

Founded in 1995, CrystaLaser manufactures high quality, compact DPSS and semiconductor laser solutions for research and commercial applications. The company offers a comprehensive line of CW and Q-Switched lasers covering a wide wavelength range from 260nm to 2um. In addition, the customer support and applications team with individuals having more than 20 years of laser experience only underscores the fact that CrystaLaser is dedicated to providing customers with the best performance and support.

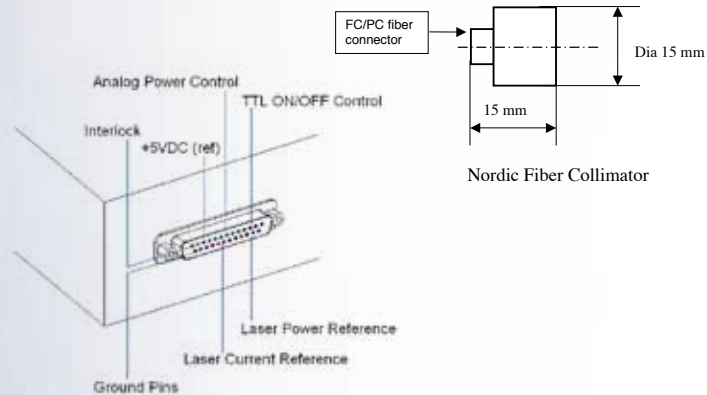
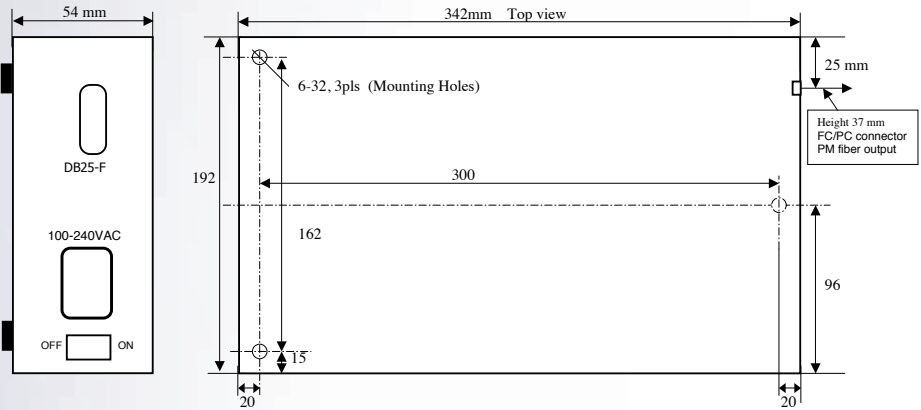
## CrystaLaser

4750 Longley Lane  
Suite 205  
Reno, NV 89502 USA

**775.348.4820**

fax 775.348.7047

e-mail  
sales@crystalaser.com



## System parameters

Beam to Beam overlap	<50urad
Beam pointing stability	<20urad
Noise <sup>1</sup>	<0.5% (RMS 1Hz to 20MHz), <1.0% (RMS 1Hz to 50kHz)
Stability	<2% (over 24 hours)
M <sup>2</sup>	<1.2
Beam diameter	0.8mm (+/-0.15mm)
Beam Symmetry	>90%
Polarization ratio	>100:1 Vertical linear polarization
TTL rise/fall time <sup>2</sup>	<3ns - <72us (10% to 90%)
Warm up time <sup>3</sup>	<120s (system/cold start)
Input voltage	90VAC – 250VAC (50/60Hz), 12VDC option available
Input current	<1A
Input power	<125W

<sup>1</sup> & <sup>2</sup> Depending on model & options

<sup>3</sup> Optimum performance in 10minutes

## Environmental

Operating temperature	10° - 35°C
Operating humidity	Non-condensing
Operating pressure	Atmospheric





NEW!

# NORDIC COMBINER

First of its Kind, Full Spectrum Laser System

- More Lasers
- More Wavelengths
- Proven Design
- Ideal Performance
- Smallest Form-Factor





### Applications:

- Confocal Microscopy
- Flow Cytometry
- Fluorescence
- Genomics
- PALM, STORM, TIRF
- Rhodopsin Stimulation
- Material Inspection
- Pharmaceutical Research

CrystaLaser has once again taken the lead with its ultra-compact technology, and is now offering this five-laser solution that is adaptable to most any application.

