C61 Air-Cooled Argon Laser System

Features

- Superior Beam Quality
- Low Noise
- Internal Mirror Design
- Extended Lifetime
- Designed for Fiber Optic Delivery
- Exceptional Warranty

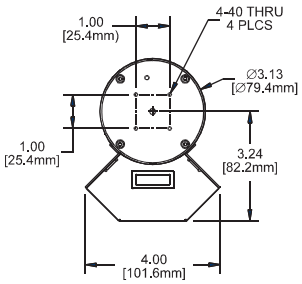
Cylindrical Design

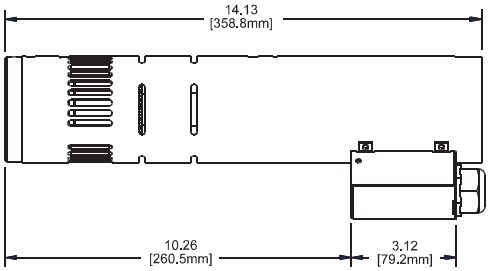
The C61 argon laser has been engineered to meet today's most demanding OEM applications. Designed in an industry standard cylindrical package, the C61 minimizes vibration by utilizing remote cooling. The laser head was designed for quick field replacement and has been designed by NLC to offer tube replacement as well.

Beam Quality

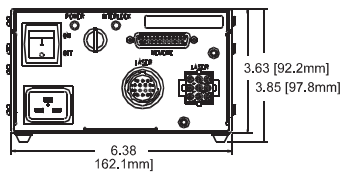
The C61 provides unparalleled beam quality that is constant across output power levels and through fiber delivery systems. The laser incorporates the latest in internal mirror tube technology securing permanent beam alignment and eliminating contamination. The C61 also offers improved beam pointing stability, and low noise.

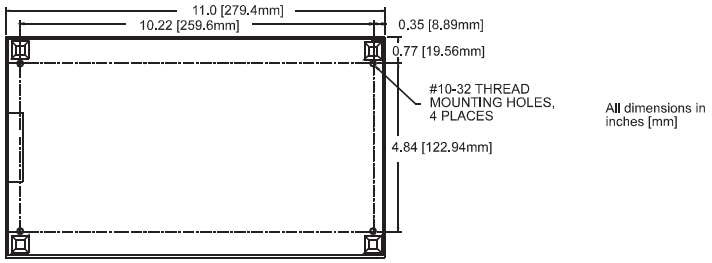
C61 Laser Head





Power Supply





All dimensions in inches [mm]

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C61 Specifications

Applications

- Photo Finishing
- Graphic Arts
- Flow Cytometry
- DNA Sequencing
- Confocal Microscopy
- Spectroscopy
- Hematology
- Semiconductor Inspection
- Medical Detection Equipment
- Basic Research

Product Specifications[1,2,3]	**C61DB**	**C61BL**	**C61GL**	**C61AL**
Wavelength	458nm	488nm	514nm	458-514nm
Output Power	5mW	4,10,20,30mW	10,15,20mW	25,40,65mW
Power Stability (over 2 hours)	±1%	±1%	±1%	±1%
Spatial Mode	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}
M^2	≤1.2	≤1.2	≤1.2	≤1.2
Beam Diameter @ $1/e^2$ (mm)	0.62±5%	0.65±5%	0.67±5%	0.67±5%
Beam Divergence (mrad)	<1.0	<1.0	<1.0	<1.0
Polarization Ratio	>250:1	>250:1	>250:1	>250:1
Pointing Stability over 2 hours (µrad)	±30/±3°C	±30/±3°C	±30/±3°C	±30/±3°C
Noise (20Hz - 2kHz peak to peak)	0.1%	0.1%	0.1%	0.1%
Noise (20Hz - 20kHz peak to peak)	1.0%	1.0%	1.0%	1.0%
Noise (20Hz - 2MHz rms)	1.0%	1.0%	1.0%	1.0%
Operating Parameters				
Voltage (Universal Input)	100-240VAC±10%			
Current	16 Amps Max.			
Frequency	47-63 Hz			
Phase	Single			
Air Intake	65 CFM[4]			
Air Intake Clearance	2.5cm (1in)			
Operating Temperature / Humidity	4-40°C (40-105°F) / ≤90%			
Storage Temperature / Humidity	-30-60°C (-22-140°F) / ≤100%			
Warm-up Period	10 min.			
Dimensions				
Laser Head	14.13" x 4" x 4.81"			
Power Supply	11" x 6.38" x 3.85"			
Weights				
Laser Head	6.5 lbs (2.8 kg)			
Power Supply	7 lbs (3.18 kg)			

