



Technical data sealed CO₂ lasers – specification

	SR 25i (PP) 10.25µm
Laser beam data	
Wavelength ⁽¹⁾	10.25µm
Excitation	RF
Output power	
Power range (rated) ⁽²⁾	10 – 225W
Typical stability (long term) ⁽³⁾	± 3% without power feedback, ± 1% with power feedback
Peak power ⁽⁴⁾	565W
Minimum shipment power ⁽²⁾	270W
Laser beam quality	
Diameter @ (1/e ²) (at laser o/p optic)	6.5 ± 0.5mm
Beam quality factor	M ² < 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
RF input requirements	
DC input voltage	50VDC ± 1%
Maximum average DC input current ⁽⁵⁾	96A
Maximum peak DC input current	160A
Maximum average power consumption ⁽⁶⁾	4.8kW
Pulsed mode	
Frequency	0 – 130kHz
Pulse width	2 – 400µs
Energy	9 - 180mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	60%
Dimensions and weights	
Laser head/RF	(LxWxH) 941x198x222 (mm) 34kg
External control facilities	
Laser head	Commands from external controller Status signal to external controller
DC Electrical ratings	
Input voltage range	230VAC ± 10% 50/60Hz. Single or bi-phase
Input current (max)	29A @ 230V
External fusing requirement	40A @ 230V
Output voltage	50V
Maximum output current	120A
Maximum output power ⁽⁶⁾	6kW
Earth leakage current	<4mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 5.25kW
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:

¹10.25µm is the predominant wavelength. This can typically vary in the range 10.17µm – 10.33µm.

² Mean average power at maximum duty cycle.

³ Guaranteed stability (long-term) is ± 6% without power feedback and ± 2% of rated power with power feedback.

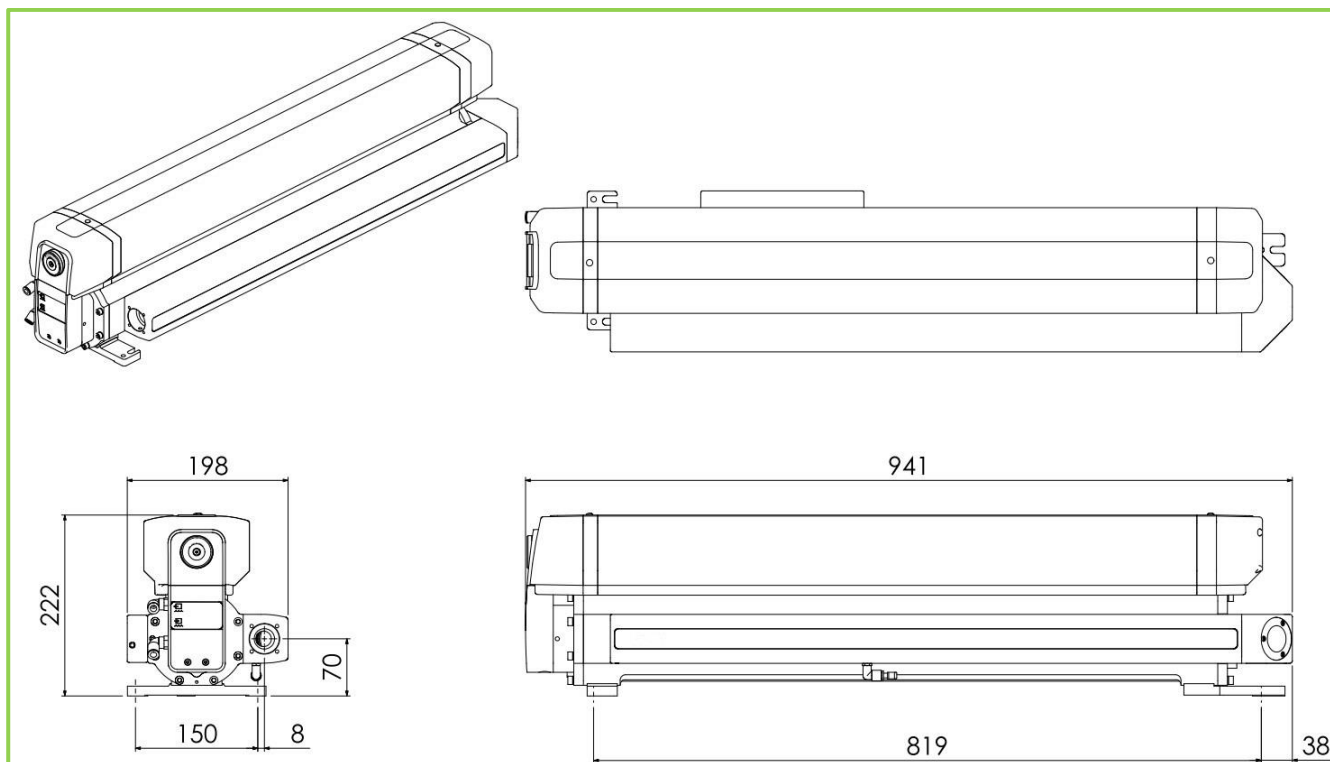
⁴ Depending on frequency.

