



Technical data sealed CO₂ lasers - specification

	OEM 65iX
Laser beam data	
Wavelength ⁽¹⁾	10.6µm
Excitation	RF
Output power	
Power range ⁽²⁾	35W–650W
Typical stability (long term with power feedback)	± 1%
Guaranteed stability (long term with power feedback)	± 2%
Typical stability (long term without power feedback)	± 4.1%
Guaranteed stability (long term without power feedback)	± 7%
Peak power @ (PW > 50µs)	1640W
Minimum shipment power ⁽³⁾	780W
Laser beam quality	
Diameter @ (1/e ²)	11.6. ± 1.0mm
Beam quality factor	K > 0.83 or M ² < 1.2
Divergence (full angle)	< 1.75mrad (1 to 10m)
Pointing stability (half angle) ⁽⁴⁾	< 0.25mrad
Polarisation	linear (parallel to base plate)
Ellipticity	< 1.2:1
Pulsed mode⁽⁵⁾	
Frequency	0–130kHz ⁽⁶⁾
Pulse Width	2µs–400µs
Energy	26mJ-520mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	60%
Dimensions and weights	
Laser head (with covers)	(LxWxH)1206mmx350mmx288mm 93.5kg
Laser head (without covers)	(LxWxH)1152mmx350mmx288mm 73kg
RF unit	(LxWxH)1070mmx178mmx358mm 40.5kg
Combined DC unit (water cooled) and controller assembly	(LxWxH)726mmx483mmx244mm 51kg
Shutter/diode assembly	(LxWxH) 205mmx134mmx135mm 4.5kg
External control facilities	External interfaces to allow control of the laser by a PC or a PLC based control system. A hand-held control module and on-board diagnostics with output signals for continuous monitoring of: laser power and stability, coolant flow, power supply operation and external interlocks etc
DC electrical ratings	
-3 phase water cooled	
Input voltage range ⁽⁷⁾	400VAC ± 10% 3 phase 50/60Hz
Input current	24A
Maximum output current	300A
Maximum output power	15kW
External fusing requirement	32A fuse per phase
Cooling	
Flow rate	≥ 10L/min
Refrigeration capacity	≥ 16kW
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)

