

SpectraTec RGB

White Light Laser Source



- **Individually controllable Red/Green/Blue lasers**
- **Multimode fiber with armored cable**
- **Ultra-high Illumination Intensity**
- **Optical Fiber options from 50 microns and up**
- **Integrated control, drive and protection circuits**

The SpectraTec RGB White Light Laser source is a compact, highly reliable illumination source that provides up to 750mW of RGB power via a multi or single mode optical fiber. Applications include; Endoscopy illumination, bio-imaging, medical devices, semiconductor inspection, machine vision, metrology inspection and scientific instrumentation systems. The system uses semiconductor laser technology, and can be customized for unique power or wavelength requirements. Control interfaces can be tailored to match your system control, GUI, monitoring and operational requirements.

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SpectraTec RGB Power Levels

Optical Specifications*	RGB Wavelength's			
Wavelength's	nm	450	520	638
Laser(s) Output Power (Max)**	mW	500	200	50

* Multimode 200 or 400 Microns (NA= 0.22) used for rated power levels

** Combined "White" laser power of 750mW, unique power & wavelength configurations are available. Please contact Blue Sky Research Sales for details

General Product Specifications: (w/200 μm Multimode Fiber)

Optical Parameter	Units	Specification			Conditions* All Laser Wavelengths
		Min.	Typ.	Max	
Power stability (1 hours)	%			5	All channels, 1 hrs, ΔT +/- 3°
Beam Aspect Ratio		0.9	1.0	1.1	Any channel, over beam path, 1/e2
Beam Co-alignment	μRad		Perfect		At exit aperture
Laser(s) Shutdown Time	μs		20	50	
RoHS Compliant**		Yes			All parts, assemblies and packaging
ESD Rating		Level 4			

* All data taken at constant temperature unless specified otherwise

** Certificate available upon request

General Electrical Specifications

Electrical Specifications	Units	Specifications
Operating Voltage*	V	8.0 ± 0.5 and 5V ± 0.5
Operating Current	A	2A max for the 6.5V line - 6A max for the 5V line

General Mechanical Specifications

Mechanical Parameter	Units	Specification	Comments
SpectraTec X Housing		Aluminum	L x W x H, see drawing for details
SpectraTec X Dimensions	mm	165 x 125 x 33.5	
Fiber Type		200 or 400 micron	Other fiber types available*
Connector type		FCPC/SMA	Other connector types available*
Output Fiber Cable		3mm buffer or armored	50 – 100cm lengths available
Interface connector		37 pin D-Sub	On Spectra Tec housing

* Through Bulkhead fiber optics adaptor available. Please contact Blue Sky Research Sales for details on adaptors, fiber, cabling, and connector types

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General Electrical Specifications

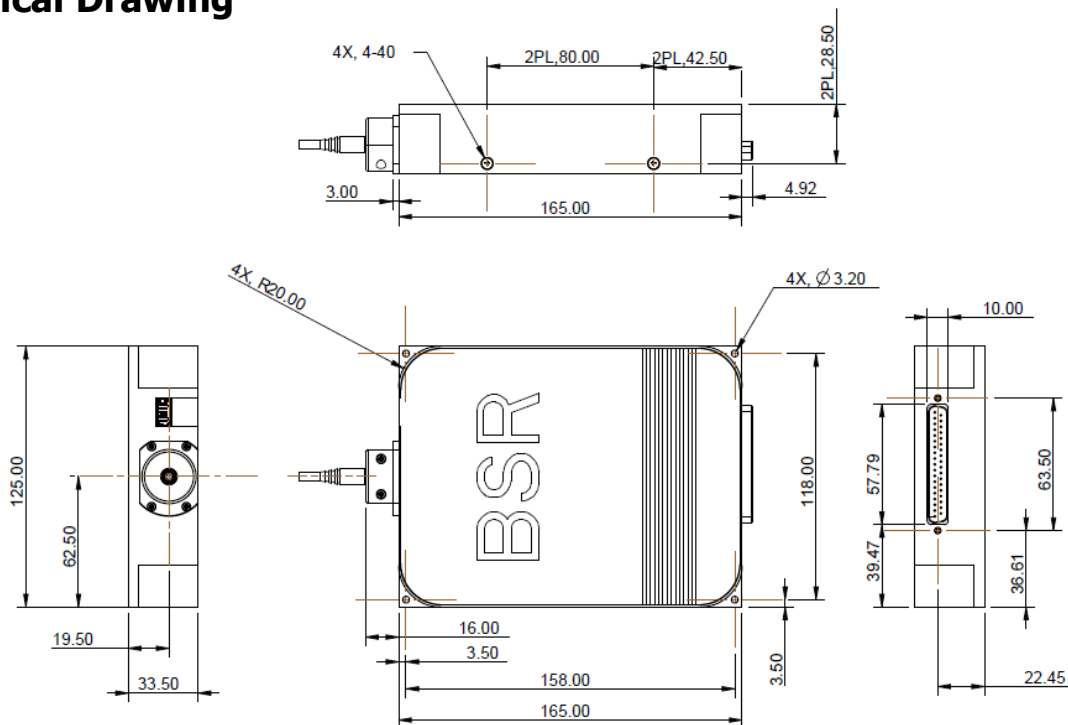
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Mechanical Drawing