⁵ 400µs pulse width @ 60% Duty.

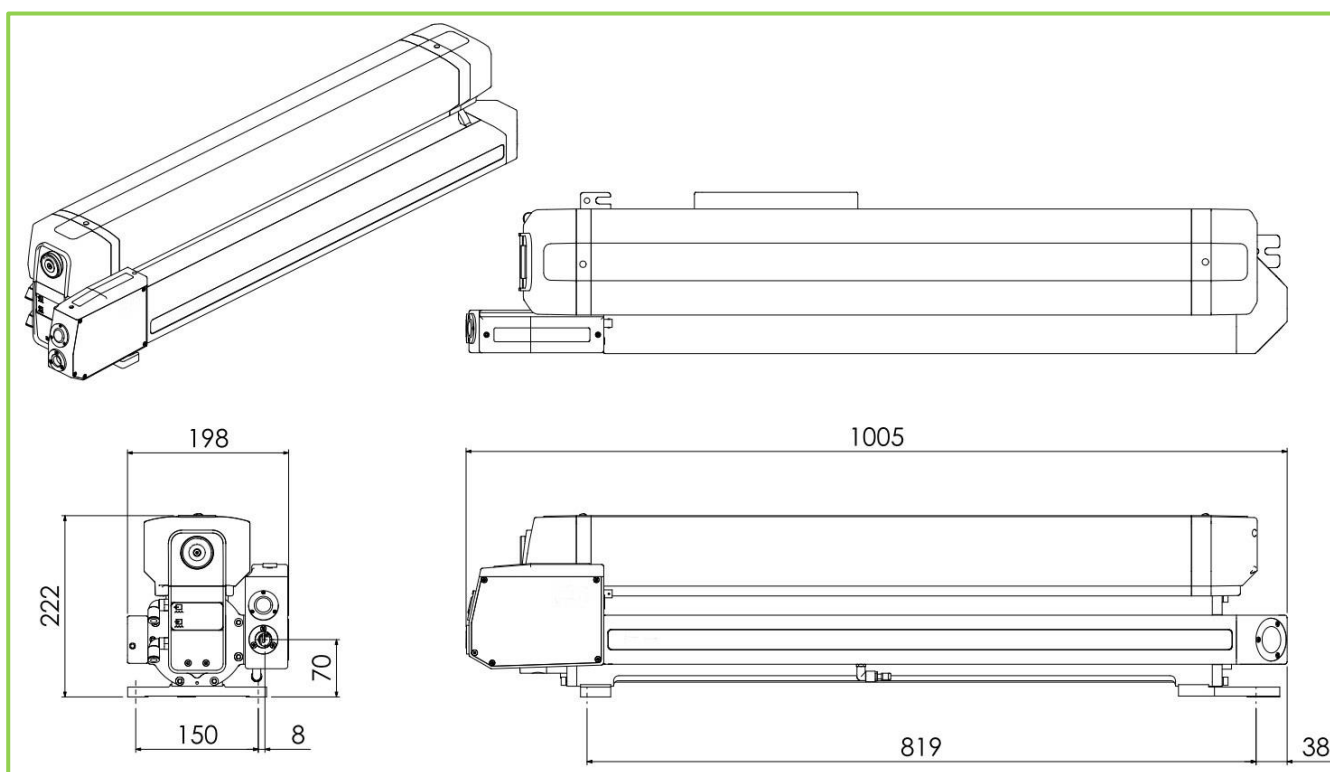
⁶ We recommend using a DC PSU with at least 20% head room on the maximum average power rating.

