

# ZM 31



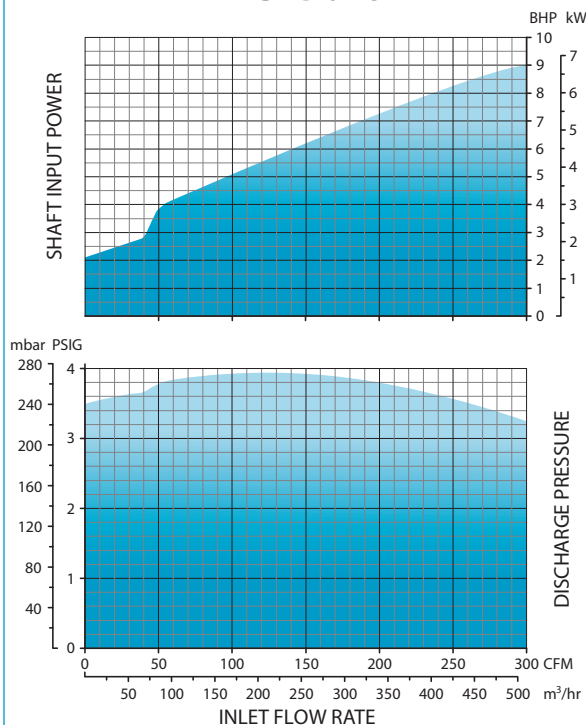
*Atlas Copco*

MULTISTAGE  
CENTRIFUGAL  
BLOWERS

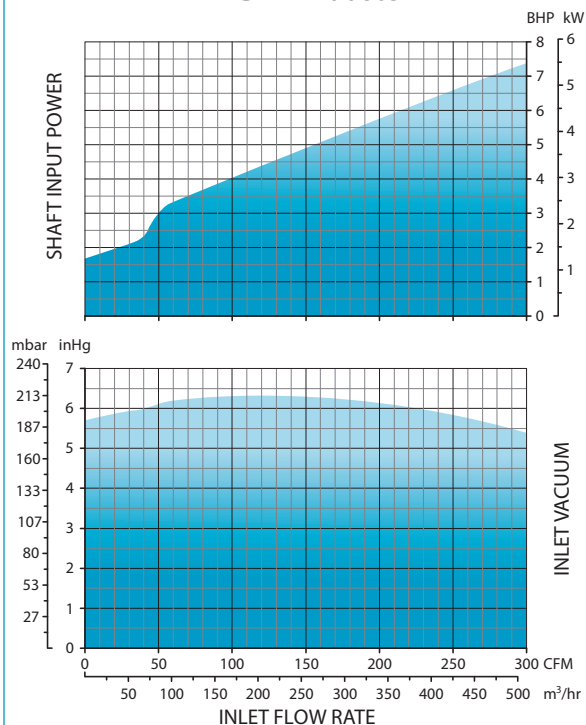
## General Performance

## Specifications Standard

### ZM 31 Blower



### ZM 31 Exhauster



### Technical Data

Number of Stages .....	1 to 11
Inlet Connection .....	3" flange, ASA 125# / ANSI 150# drilling Optional DIN 80 adapter flange
Outlet Connection .....	3" flange, ASA 125# / ANSI 150# drilling Optional DIN 80 adapter flange
Operating Speed .....	Fixed speed 3550 RPM (60 Hz), 2960 RPM (50 Hz) Variable speed option available
Casing Pressure.....	15 PSIG (1 bar)
Seals (air) .....	Labyrinth type
Seals (gas) .....	OPTi Seal/ Stuffing box type/ Carbon ring type/ Custom available
Bearings .....	Ball, 10-year minimum life per AFBMA L <sub>10</sub> standard
Lubrication .....	Standard Grease
Impeller Diameter .....	14.50 in (368.3 mm)
Impeller Tip Speed .....	225 ft/s (68.5 m/s) direct, 321 ft/s (97.9 m/s) belt
First Critical Speed .....	6320 RPM (11-stage)
Drive Type .....	Direct coupled or Belt driven, Inlet driven (standard) or Outlet driven
Shaft End .....	1.125 in (28.58 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

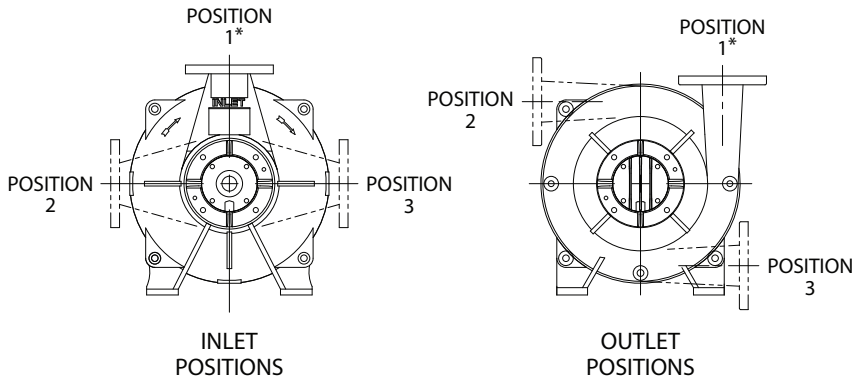
### Materials of Construction

Casing .....	Cast iron ASTM A48 grade 25/30
Bearing Caps & Housings...	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) .....	Consult Factory
Tie Rods .....	.50 in (12.7 mm) diameter, high strength steel ASTM A193-B7/B7M available
Blower Base .....	Welded structural steel ASTM A36 ASME/AWS D1.1
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

