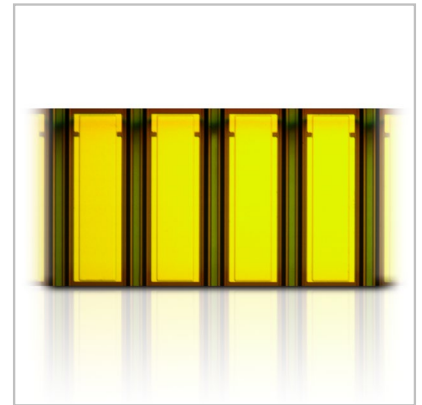


High Power Multi-Junction Pulsed Laser Diodes Arrays 905D1 SxxL3JTxx

Features

- Multi-junction devices up to 115 W
- 75 μm , 150 μm and 225 μm source size
- 3.2 W/A efficiency
- Arrays available with 2, 4, 8, 16 and 32-element devices.
- Available as bars or mounted on ceramics or substrates with individually-addressable or connected elements.
- Proven InGaAs / GaAs high reliability structure
- High power multi-junction structure for narrow far field.
- Excellent temperature stability
- Hermetic and custom designed package



Applications

- Range finding
- Surveying equipment
- Weapons simulation
- LiDAR
- Obstacle detection
- Medical

General Optical Characteristics per Element at $t_{RT} = 21^{\circ}\text{C}$, I_{FM}

	Min	Typ	Max	Units
Wavelength of peak radiant intensity λ	895	905	915	nm
Spectral bandwidth $\Delta\lambda$ at 50% intensity points		5		nm
Wavelength temperature coefficient		0.28		nm/ $^{\circ}\text{C}$
Beam spread				
Parallel to junction plane \parallel FWHM		10		Degrees
Perpendicular to junction plane \perp FWHM		23		Degrees
Parallel to junction \parallel/e^2		15		Degrees
Perpendicular to junction \perp/e^2		48		Degrees
Polarization ratio TE/(TE+TM)		>98%		

Typical Product Characteristics per Element at $t_{RT} = 21^{\circ}\text{C}$, $t_w = 100\text{ ns}$, $P_{rr} = 1\text{ kHz}$

Parameter	905D1SxxL3JT03	905D1SxxL3JT06	905D1SxxL3JT09
P_O at I_{FM}	40 W	80 W	115 W
Emitting area	85 x 10 μm	160 x 10 μm	235 x 10 μm
I_{TH}	300 mA	600 mA	800 mA
I_{FM}	13.5 A	27 A	40 A
Forward voltage at I_{FM}	9.5 V	11.8 V	13.2 V

Absolute Maximum Ratings

Maximum ratings	Limiting values
Peak reverse voltage	36 V
Pulse duration	150 ns
Duty factor	0.1%
Temperature	
- Storage	-55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$
- Operating	-40 $^{\circ}\text{C}$ to + 105 $^{\circ}\text{C}$

