 50° C.
- Motors are external rotor motor design.
- Sealed for life ball bearings to operate at any angle.
- Motors protected to IP44 with Class F insulation.

Features & Benefits

Material strength – Powerduct SPD fans have a robust casing design for added strength and durability. Casings are manufactured in pre-galvanised sheet steel which is suitably stiffened, with all motor supports powder coated after manufacture.

Quality Impellers – Aerodynamically designed backward curved impellers which are constructed from aluminum or galvanised sheet steel and dynamically balanced to quality class G6.3 to maximize efficiency.

Stock Availability – The range of SPD fans are available ex-stock.

Inspection access – All units are supplied with an inspection hole which means the correct rotation of the impeller can be checked for ease of commissioning and general maintenance checks.

Mounting - Units can be fitted in-line or end of ductwork, either horizontally or vertically.

Safety – All motors are fitted with integral 'Thermal overload protection' preventing the motor from overheating.

Flexibility – Designed for systems with fluctuations in resistance as the impeller is able to withstand lower and higher airflow velocities.

Fully speed controllable – Both single and three phase SPD units can be adjusted on site to match duty requirements.

Efficiency – The Powerduct SPD has a non-overloading power characteristic and a high peak efficiency.

Square ducting - Casings incorporate metric flange connections to suit industry standard duct sizes which means they can be installed quicker and easier.

Ease of installation – All motors are pre-wired to an integral IP55 terminal box on the outside of the casing so they are ready for customer installation.

Tested to the very latest standards – SPD units are tested to ISO 5801:1997 (airside performance) and to BS 848 Pt 2:1985 (sound performance) at Elta Fans own test facility, meaning accurate, up-to-date information on performance and noise data that can be relied upon.

Quality assurance – All units are designed and manufactured with procedures as defined in BS EN ISO 9001: 2000.

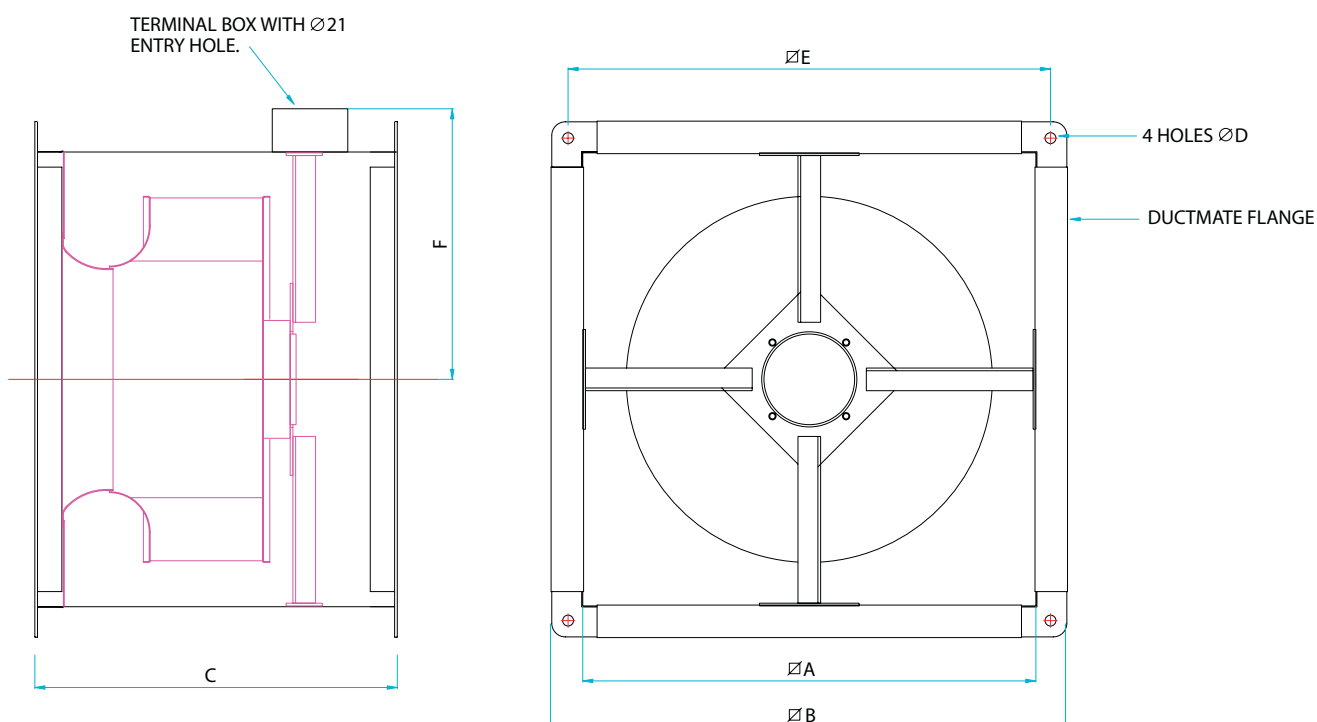
Warranty – Each SPD has a 12 month warranty.

