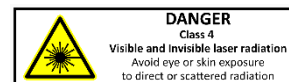


Technical data sealed CO₂ lasers – specification



SR 10 AOM 9.3µm	
Laser beam data	
Wavelength ⁽¹⁾	9.3µm
Excitation	RF
Output power	
Power range (rated) ⁽²⁾	0 -75W
Typical stability (long term) ⁽³⁾	± 2%
Peak power ⁽⁴⁾	75W
Minimum shipment power ⁽²⁾	>75W
Laser beam quality	
Diameter @ (1/e ²) (at laser o/p optic)	5.6 ± 0.5mm
Beam quality factor	M ² < 1.2 (K > 0.83)
Divergence (full angle far field)	< 3mrad
Pointing stability (half angle)	< 0.3mrad
Polarisation	Linear (perpendicular to base)
Ellipticity	< 1.1 : 1 (typical), < 1.2 : 1 (guaranteed)
System input requirements	
DC input voltage	50VDC ± 1%
Maximum average DC input current ⁽⁴⁾	64A
Maximum average power consumption ⁽⁴⁾	3.2kW
AOM Pulsed mode	
Frequency	600-600kHz
Pulse width	>1µs
Energy	>0mJ
Optical pulse rise/fall	< 1µs
Duty cycle (max)	80%
Dimensions and weights	
Laser head/RF	(LxWxH) 885x290x224 (mm) 48kg
External control facilities	
Laser head	Commands from external controller Status signal to external controller
DC Electrical ratings	
Input voltage range	230VAC ± 10% 50/60Hz. Single or bi-phase
Input current (max)	14A @ 230V
External fusing requirement	19A @ 230V
Output voltage	50V
Maximum output current	60A
Maximum output power ⁽⁴⁾	3kW
Earth leakage current	<2mA

Cooling (Laser + RF + DC PSU)

Minimum flow rate	≥ 4L/min
Recommended flow rate	≥ 5L/min
Maximum pressure	6 bar
Refrigeration capacity	> 3.6kW
Temperature	18°C/64°F to 25°C/77°F ± 1°C (above dew point)

Cooling (AOM)

Minimum flow rate	≥ 2L/min
Recommended flow rate	≥ 3L/min
Maximum pressure	3 bar
Refrigeration capacity	> 0.45kW
Temperature	18°C/64°F to 20°C/68°F ± 1°C (above dew point)

Environmental requirements

Ambient temperature range	5 – 30°C
Relative humidity range	10 – 85% (non-condensing)
Operational altitude	< 2000m

Notes:

¹ 9.27μm is the predominant wavelength. This can typically vary in the range 9.2μm – 9.4μm.

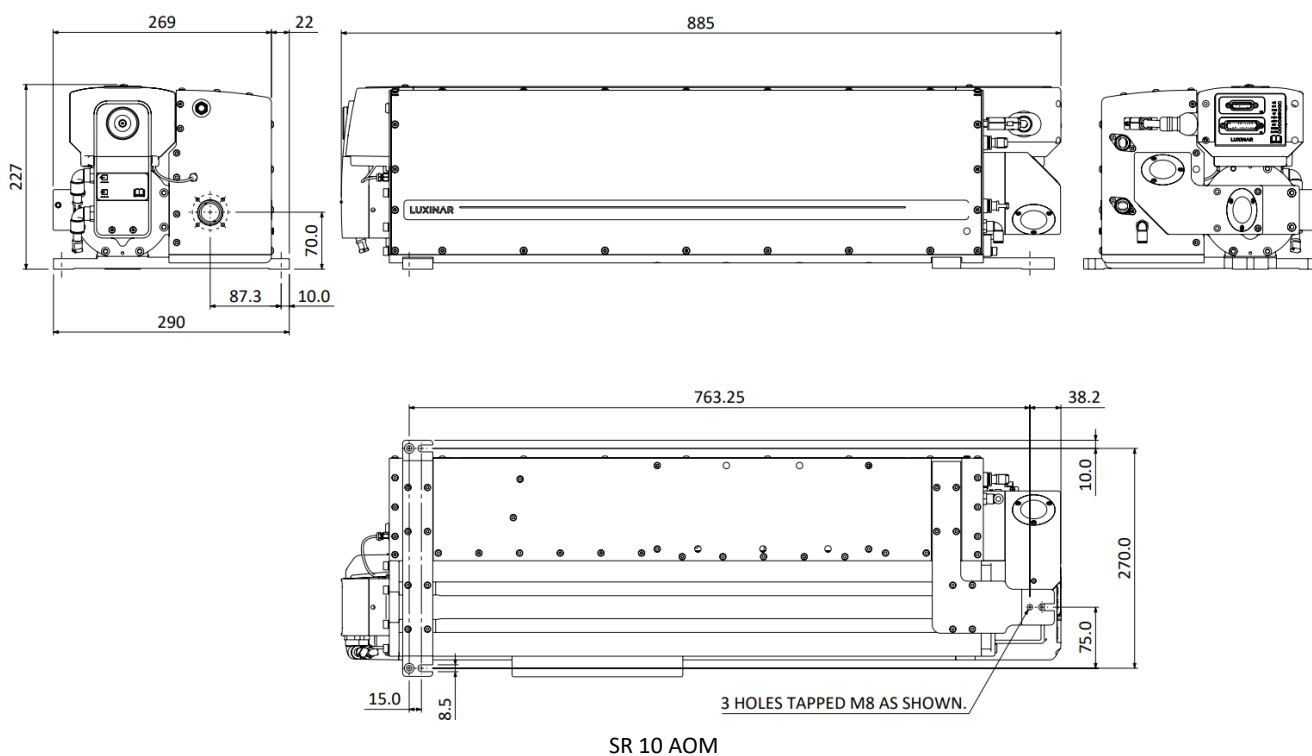
² Mean average power at 100% AOM duty cycle. The mean average power is proportional to AOM duty cycle.

