

Technical data sealed CO₂ lasers - specification

	OEM 65iX
Laser beam data	
Wavelength ⁽¹⁾	10.6μm
Excitation	RF excited
Laser output power	
Power range	35 – 650W
Typical power stability (without power feedback)	± 4%
Typical stability (with power feedback) ⁽²⁾	± 1%
Guaranteed stability (without power feedback)	± 7%
Guaranteed stability (with power feedback) ⁽²⁾	± 2%
Peak power	1640W
Minimum shipment power ⁽³⁾	780W
Laser beam quality	
Diameter @ (1/e ²) at laser O/P optic	11.6. ± 1.0mm
Beam quality factor M ² (K)	M ² < 1.2 (K > 0.83)
Divergence (full angle far field)	< 1.75mrad
Pointing stability (half angle) ⁽⁴⁾	< 0.25mrad
Polarisation	< Linear (parallel to base), purity > 100:1
Ellipticity	< 1.2:1
RF PSU	
Input voltage ⁽⁵⁾	50VDC
Maximum average DC input current	288A
Maximum average power consumption	14kW
Pulsed mode	
Frequency	0 – 130kHz
Pulse Width	2 – 400μs
Energy	26 – 520mJ
Optical pulse rise/fall	< 60μs
Duty cycle (max)	60%
Dimensions and weights	
Laser head (with covers)	(LxWxH) 1251mmx350mmx289mm 90kg
Laser head (without covers)	(LxWxH) 1205mmx350mmx289mm 76kg
RF unit	(LxWxH) 1131mmx188mmx358mm 41kg
Shutter/diode assembly (optional)	(LxWxH) 205mmx134mmx135mm 5kg
DC PSU – Option 1	(LxWxH) 727mmx483mmx244mm 51kg
DC PSU – Option 2	(LxWxH) 547mmx483mmx221mm 24kg
External control facilities	
Controller	RS232 or Ethernet communications Mobile control unit (optional) PWM input Status outputs
Cooling	
Flow rate (minimum)	≥ 9 l/min
Refrigeration capacity	≥ 15.9kW
Environment requirements	
Ambient temperature range	5 – 40°C
Relative humidity range	10 – 85% (non-condensing)
Operational altitude	< 2000m

DC PSU – Option 1

Input voltage rating	400 – 480VAC $\pm 10\%$, 50-60Hz (3 phase – no neutral connection)
Input current (max)	21A per phase
Earth leakage current	< 8mA
Output voltage	50VDC
Coolant pressure (max)	6 bar (88 psi)
Coolant flow	> 10 l/min