Full accessory range – Speed controllers, mounting brackets, anti-vibration mounts, flexible connectors and silencers.

Applications

Where higher pressure developments are required such as in kitchen canopies, restaurants, lift motor rooms, general HVAC installations.

Powerduct SPD - Square Cased Dimensional Data



CENTRIFUGAL

Product Code	A	B	C	D	E	F	G	Weight kg
SPD400	400	450	300	9	425	265	25	18
SPD450	450	500	400	9	475	290	25	22
SPD500	500	550	400	9	525	315	25	28
SPD550	550	620	500	11	585	340	35	34
SPD650	650	720	500	11	685	390	35	50
SPD700	700	770	500	11	735	415	35	52

Accessories



Powerduct SPD - Square Cased Performance & Electrical Data



SINGLE Phase - 220V-240V / 50Hz

Product Code	Speed r/min	Airflow m³/s @ Static Pressure Pa.										Motor Electrical Data		A.V. Mounts	Speed Control		Sound Level dBA @ 3m	
		0	50	100	150	200	250	300	400	500	600	FLC Amps	Input kW		Electr- onic	Trans- former		
SPD400/6-2	900	0.27	0.21	0.10									0.54	0.07	S1G	EL31	TC12	45
SPD400/4-2	1380	0.42	0.38	0.33	0.28	0.21							0.66	0.15	S1G	EL31	TC12	49
SPD450/6-2	900	0.43	0.35	0.24									0.32	0.07	S1G	EL31	TC12	47
SPD450/4-2	1380	0.75	0.71	0.67	0.62	0.56	0.49	0.39					1.08	0.24	S1G	EL31	TC12	54
SPD500/6-2	900	0.72	0.65	0.56	0.43	0.18	0.30						0.88	0.20	S1G	EL31	TC12	48
SPD500/4-2	1380	1.10	1.05	1.00	0.94	0.88	0.80	0.72	0.49				2.20	0.52	S1G	EL31	TC14	58
SPD550/6-2	900	1.05	0.96	0.86	0.74	0.58	0.30	0.49					1.85	0.36	S2B	EL31	TC12	49
SPD550/4-2	1380	1.60	1.51	1.45	1.38	1.32	1.25	1.18	1.00	0.74			3.60	0.76	S2B	EL61	TC18	61
SPD650/6-2	900	1.45	1.37	1.27	1.12	0.95	0.77	0.49					2.50	0.53	S2B	EL31	TC14	52
SPD650/4-2	1380	2.20	2.15	2.08	2.01	1.93	1.84	1.74	1.53	1.30	1.02		5.70	1.35	S2B	EL61	TC18	64
SPD700/6-2	900	2.10	1.96	1.81	1.65	1.49	1.31	1.10					4.10	0.84	S2B	EL61	TC18	54

Sound levels are average spherical free field values at 50% peak pressure for comparative purposes only.

THREE Phase - 380-415V / 50Hz

Product Code	Speed r/min	Airflow m³/s @ Static Pressure Pa.											Motor Electrical Data		Speed Control	A.V. Mounts	Sound Level dBA @ 3m
		0	50	100	150	200	250	300	400	500	600	800	FLC Amps	Input kW			
SPD400/6-3	900	0.27	0.21	0.10									0.15	0.09	TC33	S1G	42
SPD400/4-3	1380	0.42	0.38	0.33	0.28	0.21							0.37	0.18	TC33	S1G	49
SPD450/6-3	900	0.43	0.35	0.24									0.39	0.24	TC33	S1G	45
SPD450/4-3	1380	0.75	0.71	0.67	0.62	0.56	0.49	0.39					0.72	0.32	TC33	S1G	54
SPD500/6-3	900	0.72	0.65	0.56	0.43	0.18	0.30						0.73	0.23	TC33	S1G	47
SPD500/4-3	1380	1.10	1.05	1.00	0.94	0.88	0.80	0.72	0.49				0.90	0.50	TC33	S1G	58
SPD550/6-3	900	1.05	0.96	0.86	0.74	0.58	0.30	0.49					0.90	0.44	TC33	S2B	49
SPD550/4-3	1380	1.60	1.51	1.45	1.38	1.32	1.25	1.18	1.00	0.74			1.47	0.77	TC33	S2B	61
SPD650/6-3	900	1.45	1.37	1.27	1.12	0.95	0.77	0.49					1.20	0.65	TC33	S2B	52
SPD650/4-3	1380	2.20	2.15	2.08	2.01	1.93	1.84	1.74	1.53	1.30	1.02		2.60	1.3	TC35	S2B	64
SPD700/6-3	900	2.10	1.96	1.81	1.65	1.49	1.31	1.10					1.60	1.0	TC33	S2B	54
SPD700/4-3	1380	3.07	3.03	2.97	2.90	2.81	2.71	2.60	2.36	2.14	1.91	0.85	3.60	1.5	TC35	S2B	68

Sound levels are average spherical free field values at 50% peak pressure for comparative purposes only.

