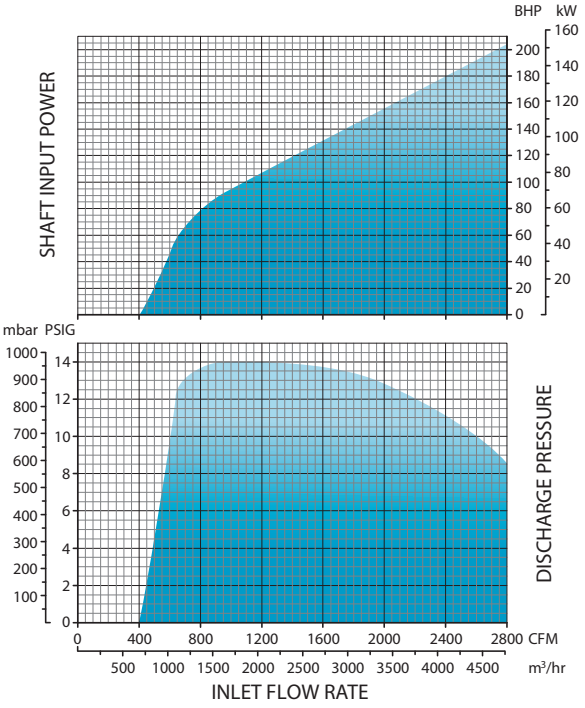
ZM 81

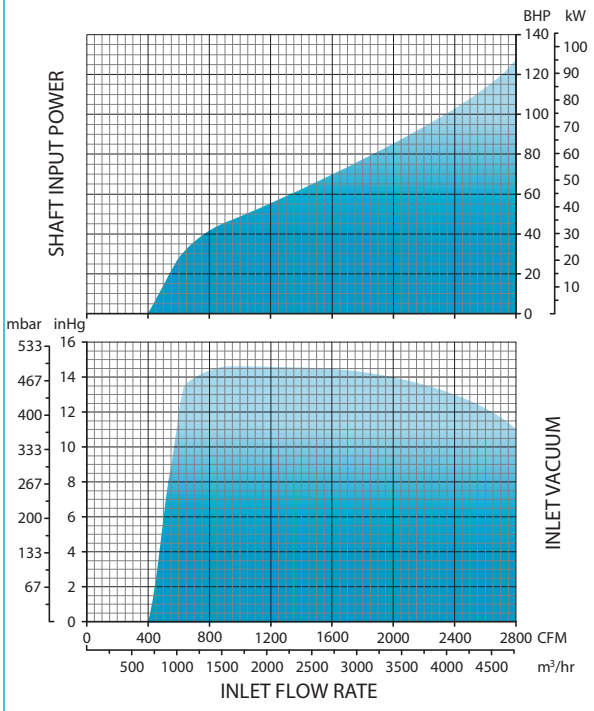
MULTISTAGE CENTRIFUGAL BLOWERS

General Performance

ZM 81 Blower



ZM 81 Exhauster



Specifications Standard

Technical Data

Number of Stages	1 to 9
Inlet Connection	8" flange, ASA 125# / ANSI 150# drilling Optional DIN 200 adapter flange
Outlet Connection	8" flange, ASA 125# / ANSI 150# drilling Optional DIN 200 adapter flange
Operating Speed	Fixed speed 3550 RPM (60 Hz), 2960 RPM (50 Hz) Variable speed option available
Casing Pressure	20 PSIG (1.4 bar)
Seals (air)	Labyrinth type
Seals (gas)	OPTi Seal/ Stuffing gas type/ Carbon ring type/ Custom available
Bearings	Ball, 10-year minimum life per AFBMA L_{10} standard
Lubrication	Standard Grease/ Oil option available
Impeller Diameter	24.10 in (612.1 mm)
Impeller Tip Speed	373 ft/s (114 m/s) @ 3550 RPM
First Critical Speed	4701 RPM (9-stage)
Drive Type	Direct coupled or Belt driven, Inlet driven (standard) or Outlet driven
Shaft End	1.875 in (47.63 mm) diameter at coupling
Vibration Tolerance	.25 in/s (6.4 mm/s) ISO overall specification, 1.25 mils (0.03 mm) peak to peak
Rotor Balance	Military standard 167-1. Individual impellers and rotating assembly dynamically balanced