Notes

1. Specifications subject to change without notice.
2. When used with LDI 9400 or NLC 2200 series power supply.
3. Measurements taken in light control after 5 minute warm-up.
4. Nominal air flow is 65 CFM. Use McLean Engineering Model INB412 or equivalent fan rated for 185 CFM free air flow and 1.8 inches of water. Hose length not to exceed two meters.

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N61 ARGON LASER

The N61 argon laser is an excellent replacement laser head. Designed in a traditional rectanglar package, the N61 provides excellent beam quality and long laser life. The N61 also offers improved thermal stability, and low electronic and optical noise. The laser incorporates the latest in internal mirror tube technology securing permanent beam alignment and eliminating contamination. NLC's design permits ease of servicing and simple, drop-in laser tube replacement.

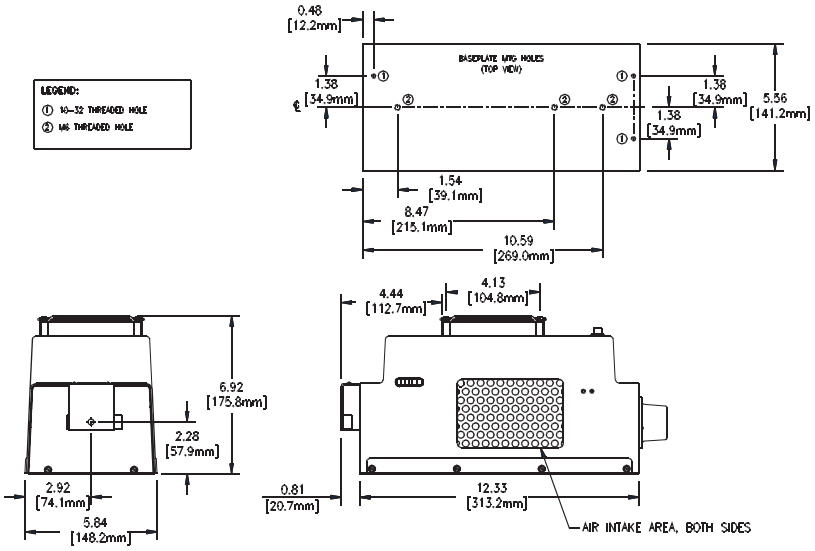
Features

Superior Beam Quality
Low Optical and Electronic Noise
Internal Mirror Design
Extended Lifetime
Drop-in Tube Replacement
Exceptional Warranty

Applications

Pre-Press Color Separations & Scanning
High Speed Laser Printing
Photo Plotters for PCB manufacturing
Graphic Arts
Flow Cytometry
DNA Sequencing
Confocal Microscopy
Spectroscopy
Hematology
Medical Detection Equipment
Basic Research

