

SPECTRA L12A

SPECTRA L12A 1280×1024 Uncooled LWIR Module

Overview

A 1280×1024, 12 μm uncooled LWIR module shown with the 45 mm F1.0 fixed-focus athermalized lens — 25 Hz imaging, MIPI video output and RS422 control, ≤ 3 W steady-state power and ≤ 80 g module weight, with sharp imaging across the full temperature range (no shutter-lid effect).



1280×1024

RESOLUTION


12 μm

PIXEL PITCH


8–14 μm

SPECTRAL BAND


NETD ≤ 40 mK

THERMAL SENSITIVITY

Key Features

Engineering profile

- This page shows the 45 mm F1.0 athermalized fixed-focus configuration as the example; a 19/25/35/45/55 mm fixed-lens series is available, with MIPI video output and an RS422 control interface configured per program.

Key capabilities

- Detector: VOx Uncooled LWIR
- Resolution: 1280×1024 @ 25 Hz
- Pixel pitch: 12 μm
- Spectral band: 8–14 μm
- Thermal sensitivity: NETD ≤ 40 mK @ 25 °C (typical)

Image processing and control

- White-hot/black-hot polarity switching, auto/manual non-uniformity correction (shutter-based correction can be disabled), reticle display/hide, image flip (vertical/horizontal/diagonal), 0–7 levels of image enhancement, 1X/2X/4X electronic zoom, auto/manual brightness and contrast, power-on and command self-test (self-test ≤ 3 s, start-up ≤ 8 s), save settings and factory reset.

Typical Applications



Security Monitoring



Machine Vision



Wearable Devices



Industrial Inspection



Technical Specifications

Detector & Optics

Detector	VOx Uncooled LWIR
Resolution	1280×1024
Pixel pitch	12 μm
Spectral band	8–14 μm
Thermal sensitivity	NETD ≤40 mK @ 25 °C (typical)
Frame rate	25 Hz
Lens type	Fixed-focus athermalized
Example lens	45 mm F1.0 (FOV 19.4°×15.5°, calculated)

Video & Interfaces

Video output	MIPI (25 Hz)
Control interface	RS422, 115200 bps
Extended interfaces	DVP, CVBS, USB, Ethernet and other common interfaces available on request

Power & Physical

Power supply	DC 5.0–5.5 V
Power consumption	≤3 W steady state (peak ≤6 W)
Dimensions	≤35×35×30 mm (module, excl. lens)
Weight	≤80 g (module, excl. lens)
Operating temperature	–40 ~ +60 °C
Storage temperature	–50 ~ +70 °C
Humidity	5%~95%, non-condensing
Protection	IP67 (lens window)

Parameters compiled from the 45 mm configuration technical specification; FOV/IFOV/DRI are optical-geometry reference values; lens focal length, video interfaces and connector options are subject to final project confirmation.

Rev. 1.0 · September 2026