

# 2380Z1 SERIES

**THOMAS**  
An Ingersoll Rand Business

## FEATURES

- > Easy to use BLDC technology/operation
- > On-board, integrated brushless DC motor controller
- > Seven convenient fixed speed output selections
- > Variable speed PWM input signal for full range flexibility
- > Closed loop speed operation for consistent performance
- > Pressure or vacuum capability
- > Proven WOB-L piston technology
- > Integrated cooling fan for simple thermal management
- > Durable die-cast aluminium components
- > Field serviceable

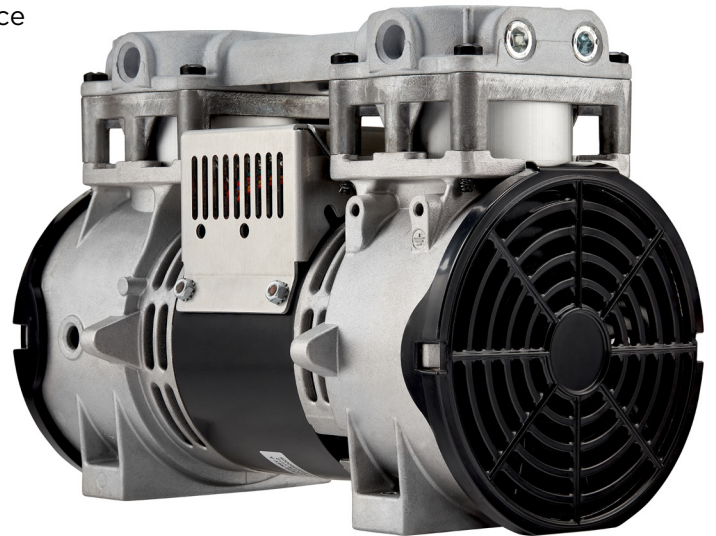
## TYPICAL APPLICATIONS

- > In-Vitro Diagnostics
- > Dental Equipment
- > Spray Atomization
- > Pond Aeration



## BASE MODEL

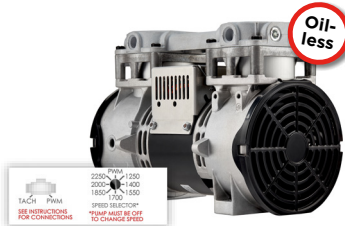
2380Z1C3224W (Pressure/Vacuum, 24Vdc)  
2380Z1C3248W (Pressure/Vacuum, 48Vdc)  
2380Z1B5324W (Vacuum, 24Vdc)  
2380Z1B5348W (Vacuum, 48Vdc)



**WOB-L**

# 2380Z1 Series

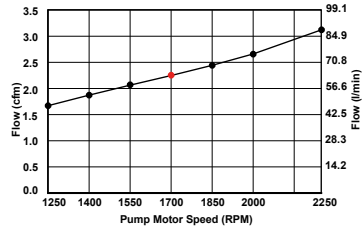
<b>Flow</b>	<b>3.14 cfm (88.8 l/min)</b>
<b>Max. pressure</b>	<b>100 psi (6.9 bar)</b>
<b>Max. vacuum</b>	<b>92% local barometer</b>



TACH+ PWM  
SEE INSTRUCTIONS FOR CONNECTIONS  
SPEED SELECTOR  
PUMP SPEEDS BE SET TO CHANGE SPEED

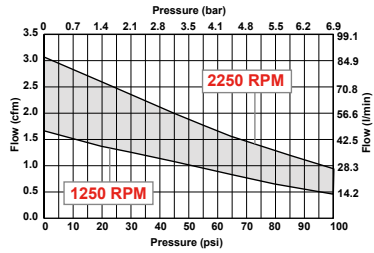
**On board - Integrated fixed or variable PWM speed control**

**Pump Open Flow at Each Pump Speed Selection**



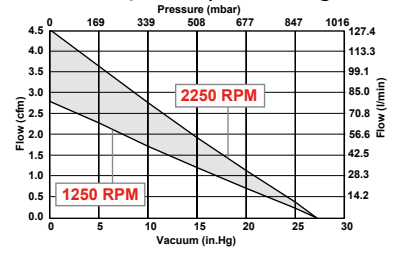
Performance of 2380Z1C32

**Pump Flow and Pressure at Min. / Max. Speed Setting**



Pressure performance of 2380Z1C32

**Pump Flow and Vacuum at Min. / Max. Speed Setting**



Vacuum performance of 2380Z1B53

NOTE: All test values are nominal and for reference only. They are not guaranteed maximum or minimum limits, nor do they imply mean or median.

