

Vent-Axia Power-Line® (TDF)

Features and Benefits

- **Direct Drive Twin Fan (Run & standby)**
- **Backward Curved Centrifugal Impellers**
- **Operating temperatures up to 40°C**
- **Performance range up to 2.72m³/s**
- **Static Pressure Development up to 500pa**
- **Speed Controllable**
- **Quality assured to BS EN ISO 9001**
- **Performance listed to BS 848 Part 1**

The TDF range are twin backward curved centrifugal impellers (Run & Standby) designed for induct installations.

Casings

Robustly constructed from galvanised sheet steel, fitted with propriety flanges at each end in accordance with DW142.

Impellers

Aerodynamically designed backward curved constructed from aluminium or steel plate depending on size and rotational speed.

The rotor of the external rotor motor forms the hub of the impeller. Rotors and impellers are factory matched and statically and dynamically balanced on precision machines according to VDI2060 quality class Q6.3.

Motors

Maintenance free external rotor motors with generously dimensioned sealed for

life ball bearings encapsulating a high temperature lubricant. The bearings allow for the fan to be mounted at any angle. Insulation is Class B with the enclosure IP44 according to DIN 40050. The electrical design corresponds to VDE 0530/12.84. The motors are suitable for operation in atmosphere up to 95% RH and ambients up to 40°C.

Motors are wound to suit either 240V 50HZ 1PH or 415V 50HZ 3PH electrical supply. All motors are fitted with Hot Spot protection by means of a thermal contact switch incorporated in the motor windings to prevent motor damage due to overloading. As the motors have a special torque-speed characteristic they are ideally suitable for speed control by voltage reduction.

Performance

Performance figures given have been tested using installation Type 'D' in accordance with BS848 Part 1 1980 and BS848 Part 2 1985. The aerodynamic performance data being to tolerance Class 'C' as recommended by BSI C.A.M.E Scheme, Certification No CM005.

Sound Levels

Sound Levels are measured in a reverberent chamber in accordance with BS848 Part 2. Sound level measurements are taken with the fan operating at 20% of its maximum pressure development.

Published dBA figures are sound pressure levels measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the real sound level experienced will depend on the acoustic characteristics of the area being served.

Quality Assurance

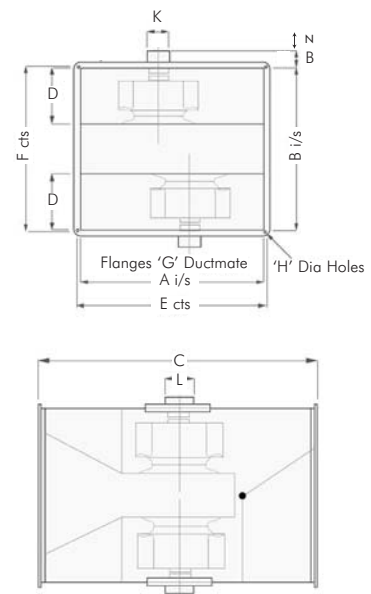
Design and manufacture is in accordance with Quality Assured to BS EN ISO9001



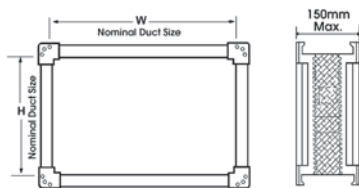
Fan Dimensions (mm)

Unit Size	A	B	C	D	E	F	G	H	J	K	L	N	Max Weight Kg
220	375	330	570	115	400	355	25	9	40	150	115	110	24
250	375	330	570	115	400	355	25	9	40	150	115	110	26
280	425	540	780	190	450	565	25	9	40	150	115	175	40
320	500	655	900	230	525	680	25	9	50	150	130	220	65
380	550	745	1015	260	585	780	35	11	50	160	130	240	75
420	625	830	1130	295	600	865	35	11	50	230	230	220	103
480	700	925	1250	325	735	960	35	11	65	230	230	300	112
520	775	1055	1385	355	810	1090	35	11	50	230	230	350	145
600	850	1200	1530	400	885	1235	35	11	55	230	230	400	180
700	950	1280	1675	430	985	1295	35	11	55	230	230	450	203

Note: For motor removal allow D+J minimum clearance



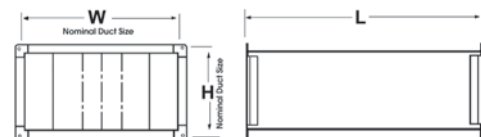
Power Line TDF Flexible Connections



Dimensions in (mm)

Unit Code	W	H	Ductmate
220	375	330	25
250	375	330	25
280	425	540	25
320	500	655	25
380	550	745	35
420	625	830	35
480	700	925	35
520	775	1055	35
600	850	1200	35
700	950	1280	35

