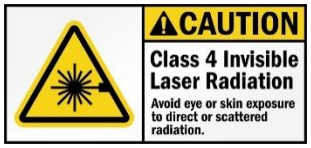
LUXINAR
INGENUITY AMPLIFIED



Technical data sealed CO_2 lasers – specification

	SR 15i (PP) 10.25µm	
Laser beam data		
Wavelength (1)	10.25µm	
Excitation	RF	
Output power		
Power range (rated) (2)	10 – 155W	
Typical stability (long term) (3)	± 3% without power feedback, ± 1% with power feedback	
Peak power (4)	390W	
Minimum shipment power (2)	186W	
Laser beam quality		
Diameter @ ($1/e^2$) (at laser o/p optic)	6.8 ± 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)	72A	
Maximum peak DC input current	120A	
Maximum average power consumption (6)	3.6kW	
Pulsed mode		
Frequency	0 – 130kHz	
Pulse width	2 – 400µs	
Energy	6 – 124mJ	
Optical pulse rise/fall	< 60µs	
Duty cycle (max)	60%	
Dimensions and weights		
Laser head/RF	(LxWxH) 879x198x222 (mm) 32kg	
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)	22A @ 230V	11A@415V
External fusing requirement	32A @ 230V	Three x 16A@415V
Output voltage	50V	50V
Maximum output current	96A	150A
Maximum output power (6)	4.8kW	7.5kW
Earth leakage current	<4mA	<30mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 4kW
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]10.25µm 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) ± 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