NLC N61 ARGON LASER SPECIFICATIONS



Optical Specifications[1,3,4]	458nm	488nm	514nm	458-514nm
Output Power	3mW	10, 15mW	10mW	25mW
Operating Current[2]	<7A	<7A	<7A	<7A
Spatial Mode	TEM_{00}, M^2 ≤1.2	TEM_{00}, M^2 ≤1.2	TEM_{00}, M^2 ≤1.2	TEM_{00}, M^2 ≤1.2
Beam Diameter (mm)	0.63±5%	0.65±5%	0.67±5%	0.67±5%
Beam Divergence (mrad)	<1.0	<1.0	<1.0	<1.0
Polarization Ratio	>250:1	>250:1	>250:1	>250:1
Beam Pointing Stability over 2 hours	±30 µrad/±3°C	±30 µrad/±3°C	±30 µrad/±3°C	±30 µrad/±3°C
Power Stability over 2 hours	±1%	±1%	±1%	±1%
Beam Position	±1.0 mm	±1.0 mm	±1.0 mm	±1.0 mm
Beam Angle	≤5.0 mrad	≤5.0 mrad	≤5.0 mrad	≤5.0 mrad

Noise Specifications[1,3,4]	
Noise @ 20Hz - 2kHz (p-p)	0.2%
@ 20Hz - 20kHz (p-p)	2.0%
@ 20Hz - 2MHz (rms)	1.0%

Power Requirements[1,3]	
Voltage (Univ. Input)	100-240 VAC±10%
Current	16 Amps Max.
Frequency	47-63 Hz
Phase	Single

Environmental Specifications[1]	
Temperature	
Operating	4-40°C (40-105°F)
Non-Operating	-30-60°C (-22-140°F)
Humidity (no condensation)	
Operating	0 to 90%
Non-Operating	0 to 100%
Altitude	0-3000m (0-9,800ft)
Shock (11msec)	25g
Laser Head Weight (std, lrg fan)	11.1, 12.4 lbs (5.03, 5.62 kg)
Air Intake	
Standard fan configuration	106 CFM
Large fan configuration	225 CFM
Air Intake Clearance	2.5cm (1in)

Warranty
The laser head is warranted to be free from defects in materials or workmanship for a period of twelve (12) months from the date of shipment or five thousand (5,000) hours of operation at or below standard operating specifications, whichever first occurs.

Notes
1. Specifications subject to change without notice.
2. Nominal operating current at beginning of life.
3. When used with 9400 series power supply.
4. Measurements taken in light control after 5 minute warm-up.

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210 Air-Cooled Argon Laser System

Features

- Superior Beam Quality
- Low Noise
- Internal Mirror Design
- Extended Lifetimes
- Drop-in Tube Replacement
- Designed for Fiber Optic Delivery
- Exceptional Warranty

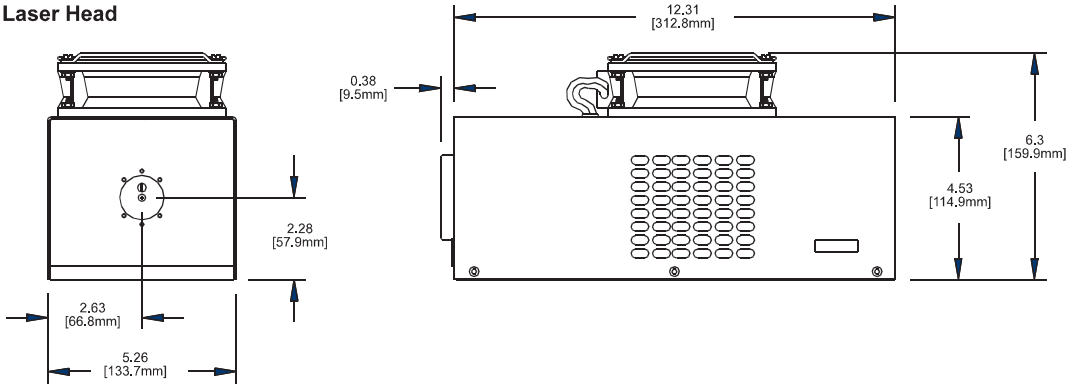
Design

The 210 argon laser has been engineered to meet today's most demanding needs in OEM applications. Offered in an industry standard rectangular package, the 210 provides unparalleled beam quality that is constant across output power levels and through fiber delivery systems. The 210 is also available with a remote cooling option for applications where fan vibration is a concern. The 210 also offers improved thermal stability, longer life and exceptionally low noise.

