

SPECTRA L12E

SPECTRA L12E 1280×1024 Uncooled LWIR Network Module with 50 mm F1.0 Lens

Overview

SPECTRA L12E is a high-resolution telephoto network thermal imaging module built around a 1280×1024/12 μm uncooled VOx detector and a 50 mm F1.0 athermalized fixed lens with a nominal 17.5°×14.0° field of view. The module provides one RTSP network video stream over adaptive 10/100/1000M Ethernet with H.264/H.265/MJPEG encoding and ONVIF / GB/T 28181 support, while an RS485 port running Modbus RTU connects directly to industrial control systems. With NETD ≤30 mK, -40 ~ +70 °C operation and typical power consumption below 4 W, it is designed for long-range surveillance, perimeter protection, fire detection and target observation.



1280×1024

RESOLUTION



50 mm F1.0

LENS



≤30 mK

NETD



17.5°×14.0°

FIELD OF VIEW

Key Features

Megapixel VOx Detector

- 1280×1024 uncooled VOx focal plane array, 12 μm pixel pitch
- NETD ≤30 mK (F1.0, 25 °C ambient)
- 25/50 Hz digital frame rate, per delivery firmware configuration
- Start-up time ≤8 s under typical ambient conditions

50 mm Athermalized Telephoto Lens

- 50 mm F1.0 fixed-focus lens with athermalized design
- Nominal field of view 17.5°×14.0° (H×V)
- HD-coated front element, IP67 front protection
- Maximum lens diameter Ø55 mm

All-IP Network Video

- 1× Ethernet RTSP output, 10/100/1000M adaptive
- Main stream 1280×1024 or 1024×768, sub stream 1024×768 / 640×512 / 320×256 (per delivery firmware)
- H.264 / H.265 / MJPEG video encoding
- TCP/IP, UDP, HTTP, RTSP, DHCP, DNS, ONVIF and GB/T 28181 protocols

Typical Applications



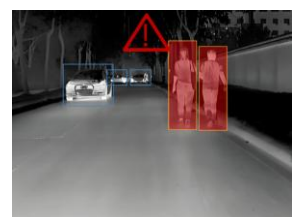
Long-Range Surveillance



Perimeter Protection



Fire Detection



Target Observation



Technical Specifications

Detector & Imaging

Detector	VOx uncooled focal plane array
Resolution	1280×1024
Pixel pitch	12 μm
Spectral range	8–14 μm
NETD	≤30 mK (F1.0, 25 °C ambient)
Frame rate	25/50 Hz (per delivery firmware)
Start-up time	≤8 s

Optics

Lens type	Fixed focus, athermalized design
Focal length / aperture	50 mm F1.0
Nominal FOV	17.5°×14.0° (H×V)
Front element coating	HD coating
Front protection	IP67
Max lens diameter	Ø55 mm
Detection / Recognition / Identification (est.)	3540 m / 1180 m / 590 m (est.)

Image Processing

Video format	YUV
Image processing	NUC / 3DNR / DNS / DRC / EE
Palettes	10 (white hot, black hot, lava, iron red, medical, arctic, rainbow, etc.)

Network Video

Network video output	1× Ethernet RTSP
Ethernet	10/100/1000M adaptive, via network interface assembly
Main stream	1280×1024 or 1024×768 (per delivery firmware)
Sub stream	1024×768, 640×512 or 320×256 (per delivery firmware)
Video encoding	H.264 / H.265 / MJPEG
Protocols	TCP/IP, UDP, HTTP, RTSP, DHCP, DNS, ONVIF, GB/T 28181

Serial & I/O

Serial interface	RS485 A/B, via network interface assembly
Application protocol	Modbus RTU
Extended I/O	USB, CVBS, audio in/out, alarm inputs/outputs, 3.3 V UART, speaker (via network interface assembly)

Power & Environment

Main power input	DC 12 V nominal
Input range	9–24 V
Typical power	<4 W
Operating temperature	–40 ~ +70 °C
Storage temperature	–45 ~ +85 °C
Humidity	5%–95% RH, non-condensing
Shock	Half-sine 30 g / 11 ms, six directions
Vibration	10–150–10 Hz, 0.15 mm peak
Compliance	RoHS 2.0 / REACH

Mechanical

End face	44.5 mm × 44.5 mm
Body cross-section	38 mm × 38 mm
Overall length	93.4 mm
Rear body length	43.9 mm
Mounting holes	4 × M2, 2.5 mm deep, symmetric
Hole spacing	30 mm

Specifications subject to change without notice. D/R/I: estimated detection / recognition / identification ranges (m), Johnson criteria (50% probability, 1.7 m × 0.5 m target). Stream and frame-rate configurations follow the delivery firmware. Actual performance varies with scene and target.

Rev. 1.0 · September 2026