



Technical data sealed CO₂ lasers – specification

	SR 15i (PP) 10.25μm	
Laser beam data		
Wavelength ⁽¹⁾	10.25μm	
Excitation	RF	
Output power		
Power range (rated) ⁽²⁾	10 – 155W	
Typical stability (long term) ⁽³⁾	± 3% without power feedback, ± 1% with power feedback	
Peak power ⁽⁴⁾	390W	
Minimum shipment power ⁽²⁾	186W	
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⁾	72A	
Maximum peak DC input current	120A	
Maximum average power consumption ⁽⁶⁾	3.6kW	
Pulsed mode		
Frequency	0 – 130kHz	
Pulse width	2 – 400μs	
Energy	6 – 124mJ	
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	415VAC ± 10% 50/60Hz. Three phase
Input current (max)	22A @ 230V	11A@415V
External fusing requirement	32A @ 230V	Three x 16A@415V
Output voltage	50V	50V
Maximum output current	96A	150A
Maximum output power ⁽⁶⁾	4.8kW	7.5kW
Earth leakage current	<4mA	<30mA

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:

¹10.25µm is the predominant wavelength. This can typically vary in the range 10.17µm – 10.33µm.

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.

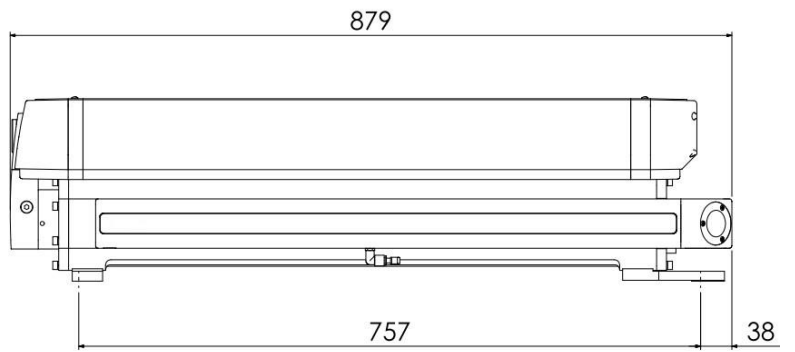
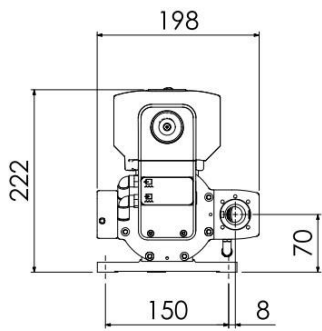
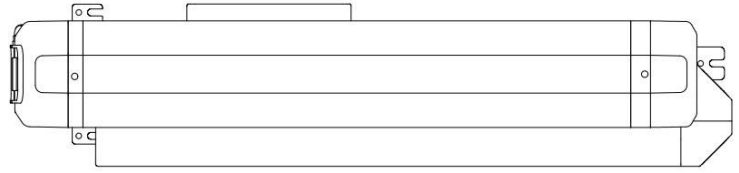
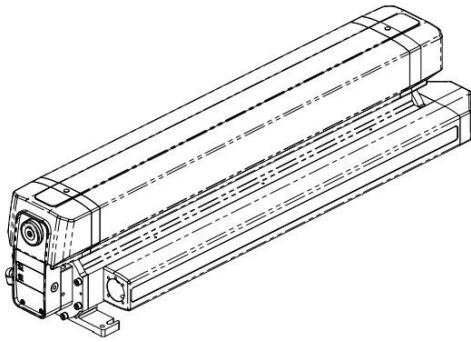
⁴ Depending on frequency.

⁵ 400µs pulse width @ 60% Duty.

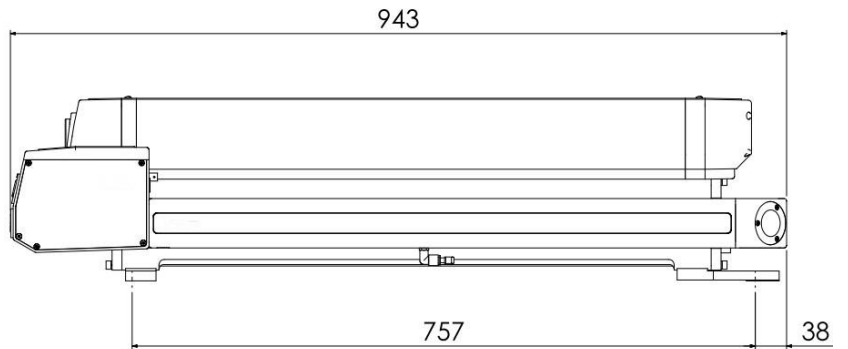
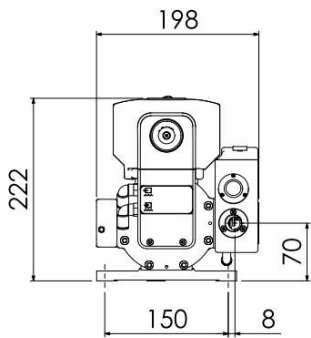
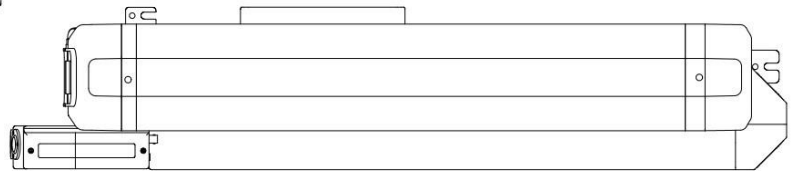
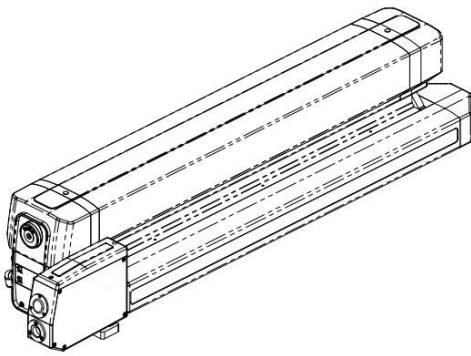
⁶ We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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