Silencer Data - SINGLE Phase

Product Code	dBA Attenuation	ΔP (Pa)
SPD400/6-2	-22	1
SPD400/4-2	-21	3
SPD450/6-2	-21	2
SPD450/4-2	-17	6
SPD500/6-2	-18	2
SPD500/4-2	-18	7
SPD550/6-2	-15	4
SPD550/4-2	-15	10
SPD650/6-2	-15	4
SPD650/4-2	-14	10
SPD700/6-2	-16	7

Silencer Data - THREE Phase

Product Code	dBA Attenuation	ΔP (Pa)
SPD400/6-3	-22	1
SPD400/4-3	-21	3
SPD450/6-3	-21	2
SPD450/4-3	-17	6
SPD500/6-3	-18	2
SPD500/4-3	-18	7
SPD550/6-3	-15	4
SPD550/4-3	-15	10
SPD650/6-3	-15	4
SPD650/4-3	-14	10
SPD700/6-3	-16	7
SPD700/4-3	-15	14

Powerduct SPD - Square Cased

Sound Data



SPD - SINGLE Phase

Product Code	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dBA @ 3m
SPD400/4-2	80	74	68	68	63	61	56	49	49
SPD450/4-2	78	81	70	71	70	68	62	55	54
SPD500/4-2	84	84	75	75	74	71	68	64	58
SPD550/4-2	89	85	78	78	77	73	72	71	61
SPD650/4-2	91	89	82	81	81	75	74	73	64
SPD400/6-2	76	72	63	63	61	56	52	48	45
SPD450/6-2	78	74	65	65	63	58	54	50	47
SPD500/6-2	76	73	66	66	64	61	58	50	48
SPD550/6-2	74	72	67	66	65	63	61	50	49
SPD650/6-2	79	77	70	69	68	65	63	54	52
SPD700/6-2	84	81	73	71	70	66	64	57	54

SPD - THREE Phase

Product Code	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dBA @ 3m
SPD400/4-3	80	74	68	68	63	61	56	49	49
SPD450/4-3	78	81	70	71	70	68	62	55	54
SPD500/4-3	84	84	75	75	74	71	68	64	58
SPD550/4-3	89	85	78	78	77	73	72	71	61
SPD650/4-3	91	89	82	81	81	75	74	73	64
SPD700/4-3	94	94	86	85	86	77	77	76	68
SPD400/6-3	76	72	63	63	61	56	52	48	42
SPD450/6-3	78	74	65	65	63	58	54	50	45
SPD500/6-3	76	73	66	66	64	61	58	50	47
SPD550/6-3	74	72	67	66	65	63	61	50	49
SPD650/6-3	79	77	70	69	68	65	63	54	52
SPD700/6-3	84	81	73	71	70	66	64	57	54