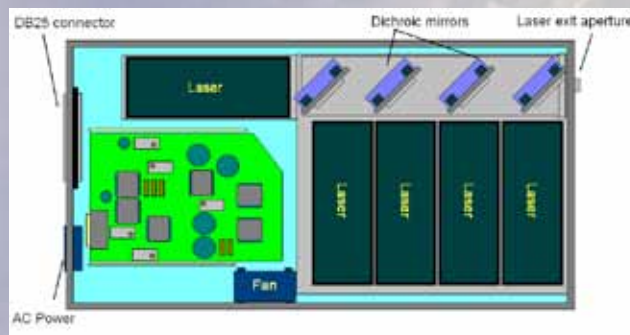
## Common Fluorochromes

Wavelength	Associated Fluorochrome			
375	Blancophor SV	Calcein Blue	Dapoxyl	LysoSensor Blue
405	Alexa Fluor 405	Cascade Blue	DyLight 405	Pacific Blue
445	Alexa Fluor 430	AmCyan	Lucifer Yellow	Sevron Orange
473	AcGFP1	Fura Red	Midoriishi-Cyan	Procion Yellow
488	Alexa Fluor 488	Cy2	DyLight 488	Fluorescein
523	Astrazon Red 6B	Magdala Red	PhiYFP	Sulphorhodamine B
527	Ethidium Homidimer	RH 237	TurboYFP	ZsYellow
532	Alexa Fluor 532	LysoTracker Yellow	NeuroTrace 530	Propidium Iodide
542	BODIPY 542	CoroNaRed	Kusabira-Orange	mBanana
555	Alexa Fluor 555	Cy3	DsRed	Rhodamine
561	Alizarin	Lissamine Rhod	mTangerine	Phycocerythrin
593	mCherry	mPlum	mRaspberry	Texas Red
633	Alexa Fluor 633	Allophycocyanin	APC-Cy7	Nile Blue
640	DilC1	NeuroTrac 640	TO-PRO-3	TOTO-3
647	Alexa Fluor 647	BODIPY 650	Cy5	DyLight 649
660	Alexa Fluor 660	BODIPY 665	SYTO 63	
671	Alexa Fluor 680	Cy5.5	DyLight 680	
690	Alexa Fluor 680	Cy5.5	DyLight 680	
750	Alexa Fluor 750	Cy7	DyLight 750	Indotricarbocyanine
785	Alexa Fluor 790	DyLight 800	IRDye 800	

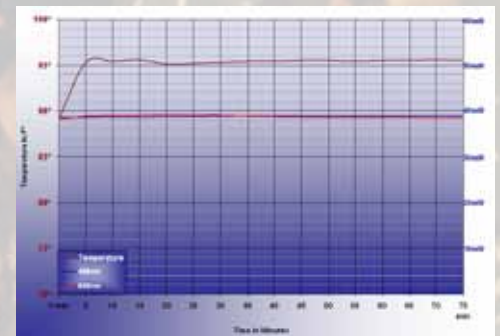
Because CrystaLaser has one of the largest wavelength selections in the industry, you can configure the Nordic Combiner virtually any way you require. Each laser can be operated independently or in conjunction with any number of other lasers. The Nordic Combiner's ultra-compact form-factor uses the highest efficiency laser cavity designs that technology will allow. The long term stability comes from extensive engineering work and material testing to insure that the mechanics do not change over the lifetime of the system. This revolutionary design's performance is unmatched.

The Nordic Combiner uses a proprietary thermal management system that rapidly brings the internal baseplate temperature to ~35°C (95°F) which provides thermal isolation from the outside environment. At this temperature the optical power is completely stabilized, and long term power drift is almost non-existent.

*Data from CrystaLaser model NLC-488-640 Nordic Combiner*



Inside view of the Nordic Combiner



Optical Power Stability



You can combine up to five different laser heads into one Nordic Combiner\*. This system will allow a fiber coupled or free space output, and can be optimized to suite your optical design.

**Fiber Coupled Nordic Combiner**

- Single-Mode Fiber
- Multi-Mode Fiber
- Fiber Collimation

The Nordic Fiber Collimator is for Nordic Combiner configurations that use single-mode fiber patchcords and require re-collimation. This exclusive design provides broad spectrum chromatic correction that will allow all wavelengths to propagate in a nearly identical fashion. When combined with a fiber patchcord, these collimators are ideal for applications that require a free space beam in a confined or remote area.

**Laser parameters**

Wavelength	375nm	405nm	445nm	473nm	488nm
Power	>20mW	>120mW	>50mW	20(150)mW	>50mW
Fiber rated power (single-mode)	10mW	50mW	30mW	100mW	30mW
Fiber rated power (multi-mode)	15mW	75mW	40mW	130mW	45mW
Spectral linewidth	<0.8nm FWHM, <4nm @-60dB				
Center Wavelength	+/-4.0nm				

Wavelength	523nm	527nm	532nm	542nm	555nm
Power	>200mW	>200mW	>500mW	>75mW	>200mW
Fiber rated power (single-mode)	150mW	150mW	350mW	60mW	150mW
Fiber rated power (multi-mode)	180mW	180mW	400mW	70mW	180mW
Spectral linewidth	<0.4nm FWH, <1nm @-60dB				
Center Wavelength	+/-1.0nm				

Wavelength	561nm	593nm	633nm	642nm	647nm
Power	>250mW	>75mW	>50mW	>100mW	>100mW
Fiber rated power (single-mode)	150mW	60mW	30mW	60mW	60mW
Fiber rated power (multi-mode)	180mW	70mW	40mW	70mW	70mW
Spectral linewidth	<0.4nm FWHM		<0.8nm FWHM		
Center Wavelength	+/-1.0nm		+/-4.0nm		

Wavelength	658nm	671nm	690nm	730nm	750nm
Power	>100mW	>300mW	>50mW	>50mW	>50mW
Fiber rated power (single-mode)	60mW	200mW	35mW	35mW	35mW
Fiber rated power (multi-mode)	70mW	225mW	45mW	45mW	45mW
Spectral linewidth	<0.4nm FWHM		<0.8nm FWHM		
Center Wavelength	+/-1.0nm		+/-4.0nm		

Wavelength	785nm	808nm	830nm	852nm	914nm	940nm
Power	>120mW	>120mW	>100mW	>100mW	>100mW	>200mW
Fiber rated power (single-mode)	85mW	85mW	80mW	80mW	80mW	150mW
Fiber rated power (multi-mode)	90mW	90mW	85mW	85mW	85mW	180mW
Spectral linewidth	<0.8nm FWHM, <4nm @-60dB					
Center Wavelength	+/-4.0nm					

\*Laser combinations can be up to five lasers, but cannot include more than two DPSS systems in any combination.