Volute-S

Centrifugal smoke extraction fans

Radial centrifugal smoke extraction fan for removing high-temperature gas-air mixtures and heat generated in case of fire in premises

Air flow:
up to 105 000 m³/h

Transported air temperature:
+120 °C for long-term operation;
+400 °C for operation
up to 120 minutes



Application

- The dual-purpose centrifugal smoke extraction fan is used in emergency exhaust ventilation systems for forced removal of smoke, heated gas and combustion products.
- The fan may be used for general exhaust ventilation.
- The fan is a component part and is not designed for independent operation.

Operation

- The fan is designed to remove smoke and air mixtures heated up to +400 °C for up to 120 minutes, and long-term operation with transported air temperature of up to +120°C.
- The fans can be equipped with a frequency converter to adjust the rotation speed.
- The fan may be used for general extract ventilation.
- The fan can be designed for temperate (**U**) , tropical (**T**) or maritime moderately cold (**M**) climate.

Design

- The fans are made from steel with heat-resistant polymer coating, which ensures protection from weather conditions.
- The impeller and backward curved blades are powder-coated.
- The fan's casing can rotate within the angle range of 0° – 315°.
- The unit design is constantly being improved, thus some models may be slightly different from those described in this catalog.

Motor

- The fans are equipped with three-phase electric motors rated for a voltage of 400 V, 50 Hz.
- The motor is located outside of the transported air flow. The motor protection class according to IEC 60034-5 is IP55.

Designation key

Volute-S 40- 2 D/ x - R 90- U 1 -400/2

Series
Volute-S: centrifugal fan for smoke extraction with direct drive

Impeller size [cm]
28; 31; 35; 40; 45; 50; 56; 63; 71; 80; 90; 100; 112; 125

Number of poles
2, 4, 6, 8

No. of phases
D: three-phase

Motor power [kW]

Casing design
R: right

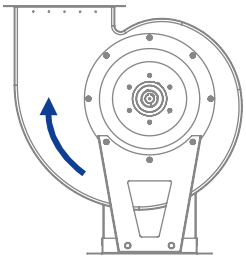
Casing rotation angle
0; 45; 90 (standard); 135; 180; 225; 270; 315

Climatic category
U: temperate climate (-40...+40 °C)
T: tropical climate (-10...+50 °C)
M: maritime moderately cold climate (-40...+40 °C)

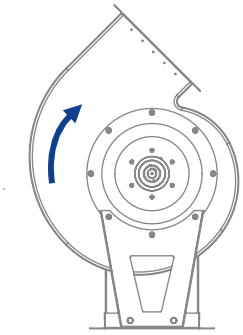
Placement category
1: outdoors
2: under a canopy or indoors, where the conditions are the same as outdoors, except for solar radiation and precipitation
3: indoors without artificial climate control

