



300K 640x512 Uncooled Thermal Camera Module

Key Properties

Uncooled VOx infrared detector 640x512 pixels

Spectral Band: 8 μ m ~14 μ m

Thermal Sensitivity(NETD): $\leq 40\text{mK}$ @25°C

Frame Rate: 50fps for 300K(640(W)x512(H))

Data Interface: USB YUY2 format

Lens Mount: M17

Fixed Focus Lenses Option: FL9.1/FL13/FL19/FL25/FL35/FL50

FL	9.1mm	13mm	19mm	25mm	35mm	50mm
FOV(H)	47°	31°	22°	17°	12°	9°



Application

Thermography / Outdoor Night Vision / ADAS / Smart Building

Security / Machine Vision / Bioenergy Detection / Thermal Inspection

Feature

- **Resolution:** A 640x512 pixel sensor array offers high thermal image clarity and detail for precise analysis.
- **Thermal Sensitivity:** NETD $\leq 40\text{mK}$, high sensitivity ensures accurate detection of temperature differences.
- **Compact and Lightweight:** Designed for easy integration into various systems, such as drones, surveillance cameras, and industrial inspection tools.
- **Uncooled Technology:** Utilizes a microbolometer or other similar uncooled infrared detector, making it more energy-efficient and cost-effective compared to cooled counterparts.
- **No Cooling System Required:** Reduces operational complexity and cost.
- **Rugged and Reliable:** Suitable for harsh environments.
- **Cost-Effective:** Lower initial and maintenance costs compared to cooled thermal cameras.

Introduction

TCM300K50SQ Uncooled Thermal Camera Module is a specialized imaging device that captures infrared radiation, enabling thermal imaging without requiring cryogenic cooling. This is suitable for use in various industries due to its compact design, reliability, and ability to operate in diverse environmental conditions. Applications commonly used in surveillance and security include night vision and all-weather monitoring. In industrial inspection, they are utilized for identifying thermal anomalies in machinery or electrical systems. In the medical and research fields, they are employed for temperature measurements. In aerospace and defense, they serve purposes such as targeting, navigation, and situational awareness.



Specifications

Model	TCM300K50SQ1/Q2
Sensor	Uncooled VOx infrared detector, ceramic package
Spectral Band	8μm ~14μm
Image Pixels & Resolution	640(W) x 512(H)
Pixel Size	12μm
Sensor Area	7680 μm x 6144 μm
Thermal Sensitivity (NETD)	≤40mK @25°C
Thermal Time Constant	<12ms
Image Transfer Rate	50fps @640x512
Read Mode	Rolling shutter mode
Special Function	Non-uniformity correction, X and Y directions mirroring
Data Interface	USB
Connecting Port	USB Type C
Communcation	UART
Plug & Play	UVC(USB Video Class) Compliant support
Lens Parameters	Default: FL9.1mm Optional: FL9.1/FL13/FL19/FL25/FL35/FL50
Lens Holder	M17 lens holder
Operating Voltage	DC 5V (4V~5.5V DC)
Power Consumption	≤1.2W
Operating Temperature	-40°C ~ 80°C
Storage Temperature	-45°C ~ 85°C
PCBA Dimensions (exclude lens)	Q1: 28x28x36.5mm / Q2: 20x20x38.2mm
Weight (exclude lens)	Q1: ≤46g / Q2: ≤26g
Operating System Request	WinXP/Vista/Win7/Win8/Win10 Linux with UVC(above 2.6.26) MAC-OS X 10.4.8 or later Android 4.0 or above with UVC

