

# BLADE™ RF

Never ending power lasers



Mid Power CO<sub>2</sub> lasers  
Power from 350W to 850W

## KEY FEATURES

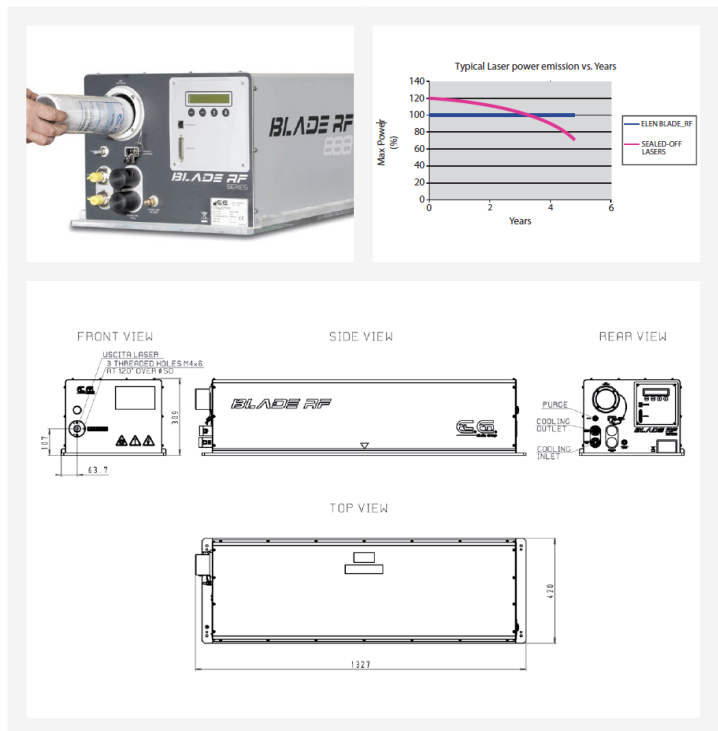
- Semisealed technology: no factory refilling needed
- Radio Frequency excited
- Low operative cost & easy integration
- High reliability & high beam quality
- Same size for all powers
- High electrical/optical conversion efficiency
- Integrated RF power supply
- TCP/IP connection for remote diagnostics and control

# RF 333 // RF 333P // RF 555 // RF 777 // RF 888 // RF 899

The **Blade RF Self refilling** technology provides an unsurpassed stability of the laser power, allowing absolute consistency of the processes parameters in long term operations. The internal gas cartridge is extremely easy to change (typically twice a year) at an extraordinarily low cost. The **Blade RF Self refilling** laser is the first laser that joins the advantages of the RF excitement technology (high peak power, high frequency modulation, compactness) with the incredible advantaged of virtually "no factory service" requirement of the self refilling solution.

## MAIN APPLICATIONS:

- high performance galvo scanners applications;
- plastics, wood and leather cutting;
- digital converting
- polypropylene coating & film cutting
- labels kiss-cutting.



## Systems Specifications

| MODEL   | RF 333 (P)  | RF 555          | RF 777          | RF 888          | RF 899          |
|---|---|-----------------|-----------------|-----------------|-----------------|
| Rated power (W)                                   | 350 (330)   | 550             | 750             | 850             | 850             |
| Effective peak power (W)                          | >850 (>750)                                       | >1650           | >1750           | >1800           | >1800           |
| Power stability (long term)                       | ±4% (±5%)   | ±5%             | ±5%             | ±5%             | ±5%             |
| Wavelength (µm)                                   | 10.6 ± 0.4 (10.2 ± 0.4)                           | 10.6 ± 0.4      | 10.6 ± 0.4      | 10.6 ± 0.4      | 10.6 ± 0.4      |
| Polarization                                      | Linear horizontal                                 | Linear vertical | Linear vertical | Linear vertical | Linear vertical |
| Beam diameter (1/e <sup>2</sup> at the exit) (mm) | 9.5 ± 0.5   | 9.5 ± 0.5       | 11.8 ± 0.5      | 11.8 ± 0.5      | 11.5 ± 0.5      |
| Beam divergence (full angle) (mrad)               | 2.0 ± 0.2   | 2.0 ± 0.2       | 1.0 ± 0.1       | 1.0 ± 0.1       | 0.8 ± 0.1       |
| Maximum pulsing frequency (kHz)                   | 100   | 100             | 100             | 100             | 100             |
| Pulse width range (µs)                            | 2 ÷ 1000 (2 ÷ 150)                                | 2 ÷ 150         | 2 ÷ 150         | 2 ÷ 150         | 2 ÷ 150         |
| Mode quality (M <sup>2</sup> )                    | <1.1  | <1.1            | <1.2            | <1.2            | <1.2            |
| Beam ellipticity                                  | 1.1:1   | 1.2:1           | 1.2:1           | 1.2:1           | 1.2:1           |
| Typical gas mix consumption (Cartridge/year)      | 2   | 2               | 2               | 2               | 2               |
| Pulse Rise /Fall Time (µs)                        | < 50  | < 50            | < 50            | < 50            | < 50            |
| Environmental temperature range (°C)              | 5° ÷ 35°  |                 |                 |                 |                 |
| Maximum humidity                                  | Non-condensing at inlet water cooling temperature |                 |                 |                 |                 |
| <b>Electrical Power Requirements</b>              |   |                 |                 |                 |                 |
| Input voltage (V <sub>DC</sub> )                  | 48 ± 1  | 48 ± 0.5        | 48 ± 0.5        | 48 ± 0.5        | 48 ± 0.5        |
| Max current (A)                                   | 100   | 140             | 180             | 200             | 200             |
| <b>Coolant</b>                                    |   |                 |                 |                 |                 |
| Heat dissipation (W)                              | 5000  | 6800            | 9000            | 10000           | 10000           |
| Coolant temperature (°C)                          | 20° ± 1°  |                 |                 |                 |                 |
| Max water cooling input pressure (bar)            | 4   | 5               | 5               | 5               | 5               |
| Water cooling flow rate (l/min)                   | 11±1  | 15 ± 1          | 17±1            | 19±1            | 19±1            |
| <b>Dimensions/Weight</b>                          |   |                 |                 |                 |                 |
| Dimensions (LxWxH) (mm)                           | 1327x420x309                                      |                 |                 |                 |                 |
| RF Power supply dimensions                        | Integrated  |                 |                 |                 |                 |
| Safety shutter                                    | Optional  | Optional        | Optional        | Optional        | Integrated      |
| Weight (kg)                                       | 92  | 92              | 110             | 110             | 110             |

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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