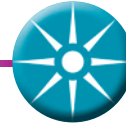




**LASER 2000**

The Future of Photonics

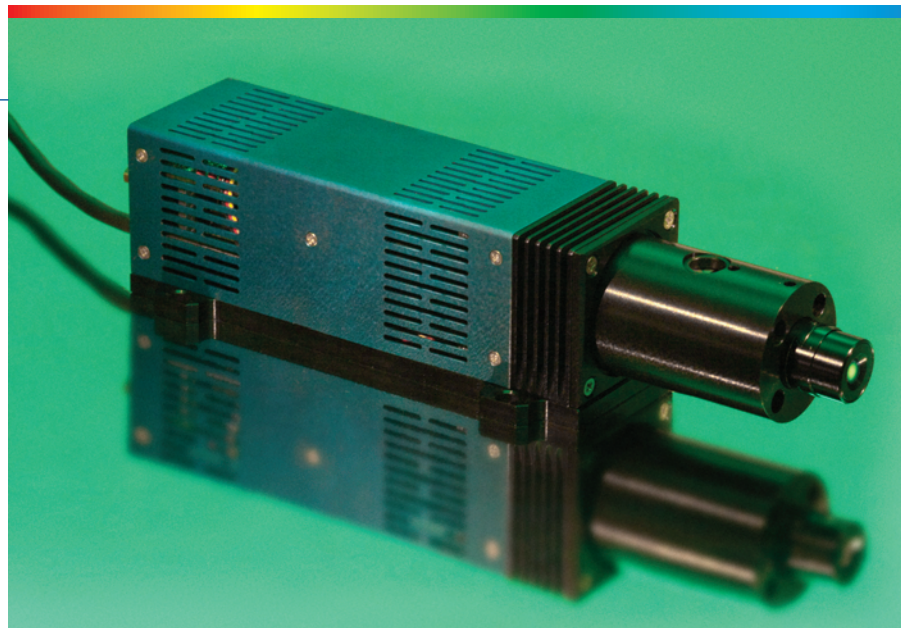


ILLUMINATION

# Lasiris™ Green PowerLine Laser

## FEATURES

- High power, high visibility, high contrast laser
- External focusing
- Uniform, non-Gaussian intensity distribution along the line
- ESD, over-temperature, and reverse-polarity protection

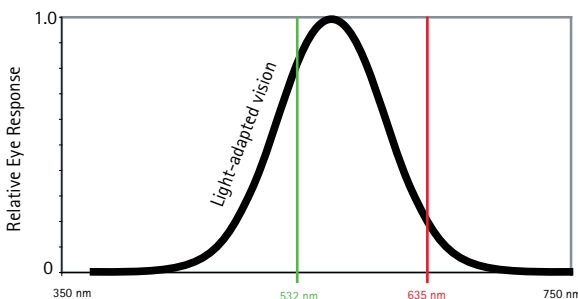


## THERMOELECTRICALLY COOLED GREEN POWERLINE LASER

StockerYale's Lasiris™ Green PowerLine structured light laser offers a thermoelectric system and fan that maintains a constant laser diode temperature, resulting in better wavelength, power, and pointing stabilities. The Green PowerLine design makes focusing even easier with the focus adjusting screw located directly on the body of the laser.

## HIGH VISIBILITY, HIGH CONTRAST GREEN BEAM

A green beam can provide better contrast on red hot metal or wood. Another advantage is that a green beam is more visible to the human eye than red, thereby making the relative eye response to the green much higher. For the same power, a green beam (532nm) will be better perceived by the human eye than a red beam (635 nm).



## APPLICATIONS

- Hot steel inspection
- Glass inspection
- Outdoor applications
- Positioning
- R&D

## SOME AVAILABLE PATTERNS

### Standard

Single Line



Single Dot



Crosshair\*



### Upon Request

Parallel Lines



Dot Line



Single Square



7x7 Dot Matrix



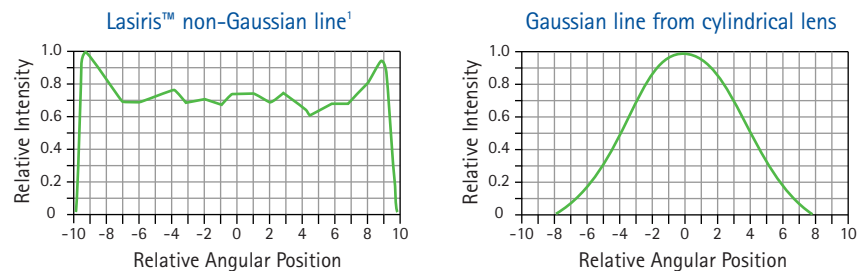
See ordering information section for more patterns or call us.

\* Lasiris™ crosshair projectors have a single optical component, unlike conventional crosshairs that are formed either by using two lasers or by splitting and recombining one beam to form a cross.

## UNIFORM INTENSITY

Laser line patterns are often generated by cylindrical optics that produce a Gaussian line profile with a bright center and fading ends. Lasiris™ patented optics spread the light into an evenly illuminated line with sharp ends.