Fire resistance rating/hours
400/2: 400 °C/2 h

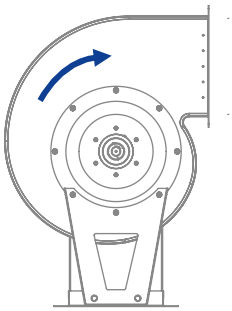
Casing rotation angle



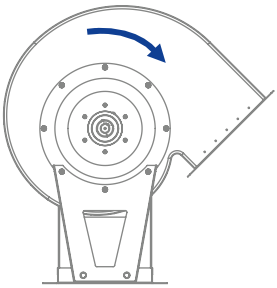
0°



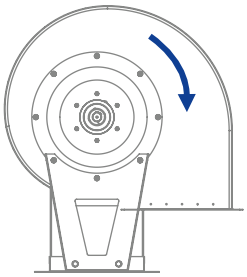
45°



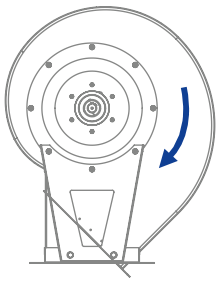
90°



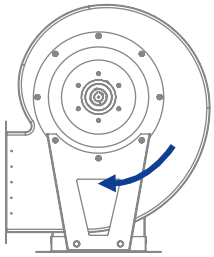
135°



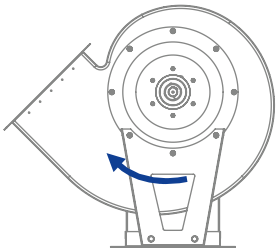
180°



225°



270°



315°

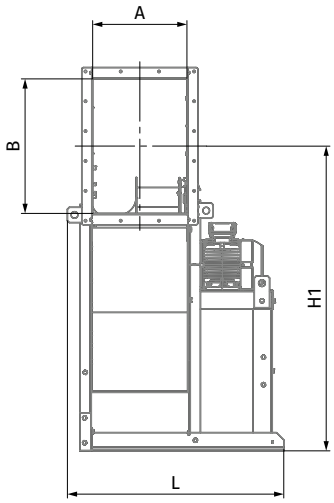
Accessories

Backdraft damper	Flexible joint	Spring-loaded anti-vibration mount	Frequency converter	Safety switches
				
VRV-AF...400/2	EVAF-AF...400/2	SIF-AF	Basic Drive FC-101	A

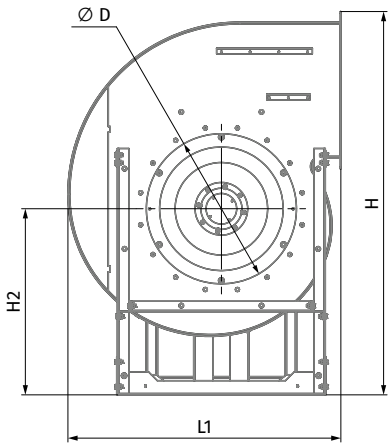
Dimensions [mm]

