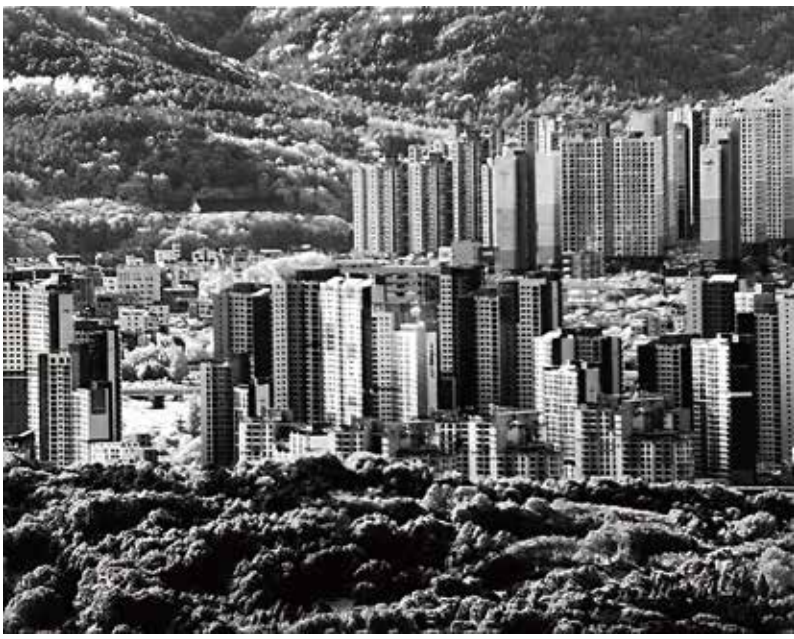
i3system

THERMAL™ EXPERT

Intelligent
Image
Information
System



i3system, Inc.

True Partner for Your Success in Trust

Daejeon, Republic of Korea

2025_Ver2.9

i3system, Inc.

True Partner for Your Success in Trust

Company overview

Company Name : i3system, Inc.
(Intelligent Image & Information System)
CEO : Chung Han (Ph.D)
Establishment : 1998
Number of Employees : 480 (Q4, 2024)

- 1988 : Initial Research at KAIST by founder
- 2003 : Cooled MWIR R&D
- 2006 : Uncooled LWIR R&D
- 2010 : Serial Production of Cooled MWIR IDDCA
- 2012 : Serial Production of Uncooled LWIR micro-bolometer
- 2015 : IPO in KOSDAQ (Korean stock market)
- 2015 : ISO9001:2008 / ISO9001:2015
- 2016 : New production building set up at Moonji-dong
- 2018 : Launch 12μm XGA / VGA / QVGA micro-bolometer detector
- 2019 : Innovation Award by Korea Ministry of Defence
- 2022 : Launch New T2SL HOT MWIR / Cooled LWIR detector
- 2023 : Developed 8μm SXGA micro-bolometer detector
- 2024 : Developed T2SL Dual Band detector

Headquarter / Factory #1

Moonji-dong / Factory #2

Jang-dong (R&D Center)