Power Line TDF Attenuators

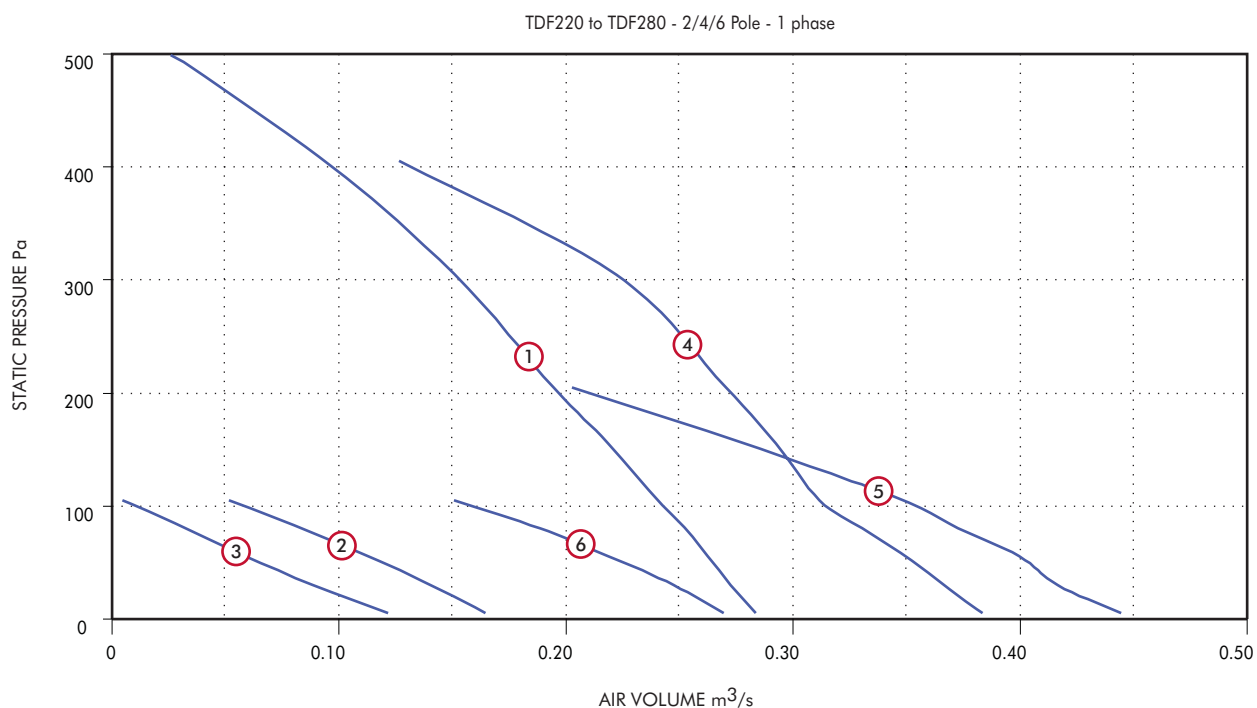


Unit Code

Unit Code	W	L	H	Ductmate	Weight
220	375	900	330	25	12
250	375	900	330	25	12
280	425	900	540	25	18
320	500	900	655	25	30
380	550	1200	745	35	62
420	625	1200	830	35	70
480	700	1500	925	35	96
520	775	1500	1055	35	110
600	850	1800	1200	35	150
700	950	1800	1260	35	240

Vent-Axia Power-Line (TDF)

