

BLADE™ RF

High Peak Power Sealed-off Lasers



RF Excited CO₂ lasers
Power from 150W to 300W

KEY FEATURES

- High peak power Sealed-off technology
- Radio Frequency excited
- Extremely compact & easy to integrate
- Special RF 177G: 150W @9.3 μ m
- High electrical/optical conversion efficiency
- Integrated RF power supply
- Naked version in option for optimized custom layout



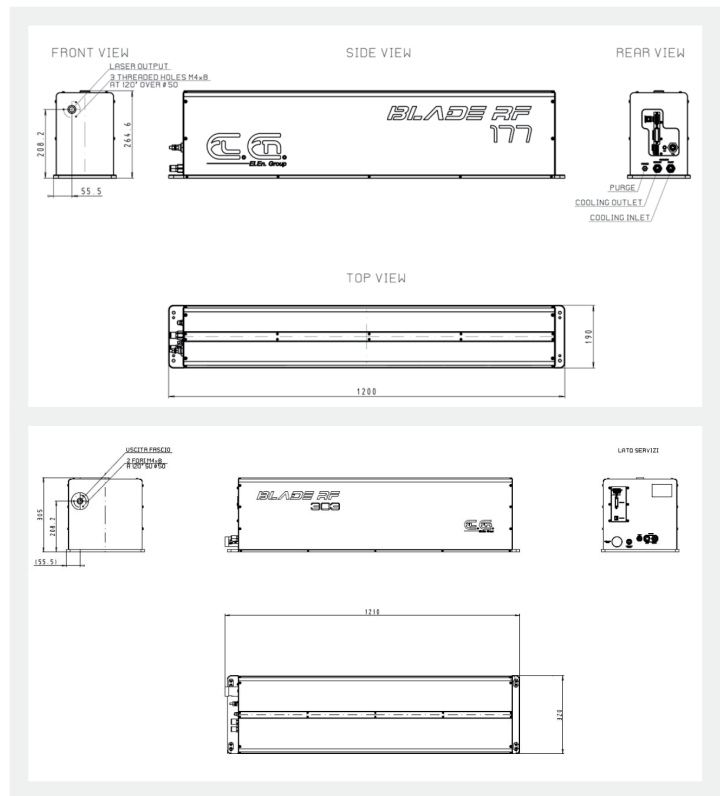
RF 177 // RF 177G // RF 303

The exceptional characteristics of the new sealed-off technology allow to obtain excellent performances in this power range laser applications.

The extreme compactness of the **Blade RF CO₂** Sealed-off laser sources makes them one of the easiest to integrate.

MAIN APPLICATIONS:

- galvo scanners applications;
- plastics and leather cutting;
- thin glass film, display, LCD processing.



Systems Specifications

Model	RF 177	RF 177 G	RF 303
Rated power (W)	≥150	≥170	≥300
Effective peak power ⁽¹⁾ (W)	600	700	1100
Power stability (long term)	± 5%	± 5%	± 5%
Wavelength (μm)	10.6 ± 0.4	9.3 ± 0.2	10.6 ± 0.4
Polarization	linear vertical	linear vertical	linear vertical
Beam diameter (1/e ² at the exit) (mm)	9.5 ± 0.5	9.5 ± 0.5	8.0 ± 0.5
Beam divergence (full angle) (mrad)	3.0 ± 0.3	3.0 ± 0.3	≤ 2.0
Maximum pulsing frequency (kHz)	100	100	100
Pulse width range (μs)	2 ÷ 1000	2 ÷ 1000	2 ÷ 150
Pulse Rise / Fall time (μs)	< 50	< 50	< 50
Mode quality (M ²)	< 1.15	< 1.15	< 1.20
Beam ellipticity	1.15:1	1.15:1	1.20:1
Environmental temperature range (°C)	5° ÷ 35°	5° ÷ 35°	5° ÷ 35°
Maximum humidity	Non condensing at inlet water cooling temperature		

Electrical Power Requirements

Input voltage (V _{DC})	48 ± 1	48 ± 1	48 ± 1
Max current (A)	60	60	115

Coolant

Heat dissipation (W)	3000	3000	5500
Coolant temperature (°C)	20° ± 0,5°	20° ± 0,5°	20° ± 0,5°
Max water cooling input pressure (bar)	4	4	≤ 4
Water cooling flow rate (l/min)	7 ± 0.5	7 ± 0.5	10.5 ± 0.5

Dimensions/Weight

Dimensions (LxWxH) (mm)	1200x190x264.6	1200x190x264.6	1210x320x305
External safety shutter	optional	optional	optional
RF Power supply dimensions (LxWxH) (mm)		integrated	
Weight (kg)	37,5	37,5	65

1 - At 10% duty cycle and 1kHz

NOTE: Aiming to product improvement, El.En. SpA reserves the right to change specifications without notice. Purchaser acknowledges that the products must comply with applicable regulations before they can be resold to customers. El.En. lasers are produced under a quality assurance system certified according to ISO 9001.



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