

## Technical data sealed CO<sub>2</sub> lasers – specification

	SR 15e 9.3µm
<b>Laser beam data</b>	
Wavelength <sup>(1)</sup>	9.3µm
Excitation	RF
<b>Output power</b>	
Power range (rated) <sup>(2)</sup>	10 – 160W
Typical stability (long term) <sup>(3)</sup>	± 4%
Peak power <sup>(4)</sup>	460W
Minimum shipment power <sup>(2)</sup>	>192W
<b>Laser beam quality</b>	
Diameter @ (1/e <sup>2</sup> ) (at laser o/p optic)	6.3 ± 0.5mm
Beam quality factor	M <sup>2</sup> < 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
<b>RF input requirements</b>	
DC input voltage	50VDC ± 1%
Maximum average DC input current <sup>(5)</sup>	80A
Maximum peak DC input current	160A
Maximum average power consumption <sup>(6)</sup>	4kW
<b>Pulsed mode</b>	
Frequency	0 – 130kHz
Pulse width	2 – 400µs
Energy	8 – 155mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	50%
<b>Dimensions and weights</b>	
Laser head/RF	(LxWxH) 941x198x222 (mm) 34kg
<b>External control facilities</b>	
Laser head	Commands from external controller Status signal to external controller
<b>DC Electrical ratings</b>	
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 <sup>(6)</sup>	4.8kW
Earth leakage current	< 4mA

## Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Maximum pressure	6 bar
Refrigeration capacity	> 4.4kW
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:

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

<sup>2</sup>Mean average power at maximum duty cycle.

<sup>3</sup>Guaranteed stability (long-term) is ± 6%.

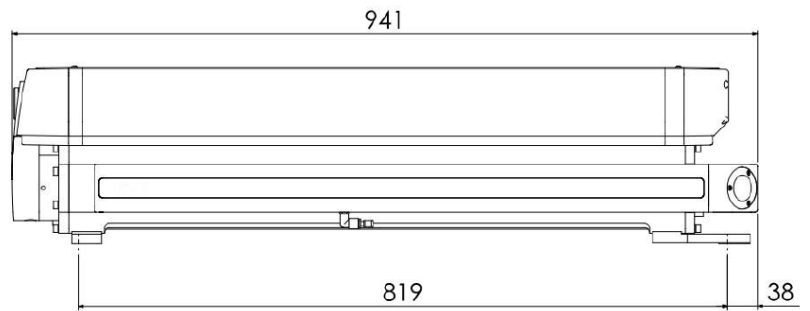
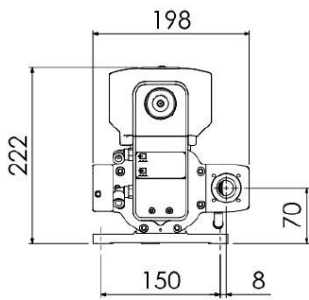
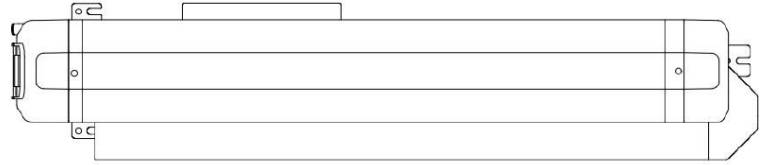
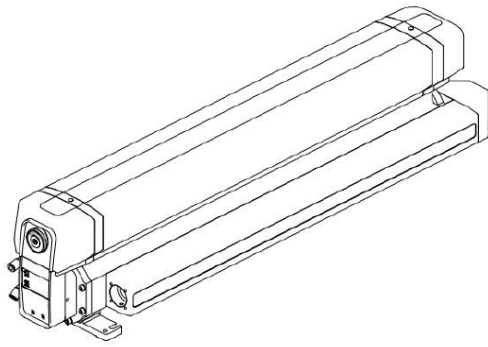
<sup>4</sup>Depending on frequency.

<sup>5</sup>400μs pulse width @ 50% Duty.

