

JM Aerofoil Multi-Stage 50 Hz



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FläktWoods



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JM AEROFOIL - MULTI-STAGE INTRODUCTION

Air movement technology is a world of specialised knowledge and one in which Woods Air Movement Limited are not just the specialists but the acknowledged leaders. Woods extensive knowledge of design and applications extends back over 90 years of experience as one of the world's largest manufacturers of fans and air moving equipment.

Based in Colchester, in the U.K., Woods have extensive laboratories that constantly develop new concepts and product ranges, enabling the company to maintain its market leadership. In addition Woods have three sales centres in the U.K. together with subsidiary companies in Italy, Germany, Finland, France, Singapore and the U.S.A. plus, a network of fully trained local staff in 70 different countries with intimate knowledge of local needs.

In fact Woods products are marketed and installed in over 100 countries, with applications ranging from the world's largest engineering projects to the smallest poultry houses.

Whatever the product size or cost it is Woods policy to provide the highest quality at competitive prices, all backed by dedicated staff, fully trained to provide customer satisfaction.

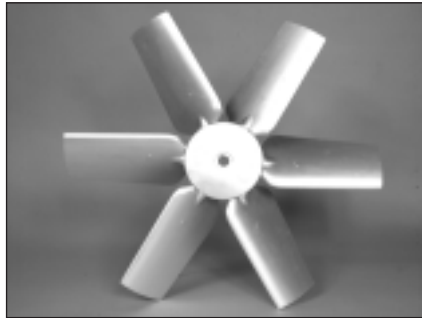
Woods Air Movement Limited is a BS EN ISO 9001:94 registered company.

In line with the Company's strict adherence to the highest quality assurance standards, regular quality audits occur ensuring that the Woods JM Aerofoil consistently meet the catalogue specifications, now independently endorsed by the Air Movement and Control Association International (AMCA).



All Aluminium Precision Die-Cast Impeller

A unique high efficiency aerofoil section blade within a purposely smoothed hub and clamp-plate for adjustable pitch angle flexibility. The Woods impellers are all precision die-cast to offer thin aerofoil sections for low generation of noise levels. Cast aluminium components are X-ray quality assured using Real Time Radiography inspection prior to assembly. This feature can provide evidence of casting quality against product liability legislation if specified.



Fixings

All fixings are protected with an organically based zinc coating to provide excellent corrosion resistance.



“T” Slot/Pad Mounted Fan Motors

All Woods JM range of fans incorporate an electrical power drive specifically designed to optimise fan performance, and minimise the obstruction to airflow.

Totally enclosed, pad mounted design to designation IP55, Class F insulation as standard. Directly coupled to the fan impeller to minimise drive losses. Overheat protection is included on single phase machines and available on others.



Arms

Mounting arms are specifically designed to offer minimal resistance to airflow. These arms are carefully spaced away from the impeller to minimise noise generation.

The arms also improve the cooling of the motor, hence increasing motor performance and life. All arms are hot dipped galvanised after manufacture for maximum resistance to corrosion.



Testing

Performance data has been obtained in accordance with the internationally recognised standard ISO5801:1997 installation category D (AMCA approved) for aerodynamic performance and BS848 Part 2(1985) for acoustic performance.



Casings

Available in either a long cased form complete with an externally mounted pre-wired electrical terminal box, or short cased for duct or plate installation. Casings are spun from sheet steel



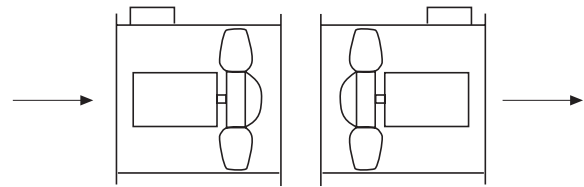
with integral pre-drilled flanges, fully welded seams and hot-dipped galvanised after manufacture for excellent durability.

MULTI-STAGING

The fan performance charts and motor frame size schedules are shown for two stage JM Aerofoil fans. This data can be used in conjunction with publication JM/SS.

Contra-rotating two stage fans are unique in that they offer 2.5-3 times the pressure development of a single stage fan. The two stages are assembled in series with opposite handed impellers rotating in opposed directions. From this arrangement, additional contra-rotating stages can be added, with successively higher pressure development capabilities.

All two stage JM Aerofoil fans are supplied in a Form A/B configuration to maximise the pressure development available:-



Form A/B

For specification data and a guide to fan selection please refer to publication JM/SS.

POWER FRAME SIZE SCHEDULES

The interaction of the opposed impellers of the multi-stage JM Aerofoil varies with pressure loading as well as with impeller angle. The combination of impeller angles have been selected for each fan size to optimise the performance and efficiency from mid to peak pressure.

The table below summarises the angle combinations for each fan size.

2nd Stage Blade Pitch Angle (°)	1st Stage Blade Pitch Angle (°)											
	Fan/Hub Diameter (cm)											
	31/16	35/16	40/16	45/16	45/20	50/20	56/20	63/25	71/25	80/25	90/25	100/31
8	8	8	9	10	8	9	9	9	9	10	10	10
10	11	11	11	12	11	12	12	12	12	12	12	13
12	13	13	14	15	14	14	14	14	14	14	15	15
14	16	16	16	17	16	17	17	17	17	17	17	18
16	19	19	19	20	19	20	20	19	20	20	20	21
18	21	21	22	22	22	22	23	22	22	22	23	23
20	24	24	24	25	24	25	25	24	24	24	25	26
22	27	27	27	27	27	28	28	27	27	27	28	29
24	29	29	29	30	29	30	30	30	30	30	30	31
26	32	32	32	32	32	32	33	32	32	32	33	34
28	35	35	35	35	35	36	36	35	35	35	36	37
30	37	37	37	37	37	38	38	37	37	37	38	40
32	40	40	40	40	40	41	40	40	40	40	40	43

The (absorbed) power curves shown on the performance charts indicate the combined mechanical power absorbed by the two stage fan unit. The individual fan stage powers vary in the proportion of the total absorbed power depending on the load on the fan. The power of an individual fan stage may approximately be taken to be half of the total power shown on each chart.

The motors in the frame size schedule have been selected for the maximum of the individual fan stage power requirements.

Motor Frame Size Schedule

400 V / 50 Hz / 3 ϕ

Code	Speed rev/min	Max. Pitch Angle (°)	Motor	Motor Rating (kW)	Full Load Current (A)	Starting Current d.o.l.(A)	Efficiency %	Power Factor cos ϕ
31JM2/16/4/5...	1420	40/32	BT4	0.13	0.5	1.8	58	0.7
31JM2/16/2/5...	2840	16/14	BT5	0.35	0.9	3.6	66	0.85
		27/22	BT9	0.58	1.4	6	71	0.85
		40/32	CT5	0.95	2	9.5	75	0.9
35JM2/16/4/5...	1420	32/26	BT4	0.13	0.5	1.8	58	0.7
		40/32	BT5	0.2	0.7	2.4	62	0.7
35JM2/16/2/5...	2840	13/12	BT9	0.58	1.4	6	71	0.85
		24/20	CT5	0.95	2	9.5	75	0.9
		40/32	CT9	1.7	3.5	20	78	0.9
40JM2/16/4/5...	1420	19/16	BT4	0.13	0.5	1.8	58	0.7
		29/24	BT5	0.2	0.7	2.4	62	0.7
		40/32	BT9	0.3	0.9	4.6	65	0.75
40JM2/16/2/5...	2840	14/12	CT5	0.95	2	9.5	75	0.9
		27/22	CT9	1.7	3.5	20	78	0.9
45JM2/16/4/5...	1420	20/16	BT5	0.2	0.7	2.4	62	0.7
		27/22	BT9	0.3	0.9	4.6	65	0.75
		32/26	BT9	0.39	1.1	4.6	67	0.75
		40/32	CT5	0.58	1.7	6.5	67	0.74
45JM2/20/2/6...	2910	14/12	CT9	1.7	3.5	20	78	0.9
		29/24	F2225	3.8	7.1	44	84	0.92
		40/32	F2229	6.2	11	90	86	0.92
50JM2/20/4/6...	1420	14/12	BT9	0.3	0.9	4.6	65	0.75
		20/16	BT9	0.39	1.1	4.6	67	0.75
		28/22	CT5	0.58	1.7	6.5	67	0.74
		38/30	CT9	0.9	2.3	9	72	0.78
		41/32	CT9	1.15	3	14	71	0.78
50JM2/20/2/6...	2910	20/16	F2225	3.8	7.1	44	84	0.92
		30/24	F2229	6.2	11	90	86	0.92
56JM2/20/4/6...	1420	20/16	CT5	0.58	1.7	6.5	67	0.74
		28/22	CT9	0.9	2.3	9	72	0.78
		33/26	CT9	1.15	3	14	71	0.78
		40/32	F2245	1.6	3.7	24	81	0.77
63JM2/25/4/9...	1440	24/20	F2245	2.1	4.7	30	79	0.82
		30/24	F2245	2.7	5.8	30	81	0.83
		40/32	F2249	4.4	9.3	52	83	0.83
71JM2/25/4/9...	1440	14/12	F2245	2.1	4.7	30	79	0.82
		20/16	F2245	2.7	5.8	30	81	0.83
		30/24	F2249	4.4	9.3	52	83	0.83
		40/32	D132/18	7	14.3	85	86	0.83
80JM2/25/4/9...	1440	10/8	F2245	2.7	5.8	30	81	0.83
		20/16	F2249	4.4	9.3	52	83	0.83
		27/22	D132/18	7	14.3	85	86	0.83
		35/28	D132/24	10	20.4	127	87	0.82
		40/32	D160/20	14	28.4	140	87	0.82
90JM2/25/4/9...	1470	17/14	D132/18	7	14.3	85	86	0.83
		25/20	D132/24	10	20.4	127	87	0.82
		33/26	D160/20	14	28.4	140	87	0.82
		38/30	D160/26	18.5	35.7	185	88	0.85
		40/32	D160/34	24	46.4	255	89	0.84
100JM2/31/4/9...	1470	10/8	D132/18	7	14.3	85	86	0.83
		18/14	D132/24	10	20.4	127	87	0.82
		23/18	D160/20	14	28.4	140	87	0.82
		29/22	D160/26	18.5	35.7	185	88	0.85
		34/26	D160/34	24	46.4	255	89	0.84
		40/30	D160/40	28	54.1	320	89	0.84

JM AEROFOIL – MULTI-STAGE

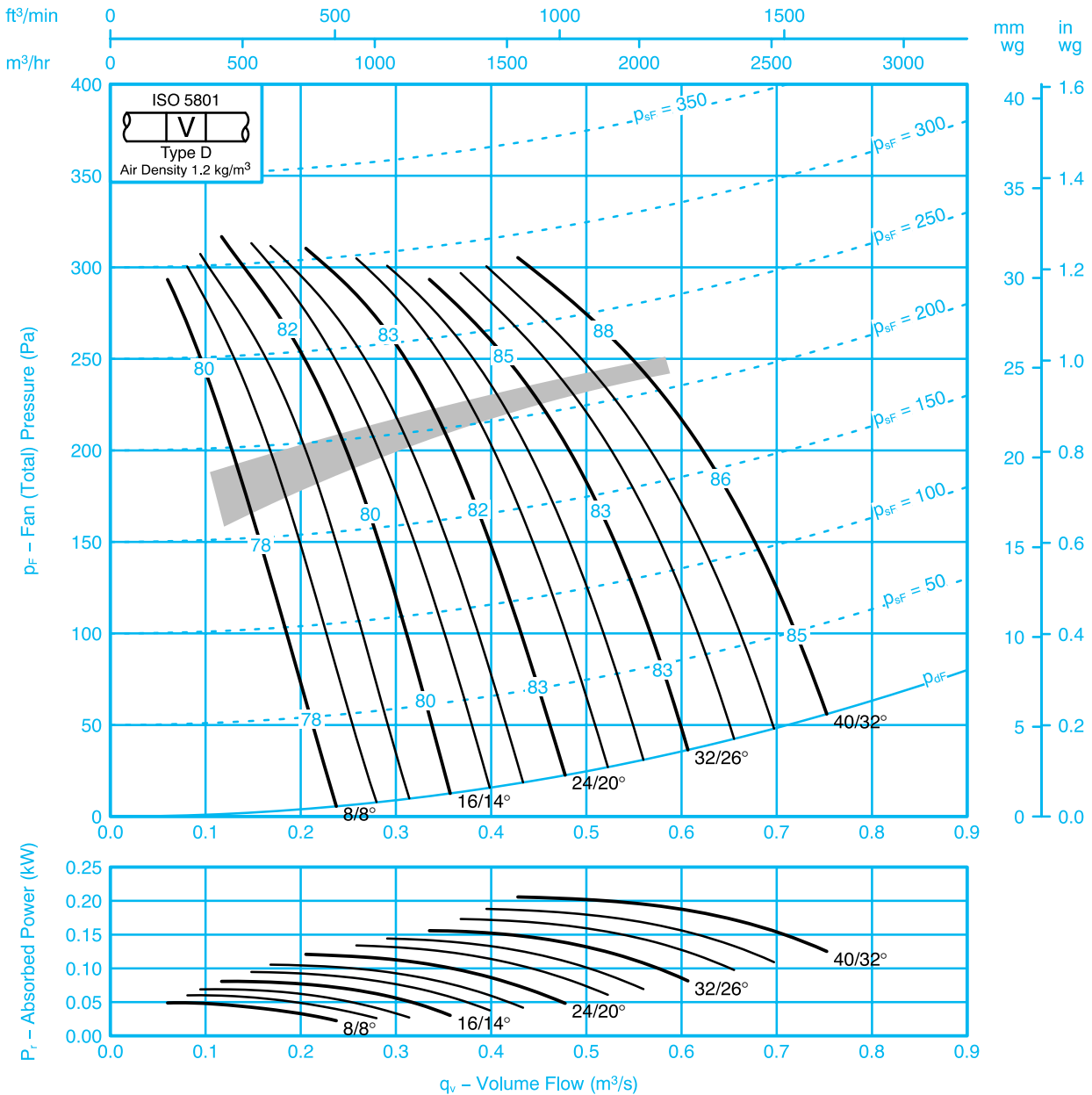


Fan Code: 31JM2/16/4/5/...