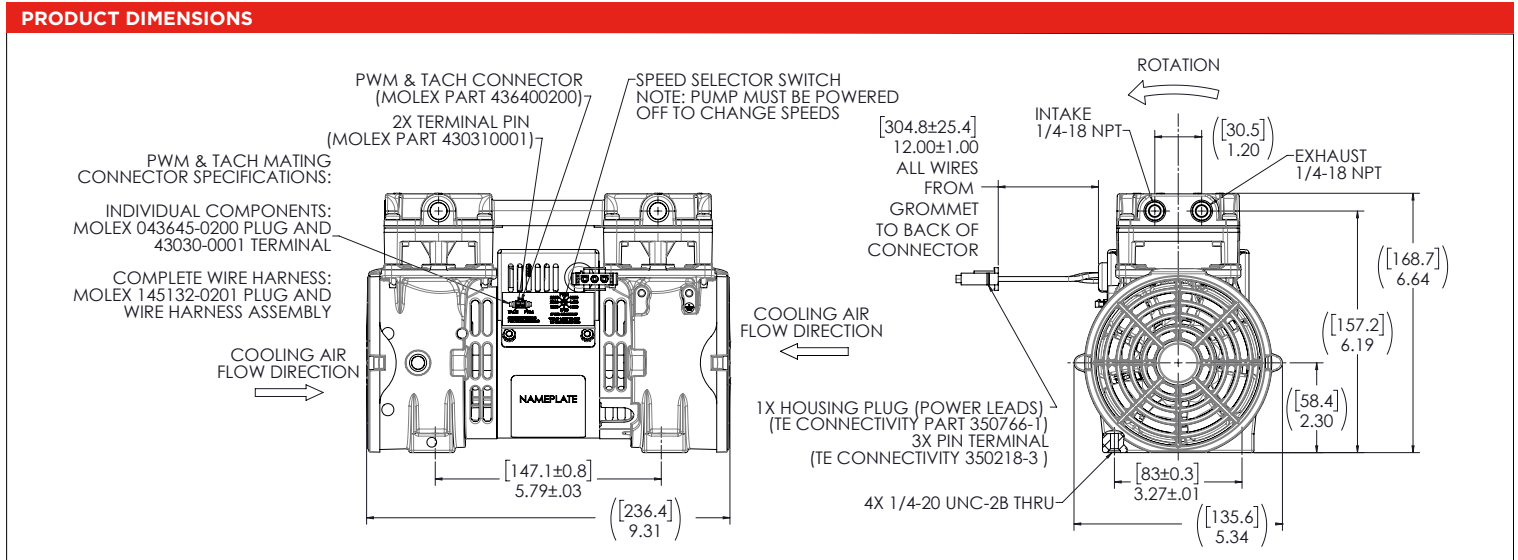
PERFORMANCE DATA		Shaded column indicates factory pre-set "speed selector"						
Pump Configuration	Parallel Flow, Pressure and/or Vacuum							
Model Number - 24 Vdc Nominal Voltage	2380Z1C3224W							
Model Number - 48 Vdc Nominal Voltage	2380Z1C3248W							
<b>Speed Setting</b>	<b>1250 RPM</b>	<b>1400 RPM</b>	<b>1550 RPM</b>	<b>1700 RPM</b>	<b>1850 RPM</b>	<b>2000 RPM</b>	<b>2250 RPM</b>	
Open Air Flow - cfm (l/min)	1.68 (47.7)	1.87 (53.0)	2.06 ( 58.3)	2.25 (63.7)	2.45 (69.4)	2.67 (75.6)	3.14 (88.8)	
Max. rated pressure - psi (bar)	100 (6.9)	100 (6.9)	100 (6.9)	100 (6.9)	100 (6.9)	100 (6.9)	100 (6.9)	
Flow at max. rated pressure - cfm (l/min)	0.45 ( 12.9)	0.51 (14.5)	0.58 (16.4)	0.66 (18.6)	0.75 (21.1)	0.79 (22.5)	0.93 (26.3)	
Current at max. rated pressure - Amps at 24Vdc	7.6	8.0	8.8	9.6	10.5	11.3	13.1	
Current at max. rated pressure - Amps at 48Vdc	4.0	4.2	4.6	5.0	5.4	5.9	6.5	
Power at max. rated pressure - Watts at 24Vdc	180	191	209	229	251	271	313	
Power at max. rated pressure - Watts at 48Vdc	190	202	218	237	260	279	312	
Pump Configuration	Parallel Flow, Vacuum Only							
Model Number - 24 Vdc Nominal Voltage	2380Z1B5324W							
Model Number - 48 Vdc Nominal Voltage	2380Z1B5348W							
<b>Speed Setting</b>	<b>1250 RPM</b>	<b>1400 RPM</b>	<b>1550 RPM</b>	<b>1700 RPM</b>	<b>1850 RPM</b>	<b>2000 RPM</b>	<b>2250 RPM</b>	
Open Air Flow - cfm (l/min)	2.79 (79.0)	3.05 (86.5)	3.39 (95.9)	3.63 (102.9)	3.81 (107.9)	4.03 (114.2)	4.52 (128.1)	
Flow at 15 inHg - cfm (l/min)	1.20 (34.1)	1.32 (37.3)	1.44 (40.8)	1.57 (44.5)	1.65 (46.8)	1.76 (49.9)	1.95 (55.3)	
Current at 15 inHg - Amps at 24 Vdc	5.3	5.9	6.6	7.3	8.1	8.9	10.8	
Current at 15 inHg - Amps at 48 Vdc	2.6	2.9	3.1	3.6	4.0	4.4	5.4	
Power at 15 inHg - Watts at 24 Vdc	126	141	158	175	194	213	258	
Power at 15 inHg - Watts at 48 Vdc	125	140	150	175	193	211	259	