### LINE INTENSITY PROFILE ALONG LINE LENGTH



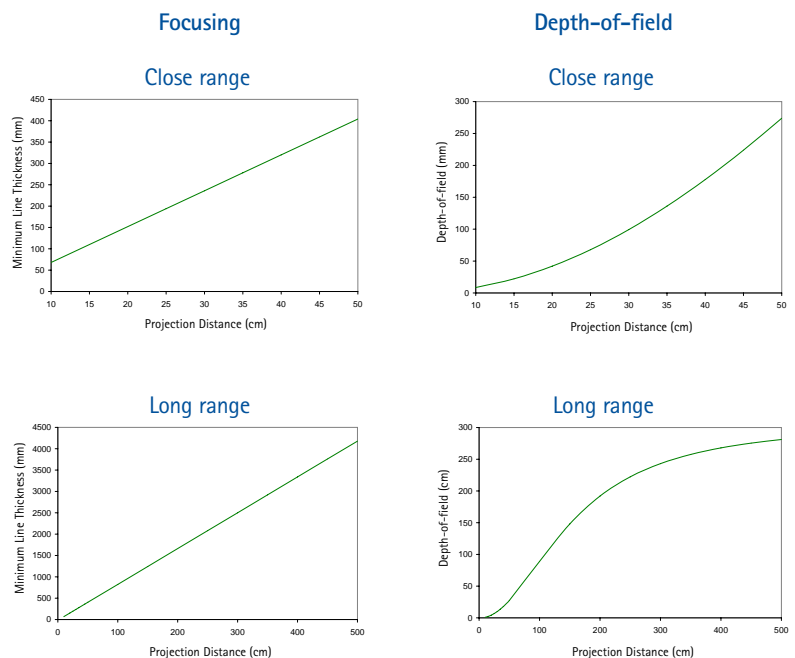
Relative intensity vs. angular position along line length

1) Typical profile

## FOCUSING PERFORMANCE

The following figures show the typical focusing and depth-of-field performance of the Green PowerLine Laser. The focus charts indicate the minimum line thickness (at  $1/e^2$ ) achievable for a specific projection distance. The depth-of-field is defined as twice the distance over which the thickness of the line has increased by a factor of  $\sqrt{2}$ .

### FOCUSING AND DEPTH-OF-FIELD PERFORMANCE



## LASERS AND EYE SAFETY

Our lasers can comply with CDRH and IEC classification and fall in different safety classes depending on output power, wavelength and fan angle. According to CDRH 21CFR1040.10 regulations, they can be classified Class II, Class IIIa, or Class IIIb.

According to IEC 60825-1 regulations, they can be classified Class 1, 1M, 2, 2M, 3R, or 3B. For Class 1M and 2M lasers, viewing the laser output with certain optical instruments (magnifiers, binoculars, etc.) may pose an eye hazard.



**CAUTION:** It is important to follow laser safety rules and wear appropriate protective eyewear when working around lasers. Use of controls, adjustments or performance of procedures other than those specified in the instruction manual may result in hazardous radiation exposure.

## SPECIFICATIONS

### OPTICAL SPECIFICATIONS

Output power*	50, 100, 150, 200 mW
Wavelength	532 nm
Intensity distribution	TEM <sub>00</sub> (Gaussian profile)
M <sup>2</sup> (typical)	1.6
Polarization ratio (typical)	4:1
Line thickness (focus)	See focus charts
Bore sighting	< 3 mrad

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20 to +45°C
Storage temperature	-40 to +70°C
Operating pressure & humidity	Atmospheric/ non-condensing

### OPTIONS

High polarization ratio: 100:1
Separate driver

\* Green laser do not operate in CW mode and exhibit a high frequency "Q-Switch" phenomenon. Please refer to the StockerYale Application Note on our website.

## ELECTRICAL SPECIFICATIONS

Power supply voltage	5 VDC ± 0.5 VDC; An adapter is available to supply the unit from 110/240 V AC line
Power supply current	3 A at ambient temperature; 4 A maximum
Built-in protections	Entire product: ESD, over-voltage up to 12 V, reverse polarity of power supply. Laser diode: over-heating, over-current
Laser diode operating temperature	25° C ± 0.5°C (adjusted in factory)
Max. beam power	User adjustable (trim potentiometer on the back panel)
Beam modulation	External, through a DB-9 connector on the back panel
Monitoring	Laser temperature, laser current, PD current, through the DB-9 connector

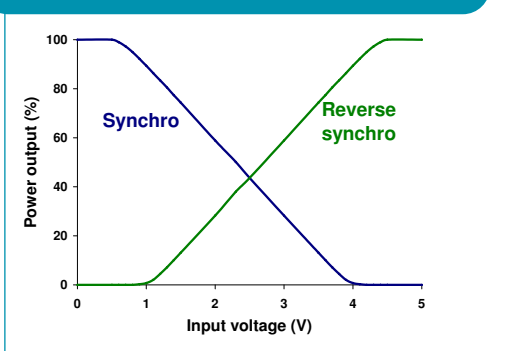
Modulation options (see figure below)  
**Standard : Synchro (code S)** Input voltage = 0V -> laser "ON" (max. power)  
 Input voltage = 5V -> laser "OFF"

**Reverse : add R (code RS)** Input voltage = 0V -> laser "OFF"  
 Input voltage = 5V -> laser "ON" (max. power)

### Pulsed modulation available for both options

Maximum frequency	< 100 Hz
Rise/Fall time	< 1 ms

### POWER ADJUSTMENT CURVES



The curves are typical and can vary depending on the laser model.