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Electronics & Control Interface

A key feature of the SpectraTec RGB White Light Laser Source is that each laser can be activated, adjusted and controlled individually. All lasers can be on at the same time while also maintaining individual power stabilization. The SpectraTec RGB module has a 37 pin D-sub male connector and is provided with a 50 – 100cm cable terminated in a 37 pin D-Sub Female connector. Custom OEM interface options can be developed.

P	Name	Direction	Comment
J1-1	GND	Power Input	TEC Gnd
J1-2	GND	Power Input	TEC Gnd
J1-3	GND	Power Input	TEC Gnd
J1-4	GND	Power Input	TEC Gnd
J1-5	Laser 4 - Status TEC OK	Digital Output	Output HI when TECs is in temp range
J1-6	No Connection	NA	
J1-7	GND	Power Input	System Gnd
J1-8	Laser 4 - Enable	Digital Input	Active HI
J1-9	Laser 4 - PD Monitor I	Analog Output	Photodiode Monitor Voltage
J1-10	Laser 3 - Power Adjust	Analog Input	Output Power Adjustment / Modulation
J1-11	Laser 3 – LD Monitor	Analog Output	Laser Drive Current Monitor Voltage
J1-12	GND	Power Input	System Gnd
J1-13	No Connection	NA	
J1-14	No Connection	NA	
J1-15	Laser 1 - Power Adjust	Analog Input	Output Power Adjustment / Modulation
J1-16	Laser 1 – LD Monitor	Analog Output	Laser Drive Current Monitor Voltage
J1-17	GND	Power Input	System Gnd
J1-18	GND	Power Input	System Gnd
J1-19	GND	Power Input	System Gnd
J1-20	5V	Power Input	Power for TECs
J1-21	5V	Power Input	Power for TECs
J1-22	5V	Power Input	Power for TECs
J1-23	5V	Power Input	Power for TECs
J1-24	Laser 3 - Status TEC OK	Digital Output	Output HI when TECs is in temp range
J1-25	Laser 1 - Status TEC OK	Digital Output	Output HI when TEC is in temp range
J1-26	Laser 4 - Power Adjust	Analog Input	Output Power Adjustment / Modulation
J1-27	Laser 4 – LD Monitor	Analog Output	Laser Drive Current Monitor Voltage
J1-28	GND	Power Input	System Gnd
J1-29	Laser 3 - Enable	Digital Input	Active HI
J1-30	Laser 3 - PD Monitor I	Analog Output	Photodiode Monitor Voltage
J1-31	No Connection	NA	
J1-32	No Connection	NA	
J1-33	GND	Power Input	System Gnd
J1-34	Laser 1 - Power Adjust	Analog Input	Output Power Adjustment / Modulation
J1-35	Laser 1 – LD Monitor	Analog Output	Laser Drive Current Monitor Voltage
J1-36	8.0V	Power Input	Power for System
J1-37	8.0V	Power Input	Power for System

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Our Sales or Applications Engineers will be happy to help you determine the best product choice to meet your requirements and provide you with detailed performance specifications on individual lasers. They can also assist you with options, system specifications or device customization your system may need.

**Please contact Blue Sky Research, (408) 941- 6068, or visit our Website;
www.BlueSkyResearch.com or email us at sales@blueskyresearch.com**

Blue Sky Research is an ISO 9001:2015 certified company

This component does not comply with the Federal Regulations (21 CFR Subchapter1) as administered by the Center for Devices and Radiological Health. Purchaser acknowledges that his/her products must comply with these regulations before they can be sold to a customer. The output light from laser diodes is harmful to a human body even if it is invisible. Avoid looking at the output light of a laser directly or even indirectly through a lens during operation. Observance of operation should be through a TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products. Blue Sky Research follows a policy of continuous improvement. Specifications are subject to change without notice.