

ILLUMINATION

Lasiris™ DLS and DLSC Lasers

FEATURES

- Two year warranty
- Elliptical or circular beam
- Wide range of wavelengths and powers
- Focusable
- ESD, over-temperature, over-voltage, and reverse-polarity protection
- Rugged, shock and vibration resistant design



ELLIPTICAL AND CIRCULAR SPOT PROJECTORS

StockerYale's Lasiris™ DLS and DLSC lasers produce focusable, high quality beams, perfect for alignment and aiming applications. The DLS projects an elliptical spot having a 1:3 ratio of the minor to major axis. For certain applications, a circular beam is more effective, since the optical performance of a system of lenses is optimized when the beam is round. For such uses, the DLSC is available, projecting a diffraction-limited circular beam that does not require shape correction with a series of lenses.

Lasiris™ DLS and DLSC lasers can replace HeNe lasers in many applications. They offer the same high reliability found in our well-known SNF series. The lasers have fully protected diode electronics, complete with passive internal heat dissipation, a rugged housing, and reverse-polarity, over-voltage, over-temperature and ESD protection.

APPLICATIONS

- Laboratory experimentation
- Alignment and positioning
- Event detection
- Dimensional scanning
- Metrology
- Edge detection
- Analysis
- Optical fiber testing

OPTIONS AND CUSTOM UNITS

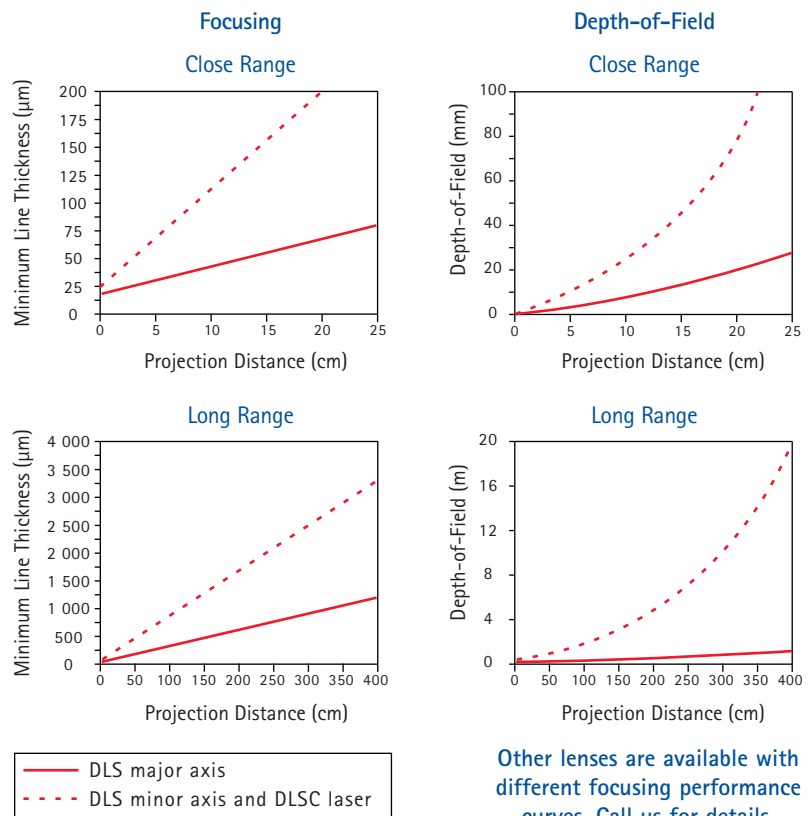
The lasers are available with options allowing you to strobe or control their output electronically (refer to the Pulsing and Power Adjustment section in this brochure). The cable length and model can be customized according to your needs. Some accessories are available as well. Please contact our application engineers for further details concerning specific requests, since custom units can be built for specialized applications.

FOCUSING PERFORMANCE

The DLSC typically deviates from circularity by no more than 1.2 to 1 ratio of the major to the minor axis. For the DLS, the spot is elliptical (1:3 ratio of axes) because the laser diode has a rectangular aperture. The following figures show the typical focusing and depth-of-field (at $1/e^2$) performance of the DLS and DLSC spot projectors. The solid lines on the graphs apply to the major axis of the DLS and the dotted lines apply to the DLSC and to the minor axis of the DLS.

The focus charts indicate the minimum spot thickness (at $1/e^2$) achievable for a specific projection distance. The depth-of-field is defined as twice the distance over which the spot thickness has increased by a factor of $\sqrt{2}$.

FOCUSING AND DEPTH-OF-FIELD PERFORMANCE



The smallest achievable beam width can be determined using these focus charts. However, the laser can also be adjusted to project a wider spot at a given projection distance, or collimated for minimum divergence. The focus is adjustable with our C-Thru Focus key, or the focus can be set at the factory. By specifying the desired spot diameter and working distance, the laser can be preset to your precise requirements. A collimating focal lens is available on request.

LASERS AND EYE SAFETY

DLS and DLSC lasers can comply with CDRH and IEC certification. Lasers fall in different safety classes depending on output power, wavelength, and fan angle.

According to CDRH 21CFR1040.10 regulations, they can be classified as Class II, IIIa, or 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.

Call us, or visit our website for further details.