315 mm 1420 rev/min 5 Blades 50 Hz

Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
8/8	-11	-6	-5	-5	-13	-21	-28	-37	8/8	-9	-4	-3	-4	-12	-19	-27	-36
	-13	-5	-5	-6	-13	-20	-27	-37		-11	-3	-2	-5	-13	-18	-24	-33
16/14	-10	-5	-5	-7	-15	-22	-29	-38	16/14	-9	-2	-2	-6	-14	-20	-29	-37
	-11	-5	-5	-6	-16	-23	-29	-38		-10	-2	-2	-6	-16	-21	-27	-37
24/20 – 40/32	-6	-5	-5	-11	-19	-27	-32	-39	24/20 – 40/32	-5	-4	-3	-10	-18	-24	-29	-36
	-9	-6	-3	-10	-17	-25	-30	-38		-6	-3	0	-9	-17	-23	-28	-36

JM AEROFOIL – MULTI-STAGE

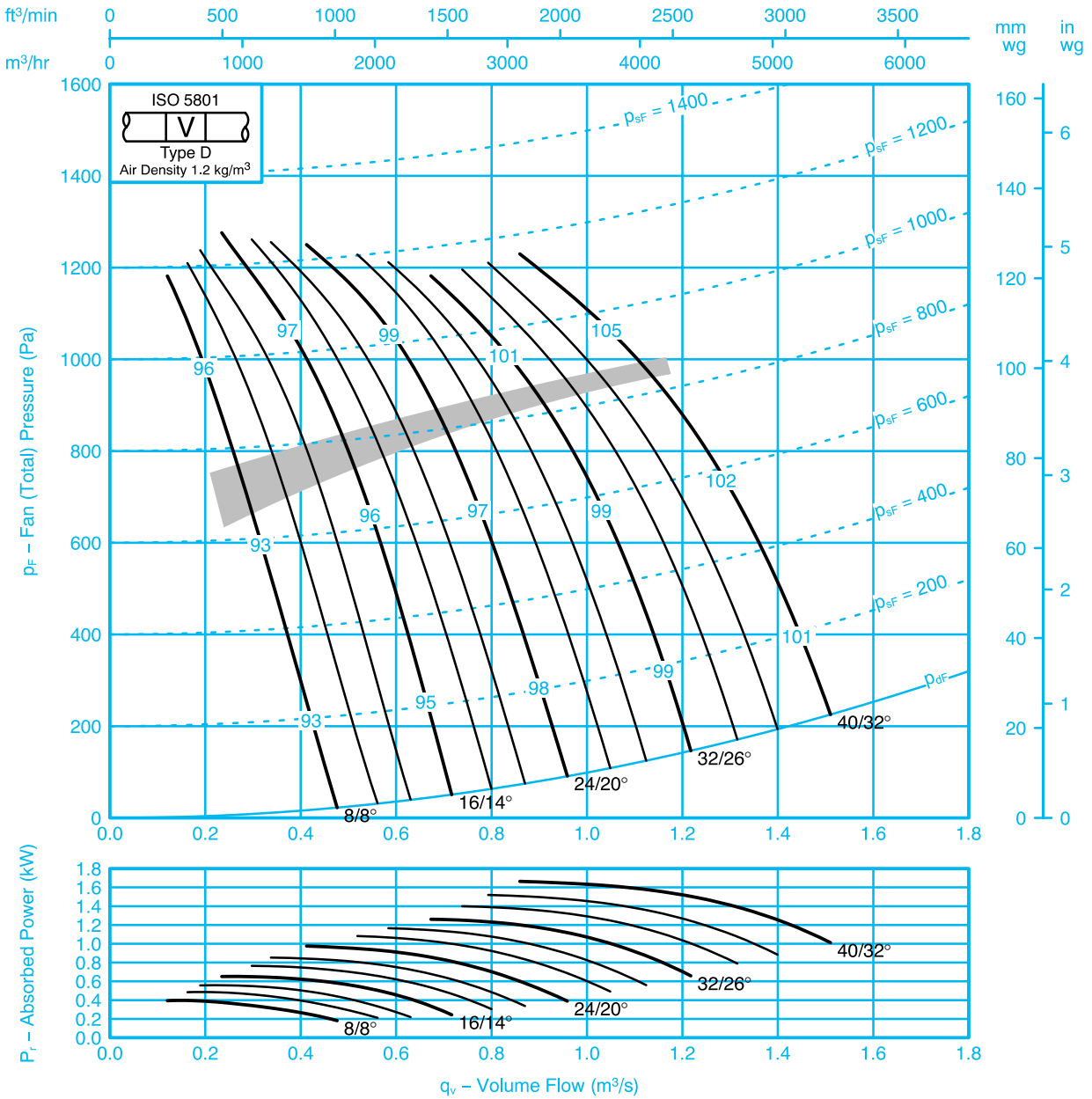


Fan Code: 31JM2/16/2/5/...

315 mm 2850 rev/min 5 Blades 50 Hz

Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

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8/8	-8	-12	-7	-6	-6	-14	-22	-29	8/8	-5	-11	-5	-4	-4	-12	-21	-27
	-11	-13	-6	-5	-6	-13	-21	-28		-9	-13	-4	-3	-5	-11	-18	-24
16/14	-8	-11	-5	-6	-8	-16	-23	-30	16/14	-7	-11	-3	-3	-6	-14	-23	-29
	-10	-12	-6	-5	-7	-17	-24	-29		-8	-12	-3	-2	-6	-14	-22	-28
24/20 – 40/32	-7	-8	-7	-6	-12	-20	-28	-33	24/20 – 40/32	-5	-7	-5	-4	-11	-18	-25	-30
	-9	-9	-7	-4	-11	-18	-26	-31		-7	-9	-4	-1	-9	-16	-23	-28

JM AEROFOIL – MULTI-STAGE



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ISO 9001

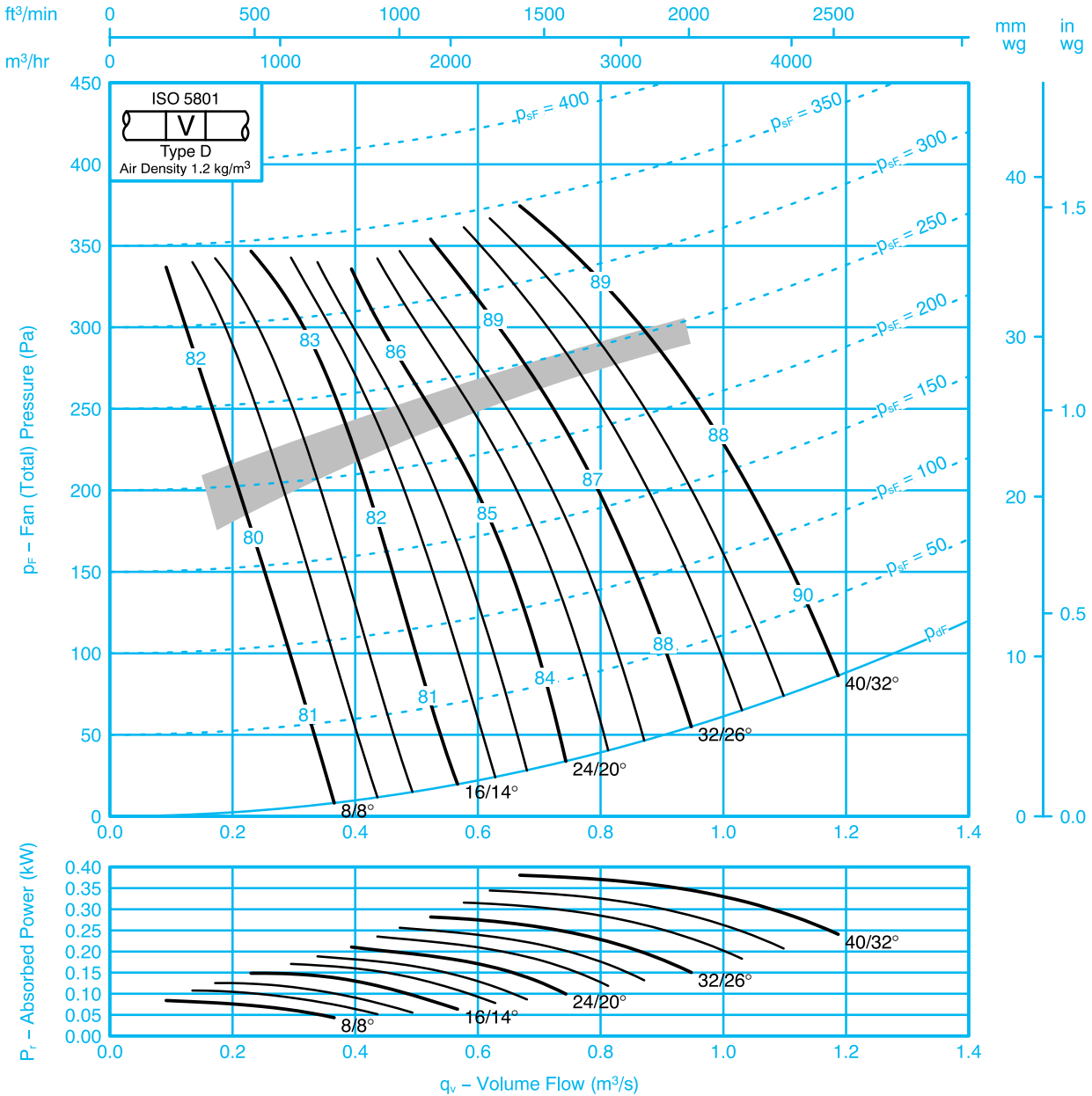
Fan Code: 35JM2/16/4/5/...

