



Technical data sealed CO₂ lasers – specification

	SR 15i (PP) 9.3µm
Laser beam data	
Wavelength ⁽¹⁾	9.3µm
Excitation	RF
Output power	
Power range (rated) ⁽²⁾	5 – 130W
Typical stability (long term) ⁽³⁾	± 3% without power feedback, ± 1% with power feedback
Peak power ⁽⁴⁾	325W
Minimum shipment power ⁽²⁾	156W
Laser beam quality	
Diameter @ (1/e ²) (at laser o/p optic)	6.0 ± 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⁾	72A
Maximum peak DC input current	120A
Maximum average power consumption ⁽⁶⁾	3.6kW
Pulsed mode	
Frequency	0 – 130kHz
Pulse width	2 – 400µs
Energy	5 – 104mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	60%
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	<4mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 4kW
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 9.20µm – 9.35µm.

² Mean average power at maximum duty cycle.

³ Guaranteed stability (long-term) ± 6% without power feedback and ± 2% of rated power with power feedback.

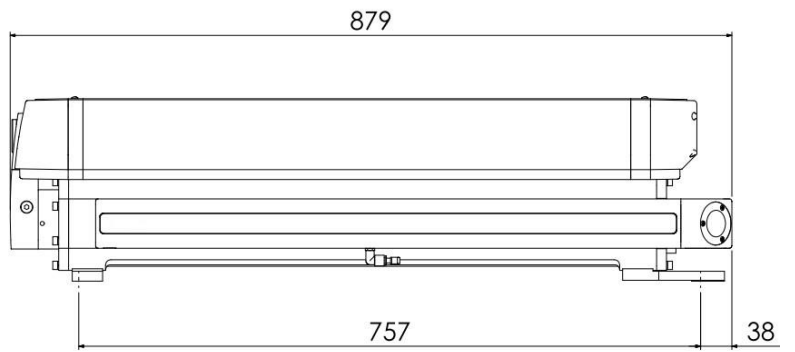
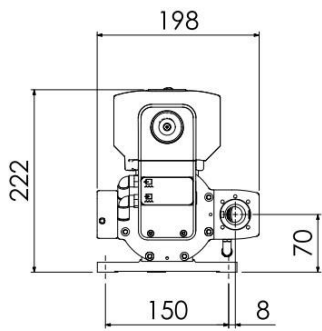
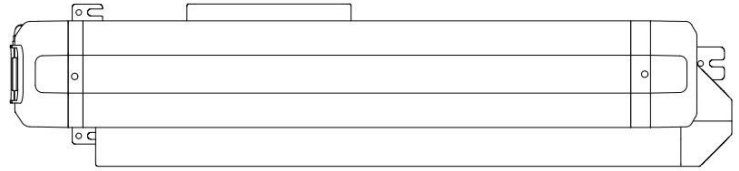
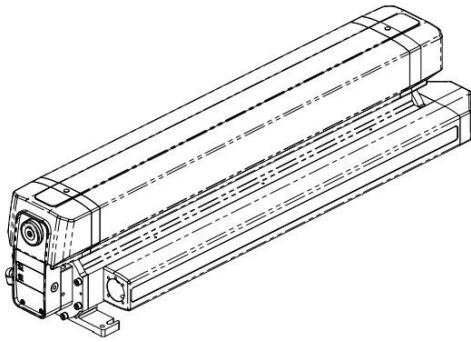
⁴ Depending on frequency.

⁵ 400µs pulse width @ 60% Duty.

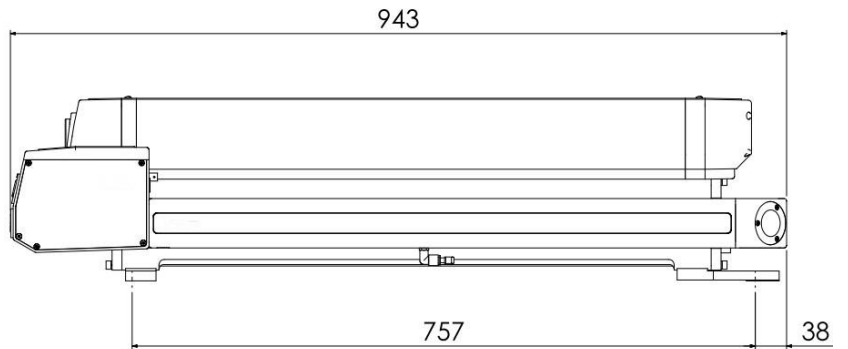
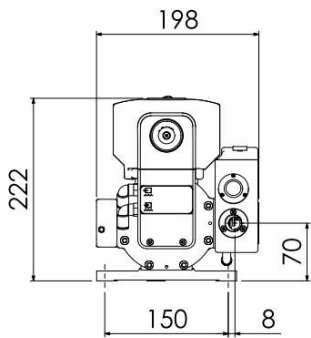
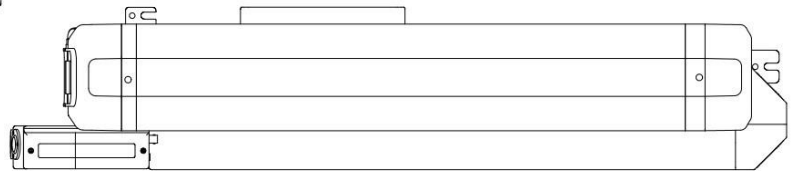
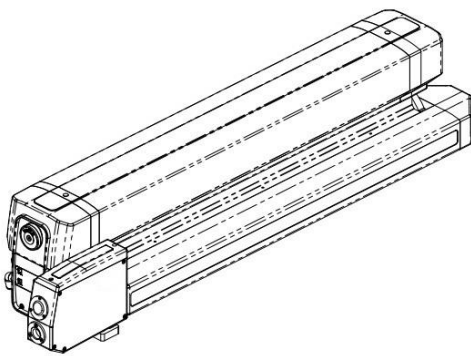
⁶ We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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