Performance Curve



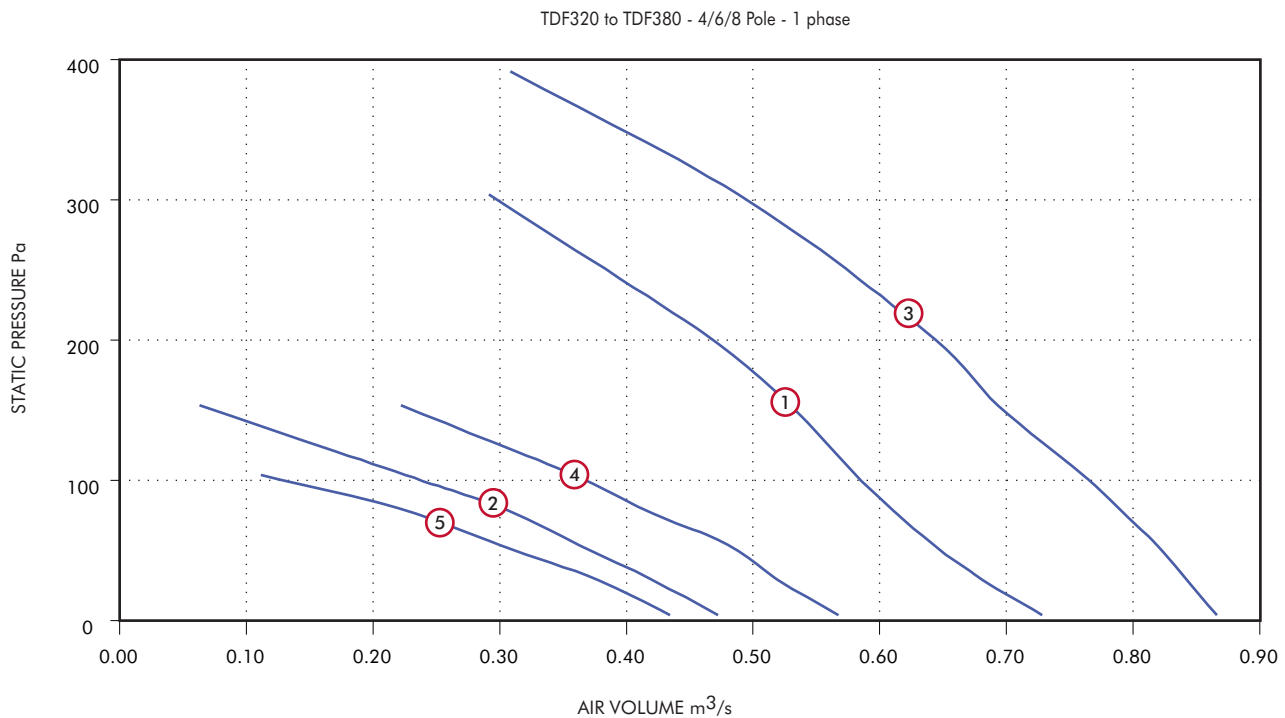
Performance Guide

Phase			Curve		m³/s at Pa								Motor	S.C.	F.L.C.	dBA	
Size	Motor	Pole	r.p.m.	Ref.	0	25	50	75	100	150	200	300	400	kW	Amps	Amps	@ 3m
TDF220	1	2	2700	①	0.285	0.274	0.264	0.254	0.242	0.22	0.196	0.15		0.21	3.6	0.9	59
TDF220	1	4	1300	②	0.166	0.142	0.114	0.085	0.053					0.07	1	0.44	40
TDF220	1	6	950	③	0.123	0.09	0.06	0.034	0.006					0.15	1.4	0.62	36
TDF250	1	2	2500	④	0.385	0.368	0.351	0.332	0.313	0.294	0.272	0.223	0.128	0.27	4.6	1.15	65
TDF280	1	4	1325	⑤	0.446	0.418	0.401	0.374	0.35	0.28	0.204			0.17	1.35	0.9	53
TDF280	1	6	910	⑥	0.271	0.249	0.22	0.19	0.152					0.08	0.75	0.39	46

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dBa @ 3m
TDF220	2	61	71	79	78	69	68	65	57	58
TDF220	4	56	59	60	58	55	54	50	41	40
TDF220	6	55	51	58	54	54	50	46	34	36
TDF250	2	67	76	80	85	84	83	80	73	65
TDF280	4	62	76	79	72	69	66	62	63	53
TDF280	6	62	66	68	64	63	60	54	43	46

Performance Curve



Performance Guide

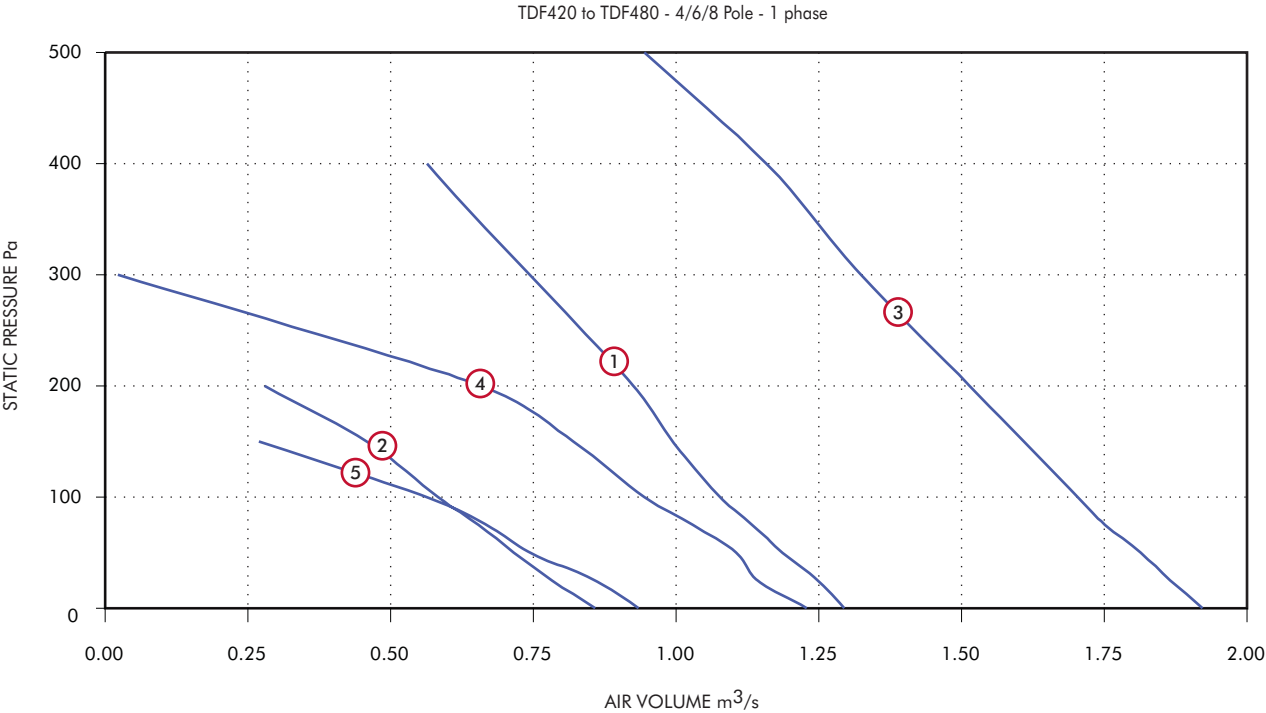
Size	Phase			Curve	m³/s at Pa								Motor	S.C.	F.L.C.	dBA	
	Motor	Pole	r.p.m.	Ref.	0	25	50	75	100	150	200	300	400	kW	Amps	Amps	@ 3m
TDF320	1	4	1375	①	0.731	0.684	0.646	0.613	0.584	0.532	0.465	0.294		0.31	1.35	3.7	58
TDF320	1	6	860	②	0.475	0.423	0.366	0.309	0.228	0.066				0.12	1.1	0.54	44
TDF380	1	4	1365	③	0.869	0.845	0.822	0.793	0.763	0.696	0.642	0.491	0.285	0.52	5	2.2	59
TDF380	1	6	800	④	0.57	0.522	0.484	0.418	0.316	0.225				0.17	1.6	0.8	47
TDF380	1	8	655	⑤	0.437	0.38	0.304	0.228	0.114					0.13	1	0.68	40

