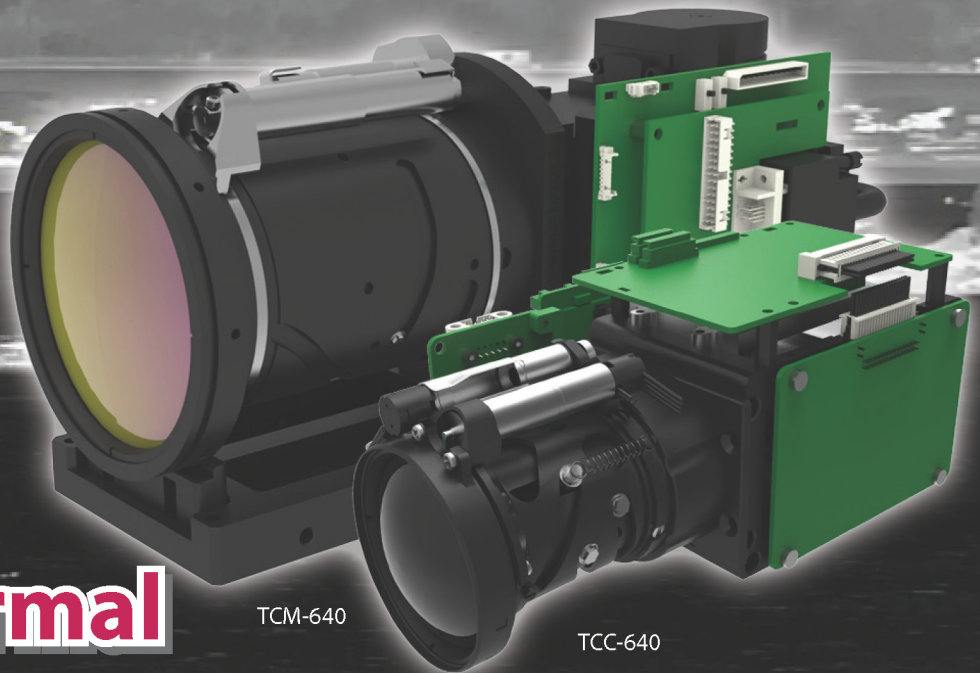




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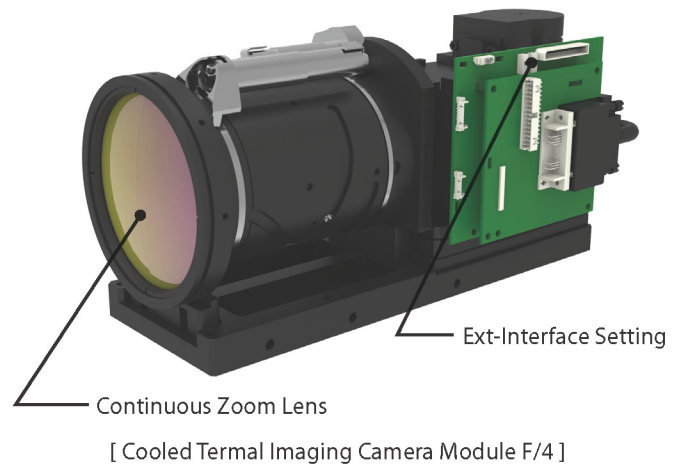
# Cooled Thermal Imaging Camera Module

## FEATURES

### Cooled Thermal Imaging Camera Module

- Detector type : Cooled InSb FPA 15 $\mu$ m (640 x 512)
- NETD : <17mk(F4.0) / <20mk(F5.5) typical (without lens)
- Continuous ZOOM LENS
- Continuous Digital Zoom (8x)
- Advanced image processing
  - Multi Contrast Image Detail Enhancement (MIDE)
  - Image Definition Enhancement (Sharpness)
  - Effective Digital Image Stabilizer Include (DIS)
- Cooler - MTBF(Mean Time Between Failures)  
12,000 hours(F4.0) / 10,000 hours(F5.5)
- Various color sets  
(B/W / Rainbow / Iron / Glowbow / 2 Color)

## COOLED THERMAL CAMERA MODULE



[ Cooled Thermal Imaging Camera Module F/4 ]

## APPLICABLE PRODUCTS



Cooled Multi Sensor



Gyro Stabilization  
Gimbal (Cooled)



Cooled Compact PTZ



[ Compact Cooled Thermal Imaging Camera Module F/5.5 ]



\* Specifications and images are subject to change without notice.

