

Technical data sealed CO₂ lasers – specification

	SCX 35
Laser beam data	
Wavelength ⁽¹⁾	10.6µm
Excitation	RF
Output power	
Power range (typical rated)	20W-350W ⁽⁶⁾
Typical power stability	± 5.00%
Typical Power stability with power feedback	± 1%
Guaranteed power stability	± 7% (± 2% ⁽⁵⁾)
Peak power	> 880W
Minimum shipment power ⁽⁴⁾	420W
Typical shipment power	465W
Laser beam quality	
Diameter @ (1/e ²)	7.0 ± 0.5mm
Beam quality factor M ² (K)	M ² < 1.2 (K > 0.8)
Divergence (full angle)	< 2mrad (1 to 10m)
Pointing stability (half angle) ⁽³⁾	< 0.25mrad
Polarisation	linear (45° base)
Ellipticity	< 1.2:1
Pulsed mode⁽²⁾	
Frequency	0kHz – 130kHz
Width	2µs – 400µs
Energy	14mJ – 280mJ
Optical pulse rise/fall ⁽⁷⁾	< 60µs
Duty cycle (max)	60%
Dimensions and weights	
Laser head	(LxWxH) 1178mmx263mmx232.5mm approx. 63kg
Combined RF/DC unit	(LxWxH) 613mmx487mmx259mm approx. 65kg
RF	(LxWxH) 490mmx371mmx80mm approx. 17kg
External control facilities	
Laser head	Commands from external controller Status signal to external controller PWM control ⁽⁵⁾ NC control (0–10V) ⁽⁵⁾
DC Electrical ratings – 3 phase water cooled	
Input Voltage Range	400VAC ± 10%. 3 phase 50/60Hz (three phase–no neutral)
Maximum output current	150A
Maximum output power	7.5kW
External fusing requirement	20A fuse per phase
Earth leakage current	< 6mA OR
Cooling	
Flow rate	≥ 360L/hr (laser head)
Refrigeration capacity	≥ 8.0kW
Temperature	19°C/66°F to 25°C/77°F ± 1K (above dew point)