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dbA @ 3m
TDF320	4	65	84	79	77	73	70	65	58	58
TDF320	6	63	65	64	61	61	56	50	45	44
TDF380	4	66	84	78	79	75	71	66	59	59
TDF380	6	70	69	67	65	63	60	53	46	47
TDF380	8	53	64	60	59	58	51	42	33	40

Vent-Axia Power-Line (TDF)

Performance Curve



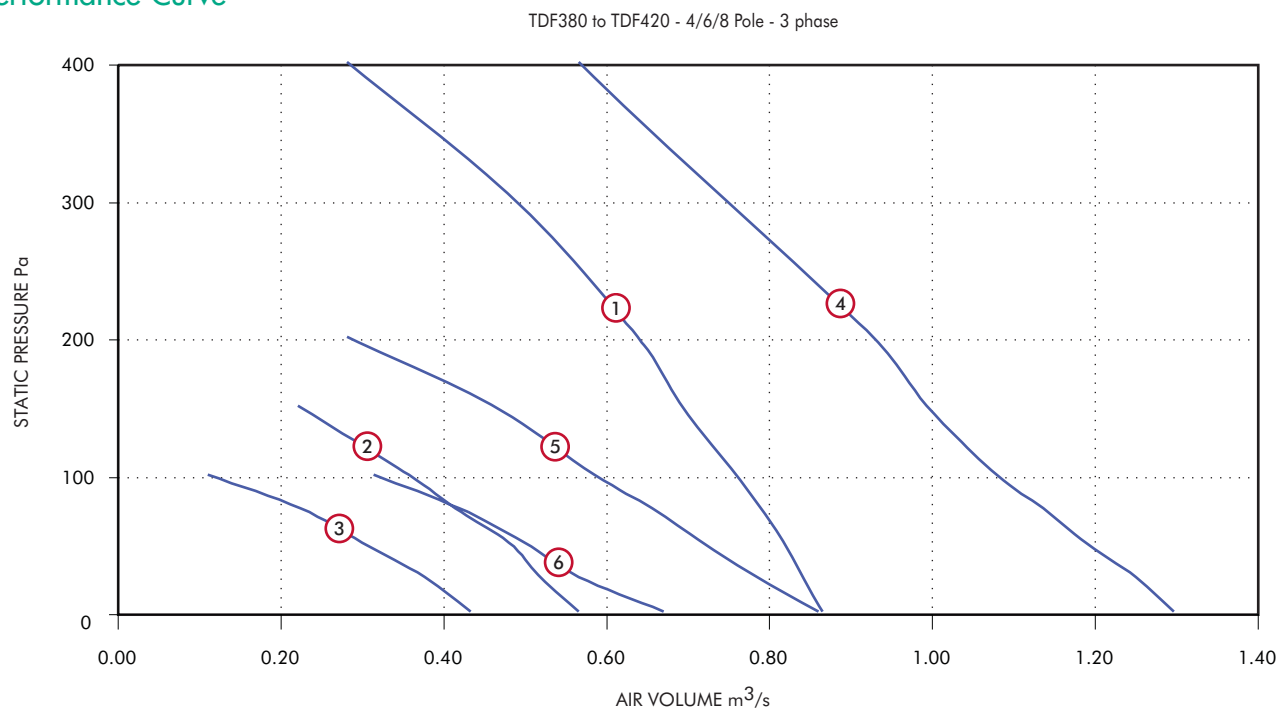
Performance Guide

Size	Phase		r.p.m.	Curve Ref.	m ³ /s at Pa										Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
	Motor	Pole			0	25	50	75	100	150	200	300	400	500				
TDF420	1	4	1280	①	1.301	1.254	1.192	1.14	1.083	0.977	0.931	0.750	0.57		0.74	7	3.2	61
TDF420	1	6	840	②	0.864	0.788	0.722	0.66	0.589	0.465	0.285				0.3	2	1.5	52
TDF480	1	4	1360	③	1.928	1.871	1.843	1.757	0.71	1.615	1.52	1.33	1.164	0.95	1.3	15	5.7	66
TDF480	1	6	905	④	1.235	1.149	1.111	1.035	0.95	0.826	0.665	0.028			0.45	4.2	2.2	53
TDF480	1	8	670	⑤	0.94	0.864	0.75	0.674	0.57	0.275					0.23	2.05	1.15	45