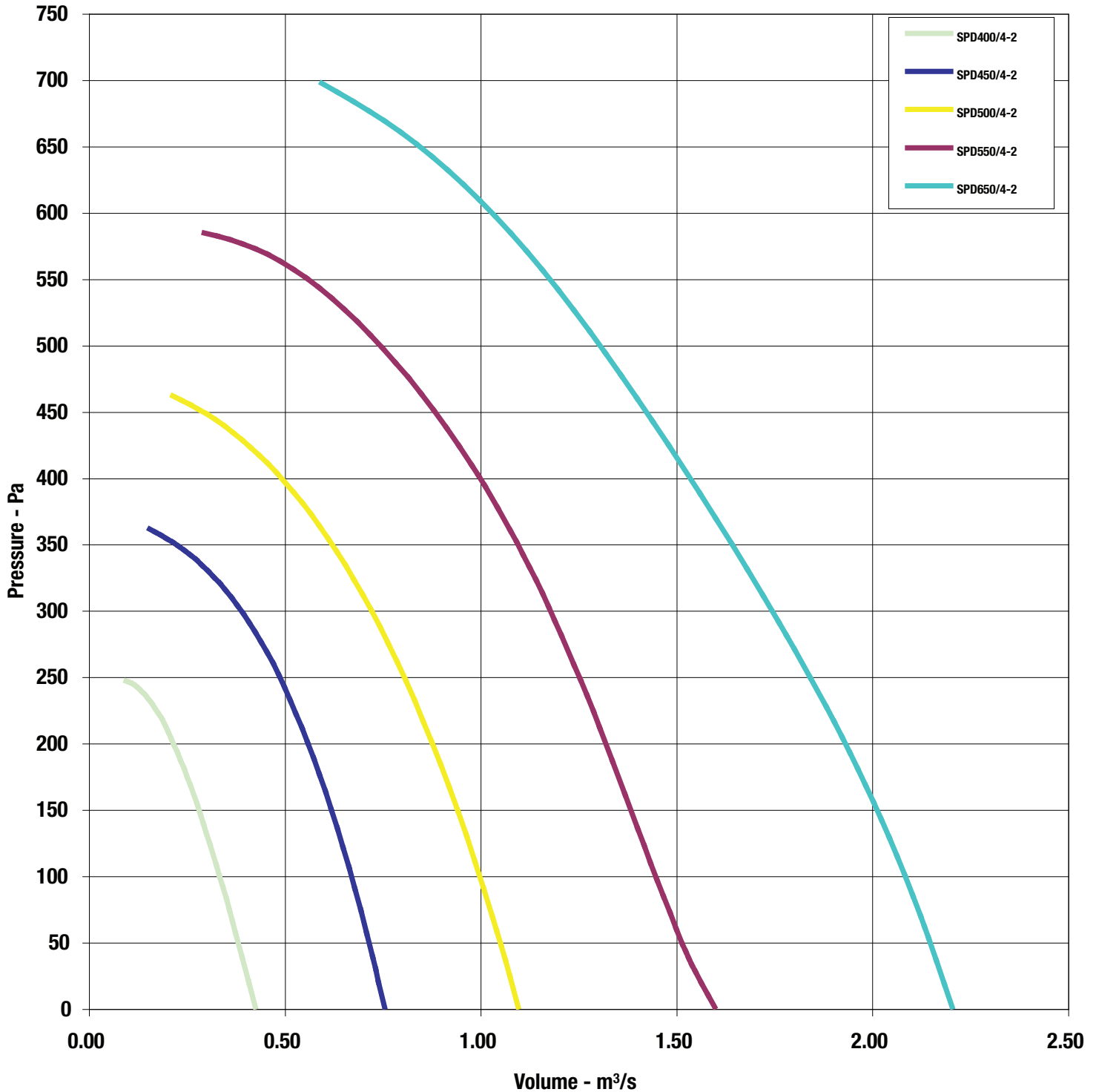
Acoustic data: tests and preparation of data have been carried out in accordance with BS848 Part 2(1985). The In-duct Sound Power Level Spectra are in dB re 1pW. The overall A-Scale sound pressure level is at a distance of three metres with spherical propagation. It is expressed in dB re 20uPa and is presented for comparative purposes only as in practice the semi-reverberant nature of any installation and directivity effects can give a different level.