Model	A	B	∅ D	H (R90)	H (R0)	H1	H2	L	L1 (R90)	L1 (R0)	L2	L3	Weight [kg]
Volute-S 28-2D/0.55-400/2	190	225	280	735	625	590	400	480	475	545	500	350	37.5
Volute-S 31-4D/0.25-400/2	207	252	315	805	685	650	435	530	535	610	530	385	43
Volute-S 31-2D/1.1-400/2	207	252	315	805	685	650	435	530	535	610	530	385	47
Volute-S 35-4D/0.37-400/2	227	284	355	895	755	720	480	555	595	680	575	400	49
Volute-S 35-2D/2.2-400/2	227	284	355	895	755	720	480	555	595	680	575	400	58
Volute-S 40-2D/4-400/2	258	316	400	966	777	771	498	648	655	765	610	400	67
Volute-S 40-4D/0.37-400/2	258	316	400	966	777	771	498	648	655	765	610	400	57
Volute-S 45-2D/7.5-400/2	283	356	450	1078	835	863	556	767	734	856	705	450	112
Volute-S 45-4D/0.75-400/2	283	356	450	1078	835	863	556	767	734	856	705	450	65
Volute-S 50-4D/1.5-400/2	316	390	500	1186	974	951	607	705	813	950	705	450	95
Volute-S 50-6D/0.37-400/2	316	390	500	1186	974	951	607	705	813	950	705	450	87
Volute-S 56-4D/2.2-400/2	353	436	560	1312	1073	1057	671	742	901	1055	705	450	110
Volute-S 56-6D/0.75-400/2	353	436	560	1312	1073	1057	671	742	901	1055	705	450	100
Volute-S 63-6D/1.5-400/2	397	491	630	1469	1204	1186	753	787	1014	1182	767	550	128
Volute-S 63-4D/4-400/2	397	491	630	1469	1204	1186	753	787	1014	1182	767	550	148
Volute-S 71-8D/1.1-400/2	442	554	710	1709	1422	1385	897	895	1146	1338	895	570	153
Volute-S 71-6D/2.2-400/2	442	554	710	1709	1422	1385	897	895	1146	1338	895	570	160
Volute-S 71-4D/7.5-400/2	442	554	710	1709	1422	1385	897	895	1146	1338	895	570	192
Volute-S 80-8D/2.2-400/2	492	703	800	2002	1596	1592	972	1130	1426	1697	1065	940	306
Volute-S 80-6D/4-400/2	492	703	800	2002	1596	1592	972	1130	1426	1697	1065	940	308
Volute-S 80-4D/15-400/2	492	703	800	2002	1596	1592	972	1330	1426	1697	1265	940	392
Volute-S 90-8D/4-400/2	562	782	900	2349	1892	1900	1210	1265	1573	1880	1200	1060	430
Volute-S 90-6D/7.5-400/2	562	782	900	2349	1892	1900	1210	1265	1573	1880	1200	1060	450
Volute-S 90-4D/30-400/2	562	782	900	2349	1892	1900	1210	1415	1573	1880	1350	1060	553
Volute-S 100-8D/7.5-400/2	613	900	1000	2426	1908	1916	1125	1339	1808	2153	1321	1240	542
Volute-S 100-6D/15-400/2	613	900	1000	2426	1908	1916	1125	1339	1808	2153	1321	1240	581
Volute-S 112-8D/11-400/2	686	1001	1120	2663	2091	2103	1225	1468	2003	2383	1450	1300	719
Volute-S 112-8D/15-400/2	763	1001	1120	2663	2091	2103	1225	1595	2003	2383	1577	1300	832
Volute-S 112-6D/22-400/2	686	1001	1120	2663	2091	2103	1225	1518	2003	2383	1500	1300	786
Volute-S 112-6D/30-400/2	763	1001	1120	2663	2091	2103	1225	1685	2003	2383	1667	1300	887
Volute-S 125-8D/22-400/2	730	1071	1250	2840	2231	2245	1305	1651	2143	2546	1633	1380	982
Volute-S 125-6D/45-400/2	730	1071	1250	2840	2231	2245	1305	1839	2143	2546	1699	1380	1334

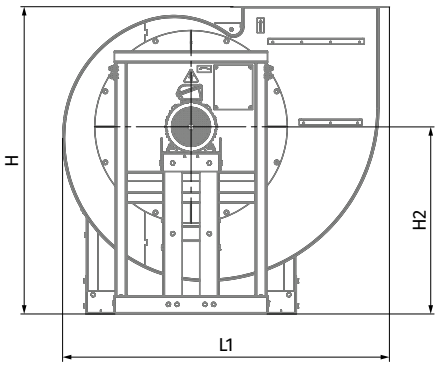
The dimensions provided apply to models with the R0 and R90 rotation angles. Dimensions for models with different rotation angles are available upon request.