Note: pump is capable of continuous pressure and/or light duty vacuum. For vacuum only applications see table below  
Test Reference: T22-0134, T22-0102, T21-0200, T20-0282

ELECTRICAL DATA	
Motor type	24 Vdc or 48 Vdc BLDC
Motor insulation class	F
Motor protection	Controller current limit and one-shot thermal fuse
Power lead wire color, gauge	Black, 16 AWG   Green w/yellow, 18 AWG   Red, 16 AWG
Power lead wire color function/pin ID	Black: 0 VDC/Pin 1   Green w/yellow: Ground/Pin 2   Red: +Vdc/Pin 3
I/O lead wire color function/pin ID	White: PWM/Pin 1   Blue: Tach out/Pin 2 (See Speed Selection Instructions included with pump), I/O harness not included with pump.

GENERAL DATA	
Operating ambient temperature	50° to 104°F (10°C TO 40°C)*
Pump functionality	Pump pre-set to 1700 RPM. 7 fixed speeds or PWM (1250-2250 RPM) may be selected
Net weight	9.79 lbs. (4.44 kg), approximate for 32 stroke

\*Broader ambient operating ranges may be possible depending on your specific application. Please consult your Thomas representative regarding your system needs.



## GENERAL CONTACT

### EMEA

**Gardner Denver Thomas GmbH**

Livry-Gargan-Str. 10  
82256 Fuerstenfeldbruck  
Germany

Tel: +49 8141 2280 0  
Fax: +49 8141 8892136  
thomas.de@irco.com

### AMERICAS

**Gardner Denver Thomas, Inc.**

1419 Illinois Avenue  
Sheboygan, WI 53081  
USA

Tel: +1 920 457 4891  
Fax: +1 920 451 4276  
td.usa@irco.com

### ASIA PACIFIC

**Gardner Denver Thomas  
Pneumatic Systems (Wuxi) Co., Ltd.**

No. 1 New Dong An Road  
Shuofang Town  
Wuxi, Xinwu District  
Jiangsu 214142  
China

Tel: 400-012-1268  
QQ 800 180 724  
thomas.cn@irco.com

**THOMAS** is a leading manufacturer of systems, compressors, vacuum, and liquid pumps for Original Equipment Manufacturers (OEMs) in the medical, laboratory, environmental and industrial sector.

With its experienced Engineering, Technical, and Operations staff and capabilities, Thomas designs and manufactures customized pressure and vacuum solutions that meet the precise needs of its customers. Backed by over 60 years of engineering excellence and innovation, and a global manufacturing network, Thomas stands out as the reliable choice for OEMs worldwide.

For more information, visit [www.thomaspumps.com](http://www.thomaspumps.com)

Please check out all our brands for your mission-critical flow control technologies:



OEM Pumps  
[thomaspumps.com](http://thomaspumps.com)



Vacuum Pumps & Systems  
[welchvacuum.com](http://welchvacuum.com)



Syringe Pumps  
[tricontinent.com](http://tricontinent.com)



Lab Automation  
[zinsser-analytic.com](http://zinsser-analytic.com)



Syringes  
[microsyringes.com](http://microsyringes.com)



OEM Peristaltic Pumps  
[gd-thomas.com](http://gd-thomas.com)