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

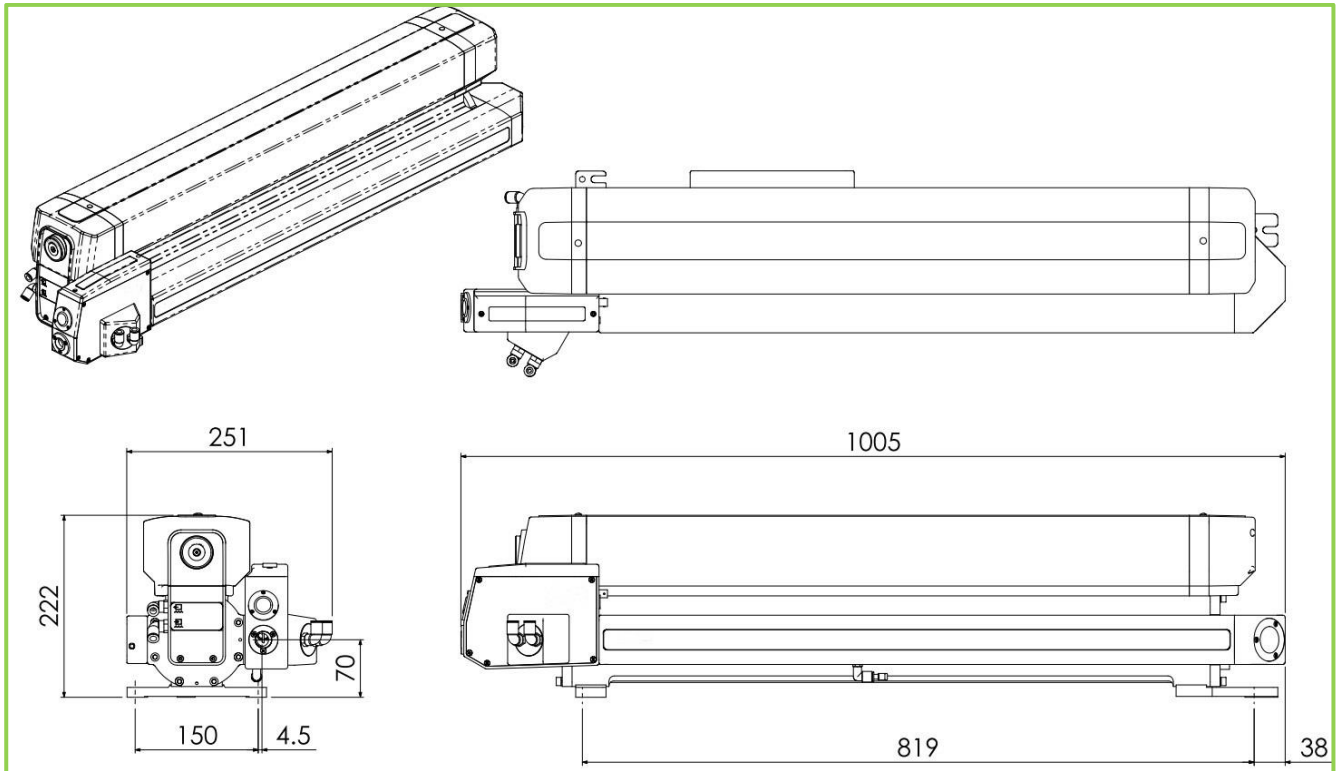
Please note that while every effort has been made to ensure that the data given in this document is accurate, the information, figures, illustrations, tables, specification and schematics contained herein are subject to change without notice



