

2 Technical data

Note: To comply with CSA standards, the pump must be installed and used indoors, and within the operating conditions specified below.

2.1 Operating and storage conditions

Ambient temperature range (operation)	12 to 40 °C (53.6 to 104 °F)
Ambient temperature range (storage)	-30 to 70 °C (-22 to 158 °F)
Normal surface temperature of the pump-body*	50 to 70 °C (122 to 158 °F)
Maximum humidity (operation)	90% RH
Maximum altitude (operation)	2000 m (6561 ft)
Pollution degree	2
Installation category	II

* At ultimate vacuum, with ambient temperature of 20 °C (68 °F).

2.2 Performance

Note: Where total pressures are shown below, the measurements were taken using an untrapped total pressure capacitance diaphragm gauge on a header, as specified by Pneurop 6602.

	E2M0.7	E2M1	E2M1.5
Maximum displacement			
50 Hz electrical supply	0.9 m ³ h ⁻¹	1.0 ft ³ min ⁻¹	1.8 m ³ h ⁻¹
60 Hz electrical supply	1.1 m ³ h ⁻¹	1.3 ft ³ min ⁻¹	2.2 m ³ h ⁻¹
Maximum pumping speed - Pneurop			
50 Hz electrical supply	0.75 m ³ h ⁻¹	0.94 ft ³ h ⁻¹	1.6 m ³ h ⁻¹
60 Hz electrical supply	0.95 m ³ h ⁻¹	1.2 ft ³ h ⁻¹	2.0 m ³ h ⁻¹
Motor rotational speed			
50 Hz electrical supply	1400 r min ⁻¹	2800 r min ⁻¹	2800 r min ⁻¹
60 Hz electrical supply	1700 r min ⁻¹	3400 r min ⁻¹	3400 r min ⁻¹
Ultimate vacuum			
without gas-ballast (partial pressure)	7 x 10 ⁻⁴ mbar (7 x 10 ⁻² Pa)	3.8 x 10 ⁻⁴ torr (5 x 10 ⁻² Pa)	5 x 10 ⁻⁴ mbar (5 x 10 ⁻² Pa)
without gas-ballast (total pressure)	3 x 10 ⁻³ mbar (3 x 10 ⁻¹ Pa)	1.1 x 10 ⁻³ torr (1.5 x 10 ⁻¹ Pa)	1.5 x 10 ⁻³ mbar (1.5 x 10 ⁻¹ Pa)
with full gas-ballast (partial pressure)	2 x 10 ⁻¹ mbar (2 x 10 ⁻¹ Pa)	1.9 x 10 ⁻² torr (2.5 Pa)	2.5 x 10 ⁻² mbar (2.5 Pa)
Maximum water vapour inlet pressure	15 mbar	11.3 torr	15 mbar
Maximum water vapour pumping rate	8 g h ⁻¹	16 g h ⁻¹	16 g h ⁻¹ (1.5 x 10 ⁵ Pa)
Maximum permitted outlet pressure (at full pump throughput)	0.5 bar gauge 1.5 bar absolute (1.5 x 10 ⁵ Pa)	0.5 bar gauge 1.5 bar absolute (1.5 x 10 ⁵ Pa)	0.5 bar gauge 1.5 bar absolute (1.5 x 10 ⁵ Pa)

2.3 Mechanical data

Approximate pump mass	10 kg (22 lbs)
Dimensions	See Figure 2
Degree of protection (IEC34-5:1981)	IP44
Pump inlet port	NW10 (the flange can be removed from the $\frac{3}{8}$ inch BSP tapped hole)
Pump outlet port	11 mm external diameter nozzle (the nozzle can be removed from the $\frac{3}{8}$ inch BSP tapped hole)
Noise level at 1 metre	54 dB(A)

2.4 Electrical data

The motor start-up current is drawn for less than one second, so you must use slow-blow fuses to prevent unnecessary fuse failure when the pump starts. If you use the pump at temperatures lower than 12 °C (53.6 °F), the start-up current will be drawn for longer; this may cause the motor thermal overload device to open.

E2M0.7 pump	
Motor output rating - continuous	0.09 kW
Motor electrical supply	Single phase
E2M1 and E2M1.5 pumps	
Motor output rating - continuous	0.16 kW
Motor electrical supply	Single phase

Table 1 - Electrical data

Pump	Nominal supply (V)	Frequency (Hz)	Full load current (A)	Start-up current (A)	Maximum fuse rating (A)*
E2M0.7	100-115	50	1.8	5.7	10
	100-120	60	1.9	5.3	10
	200-230	50	0.85	2.8	6
	200-240	60	1.0	2.3	6
E2M1 and E2M1.5	100-115	50	3.1	12.0	10
	100-120	60	3.0	11.2	10
	200-230	50	1.3	5.5	6
	200-230	60	1.4	5.2	6

* Fuses should be EN60269 [Section 2.2](#) or to BS 1362.

2.5 Lubrication data

Note: A Edwards Material Safety Data Sheet for Ultragrade 15 is available on request.

Recommended oil *	Ultragrade 15
Maximum oil capacity	0.32 litre

* To operate the pump when the ambient temperature is outside the range specified in Section 2.1, or to optimise pump performance when you process condensible vapours, you may need a different oil.

Figure 2 - Dimensions (mm)