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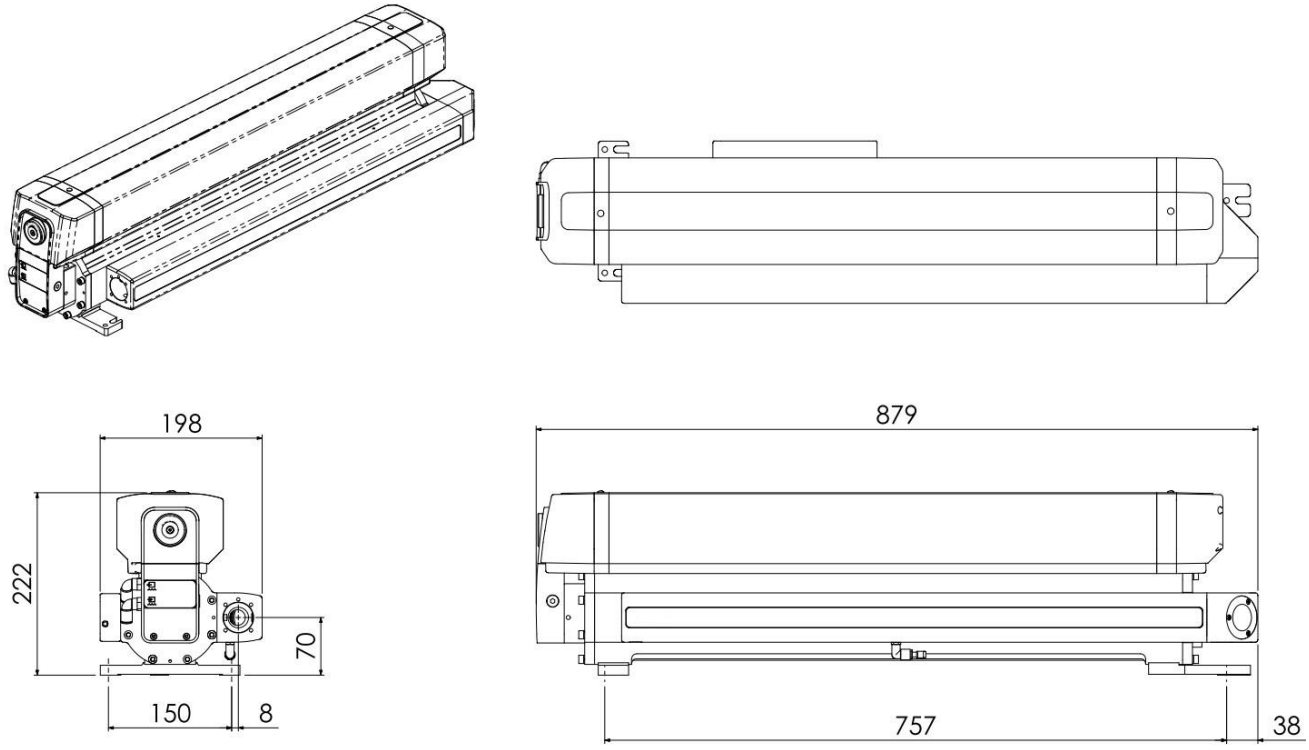