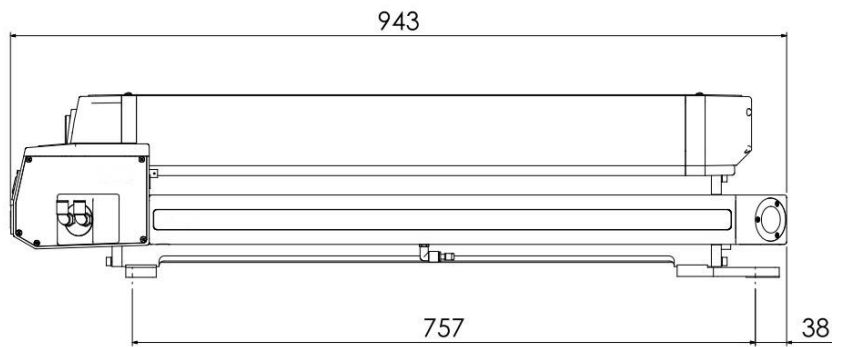
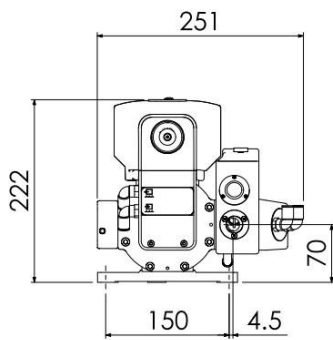
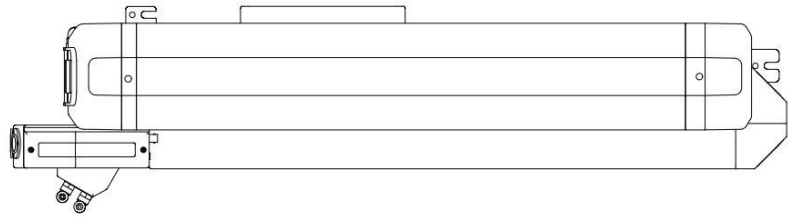
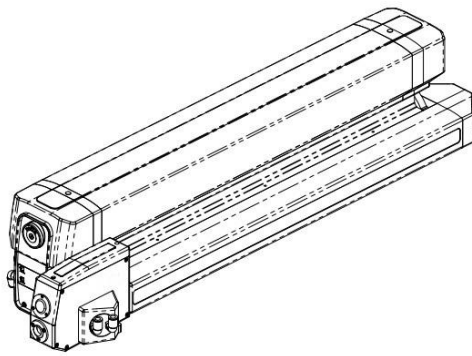
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



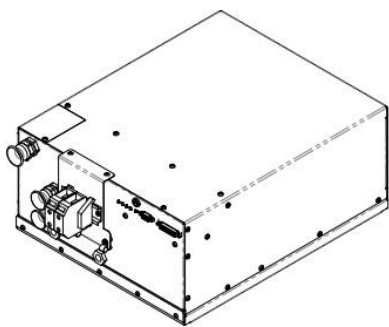
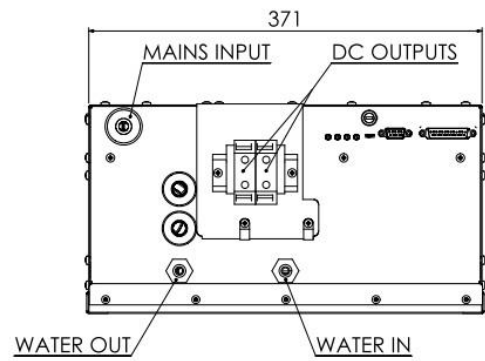
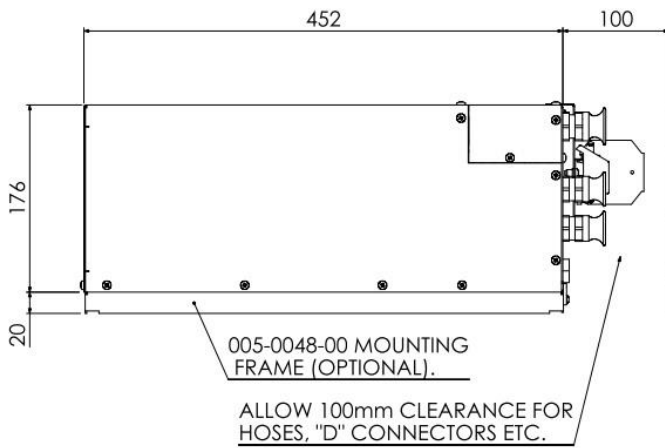
SR 15i



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