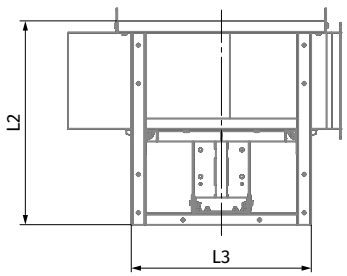
R90



R0



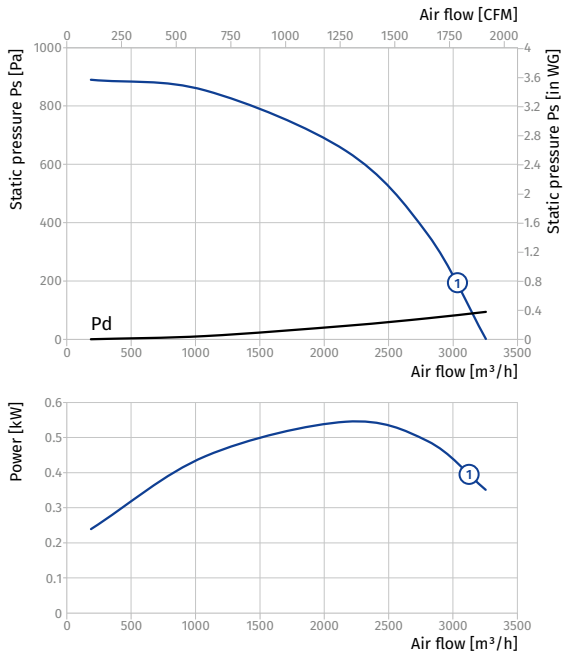
Bottom view



Technical data

Standard size	Number of poles	Voltage [V/50 Hz]	Fan model	Rated power [kW]	Rated RPM [min⁻¹]	Curve number
280	2	3~400	Volute-S 28-2D/0.55-400/2	0.55	2880	①
315	4	3~400	Volute-S 31-4D/0.25-400/2	0.25	1440	②
315	2	3~400	Volute-S 31-2D/1.1-400/2	1.1	2880	③
355	4	3~400	Volute-S 35-4D/0.37-400/2	0.37	1440	④
355	2	3~400	Volute-S 35-2D/2.2-400/2	2.2	2880	⑤
400	4	3~400	Volute-S 40-4D/0.37-400/2	0.37	1440	⑥
400	2	3~400	Volute-S 40-2D/4-400/2	4	2880	⑦

STANDARD SIZE: 280



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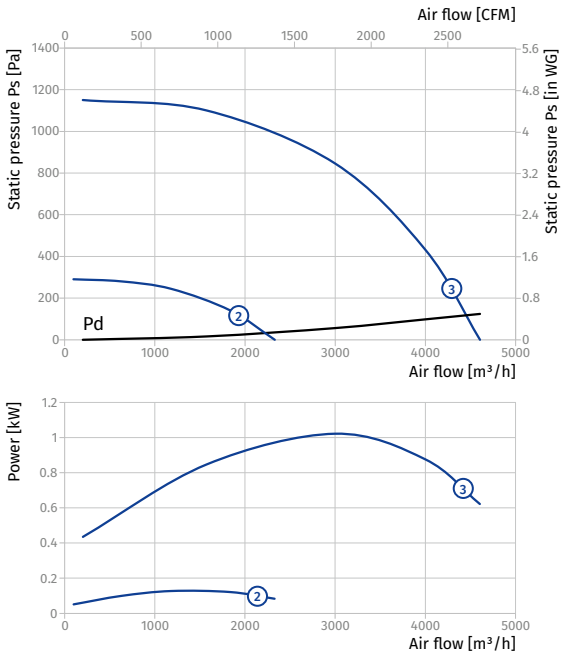

