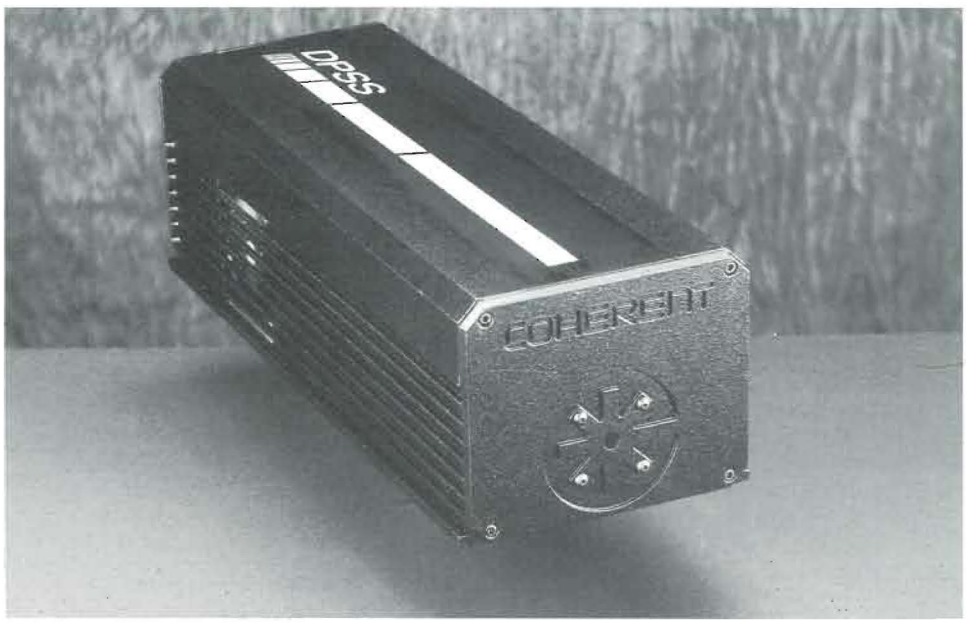
COHERENT

DPSS 1064
Diode-Pumped Nd:YAG Laser

Features

- Extremely low noise
- Long-term output stability
- Maintenance-free operation
- Compact, rugged package
- Turnkey operation



The DPSS 1064 Series incorporates our innovative STAR™ Technology to deliver all the inherent benefits of a diode-pumped Nd:YAG laser in a compact, integrated package.

STAR Technology
The patented* STAR (*S*ingle-frequency, *T*ight-*A*ngle *R*ing) resonator is a novel, two-mirror design that utilizes refraction in the YAG prism to complete the ring path. Unidirectional operation is achieved through the Faraday effect in YAG, and a Brewster-cut rotator plate.

Optical characteristics
The output power of the DPSS 1064 Series is factory-preset above the rated specification. Stable operation is maintained through current regulation of the laser diode.

The DPSS 1064 Series also produces exceptional mode quality. The specified M^2 value *(see footnote on back)* is close to the theoretical limit for a Gaussian beam. The resonator is constructed with materials chosen to optimize thermomechanical stability.

Robust, zero-maintenance packaging
The DPSS 1064 Series is designed to achieve the highest level of performance in a compact laser. The single-piece package includes the laser head and power supply. The integrated design eliminates potential catastrophic damage to the laser diode arising from Electro-Static Discharge (ESD), while reducing other potential failure mechanisms associated with detachable umbilicals.

Providing electrical power to the system and activating a key switch are the only user requirements for operation. Laser emission commences after a 20-second start delay.

There are no customer-serviceable parts, and no standard maintenance is required.

Warranty
The standard system warranty for the DPSS 1064 Series provides parts and labor for one year or 3000 hours of operation, whichever occurs first. Extended warranties are available.

*U.S. patent number 5,052,815.

DPSS 1064 SPECIFICATIONS

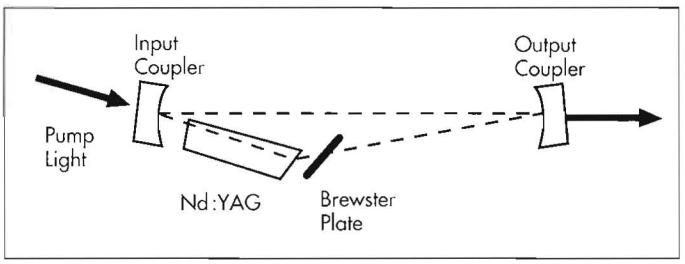
Wavelength	1064 nm
Power	
Model 1064-100	>100 mW CW
Model 1064-200	>200 mW CW
Model 1064-300	>300 mW CW
Mode	TEM_{00}
M^2 (*see Footnote*)	<1.5
Short-Term Noise (10 Hz-10 MHz)	<0.5% rms
Long-Term Stability (over 8 hours)	±5%
Polarization	Horizontal, Linear
Polarization Ratio	300:1
Beam Radius ($1/e^2$ intensity)	0.45 mm
Beam Divergence (full angle)	≤2.4 mrad
Operating Temperature Range	15-35°C
Max. Ambient Temperature Change	<1°C/min
Warm-Up Time	<5 min
Dimensions—Integrated Head and Power Supply (LxWxH)	314 x 120 x 86 mm
Weight	7.2 lbs (3.2 kg)
Operating Voltage	100/115/220 VAC ±10%
Typical Power Consumption	50W
Positional Orientation†	±0.5 mm
Angular Orientation†	±5 mrad

† With respect to a preset reference.

Footnote
M^2 is a measurement of laser beam quality—a single number that describes the beam's quality in comparison to a theoretically perfect Gaussian beam, and that can be used to predict a real, non-Gaussian beam's behavior in an optical system. For further details, see "Beam Characteristics and Measurement of Propagation Attributes," by M. W. Sasnett and T. F. Johnston, Jr., *SPIE Proceedings* Vol. 1414, 1991.

Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

STAR Resonator



Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

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