Materials of Contruction

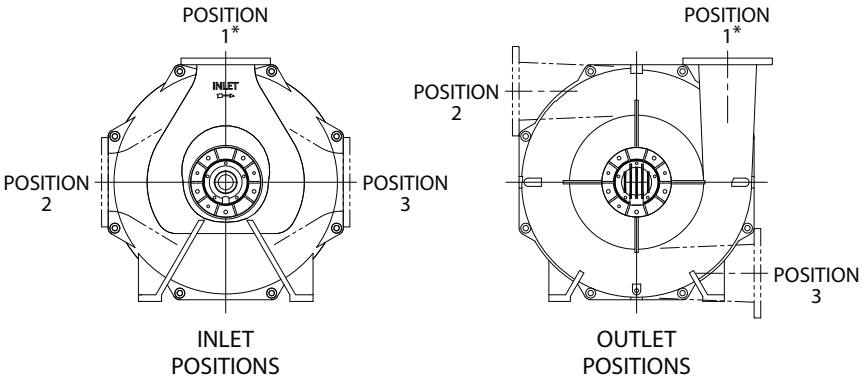
Casing	Cast iron ASTM A48 grade 25/30
Bearing Caps & Housings	Cast iron ASTM A48 grade 25/30
Oil Reservoir	Cast iron ASTM A48 grade 25/30
Shaft	Carbon steel AISI 4140 (stainless steel available)
Impellers	Cast aluminum ANSI AA319/356 (stainless steel/custom alloys available)
Seals (air)	Cast iron ASTM A48 grade 30 with lead babbitt insert Zinc-Alloy, ZA-12
Seals (gas)	Stainless Steel with Viton Elastomer, isostatically molded high density fine grain electro-graphite
Tie Rods	.75 in (19.1 mm) diameter, high strength steel ASTM A193-B7/B7M available
Blower Base	Welded structural steel ASTM A36 ASME/AWS D1.1 WPS's available
Motor Pedestal	Welded steel plate ASTM A36
Joint Sealing Compound	RTV silicone
Base Isolation Pads	Neoprene rubber
Finish	Standard 2 part epoxy, 7011 Atlas Copco Dark Gray

Curves are based on atmospheric conditions of 1 Atm, 68F/20C, 36% RH, and 3550 rpm

ZM81 MULTISTAGE CENTRIFUGAL BLOWER

Inlet and Outlet Orientation Options

The orientation of the inlet and outlet is selectable from any of three different positions, as viewed when facing the exterior of the part:



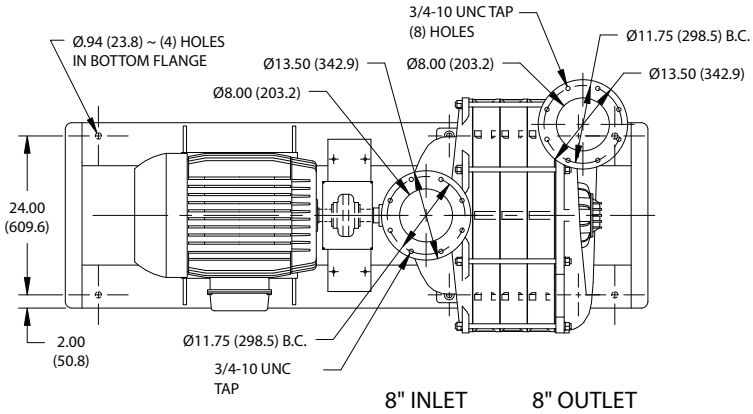
*Standard configuration.