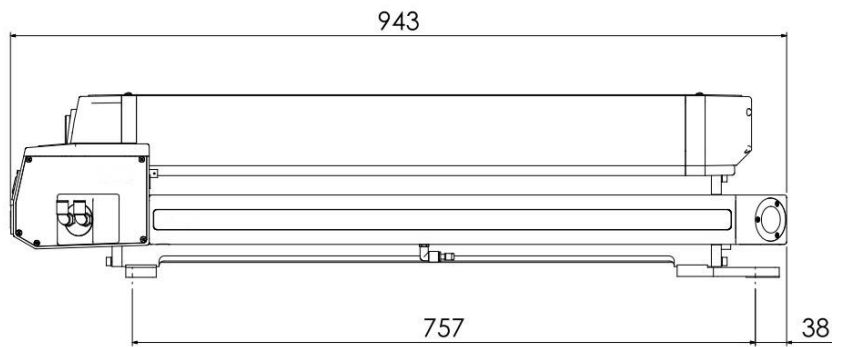
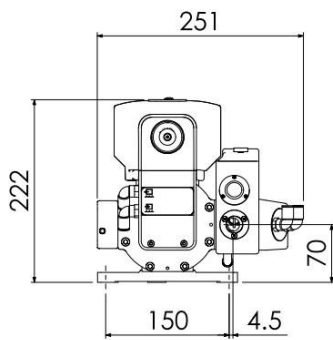
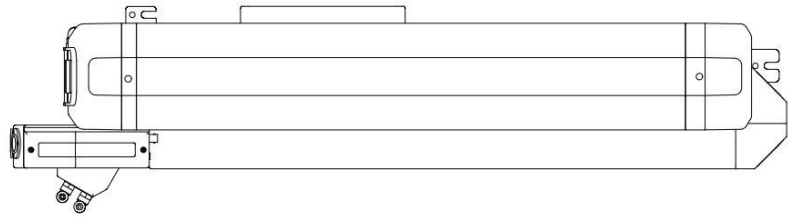
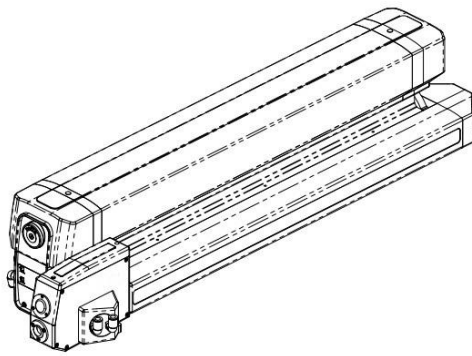
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



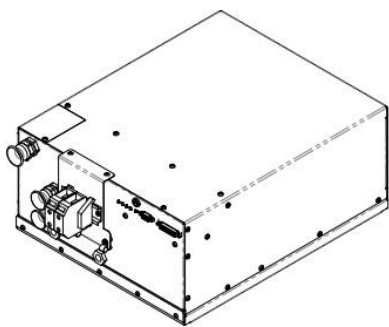
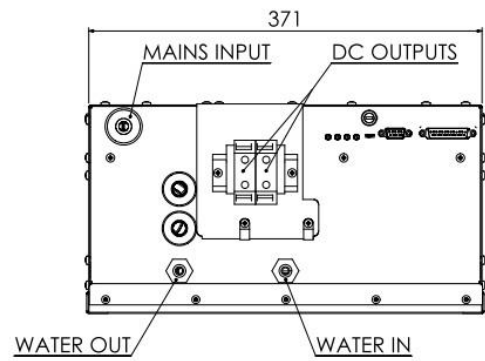
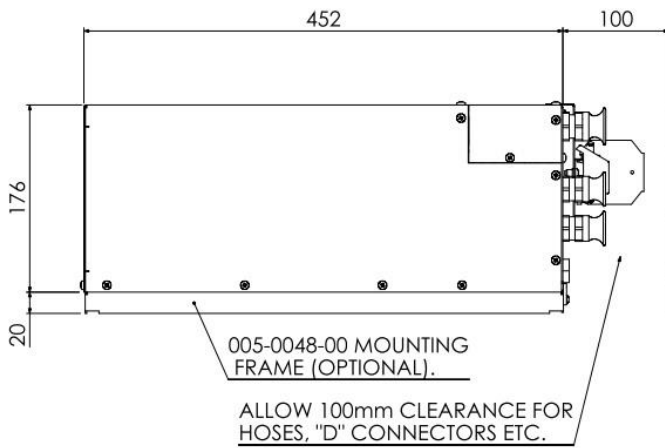
SR 15i



SR 15i – with shutter and diode assembly - optional



SR 15i – with shutter, diode and power feedback assembly – optional



DC power supply – water cooled - 50V - optional