355 mm 1420 rev/min 5 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

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	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
8/8	-15	-7	-4	-5	-11	-18	-27	-36	8/8	-12	-5	-2	-4	-10	-17	-26	-36
	-13	-6	-4	-7	-12	-18	-25	-34		-11	-4	-2	-6	-12	-17	-22	-30
16/14	-11	-6	-4	-7	-13	-20	-27	-36	16/14	-9	-3	-2	-6	-13	-19	-27	-36
	-12	-6	-4	-7	-14	-20	-26	-34		-10	-3	-2	-6	-13	-18	-24	-33
24/20 – 40/32	-7	-6	-3	-10	-17	-24	-31	-38	24/20 – 40/32	-6	-5	-2	-9	-16	-22	-28	-35
	-11	-8	-2	-9	-16	-23	-29	-37		-9	-5	1	-8	-16	-21	-27	-35

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ISO 9001

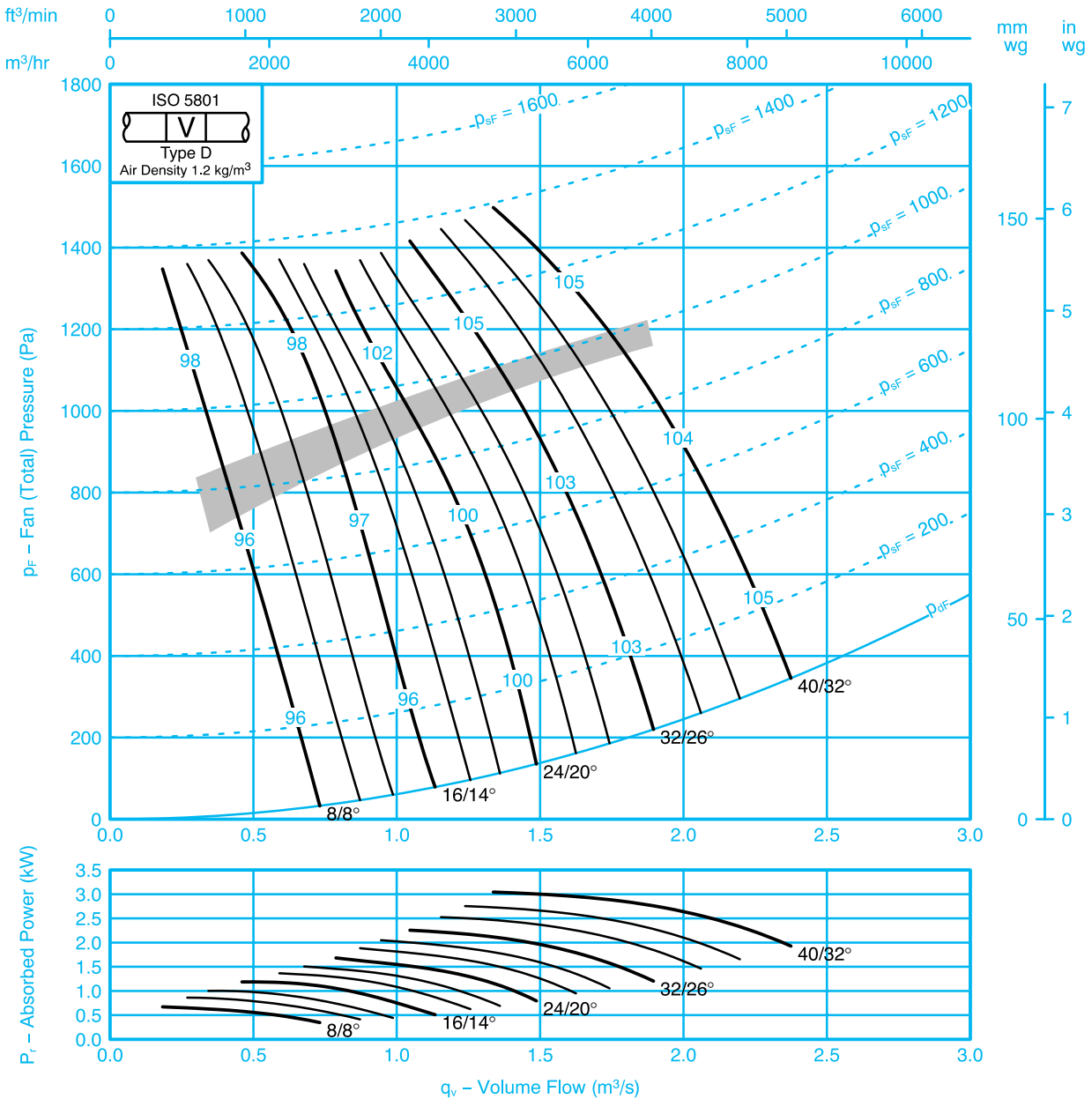
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355 mm 2840 rev/min 5 Blades 50 Hz



Performance Data ISO 5801:

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Sound Data BS848 Part 2 1985:

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	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
8/8	-13	-15	-8	-4	-6	-11	-19	-27	8/8	-11	-14	-5	-2	-4	-9	-18	-26
	-12	-13	-7	-4	-7	-13	-19	-25		-10	-13	-4	-2	-6	-11	-16	-21
16/14	-9	-11	-6	-5	-7	-14	-21	-28	16/14	-8	-11	-4	-2	-6	-12	-21	-27
	-11	-12	-6	-5	-7	-14	-21	-26		-9	-12	-4	-2	-6	-12	-19	-24
24/20 – 40/32	-8	-8	-7	-4	-11	-18	-26	-32	24/20 – 40/32	-6	-8	-6	-3	-10	-15	-23	-29
	-11	-11	-8	-3	-10	-16	-24	-30		-9	-11	-5	0	-9	-14	-21	-27

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ISO 9001

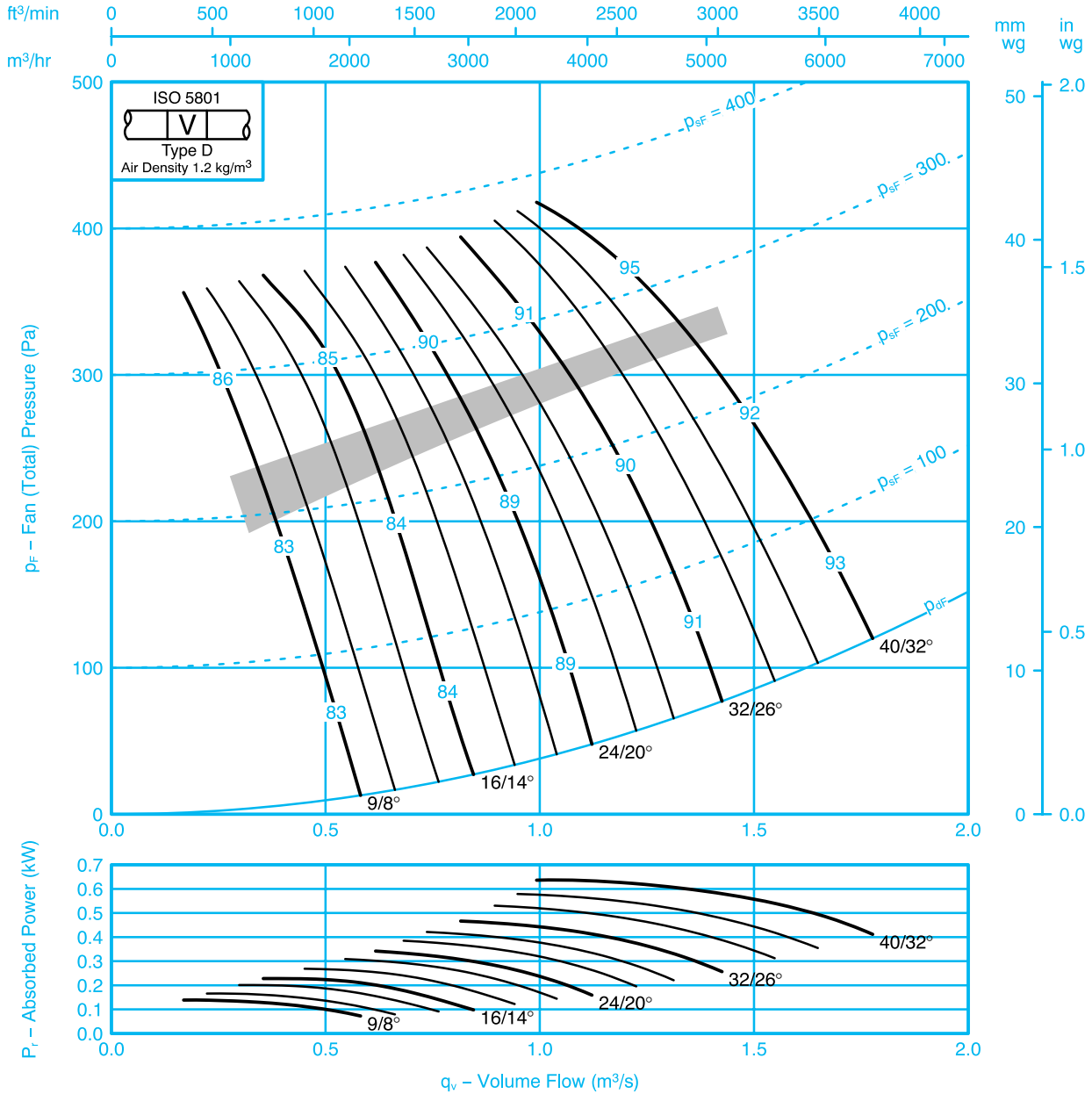
Fan Code: 40JM2/16/4/5/...



400 mm 1420 rev/min 5 Blades 50 Hz

Performance Data ISO 5801:

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Sound Data BS848 Part 2 1985:

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9/8	-14	-7	-5	-5	-10	-17	-26	-35	9/8	-12	-5	-3	-4	-10	-16	-25	-34
	-12	-6	-4	-6	-11	-16	-23	-31		-11	-4	-2	-6	-11	-14	-20	-27
16/14	-11	-5	-5	-7	-12	-18	-26	-34	16/14	-9	-3	-2	-6	-12	-17	-25	-33
	-11	-5	-5	-7	-13	-19	-24	-32		-9	-2	-2	-7	-13	-16	-23	-30
24/20 – 40/32	-7	-6	-4	-9	-16	-23	-30	-37	24/20 – 40/32	-6	-4	-2	-8	-15	-20	-27	-34
	-11	-7	-2	-10	-16	-22	-29	-36		-9	-4	0	-9	-15	-20	-26	-33

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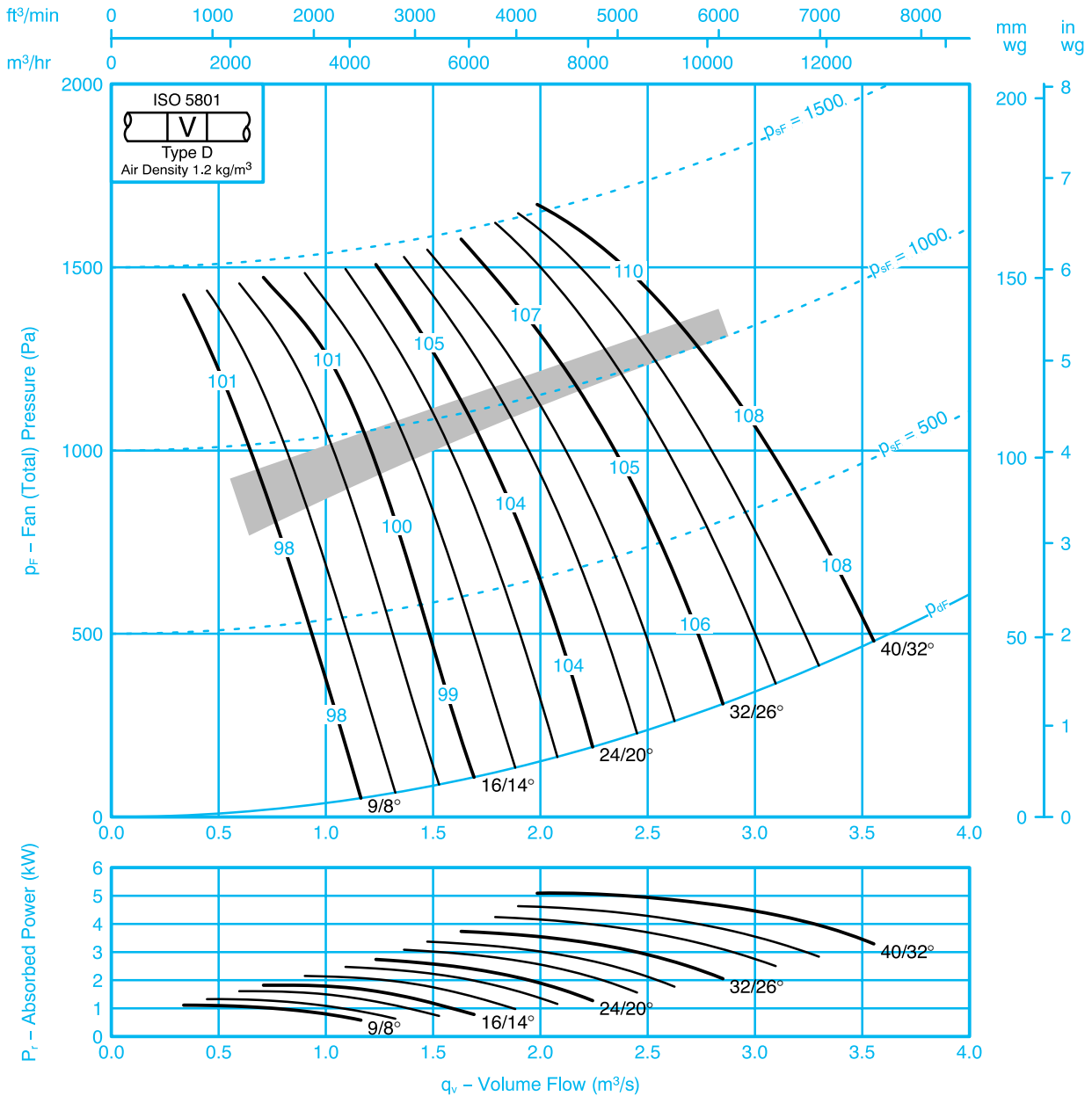
Fan Code: 40JM2/16/2/5/...

