

Technical data sealed CO₂ lasers – specification

	OEM 45iX
Laser beam data	
Wavelength ⁽¹⁾	10.25µm
Excitation	RF excited
Laser output power	
Power range (rated)	20 – 405W
Typical power stability (without power feedback)	± 3%
Typical power stability (with power feedback) ⁽²⁾	± 1%
Guaranteed power stability (without power feedback)	± 5%
Guaranteed power stability (with power feedback) ⁽²⁾	± 2%
Peak power	1215W
Minimum shipment power ⁽³⁾	486W
Laser beam quality	
Diameter @ (1/e ²) at laser o/p optic ⁽⁴⁾	11.0 ± 1mm
Beam quality factor M ² (K)	M ² < 1.2 (K > 0.83)
Divergence (full angle far field)	< 2mrad
Pointing stability (half angle)	< 0.25mrad
Polarisation	Linear (parallel to base), purity > 100:1
Ellipticity	< 1.2:1
RF PSU	
Input voltage range ⁽⁵⁾	50VDC ±1%
Maximum average DC input current	170A
Maximum average power consumption	8.5kW
Modulation parameters	
Frequency	0 – 100kHz
Width	2 – 400µs
Energy	18 – 353mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	55%
Dimensions and weights	
Laser head/RF (without cover)	(LxWxH)1274mmx430mmx319mm 78kg
Laser head/RF (including cover)	(LxWxH)1274mmx430mmx319mm 92kg
DC PSU (Optional)	(LxWxH)512mmx483mmx133mm 15kg
External control facilities	
Laser head	RS232 or Ethernet communications Mobile control unit (optional) PWM input Status outputs
Cooling	
Flow rate (minimum)	> 7 l/min
Refrigeration capacity	> 9.5kW
Environment requirements	
Ambient temperature range	19 – 25°C
Relative humidity range	10 – 85% (non-condensing)
Operational altitude	< 2000m

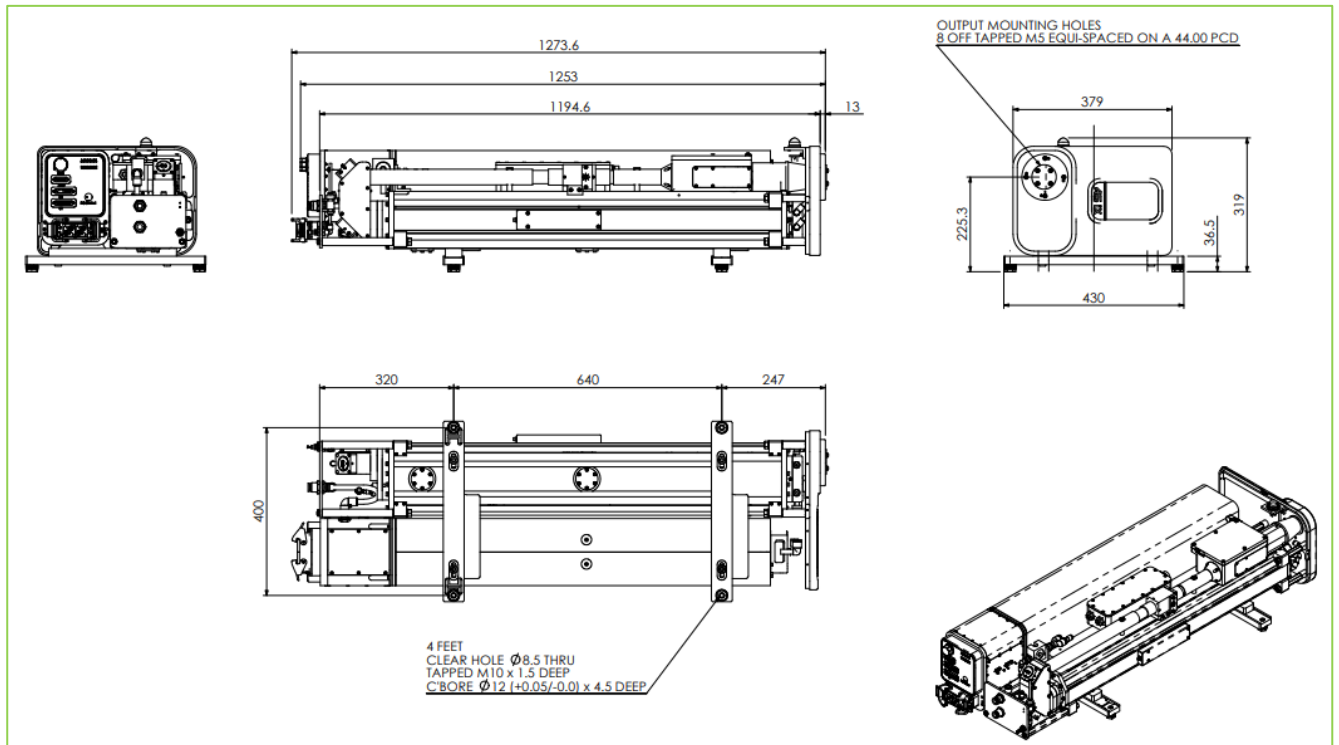
DC PSU (optional)

