

# 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 aluminum 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)  
2380Z1V5324W (Two-Stage Vacuum, 24Vdc)



**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>98% local barometer</b>



On board - Integrated fixed or variable PWM speed control

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

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 - 24VDC Nominal Voltage	2380Z1B5324W							
Model Number - 48VDC 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 24Vdc	5.3	5.9	6.6	7.3	8.1	8.9	10.8	
Current at 15 inHg - Amps at 48Vdc	2.6	2.9	3.1	3.6	4.0	4.4	5.4	
Power at 15 inHg - Amps at 24Vdc	126	141	158	175	194	213	258	
Power at 15 inHg - Amps at 48Vdc	125	140	150	175	193	211	259	

  

Pump Configuration	Two-Stage, Vacuum Only							
Model Number - 24 Vdc Nominal Voltage	2380Z1V5324W							
Model Number - 48 Vdc Nominal Voltage	N/A							
<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)	1.36 (38.5)	1.32 (37.4)	1.33 (37.7)	1.40 (39.7)	2.25 (63.7)	2.4 (68.0)	1.90 (53.8)	
Flow at 15 inHg - cfm (l/min)	0.61 (17.4)	0.72 (20.3)	0.78 (22.1)	0.83 (23.6)	0.88 (25.0)	0.96 (27.0)	1.08 (30.7)	
Current at 15 inHg - Amps at 24 Vdc	4.0	4.6	5.0	5.7	6.4	7.0	8.3	
Power at 15 inHg - Watts at 24 Vdc	97	110	123	138	153	170	201	

Test reference: T22-0134, T22-0102, T21-0200, T20-0282, T24-0123

## 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.

## PRODUCT DIMENSIONS

**PNEUMATIC PORT CONFIGURATION**  
2380Z1C3224W, 2380Z1C3248W, 2380Z1B5324W, 2380Z1B5348W:

**2380Z1V5324W:**

MODEL	A	B
2380Z1C3224W	[168.7]	[157.2]
2380Z1C3248W	6.64	6.19
2380Z1B5324W	[171.6]	[160]
2380Z1B5348W	6.76	6.30
2380Z1V5324W		

**PWM & TACH CONNECTOR (MOLEX PART 436400200)**  
2X TERMINAL PIN (MOLEX PART 430310001)

**SPEED SELECTOR SWITCH**  
NOTE: PUMP MUST BE POWERED OFF TO CHANGE SPEEDS

**COOLING AIR FLOW DIRECTION**

**ROTATION**

**EXHAUST 1/4-18 NPT**

**1X HOUSING PLUG (POWER LEADS) (TE CONNECTIVITY PART 350766-1)**  
**3X PIN TERMINAL (TE CONNECTIVITY 350218-3)**

**4X 1/4-20 UNC-2B THRU**

**INDIVIDUAL COMPONENTS:**  
MOLEX 043645-0200 PLUG AND 43030-0001 TERMINAL

**COMPLETE WIRE HARNESS:**  
MOLEX 145132-0201 PLUG AND WIRE HARNESS ASSEMBLY

Dimensions: [147.1±0.8], 5.79±0.03, [236.4], 9.31, [304.8±25.4], 12.00±1.00, [30.5], 1.20, [58.4], 2.30, [83±0.3], 3.27±0.1, [135.6], 5.34

## GENERAL CONTACT

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