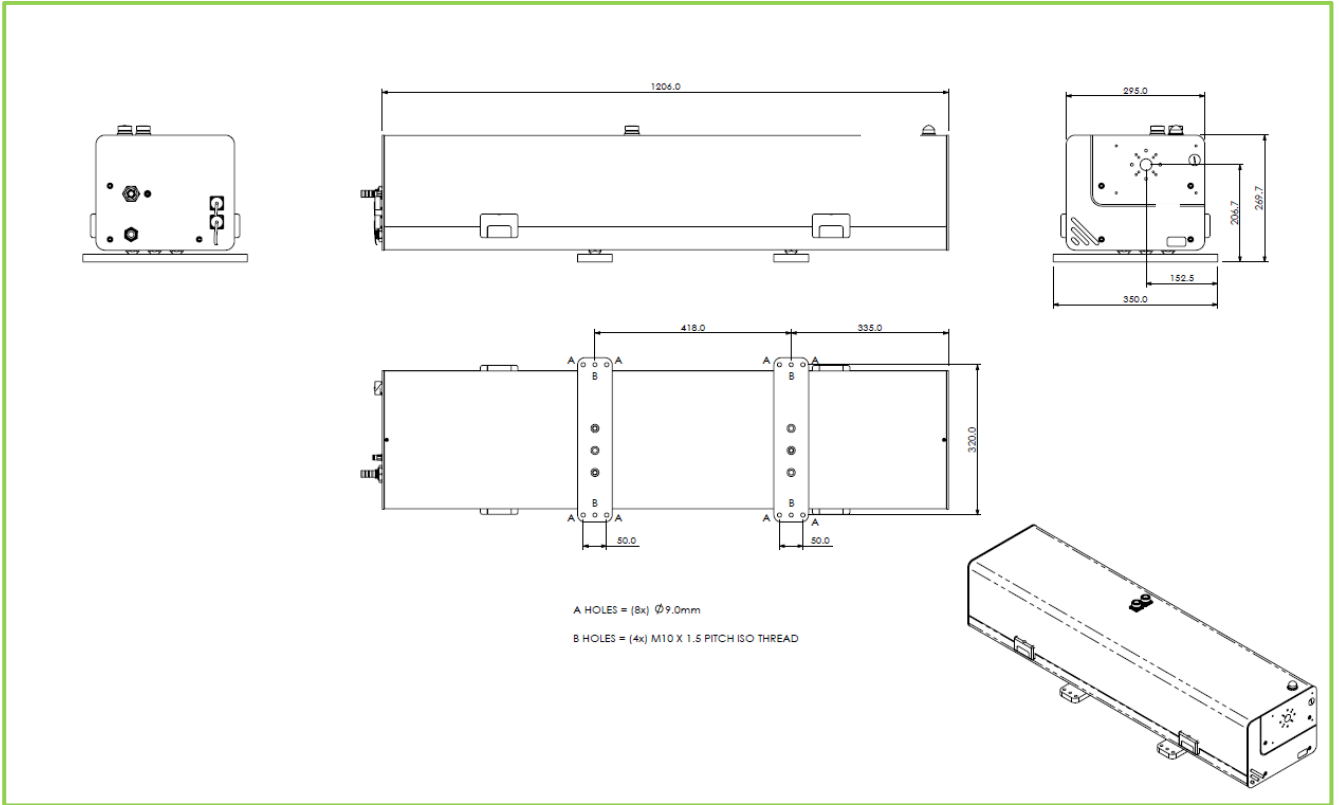
Operational altitude

< 2000m

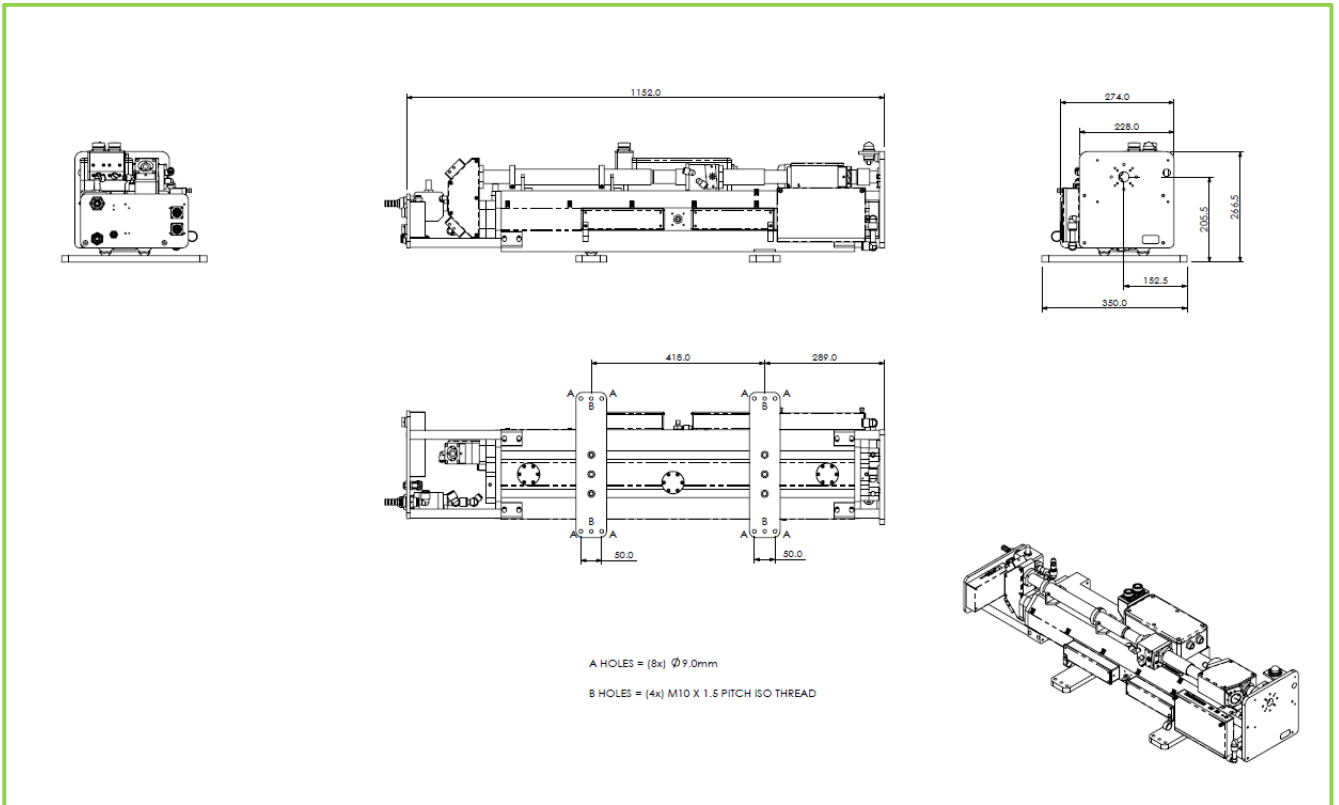
Notes:

1. 10.6µm is the predominant wavelength. This can typically vary in the range 10.45µm–10.7µm
2. Maximum power measured at 400µs pulse width and maximum allowable duty cycle
3. Mean average power measured at 400µs pulse width at maximum duty cycle
4. The pointing stability stated is based upon the full range of available pulse widths. At a fixed pulse width stability will be significantly better
5. Minimum and maximum optical modulation depths are frequency and duty cycle dependent, minimum depth occurs at short pulse widths and high frequency. Optical modulation depths are typical: a.10kHz–44 to 100%, b.30kHz–17 to 100%, c.60kHz–11 to 71%
6. Maximum pulse frequency is quoted for operation in external pulse width modulation (PWM) mode. In power control modes the maximum pulse frequency is 100kHz
7. 3-phase delta, no neutral required

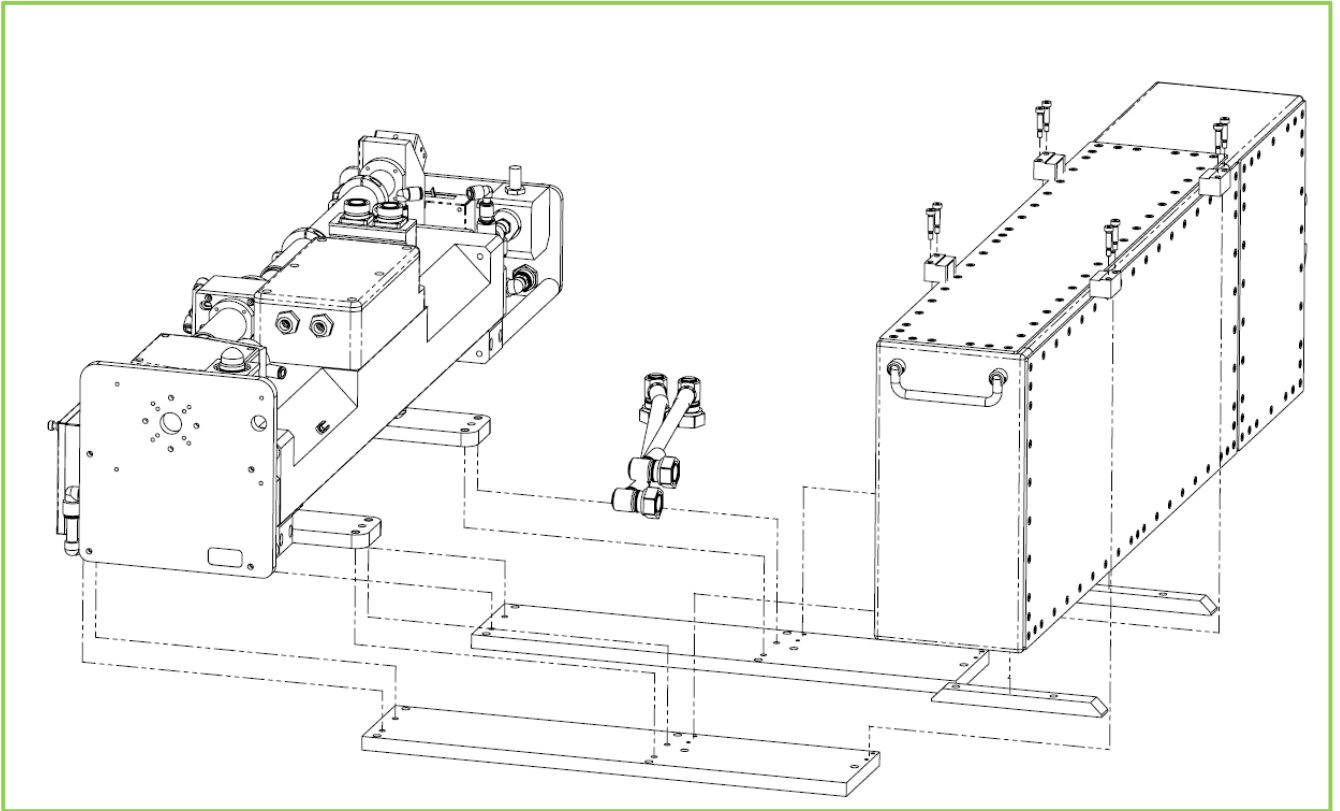
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



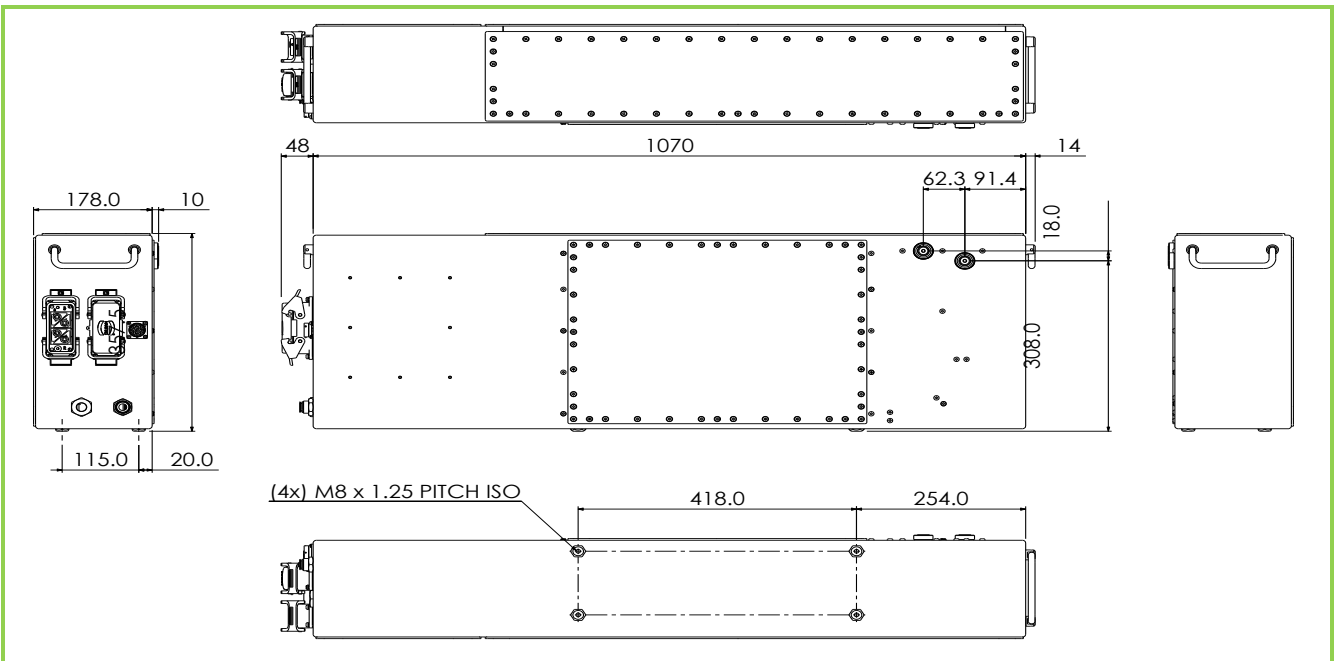
OEM 65ix laser assembly (with covers)