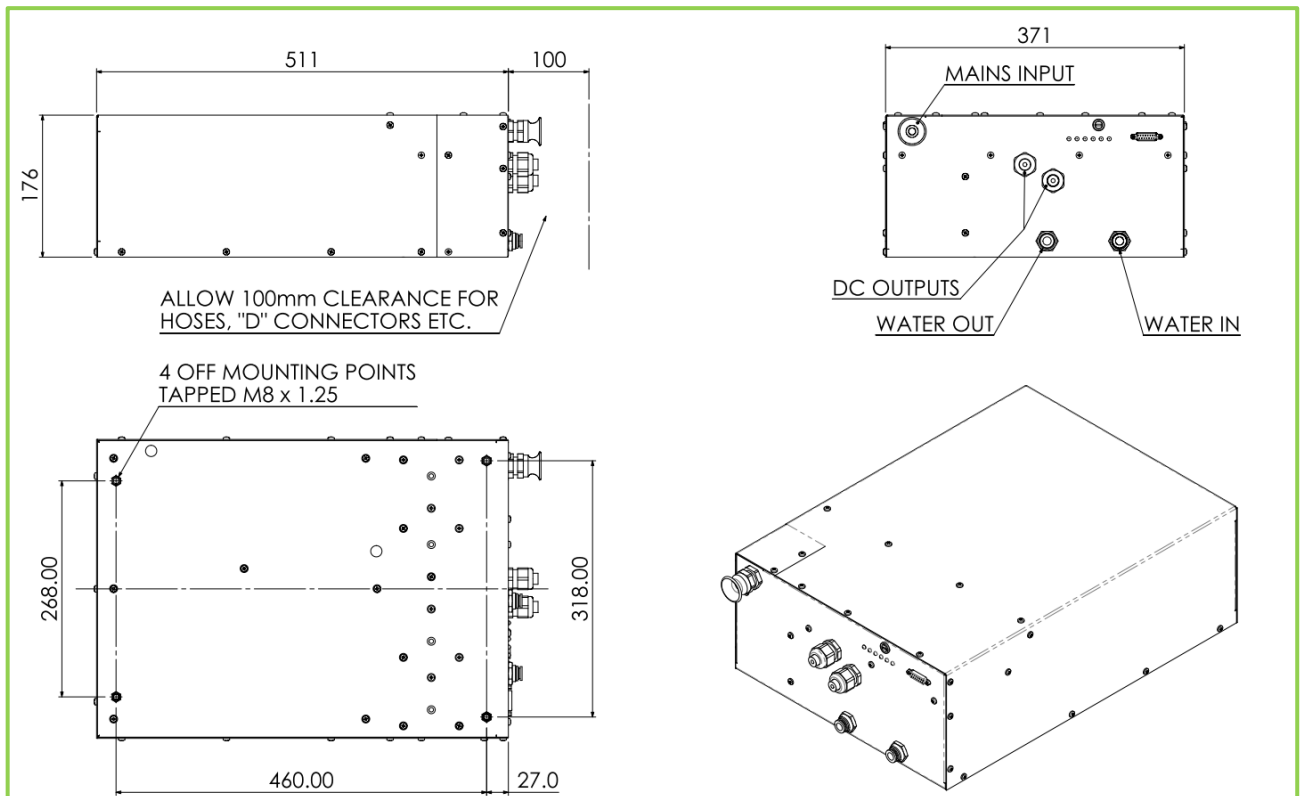
SR 25i



SR 25i – with shutter and diode assembly - optional



SR 25i – with shutter, diode and power feedback assembly – optional



DC power supply – water cooled - 50V - optional



Technical data sealed CO₂ lasers – specification

	SR 25i (PP) 10.6µm	
Laser beam data		
Wavelength ⁽¹⁾	10.6µm	
Excitation	RF	
Output power		
Power range (rated) ⁽²⁾	15 – 250W	
Typical stability (long term) ⁽³⁾	± 3% without power feedback, ± 1% with power feedback	
Peak power ⁽⁴⁾	630W	
Minimum shipment power ⁽²⁾	300W	
Laser beam quality		
Diameter @ (1/e ²) (at laser o/p optic)	6.5 ± 0.5mm	
Beam quality factor	M ² < 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	
RF input requirements		
DC input voltage	50VDC ± 1%	
Maximum average DC input current ⁽⁵⁾	96A	
Maximum peak DC input current	160A	
Maximum average power consumption ⁽⁶⁾	4.8kW	
Pulsed mode		
Frequency	0 – 130kHz	
Pulse width	2 – 400µs	
Energy	10 - 200mJ	
Optical pulse rise/fall	< 60µs	
Duty cycle (max)	60%	
Dimensions and weights		
Laser head/RF	(LxWxH) 941x198x222 (mm) 34kg	
External control facilities		
Laser head	Commands from external controller Status signal to external controller	
DC Electrical ratings		
Input voltage range	230VAC ± 10% 50/60Hz. Single or bi-phase	415VAC± 10% 50/60Hz. Three phase
Input current (max)	29A @ 230V	11A@415V
External fusing requirement	40A @ 230V	Three x 16A@415V
Output voltage	50V	50V
Maximum output current	120A	150A
Maximum output power ⁽⁶⁾	6kW	7.5kW
Earth leakage current	<4mA	<30mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 5.25kW
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:

¹10.6µm is the predominant wavelength. This can typically vary in the range 10.45µm – 10.7µm.

² Mean average power at maximum duty cycle.

³ Guaranteed stability (long-term) is ± 6% without power feedback and ± 2% of rated power with power feedback.