# ZM31 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.

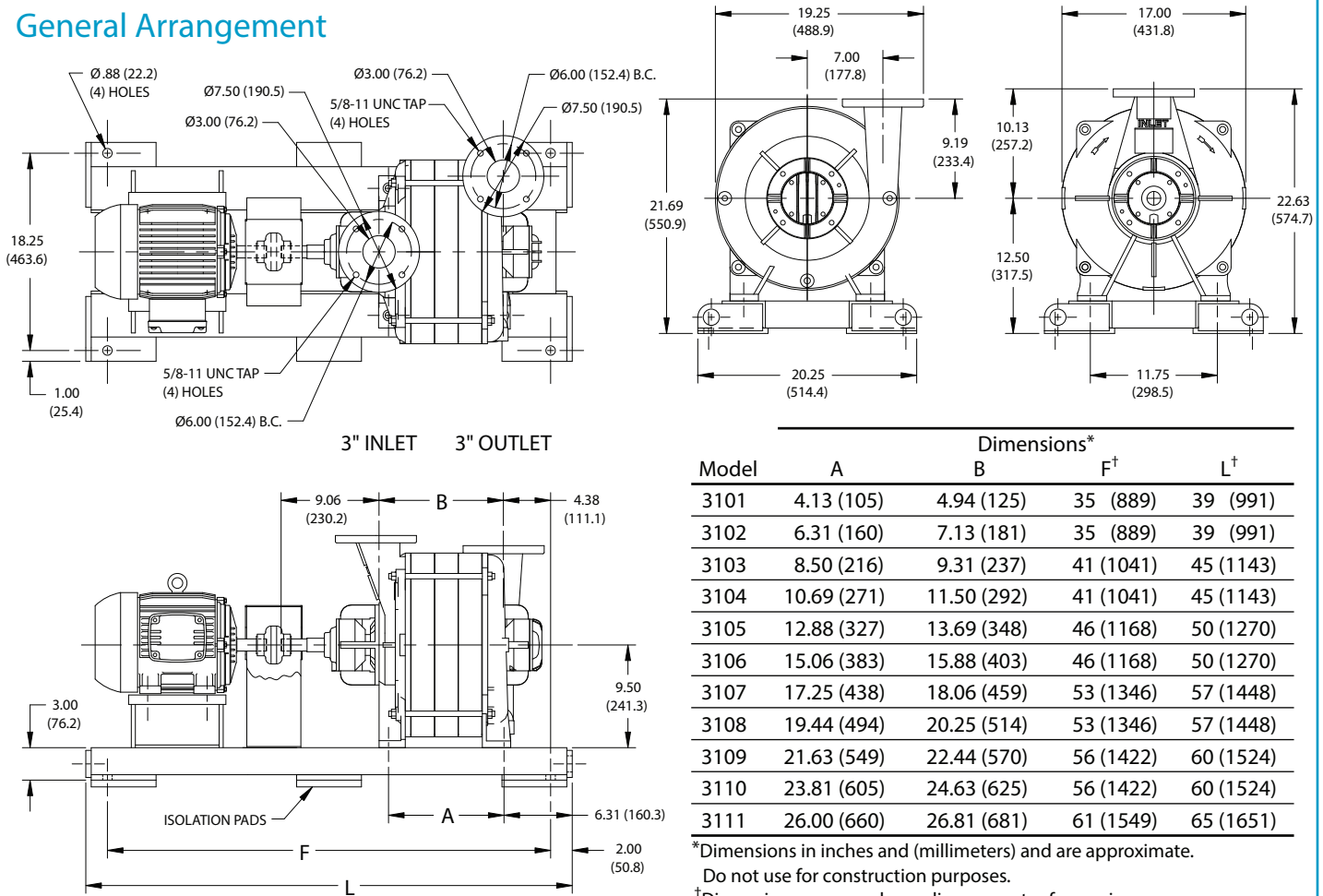
## Weight and Inertia

Model	Weight*		Wk <sup>†</sup>	
	lb	kg	lb-ft <sup>2</sup>	kg-m <sup>2</sup>
3101	140	64	1	0.04
3102	180	82	2	0.08
3103	220	100	3	0.12
3104	260	118	4	0.16
3105	300	136	5	0.20
3106	340	154	6	0.23
3107	380	172	7	0.27
3108	420	191	7	0.31
3109	460	209	8	0.35
3110	500	227	9	0.39
3111	540	245	10	0.43

\*Approximate weight for blower only.

† Inertia based on cast impellers.

## General Arrangement



Model	Dimensions*			
	A	B	F <sup>†</sup>	L <sup>†</sup>
3101	4.13 (105)	4.94 (125)	35 (889)	39 (991)
3102	6.31 (160)	7.13 (181)	35 (889)	39 (991)
3103	8.50 (216)	9.31 (237)	41 (1041)	45 (1143)
3104	10.69 (271)	11.50 (292)	41 (1041)	45 (1143)
3105	12.88 (327)	13.69 (348)	46 (1168)	50 (1270)
3106	15.06 (383)	15.88 (403)	46 (1168)	50 (1270)
3107	17.25 (438)	18.06 (459)	53 (1346)	57 (1448)
3108	19.44 (494)	20.25 (514)	53 (1346)	57 (1448)
3109	21.63 (549)	22.44 (570)	56 (1422)	60 (1524)
3110	23.81 (605)	24.63 (625)	56 (1422)	60 (1524)
3111	26.00 (660)	26.81 (681)	61 (1549)	65 (1651)

\*Dimensions in inches and (millimeters) and are approximate.

Do not use for construction purposes.

† Dimension may vary depending on motor frame size.