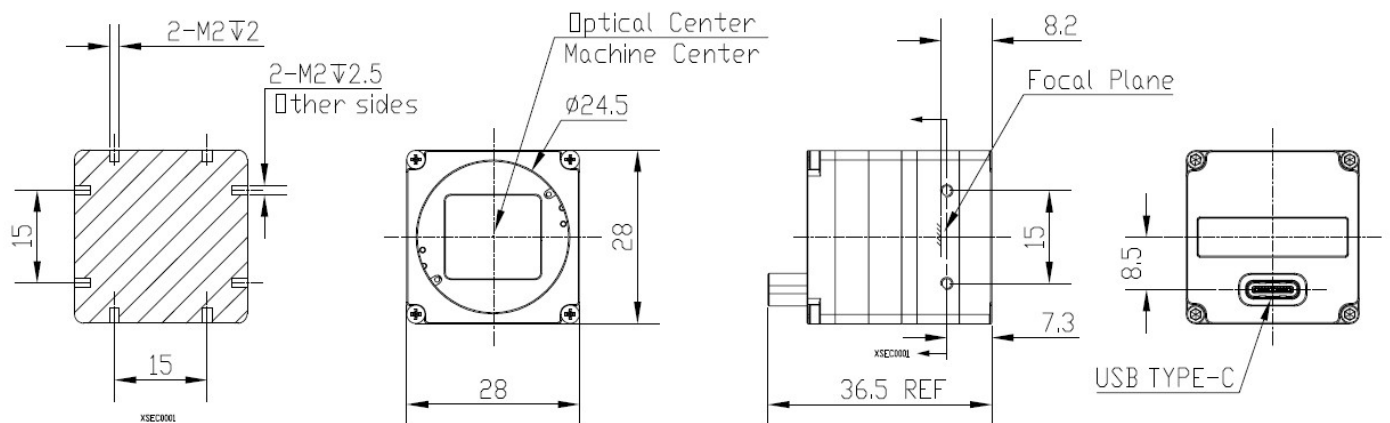
Note:

Product images are for reference only. Specifications are subject to change without notice due to continuous product improvement. For the latest information, please contact us.