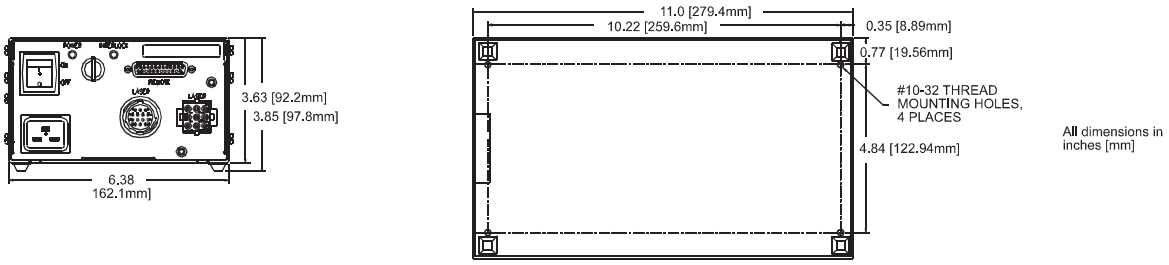
Quality

The 210 draws upon years of experience and proven results with major OEM's worldwide. Utilized in life science, image recording and research applications, the 210 has effectively proven to reduce warranty retuns and increase lifetimes. The laser incorporates the latest in internal mirror tube technology assuring permanent beam alignment and eliminating contamination. NLC's design permits ease of servicing and simple, drop-in laser tube replacement.

210 Laser Head



Power Supply



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210 Specifications

Applications

- Flow Cytometry
- DNA Sequencing
- Confocal Microscopy
- Spectroscopy
- Hematology
- Medical Detection Equipment
- Photo Finishing
- Ultra High Speed Laser Printing
- Graphic Arts
- Semiconductor Inspection
- Basic Research

Product Specifications[1,2,3]	**210DB**	**210BL**	**210GL**	**210AL**
Wavelength	458nm	488nm	514nm	458-514nm
Output Power	5mW	15,20,30mW	10,15,20mW	25,40,65mW
Power Stability (over 2 hours)	±1%	±1%	±1%	±1%
Spatial Mode	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}
M^2	≤1.2	≤1.2	≤1.2	≤1.2
Beam Diameter @ $1/e^2$ (mm)	0.63±5%	0.65±5%	0.67±5%	0.67±5%
Beam Divergence (mrad)	<1.0	<1.0	<1.0	<1.0
Polarization Ratio	>250:1	>250:1	>250:1	>250:1
Pointing Stability over 2 hours (µrad)	±30/±3°C	±30/±3°C	±30/±3°C	±30/±3°C
Noise (20Hz - 2kHz peak to peak)	0.1%	0.1%	0.1%	0.1%
Noise (20Hz - 20kHz peak to peak)	1.0%	1.0%	1.0%	1.0%
Noise (20Hz - 2MHz rms)	1.0%	1.0%	1.0%	1.0%
Operating Parameters				
Voltage (Universal Input)	100-240VAC±10%			
Current	16 Amps Max.			
Frequency	47-63 Hz			
Phase	Single			
Air Intake (Standard, Large, Remote Cooling[4])	106, 225, 65 CFM			
Air Intake Clearance	2.5cm (1in)			
Operating Temperature / Humidity	4-40°C (40-105°F) / ≤90%			
Storage Temperature / Humidity	-30-60°C (-22-140°F) / ≤100%			
Warm-up Period	10 min.			
Dimensions				
Laser Head	12.69" x 5.26" x 6.3"			
Power Supply	11" x 6.38" x 3.85"			
Weights				
Laser Head (Std, Lrg, Remote Fan)[5]	10.8, 12.5, 9.5 lbs (4.9, 5.7, 4.3 kg)			
Power Supply	7 lbs (3.18 kg)			