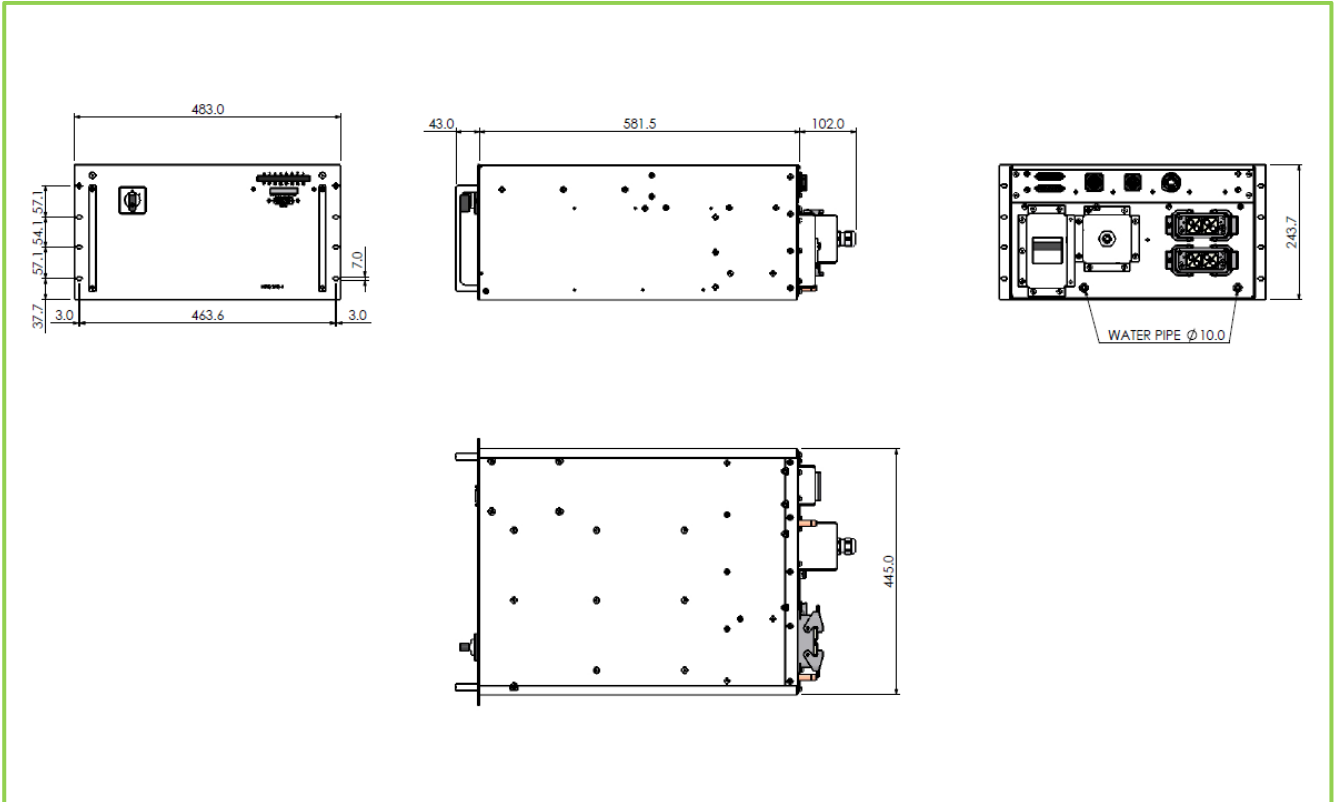
OEM 65ix laser assembly (without covers)