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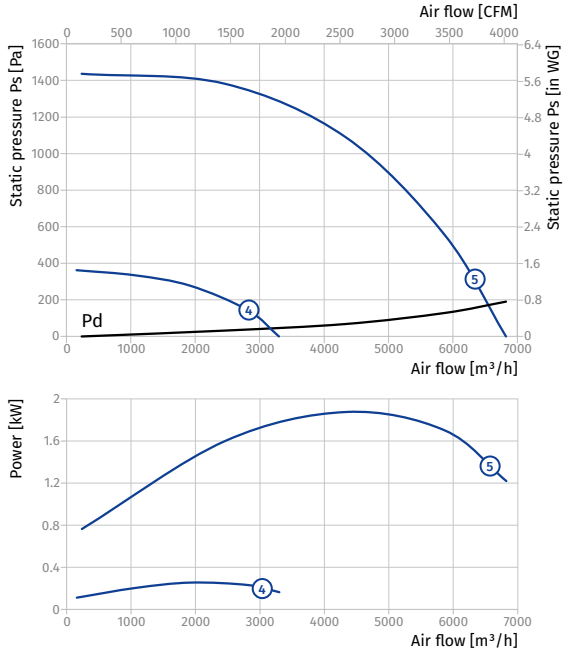
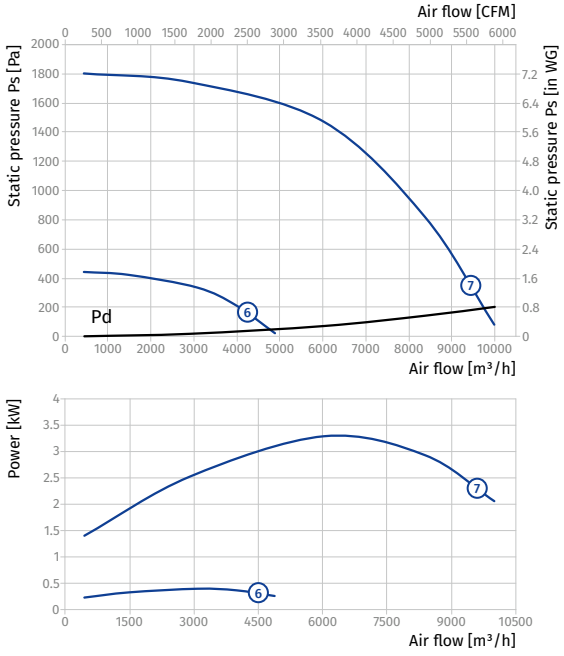
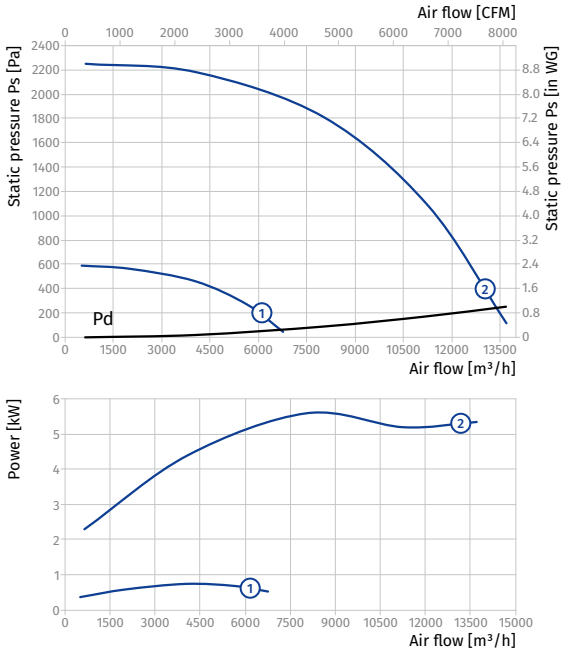


STANDARD SIZE: 400



Standard size	Number of poles	Voltage [V/50 Hz]	Fan model	Rated power [kW]	Rated RPM [min⁻¹]	Curve number
450	4	3~400	Volute-S 45-4D/0.75-400/2	0.75	1440	①
450	2	3~400	Volute-S 45-2D/7.5-400/2	7.5	2880	②
500	6	3~400	Volute-S 50-6D/0.37-400/2	0.37	960	③
500	4	3~400	Volute-S 50-4D/1.5-400/2	1.5	1440	④
560	6	3~400	Volute-S 56-6D/0.75-400/2	0.75	960	⑤
560	4	3~400	Volute-S 56-4D/2.2-400/2	2.2	1440	⑥
630	6	3~400	Volute-S 63-6D/1.5-400/2	1.5	950	⑦
630	4	3~400	Volute-S 63-4D/4-400/2	4	1440	⑧