Notes
1. Specifications subject to change without notice.
2. When used with LDI 9400 or NLC 2200 series power supply.
3. Measurements taken in light control after 5 minute warm-up.
4. Nominal air flow is 65 CFM. Use McLean Engineering Model INB412 or equivalent fan rated for 185 CFM free air flow and 1.8 inches of water. Hose length not to exceed two meters.
5. Large fan required for 30, 20, & 65mW @ 488, 514, & 458-514nm options.

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600 Air-Cooled Argon Laser System

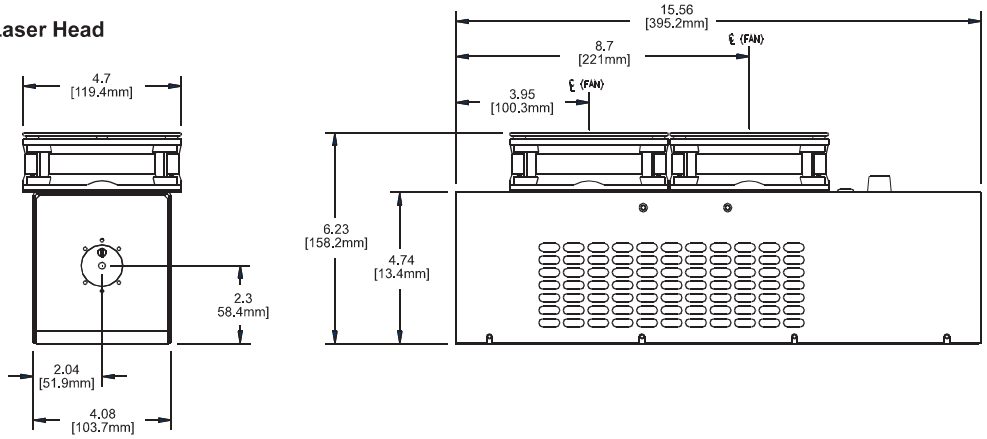
Features

- Superior Beam Quality
- Low Noise
- Internal Mirror Design
- Extended Lifetime
- Designed for Fiber Optic Delivery
- Exceptional Warranty

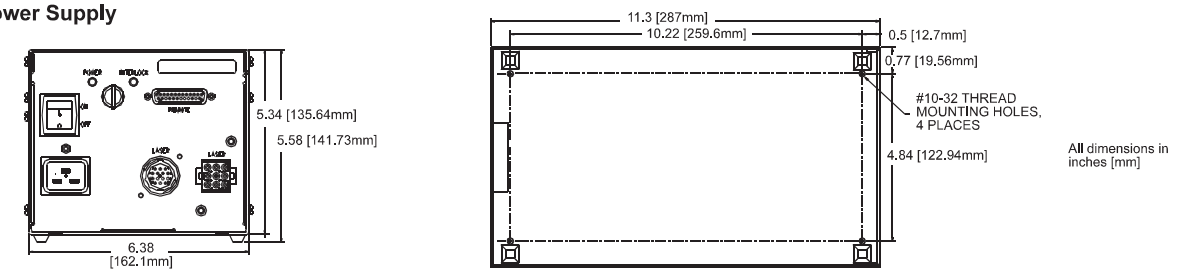
Design

The 600 argon laser has been engineered to meet today's most demanding needs for the mid-power range in OEM applications. Designed in a rectangular package, the 600 provides unparalleled beam quality that is constant across output power levels and through fiber delivery systems. The 600 also offers improved thermal stability, longer life and low electronic and optical noise. The laser incorporates the latest in internal mirror tube technology securing permanent beam alignment and eliminating contamination. NLC's design permits ease of servicing and simple, drop-in laser tube replacement.