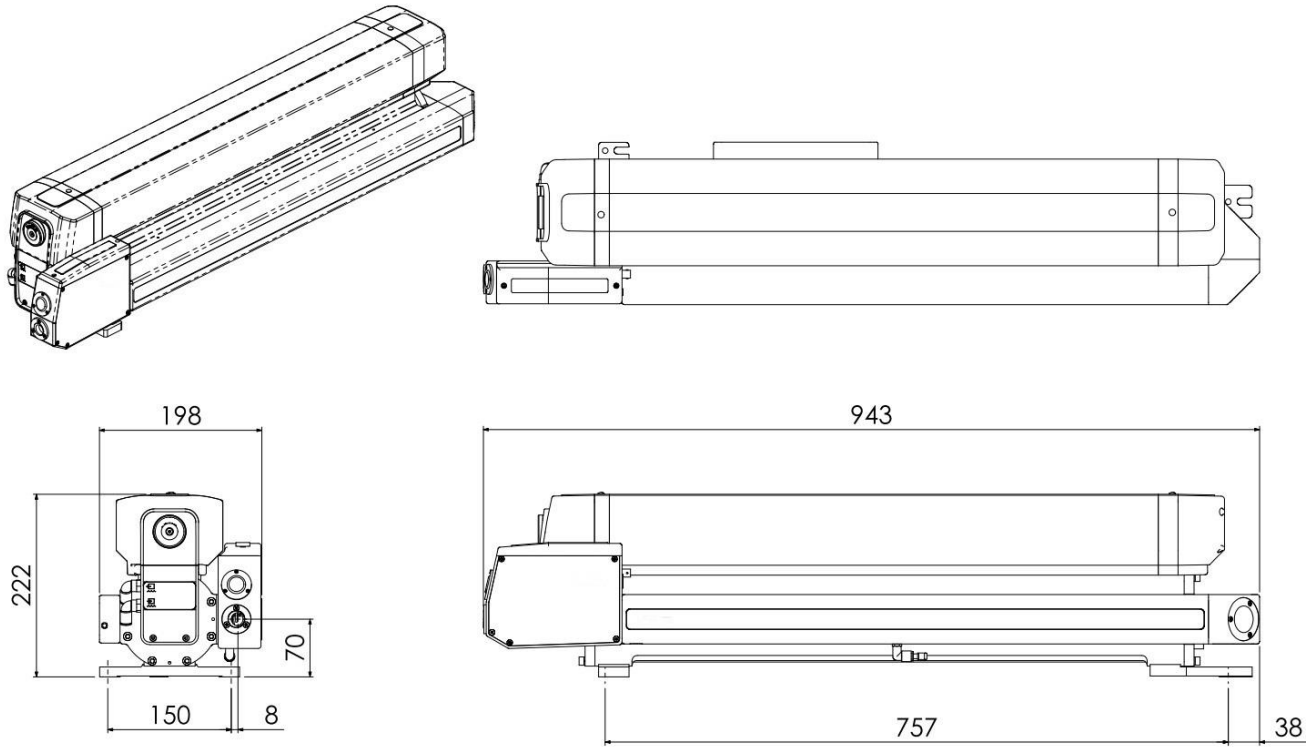
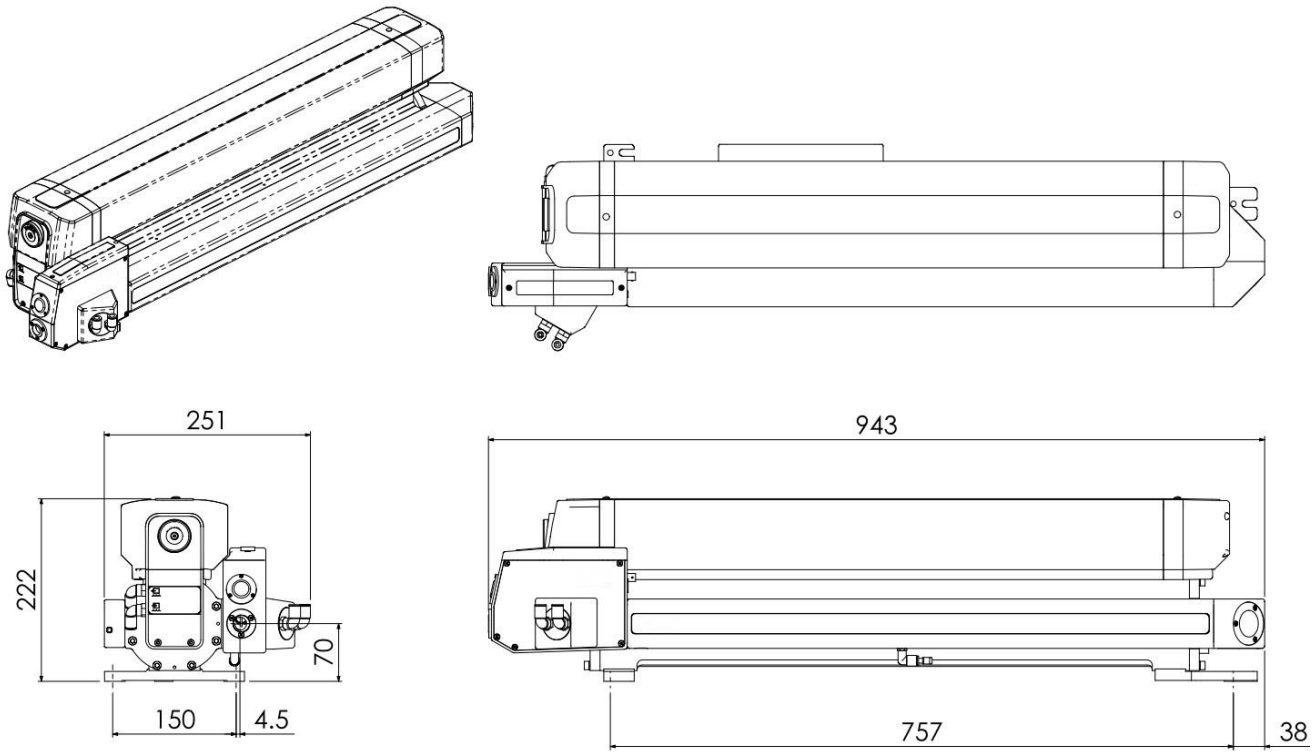


