

SPECTRA L06CN

640×512 Ultra-Compact Uncooled Radiometric Module

Overview

Spectra L06CN packs a 640×512/12 μm wafer-level uncooled detector, high-performance signal processing and image algorithms into a coin-sized 25.4×25.4×15.7 mm core of just 15 g and 0.65 W. Industry-standard interfaces with RAW/YUV data output make OEM integration straightforward, and a full athermal lens lineup covers more scenarios. Full-frame, regional, spot and isotherm temperature measurement with ±2 °C or ±2% accuracy (whichever is greater), plus Android/Linux/Windows SDKs — ideal for integrators who chase miniaturization, low power and high cost-performance.



640×512

RESOLUTION



15 g

WEIGHT



≤25 mK

NETD



25.4×25.4×15.7 mm

DIMENSIONS

Key Features

SWaP-Optimized, Coin-Sized

- Ultra-compact 25.4×25.4×15.7 mm bare core (excl. lens)
- Ultra-light from 15 g, ultra-low power from 0.65 W

Clear Imaging, Ready Radiometry

- NUC / 3DNR / DNS / DRC / EE next-generation image algorithms for sharper images
- Full-frame / regional / spot / isotherm measurement: -20 °C~+150 °C and 0~+550 °C, ±2 °C or ±2% (whichever is greater)

Fast Integration

- USB2.0 / DVP / BT.656 / BT.1120 / LVDS multi-mode video output, RAW/YUV data, serial control
- Android / Linux / Windows SDK for full-frame temperature measurement

Typical Applications



UAV Payload



Smart Wearables



AIoT & Smart Hardware



Industrial Thermometry



Technical Specifications

Detector Performance

Sensitive Material	Uncooled vanadium oxide (VOx)
Package	Wafer-level package
Resolution	640×512
Pixel Pitch	12μm
Spectral Band	8~14μm
Typical NETD	≤25mK @ F1.0/25°C
Digital Frame Rate	25Hz/30Hz
Boot-up Time	≤6 s

Image Processing

Analog Video	PAL/NTSC
Digital Video	RAW/YUV/TMP
Video Output Modes	DVP8/DVP16/BT.656/BT.1120/LVDS/USB2.0
Image Display	Black-hot / white-hot / pseudo-color (10 palettes)
Image Algorithms	NUC, 3DNR, DNS, DRC, EE

Temperature Measurement

Measurement Range	-20°C~+150°C, 0°C~+550°C
Accuracy	±2°C or ±2% of reading (whichever is greater) @ 23°C±3°C, at 5 m (4.8~19 mm lenses) / 10 m (25/35 mm lenses)
Regional Measurement	Arbitrary region with max / min / average output
Spot Measurement	Supported
Isotherm	Supported
Full-frame Measurement	Temperature matrix output
SDK	Android / Linux / Windows versions; video stream parsing and gray-to-temperature conversion
Measurement Operating Temp.	-10°C ~ +50°C

Electrical & Interfaces

Standard Connector	50-pin HRS DF40C-50DP-0.4V(51), male
Communication	TTL-232 / USB2.0
Expansion Components	USB2.0 / USB3.0 / VPC / USB2.0&VPC / GMSL expansion boards
Operating Voltage Range	DC 4.5~5.5V
Typical Power	0.65W @ 4.5V (23±3°C)

Physical

Dimensions (mm)	≤25.4×25.4×15.7 (excl. lens)
Weight	15 g

Environmental

Operating Temp.	-40°C ~ +70°C
Storage Temp.	-45°C ~ +85°C
Humidity	5%~95%, non-condensing
Vibration	Random vibration 5.35 grms, 3 axes
Shock	Half-sine 40 g / 11 ms, 3 axes 6 directions
Protection	Lens front element IP67
Certification	RoHS 2.0 / REACH

Lens Options

4.8 mm fixed	FOV 90°×72.5° · IFOV 2.45 mrad DRI (est.) 350/120/60 m
7 mm fixed	FOV 62°×49.6° · IFOV 1.69 mrad DRI (est.) 500/170/85 m
9.1 mm fixed	FOV 48.3°×38.6° · IFOV 1.32 mrad DRI (est.) 640/215/105 m
13 mm fixed	FOV 33.9°×27° · IFOV 0.92 mrad DRI (est.) 920/310/150 m
19 mm fixed	FOV 22.7°×18.3° · IFOV 0.63 mrad DRI (est.) 1300/450/220 m
25 mm fixed	FOV 17.5°×14.0° · IFOV 0.48 mrad DRI (est.) 1750/590/290 m
35 mm fixed	FOV 12.5°×10.0° · IFOV 0.34 mrad DRI (est.) 2450/830/410 m
50 mm fixed	FOV 8.8°×7.0° · IFOV 0.24 mrad DRI (est.) 3500/1190/580 m
70 mm fixed	FOV 6.3°×5.0° · IFOV 0.17 mrad DRI (est.) 4900/1660/810 m

Specifications subject to change without notice. All lenses are athermal fixed-focus. Accuracy conditions: 23 °C ± 3 °C, at 5 m (4.8/7/9.1/13/19 mm lenses) or 10 m (25/35 mm lenses). D/R/I: estimated detection / recognition / identification range (m), Johnson criteria at 50% probability, standard human target 1.7 m × 0.5 m; actual range varies with scene and target.

Rev. 1.0 · September 2026