600 Laser Head



Power Supply



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600 Specifications

Applications

- Ultra High Speed Laser Printing
- Optical Disk Mastering
- Flow Cytometry
- DNA Sequencing
- Confocal Microscopy
- Spectroscopy
- Hematology
- Basic Research

Product Specifications[1,2,3]	**600BL**	**600AL**	**600AM**
Wavelength	488nm	458-514nm	458-514nm
Output Power	40mW	100mW	200mW
Power Stability (over 2 hours)	±1%	±1%	±1%
Spatial Mode	TEM_{00}	TEM_{00}	Multimode
M^2	≤1.2	≤1.2	
Beam Diameter @ $1/e^2$ (mm)	0.70±5%	0.75±5%	0.80±5%
Beam Divergence (mrad)	<1.0	<1.0	<2.4
Polarization Ratio	>250:1	>250:1	Random
Pointing Stability over 2 hours (µrad)	±30/±3°C	±30/±3°C	±30/±3°C
Noise (20Hz - 2kHz peak to peak)	0.1%	0.1%	0.1%
Noise (20Hz - 20kHz peak to peak)	1.0%	1.0%	1.0%
Noise (20Hz - 2MHz rms)	1.0%	1.0%	1.0%
Operating Parameters			
Voltage (Universal Input)	200-240VAC±10%		
Current	16 Amps Max.		
Frequency	47-63 Hz		
Phase	Single		
Air Intake	216 CFM		
Air Intake Clearance	2.5cm (1in)		
Operating Temperature / Humidity	4-40°C (40-105°F) / ≤90%		
Storage Temperature / Humidity	-30-60°C (-22-140°F) / ≤100%		
Warm-up Period	10 min.		
Dimensions			
Laser Head	15.56" x 4.7" x 6.23"		
Power Supply	11.3" x 6.38" x 5.58"		
Weights			
Laser Head	12.5 lbs (5.8 kg)		
Power Supply	7 lbs (3.18 kg)		

Notes
1. Specifications subject to change without notice.
2. When used with LDI 8470 or NLC2270 power supply.
3. Measurements taken in light control after 5 minute warm-up.

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800 Air-Cooled Argon Laser System

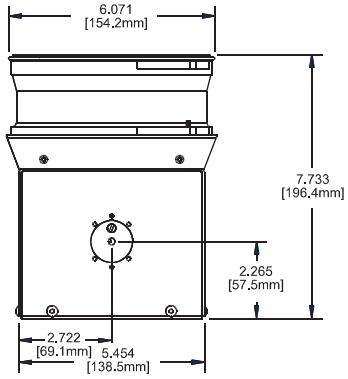
Features

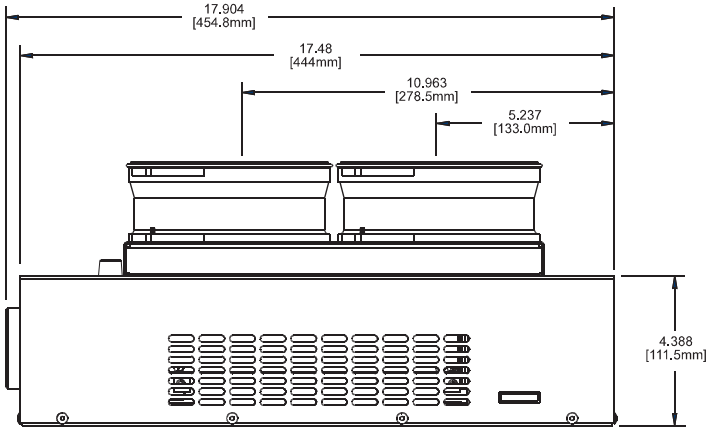
- Superior Beam Quality
- Low Noise
- Internal Mirror Design
- Extended Lifetime
- Designed for Fiber Optic Delivery
- Exceptional Warranty