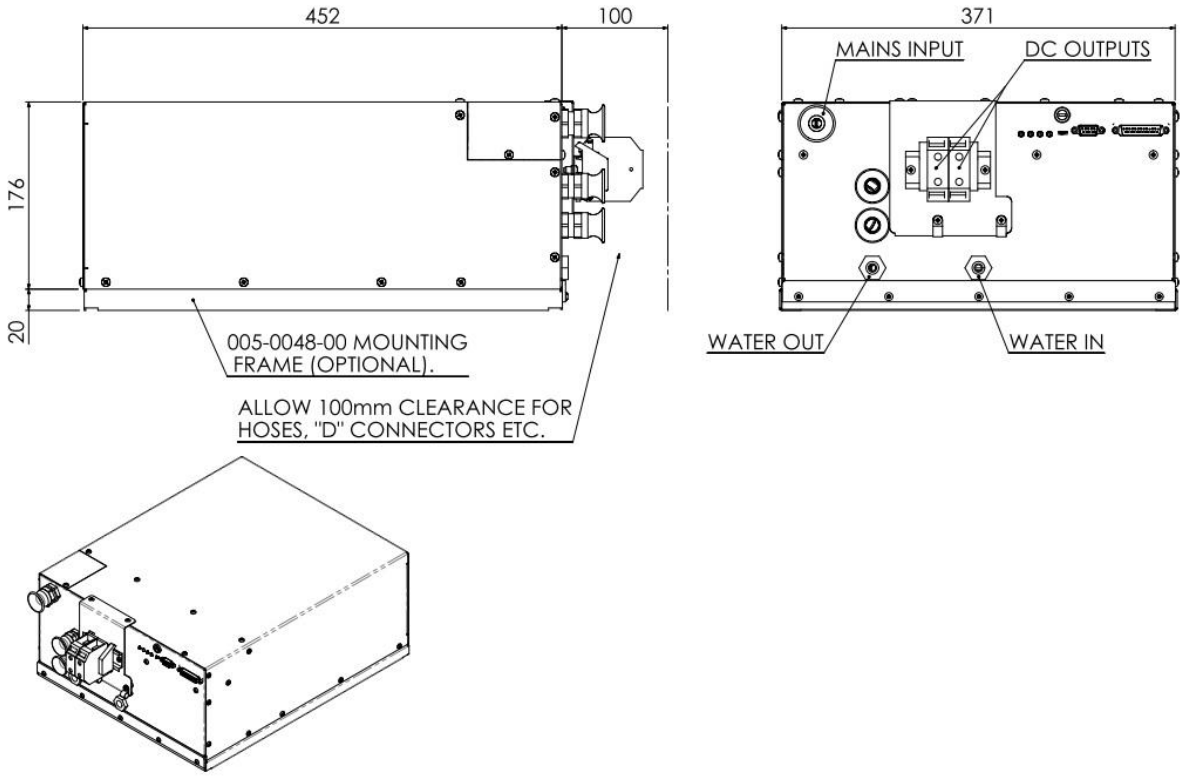
SR 15i



SR 15i – with shutter and diode assembly - optional



SR 15i – with shutter, diode and power feedback assembly – optional



DC power supply – water cooled - 50V - optional

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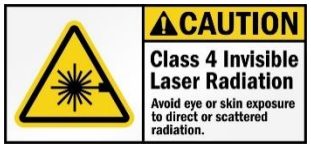

Technical data sealed CO_2 lasers – specification

	SR 15i (PP) 10.6µm
Laser beam data	
Wavelength (1)	10.6µm
Excitation	RF
Output power	
Power range (rated) (2)	10 – 175W
Typical stability (long term) (3)	± 3% without power feedback, ± 1% with power feedback
Peak power (4)	440W
Minimum shipment power (2)	210W
Laser beam quality	
Diameter @ ($1/e^2$) (at laser o/p optic)	6.8 ± 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)	72A
Maximum peak DC input current	120A
Maximum average power consumption (6)	3.6kW
Pulsed mode	
Frequency	0 – 130kHz
Pulse width	2 – 400µs
Energy	7 – 140mJ
Optical pulse rise/fall	< 60µs
Duty cycle (max)	60%
Dimensions and weights	
Laser head/RF	(LxWxH) 879x198x222 (mm) 32kg
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)	22A @ 230V
External fusing requirement	32A @ 230V
Output voltage	50V
Maximum output current	96A
Maximum output power (6)	4.8kW
Earth leakage current	<4mA

Cooling

Minimum flow rate	≥ 5L/min
Recommended flow rate	≥ 6L/min
Refrigeration capacity	> 4kW
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] Mean average power at maximum duty cycle.

[3] Guaranteed stability (long-term) ± 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