Figure 1:
Output power vs. forward current

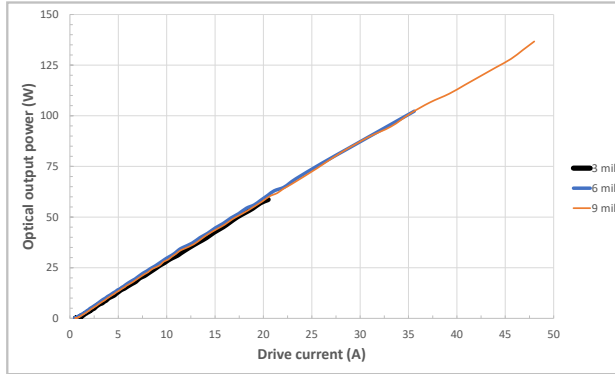


Figure 2:
Optical output power vs. temperature

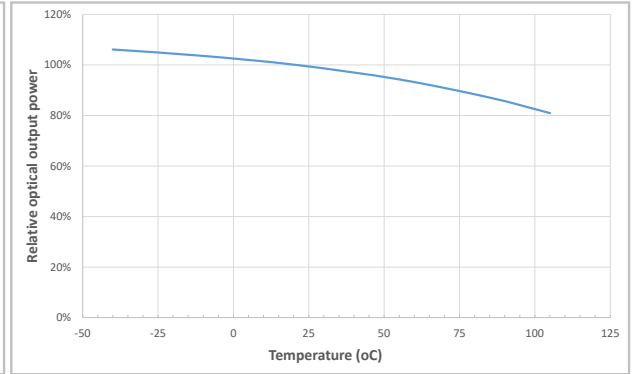


Figure 3:
Wavelength vs. temperature

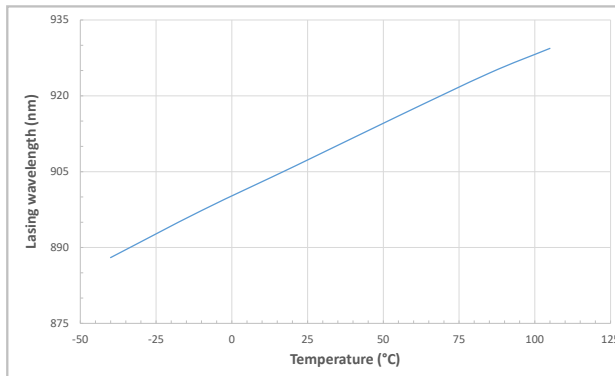


Figure 4:
Output power vs. cone half angle

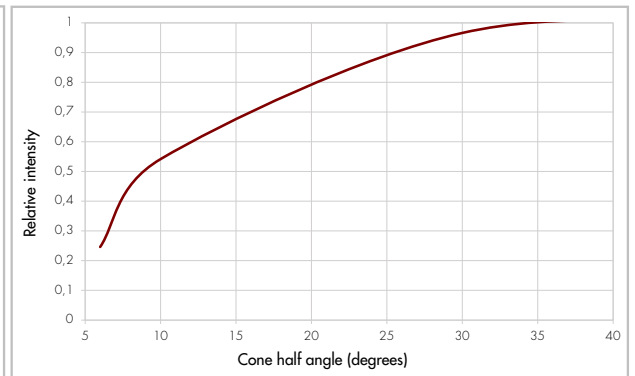


Figure 5:
Spectral intensity distribution

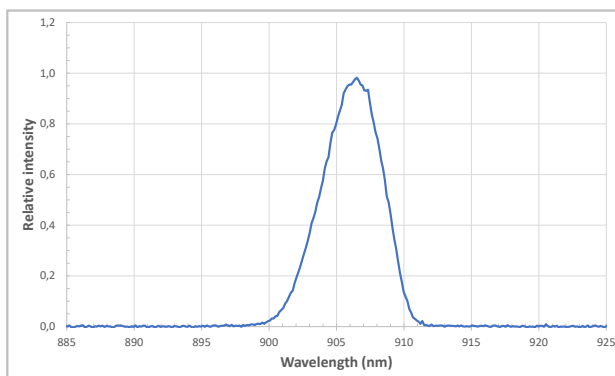


Figure 6:
Far field emission parallel and perpendicular to junction plane

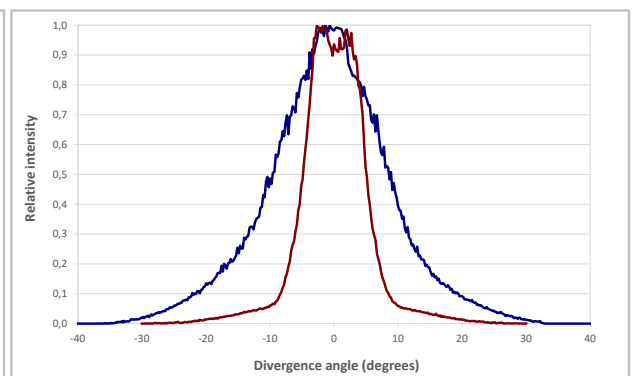


Figure 7:
Series static forward voltage (V_f) per element.

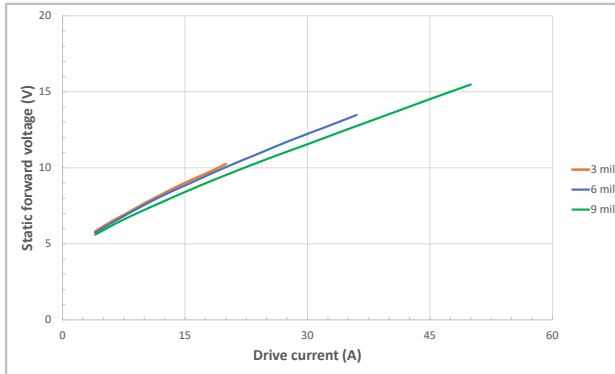


Figure 8:
Typical near field scan of triple junction lasers.