400 mm 2840 rev/min 5 Blades 50 Hz



Performance Data ISO 5801:

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Sound Data BS848 Part 2 1985:

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9/8	-14	-15	-8	-5	-5	-11	-18	-26	9/8	-12	-14	-5	-3	-4	-9	-17	-25
	-13	-13	-7	-5	-7	-11	-17	-24		-11	-13	-4	-2	-6	-9	-14	-20
16/14	-10	-11	-6	-5	-7	-13	-19	-26	16/14	-9	-11	-3	-2	-6	-11	-18	-26
	-11	-12	-6	-5	-8	-14	-20	-25		-9	-11	-3	-2	-7	-11	-18	-23
24/20 – 40/32	-9	-9	-7	-5	-11	-17	-24	-31	24/20 – 40/32	-7	-8	-5	-3	-9	-14	-21	-28
	-12	-12	-7	-3	-10	-16	-23	-29		-9	-11	-4	0	-9	-14	-20	-26

JM AEROFOIL – MULTI-STAGE



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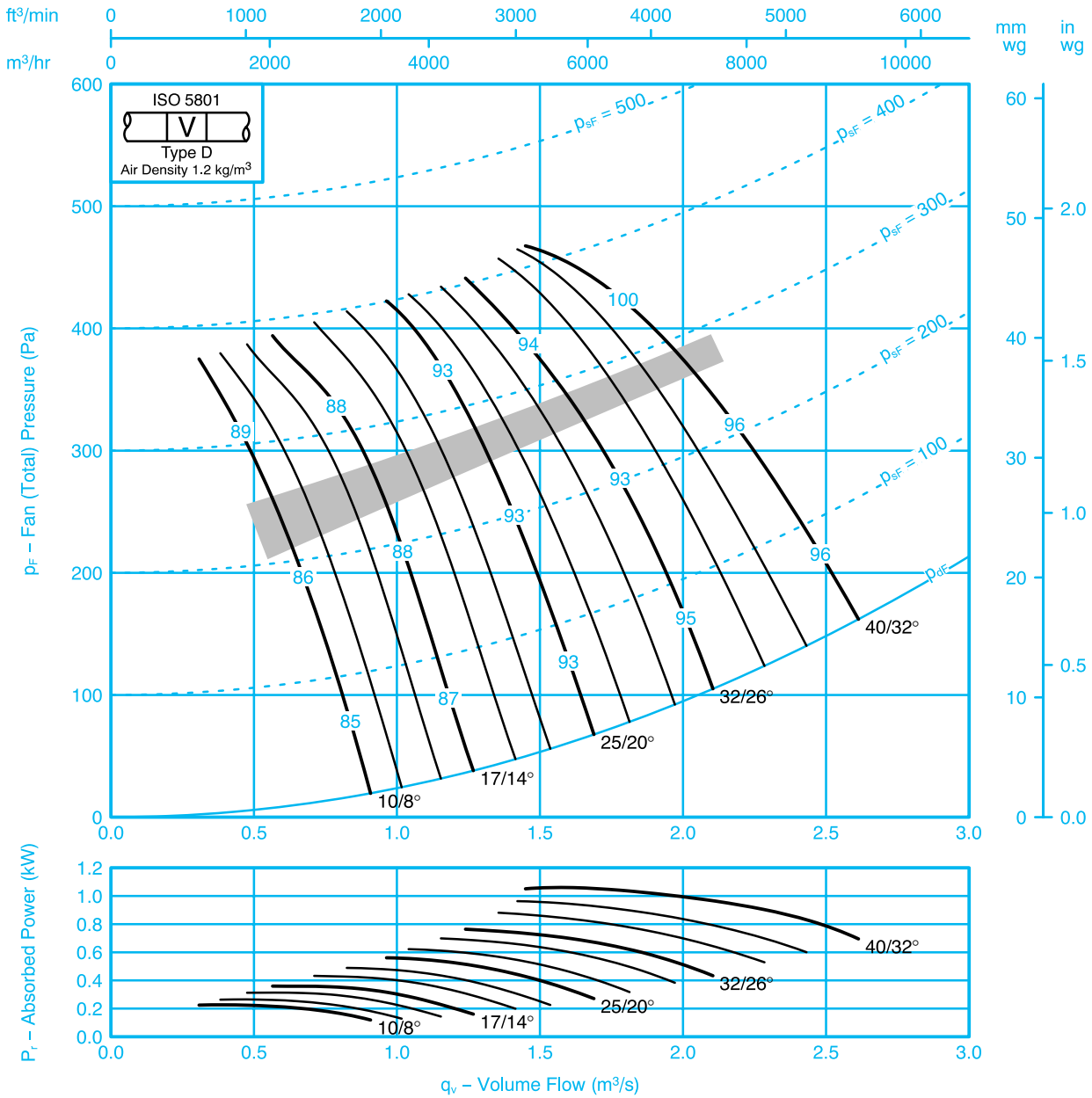
Fan Code: 45JM2/16/4/5/...



450 mm 1420 rev/min 5 Blades 50 Hz

Performance Data ISO 5801:

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Sound Data BS848 Part 2 1985:

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	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
10/8	-14	-8	-5	-5	-11	-17	-26	-32	10/8	-13	-5	-3	-5	-10	-16	-24	-29
	-12	-7	-4	-7	-10	-14	-22	-28		-12	-6	-3	-7	-10	-12	-20	-25
17/14	-11	-5	-5	-7	-12	-17	-25	-31	17/14	-10	-5	-5	-7	-12	-16	-23	-28
	-11	-5	-5	-8	-13	-18	-24	-30		-10	-4	-4	-8	-13	-15	-21	-27
25/20 – 40/32	-8	-6	-5	-9	-16	-22	-29	-34	25/20 – 40/32	-7	-6	-4	-9	-15	-21	-27	-32
	-12	-6	-3	-10	-16	-21	-28	-34		-11	-6	-2	-9	-15	-19	-26	-31

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

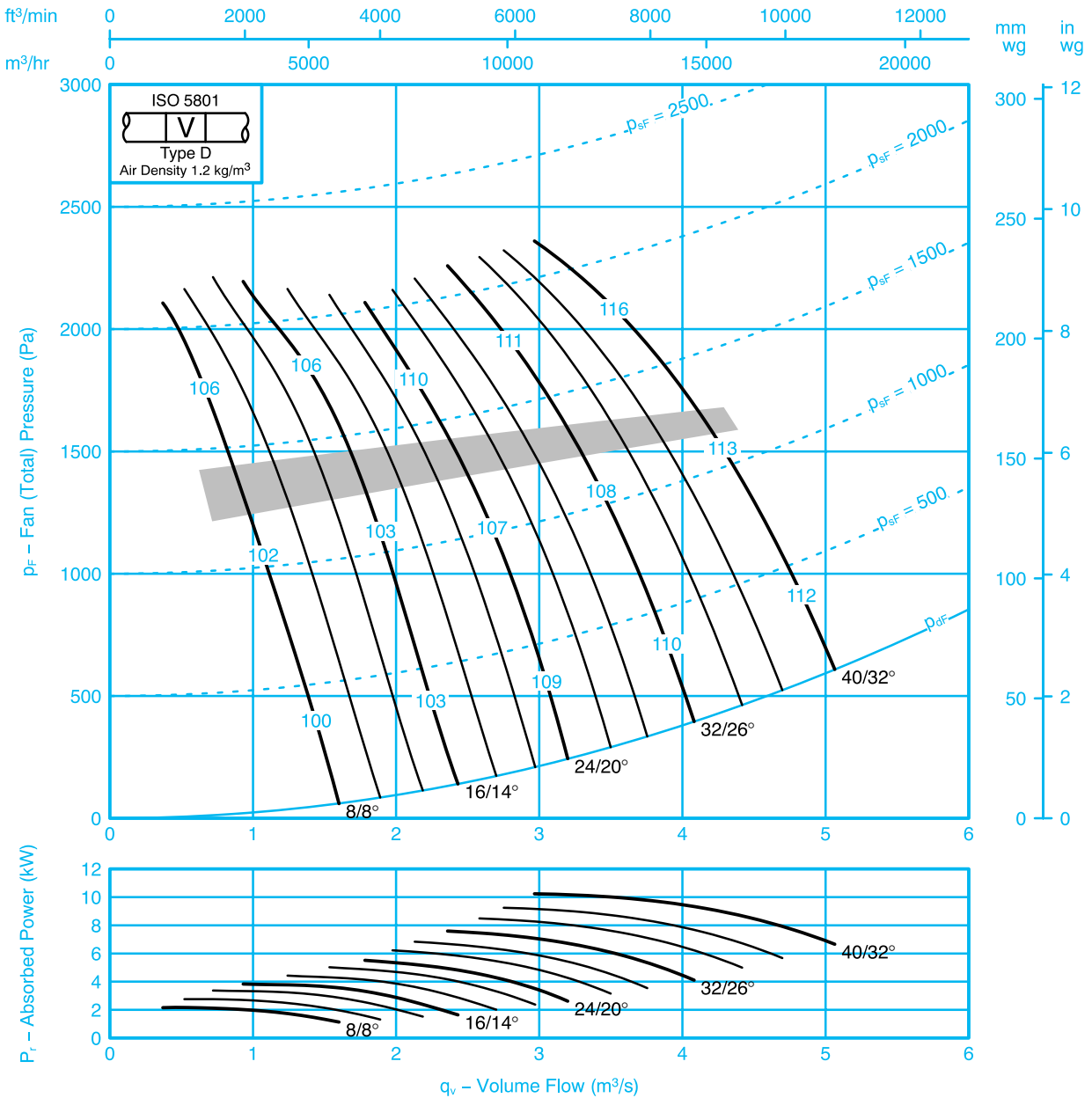
Fan Code: 45JM2/20/2/6/...

450 mm 2910 rev/min 6 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS48 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
8/8	-15	-14	-9	-6	-5	-9	-16	-25	8/8	-13	-13	-7	-4	-3	-7	-15	-22
	-14	-13	-9	-5	-7	-8	-13	-21		-13	-13	-7	-3	-5	-5	-11	-18
16/14	-12	-11	-8	-5	-7	-9	-15	-23	16/14	-11	-11	-6	-4	-6	-8	-14	-22
	-13	-11	-6	-4	-8	-11	-17	-23		-11	-11	-4	-3	-7	-9	-15	-21
24/20 – 40/32	-10	-8	-7	-5	-10	-13	-19	-27	24/20 – 40/32	-8	-8	-5	-4	-8	-11	-17	-24
	-12	-12	-7	-4	-9	-12	-18	-26		-10	-11	-5	-1	-8	-10	-16	-24

