

## SWaP Optimized MWIR Optical Gas Imaging Camera Module

# NEUTRINO® LC OGI



Made in the USA, the ITAR-free Neutrino LC OGI provides 640x512 VGA-resolution MWIR optical-gas-imaging (OGI) and is easily integrated into a wide range of solutions to detect, measure, and visualize gas emissions. Teledyne FLIR's High Operating Temperature (HOT) FPA technology and linear micro-cooler provide integrators with the industry-best, two-year warranty and significantly longer endurance in the leading size, weight, and power (SWaP) module available today. Quick cool down and time-to-image combined with low-power and quiet, low-vibration operation make Neutrino LC OGI the choice for battery-powered handhelds, UAVs (unmanned aerial vehicles), small gimbals, and fixed-mounted gas leak detection systems within processing facilities, refineries, pipelines, tank farms, and well pads for the oil and gas industry.

Designed to meet EPA performance requirements, the narrow 3.3  $\mu\text{m}$  infrared (IR) spectral band accurately detects hydrocarbons including methane, propane, butane, and other greenhouse gases and volatile organic compounds (VOCs). The Neutrino LC OGI can be operated in VGA mode to maximize scene awareness or Bin mode to improve sensitivity to an industry-leading  $<20$  mK. Backed by a standard two-year warranty and a professional technical support team for integration assistance, the Neutrino LC OGI is the lowest-risk and highest-performance OEM camera module for integrators developing methane monitoring and other gas imaging solutions today.



### RAPID AND ACCURATE LEAK DETECTION

15 $\mu\text{m}$  HOT MWIR FPA and image processing offer industry-best sensitivity and visualization.

- Detect methane, propane, butane, and other hydrocarbons
- 640 x 512 VGA array with 1x to 8x digital zoom
- $<35$  mK VGA mode and  $<20$  mK Bin mode
- $<5.5$  min cooldown time at 23 °C



### MAXIMIZE OPERATIONAL TIME

Best-in-class size, weight, power consumption, and reliability.

- $<12\text{W}$  cool down and  $<5.25\text{W}$  steady state at 23 °C
- $<380$  grams (without lens) and compact size
- Quiet, low-vibration linear micro-cooler
- 27,000-hour MTTF with Industry leading two-year warranty



### DESIGNED FOR INTEGRATORS

Reduce development and supply chain risk with the global manufacturing leader in IR.

- Built-in support for physical and protocol-level industry standards
- Full suite of hardware accessories and SDK
- Dedicated technical team for post-sales integration support
- ITAR free – classified under US Department of Commerce jurisdiction as EAR 6A003.b.4.a

## SPECIFICATIONS

Neutrino LC OGI	
Sensor Technology	HOT MWIR
Sensor Size	640 x 512, 15 µm pitch
Spectral Band	3.2 – 3.4 µm
Sensitivity (NEΔT)	<35 mK (50% well fill at TBB=25 °C )
Frame Rate Options	60 Hz maximum, 30 Hz nominal
Time to Image	<5.5 min 23 °C ambient
Shutter	with Integral Shutter
<b>PHYSICAL ATTRIBUTES</b>	
Size (L x W x H)	78.5 x 45.5 x 61 mm (3.1" x 1.8" x 2.4")
f/number	f/1.59
Cold Aperture Height	18.56 mm from FPA
Weight	<380 g (<13.4 oz)
<b>FPA CONTROL</b>	
ROIC	ISC0403
Direct Injections, Snapshot, Progressive	Yes
Programmable Integration Time	Yes (.01 ms - 16 ms)
Well Capacity	7 x 10 <sup>6</sup> electrons
ROIC Modes	Free Run, Readout Priority, & Integration Priority
External Sync	Master or Slave
<b>IMAGE PROCESSING &amp; DISPLAY CONTROLS</b>	
NTSC/PAL	Yes (accessory board required)
Image Optimization/AGC	Linear, Histogram Equalization, DDE
Invert/Revert	Yes
Color Palettes/LUTs	Yes, RGB888 mode
Symbology	Yes, RGB888 mode
Continuous Zoom	Yes, up to 8x
<b>DIGITAL VIDEO</b>	
Parallel (24-bit/16-bit/8-bit)	Yes
Camera Link	Yes (accessory board required)
USB	Yes
<b>INTERFACING</b>	
Primary Electrical Connector	80-pin Hirose, DF40C-80DS
Input Power	+3.3 VDC Camera, +12 VDC Cryocooler
Power Dissipation	<12W cooldown, <5.25W steady state @ 23 °C
Communication	USB or UART (921.6k baud)
Discrete I/O Control	One Discrete, custom configurable at factory
User Configurability via SDK & GUI	Yes
<b>ENVIRONMENTAL</b>	
Operating Temperature Range	-40 °C to +71 °C (-40 °F to +160 °F)
Non-Operating Temperature Range	-57 °C to +80 °C (-65 °F to +176 °F)
Operational Altitude	~12 km (40,000 ft)
Humidity	Non-condensing between 5% – 95%
Vibration	5.8 grms 3-axis, 1hr each
Shock	40g w/ 11 ms half-sine pulse, 3-axis

Specifications are subject to change without notice. For the most up-to-date specs, go to [www.flir.com/neutrinoogi](http://www.flir.com/neutrinoogi)

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24-0116-OEM-Neutrino-LC-OGI-Datasheet

For more information visit:  
[www.flir.com/neutrinoOGI](http://www.flir.com/neutrinoOGI)

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