

SPECTRA L04C

384×288 Ultra-Compact Uncooled LWIR Module

Overview

The SPECTRA L04C integrates a 384×288/12 μm uncooled VOx detector, image-processing electronics and a precision mechanical structure into a 26×26×21.1 mm body weighing less than 23 g. It outputs clear, stable thermal video over CVBS, USB (UVC) and BT.656, supports dual-range radiometric measurement from -20 °C to 650 °C, and accepts an optional family of athermal fixed-focus lenses from 4.6 mm to 75 mm. With RS232 / UART / RS422 / RS485 control, comprehensive power protections and a fully controlled supply chain, the SPECTRA L04C drops quickly into fire-spot detection, perimeter security, electrical equipment monitoring, tank level gauging, vehicle-mounted pedestrian & vehicle detection and wildlife observation systems.



384×288

RESOLUTION



12 μm

PIXEL PITCH



≤40 mK

NETD



26×26×21.1 mm

DIMENSIONS

Key Features

High Sensitivity, Clear & Stable Imaging

- NETD ≤40 mK captures subtle temperature differences with crisp, stable thermal video
- NUC, digital noise-reduction filtering and digital detail enhancement for consistent image quality

Highly Integrated for Fast Secondary Development

- Detector, image processing and mechanics integrated in a 26×26 mm module
- CVBS, USB (UVC) and BT.656 video plus RS232 / UART / RS422 / RS485 control

Wide-Range, High-Accuracy Thermometry

- Dual ranges: -20–150 °C and 140–650 °C
- Accuracy of ±2 °C or ±2 % for industrial monitoring

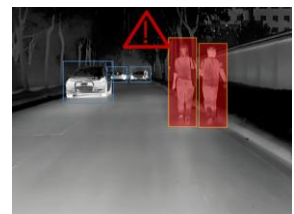
Typical Applications



Perimeter Security


Electrical Equipment
Monitoring


Fire Point Detection



Vehicle-Mounted Detection



Technical Specifications

Detector

Material	Uncooled VOx
Array Format	384×288
Pixel Size	12μm
NETD	≤40mK @ F1.0, 25°C
Spectral Band	8–14μm

Lens Options

Standard Lens	25 mm F1.0 athermal fixed-focus
Optional Focal Lengths	4.6 / 6.6 / 9.1 / 13 / 19 / 35 / 50 / 75 mm
Field of View (25 mm)	10.5°(H)×7.9°(V) (est.)
DRI (25 mm, est.)	294/73/37 m

Temperature Measurement

Measurement Range	-20–150 °C / 140–650 °C
Accuracy	±2 °C or ±2 %

Image Processing

Frame Rate	Up to 50 Hz
Scene Modes	Indoor / Outdoor / Manual
Image Modes	Linear / Normal / Low-temp / High-temp
Image Algorithms	NUC / digital noise reduction / digital detail enhancement
Color Palettes	6 (white hot / black hot / iron red / inverse iron red / rainbow / feather red)
Digital Zoom	×1 / ×2 / ×4
Mirror	Horizontal / Vertical

Electrical Interfaces

Video Output	CVBS / USB (UVC) / BT.656
Control Interface	RS232 / UART / RS422 / RS485

Power Supply

Supply Range	DC 5–12V
Power Consumption	≤1W
Protection	Over-current / over-voltage / reverse-polarity / surge suppression

Physical

Dimensions	26×26×21.1 mm (excl. lens & connector)
Weight	≤23 g
Mounting	6×M1.6 threaded holes

Environmental

Operating Temp.	-20°C ~ +60°C
Storage Temp.	-45°C ~ +85°C
Humidity	5%–95%, non-condensing
Vibration	Random vibration 6.06 grms, 3 axes
Shock	60 g / 4 ms, 3 axes 6 directions

Specifications subject to change without notice. D/R/I: estimated detection / recognition / identification range (m), Johnson criteria, standard target 1.8 m × 0.5 m; FOV and DRI for optional lenses available on request. Actual range varies with scene and target.

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