

Technical data sealed CO₂ lasers – specification

	SR 25 AOM 9.3µm	
Laser beam data		
Wavelength ⁽¹⁾	9.3µm	
Excitation	RF	
Output power		
Power range (rated) ⁽²⁾	0 – 150W	
Typical stability (long term) ⁽³⁾	± 2%	
Peak power ⁽⁴⁾	150W	
Minimum shipment power ⁽²⁾	>150W	
Laser beam quality		
Diameter @ (1/e ²) (at laser o/p optic)	7.7 ± 0.5mm	
Beam quality factor	M ² < 1.2 (K > 0.83)	
Divergence (full angle far field)	< 2mrad	
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⁾	96A	
Maximum peak DC input current	160A	
Maximum average power consumption ⁽⁴⁾	5.3kW	
AOM Pulsed mode		
Frequency	600kHz	
Pulse width	>1µs	
Energy	>0mJ	
Optical pulse rise/fall	< 1µs	
Duty cycle (max)	100%	
Dimensions and weights		
Laser head/RF	(LxWxH) 947x290x224 (mm) 50kg	
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	380-480 VAC 47/63Hz. Three phase
Input current (max)	29A @ 230V	50A (max inrush current)
External fusing requirement	39A @ 230V	Three x 10A
Output voltage	50V	50V
Maximum output current	120A	110A
Maximum output power ⁽⁶⁾	6kW	5.5kW
Earth leakage current	<4mA	<5mA

Cooling (Laser + RF + DC PSU)

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Maximum pressure	6 bar
Refrigeration capacity	> 5.3kW
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	> 0.5kW
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.

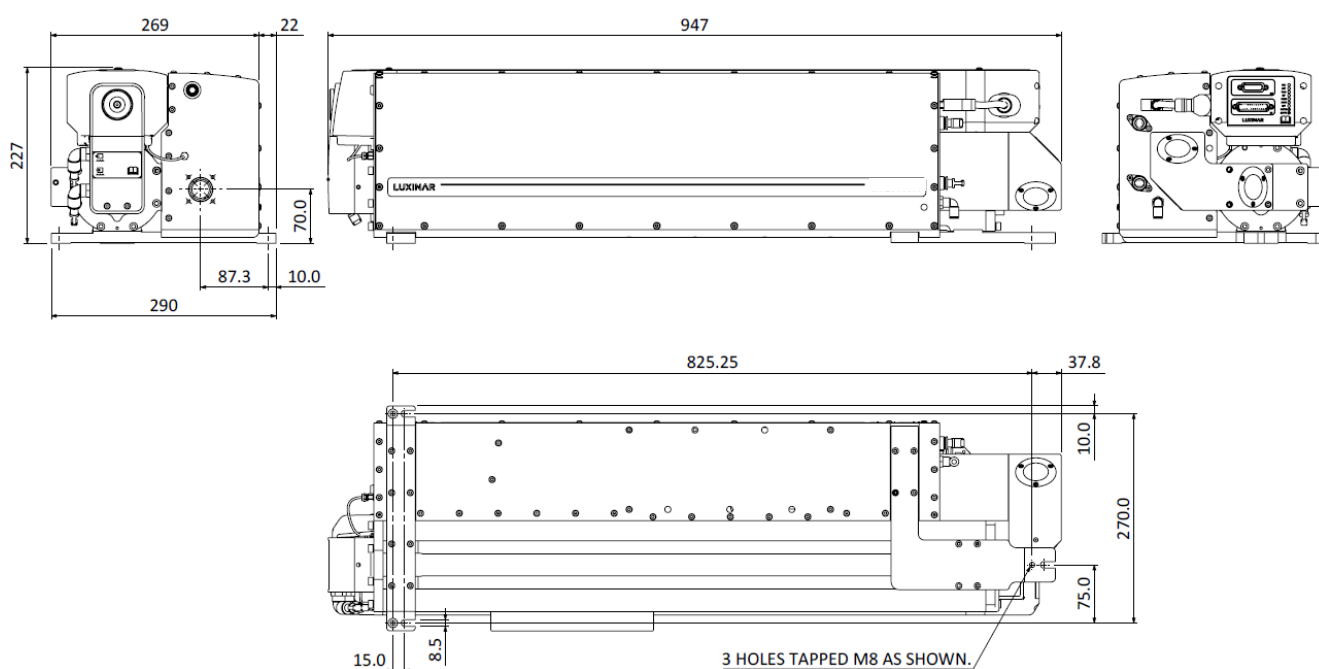
² Mean average power at 100% AOM duty cycle. The mean average power is proportional to AOM duty cycle.