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

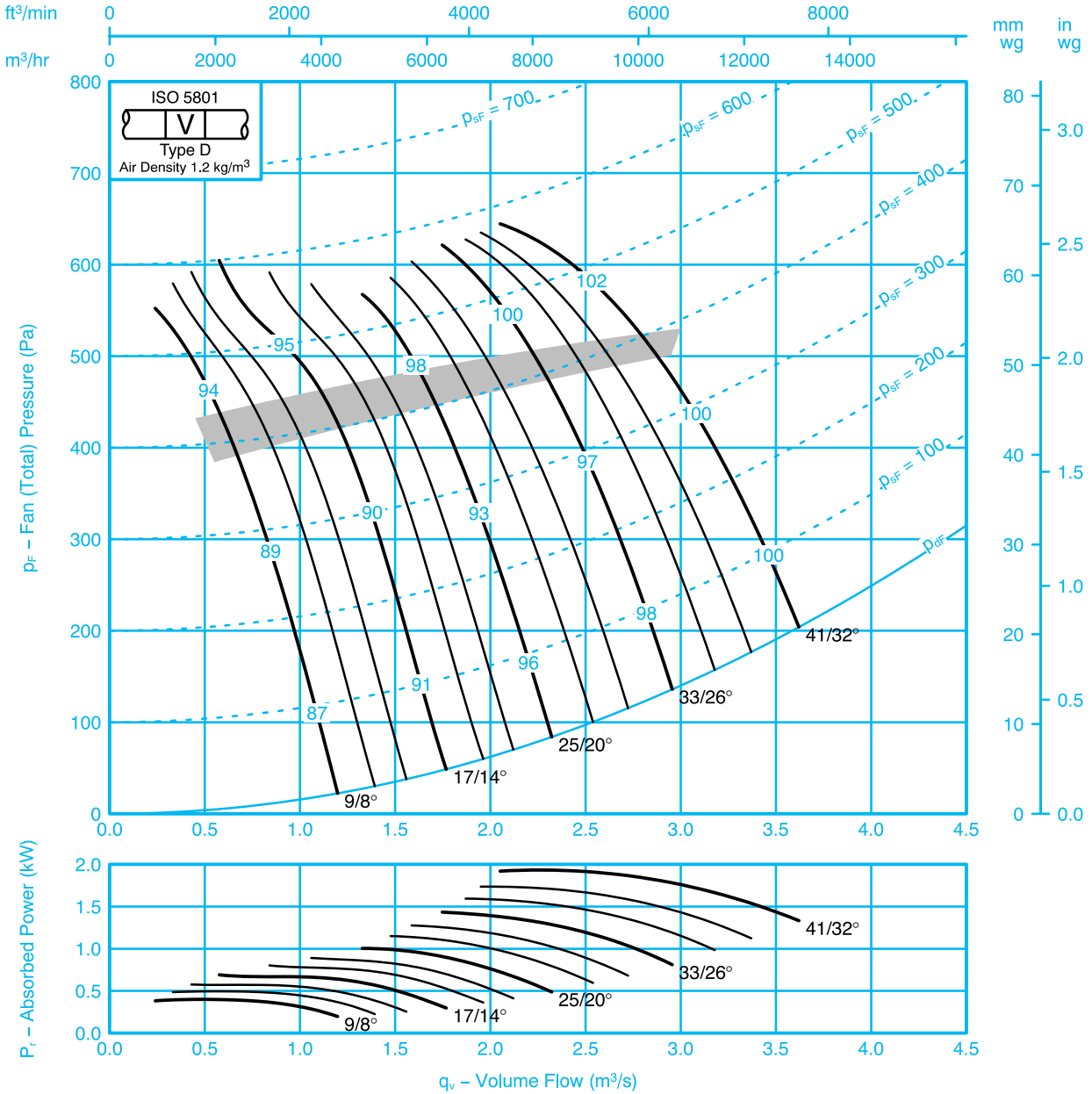
Fan Code: 50JM2/20/4/6/...

500 mm 1420 rev/min 6 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
9/8	-13	-8	-6	-4	-11	-16	-25	-33	9/8	-11	-6	-5	-2	-10	-15	-24	-31
	-13	-8	-6	-5	-9	-13	-22	-29		-11	-6	-4	-4	-8	-11	-19	-25
17/14	-10	-8	-6	-5	-9	-15	-24	-31	17/14	-9	-6	-5	-5	-9	-14	-23	-30
	-11	-6	-5	-7	-10	-15	-22	-29		-9	-4	-3	-6	-10	-14	-20	-27
25/20 – 41/32	-7	-6	-5	-9	-15	-21	-29	-36	25/20 – 41/32	-6	-4	-3	-9	-14	-19	-27	-34
	-10	-7	-3	-8	-13	-18	-27	-34		-8	-4	-1	-7	-12	-16	-24	-31

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

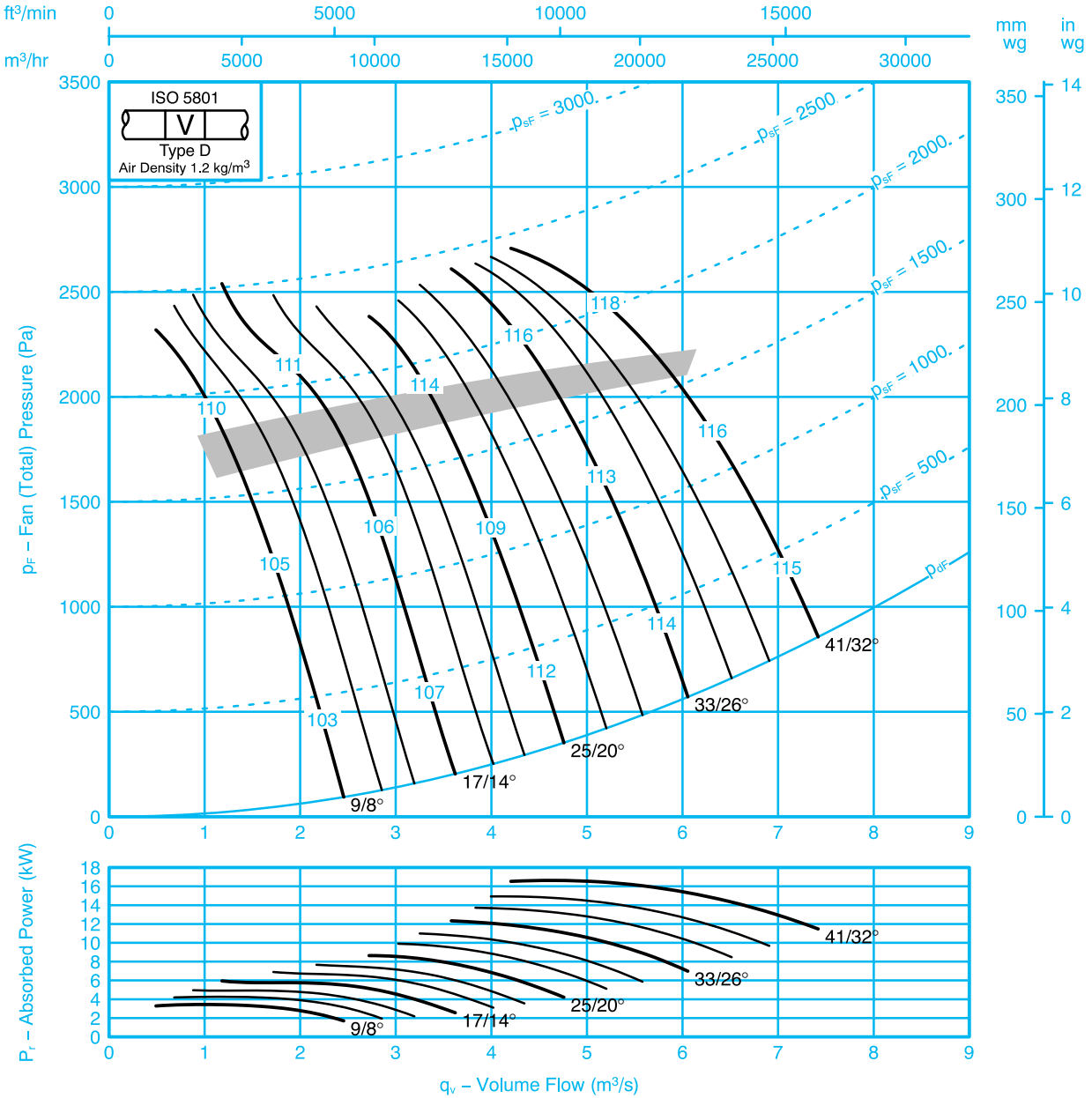
Fan Code: 50JM2/20/2/6/...

500 mm 2910 rev/min 6 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
9/8	-14	-13	-8	-6	-4	-11	-17	-25	9/8	-11	-12	-7	-4	-2	-10	-16	-23
	-14	-13	-9	-6	-5	-9	-14	-22		-12	-13	-7	-4	-4	-6	-11	-18
17/14	-12	-10	-8	-6	-6	-10	-16	-24	17/14	-11	-10	-7	-5	-5	-9	-15	-23
	-13	-11	-6	-5	-7	-11	-16	-23		-11	-11	-5	-3	-6	-9	-14	-20
25/20 - 41/32	-9	-8	-6	-5	-10	-16	-22	-30	25/20 - 41/32	-8	-7	-5	-4	-9	-14	-20	-27
	-12	-11	-7	-4	-9	-14	-20	-28		-9	-10	-5	-1	-7	-11	-17	-25

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

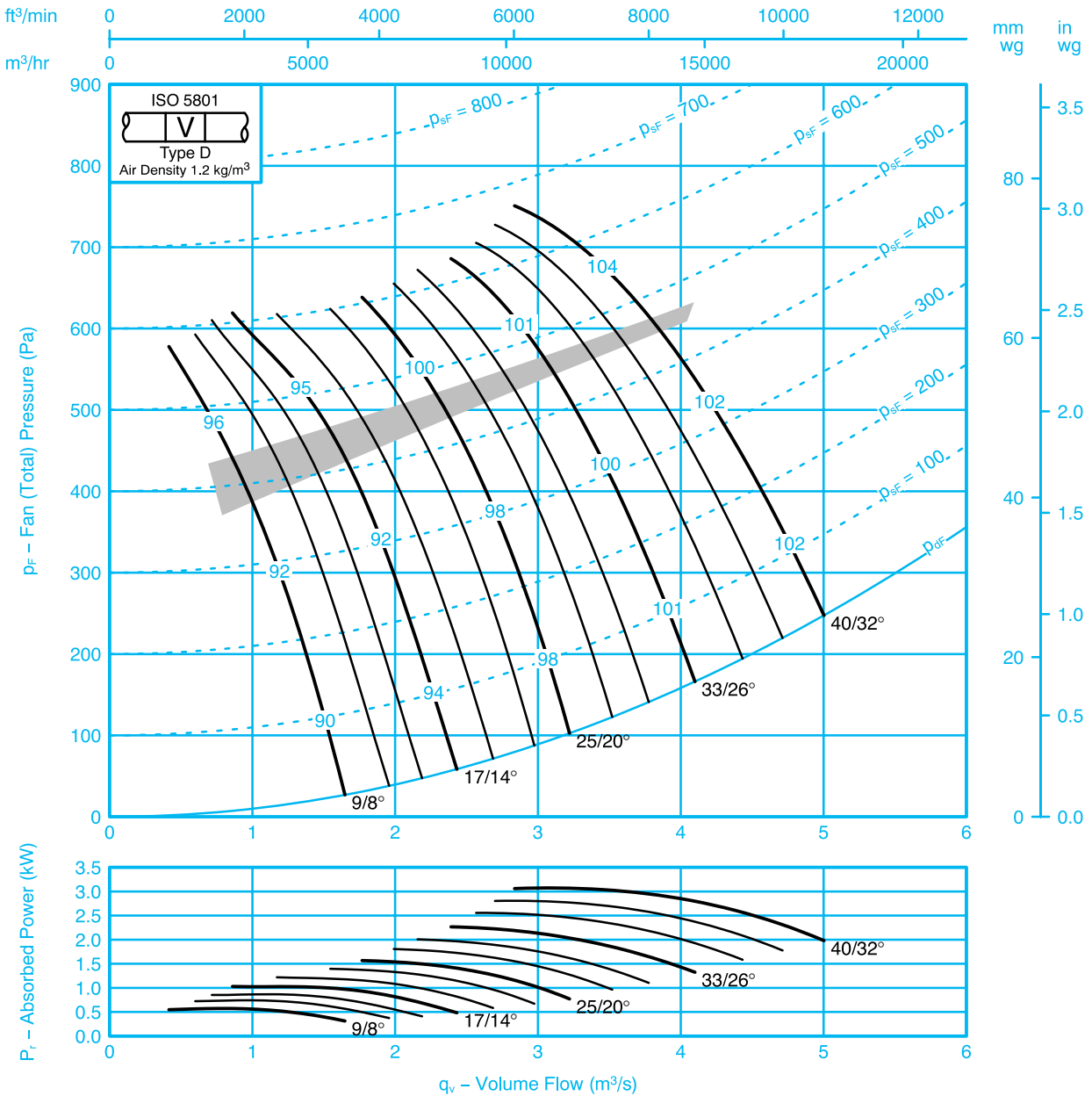
Fan Code: 56JM2/20/4/6/...