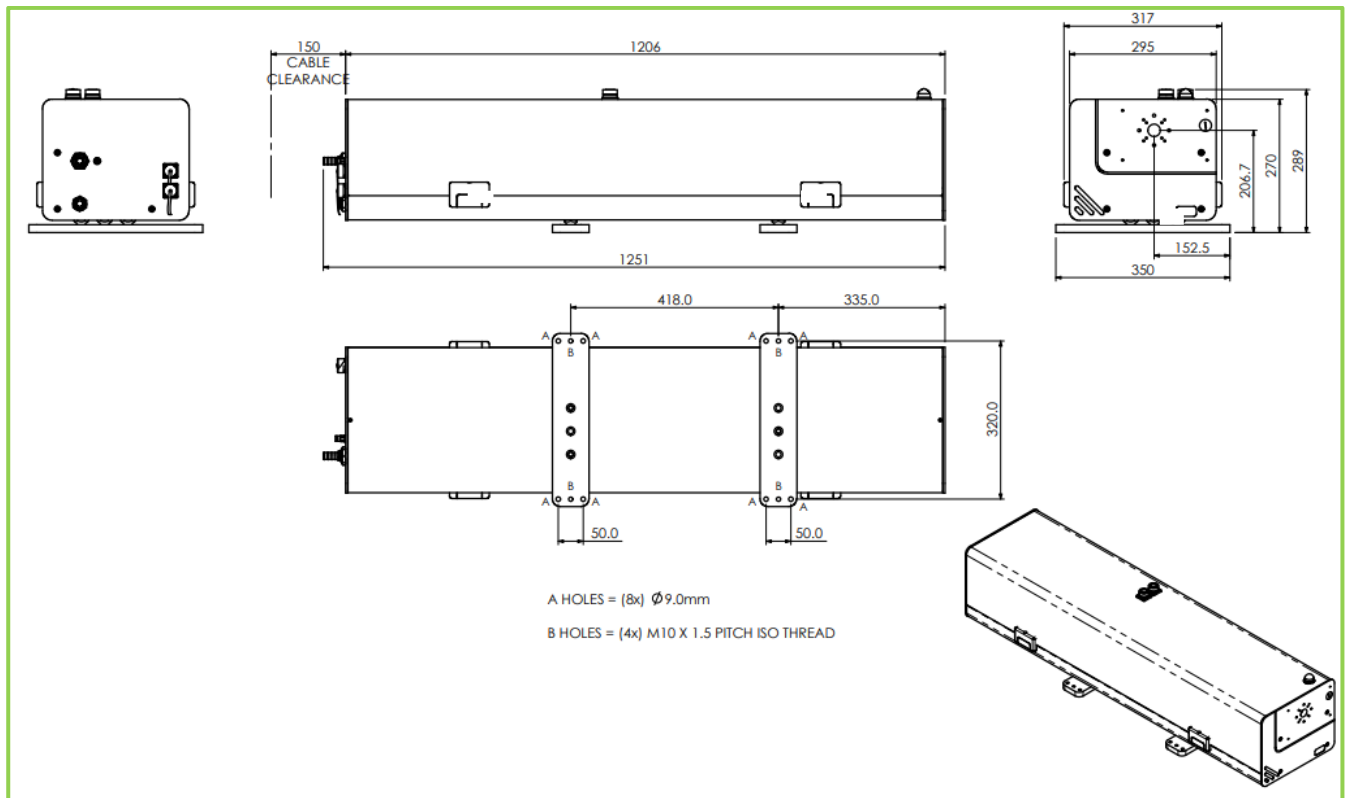
DC PSU – Option 2

Input voltage rating	380 – 480VAC $\pm 10\%$, 50-60Hz (3 phase – no neutral connection)
Input current (max)	36A per phase
Earth leakage current	< 13mA
Output voltage	50VDC
Coolant pressure (max)	6 bar (88 psi)
Coolant flow	> 10 l/min

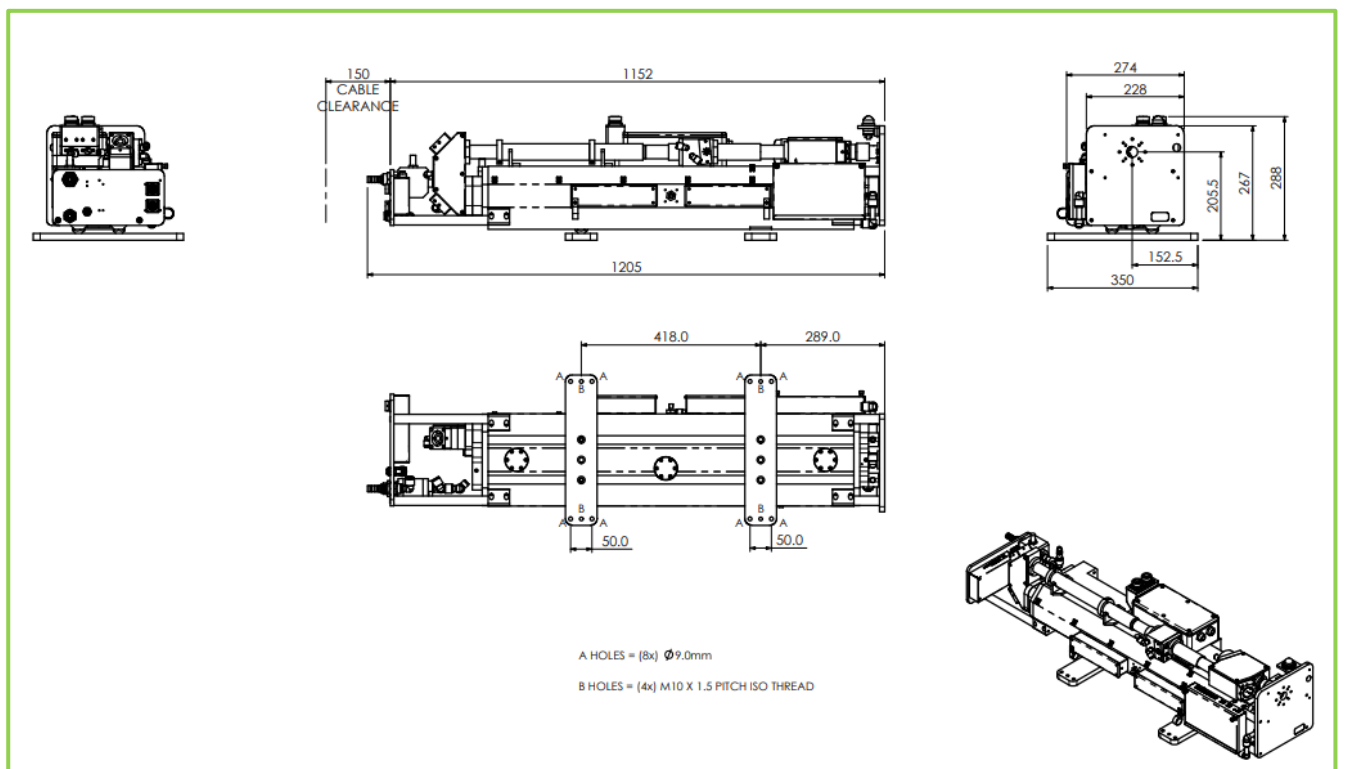
Notes:

1. 10.6 μ m is the predominant wavelength. This can typically vary in the range 10.45 μ m – 10.7 μ m
2. The guaranteed stability is $\pm 2\%$ with power feedback enabled and $\pm 7\%$ without power feedback enabled. Power feedback turn on response is typically 300 to 500 milliseconds. Minimum power with power feedback is 25W.
3. Mean average power at maximum duty cycle
The guaranteed minimum shipment power is 780W at 400 μ s pules width and 60% 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. Input load capacitance is 230mF.

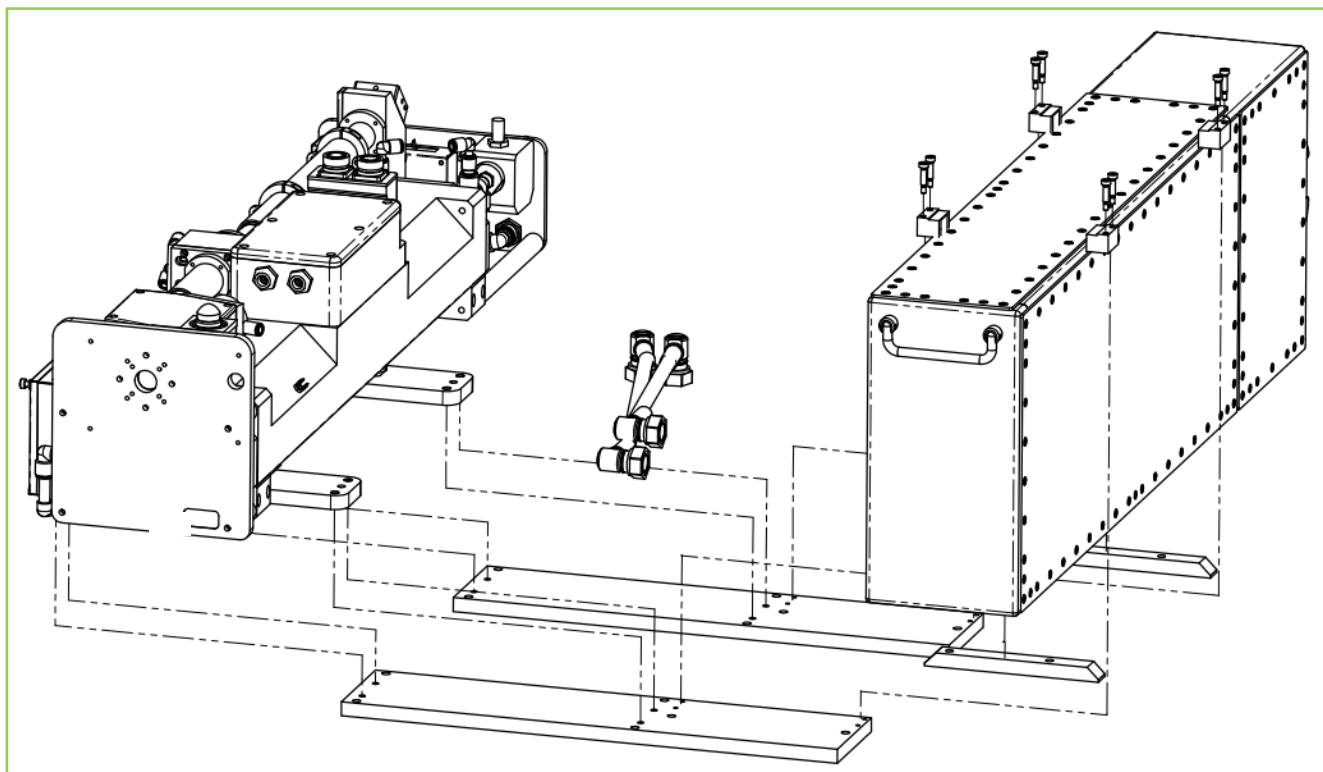
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