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dba @ 3m
TDF420	4	74	91	83	81	76	72	69	65	61
TDF420	6	75	86	74	71	67	65	58	48	52
TDF480	4	76	95	88	86	81	76	76	71	66
TDF480	6	76	82	77	73	70	65	59	53	53
TDF480	8	69	73	69	64	62	56	50	42	45

Performance Curve



Performance Guide

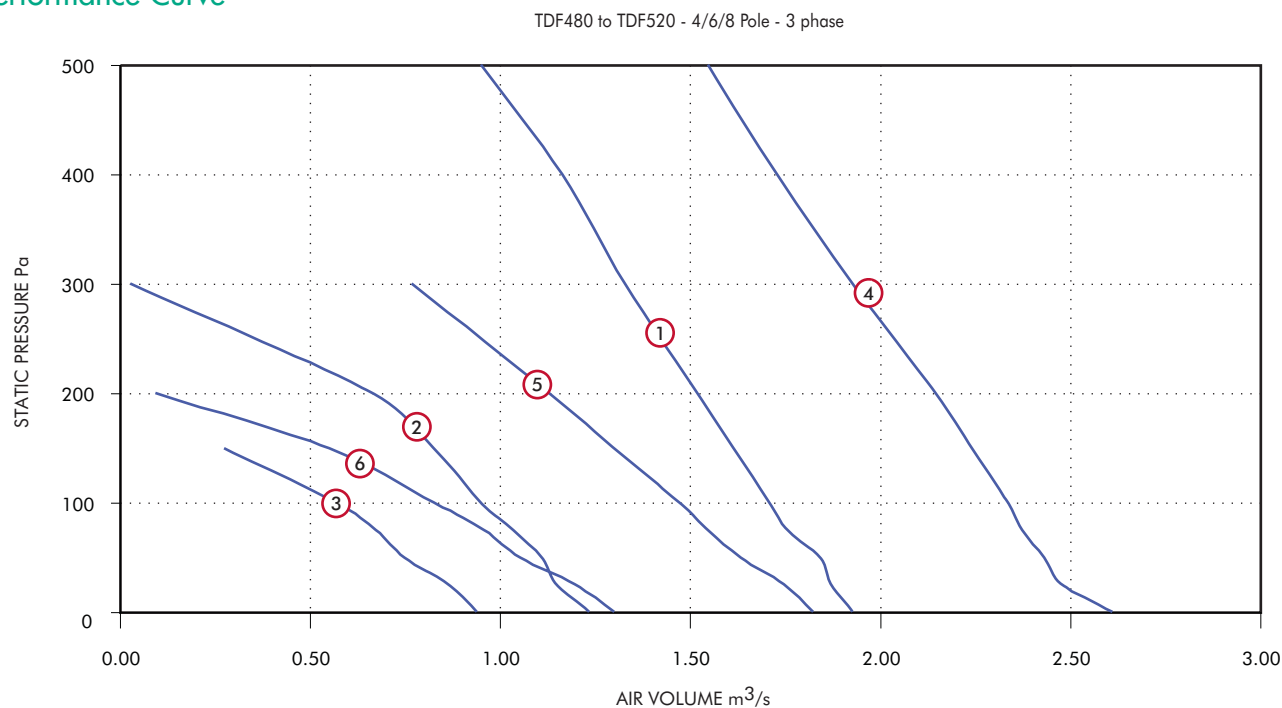
Size	Phase		r.p.m.	Curve Ref.	m ³ /s at Pa									Motor kW	S.C. Amps	F.L.C. Amps	dBa @ 3m
	Motor	Pole			0	25	50	75	100	150	200	300	400				
TDF380	3	4	1365	①	0.869	0.845	0.822	0.793	0.763	0.696	0.642	0.491	0.285	0.46	2.5	0.85	59
TDF380	3	6	800	②	0.57	0.522	0.484	0.418	0.361	0.225				0.16	1.05	0.36	47
TDF380	3	8	655	③	0.437	0.38	0.304	0.228	0.114					0.09	0.5	0.26	40
TDF420	3	4	1280	④	1.301	1.254	1.192	1.14	1.083	0.997	0.931	0.75	0.57	0.69	3.4	1.3	61
TDF420	3	6	840	⑤	0.864	0.788	0.722	0.66	0.589	0.465	0.285			0.26	1.1	0.49	52
TDF420	3	8	670	⑥	0.674	0.57	0.503	0.423	0.318					0.12	0.55	0.27	45