Design

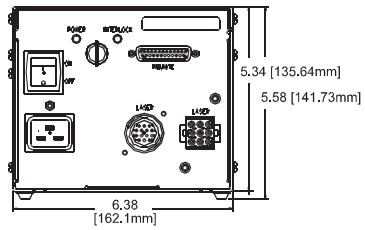
The 800 argon laser delivers a full 500mW of output power in multiline/multimode configuration as well as high output powers in the single line options. The 800 also offers improved thermal stability, longer life and low electronic and optical noise. The laser incorporates the latest in internal mirror tube technology assuring permanent beam alignment and eliminating contamination. NLC's design permits ease of servicing. The laser is also available with a remote cooling option for applications where fan vibration is a concern.

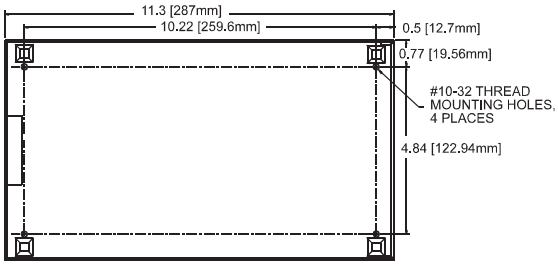
800 Laser Head





Power Supply





All dimensions in inches [mm]

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800 Specifications

Applications

- Flow Cytometry
- DNA Sequencing
- Confocal Microscopy
- Spectroscopy
- Hematology
- Optical Disk Mastering
- Lightshows & Displays
- Basic Research

Product Specifications[1,2,3]	800BL	800SM	800AL	800AM
Wavelength	488nm	488nm	458-514nm	458-514nm
Output Power	100mW	200mW	225mW	500mW
Power Stability (over 2 hours)	±1%	±1%	±1%	±1%
Spatial Mode	TEM_{00}	Multimode	TEM_{00}	Multimode
M^2	≤1.2		≤1.2	
Beam Diameter @ $1/e^2$ (mm)	0.83±5%	0.83±5%	0.85±5%	0.85±5%
Beam Divergence (mrad)	<1.0	<2.0	<1.0	<2.0
Polarization Ratio	>250:1	Random	>250:1	Random
Pointing Stability over 2 hours (µrad)	±30/±3°C	±30/±3°C	±30/±3°C	±30/±3°C
Noise (20Hz - 2kHz peak to peak)	0.1%	0.1%	0.1%	0.1%
Noise (20Hz - 20kHz peak to peak)	2.0%	2.0%	2.0%	2.0%
Noise (20Hz - 2MHz rms)[4]	1.0%	1.0%	1.0%	1.0%
Operating Parameters				
Voltage (Universal Input)	200-240VAC±10%			
Current	16 Amps Max.			
Frequency	47-63 Hz			
Phase	Single			
Air Intake (Standard / Remote Cooling[5])	450 / 250 CFM			
Air Intake Clearance	3.8cm (1.5in)			
Operating Temperature / Humidity	4-40°C (40-105°F) / ≤90%			
Storage Temperature / Humidity	-30-60°C (-22-140°F) / ≤100%			
Warm-up Period	10 min.			
Dimensions				
Laser Head	17.904" x 6.071" x 7.733"			
Power Supply	11.3" x 6.38" x 5.58"			
Weights				
Laser Head (Standard / Remote Cooling)	19.5 lbs (8.9 kg) / 14.5 (6.6 kg)			
Power Supply	7 lbs (3.18 kg)			

Notes

1. Specifications subject to change without notice.
2. When used with LDI 8470 or NLC 2270 power supply.
3. Measurements taken in light control after 5 minute warm-up.
4. 1% for single line wavelengths. 2% for multiline wavelengths.
5. Nominal air flow is 250 CFM. Use Kooltronic Model KBB49 or equivalent fan rated for 425 CFM free air flow and 2.7 inches of water. Hose length not to exceed three meters.

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