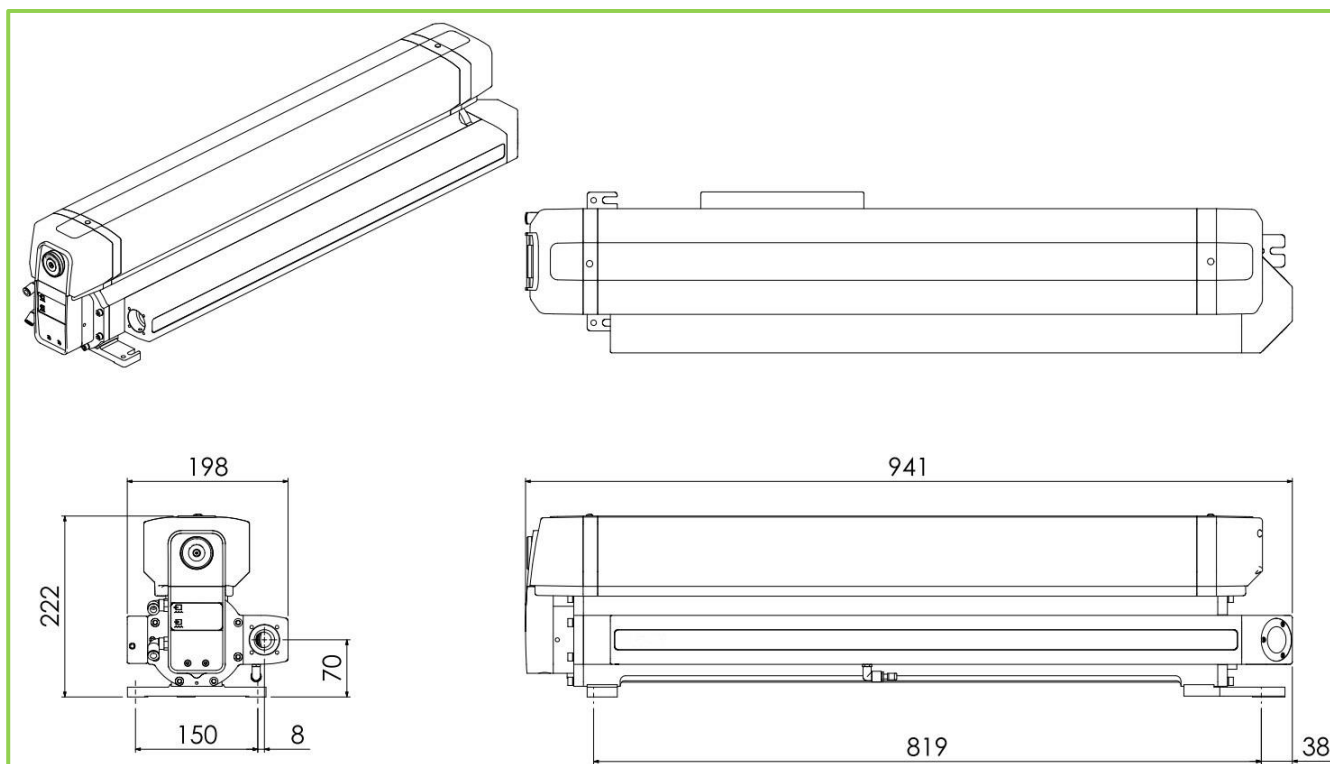
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