

**SPECIFICATION  
and Performance Map**

VAIREX Model VR 1012  
Air Delivery System

**Description:**

The Model VR 1012 Air Delivery System incorporates VAIREX proprietary variable speed motor technology. The Air Delivery System consists of a regenerative blower, integrated brushless dc motor, and motor speed controller.

<b>Specifications</b>				
System type: VAIREX model VR 1012 air delivery system				
Outputs: Pressurized air.				
<b>Output ratings</b>	<b>Min</b>	<b>Max</b>	<b>Peak <sup>(1)</sup></b>	<b>Units</b>
Output 1, Pressure <sup>(2)</sup>	1.0	1.3 (@4g/s)	1.32	ratio
Output 1 Mass Flow <sup>(3)</sup>	.1	20 (@1.01 P/p)	22	grams/sec
Noise, Acoustic		<75		dB A
Output temperature delta	0	80		°C
Blower Speed <sup>(4)</sup>	0	17,000	20,000	RPM
Motor Speed	0	17,000	18,000	RPM
<b>Inputs</b>				
Control voltage <sup>(5) (10)</sup>	0.5	5		Volts DC
Atmospheric Air <sup>(6)</sup>				
Inlet pressure range	10.3	15.1		psia
Inlet temperature	1	38		°C
Inlet humidity <sup>(7)</sup>	0	100		% R.H.
Voltage range <sup>(10)</sup>	46	50		Volts DC
Current range <sup>(8)</sup>	0	15		Amps
<b>Precision</b>				
Speed control precision	2.5	2.5		+/- %
<b>System Parameters</b>				
Total power consumption	0	560		watts
Total volume (Pump/Motor)		0.9		liters
Total volume (Controller)		0.7		liters
Total weight (Pump/Motor)		2.7		kg
Total weight (Controller)		0.4		kg
<b>Expected Durability</b>				
		25000		Hours <sup>(9)</sup>

**Notes:**

- 1) Air Delivery System is limited in peak parameters for 30 seconds operation not more than once per hour.
- 2) The output shall be capable of achieving a pressure ratio of the specified value. Pressure from the air delivery system shall be controlled by the downstream backpressure provided by the customer's device. Peak output pressure shall be limited to 110% of maximum operating pressure. Peak performance is rated at 48V, lower peak output may be expected at lower voltages.
- 3) Flows at output 1 are standardized for 25 °C inlet temperature, 14.7-psia inlet pressure.
- 4) Blower speed may be limited by max motor speed.
- 5) 0.5 – 5.0 volts for pulse-width-modulation control, 5.0 – 10.0 volts for simple commutation control.
- 6) Ambient supply of air shall be free of particulate matter greater than 20 microns in size.
- 7) Non-condensing. No un-evaporated water (liquid) may be injected or otherwise introduced into the pump inlet.
- 8) Max operational line amperage is contingent on applied voltage (i.e. @ 24 volts I<sub>max</sub> ~23.3 amps, @ 48 volts I<sub>max</sub> ~11.7amps)
- 9) Duration at 100% Duty Cycle (16,000 rpm, 1.15 pressure ratio).
- 10) Other Voltage Ranges and Control Input formats available on request.