Facilities

Process

Assembly

In house manufacture facility and test equipments

Analysis

Test & Evaluation

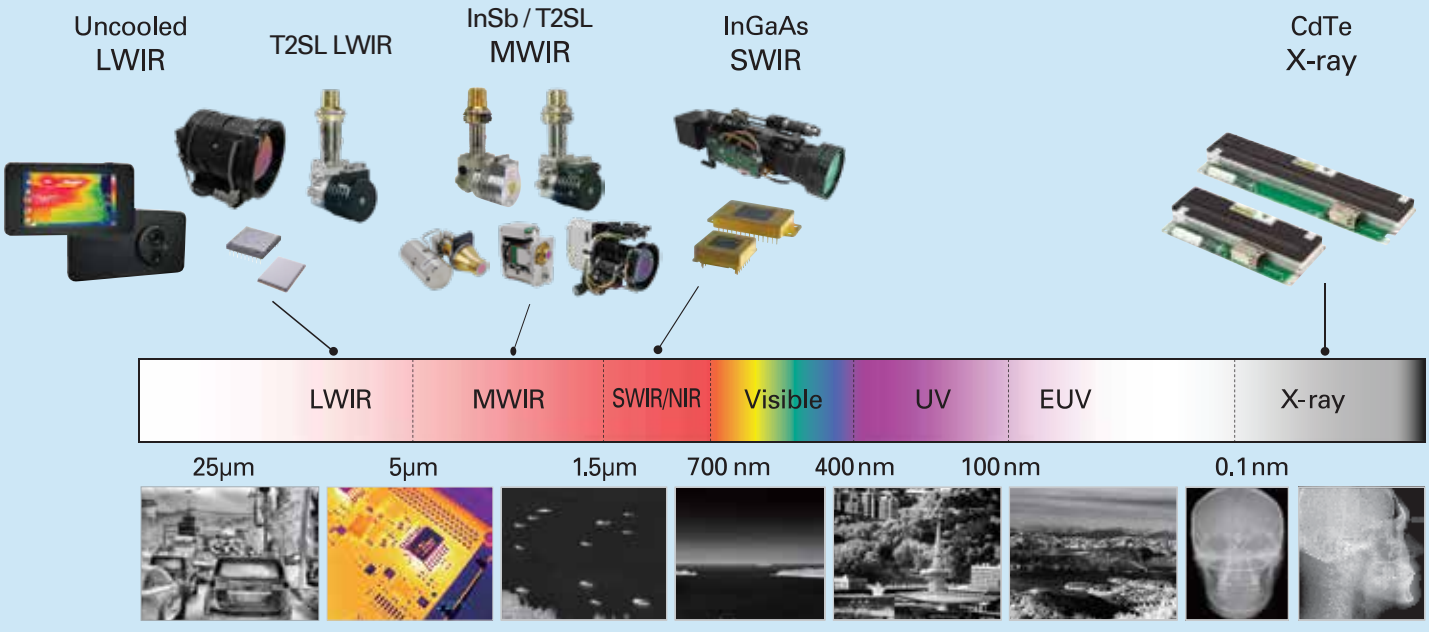
Products

T2SL MARKOS series

T2SL LUKAS series

InSb SXGA

InGaAs SWIR SXGA



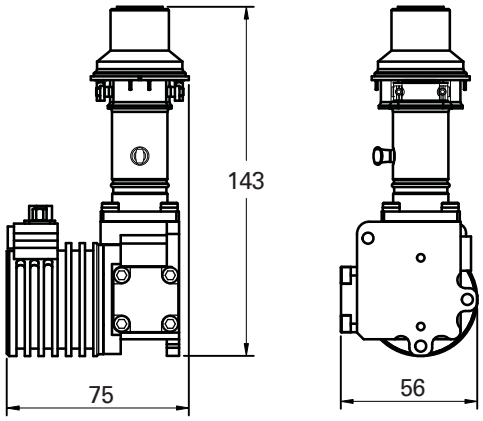
Super MARKOS

HOT MWIR 1280 x 1024 10㎛

Super MARKOS is a new generation T2SL HOT MWIR detector in HD quality. This T2SL HOT detector satisfies requirement of tactical such as long-range surveillance and electro-optical targeting system. The Operating temperature (>130K) will reduce the maintenance cost.

IDDCA

Proxy board



Applications

Security | Night Observation | Long-range Surveillance | Reconnaissance

DRI Information

225mm	1.8 x 0.5m	2.3 x 2.3m
D	9.8km	22.7km
R	1.9km	4.5km
I	1.4km	3.5km

420mm	1.8 x 0.5m	2.3 x 2.3m
D	16.1km	33.2km
R	3.4km	7.9km
I	2.6km	6.2km

690mm	1.8 x 0.5m	2.3 x 2.3m
D	20.2km	37.9km
R	5.1km	10.9km
I	4.0km	8.8km

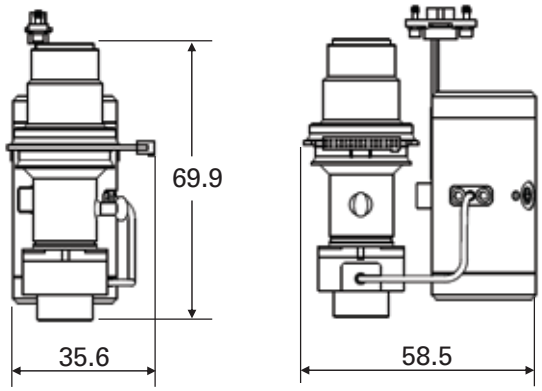
900mm	1.8 x 0.5m	2.3 x 2.3m
D	21.5km	38.8km
R	6.0km	12.2km
I	4.8km	10.0km

Array format	1280x1024
Pixel pitch	10㎛
Detector type	T2SL
Spectral Range	MWIR (3㎛~5㎛)
No. of output channel	4 or 8 channels
Operability	≥ 99.5 %
NETD	≤ 25mK @ Half well-fill
Frame rate	110Hz@1280x1024 Full frame
Dimension	75mm x 56mm x 143mm
Cool-down time	≤ 5 min
Environmental condition	MIL-STD-810
Operating temperature	-40~+71℃
FPA operating temperature	130K

MARKOS

HOT MWIR 640 x 512 15㎛, SWaP

MARKOS is a T2SL HOT MWIR SWaP detector specifically designed for handheld thermal imaging and drone & UAV systems, and light-weight monitoring devices. This HOT(High Operating Temperatue) and SWaP(Size Weight and Power) detector is suitable for long-term use.