STANDARD SIZE: 450



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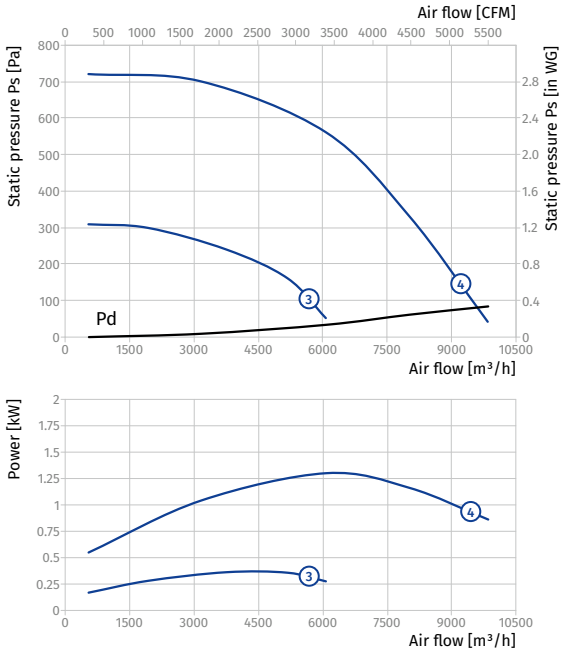

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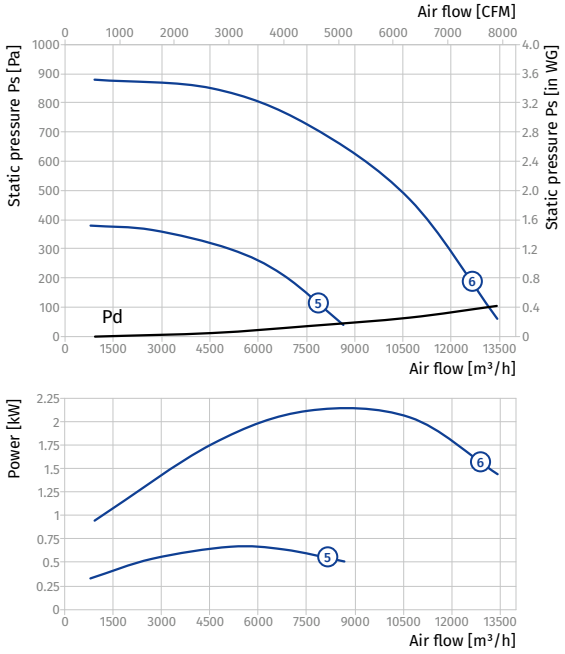

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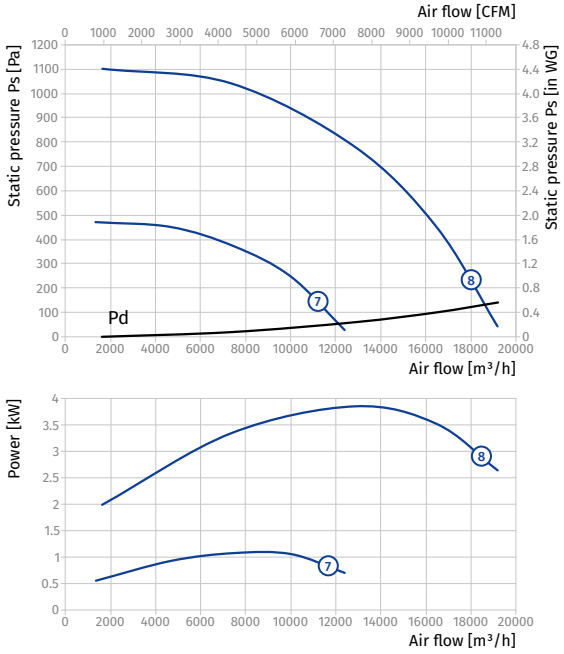
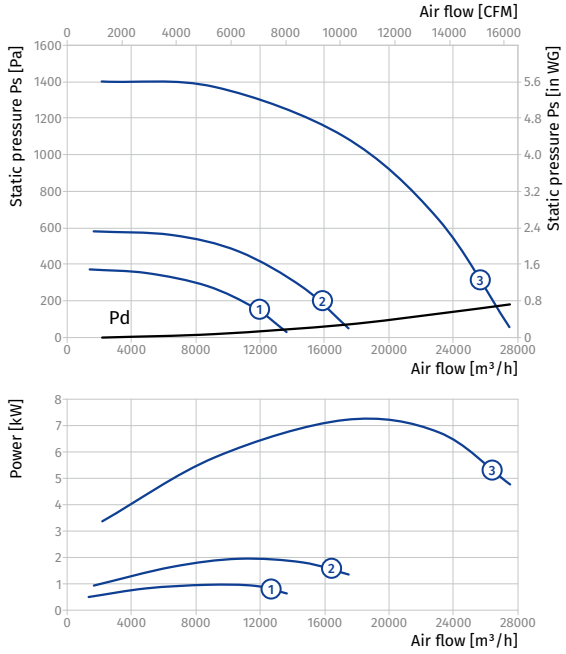


