TELEDYNE | FLIR Defense

NIR VCSEL

Compact VCSEL Based Laser Illuminators

APPLICATIONS

HANDHELD

GIMBAL

UNMANNED

ROBOTICS



CLI-TO (100 mW) CLI-650 (650 mW)

FLIR's NIR laser illuminators are based on proprietary laser diode technology and achieve superior illumination quality for improved image resolution with higher signal-to-noise ratios. 100mW and 650 mW models are available to provide high brightness illumination in 1-3° spot size.

FLIR's proprietary high power Vertical-Cavity, Surface-Emitting Laser (VCSEL) arrays provide uniform spatial illumination in a custom defined illumination pattern with low speckle, while delivering light weight, high efficiency, and high reliability. The CLI-TO and CLI-650 are ready to support your mission.

FEATURES

NIR ILLUMINATION

LOW DIVERGENCE BEAM

WORKS WITH CCD, CMOS AND INGAAS IMAGING SYSTEMS

CONTINUOUS AND CAMERA SYNCHRONIZED OPERATION

SUPERIOR BEAM QUALITY WITH LOW SPECKLE

For more information contact:
VCSEL@Teledyne.com

SPECIFICATIONS

Parameter	CLI-TO	CLI-650
Output Laser Power	100 mW	<500 mW
Wavelength	850 nm	860 nm
Power Efficiency	35%	30%
Part Weight	1.6 g	3.6 g
Beam Divergence	4°	3°
Operating Voltage	2.2 V	1.8 V
Operating Current	140 mA	830 mA
Classification	Class 3B Laser	Class 3B Laser



340-meter, moonless night, commercial CMOS camera, no laser illumination



340-meter, moonless night, commercial CMOS camera, CLI-650 illumination



This document does not contain any export-controlled information. Specifications are subject to change without notice.

This product is subject to United States export regulations and may require US authorization prior to export, reexport, or transfer to non-US persons or parties. Diversion contrary to US law is prohibited. ©2025 Teledyne FLIR Defense, Inc. All rights reserved.

Revised on 12/15/25
NIR-CLI-650_CLI-TO Datasheet_LTR_25-0903

For more information contact:
VCSEL@Teledyne.com