560 mm 1420 rev/min 6 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
9/8	-13	-8	-7	-6	-8	-14	-23	-30	9/8	-10	-5	-5	-4	-7	-12	-22	-28
	-12	-7	-7	-7	-7	-11	-19	-26		-11	-5	-5	-5	-7	-9	-16	-22
17/14	-11	-8	-8	-5	-8	-13	-22	-28	17/14	-10	-6	-6	-4	-7	-12	-20	-26
	-12	-6	-6	-7	-8	-13	-20	-26		-11	-5	-4	-6	-8	-11	-19	-23
25/20 – 40/32	-8	-7	-5	-8	-12	-18	-27	-32	25/20 – 40/32	-7	-6	-3	-7	-11	-16	-25	-30
	-12	-9	-3	-8	-11	-17	-26	-31		-9	-6	-1	-7	-10	-14	-24	-29

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

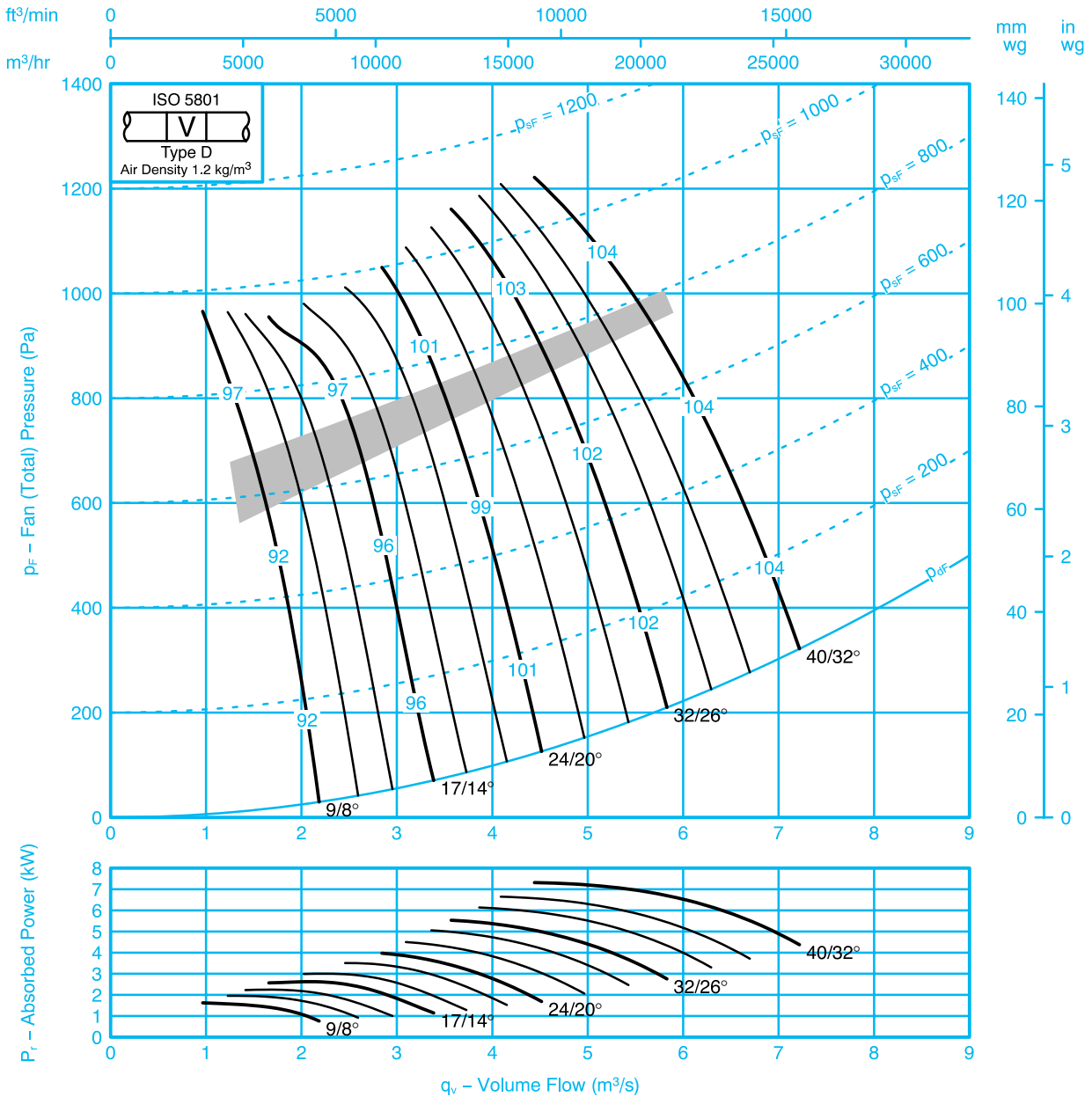
Fan Code: 63JM2/25/4/9/...

630 mm 1440 rev/min 9 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
9/8	-12	-12	-6	-5	-7	-13	-22	-30	9/8	-10	-11	-4	-3	-6	-12	-21	-27
	-14	-14	-6	-4	-8	-12	-17	-26		-13	-13	-4	-2	-7	-10	-14	-22
17/14	-9	-12	-7	-4	-9	-14	-23	-30	17/14	-7	-11	-6	-3	-8	-13	-22	-28
	-14	-16	-8	-2	-10	-16	-21	-28		-12	-15	-6	0	-9	-14	-19	-26
24/20 – 40/32	-8	-11	-8	-4	-10	-18	-27	-32	24/20 – 40/32	-6	-10	-6	-3	-9	-16	-25	-30
	-11	-13	-7	-3	-9	-17	-24	-31		-9	-12	-5	-1	-9	-15	-22	-28

JM AEROFOIL – MULTI-STAGE



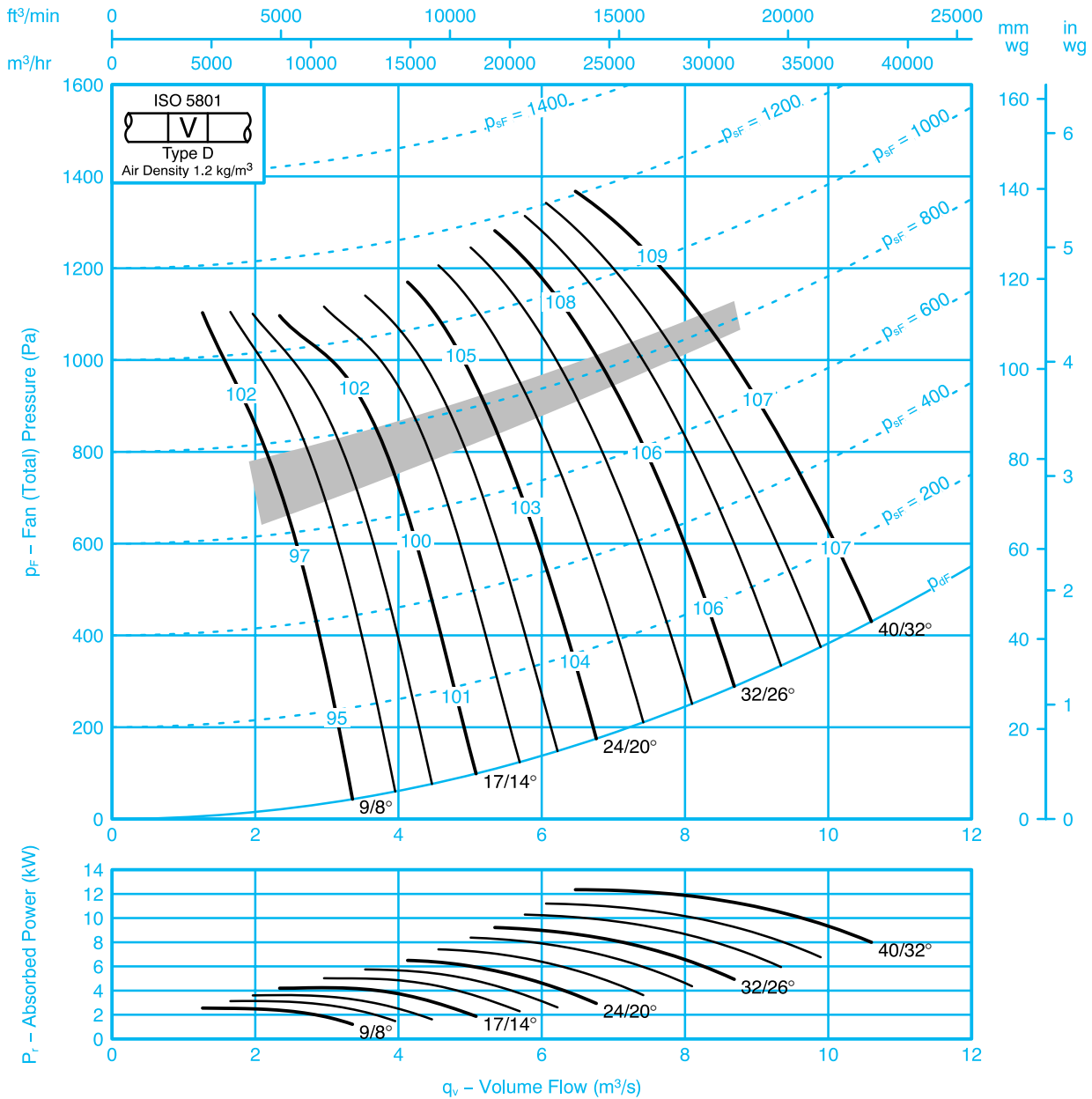
Fan Code: 71JM2/25/4/9/...



710 mm 1440 rev/min 9 Blades 50 Hz

Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
9/8	-13	-13	-7	-5	-7	-13	-22	-29	9/8	-10	-11	-5	-2	-6	-12	-20	-27
	-15	-15	-8	-4	-7	-11	-17	-24		-13	-14	-6	-1	-6	-8	-14	-21
17/14	-9	-11	-8	-4	-8	-14	-22	-29	17/14	-8	-11	-6	-2	-8	-13	-21	-27
	-14	-16	-9	-2	-9	-15	-21	-27		-13	-15	-7	0	-8	-13	-19	-25
24/20 – 40/32	-7	-11	-9	-4	-10	-16	-25	-31	24/20 – 40/32	-6	-10	-7	-3	-9	-15	-23	-29
	-11	-14	-9	-3	-9	-15	-23	-30		-9	-13	-7	-1	-8	-13	-21	-27

JM AEROFOIL – MULTI-STAGE



BS 5750 Pt 1
EN 29001
ISO 9001

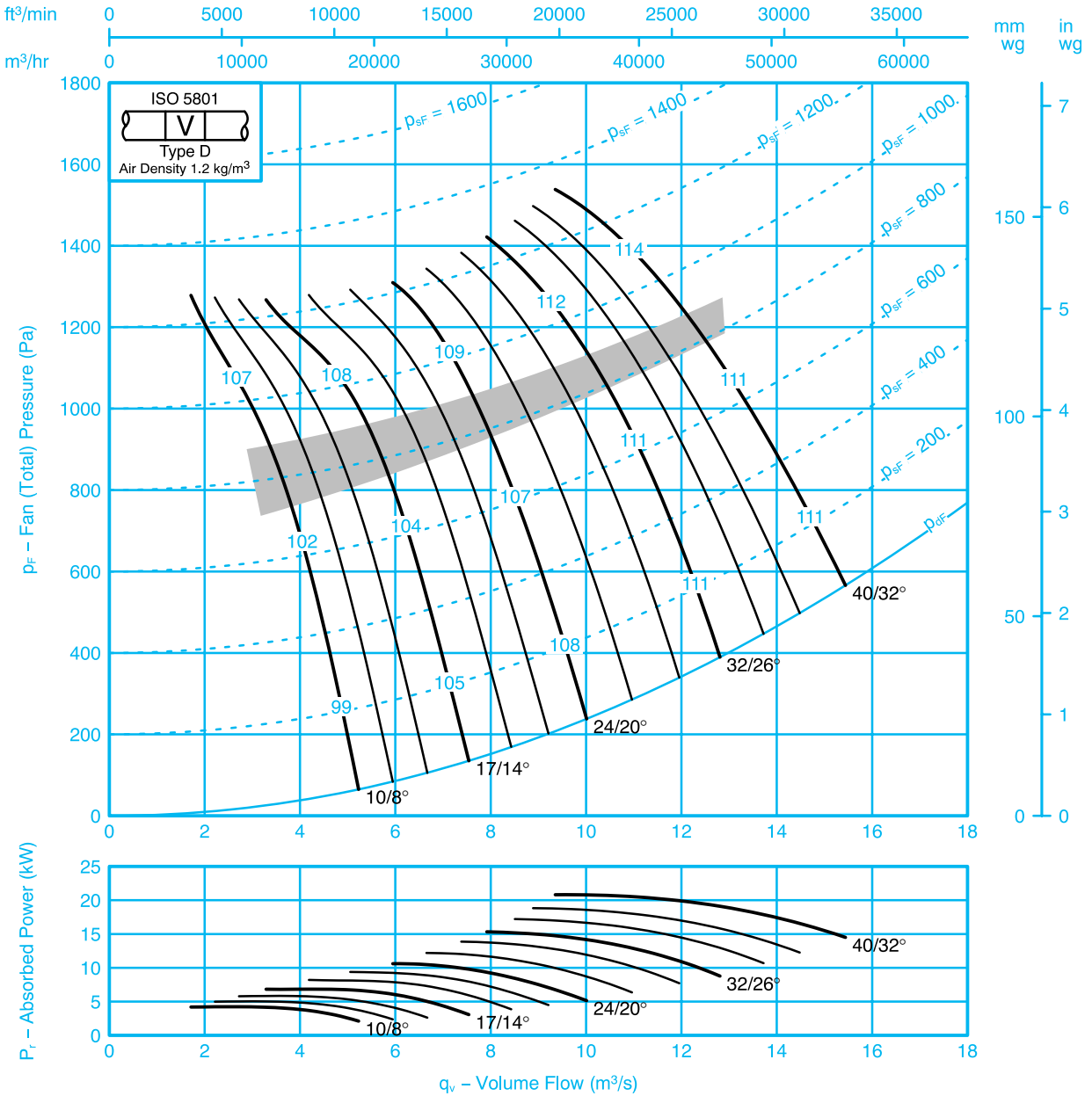
Fan Code: 80JM2/25/4/9/...