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

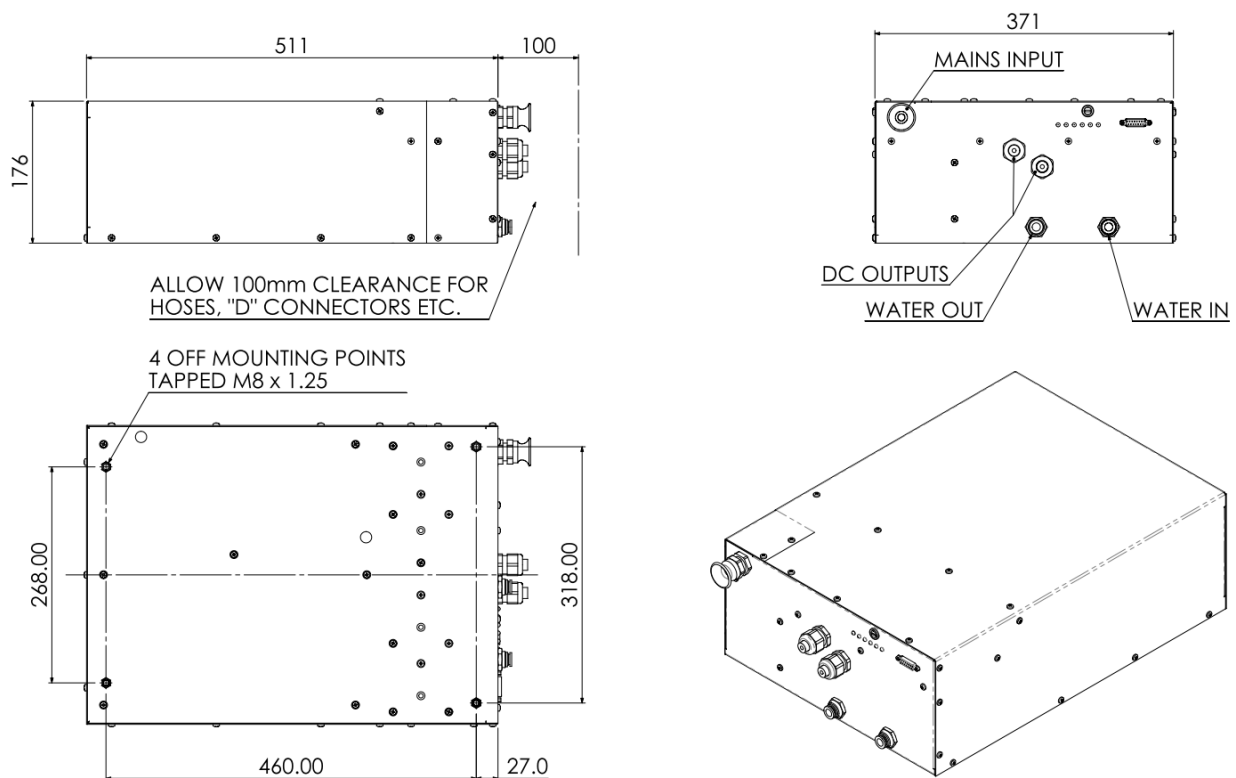
⁴ We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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

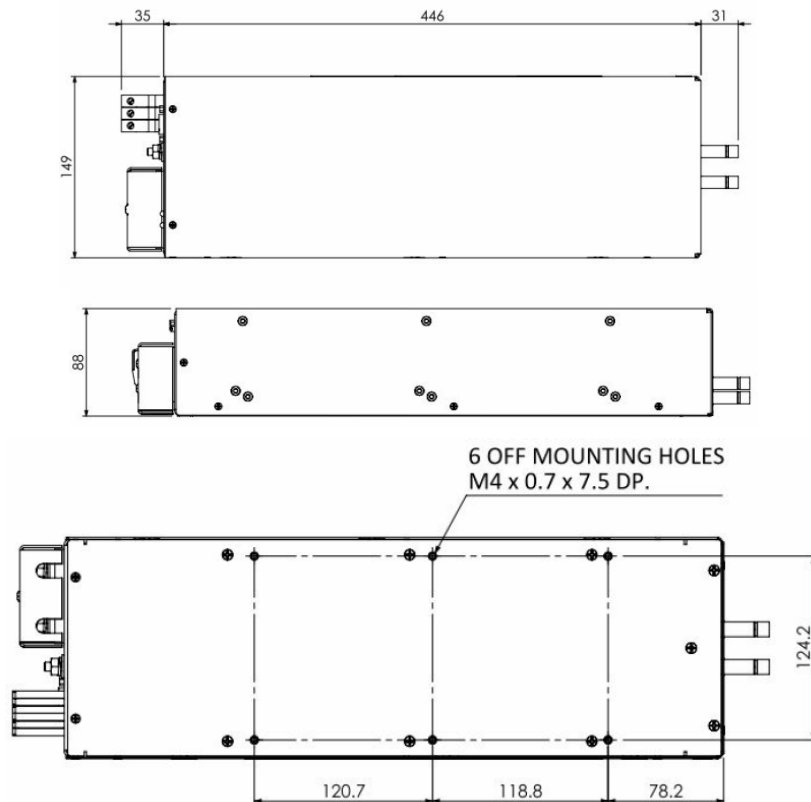
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



SR 25 AOM



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



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