



Technical data sealed CO₂ lasers – specification

	SR 15s 9.3µm
Laser beam data	
Wavelength ⁽¹⁾	9.3µm
Excitation	RF
Output power	
Power range (rated) ⁽²⁾	5 – 120W
Typical stability (long term) ⁽³⁾	± 3%
Peak power ⁽⁴⁾	160W
Minimum shipment power ⁽²⁾	144W
Laser beam quality	
Diameter @ (1/e ²) (at laser o/p optic)	6.8 ± 0.5mm
Beam quality factor	M ² < 1.2 (K > 0.83)
Divergence (full angle far field)	< 2mrad
Pointing stability (half angle)	< 0.25mrad
Polarisation	Linear (parallel to base)
Ellipticity	< 1.2 : 1
RF input requirements	
DC input voltage	50VDC ± 1%
Maximum average DC input current ⁽⁵⁾	64A
Maximum peak DC input current	80A
Maximum average power consumption ⁽⁶⁾	3.2kW
Pulsed mode	
Frequency	0 – 130kHz
Pulse width	2 – 400µs
Energy	2-70mJ
Optical pulse rise/fall	< 100µs
Duty cycle (max)	80%
Dimensions and weights	
Laser head/RF	(LxWxH) 879x198x222 (mm) 32kg
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)	22A @ 230V
External fusing requirement	32A @ 230V
Output voltage	50V
Maximum output current	96A
Maximum output power ⁽⁶⁾	4.8kW
Earth leakage current	<2mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 3kW
Temperature	19°C/66°F to 25°C/77°F ± 1°C (above dew point)

Environmental requirements

Ambient temperature range	5 – 40°C
Relative humidity range	10 – 85% (non-condensing)
Operational altitude	< 2000m

Notes:

¹9.27µm is the predominant wavelength. This can typically vary in the range 9.2µm – 9.35µm.

²Mean average power at maximum duty cycle.

³Guaranteed stability (long-term) ± 6%.

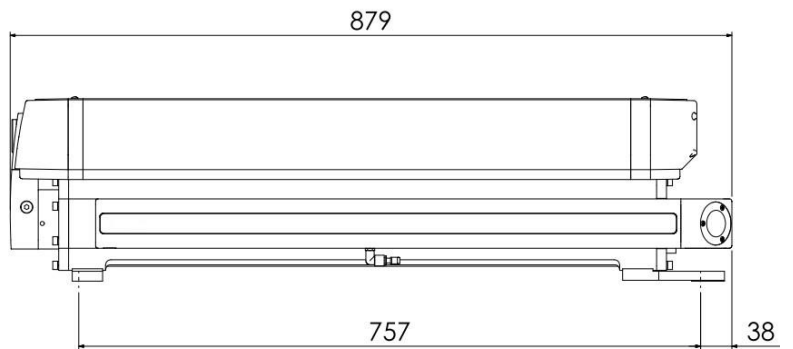
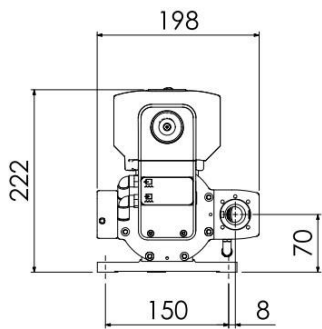
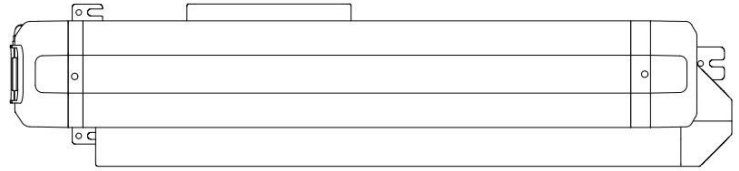
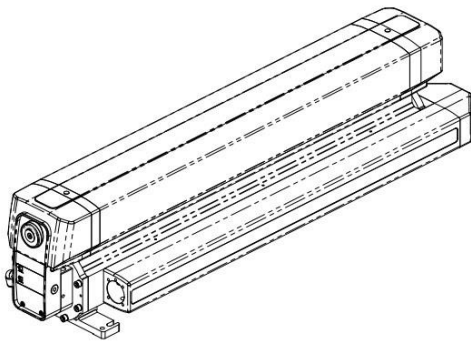
⁴Depending on frequency.

⁵400µs pulse width @ 80% Duty.

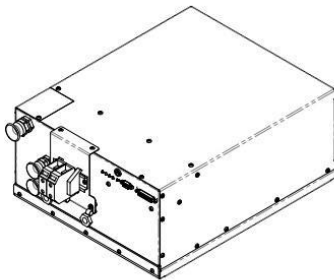
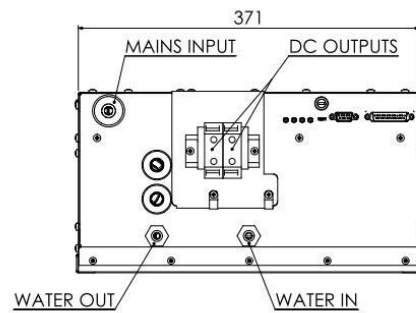
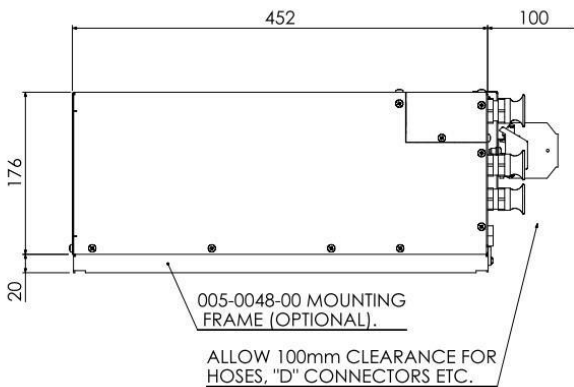
⁶We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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 15s



DC power supply – water cooled - 50V - optional