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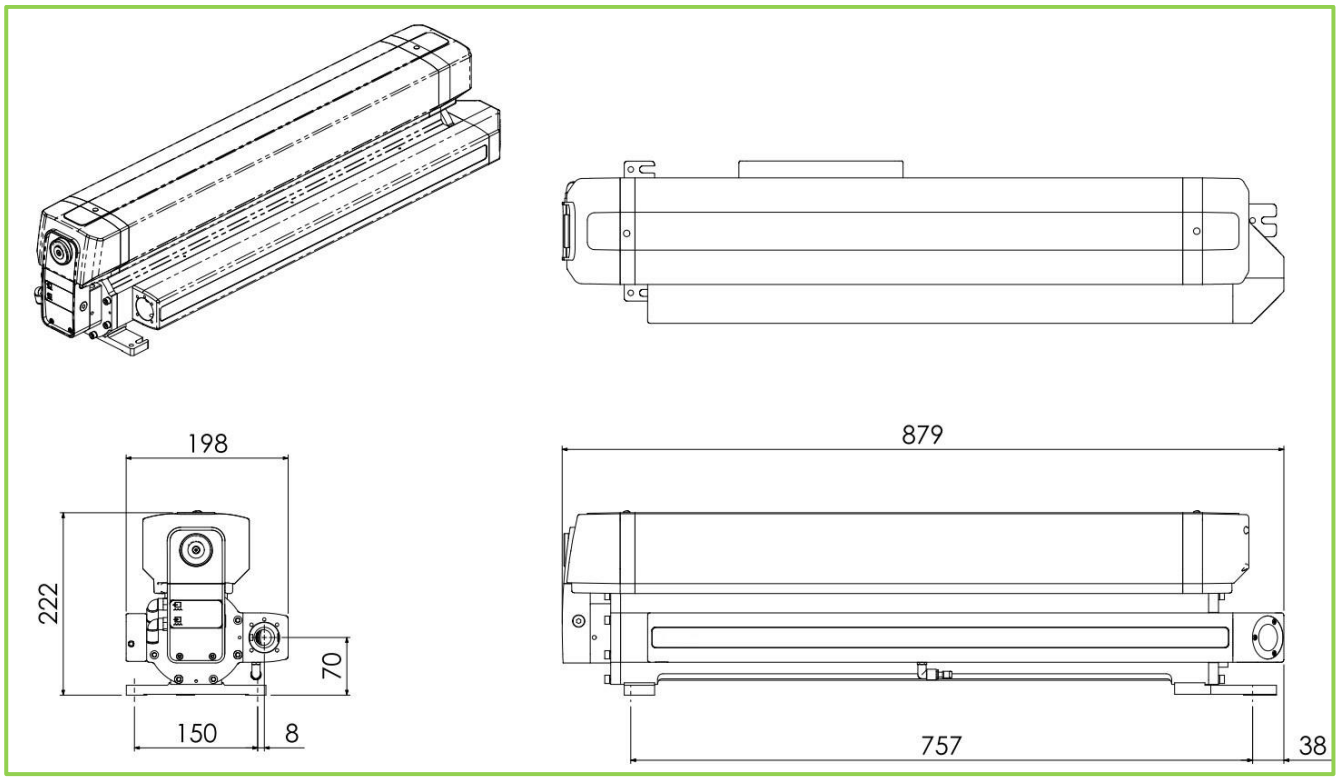