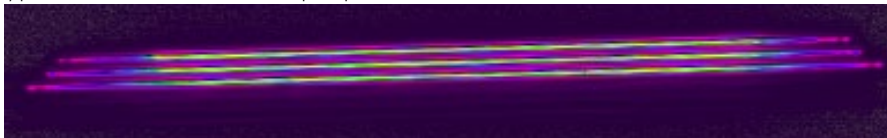


Figure 9:
Typical far field beam scan

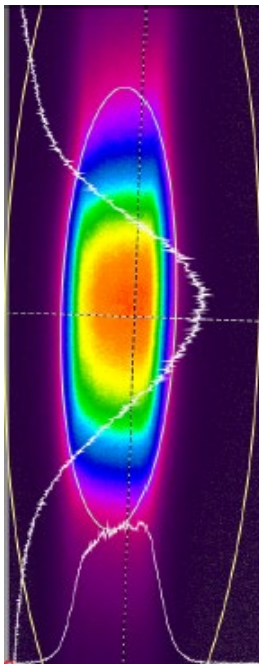
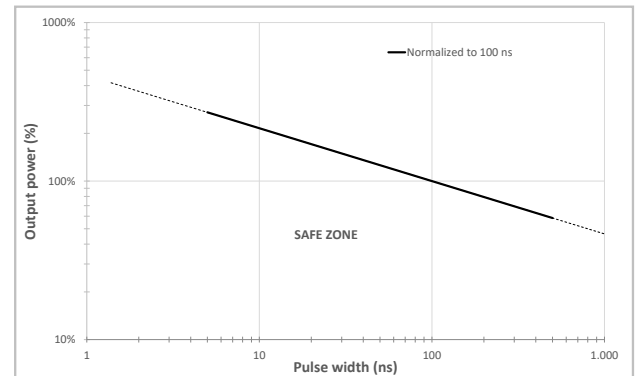
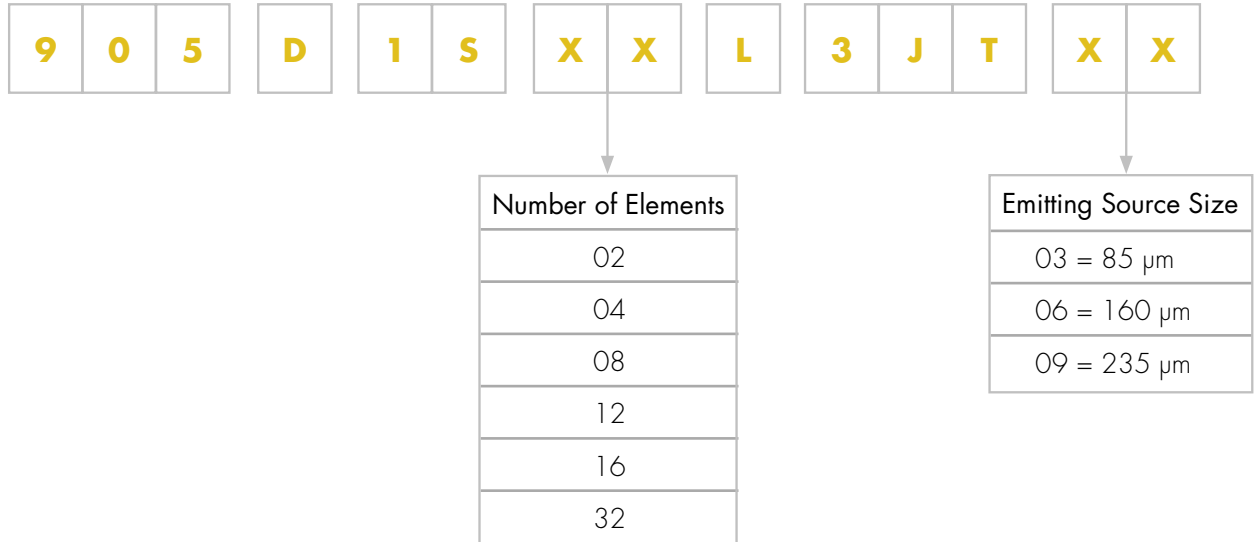


Figure 10:
Safe operating limits at maximum duty factor



Product Number Designations



Mechanical Details

Emitting Source Size	Pitch (μm)	Cavity Length (μm)
03 = 85 μm	250	750
06 = 160 μm	325	750
09 = 235 μm	400	750

Note:

Please contact us to discuss custom emitting source size, pitch, cavity length and custom ceramic or substrate with individually addressable or connected elements available.

Shipping Documentation

Bars can be shipped on blue tape on dicing loop or in shipping trays.

Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

Custom designed products are available on request.

Laser Safety

Personal Hazard:

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 "Safety of laser products".

Handling Precautions:

Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload.