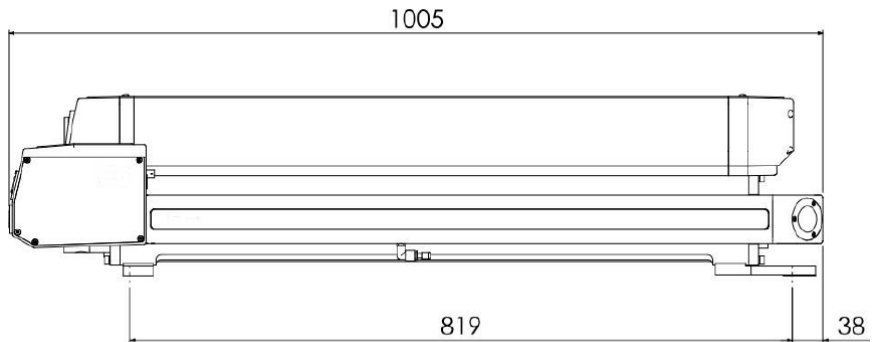
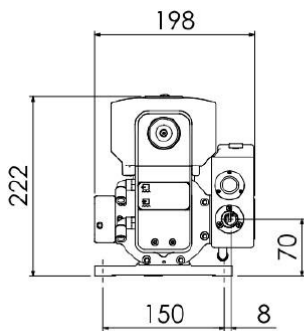
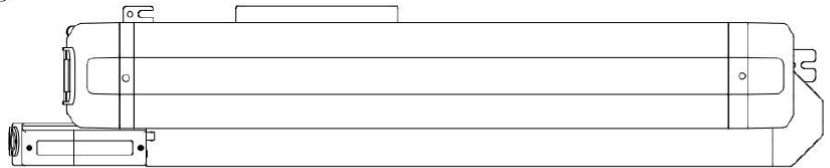
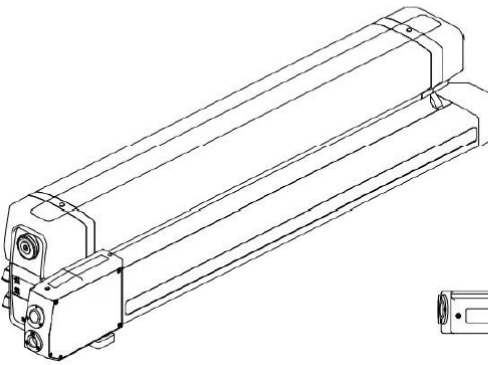
<sup>6</sup>We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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

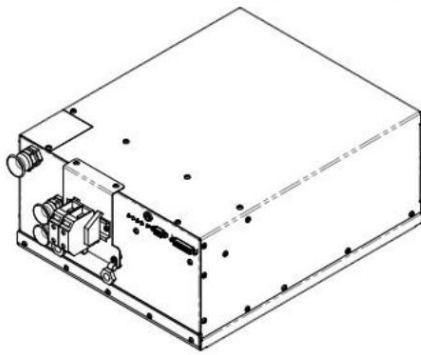
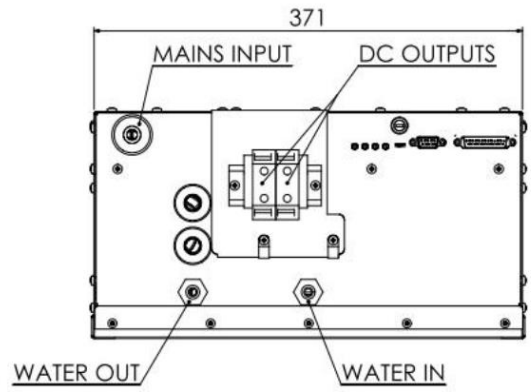
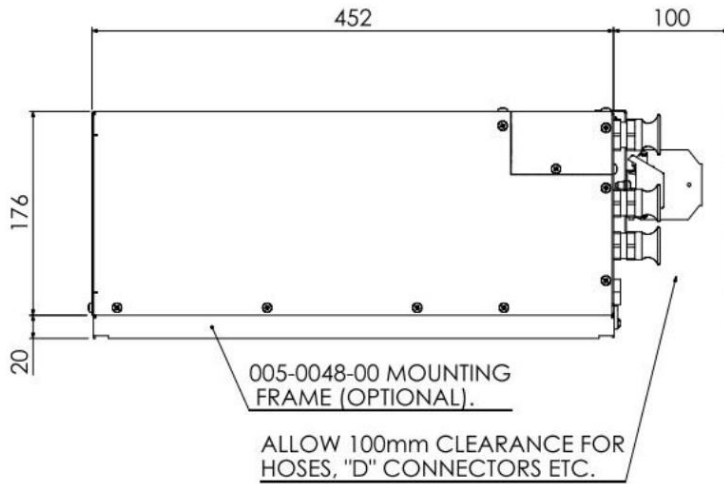
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



SR 15e



SR 15e – with shutter and diode assembly - optional



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