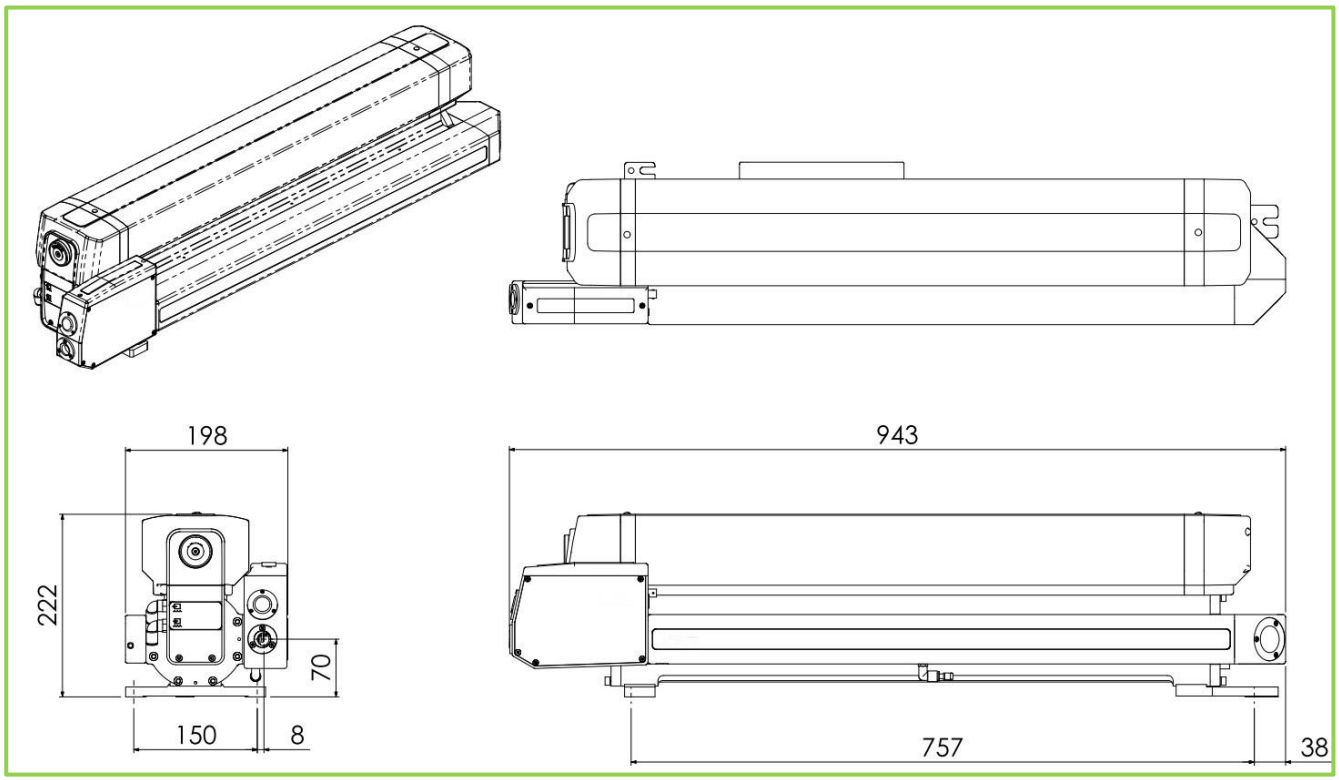
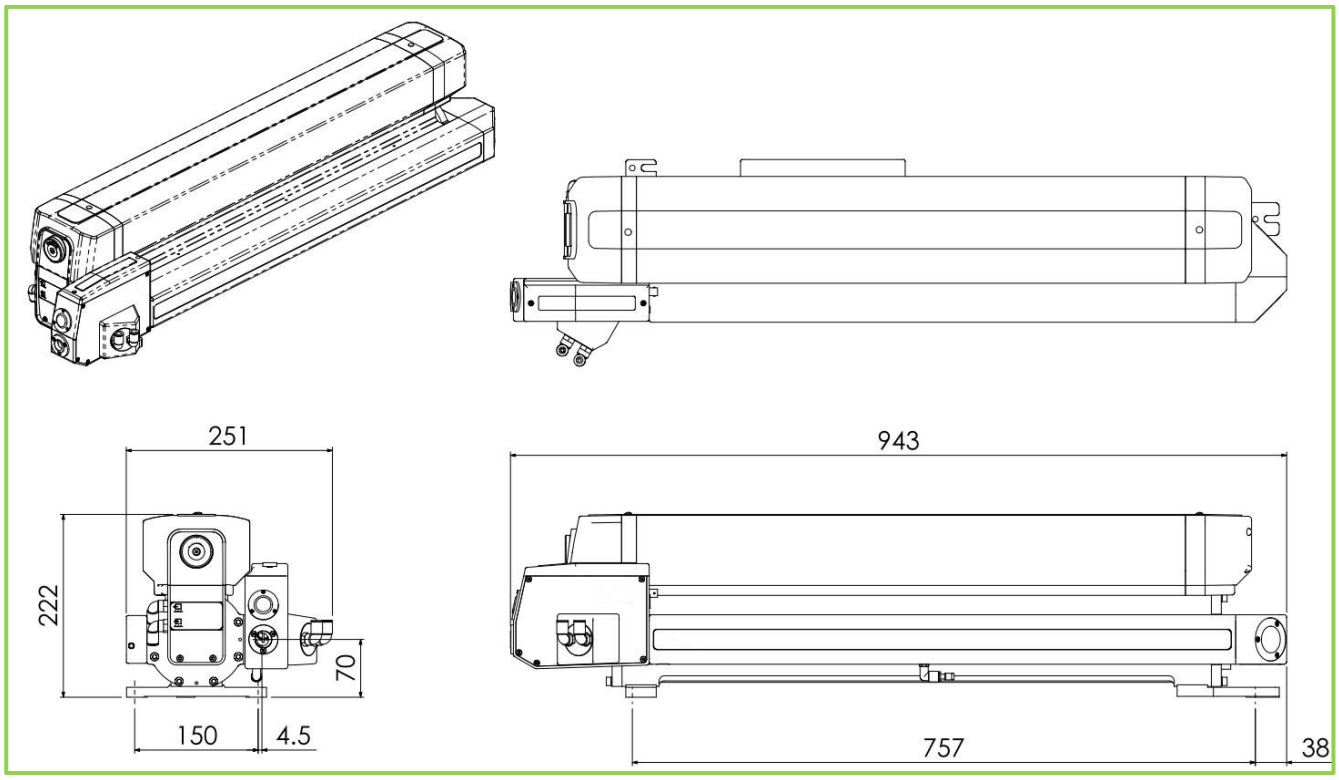


