

# DIAMOND GEM-100A (10.6 $\mu\text{m}$ )

Air-Cooled RF-Excited OEM Industrial CO<sub>2</sub> Laser

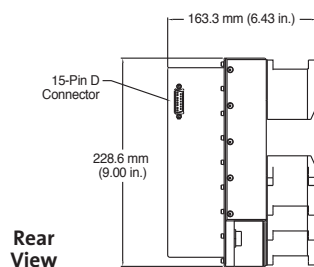
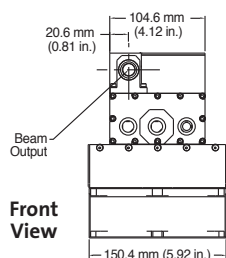
## Features

- Outstanding beam quality and stability
- Direct air-cooling
- Linear polarization
- Highly compact
- Low-cost OEM configuration
- Fast rise/fall time
- Up to 100% duty cycle operation
- All-metal seals for long life
- Interchangeable laser heads and RF power supplies
- Wide operating power range

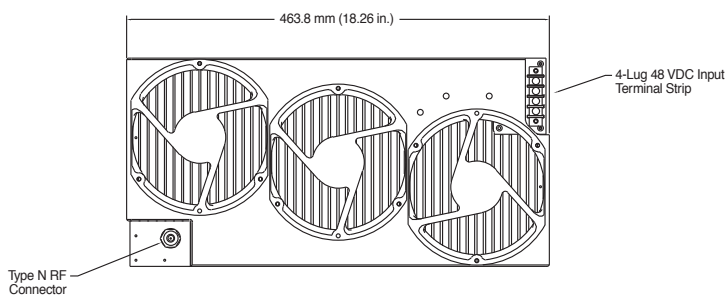
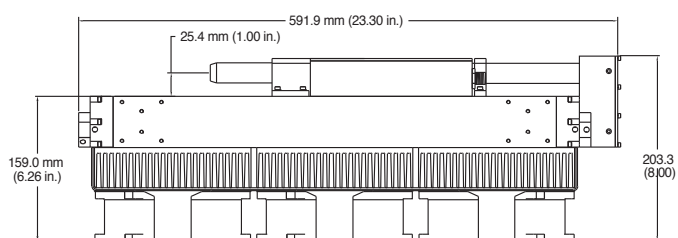


## Mechanical Specifications

### Laser Head



### Side View



**Superior Reliability & Performance**

## DIAMOND™ GEM™-100A (10.6 μm)

### Air-Cooled RF-Excited OEM Industrial CO<sub>2</sub> Laser

#### System Specifications

Wavelength (μm)(fixed)	10.55 to 10.63
Output Power <sup>1</sup> (W)	100
Power Stability <sup>2</sup> (%)	±5
Mode Quality	>95% TEM <sub>00</sub> , M <sup>2</sup> <1.3
Beam Size (mm)	3.8 ±0.4 mm
Beam Divergence (mrad, full angle)	<5.0
Polarization (fixed linear)	>100 to 1
Pulse Frequency (kHz)	Up to 25
Weight of Head	11.8 kg (26 lbs.)
Weight of Power Supply	8.2 kg (18 lbs.)
Dimensions	Shown above

#### Facilities Requirements

Input Power	48 VDC 50A (65A peak for a minimum of 1 msec) ±2% regulation with remote sense	
Surface Cooling Requirements <sup>3</sup>	Heat Dissipation	Maximum Case Temperature
Laser Head	1200W	55°C
RF Power Supply	800W	55°C
Environmental		
Temperature	5 to 40°C (41 to 104°F)	
Altitude	2000 m (<6500 ft.)	
Humidity	Non-condensing	

<sup>1</sup> Derate power by 1% / °C for laser head temperatures above 25°C.

<sup>2</sup> Power stability measured at constant duty cycle (15% to 100%) after 10-minute warm-up.

<sup>3</sup> Adverse environmental conditions (high ambient temperatures, humidity or altitude) will limit the maximum allowable duty cycle. Systems designers must limit the duty cycle so that hardware surface temperature limits are not exceeded. Power supplies incorporate over-temperature protection.

Specifications are subject to change without notice.

Coherent, Inc. guarantees that the output power of the GEM-100A (10.6 μm) will exceed the rated power for a period of one year, independent of the actual operating time. Coherent, Inc. also warrants to the original purchaser for a period of one year from the date of delivery that the GEM-100A (10.6 μm) is free from defects in material and workmanship. The warranty does not apply to any unit damaged by accident, abuse or operation in a manner inconsistent with the procedures and specifications outlined in the manual supplied with the laser.

The GEM-100A (10.6 μm) is a laser component that does not include all safety features as required by the FDA and the Center for Devices and Radiological Health (CDRH). It is sold solely to qualified manufacturers who in their end product will supply all interlocks and indicators, and will comply fully with CDRH regulations and/or local regulatory agencies.



[www.Coherent.com](http://www.Coherent.com)

U.S. Patent No. 6,192,061

U.S. Patent No. 6,788,722

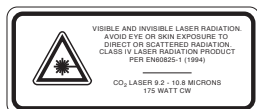
U.S. Patent No. 6,798,816

U.S. Patent No. 6,999,490

U.S. Patent No. 7,453,918

Printed in the U.S.A. MC-103-01-0Mo811Rev.H

Copyright ©2011 Coherent, Inc.



#### Coherent, Inc.

5100 Patrick Henry Drive

Santa Clara, CA 95054

phone (800) 527-3786

(408) 764-4983

fax (408) 764-4646

e-mail [tech.sales@Coherent.com](mailto:tech.sales@Coherent.com)

Benelux +31 (30) 280 6060

China +86 (10) 8215 3600

France +33 (0)1 8038 1000

Germany +49 (6071) 968 333

Italy +39 (02) 31 03 951

Japan +81 (3) 5635 8700

Korea +82 (2) 460 7900

UK +44 (1353) 658 833

#### NAMSON ENGINEERING CO., LTD



PASSION FOR INNOVATION  
ISO 9001:2008 CERTIFIED

Add: 51 - 53 Pho Quang Str, Ward 2, Tan Binh Dist,  
Ho Chi Minh City

Tel +84 8 3997.4421 - Fax: +84 8 3997.4423

E-mail: [info@namson.com.vn](mailto:info@namson.com.vn)

Website: [www.namson.com.vn](http://www.namson.com.vn)

#### BRAND

Add: No.3B, Lance 43, Giang Vo Str, Cat Linh Ward,  
Dong Da Dist, Ha Noi City

Tel: +84 4 37 36 83 77