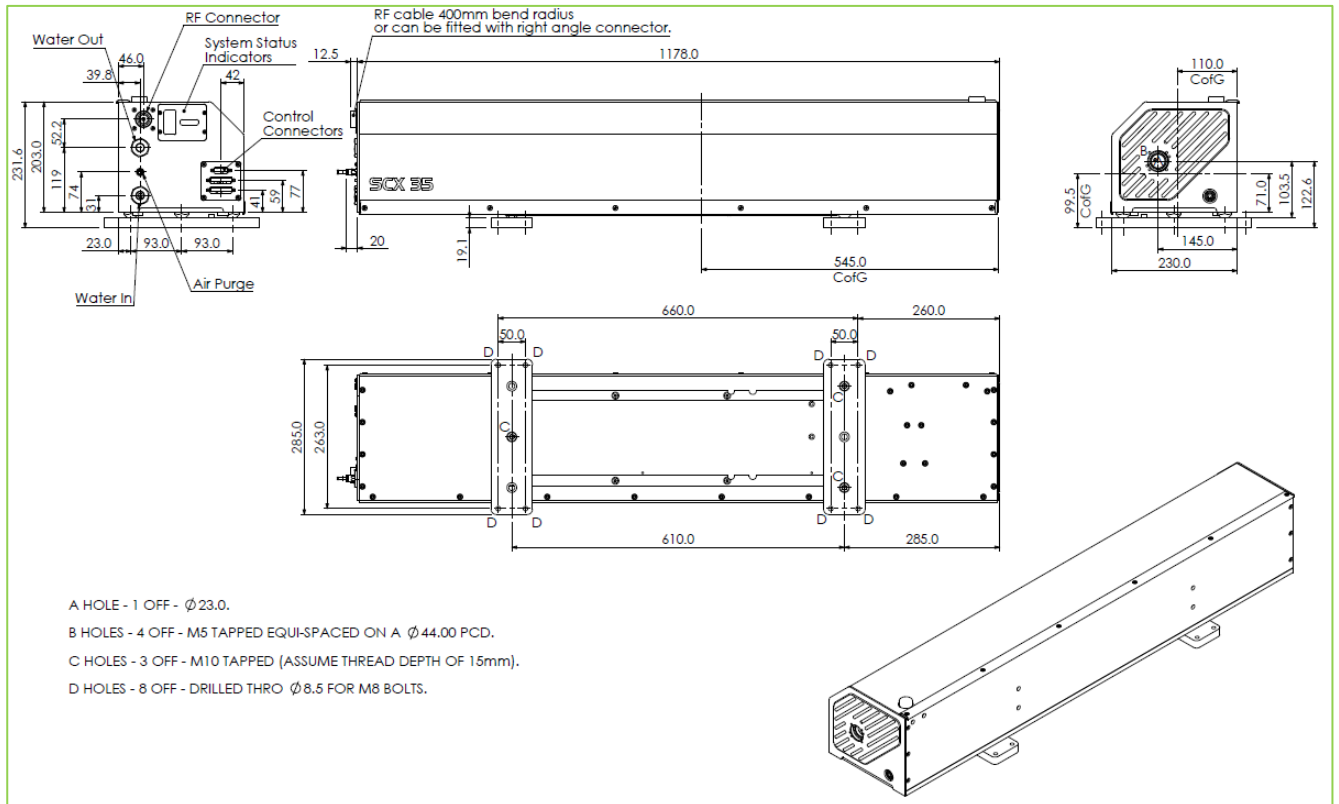
Environmental requirements

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

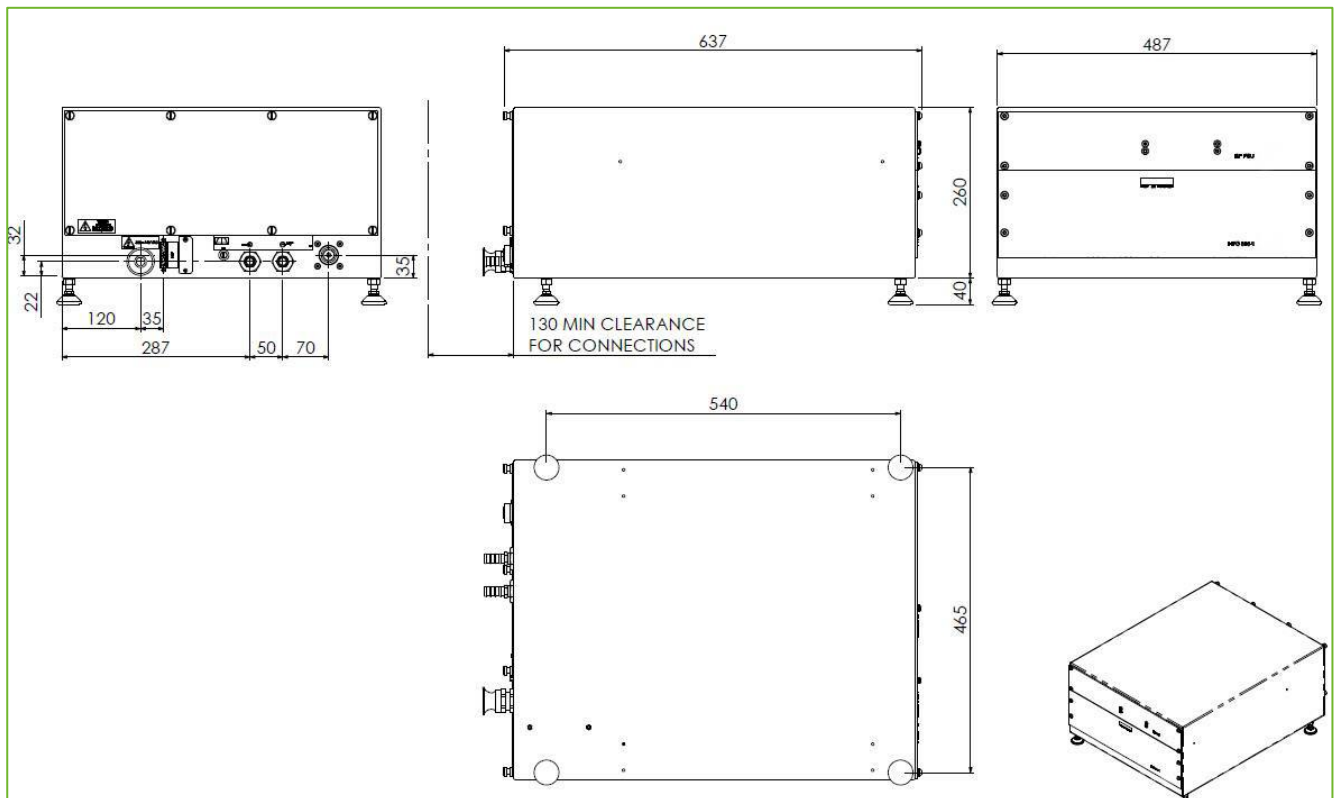
Notes:

1. 10.6µm is the predominant wavelength. This can typically vary in the range 10.45µm–10.7µm
2. Minimum and maximum optical modulation depths are frequency and duty cycle dependent – minimum depth occurs at short pulse widths and high frequency. For the SCX 35 the following optical modulation depths are typical: a.10kHz–44 to 100%, b.30kHz – 17 to 100%, c.60kHz – 11 to 71%
3. The pointing stability stated is based upon the full range of available pulse widths. At a fixed pulse width stability will be significantly better
4. Mean average power at maximum duty cycle
5. When supplied with power feedback assembly. (Turn on response is typically 300 to 500 milliseconds)
6. Minimum power with power feedback is 25W
7. Quoted from 10-90% level

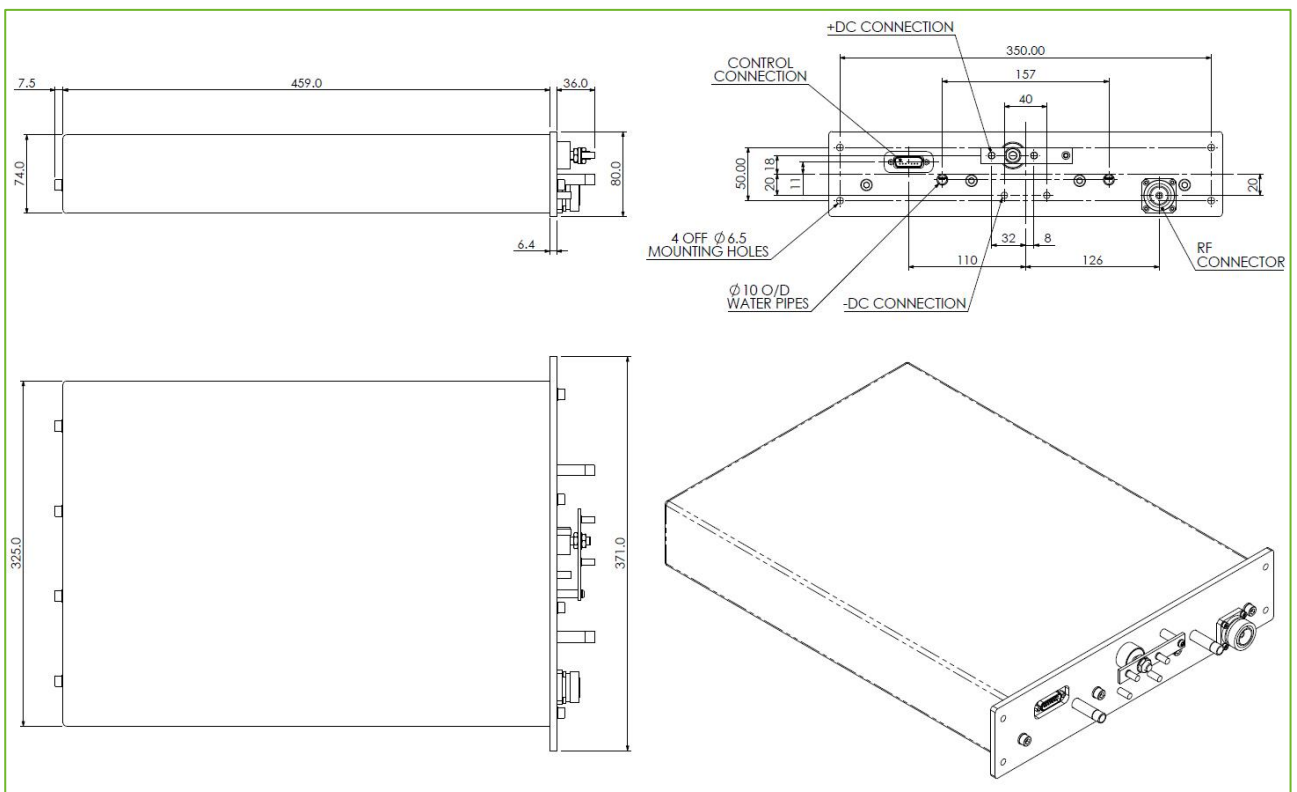
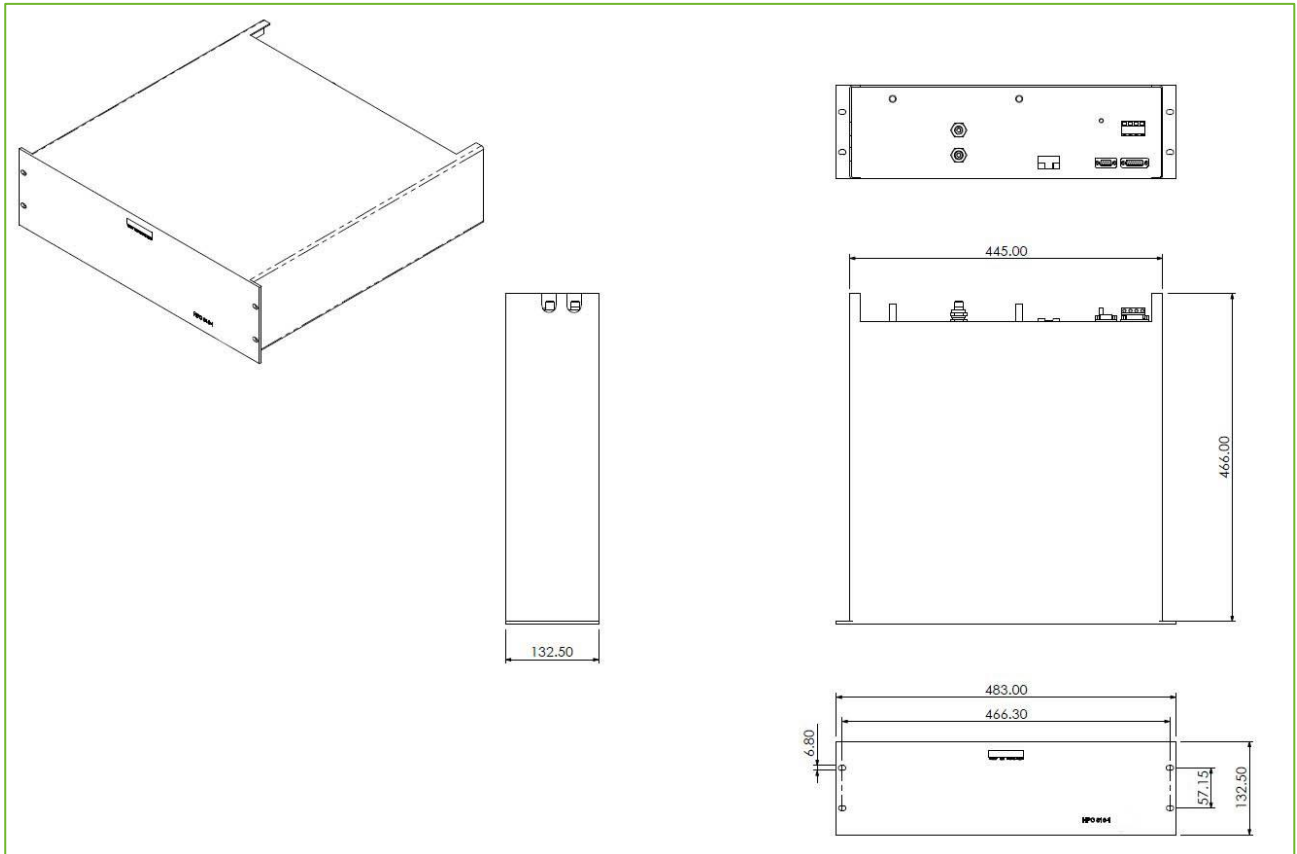
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