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

MECHANICAL SPECIFICATIONS

Weight	DLS: 54 g, DLSC: 60 g
Dimensions	See dimensional diagram
Housing material	Black anodized aluminum

OPTICAL SPECIFICATIONS

Output power	1 to 150 mW, varies with model
Wavelength	635 to 1550 nm, varies with model
Spot diameter	See focus charts
Bore sighting	<math><3\text{ mrad}</math>

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-10°C to 48°C with bracket
Wavelength drift	0.25 nm/°C typical
Over-temperature protection	Built-in: 48°C

ELECTRICAL SPECIFICATIONS: POWER SUPPLY

Input voltage	5 - 6 Vdc Optional 9,12,24 Vdc, 115/220 VAc
Connector type	Male phono-jack 3.5 mm ϕ or custom
Slow start time delay	10 μsec
Reverse-polarity & over-voltage protection	

STANDARD OPTIONS

POWER OPTIONS

Power Adjustment Potentiometer

The laser power can be easily changed by adjusting an optional built-in potentiometer with a small screwdriver. Code "P".

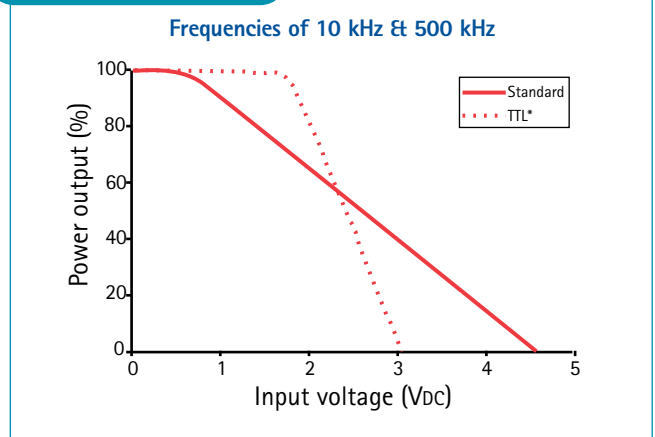
Pulsing & Power Adjustment

The power can be modulated or pulsed using an external signal. Input voltage of 0 Vdc: "on", 5 Vdc: "off" (or can be reversed). See figure below.

- Standard S: 10 kHz FS*: 500 kHz
 - TTL T*: 10 kHz FT*: 500 kHz
- 2 MHz available.

Impedance	> 1 k Ω
Rise/Fall time	10 μsec for 10 kHz, 0.3 μsec for 500 kHz

POWER CURVES



*Not available on all models.

The standard slope can be modified.

SEPARATE ELECTRONICS OPTION

The electronics of the laser can be separated from the main unit. See diagram "DLS and DLSC with separate electronics option" on the next page for details. Code "SD".

ORDERING INFORMATION

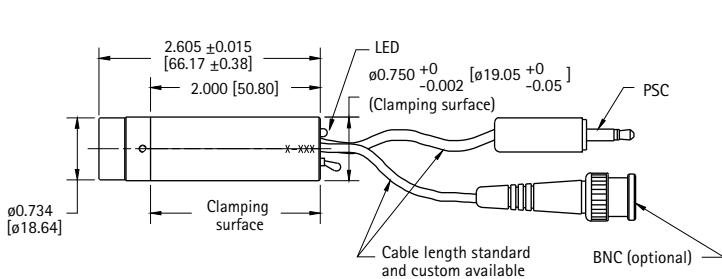
Lasers are covered under warranty (parts & labor) for 2 years (DLS) and 1 year (DLSC). To order, use the following code: DLS or DLSC - Wavelength & Power Option (if applicable) - Diode Power - Separate Electronics option (if applicable). E.g. **DLS-635T-1-SD**.

PRODUCT CODE	DLS WAVELENGTHS & POWER	DLSC WAVELENGTHS & POWER
DLS (elliptical spot projector)	635 nm 1, 5, 10, 15, 35 mW	635 nm 1, 5, 10, 15, 35 mW
DLSC (circular spot projector)	660 nm 1, 5, 10, 20, 35, 50, 100 mW	660 nm 1, 5, 20, 35, 50 mW
	690 nm 20, 35 mW	690 nm 20, 35 mW
	785 nm 20, 35, 75 mW	785 nm 20, 35, 75 mW
	830 nm 30, 100, 150 mW	830 nm 100, 150 mW
	Custom	Custom

Other wavelengths and diode powers available. Please call us for more details.

DIMENSIONAL DIAGRAMS

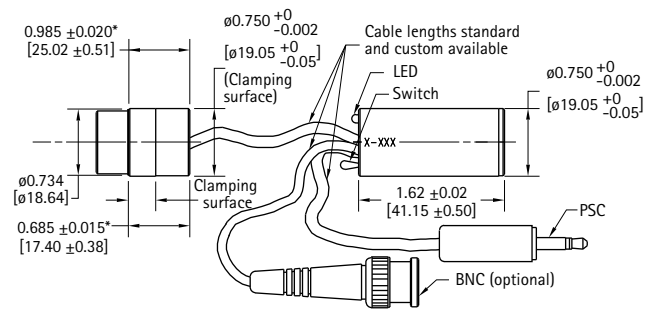
DLS AND DLSC PROJECTORS



*Add 0.325 [8.26] for DLSC lasers

Some combinations of specifications may result in different dimensions.

DLS AND DLSC WITH SEPARATE ELECTRONICS OPTION



*Add 0.325 [8.26] for DLSC lasers

in. [mm]

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.