Standard size	Number of poles	Voltage [V/50 Hz]	Fan model	Rated power [kW]	Rated RPM [min⁻¹]	Curve number
710	8	3~400	Volute-S 71-8D/1.1-400/2	1.1	730	①
710	6	3~400	Volute-S 71-6D/2.2-400/2	2.2	940	②
710	4	3~400	Volute-S 71-4D/7.5-400/2	7.5	1440	③
800	8	3~400	Volute-S 80-8D/2.2-400/2	2.2	730	④
800	6	3~400	Volute-S 80-6D/4-400/2	4	940	⑤
800	4	3~400	Volute-S 80-4D/15-400/2	15	1440	⑥
900	8	3~400	Volute-S 90-8D/4-400/2	4	750	⑦
900	6	3~400	Volute-S 90-6D/7.5-400/2	7.5	1000	⑧
900	4	3~400	Volute-S 90-4D/30-400/2	30	1470	⑨
1000	8	3~400	Volute-S 100-8D/7.5-400/2	7.5	750	⑩
1000	6	3~400	Volute-S 100-6D/15-400/2	15	1000	⑪

STANDARD SIZE: 710



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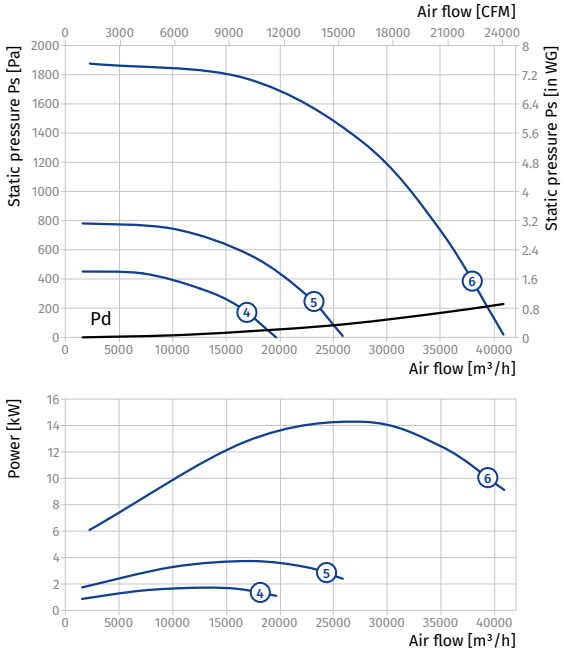

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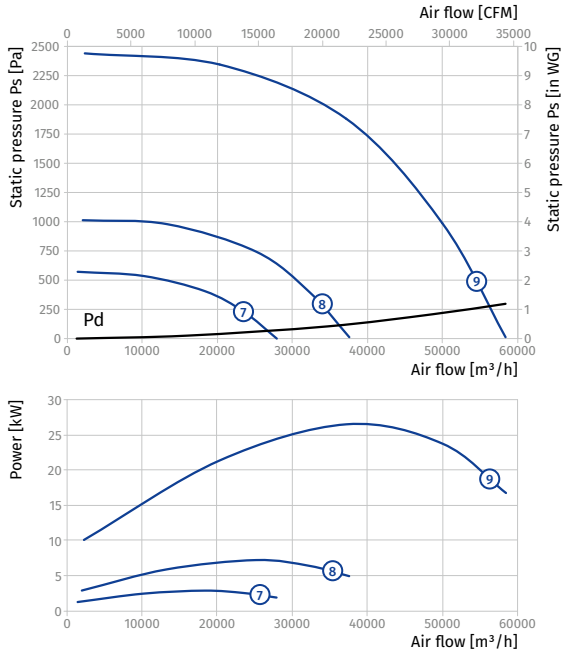