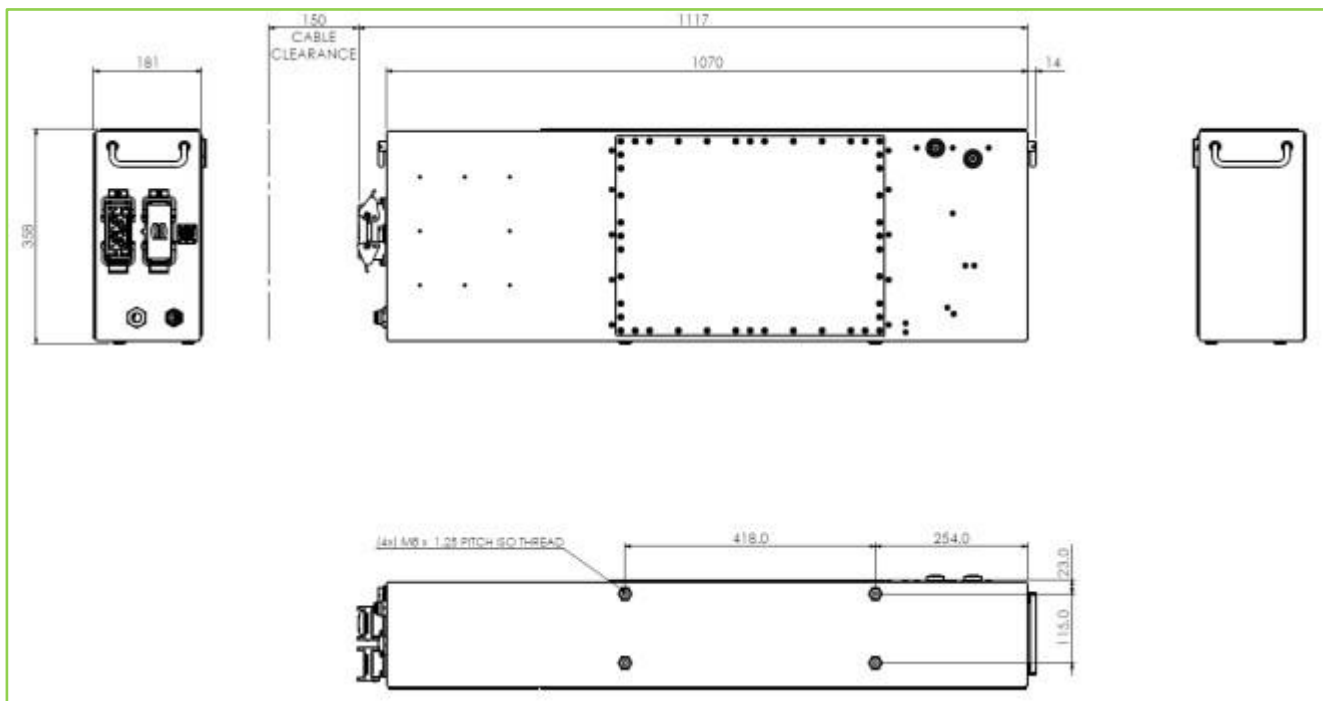
OEM 65iX laser assembly (with covers)