Applications

Security | Night Observation | Long-range Surveillance | Reconnaissance

Detector

OEM Module

Array format	640 x 512
Pixel pitch	15㎛
Detector type	T2SL
Spectral Range	MWIR (3㎛ ~ 5㎛)
No. of output channel	4 channels
Operability	≥ 99.5 %
NETD	≤ 20mK @ Half well-fill
Frame rate	up to 220Hz@ 640 x 512 Full frame
Dimension	69.9mm x 58.5mm x 35.6mm
Cool-down time	≤ 5 min
Environmental condition	MIL-STD-810
Operating temperature	-40 ~ +71℃
FPA operating temperature	130K

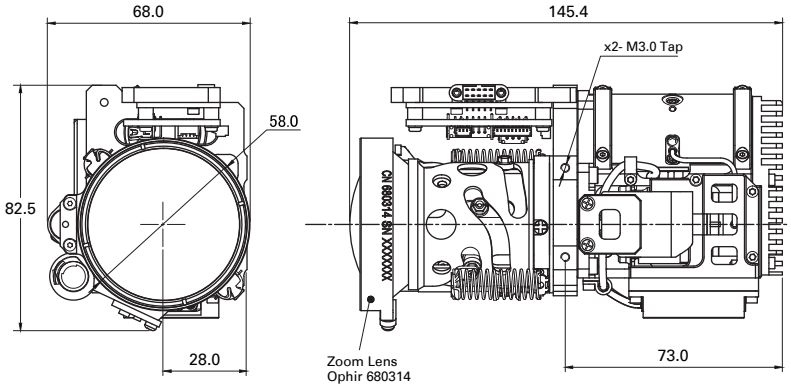
MARKOS Camera Core

HOT MWIR 640 x 512 15㎛, SWaP

- High performance VGA HOT MWIR Camera Core with low SWaP. linear cooler integration, and 20-275mm continuous zoom lens
- The camera core includes video processing and control feature designed for handheld cameras, minature gimbals for drones & UAVs, and light-weight monitoring devices
- Full MWIR Spectral Range, High Sensitivity, Common & Simple Electrical interface

Applications

Security | Night Observation | Long-range Surveillance | Reconnaissance



DRI Information

275mm	1.8 x 0.5m	2.3 x 2.3m
Detection	10.4km	23.7km
Recognition	2.0km	4.8km
Identification	1.5km	3.7km

Detector	
Detector type	T2SL
Array foramt	640 x 512, 15㎛
Spectral range	MWIR (3㎛~5㎛)
F number	F/5.5 (Standard), customizable
NETD	≤ 20mK @ Half well-fill without lens
Cool-down time	≤ 5 min. @ room temperature
Electrical	
Frame rate	60Hz
Input Power	+5.0 VDC board, +12.0 VDC SWaP linear cooler
Power Consumption	≤ 5W steady state @ 23℃ (Cooler ≤ 3W, Electronics ≤ 2W)
Control	UART (RS-232)
Video output	NTSC/PAL, HDMI, Camera-link
Mechanical	
Size (W x H x L)	Without lens : 51mm x 75.6mm x 70.1mm
	With lens : 68mm x 82.5mm x 145.4mm
Weight	Without lens : 360g
	With lens : 710g (f/5.5 20-275mm)

LUKAS Pro

LWIR 640 x 512 15㎛

LUKAS is a T2SL LWIR VGA detector which shows an excellent performance especially for ground vehicles with its anti-blooming capability and strong penetration in foggy & dusty area. This LWIR detector ensures the visibility even in tough environmental conditions such as sun-glint and light reflex.