Input voltage rating	380 – 480VAC, 50-60Hz (3 phase – no neutral connection)
Input current (max)	24A per phase
Earth leakage current	< 6mA
Output voltage	50VDC $\pm 1\%$
Output current (max)	220A
Output power (max)	11kW
Coolant pressure (max)	6 bar (88 psi)
Coolant flow	> 7 l/min

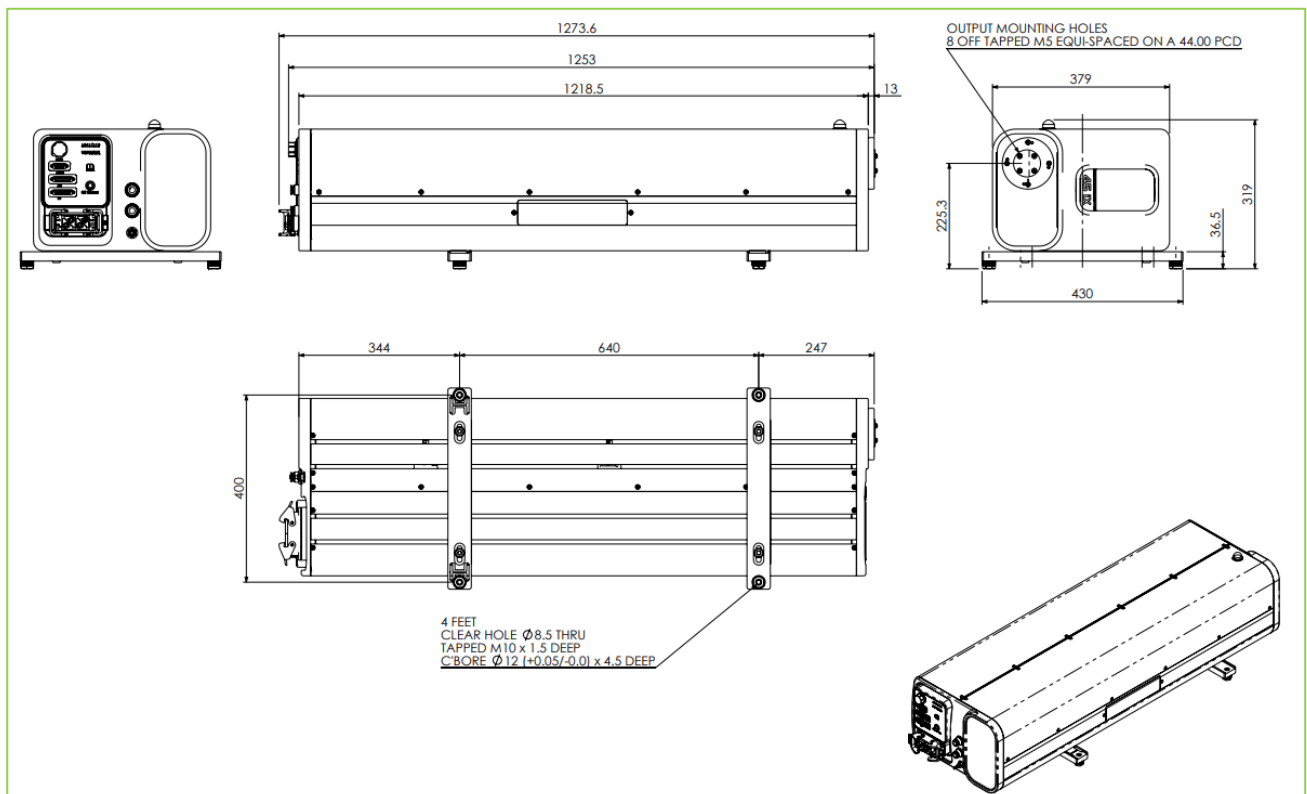
Notes:

1. 10.25 μm is the predominant wavelength. This can typically vary in the range 10.17 μm –10.33 μm
2. The guaranteed stability is $\pm 2\%$ with power feedback enabled and $\pm 5\%$ without power feedback enabled at a pulse width of 50 μs and a duty of 55%. Power feedback turn on response is typically 300-500 milliseconds
3. Mean average power at maximum duty cycle
The guaranteed minimum shipment power is 405W at 50 μs pulse width and 55% duty
4. A beam waist diameter of typically $10.0 \pm 1\text{mm}$ is located approximately 2m to 4m from the laser output
5. Input load capacitance is 142mF.

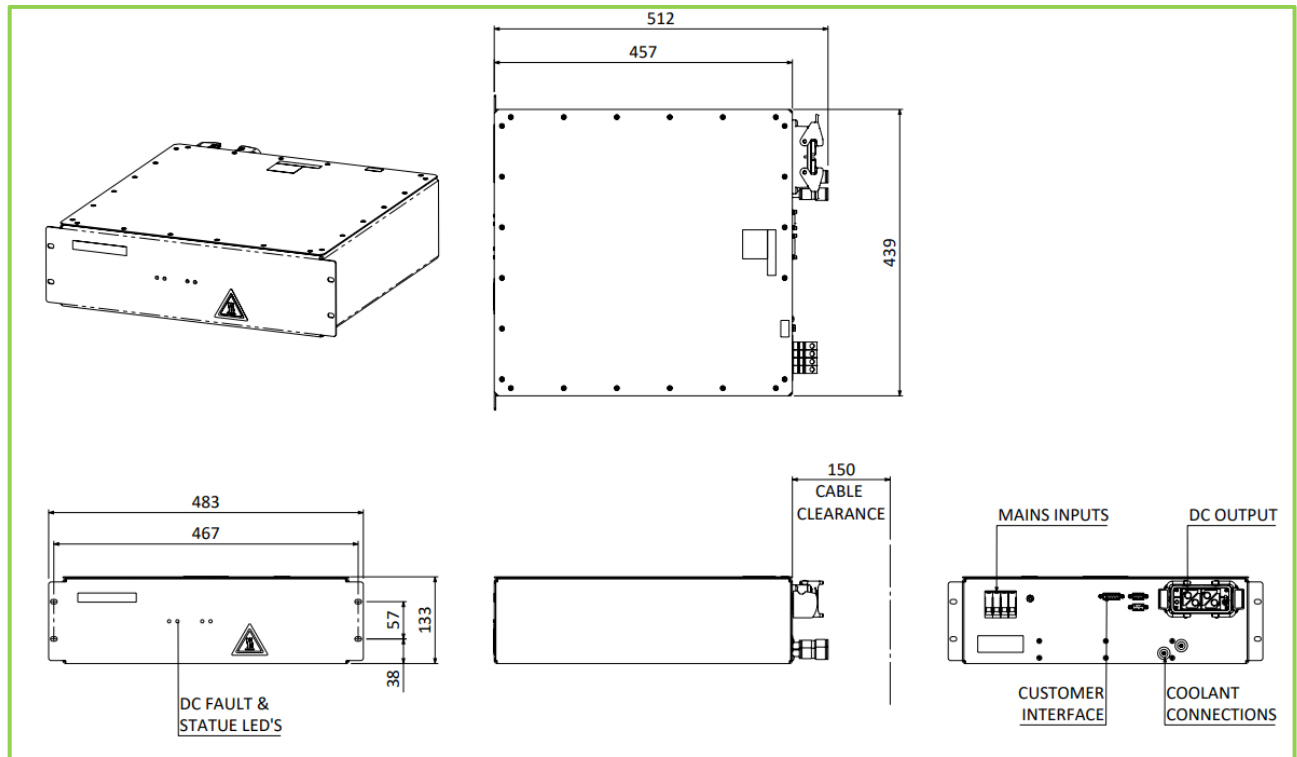
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



OEM 45iX without cover



OEM 45iX with cover



DC power supply – 11kW 3-phase (optional)