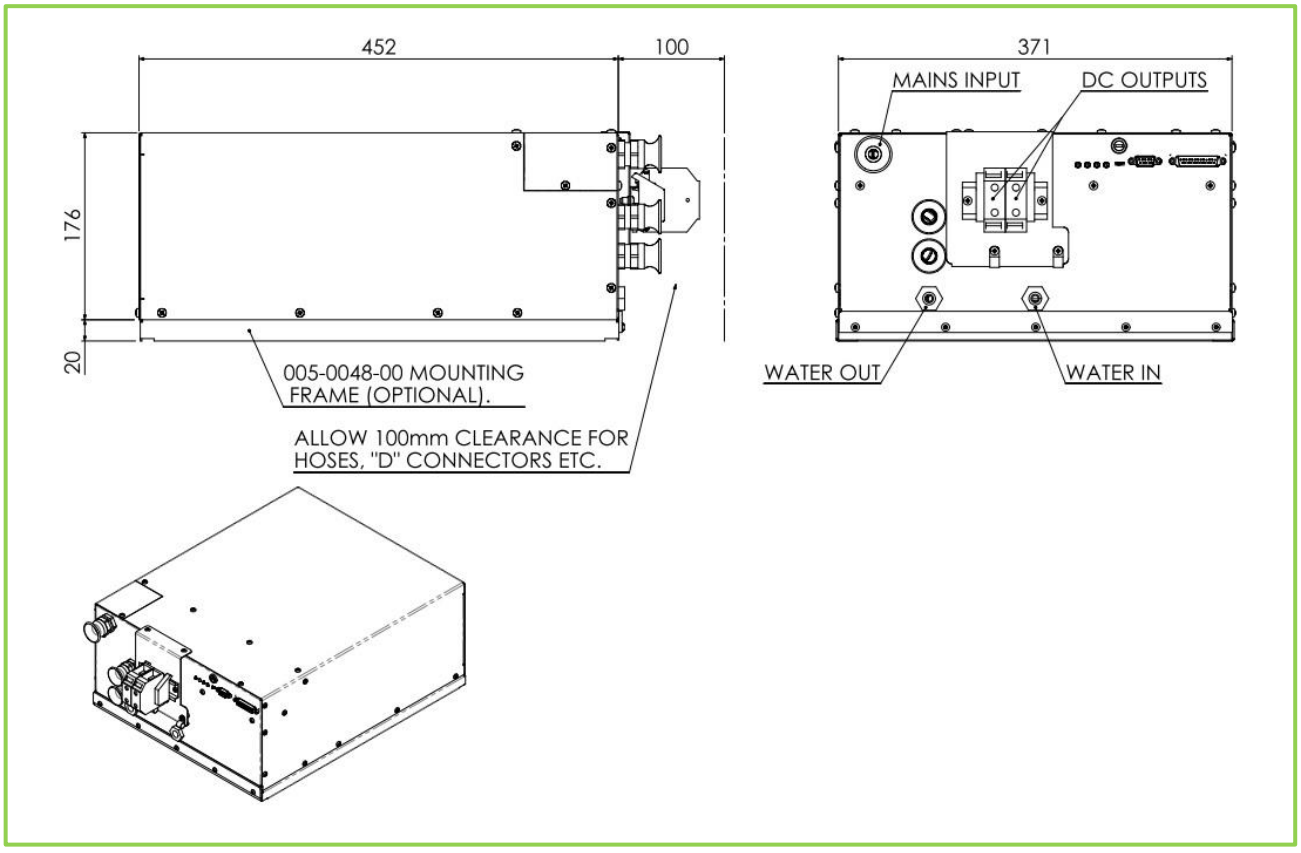
SR 15i



SR 15i – with shutter and diode assembly - optional



SR 15i – with shutter, diode and power feedback assembly – optional



DC power supply – water cooled - 50V - optional