Proxy board [Raw data]
Output: Camera Link

Applications

Security / Surveillance

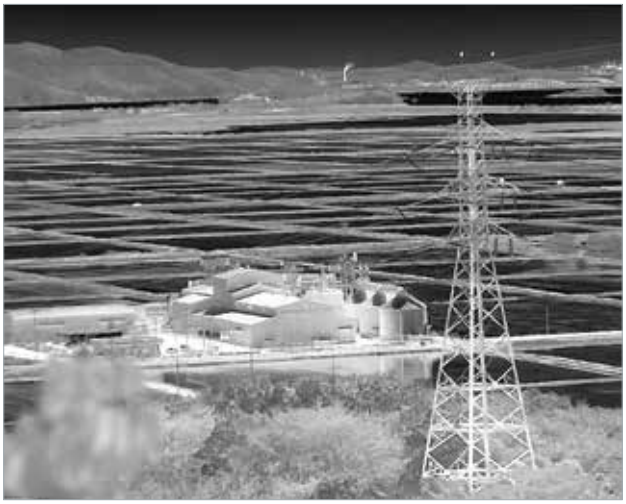
Night Observation

Thermal Sight

Specifications

Detector type	T2SL
Array format	640 x 512
Pixel pitch	15㎛
NETD	≤ 25mK @ Half well-fill
Wavelength band	LWIR (7.7㎛ ~ 9.4㎛)
Max Frame rate	200Hz @ 640 x 512 Full Frame
Cool-down time	≤ 7min

Images from the 2D IR detector



InSb Cooled IR Detector

MWIR 1280 x 1024 10㎛

DI-1280-10M

IDDCA

iCP1280

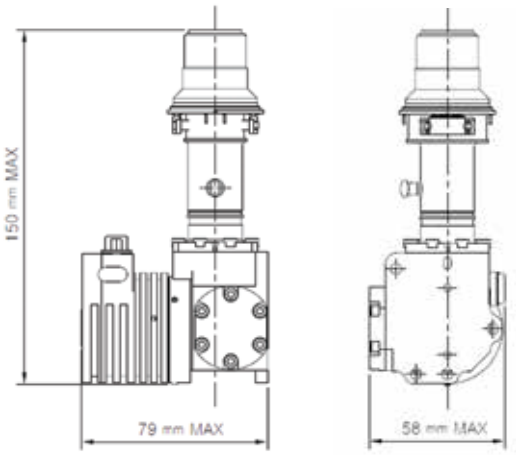
Proxy board

iCE1280P

OEM Module

Applications

- Security
- Night Observation
- Long-range Surveillance
- Reconnaissance



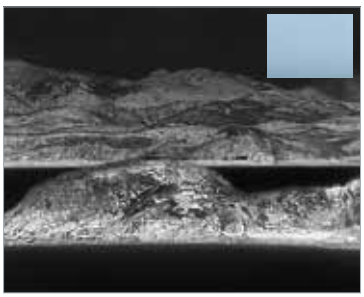
DRI Information

225mm	1.8 x 0.5m	2.3 x 2.3m
D	9.8km	22.7km
R	1.9km	4.5km
I	1.4km	3.5km

420mm	1.8 x 0.5m	2.3 x 2.3m
D	16.1km	33.2km
R	3.4km	7.9km
I	2.6km	6.2km

690mm	1.8 x 0.5m	2.3 x 2.3m
D	20.2km	37.9km
R	5.1km	10.9km
I	4.0km	8.8km

900mm	1.8 x 0.5m	2.3 x 2.3m
D	21.5km	38.8km
R	6.0km	12.2km
I	4.8km	10.0km



Array format	1280x1024
Pixel pitch	10㎛
Detector type	InSb
Spectral Range	MWIR (3㎛~5㎛)
No. of output channel	4 or 8 channels
Operability	≥ 99.5 %
NETD	≤ 25mK @ Half well-fill
Frame rate	100Hz @ 1280x1024 Full frame
Readout mode	IWR
Cool-down time	≤ 5 min
Environmental condition	MIL-STD-810
Operating temperature	-40~+71℃
FPA operating temperature	80K