Powerduct SPD - Square Cased

Performance Curves



4 Pole 1Ph Range

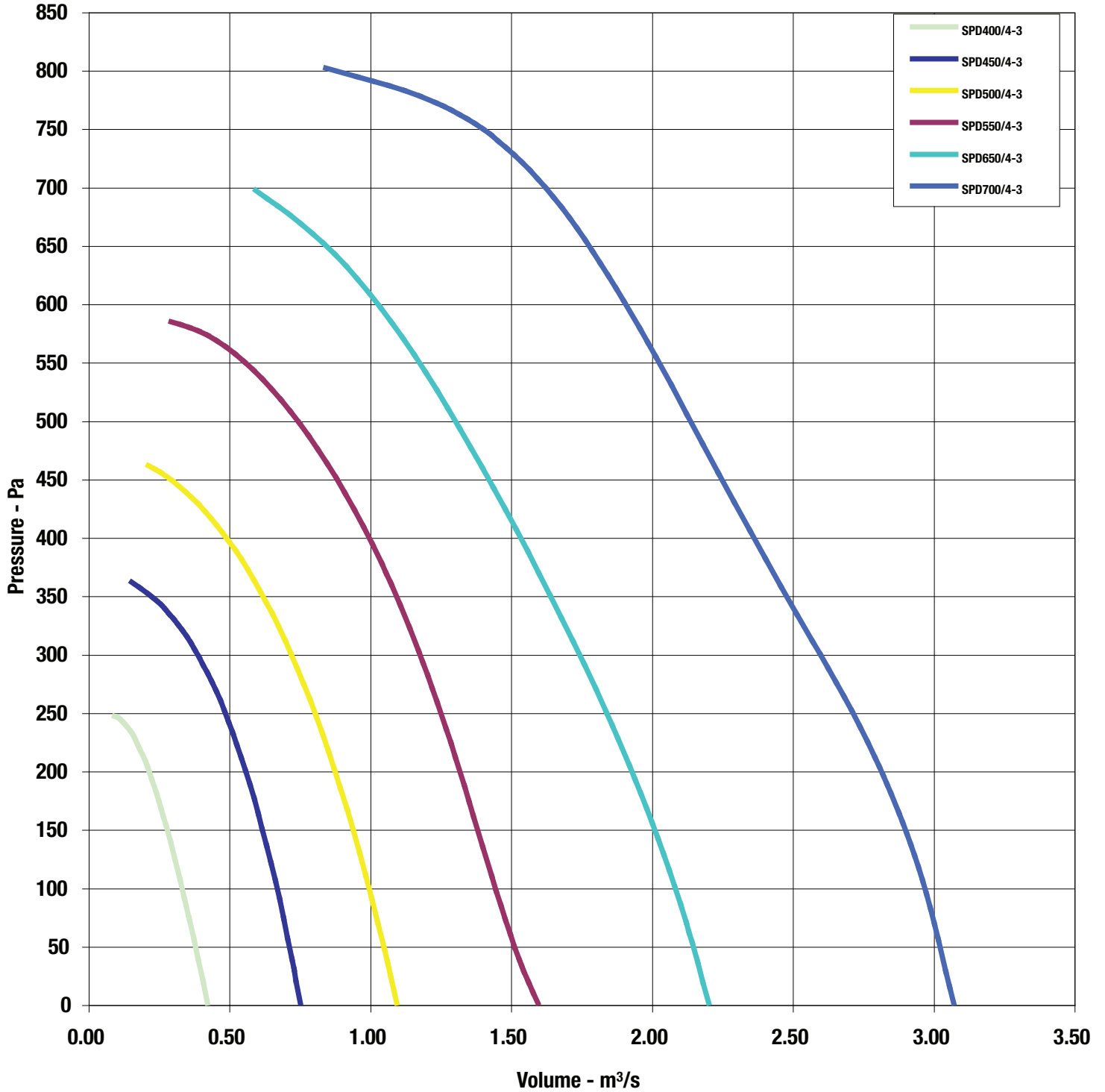


Powerduct SPD - Square Cased

Performance Curves



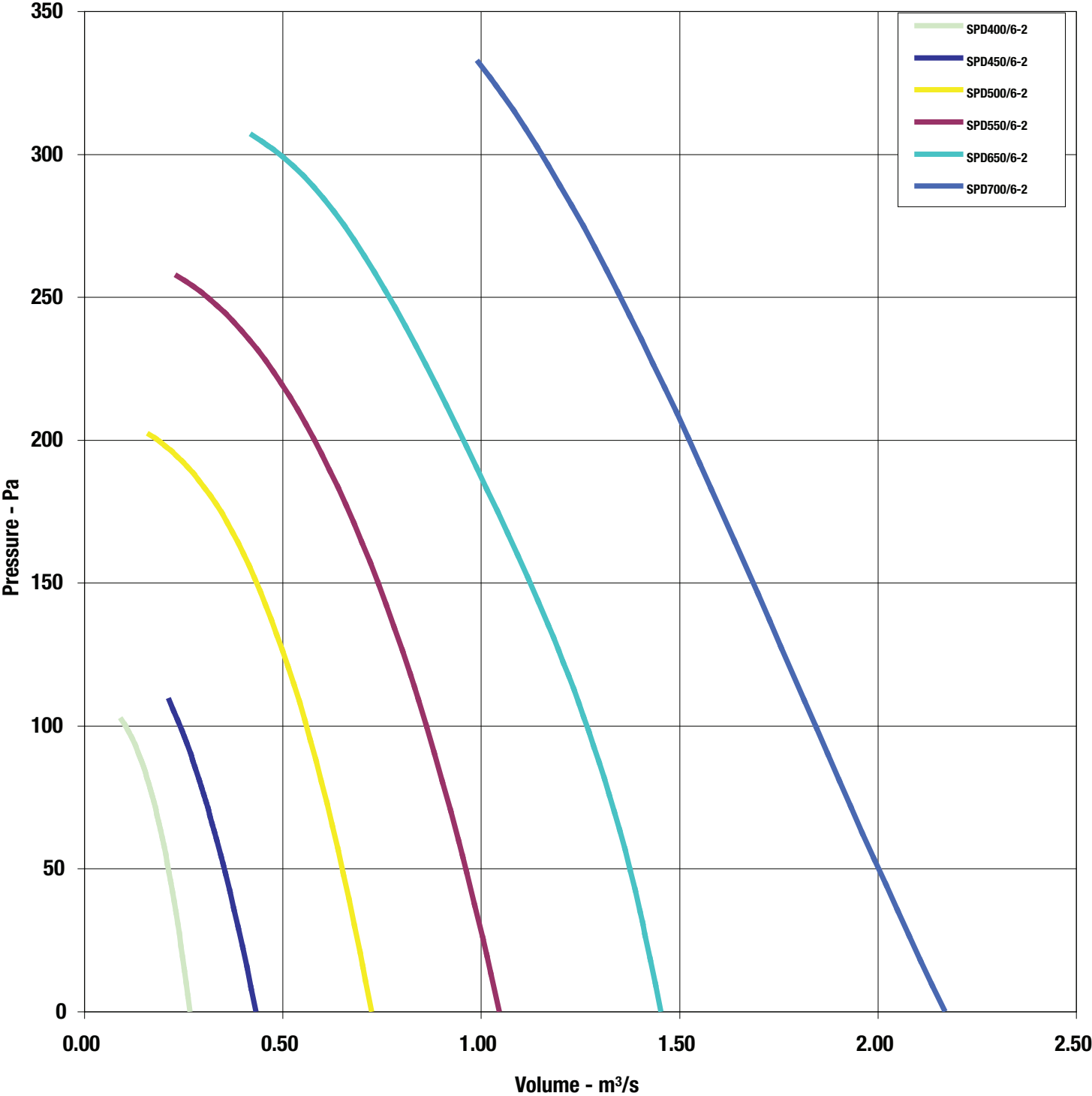
4 Pole 3Ph Range



Powerduct SPD - Square Cased Performance Curves



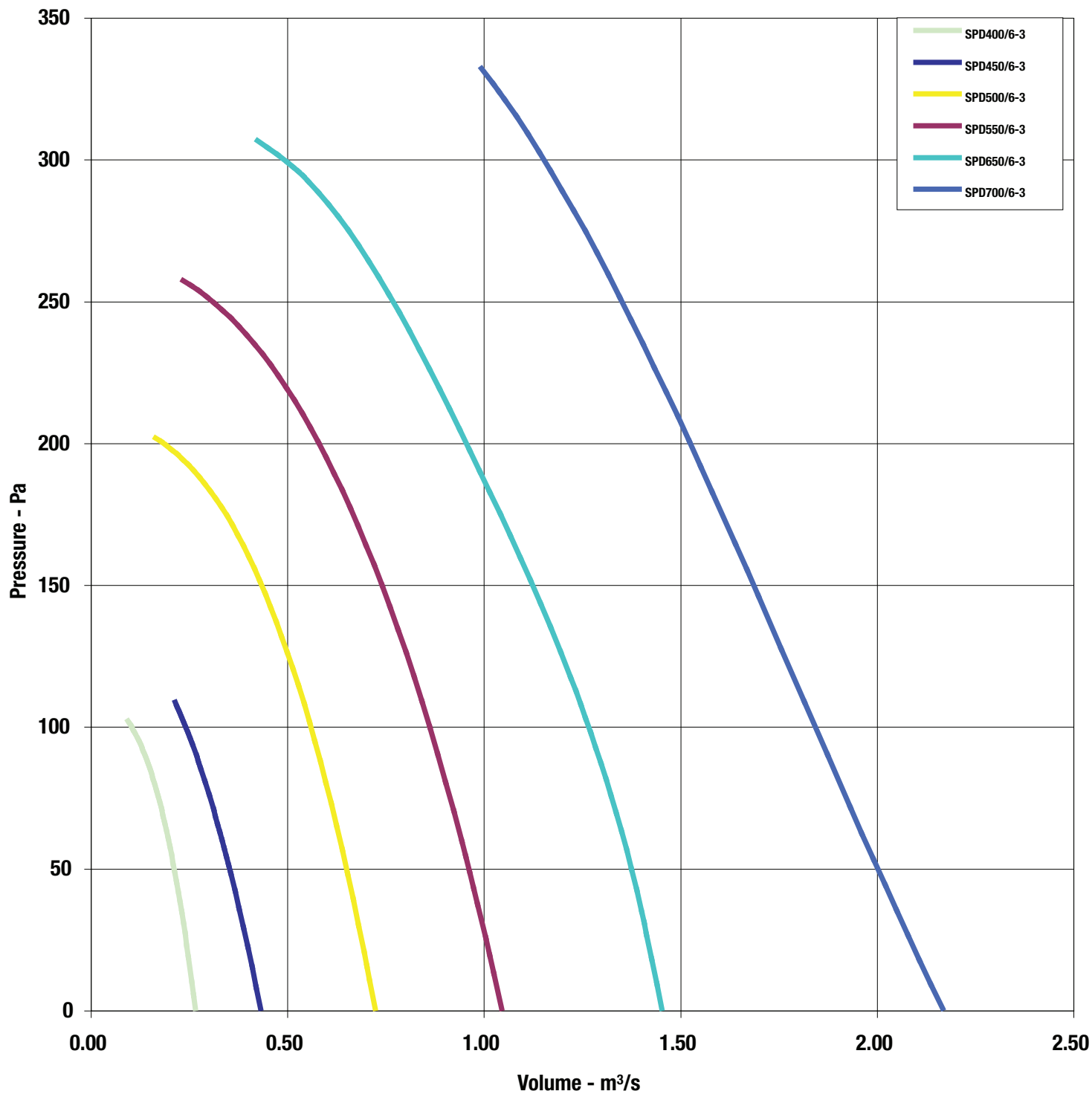
6 Pole 1Ph Range



Powerduct SPD - Square Cased Performance Curves