The TBT Cooled Thermal Imaging Camera Modules are mid-wave IR camera lens assembly works on various applications, enabling it best OEM-friendly.

## CONTINUOUS ZOOM LENS

TCM-640/TCC-640 provided with various continuous optical zoom(TCM-640 : 300mm, 420mm, 600mm, 690mm, 900mm / TCC-640 : 275mm, 700mm, 850mm) for all the EO system requirements.



7km Zoom (300mm F4.0 Lens, Invers OFF)

## DIGITAL IMAGE STABILIZER

It works to compensate the vibration of the camera from unstable move in operation to produce stable image display. It reduces blurring associated with the move from the camera.



Stabilizer OFF



Stabilizer ON

## SPECIFICATIONS \* Specifications are subject to change without notice.

MODEL	TCM-640 F 4.0 Lens	TCC-640 F 5.5 Lens
DETECTOR	Cooled InSb FPA, 640 x 512	
Detector Type	Cooled InSb FPA, 640 x 512	
Pixel Pitch	15μm	
Spectral Response	3μm ~ 5μm	
Frame rate	30~200Hz	
Cold Shield	F/4	F/5.5
NETD	<17mK typical(without lens)	<20mK typical(without lens)
COOLER		
Cooler Type	Rotary Stirling Cooler, MTBF : 12,000Hours	Rotary Stirling Cooler, MTBF : 10,000Hours
Cool-down Time	<7 Minute(@25°C)	
VIDEO		
Output Frequency	NTSC : 59.94Hz (30fps), PAL : 50Hz(25fps)	
Video Output	CVBS : 1.0Vp-p / 75Ω, Option (CameraLink, HD-SDI, BT.1120)	
Resolution	640(H) x 512(V)	
CONTROL		
Interface Protocol	RS-232, RS-422	
Baud Rate	2400 / 4800 / 9600 / 19200/38400/57600/115200 bps	
Interface Type	DSUB-15P	
LENS		
LENS	Continuous : 15 to 300mm (35.1° ~ 1.8°) / 21 to 420 mm (25.1° ~ 1.3°) / 30 to 600mm (17.2° ~ 0.9°) / 34.5 to 690mm (15.2° ~ 0.8°) / 45 to 900mm (11.4° ~ 0.61°)	Continuous 20 to 275 (28° ~ 1.9°) / 48.5 to 700mm (11.9° ~ 0.8°) / 28 to 850mm (19.8° ~ 0.3°)
FUNCTION		
Calibration	Manual /Interval(sec) Mode Selectable	
Image Translation	FLIP(Vertical, Horizontal), Inverse, Freeze	
Image Enhance	AGC, MIDE, Sharpness, Smooth	
Image Utility	Auto Focus, Digital Zoom(8x), DIS(Digital Image Stabilization)	
Pseudo Color	Gray / Rainbow / Iron / Glowbow / 2 Color	
OSD	Full Functions Menu Available	
MECHANICAL		
Dimensions (Unit : mm, WxHxD)	Without Lens : 82.5 x 92.2 x 133 15 to 300mm : 128 x 125 x 253.7±1 21 to 420mm : 133.5 x 136.3 x 317.2 30 to 600mm : TBD 34.5 to 690mm : 210 x 210 x 388 45 to 900mm : TBD	Without Lens : 77.6 x 67.8 x 120.3 20 to 275mm : 100.7 x 83.9 x 188.2±1 48.5 to 700mm : TBD 28 to 850mm : TBD
Weight	Without Lens : 1.02kg, 15 to 300mm : 3.3kg 21 to 420mm : 4kg, 30 to 600mm : TBD 34.5 to 690mm : 7.2kg, 45 to 900mm : TBD	Without Lens : 615.4g, 20 to 275mm : 1.15kg 48.5 to 700 : TBD, 28 to 850 : TBD
Random vibration	MIL-STD-810G, 5~2000Hz/5.9Grms	-
Sine vibration	MIL-STD-810G, 9~300Hz, 4~2G	-
Shock	MIL-STD-810G, 40G/6msec	-
ELECTRICAL		
Power Consumption	DC20~DC32V / 850mA[20.4W] (Max)	
Power Supply	DC24V 1A	
ETC		
Operating Temperature	-32°C ~ +55°C	
Storage Temperature	-40°C ~ +65°C	

## RANGE PERFORMANCE (LENS OPTIONS)