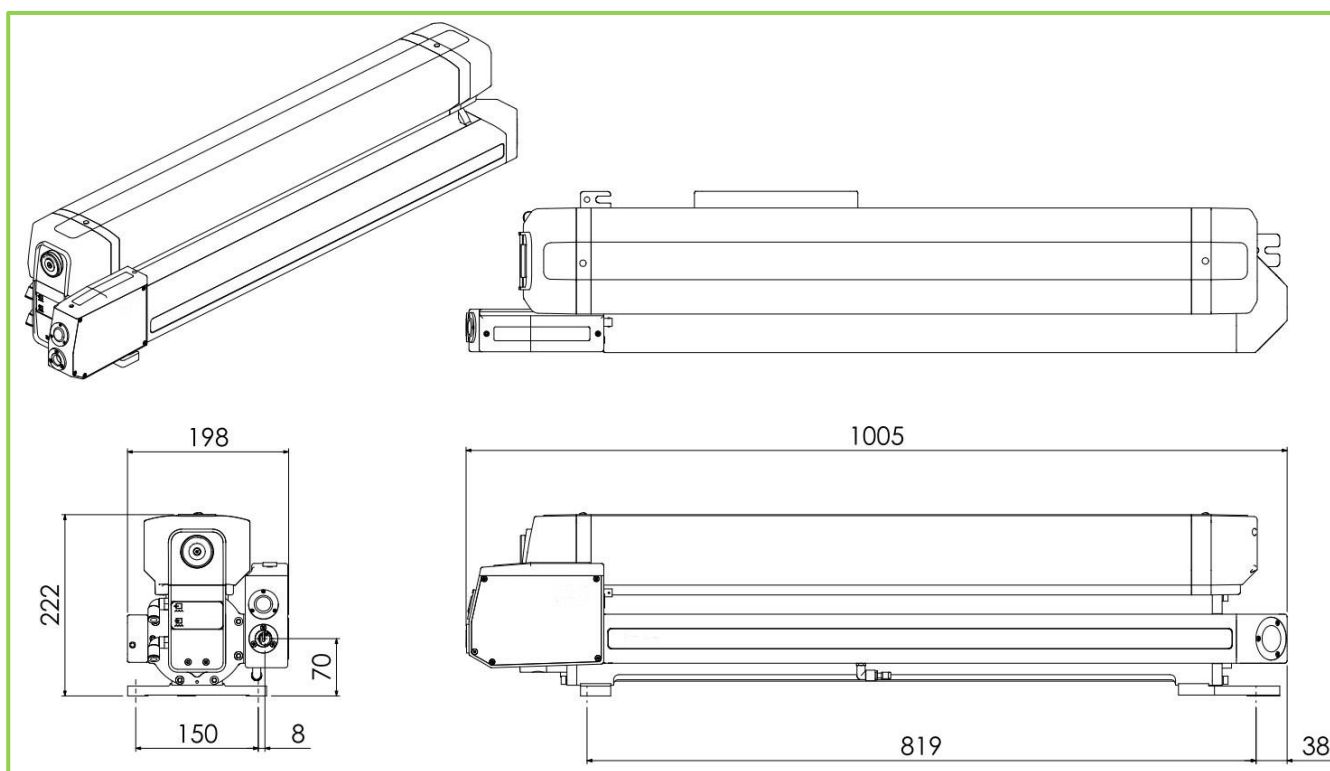
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i.e. DC PSU power= maximum o/p*1.2