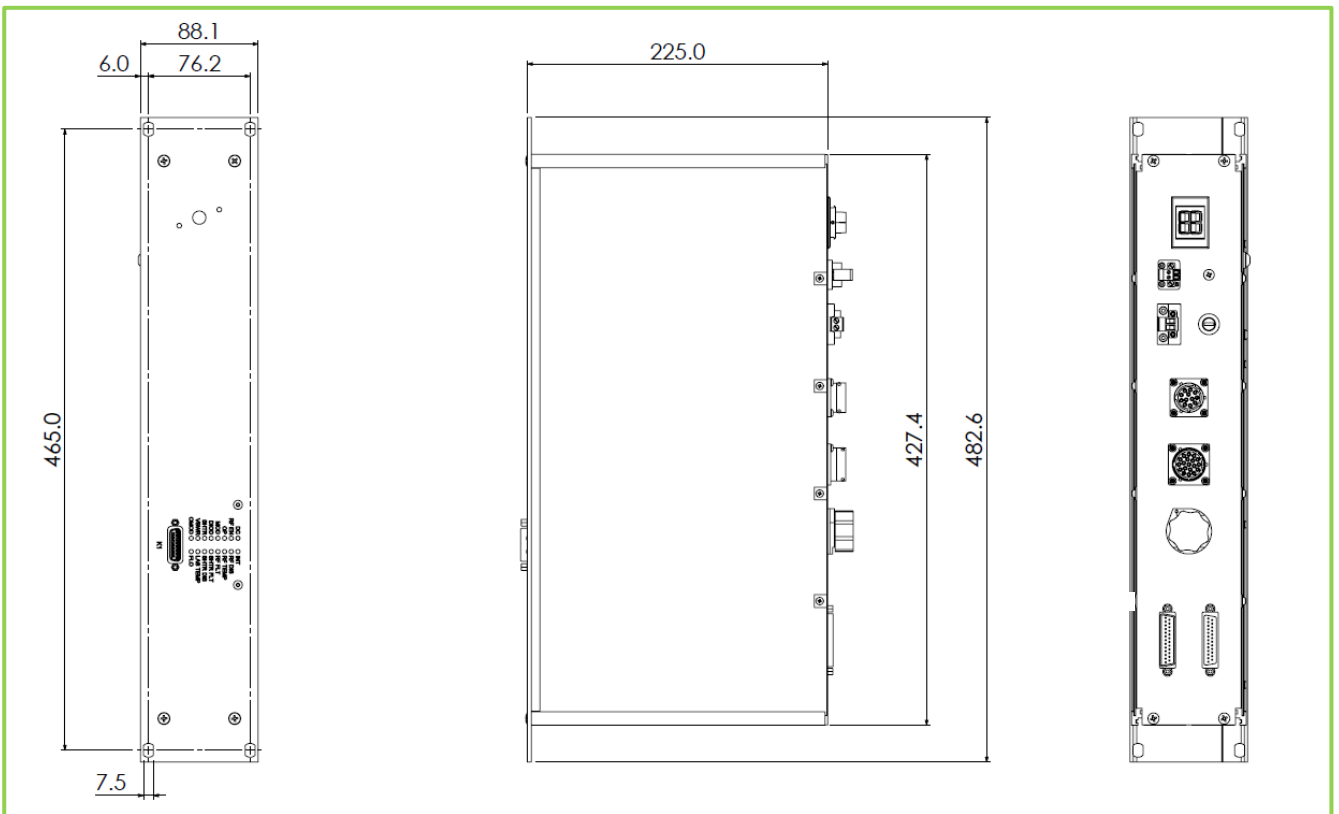
OEM 65iX laser, RF assembly, with optional mounting plate