InSb Cooled IR Detector

MWIR 640 x 512 15㎛

DI-640-15M

IDDCA

iCP640

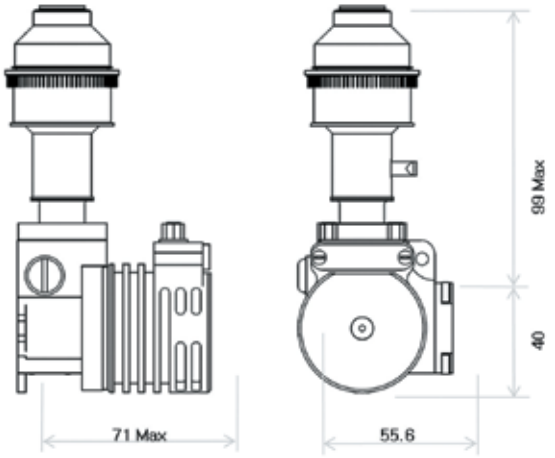
Proxy board

iCE640

OEM Module

Applications

- Security
- Night Observation
- Long-range Surveillance
- Reconnaissance



DRI Information

275mm	1.8 x 0.5m	2.3 x 2.3m
D	10.4km	23.7km
R	2.0km	4.8km
I	1.5km	3.7km

420mm	1.8 x 0.5m	2.3 x 2.3m
D	15.9km	32.5km
R	3.3km	7.8km
I	2.6km	6.1km

690mm	1.8 x 0.5m	2.3 x 2.3m
D	19.7km	36.4km
R	5.0km	10.7km
I	4.0km	8.7km

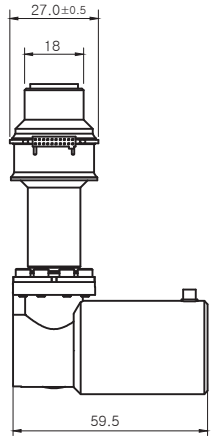
900mm	1.8 x 0.5m	2.3 x 2.3m
D	20.8km	36.8km
R	6.0km	11.9km
I	4.8km	9.8km

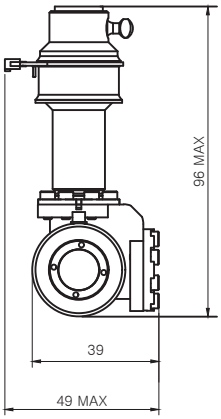
Array format	640 x 512
Pixel pitch	15㎛
Detector type	InSb
Spectral Range	MWIR (3㎛ ~ 5㎛)
No. of output channel	1 or 4 channels
Operability	≥ 99.5 %
NETD	≤ 20mK @ Half well-fill
Frame rate	200Hz @ 640x512 Full frame
Readout mode	ITR or IWR
Cool-down time	≤ 7 min
Environmental condition	MIL-STD-810
Operating temperature	-40 ~ +71℃
FPA operating temperature	80K

InSb Cooled IR Detector

MWIR 320 x 256 15㎛

DI320-15M





Applications

Security | Night Observation | Drone | Hand-held Thermal Imager

Specifications

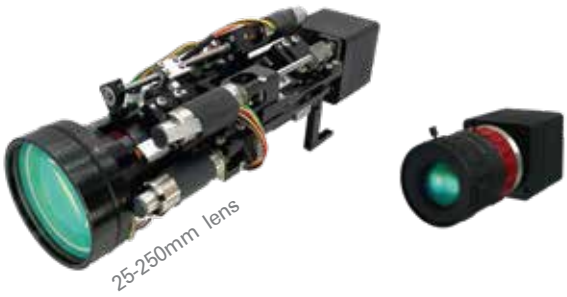
Detector type	InSb
Array format	320 x 256
Pixel pitch	15㎛
NETD	≤ 20mK @ Half well-fill
Spectral Range	MWIR (3㎛ ~ 5㎛)
Readout mode	ITR
Cool-down time	≤ 7min

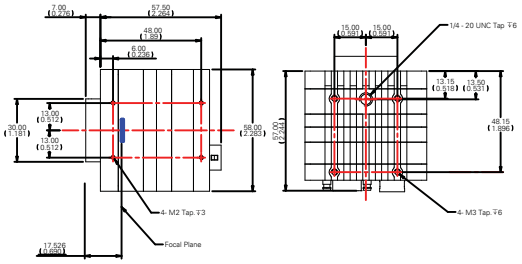
Images from the 2D IR detector

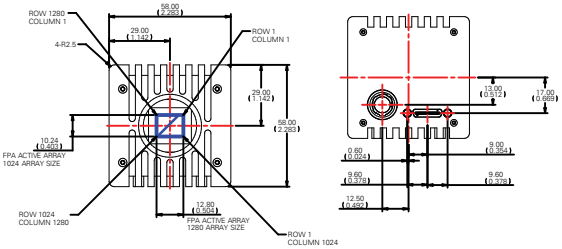
InGaAs SWIR Camera Core

1280 x 1024 10㎛ iSE1280-10-CL

iSE1280 is SWIR camera module designed for various inspections such as food quality, material, non-destructive, forgery, etc. The SWIR range provides distinctive benefits as reflective image, better atmospheric transparency, and smoke / haze penetration.







