MODO-VT-640-50

640×512 Uncooled LWIR Module

Overview

A 640×512, 12 µm uncooled LWIR module shown with the 25 mm F1.0 fixed-focus athermalized lens — 50 Hz imaging, SDI/MIPI video output, RS422 control, and a 9.1–75 mm fixed-lens series. Originally developed for a customer-specific vehicle imaging project, it is now available as a reusable MODO configuration.



640×512

RESOLUTION

12 µm

PIXEL PITCH

8–12 µm

SPECTRAL BAND

Key Features

Engineering profile

- This page shows the 25 mm F1.0 athermalized fixed-focus configuration; a 9.1/13.5/19/25/35/55/75 mm fixed-lens series is available, with SDI/MIPI video output configured per program.

Key capabilities

- Detector: VOx Uncooled LWIR
- Resolution: 640×512 @ 50 Hz
- Pixel pitch: 12 µm
- Spectral band: 8–12 µm
- Thermal sensitivity: NETD ≤45 mK @ 25 °C

Image processing and control

- Scene and shutter-based non-uniformity correction, image enhancement, white-hot/black-hot polarity, bright-light protection with a programmable radiance threshold, reticle display/hide, flip and electronic zoom, auto/manual brightness and contrast, self-test, and serial firmware upgrade.

Typical Applications



Security Monitoring



Machine Vision



Wearable Devices



Industrial Inspection

Technical Specifications

Detector & Optics

Detector	VOx Uncooled LWIR
Resolution	640×512
Pixel pitch	12 µm
Spectral band	8–12 µm
Thermal sensitivity	NETD ≤45 mK @ 25 °C
Frame rate	50 Hz
Lens type	Fixed focus, athermalized
Fixed-lens series	9.1 / 13.5 / 19 / 25 / 35 / 55 / 75 mm; 25 mm F1.0 shown (FOV 17.5°×11.7° est.)

Video & Interfaces

Video output	SDI (latency ≤20 ms); MIPI (2-lane + 4-lane)
Control interface	RS422, 115200 bps
Optional interfaces	DVP, CVBS, USB, Ethernet and other common ports on request

Power & Physical

Power supply	DC 5.0–5.5 V
Power consumption	≤6 W (peak <12 W)
Dimensions	46×40×71.93 mm (25 mm configuration)
Weight	≤300 g (25 mm configuration)
Operating temperature	−40 to +60 °C
Storage temperature	−40 to +70 °C
Ingress protection	IP67 (optical head)

Specifications reflect the 25 mm configuration technical document. Focal lengths, video interfaces, and connector options can be finalized for the target program.
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