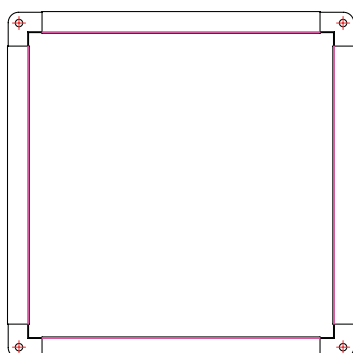
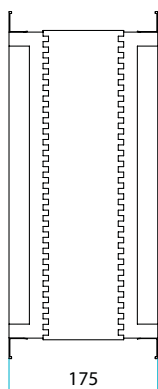
6 Pole 3Ph Range



Powerduct SPD - Square Cased Accessories



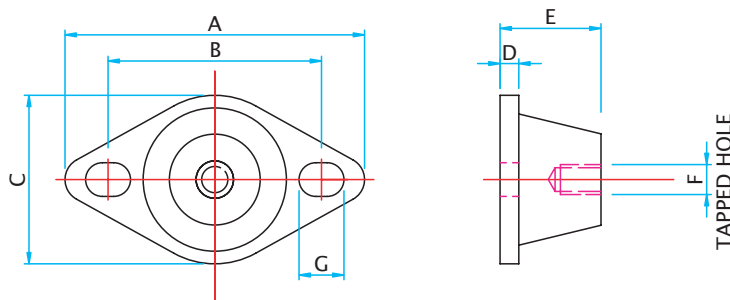
Flexible Connectors



Product Code	Fan Size	Weight kg
063-0400-MFB	400	2.6
063-0450-MFB	450	2.9
063-0500-MFB	500	3.2
063-0550-MFB	550	4.6
063-0650-MFB	650	5.4
063-0700-MFB	700	5.8

- Fix directly onto spigot