Applications

Detection / Surveillance | Material inspection | Food inspection | Forgery detection | Semiconductor inspection

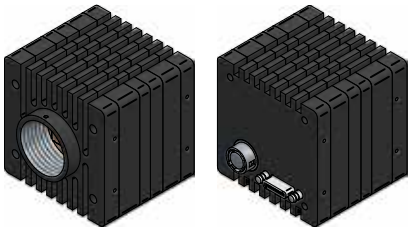
DRI Information

19mm	1.8 x 0.5m	2.3 x 2.3m
D	1.3km	3.2km
R	0.3km	0.7km
I	0.2km	0.6km

25mm	1.8 x 0.5m	2.3 x 2.3m
D	1.7km	3.9km
R	0.4km	1.0km
I	0.3km	0.7km

250mm	1.8 x 0.5m	2.3 x 2.3m
D	9.0km	15.8km
R	2.8km	6.1km
I	2.3km	5.1km

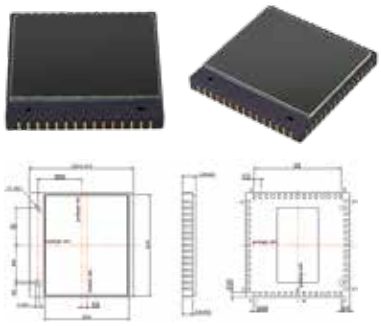
1000mm	1.8 x 0.5m	2.3 x 2.3m
D	16.8km	24.6km
R	7.2km	12.8km
I	6.1km	11.2km



Array format, Pixel pitch	1280x1024, 10㎛
Detector type	InGaAS
Spectral range	SWIR (0.9㎛~1.7㎛)
Quantum Efficiency	85% @ 1.4μm
Readout Noise (RMS)	≤ 100 e-
Shutter Mode	Global Shutter
Dark Current (e/p/s)	12,500 @ 10℃
Frame rate	50Hz
Power	12V DC, ≤ 8W
Video Output	Camera Link
Full Well Depth	* LG : 540ke- / MG : 310ke- / HG : 50ke-
Operating temperature	-33℃ ~ 55℃
Dimension and Weight	50mm X 50mm X 59mm, 250g

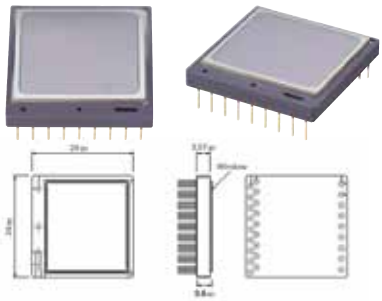
* LG : Low Gain / MG : Mid Gain / HG : High Gain

Uncooled Infrared Detector



DB1280-8C-A

1280 x 1024, 8㎛



DB1024-12C-A

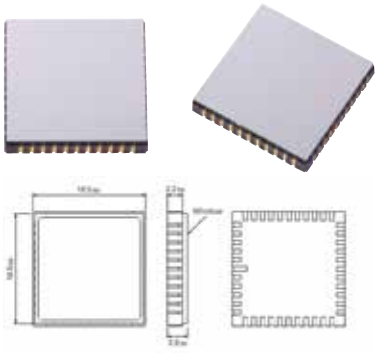
1024 x 768, 12㎛

DB640-12C-A

640 x 480, 12㎛

DB640-17C-A

640 x 480, 17㎛



DB384-12C-A

384 x 288, 12㎛

DB384-17C-A

384 x 288, 17㎛

Applications

Security / Surveillance | Night Vision | Electrical maintenance | Plumbing | Medical / Health

Specifications

Detector type	Microbolometer (uncooled)
Array format	1280 x 1024
Pixel pitch	8㎛
NETD	≤ 55mK or ≤ 70mK @ F/1 300K, 30Hz
Spectral Range	LWIR (8 ~ 14㎛)
Max Frame rate	30 Hz
Thermal time constant	≤ 15ms
Dimensions / Weight	25.2 x 25.2 x 3.4 mm / ≤ 8g

Detector type	Microbolometer (uncooled)		
Array format	1024 x 768	640 x 480	384 x 288
Pixel pitch	12㎛		
NETD	≤ 40mK or ≤ 55mK@F/1 300K, 30Hz		
Spectral Range	LWIR (8 ~ 14㎛)		
Max Frame rate	100 Hz	60 Hz	
Thermal time constant	≤ 15ms		
Dimensions / Weight	24 x 24 x 3.6 mm (without pin) / ≤ 7g		

Detector type	Microbolometer (uncooled)	
Array format	640 x 480	384 x 288
Pixel pitch	17㎛	
NETD	≤ 50mK @ F/1 300K, 30Hz	
	≤ 35mK @ F/1 300K, 30Hz (optional)	
Spectral Range	LWIR (8 ~ 14㎛)	
Max Frame rate	60 Hz	
Thermal time constant	≤ 15ms	
Dimensions / Weight	16.5 x 16.5 x 2.9 mm / ≤ 7g	