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dba @ 3m
TDF380	4	66	84	78	79	75	71	66	59	59
TDF380	6	70	69	67	65	63	60	53	46	47
TDF380	8	53	64	60	59	58	51	42	33	40
TDF420	4	74	91	83	81	76	72	69	65	61
TDF420	6	75	86	74	71	67	65	58	48	52
TDF420	8	68	70	67	63	64	59	49	39	45

Vent-Axia Power-Line (TDF)

Performance Curve



Performance Guide

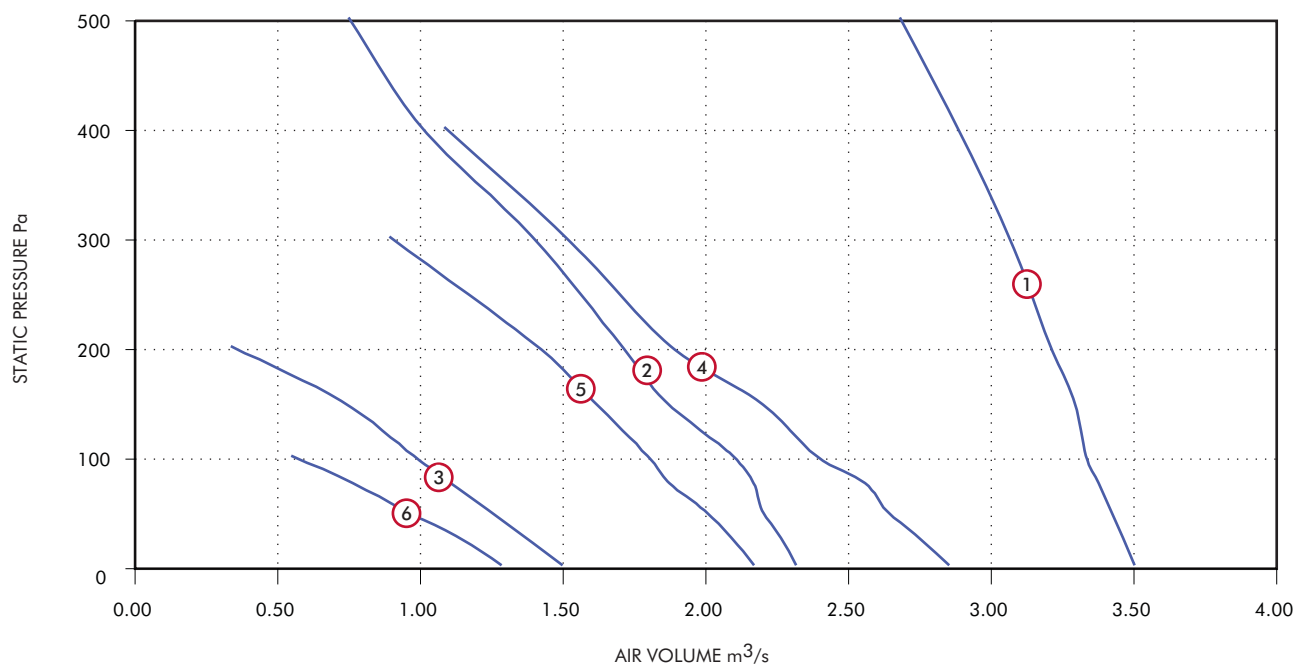
Size	Phase			Curve Ref.	m ³ /s at Pa										Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
	Motor	Pole	r.p.m.		0	25	50	75	100	150	200	300	400	500				
TDF480	3	4	1360	1	1.928	1.871	1.843	1.757	1.71	1.615	1.52	1.33	1.164	0.95	1.25	9.2	2.3	66
TDF480	3	6	905	2	1.235	1.149	1.111	1.035	0.95	0.826	0.665	0.028			0.39	1.75	0.81	53
TDF480	3	8	670	3	0.94	0.864	0.75	0.674	0.57	0.275					0.18	1	0.41	45
TDF520	3	4	1345	4	2.612	2.479	2.432	2.375	2.337	2.242	2.147	1.928	1.729	1.548	1.8	10	3.4	67
TDF520	3	6	865	5	1.824	1.748	1.634	1.548	1.472	1.301	1.13	0.769			0.69	3.6	1.5	55
TDF520	3	8	625	6	1.301	1.197	1.054	0.959	0.826	0.551	0.095				0.28	1.3	0.56	46