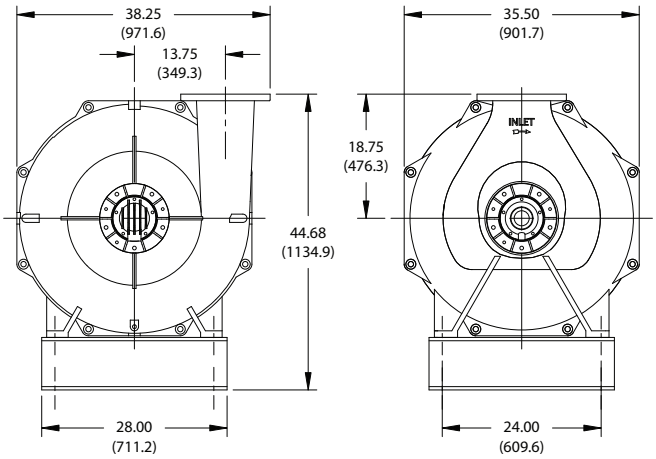
Weight and Inertia

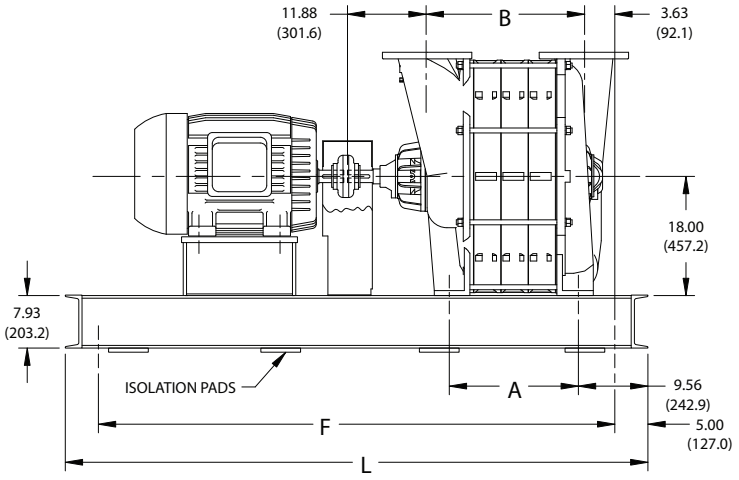
Model	Weight* lb	Weight* kg	Wk^2 lb-ft^2	Wk^2 kg-m^2
8101	560	254	10	0.42
8102	860	390	19	0.81
8103	1160	526	29	1.21
8104	1460	662	38	1.61
8105	1760	798	47	2.01
8106	2060	934	57	2.41
8107	2360	1070	66	2.80
8108	2660	1207	76	3.20
8109	2960	1343	86	3.62

*Approximate weight for blower only.
† Inertia based on cast impellers.

General Arrangement







Model	A	B	F†	L†
8101	7.13 (181)	11.56 (294)	58 (1473)	68 (1727)
8102	11.25 (286)	15.69 (398)	58 (1473)	68 (1727)
8103	15.38 (391)	19.81 (503)	71 (1803)	81 (2057)
8104	19.50 (495)	23.94 (608)	71 (1803)	81 (2057)
8105	23.63 (600)	28.06 (713)	83 (2108)	93 (2362)
8106	27.75 (705)	32.19 (818)	83 (2108)	93 (2362)
8107	31.88 (810)	36.31 (922)	83 (2108)	93 (2362)
8108	36.00 (914)	40.44 (1027)	94 (2388)	104 (2642)
8109	40.13 (1019)	44.56 (1132)	94 (2388)	104 (2642)

Dimensions*

*Dimensions in inches and (millimeters) and are approximate. Do not use for construction purposes.
†Dimension may vary depending on motor frame size.

Atlas Copco

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