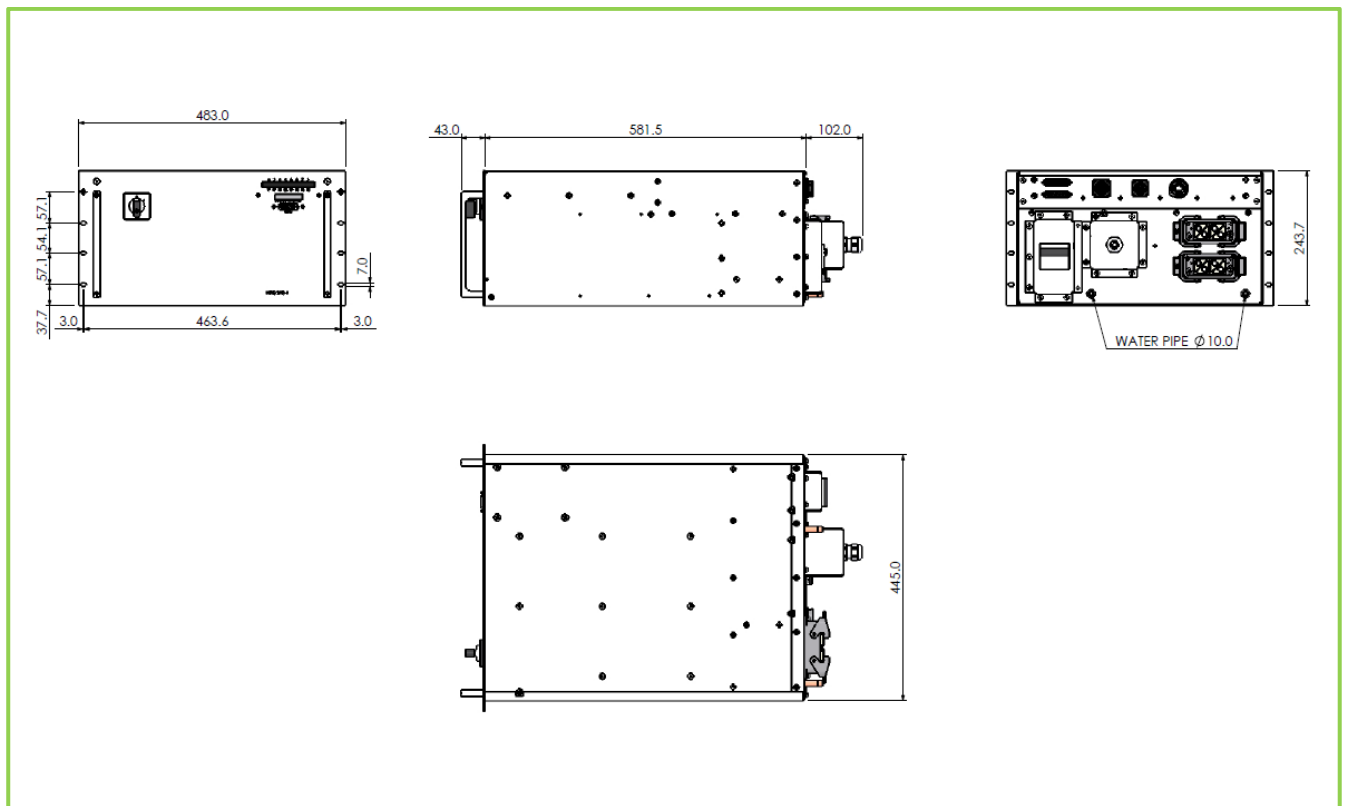
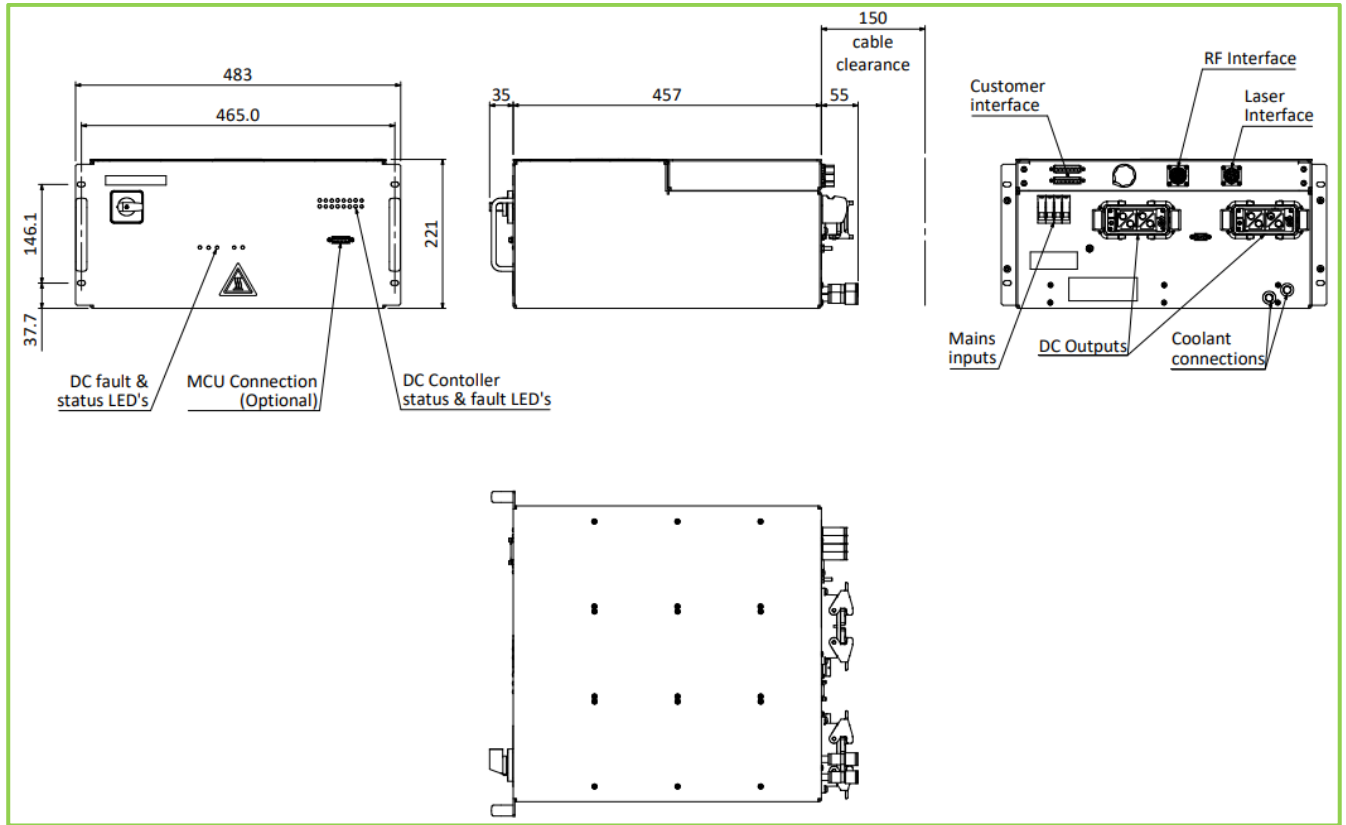
OEM 65iX laser assembly (without covers)



