



- 100, 125, 200, & 240W models
- Proven operating lifetimes > 45,000 hours
- Rugged design for industrial environments
- Excellent long term power stability
- Superior wavelength stability



evolution series - high power in a robust package

Extending our “all metal” technology to higher powers by using a folded resonator design, the *evolution series* provides users with output powers from 100 to 240W.

The all-metal sealed tube design and proprietary manufacturing process ensure high gas purity, essential for long operating lifetimes. With over 100,000 Synrad lasers operating worldwide, Synrad is the only CO₂ laser manufacturer that can boast of proven operating lifetimes in excess of 45,000 hours (at which time, a simple and inexpensive gas refill returns the laser to full operation).

The rugged construction of the *evolution* lasers guarantees high performance and reliability, and the long cavity length provides an inherent power and wavelength stability critical to many applications.

Synrad lasers can be operated from 0 - 100% duty cycle, with laser power adjusted using a pulse width modulation (PWM) control. The laser is controlled directly with a TTL signal (rear-mounted BNC

connector). Alternatively, a DB-9 connector provides remote access to all laser functions, including laser control, fault conditions monitoring, remote interlock, and failure shutdown options.

The *evolution series* combines a laser head with a separate 19” rack-mount RF power supply - 5m RF and control cables are supplied as standard. Synrad *evolution* lasers operate from standard 30VDC power supplies, and all models feature an electromechanical safety shutter.

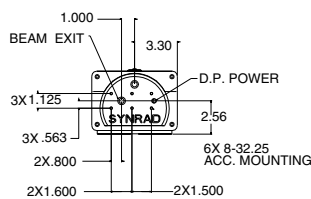
With output powers of 100, 125, 200, and 240W, the *evolution series* lasers are available in either keyswitch or OEM versions. The 200 & 240W models, because of their *Duo-Lase™* configuration, produce a randomly polarized beam, making them especially well-suited to cutting applications. The rugged design of these lasers makes them ideal for mounting on robotic arms or moving gantry systems. Applications include acrylic and die-board cutting, machining of thin metals, and high speed coding and marking.

• Specifications

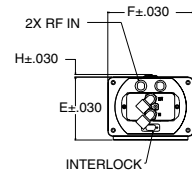
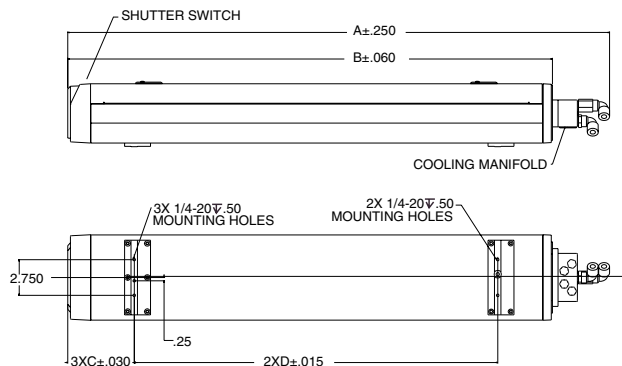
Model	Evo 100(S)	Evo 125(S)	Evo 200(S)	Evo240(S)
Output Power	100W	125W	200W	240W
Mode Quality	TEM ₀₀ , 90% Purity M ² <1.2	TEM ₀₀ , 90% Purity M ² <1.2	TEM ₀₀ , 90% Purity M ² <1.2	TEM ₀₀ , 90% Purity M ² <1.2
Ellipticity	<1.2	<1.2	<1.2	<1.2
Rise Time	<150µsec	<150µsec	<150µsec	<150µsec
Beam Diameter	4mm	4.4mm	4mm	4.4mm
Beam Divergence (full angle)	3.5mR	3.2mR	3.5mR	3.2mR
Wavelength	10.59µm	10.59µm	10.59µm	10.59µm
Power Stability, from cold start (guaranteed)	±5%	±5%	±5%	±5%
Polarization	Linear (Vertical)	Linear (Vertical)	Random	Random
Cooling	Water	Water	Water	Water
Heat Load (max)	2000W	3000W	4000W	6000W
Flow Rate (18-22°C)	2 GPM	2 GPM	4 GPM	4 GPM
Input Voltage / Current	30 VDC / 80A	30 VDC / 95A	30 VDC / 160A	30 VDC / 190A
Dimensions, laser head (in)	41.8 x 6.6 x 4.8	48.8 x 6.6 x 4.8	45.6 x 6.9 x 10.8	52.6 x 6.9 x 10.8
(mm)	1063 x 168 x 122	1240 x 168 x 122	1158 x 175 x 274	1336 x 175 x 274
Dimensions, RF supply (in)	12.0 x 19.0 x 8.9	12.0 x 19.0 x 8.9	12.0 x 19.0 x 8.9 (x2)	12.0 x 19.0 x 8.9 (x2)
(mm)	305 x 483 x 226	305 x 483 x 226	305 x 483 x 226 (x2)	305 x 483 x 226 (x2)
Weight, laser head	30 lbs / 13.6 kg	36 lbs / 16.3 kg	70 lbs / 31.8 kg	84 lbs / 38.1
Weight, RF supply	29 lbs / 13.2 kg	29 lbs / 13.2 kg	29 lbs / 13.2 kg x 2	29 lbs / 13.2 kg x 2

(S) in the model number designates OEM configuration (does not include keyswitch).
Beam specifications measured at 1/e².
Specifications subject to change without notice.

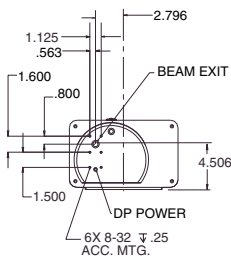
• Evolution 100/125 Outline & Mounting



	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	DIM H
EVO100	41.835	37.325	5.125	28.000	4.840	6.600	.200
EVO125	48.835	44.325	4.625	36.000	4.840	6.600	.200



• Evolution 200/240 Outline & Mounting



	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	DIM H
EVO200	45.575	41.065	5.190	35.700	6.885	10.800	.200
EVO240	52.575	48.065	5.190	42.700	6.885	10.800	.200