The shape of the curves can be customized:

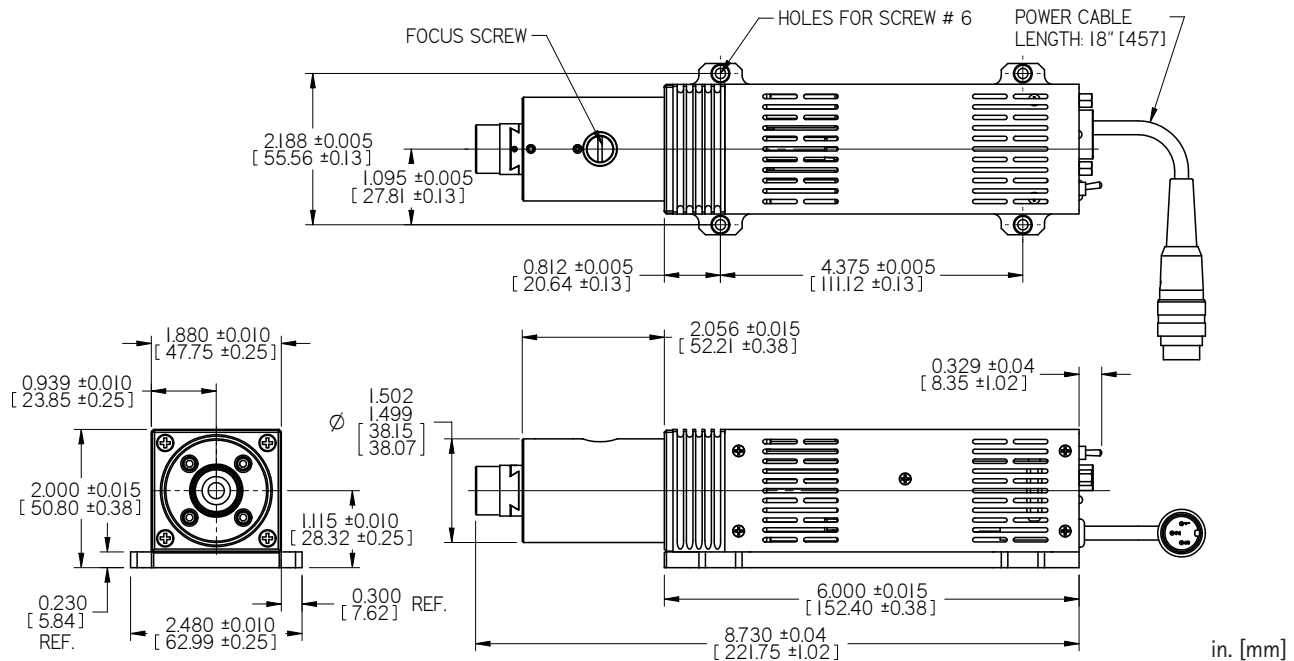
- Different slope
- Different voltages giving maximum power or no power

## ORDERING INFORMATION

Green PowerLine Lasers are covered under a one-year warranty (parts and labor). To order a Green PowerLine Laser, use the following code: GPL - Pattern (Interbeam Angle) - Wavelength - Power - Fan Angle. E.g., **GPL- 503L(1.2°) - 532 - 100 - 5°**. Contact us for more details.

PATTERN		INTERBEAM ANGLE <sup>(a)</sup>	WAVELENGTH	DIODE POWER	FAN ANGLE
501L or 501D	1 line or 1 dot	-	532 nm	50, 100, 150, 200 mW	1° <sup>(b)</sup>
501H	crosshair	-	(a) At 532 nm		5°
503L or 503D	3 lines or 3 dots	1.2°, 3.95°, 9.23°	(b) Not standard for crosshair projectors		10°
505L or 505D	5 lines or 5 dots	0.18°, 1.23°			15°
509L or 509D	9 lines or 9 dots	0.09°, 0.06°			20°
511L or 511D	11 lines or 11 dots	1.2°			30°
515L or 515D	15 lines or 15 dots	1.8°			45°
519L or 519D	19 lines or 19 dots	0.61°			60°
533L or 533D	33 lines or 33 dots	0.07°, 0.30°			75°
599L or 599D	99 lines or 99 dots	0.118°			Custom
Custom (please call us)					

## DIMENSIONAL DIAGRAMS



Information and specifications contained herein are deemed to be reliable and accurate. StockerYale reserves the right to change these specifications at any time without notice.

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