800 mm 1440 rev/min 9 Blades 50 Hz



Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
10/8	-13	-13	-7	-4	-7	-13	-21	-28	10/8	-12	-13	-6	-2	-7	-12	-19	-25
	-16	-17	-10	-4	-6	-10	-17	-23		-16	-17	-10	-3	-6	-7	-15	-20
17/14	-10	-11	-8	-4	-8	-14	-22	-28	17/14	-8	-11	-8	-4	-7	-13	-20	-25
	-14	-17	-10	-2	-8	-14	-21	-26		-14	-17	-10	-2	-7	-12	-19	-22
24/20 – 40/32	-7	-10	-10	-5	-9	-15	-24	-30	24/20 – 40/32	-5	-10	-9	-5	-9	-14	-22	-28
	-11	-15	-11	-3	-8	-14	-22	-29		-10	-14	-10	-2	-8	-12	-20	-25

JM AEROFOIL – MULTI-STAGE



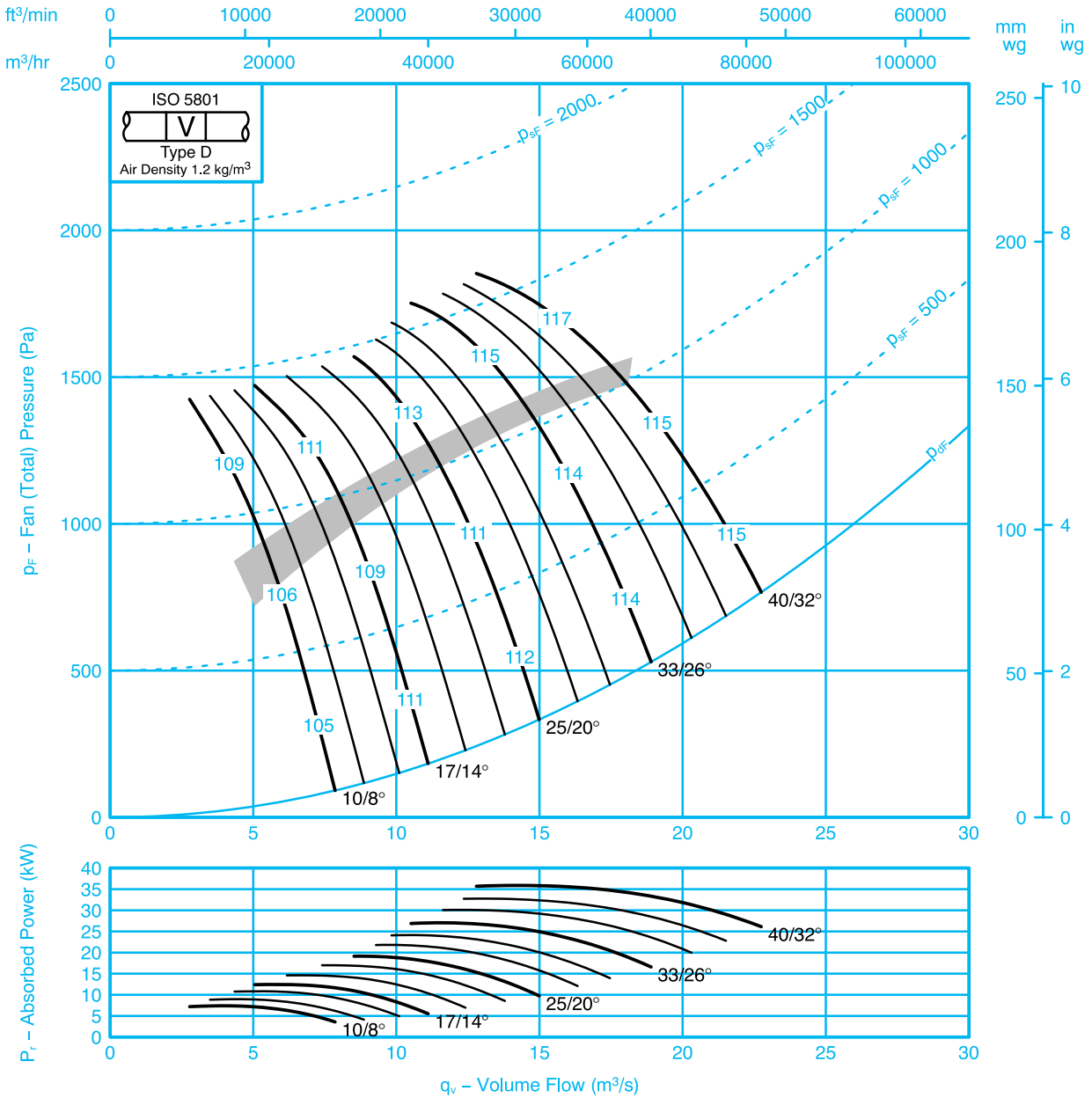
Fan Code: 90JM2/25/4/9/...



900 mm 1470 rev/min 9 Blades 50 Hz

Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
10/8	-15	-14	-9	-5	-6	-10	-17	-25	10/8	-14	-13	-7	-3	-6	-8	-15	-21
	-19	-19	-12	-3	-7	-10	-17	-22		-18	-18	-11	-2	-6	-7	-14	-19
17/14	-12	-11	-10	-4	-8	-12	-20	-26	17/14	-10	-11	-10	-3	-8	-11	-18	-23
	-17	-18	-13	-2	-9	-14	-21	-26		-17	-18	-12	-1	-9	-12	-19	-22
25/20 – 40/32	-9	-9	-9	-6	-8	-13	-21	-28	25/20 – 40/32	-7	-8	-8	-5	-7	-12	-19	-25
	-11	-12	-11	-4	-7	-12	-20	-27		-10	-12	-10	-3	-7	-9	-17	-23

JM AEROFOIL – MULTI-STAGE



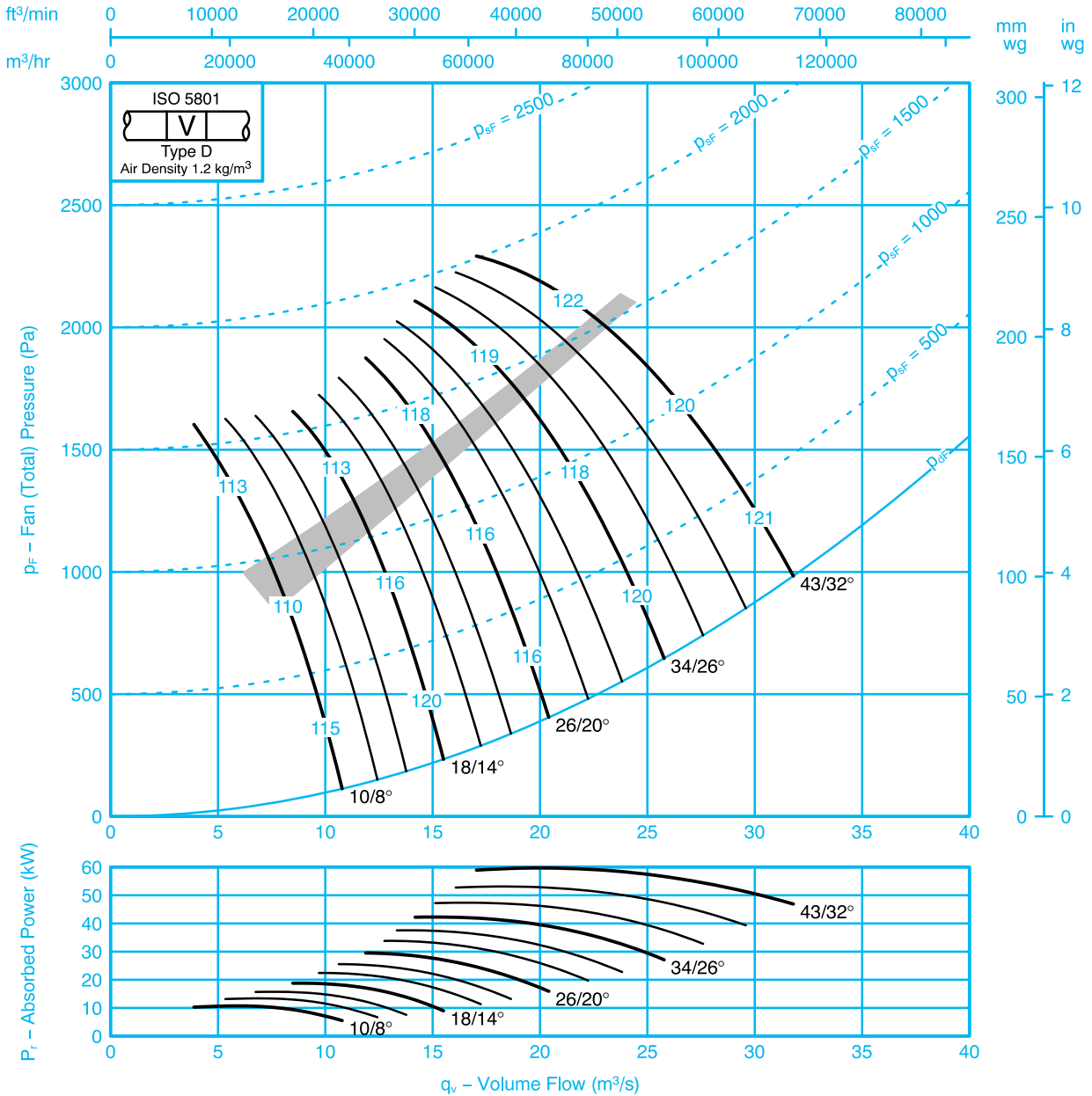
Fan Code: 100JM2/31/4/9/...



1000 mm 1470 rev/min 9 Blades 50 Hz

Performance Data ISO 5801:

Performance shown is specifically for fully ducted installations.



Sound Data BS848 Part 2 1985:

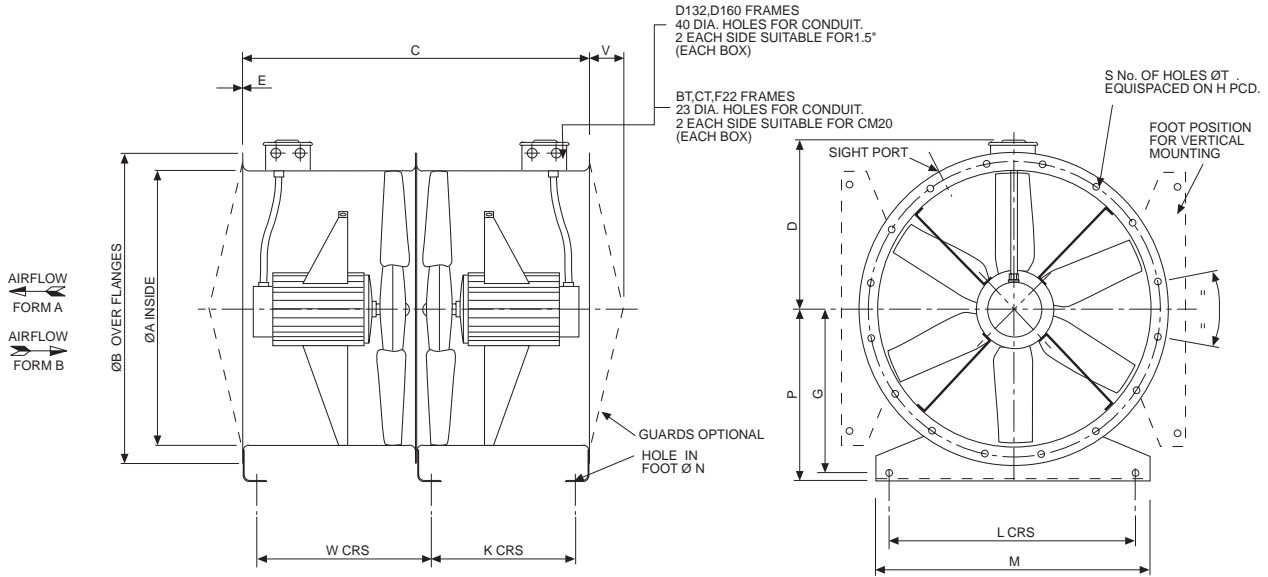
Single figures on performance curves are overall inlet sound power levels, derived from measurements taken in Woods laboratory specifically under ducted conditions. For sound power levels in eight octave bands, apply the following corrections to the overall level. Use upper corrections when operating point is above shaded area, or lower corrections when operating point is below shaded area.