THERMAL EXPERT™

Uncooled Infrared Camera Core

TE-EX2
TE-EV2
TE-EQ2

TE-EX2
1024 x 768, 12㎛
15-100mm lens

TE-EV2
640 x 480, 12㎛

TE-EQ2
384 x 288, 12㎛

DRI Information

18mm		
	1.8 x 0.5m	2.3 x 2.3m
D	950m	2300m
R	240m	570m
I	120m	290m

25mm		
	1.8 x 0.5m	2.3 x 2.3m
D	1320m	3190m
R	330m	800m
I	160m	400m

50mm		
	1.8 x 0.5m	2.3 x 2.3m
D	2640m	6390m
R	660m	1600m
I	330m	800m

100mm		
	1.8 x 0.5m	2.3 x 2.3m
D	5280m	12780m
R	1320m	3190m
I	660m	1600m

150mm		
	1.8 x 0.5m	2.3 x 2.3m
D	7920m	19170m
R	1980m	4790m
I	990m	2400m

300mm		
	1.8 x 0.5m	2.3 x 2.3m
D	15830m	38330m
R	3960m	9580m
I	1980m	4790m

	TE-EQ2	TE-EV2	TE-EX2
Detector Type	Micro-Bolometer(Uncooled)		
Array format and Pitch	384x288, 12㎛	640x480, 12㎛	1024x768 12㎛
Thermal Sensitivity(NETD)	≤55mK / F#1.0, Room Temperature		
Spectral Range	8 to 14㎛		
Power Supply	DC 5V	DC 5V	DC 5V
Power Consumption	<1.6W@30Hz(Steady State)	<2.0W@30Hz(Steady State)	<2.5W@30Hz(Steady State)
Video Output Format	Digital : USB, CameraLink, LVCMOS, BT656 Analog : NTSC, PAL		CameraLink
Frame Rate	9Hz, 30Hz		
Time to First Image	<7 Sec Max.		
Control Command Protocols	RS-232(Option RS-485)		
Dimensions(WxHxD)	30x30x27mm	30x36x27mm	30x36x27mm
Weight	<50g(Without Lens)		
Operating Temperature	-10℃ ~ 65℃(Optional -40℃ ~ 65℃)		
Storage Temperature	-40℃ ~ 85℃		
Scene Range Temperature	-10℃ ~ 150℃		

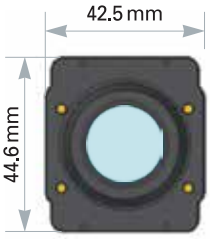
THERMAL EXPERT™

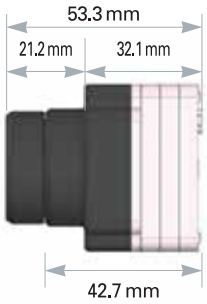
Uncooled Infrared Camera Core

TE-EV1
TE-EQ1

TE-EV1
640 x 480, 17㎛

TE-EQ1
384 x 288, 17㎛





DRI Information

19mm	1.8 x 0.5m	2.3 x 2.3m
D	710m	1710m
R	180m	430m
I	90m	210m

25mm	1.8 x 0.5m	2.3 x 2.3m
D	930m	2250m
R	230m	560m
I	120m	280m

35mm	1.8 x 0.5m	2.3 x 2.3m
D	1300m	3160m
R	330m	490m
I	160m	390m

50mm	1.8 x 0.5m	2.3 x 2.3m
D	1860m	4510m
R	470m	1130m
I	230m	560m

150mm	1.8 x 0.5m	2.3 x 2.3m
D	5590m	13530m
R	1400m	3380m
I	700m	1690m

300mm	1.8 x 0.5m	2.3 x 2.3m
D	11180m	27060m
R	2790m	6760m
I	1400m	3380m

	TE-EQ1	TE-EV1
Detector Type	Micro - Bolometer (Uncooled)	
Array format and Pitch	384 x 288, 17㎛	640 x 480, 17㎛
Thermal Sensitivity(NETD)	≤ 50mK @ F/1, 300K	≤ 50mK or 35mK @ F/1, 300K
Spectral Range	8 ~ 14㎛	
Power Supply	DC 5V	
Power Consumption	< 1.8W @ (30Hz)	< 2.0W @ (30Hz)
Video Output Format	Digital: Camera Link, USB, LV CMOS Analog: NTSC, PAL	
Frame Rate	9Hz or 30Hz	
Time to First Image	< 10 sec	
Control	USB2.0, RS-232	
Dimensions(WxHxD)	42.5mm x 44.6mm x 41.1mm	42.5mm x 44.6mm x 41.1mm
Weight	< 110g (Without lens)	
Operating Temperature	-10℃ ~ 65℃(Optional -40℃ ~ 65℃)	
Storage Temperature	-40℃ ~ 85℃	
Scene Range Temperature	-10℃ ~ 150℃	