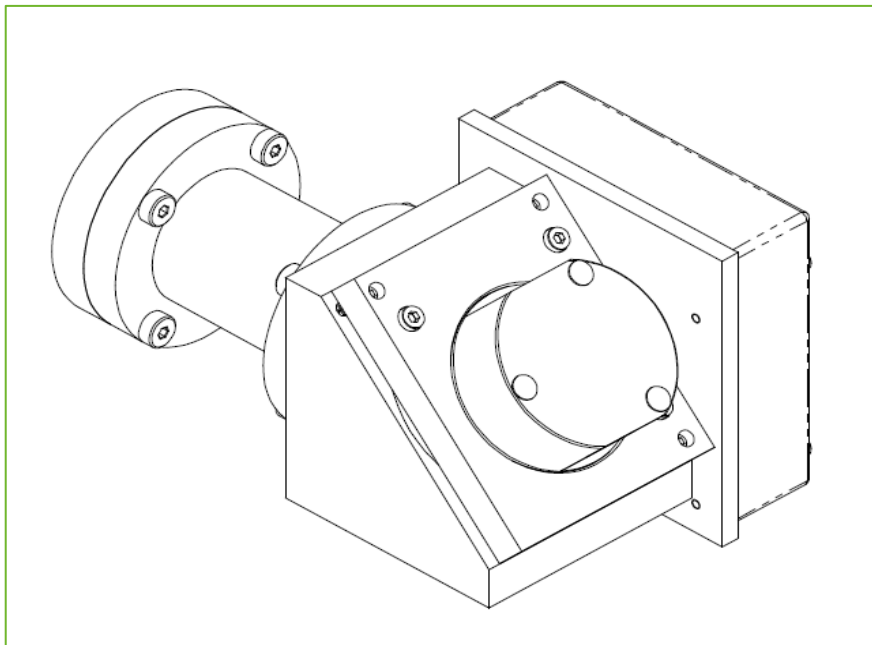
SCX 35 & SCX 35 laser assembly



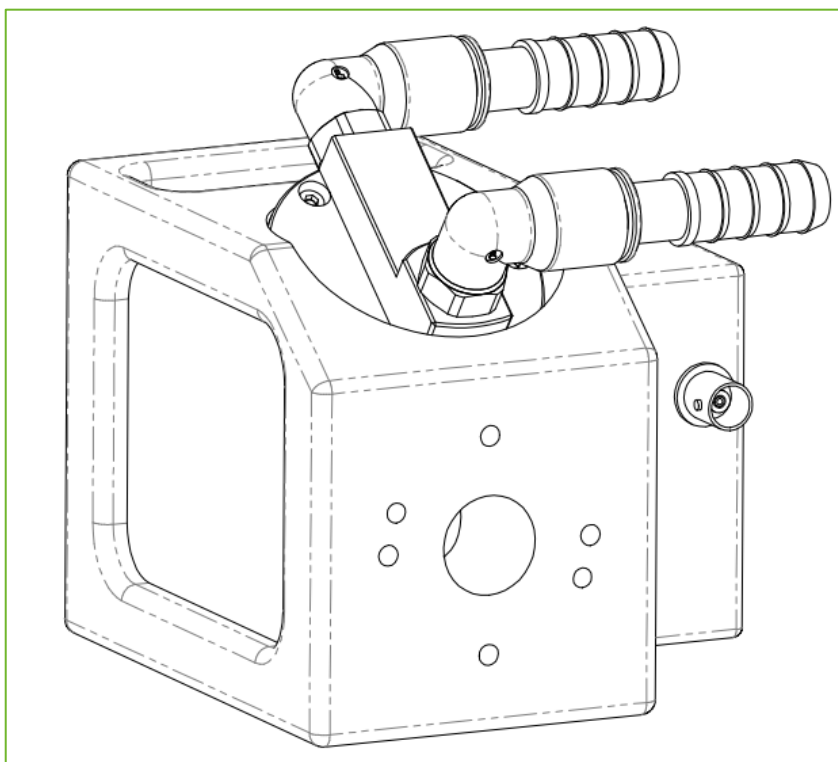
Combined water-cooled 3 phase DC power supply with 3kw RF power supply – standard configuration



SCX 35 & PMB DC power supply



SCX 35 power feedback assembly (optional)



SCX 35 power feedback assembly Mk II (optional)