Inlet Levels									Outlet Levels								
Pitch Angle	Octave Band Centre Frequency (Hz)								Pitch Angle	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k		63	125	250	500	1k	2k	4k	8k
10/8	-19	-16	-9	-5	-7	-7	-13	-22	10/8	-18	-15	-8	-3	-6	-6	-12	-19
	-23	-20	-12	-1	-11	-12	-19	-25		-23	-20	-12	-1	-11	-9	-16	-21
18/14	-15	-11	-9	-4	-8	-10	-18	-24	18/14	-14	-10	-8	-4	-7	-9	-16	-22
	-22	-20	-13	-1	-12	-13	-22	-28		-22	-19	-12	-1	-11	-11	-20	-25
26/20 – 43/32	-11	-8	-8	-6	-8	-11	-20	-27	26/20 – 43/32	-10	-7	-7	-6	-8	-11	-18	-25
	-14	-12	-7	-5	-7	-9	-19	-26		-14	-11	-7	-5	-6	-8	-16	-23

JM AEROFOIL - MULTI-STAGE



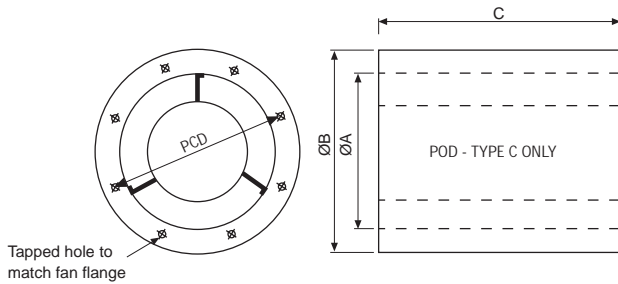
DIMENSIONS & WEIGHTS



Code	Motor	DIMENSION REFERENCE (mm)															Fan Weight (kg)	
		A	B	C	D	E	G	H	K	L	M	N	P	S	T	V		W
315	BT4/5	315	395	660	235	2.0	175	355	235	265	315	10	200	8	10	30	335	42
	BT9	315	395	750	235	2.5	175	355	280	265	315	10	200	8	10	30	380	44
	CT5	315	395	660	235	2.0	175	355	235	265	315	10	200	8	10	30	335	46
355	BT4/5	355	435	660	256	2.0	200	395	235	305	355	10	225	8	10	30	335	44
	BT9	355	435	750	256	2.5	200	395	280	305	355	10	225	8	10	30	380	46
	CT5	355	435	660	256	2.0	200	395	235	305	355	10	225	8	10	30	335	48
	CT9	355	435	750	256	2.5	200	395	280	305	355	10	225	8	10	30	380	56
400	BT4/5	400	480	660	279	2.0	225	450	235	350	400	10	250	8	12	30	335	48
	BT9	400	480	750	279	2.5	225	450	280	350	400	10	250	8	12	30	380	50
	CT5	400	480	660	279	2.0	225	450	235	350	400	10	250	8	12	30	335	52
	CT9	400	480	750	279	2.5	225	450	280	350	400	10	250	8	12	30	380	60
450	BT5	450	530	660	306	2.0	255	500	235	400	450	10	280	8	12	30	335	50
	BT9	450	530	750	306	2.5	255	500	280	400	450	10	280	8	12	30	380	52
	CT5	450	530	660	306	2.0	255	500	235	400	450	10	280	8	12	30	335	56
	CT9	450	530	750	306	2.5	255	500	280	400	450	10	280	8	12	30	380	64
	F2225	450	530	1040	306	3.0	255	500	434	400	450	10	280	8	12	30	528	88
	F2229	450	530	1040	306	3.0	255	500	434	400	450	10	280	8	12	30	528	110
500	BT9	500	594	750	338	2.5	290	560	280	450	500	10	315	12	12	30	380	56
	CT5	500	594	660	338	2.0	290	560	235	450	500	10	315	12	12	30	334	60
	CT9	500	594	750	338	2.5	290	560	280	450	500	10	315	12	12	30	380	68
	F2225	500	594	1040	338	3.0	290	560	424	450	500	10	315	12	12	30	528	108
	F2229	500	594	1040	338	3.0	290	560	424	450	500	10	315	12	12	30	520	130
560	CT5/9	560	654	750	368	2.5	330	620	280	510	560	10	355	12	12	50	381	76
	F2245	560	654	1040	368	3.0	330	620	424	510	560	10	355	12	12	50	528	112
630	F2245	630	724	1040	403	3.0	375	690	434	580	630	10	400	12	12	50	528	140
	F2249	630	724	1040	403	3.0	375	690	434	580	630	10	400	12	12	50	528	162
710	F2245	710	804	1040	443	3.0	415	770	404	660	710	10	440	16	12	50	528	148
	F2249	710	804	1040	443	3.0	415	770	404	660	710	10	440	16	12	50	528	170
	D132	710	804	1040	480	4.0	415	770	402	660	710	12	440	16	12	50	527	278
800	F2245	800	894	1040	488	3.0	485	860	404	750	800	10	510	16	12	50	528	166
	F2249	800	894	1040	488	3.0	485	860	404	750	800	10	510	16	12	50	528	188
	D132	800	894	1040	525	3.0	485	860	400	750	800	12	510	16	12	50	533	326
	D160	800	894	1250	525	5.0	485	860	505	750	800	12	510	16	12	50	638	440
900	D132	900	1006	1040	575	5.0	491	970	440	850	900	12	518	16	15	50	531	366
	D160	900	1006	1250	575	5.0	491	970	545	850	900	12	518	16	15	50	638	504
1000	D132	1000	1106	1040	625	5.0	547	1070	440	950	1000	12	574	16	15	50	531	396
	D160	1000	1106	1250	625	5.0	547	1070	545	950	1000	12	574	16	15	50	638	536
	D160/40	1000	1106	1422	625	6.0	547	1070	629	950	1000	12	574	16	15	50	723	572

ANCILLARIES

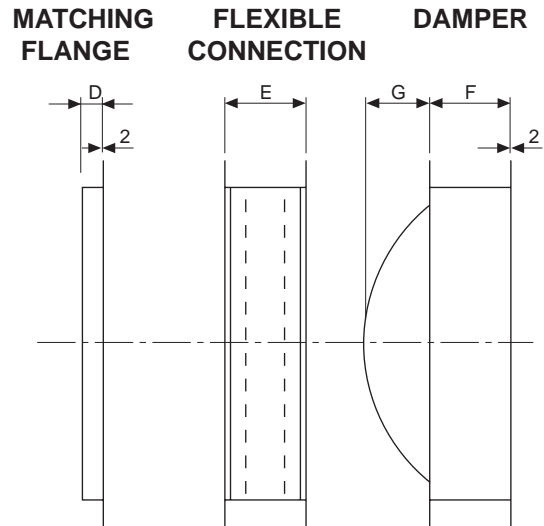
SILENCER - B (&C) TYPE



Suitable for fan ØA	B	C	Weight (kg)	
			B type	C type
315	415	315	10	13
355	455	355	12	15
400	500	400	15	18
450	600	450	20	24
500	650	500	25	29
560	710	560	30	35
630	780	630	35	42
710	860	710	44	53
800	1000	800	55	66
900	1100	900	70	84
1000	1200	1000	82	100

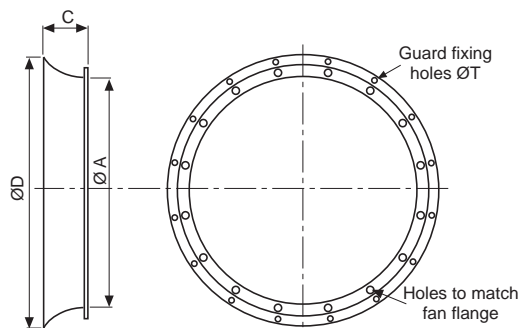
The above silencers give the approximate dB(A) reductions:-
 B Type 1 diameter length - 7 to 10 dB(A)
 C Type 1 diameter length - 12 to 15 dB(A)
 For full acoustic details contact our Woods Acoustic Division
 Telephone: +44 (0) 1206 544122

Suitable for fan ØA	D	E	F	G	Weight (kg)		
					Matching Flange	Flexible Connection	Damper
315	32	110	225	-	1.1	3.3	8
355	32	110	225	-	1.3	3.9	9
400	32	110	225	17	1.5	4.5	10
450	32	110	225	39	1.7	5.0	12
500	32	110	225	75	2.0	5.5	16
560	32	110	225	125	2.3	6.8	18
630	50	160	225	176	3.0	7.5	20
710	50	160	225	210	3.2	8.1	23
800	50	160	225	270	3.6	9.1	27
900	50	160	225	305	4.1	10.4	31
1000	50	160	225	345	4.6	11.6	36



BELLMOUTH

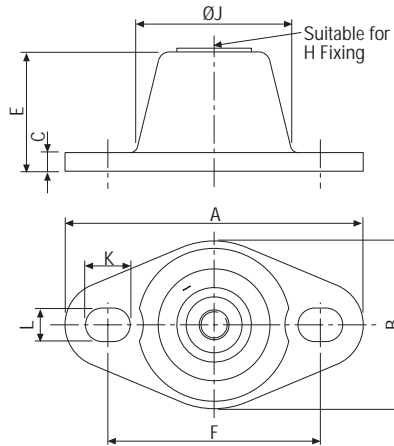
Suitable for fan ØA	C	D	Weight (kg)
315	65	387	1.0
355	85	430	1.5
400	70	482	1.5
450	95	545	2.0
500	87	606	2.9
560	100	665	3.7
630	108	763	4.3
710	126	863	5.7
800	134	962	6.3
900	150	1084	8.5
1000	167	1204	16.



All dimensions in mm and kg

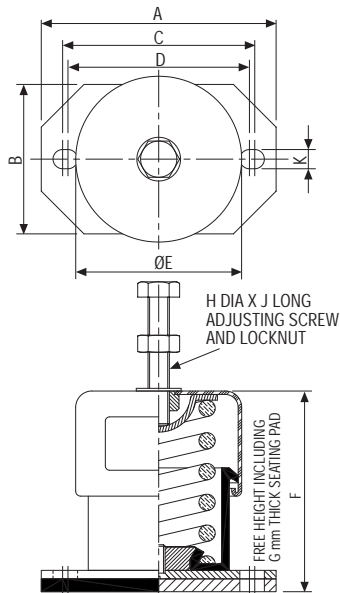
ANCILLARIES

VIBRATION ISOLATORS



Type	Load range per mounting (kg)	A	B	C	D	E	F	G	H	J	K
ES20/10/ZSB Purple	10	76	38	60	54	48	66	3	M8	40	6.5
ES20/15/ZSB Yellow	15	76	38	60	54	48	66	3	M8	40	6.5
ES20/20/ZSB Grey	20	76	38	60	54	48	66	3	M8	40	6.5
ES25/60/ZSB Green	60	110	70	90	85	78	94	6	M10	60	9.0
ES25/100/ZSB Blue	100	110	70	90	85	78	94	6	M10	60	9.0

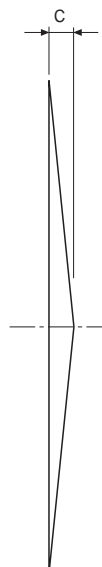
SPRING VIBRATION ISOLATORS



Type	Load range per mounting (kg)	A	B	C	E	F	H	J	K	L
63.105.40	0-4	64	43	2	20	50	M6	-	7	7
63.105.60	0-9	64	43	2	20	50	M6	-	7	7
19.100.Yellow	5-28	80	45	5	32	57	M8	41	12	9
19.100.Blue	9-50	80	45	5	32	57	M8	41	12	9
19.101.Blue	23-180	95	60	5	45	71	M10	56	14	9
19.101.Red	35-280	95	60	5	45	71	M10	56	14	9
19.102.Red	48-400	150	86	6	70	115	M12	82	22	11

GUARDS

TYPE IV



Suitable for fan ØA	Type	C	Weight (kg)
315	IV	30	0.5
355	IV	30	0.5
400	IV	30	0.6
450	IV	30	0.6
500	IV	30	0.7
560	IV	50	1.1
630	IV	50	1.2
710	IV	50	1.4
800	IV	50	1.5
900	IV	50	1.7
1000	IV	50	2.0

All dimensions in mm and kg