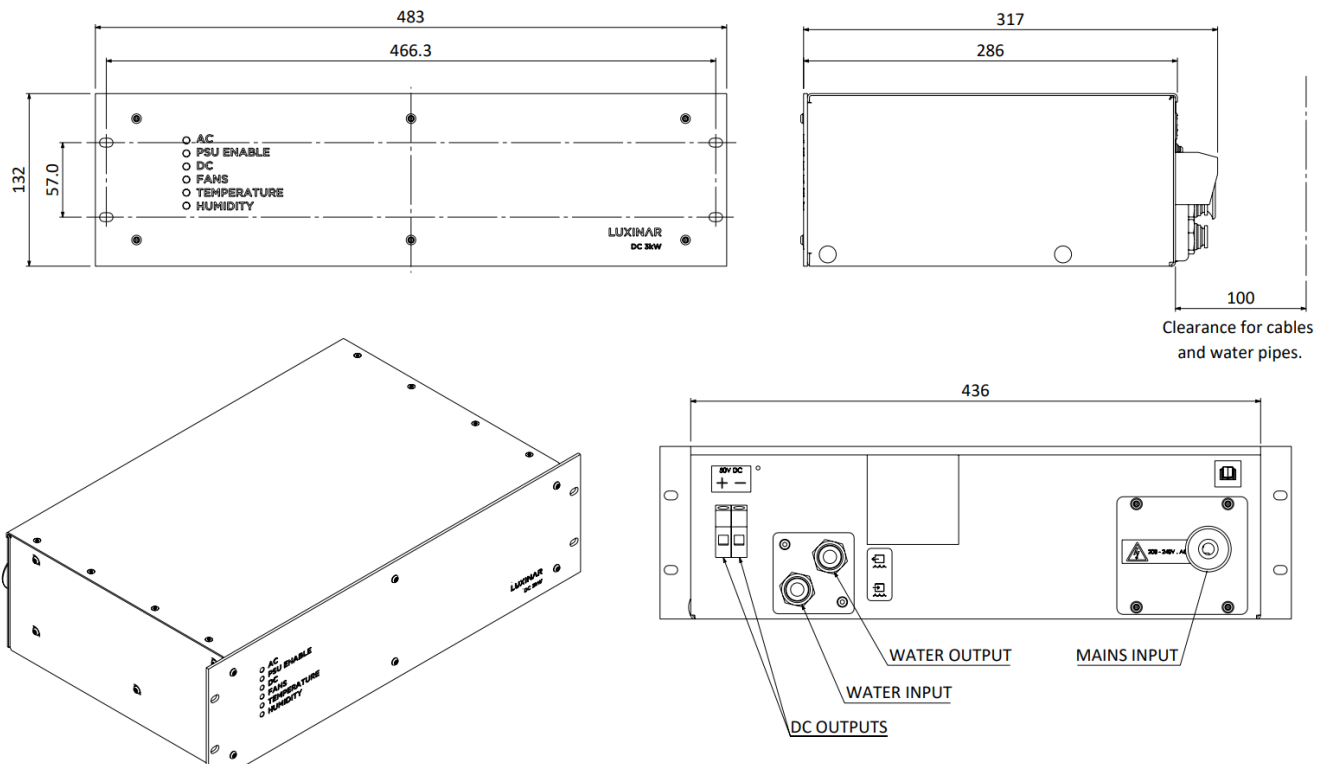
³ Guaranteed stability (long-term) is ± 3%.

⁴ We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

i.e. DC PSU power= maximum o/p*1.2

Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice





DC power supply – single phase, water cooled - 50V – optional