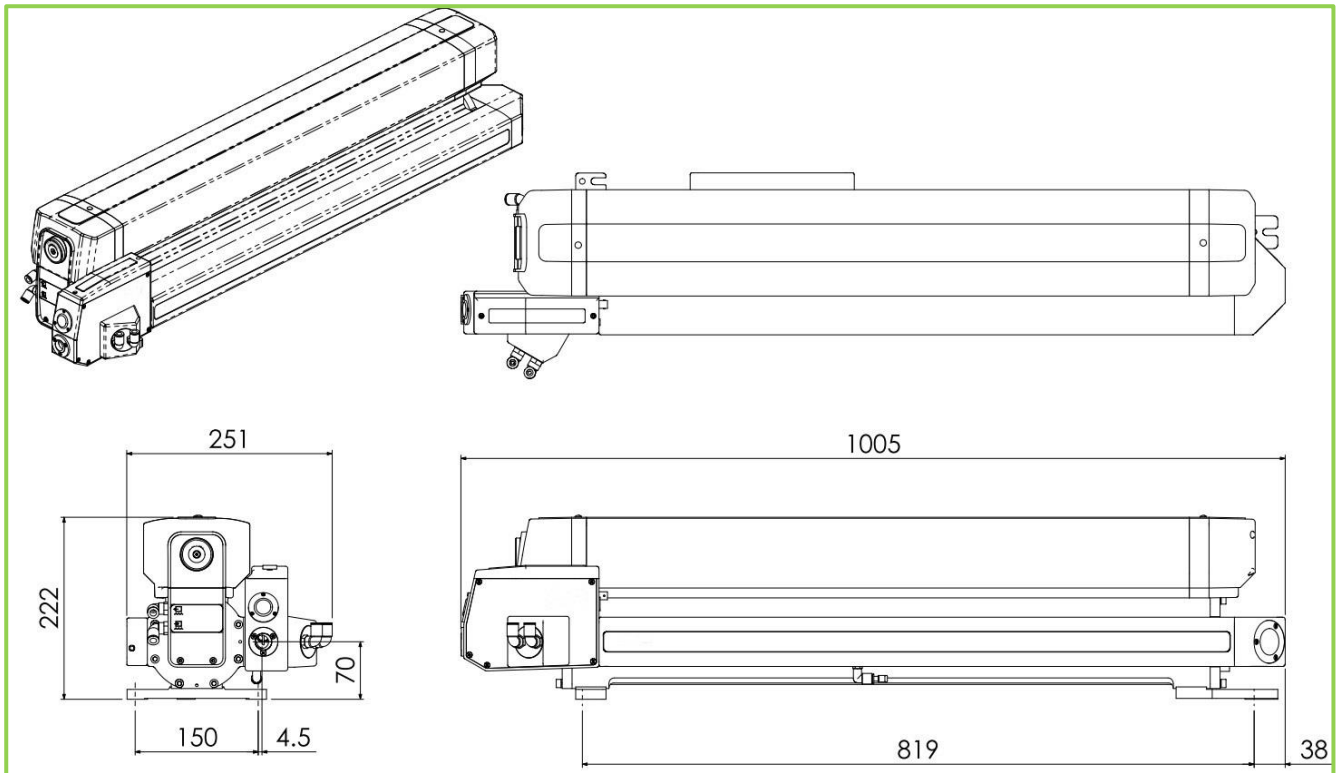
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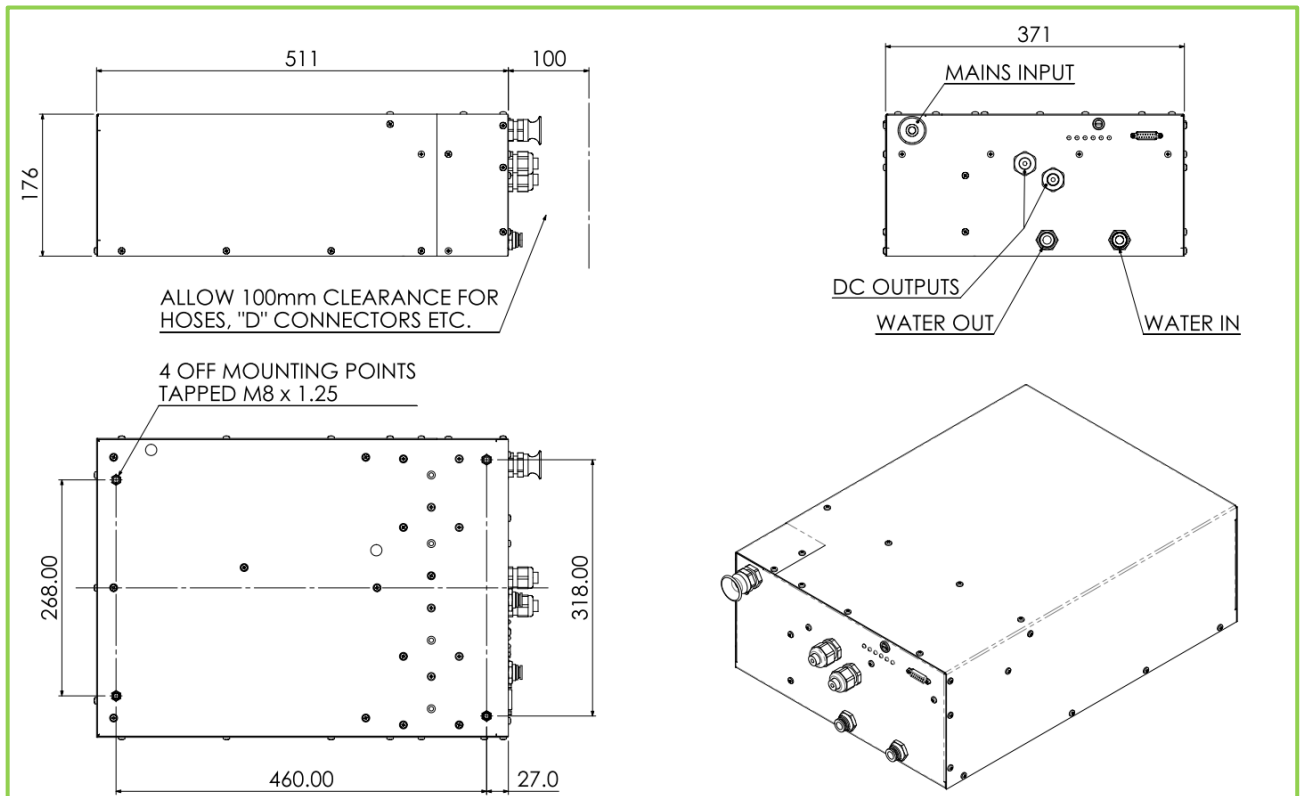
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SR 25i – with shutter, diode and power feedback assembly – optional



DC power supply – water cooled - 50V - optional