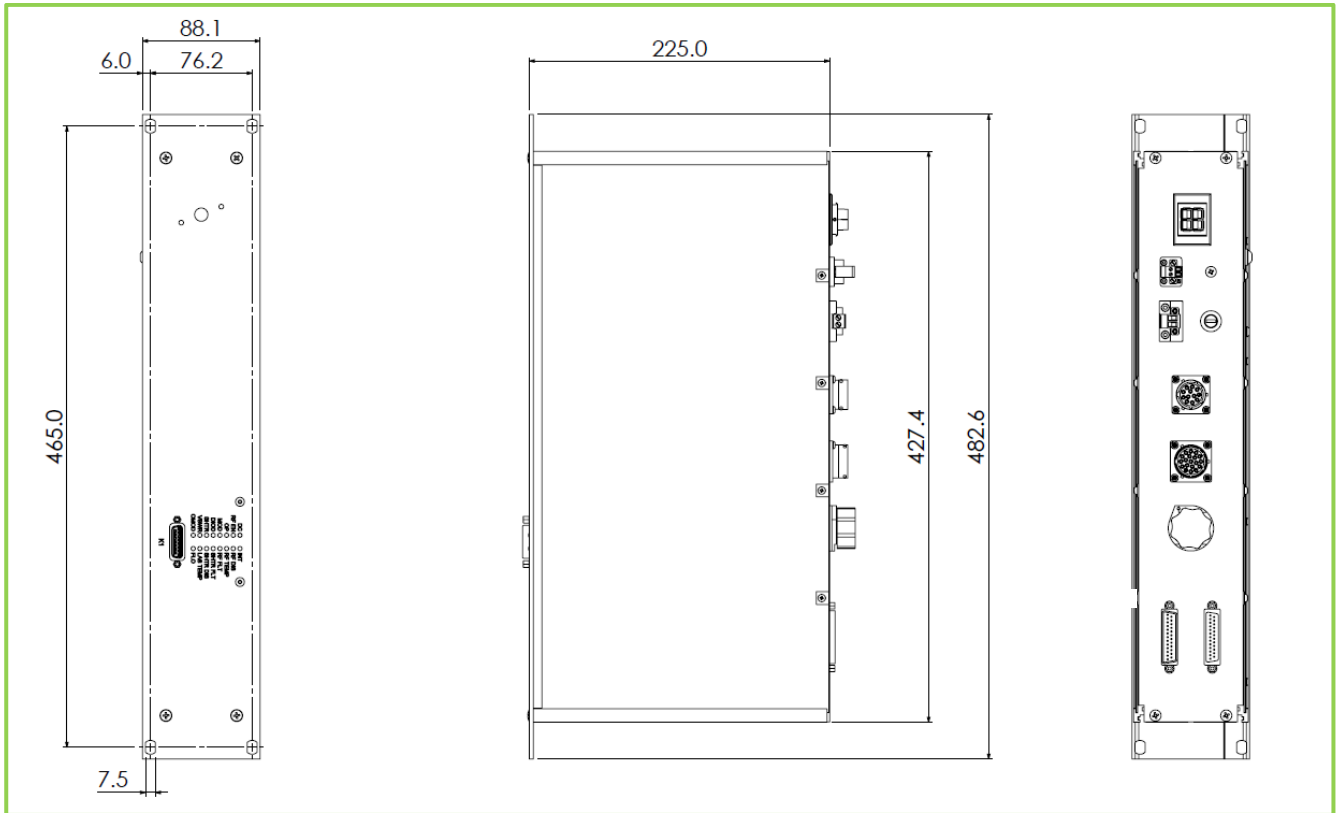
OEM 65iX laser, RF assembly, with optional mounting plate