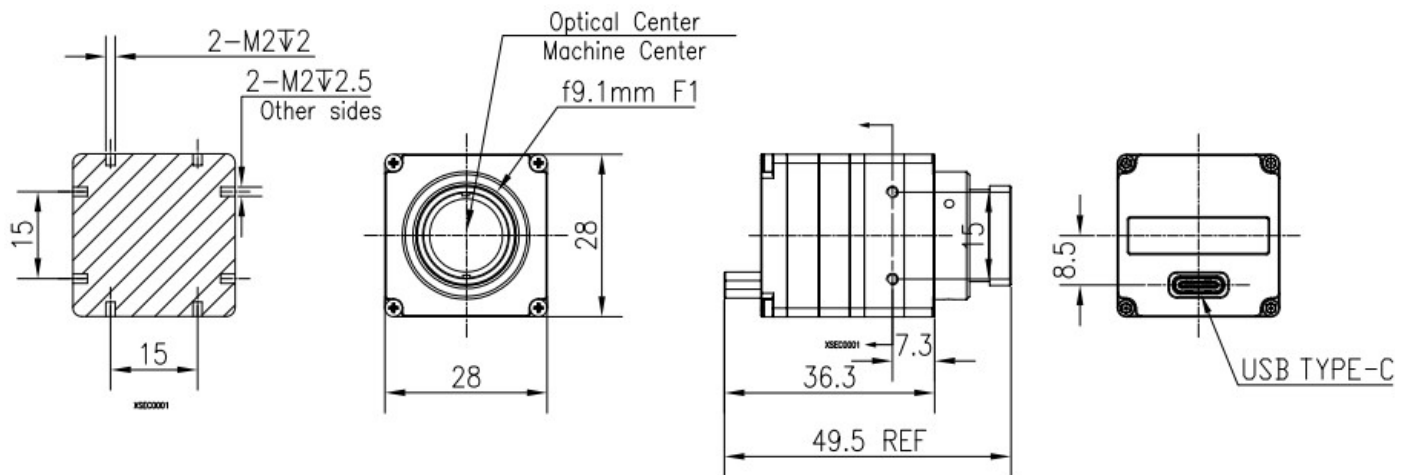


Dimension – TCM300K50SQ1

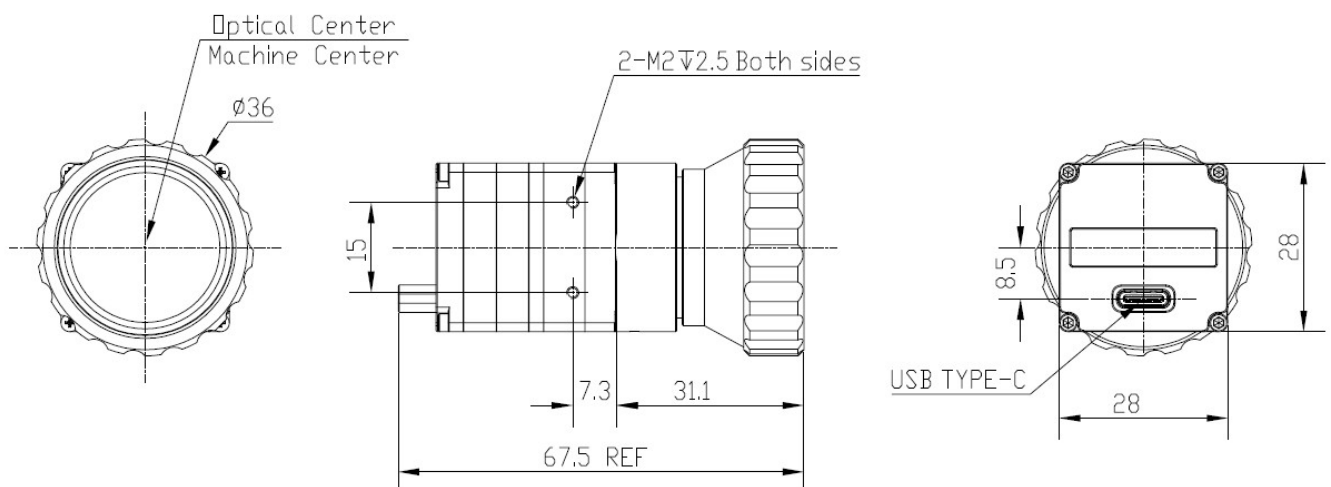
without FL



with FL9.1mm(default)



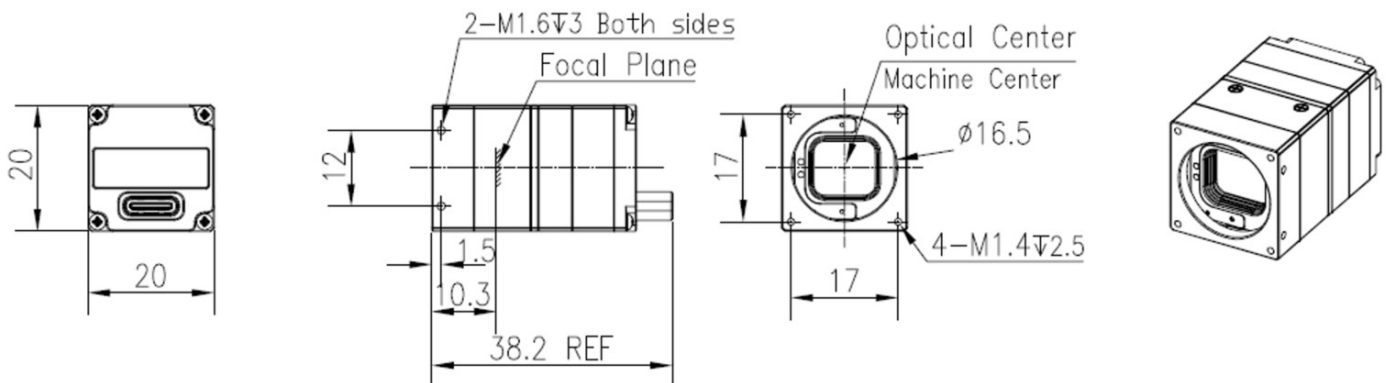
with FL25mm(optional)





Dimension – TCM300K50SQ2

without FL



with FL9.1mm(default)