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dBa @ 3m
TDF480	4	76	95	88	86	81	76	76	71	66
TDF480	6	76	82	77	73	70	65	59	53	53
TDF480	8	69	73	69	64	62	56	50	42	45
TDF520	6	80	81	78	80	71	62	60	52	55
TDF520	8	70	71	68	64	61	54	49	40	46

Performance Curve

TDF600 to TDF700 - 4/6/8/12 Pole - 3 phase



Performance Guide

Size	Phase			Curve Ref.	m³/s at Pa										Motor kW	S.C. Amps	F.L.C. Amps	dBA @ 3m
	Motor	Pole	r.p.m.		0	25	50	75	100	150	200	300	400	500				
TDF600	3	4	1425	①	3.515	3.474	3.431	3.388	3.345	3.303	3.220	3.075	2.893	2.692	4.1	29	6.8	70
TDF600	3	6	925	②	2.33	2.276	2.21	2.21	2.107	1.858	1.719	1.404	1.016	0.76	1.2	8	2.6	56
TDF600	3	8	600	③	1.51	1.383	1.253	1.118	0.989	0.734	0.349				0.43	1.9	1	43
TDF700	3	6	92	④	2.866	2.758	2.646	2.591	2.529	2.197	1.889	1.52	1.097		1.95	14	3.6	60
TDF700	3	8	720	⑤	2.182	2.103	2.009	1.885	1.807	1.617	1.42	0.903			0.96	14	1.9	53
TDF700	3	12	420	⑥	1.298	1.15	0.956	0.776	0.559						0.28	6	0.9	37

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

Size	Pole	63	125	250	500	1k	2k	4k	8k	dBa @ 3m
TDF600	4	83	99	94	90	87	85	75	70	70
TDF600	6	84	86	80	77	73	66	61	56	56
TDF600	8	67	69	67	64	60	53	47	41	43
TDF700	6	90	87	85	81	77	71	65	59	60
TDF700	8	82	78	78	74	70	63	57	50	53
TDF700	12	64	62	62	57	53	47	40	32	37

Vent-Axia Power-Line (TDF)

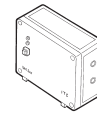
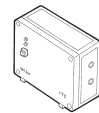
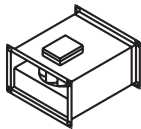
Power-Line Silencers Type TDS

Unit	Attenuation across Sound Spectrum H ₃							
Code TDS	63	125	250	500	1K	2K	4K	8K
220	3	5	16	26	37	37	29	23
250	3	5	16	26	37	37	29	23
280	2	4	14	24	32	32	24	20
320	3	8	17	24	32	32	25	20
380	6	12	23	32	45	45	33	28
420	6	10	20	31	43	43	33	27
480	4	9	17	27	36	36	24	13
520	3	7	14	22	27	21	15	10
600	4	8	15	24	30	26	14	8
700	7	15	30	41	45	45	45	32

For sound breakout through the fan casing the above figures may be reduced by 1.5dB across the frequency band 125 to 8k

Accessories

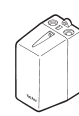
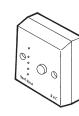
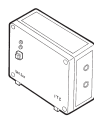
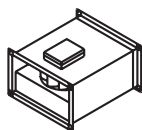
Single Phase



Duct Size	Stock	Electronic Speed	Transformer Speed	ITC Man/Auto	ITC-DS 12/24hr	RVC Remote	RSC Remote	
W x H	Pole	Ref	Controller	Controller	Ch'over Cont.	Auto Ch'over Cont.	Visual Indicator	Setback Cont.
375 x 330	2	TDF220/2/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
375 x 330	2	TDF220/2/1	W10303102M	10314103	10314200	10314210	10314220	10314230
375 x 330	4	TDF220/4/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
425 x 540	4	TDF280/4/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
500 x 655	4	TDF320/4/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
550 x 745	4	TDF380/4/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
625 x 830	4	TDF420/4/1	10303106A	10314105	10314200	10314210	10314220	10314230A
700 x 925	4	TDF480/4/1	10303106A	10314107	10314200	10314210	10314220	10314230A
375 x 330	6	TDF220/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
425 x 540	6	TDF280/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
500 x 655	6	TDF320/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
550 x 745	6	TDF380/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
625 x 830	6	TDF420/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
700 x 925	6	TDF480/6/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
550 x 745	8	TDF380/8/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
625 x 830	8	TDF420/8/1	W10303102M	10314103	10314200	10314210	10314220	10314230A
700 x 925	8	TDF480/8/1	W10303102M	10314103	10314200	10314210	10314220	10314230A

