

- 10, 25 & 50W models
- Low cost design
- Rugged & reliable
- Proven operating lifetimes > 45,000 hours



Synrad's **series48** - setting the industry standard

Synrad's original "all-metal" tube technology opened the door for sealed CO₂ lasers in many industrial applications. After 15 years, it remains the industry standard for performance, reliability, long lifetime, and low cost.

The laser tube is a rigid box structure design that provides an ultra-stable platform for the laser resonator. Synrad's 48-series tubes are mounted into an H-shaped heat sink extrusion that also serves as the chassis for the drive electronics. This guarantees that the laser will withstand the harsh requirements of modern industrial environments.

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).

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.

All 48-series lasers operate from standard 30VDC power supplies, and can be either fan-cooled (48-1 and 48-2 models) or water-cooled.

With output powers of 10, 25, or 50W, and available in either OEM or keyswitch configurations, Synrad's 48-series lasers are ideal for incorporation into marking, engraving, and small cutting systems, where performance, low price and high reliability are essential.

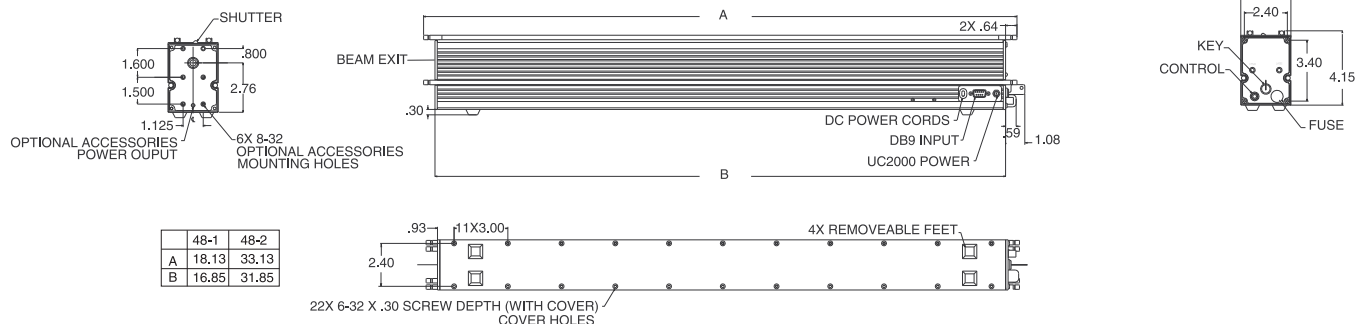
• Specifications

Model	48-1(S)	48-1(S)W	48-2(S)	48-2(S)W	48-5(S)W
Output Power	10W		25W		50W
Mode Quality	TEM ₀₀ , 95% Purity M ² <1.2		TEM ₀₀ , 95% Purity M ² <1.2		TEM ₀₀ , 95% Purity M ² <1.2
Ellipticity	<1.2		<1.2		<1.2
Rise Time	<150μsec		<150μsec		<150μsec
Beam Diameter	3.5mm		3.5mm		3.5mm
Beam Divergence (full angle)	4mR		4mR		4mR
Wavelength	10.57-10.63μm*		10.57-10.63μm*		10.57-10.63μm*
Power Stability, from cold start (guaranteed)	±10		±5%		±5%
Polarization	Linear (Vertical)		Linear (Vertical)		Random
Cooling	Air	Water	Air	Water	Water
Heat Load (max)	300W		500W		800W
Flow Rate, Air	250 CFM x 2	N/A	250 CFM x 4	N/A	N/A
Flow Rate, Water (18-22°C)	N/A	0.5 GPM	N/A	0.8 GPM	1.5 GPM
Input Voltage / Current	30 VDC / 7A		30 VDC / 14A		30 VDC / 28A
Dimensions (in)	16.9 x 2.8 x 4.2		31.9 x 2.8 x 4.2		34.9 x 5.3 x 4.5
(mm)	429 x 71 x 107		810 x 71 x 107		886 X 135 X 114
Weight	9 lbs / 4.1 kg		18 lbs / 8.2 kg		44 lbs / 20 kg

(S) in the model number designates OEM configuration (does not include keyswitch or shutter switch).
Beam specifications measured at 1/e².

*Typical. Actual wavelength range may vary from 10.2-10.8μm
Specifications subject to change without notice.

• 48-1/48-2 Outline & Mounting



• 48-5 Outline & Mounting