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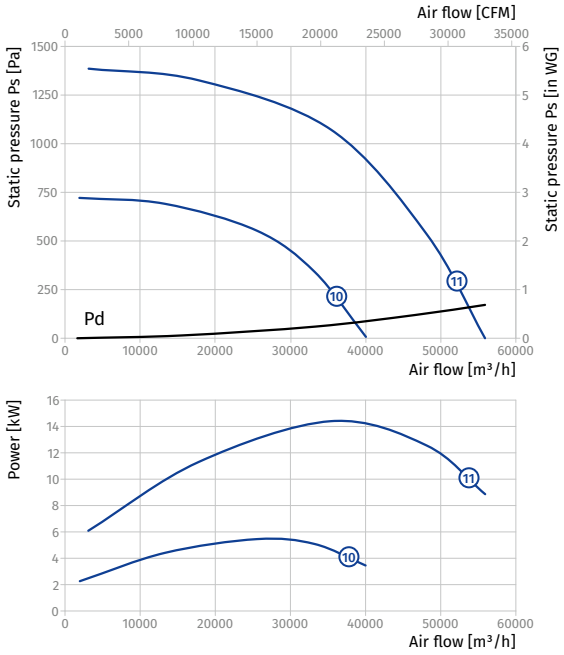
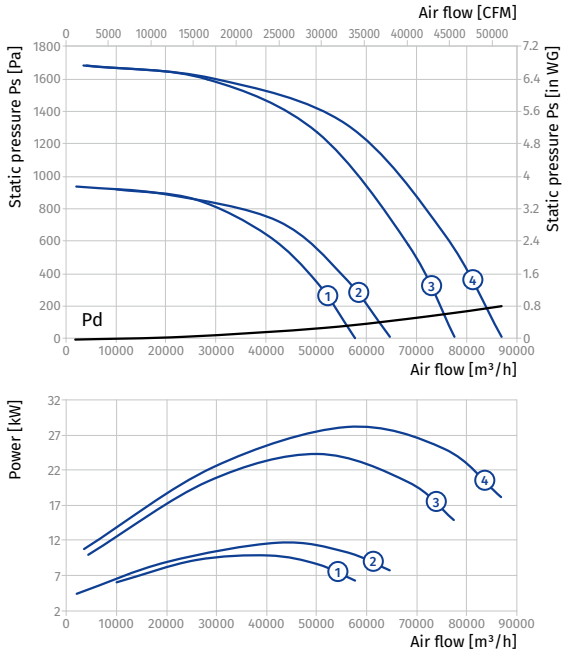


Standard size	Number of poles	Voltage [V/50 Hz]	Fan model	Rated power [kW]	Rated RPM [min⁻¹]	Curve number
1120	8	3~400	Volute-S 112-8D/11-400/2	11	750	①
1120	8	3~400	Volute-S 112-8D/15-400/2	15	750	②
1120	6	3~400	Volute-S 112-6D/22-400/2	22	1000	③
1120	6	3~400	Volute-S 112-6D/30-400/2	30	1000	④
1250	8	3~400	Volute-S 125-8D/22-400/2	22	750	⑤
1250	6	3~400	Volute-S 125-6D/45-400/2	45	1000	⑥

STANDARD SIZE: 1120



STANDARD SIZE: 1250