THERMAL EXPERT™

Uncooled Infrared Camera Core

TE-V2 mini
TE-V2
TE-Q2

TE-V2 mini

Applications

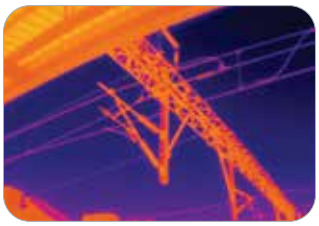
Security / Surveillance

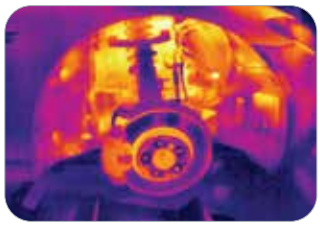
Night Vision

Electrical maintenance

Plumbing

Drone





TE-V2 mini
640 x 480, 12㎛

TE-V2
640 x 480, 12㎛

TE-V2
640 x 480, 17㎛

TE-Q2
384 x 288, 12㎛

	TE-V2 mini	TE-V2	TE-Q2
Detector Type	Micro-Bolometer(Uncooled)		
Array format and Pitch	640x480, 12㎛ (WLP)	640x480, 12㎛ / 17㎛	384x288, 12㎛
Thermal Sensitivity(NETD)	≤ 55mK	≤ 55mK(12㎛), ≤ 50mK(17㎛)	≤ 55mK
Spectral Range	8 to 14㎛		
Power Consumption	0.9W	0.85W	0.5W
Interface	USB		
Lens	9.0mm f/1.1 9.1mm f/1.0 13.0mm f/1.2	9.1mm f/1.0 (12㎛) 13mm f/1.2 (12㎛) 14mm f/1.2 (17㎛)	5.7mm f/1.1
Frame Rate	9Hz, 30Hz		9Hz
Dimensions	19 x 19 x 23.2 (9.0mm) 19 x 19 x 26.3 (9.1mm) 19 x 19 x 27.4 (13.0mm)	33.6 x 24.4 x 37.6(12㎛) 34.4 x 26.6 x 37.6(17㎛)	34 x 38 x 21.5
Weight	13.5g (9.0mm) 16.7g (9.1mm) 19g (13.0mm)	47g (12㎛, 9.1mm) 67g (17㎛)	30g
Operating Temperature	-10℃ ~ 50℃		
Scene Range Temperature	-10℃ ~ 150℃		

THERMAL EXPERT™

Portable Infrared Camera

TE-SQ1

Features

- Color palettes (12 color maps)
- Storage images (IR, visible with snapshot and video)
- Image view with visible (50:50, Twin, Overlay, Floating)
- Temperature Measurement
  (Alarm, Min / Max, Point / Rectangle / Circle profile)
- Level span (Temp. range control)
- Report (Generate PDF report)
- Wi-Fi streaming, Data Sharing
- Compatible with Analysis Tool
- Digital Zoom
- SD Card, Micro HDMI Support

Applications

Security / Surveillance | Night Vision | Electrical maintenance | Plumbing / HVAC | Medical / Health | Animal Care | Leisure

Specifications

TE-SQ1	
Detector type	Micro-Bolometer (Uncooled)
Array Format and Pitch	384x288, 12㎛
Thermal Sensitivity (NETD)	≤ 55mK@F/1, 300K (20℃~30℃)
Operability	≥ 99.0%
Spectral range	8~14㎛
Lens Specification	5.7mm, f/1.1, Manual Focus
Field of View	38°(H) x 29°(V)–47°(D)
Frame Rate	< 9Hz
Display	5 Inch (Touch Screen)
Temp. Range	-40 ~ 350℃
Accuracy	0℃ ~ 100℃ : ±3℃, 100℃ ~ 350℃ : ±3% [Ambient temp. 15 to 35℃, Object temp. above 0℃]
Output	Micro HDMI
Operation Temp.	-10 ~ 50℃
Storage	Internal 32GB, Micro SD card (External)
Dimension	157mm x 87mm x 25mm
Weight	375g
Battery	Li-Ion (Internal), 4200mA

Catalog

Cooled product

Uncooled product

Website

i3system

Thermal Expert

Social Media

LinkedIn

YouTube

Instagram

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