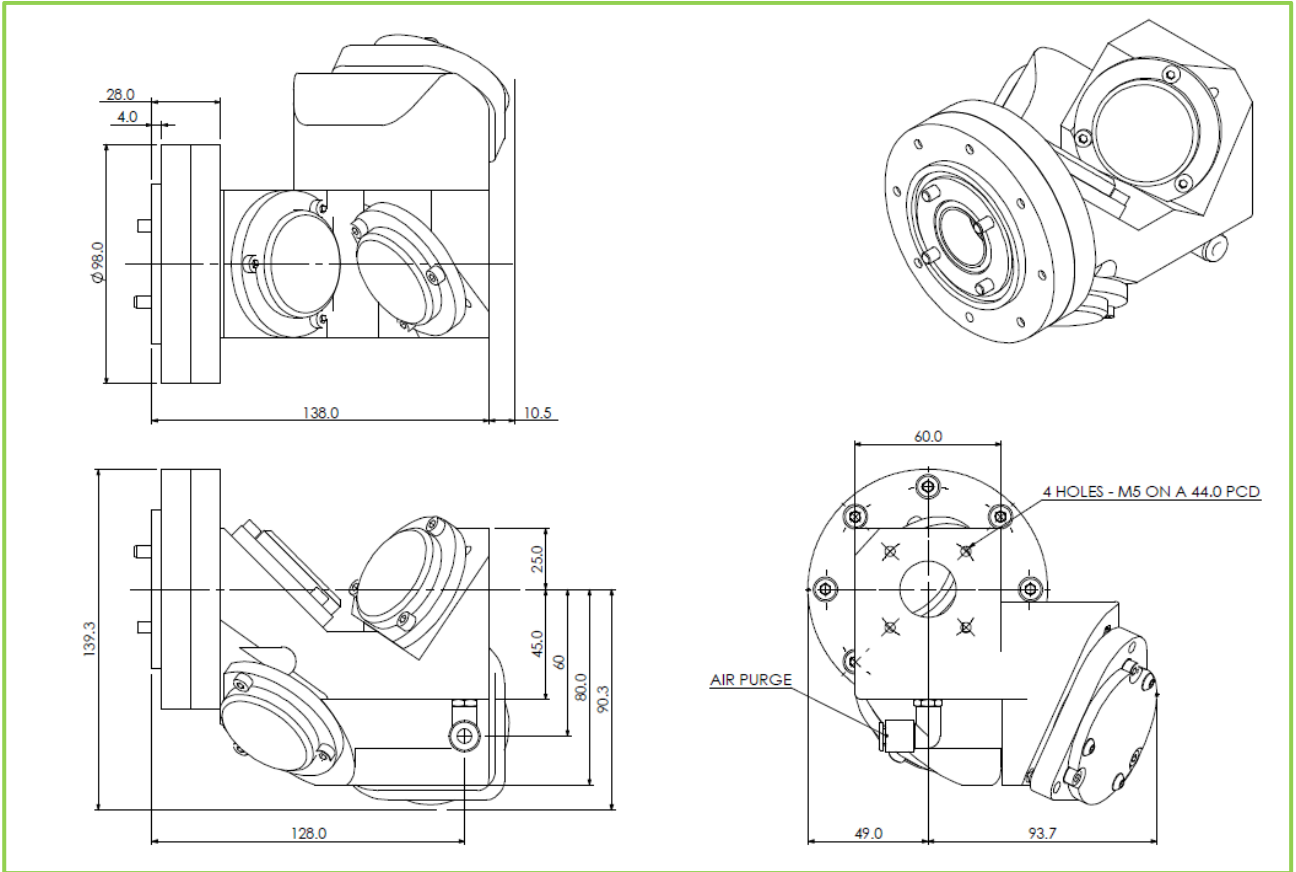
RF power supply



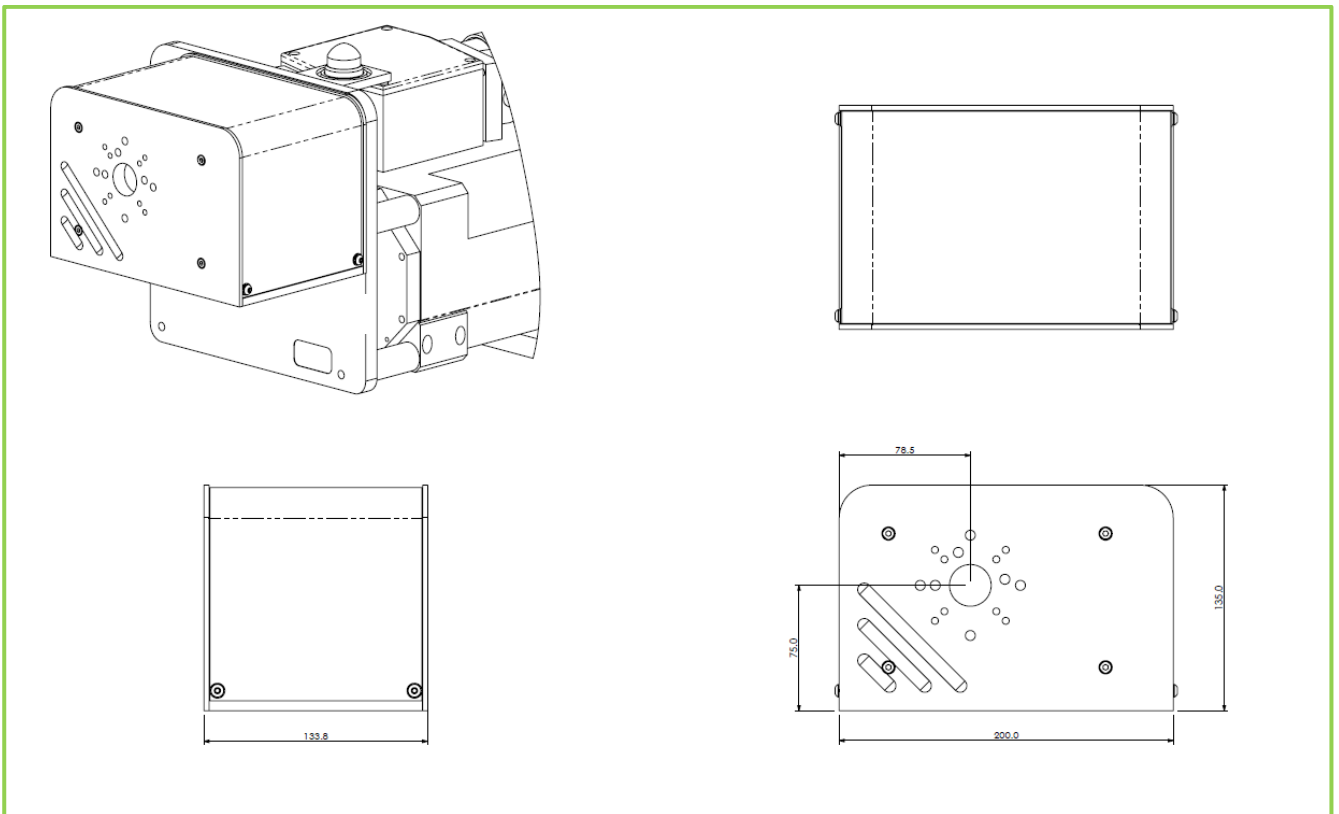
Combined water cooled 3 phase DC power supply and controller assembly



Standalone controller assembly (for use with customer supplied DC)



ATFR/straight through optical isolation system (optional)



Shutter /laser diode assembly - optional