- Provides flexible connection between fan and accessory or duct
- PVC coated polyester with galvanised sheet steel

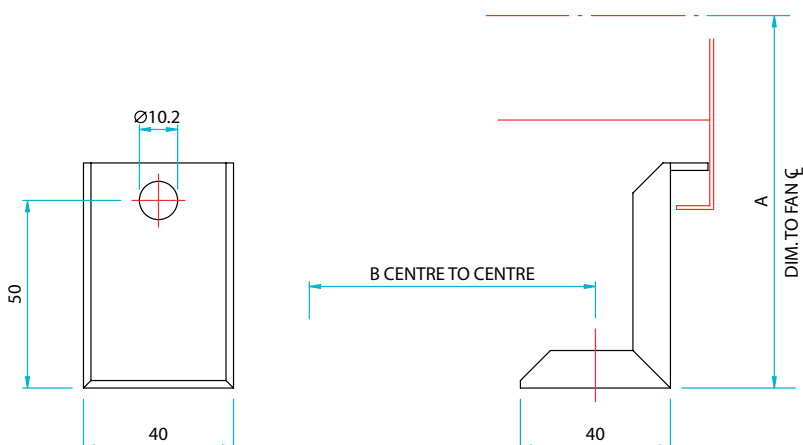
Anti-Vibration Mounts



Product Code	A	B	C	D	E	F	G	Weight kg
062-S1G	64	50	43	5.5	20	M6	∅ 7	0.040
062-S2B	80	57	45	5	32	M8	12 x 9	0.100

- Fit directly to mounting feet
- Rubber with steel insert
- Supplied as set of 4, complete with fixings