Accessories

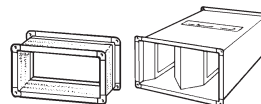
Three Phase



Duct Size		Stock	Transformer Speed	**ITC Man/Auto	**ITC-DS 12/24hr	RVC Remote	RSC Remote
W x H	Pole	Reference	Controller	Ch'over Cont.	Auto Ch'over Cont.	Visual Indicator	Setback Cont.
550 x 745	4	TDF380/4/3	10314301	10314200	10314210	10314220	10314230A
625 x 830	4	TDF420/4/3	10314304	10314200	10314210	10314220	10314230A
700 x 925	4	TDF480/4/3	10314304	10314200	10314210	10314220	10314230A
775 x 1055	4	TDF520/4/3	10314304	10314200	10314210	10314220	10314230A
850 x 1200	4	TDF600/4/3	10314307	10314200	10314210	10314220	10314230A
550 x 745	6	TDF380/6/3	10314301	10314200	10314210	10314220	10314230A
625 x 830	6	TDF420/6/3	10314301	10314200	10314210	10314220	10314230A
700 x 925	6	TDF480/6/3	10314301	10314200	10314210	10314220	10314230A
775 x 1055	6	TDF520/6/3	10314304	10314200	10314210	10314220	10314230A
850 x 1200	6	TDF600/6/3	10314304	10314200	10314210	10314220	10314230A
950 x 1280	6	TDF700/6/3	10314304	10314200	10314210	10314220	10314230A
550 x 745	8	TDF380/8/3	10314301	10314200	10314210	10314220	10314230A
625 x 830	8	TDF420/8/3	10314301	10314200	10314210	10314220	10314230A
700 x 925	8	TDF480/8/3	10314301	10314200	10314210	10314220	10314230A
775 x 1055	8	TDF520/8/3	10314301	10314200	10314210	10314220	10314230A
850 x 1200	8	TDF600/8/3	10314304	10314200	10314210	10314220	10314230A
950 x 1280	8	TDF700/8/3	10314304	10314200	10314210	10314220	10314230A
950 x 1280	12	TDF700/12/3	10314301	10314200	10314210	10314220	10314230A

**Not suitable for use with eDemand controllers. For compatible changeover panel, see Accessories and Controllers Section

Single Phase & Three Phase



			*eDemand Controller			Mounting						
			Voltage	1/3 Phase	3 Phase	Feet & AV's	Flexible	Matching	Acoustic	Discharge	Roof	
Model	Pole	Phase	Control	Inverter	Inverter	(Set of 4)	Connection	Attenuator	Jacket	Cowl	Canopy	
TDF220	2&4&6	1	444164	-	-	PAVM1	TFC220/250	RUTDS220/250	TAJ220/250	TDW220/250	TRC220/250	
TDF250	2	1	444164	-	-	PAVM1	TFC220/250	RUTDS220/250	TAJ220/250	TDW220/250	TRC220/250	
TDF280	4&6	1	444164	-	-	PAVM1	TFC280	RUTDS280	TAJ280	TDW280	TRC280	
TDF320	4&6	1	444164	-	-	PAVM1	TFC320	RUTDS320	TAJ320	-	TRC320	
TDF380	4&6&8	1	444164	-	-	PAVM2	TFC380	RUTDS380	TAJ380	TDW380	TRC380	
TDF380	4&6&8	3	444166	444177	444172	PAVM2	TFC380	RUTDS380	TAJ380	TDW380	TRC380	
TDF420	4&6&8	1	444164	-	-	PAVM3	TFC420	RUTDS420	TAJ420	TDW420	TRC420	
TDF420	4&6&8	3	444166	444177	444172	PAVM3	TFC420	RUTDS420	TAJ420	TDW420	TRC420	
TDF480	4	1	444165	-	-	PAVM3	TFC480	RUTDS480	TAJ480	TDW480	TRC480	
TDF480	4	3	444166	444177	444173	PAVM3	TFC480	RUTDS480	TAJ480	TDW480	TRC480	
TDF480	6&8	1	444164	-	-	PAVM3	TFC480	RUTDS480	TAJ480	TDW480	TRC480	
TDF480	6&8	3	444166	444177	444172	PAVM3	TFC480	RUTDS480	TAJ480	TDW480	TRC480	
TDF520	4	3	444166	444177	444173	PAVM3	TFC520	RUTDS520	TAJ520	TDW520	TRC520	
TDF520	6&8	3	444166	444177	444172	PAVM3	TFC520	RUTDS520	TAJ520	TDW520	TRC520	
TDF600*	4	3	444167	-	444175	PAVM3	TFC600	RUTDS600	TAJ600	TDW600	TRC600	
TDF600*	6	3	444166	444177	444173	PAVM3	TFC600	RUTDS600	TAJ600	TDW600	TRC600	
TDF600*	8	3	444166	444177	444172	PAVM3	TFC600	RUTDS600	TAJ600	TDW600	TRC600	
TDF700*	4&8	3	444166	444177	444172	PAVM3	TFC700	RUTDS700	TAJ700	TDW700	TRC700	

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