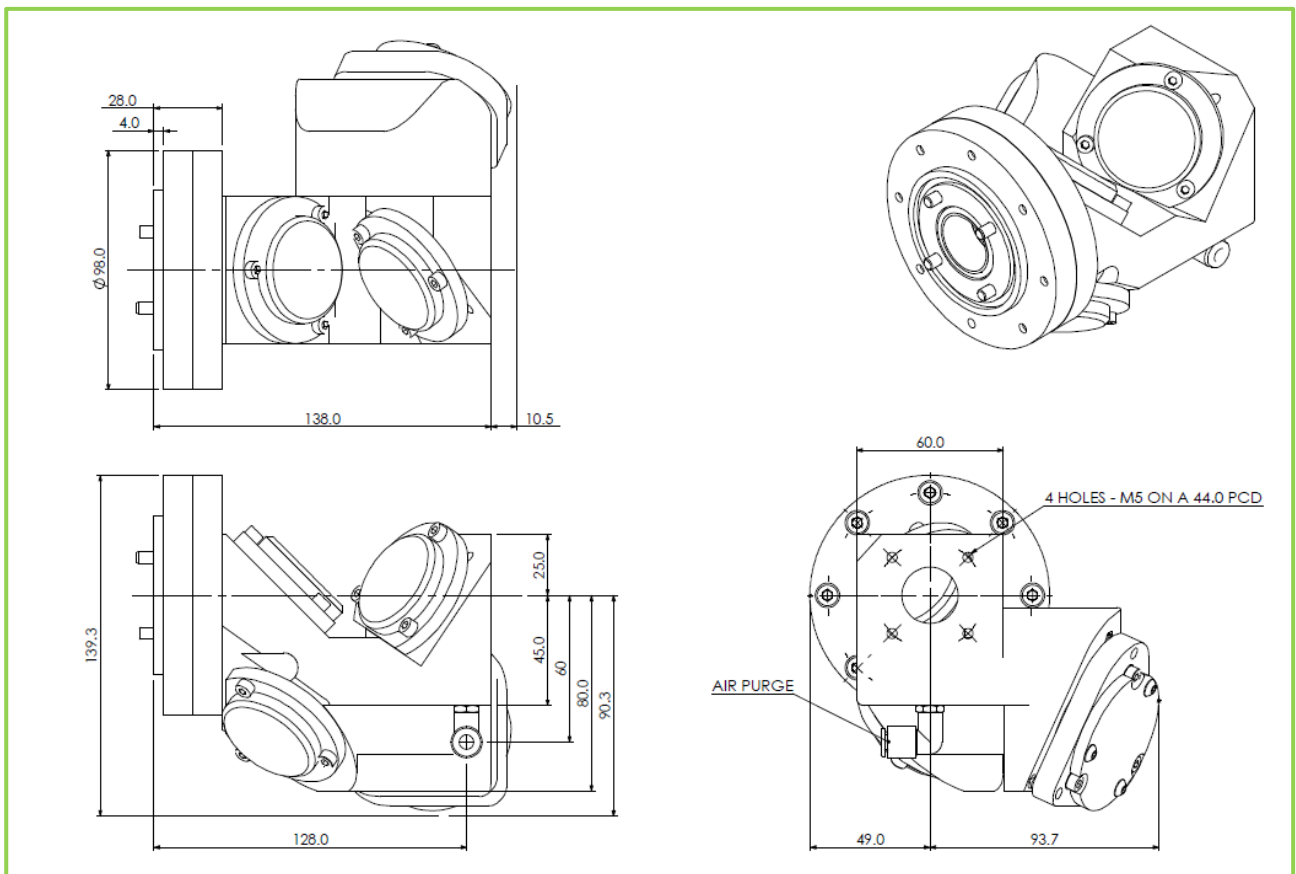
RF power supply



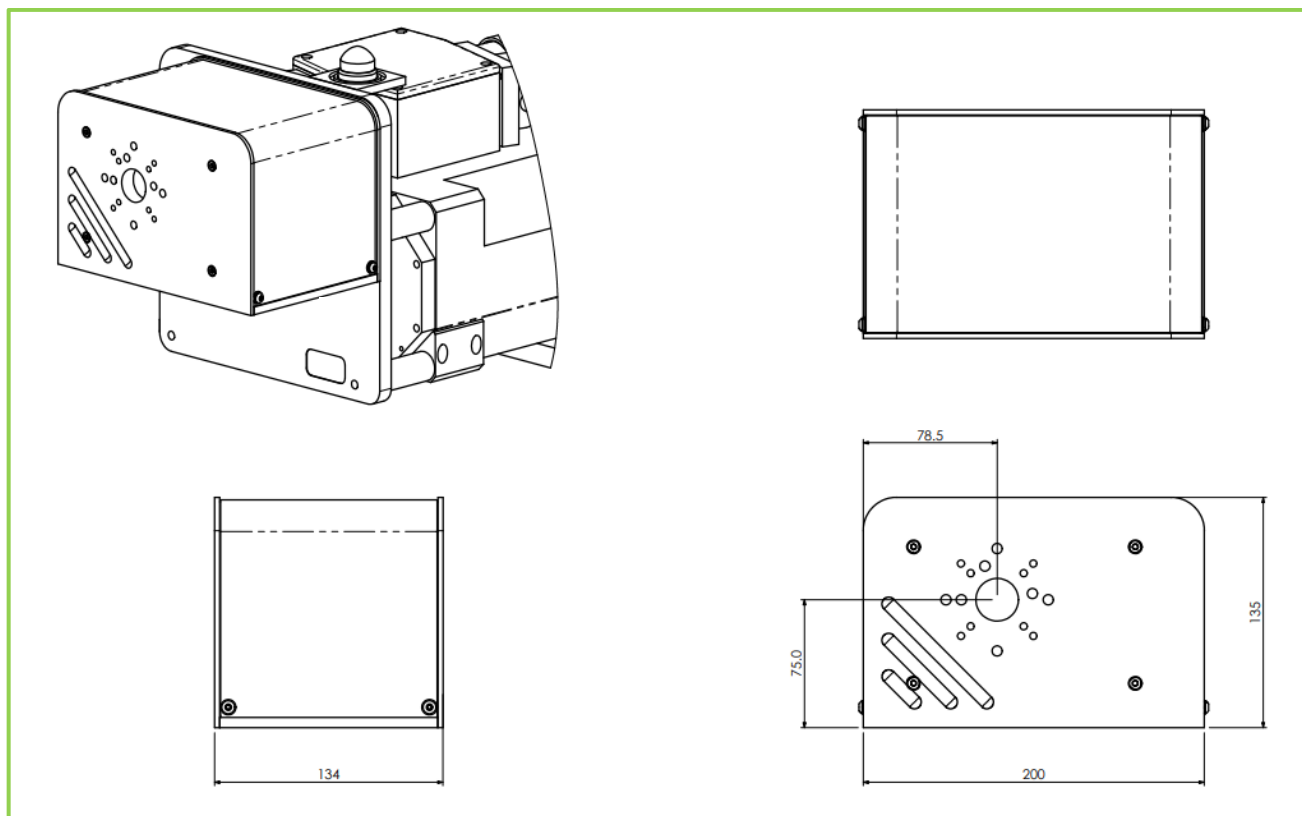
Combined water cooled 3 phase DC power supplies and controller assembly



Standalone controller assembly (for use with customer supplied DC)



ATFR/straight through optical isolation system (optional)



Shutter /laser diode assembly - optional