Mounting Feet



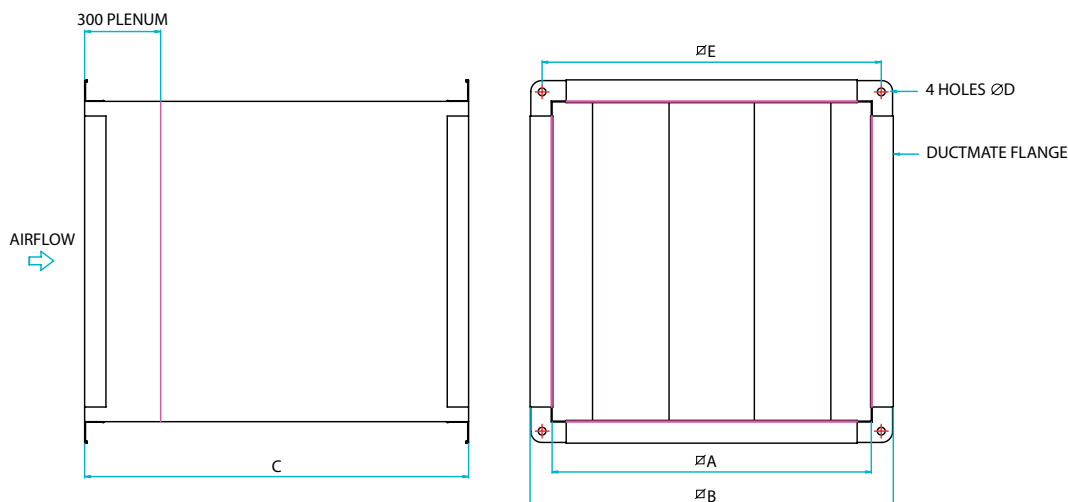
- For free standing mount or for use with anti-vibration mounts.
- Fix directly to flange
- Supplied in sets of 4 (less fixings)
- Folded galvanised steel

Product Code	Fan Size	A	B	Weight kg (Per Set)
060-MFB-01	400	263	424	0.22
060-MFB-01	450	288	414	0.22
060-MFB-01	500	313	444	0.22
060-MFB-01	550	343	494	0.22
060-MFB-01	650	393	544	0.22
060-MFB-01	700	418	594	0.22

Powerduct SPD - Square Cased Accessories



Silencers



Product Code	A	B	C	D	E	Ductmate Flange	Weight kg
068-0400-MFB	400	450	1200	9	425	25	31
068-0450-MFB	450	500	1200	9	475	25	38
068-0500-MFB	500	550	1200	9	525	25	42
068-0550-MFB	550	620	1200	11	585	35	49
068-0650-MFB	650	720	1500	11	685	35	74
068-0700-MFB	700	770	1500	11	735	35	81

N.B. For explanation of silencer data see below

- Baffle type silencers
- Galvanised steel casing with perforated steel lining and baffles
- Infill is glass tissue faced high density mineral wool

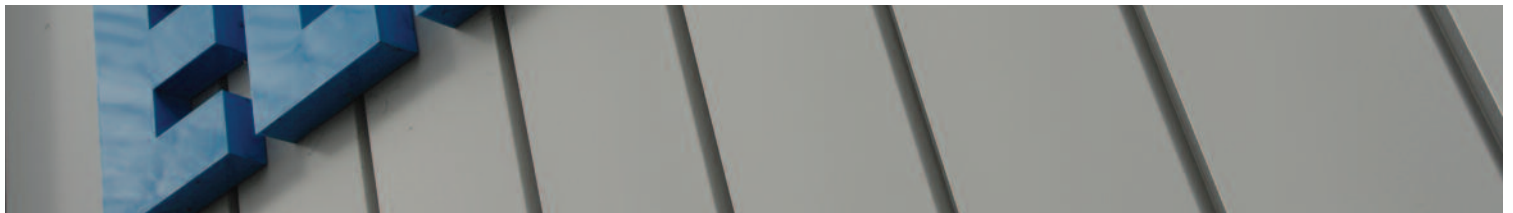
Silencer data (square & rectangular fans)

SELECT rectangular silencers are matched to the specific fan and are available in various lengths.

The inclusion of baffles in these silencers means that there is additional pressure drop in the system which needs to be overcome by the fan.

The silencer data tables in this catalogue provide information required:

- For sound, deducting the appropriate 'dBA Attenuation' figure from the 'dBA @ 3m' figure in the relevant fan performance table gives a combined 'dBA @ 3m' figure for the fan and silencer combination.
- For pressure, the 'ΔP' figure should be added to the pre-attenuation pressure requirement before selecting the appropriate fan. This may well result in a need to select a different fan! Why not use the facility in the 'Fans by Elta' interactive CD Rom to do the work for you?



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