



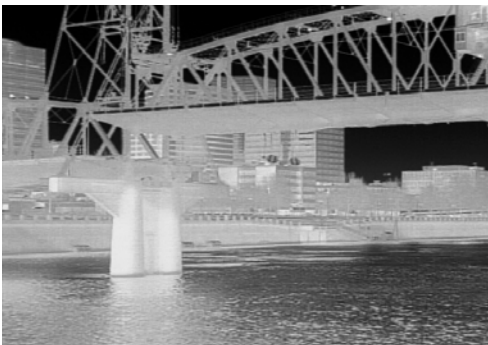
NEUTRINO™ INTEGRATED SOLUTIONS

Neutrino™ LC/CZ 19-290

FLIR is now offering Neutrino Integrated Solutions – Our best MWIR cooled camera cores now with FLIR's own zoom lenses, a cost-effective solution with superior performance and faster time to market. FLIR zoom lenses and cameras are designed together to guarantee a simplified opto-mechanical integration and user interface.

The Neutrino LC/CZ 19-290 solution provides a SWaP optimized, 19-290mm continuous zoom lens precision integrated with the Neutrino LC camera core. With a common and simplified user interface, the Neutrino LC/CZ 19-290 provides smooth, 15X continuous zoom covering a 1.9° to 27° FOV range. It is fully athermalized over a wide operating temperature range and is auto focus capable.

www.flir.com/oem/neutrino-family



COMPLETE MWIR IMAGING SOLUTION

Simplified product development and manufacturing enables faster time to market.

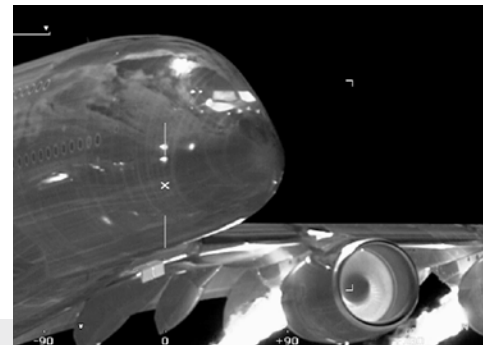
- T2SL HOT 640x512/15 μ pixel pitch FPA
- Low power consumption with < 8 W cool down and < 4 W steady state at 21°C
- SWaP optimized saves space, weight and power
- Precision aligned lens, easy to focus to the desired distance
- One supplier versus two



SEAMLESS OPTO-MECHANICAL INTEGRATION

Designed from the ground up for optimum performance and compatibility.

- Precisely aligned optical centerline to the center pixel
- Eliminate boresight wander and ensure focus through zoom
- Simplified single interface for camera and lens



MARKET LEADING THERMAL OPTICS

Integrated SWaP optimized lens provides instant clear imaging able to withstand rugged environments in the air or on the ground.

- Industry's most advanced VGA MWIR camera core
- Comprehensive product documentation
- Commercially developed, military qualified (CDMQ)
- Highly-qualified FLIR Technical Services team available to support integration

SPECIFICATIONS

Overview

Size (L x W x H)	15.77 x 7.84 x 10.01 cm (6.21 x 3.09 x 3.94 in)
Weight	735 grams
Spectral Band	3.4 - 5.0 μ m standard
Thermal Imager	640 x 512, (15 μ m pitch) HOT MWIR

Lens Specifications

EFL/Zoom Range (mm)	19.5 to 290 mm (+/- 5%) compact, continuous zoom lens
Horizontal Field of View (HFOV)	1.87° to 27.36° (actively athermalized over the operating temperature range)
Zoom and Focus Controls	Yes
Special Features	Active athermalization and auto focus capable

Connections & Communications

Discrete I/O Controls Available	None
Primary Electrical Connector	80-pin Hirose (camera), 4-pin Molex (cooler), 6-pin Molex (lens)
RS-232 Compatible Communication	RS-232, Nominal 38400 Baud
SDK and GUI	Yes, Camera only
Comm & Control	USB or UART (camera) RS-232, nominal 38400 Baud (lens)

Environmental

Humidity	5% to 95% non-condensing
Non-Operating Temperature Range	-57 °C to + 80 °C
Operating Temperature Range	-35 °C to + 70 °C, note this is limited by the lens
Operational Altitude	12 km altitude equivalent
Shock	40 g w/11 ms half-sine pulse, 3-axis
Vibration	5.8 grms, 3-axis, 1 hr each

FPA Control

Direct Injection Snapshot Prog operation	Yes
Programmable Integration Time	Yes (0.01 ms - 16.6 ms)
ROIC	ISC0403
ROIC Modes	Free run, readout & integration priority

Imaging & Optical

Analog Video Display Format	Yes, accessory board required
BT656 (8-bit)	Yes, accessory board required
Camera Link (16-bit or 8-bit)	Yes, accessory board required
CMOS (16-bit or 8-bit)	CMOS (16-bit, 16-bit color encoded YCbCr, 8-bit)
Color and Monochrome Palettes (LUTs)	Yes
Continuous Zoom (digital and analog)	Optical Zoom (lens) and Electronic Zoom (camera)
f-number	f/5.5
FPA - Digital Video Display Format	640 x 512
Frame Rate	60 Hz, adjustable 1 Hz to 60 Hz
LVDS (16-bit or 8-bit)	No
NTSC/PAL (field switchable)	Yes, accessory board required
Polarity Control [black hot & white hot]	No
Sensitivity [NE Δ T]	<30 mK
Symbology	Yes
Time to Image	<4 min room temp
Invert/Revert (analog and 8-bit digital)	Invert/Revert (Yes)
Image Optimization - AGC	Histogram Equalization, DDE+

Power

Input Power NLC	3.3 VDC (camera), 12 VDC (cooler), 12 VDC (lens)
Power Dissipation NLC	<4.5 W (camera/cooler) steady state <1.92 W (lens) steady state <12.0 W (camera/cooler) peak power <3.6 W (lens) peak power
Input Power with Lens	4.75 - 6.0 VDC Camera, 9-35 VDC Cryocooler
Power Dissipation with Lens	<8 W cooldown, <5 W Steady State

Specifications are subject to change without notice. For the most up-to-date specs, go to www.flir.com

CORPORATE

HEADQUARTERS
FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070

SANTA BARBARA

FLIR Systems, Inc.
6769 Hollister Ave.
Goleta, CA 93117

EUROPE

FLIR Systems, Inc.
Luxemburgstraat 2
2321 Meer
Belgium

www.flir.com
NASDAQ: FLIR

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