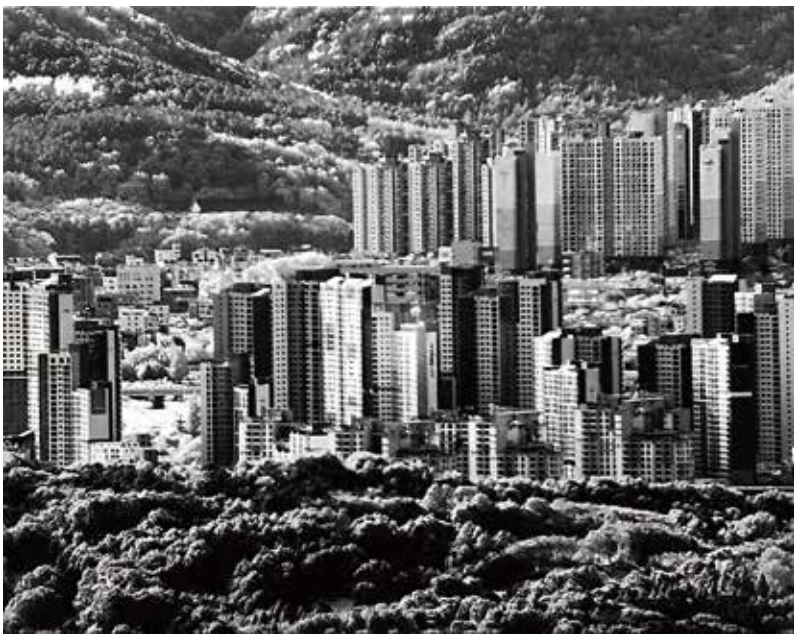
i3system

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

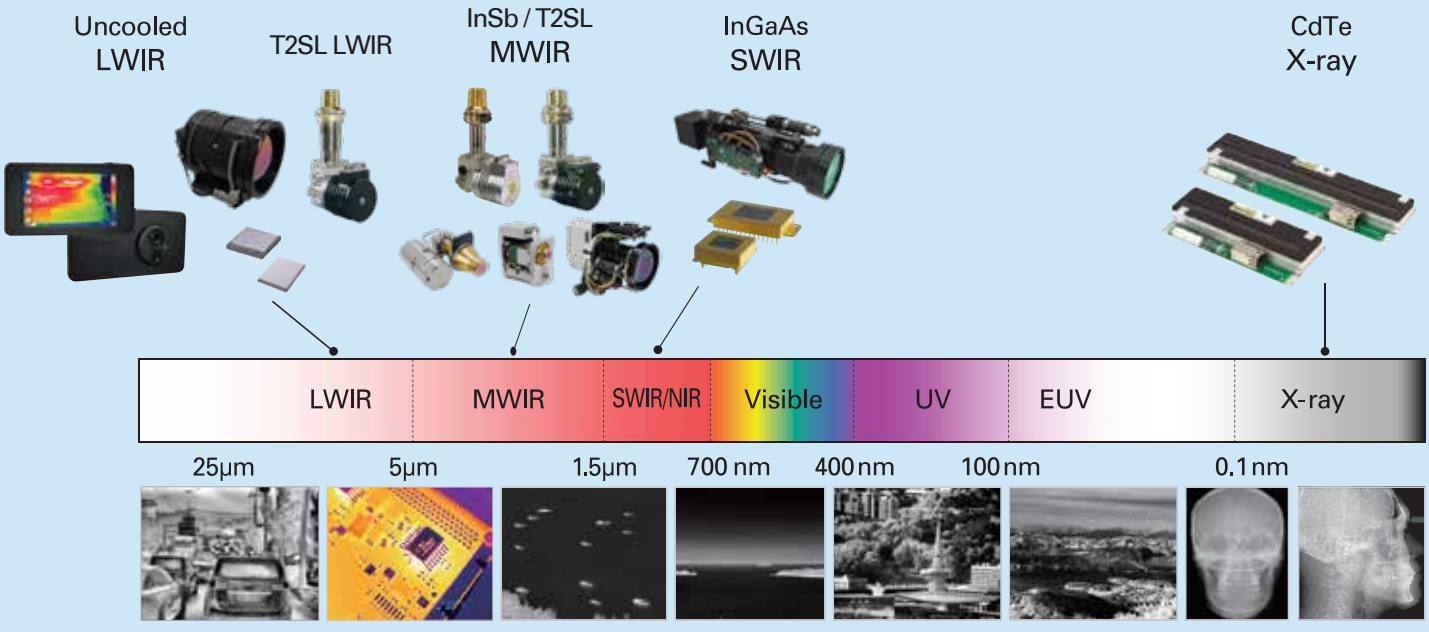
Products

T2SL MARKOS series

T2SL LUKAS series

InSb SXGA

InGaAs SWIR SXGA



Super MARKOS mini

HOT MWIR 1280 x 1024 7.5㎛, SWaP

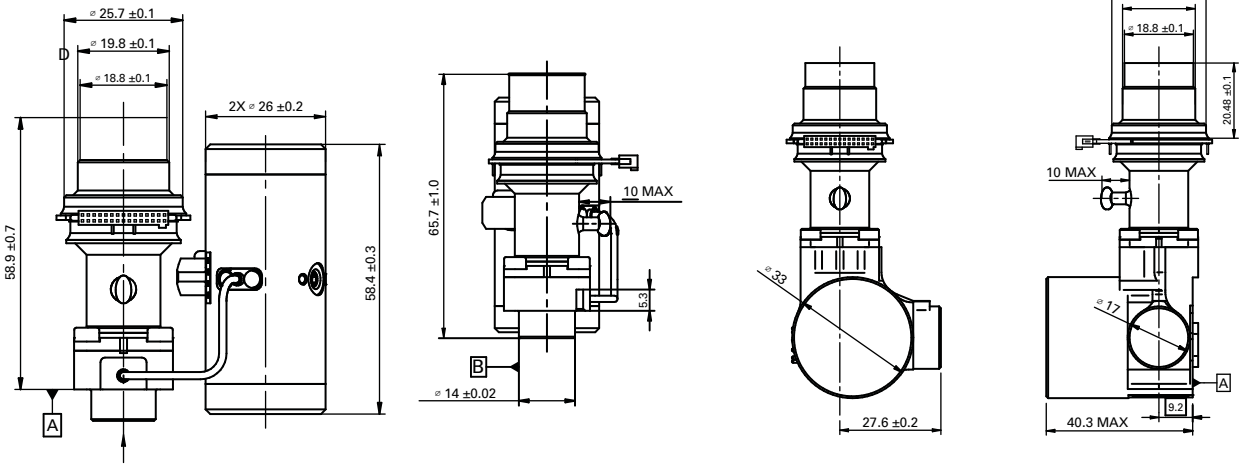
Super MARKOS mini is T2SL HOT MWIR detector which is designed for all types of SWaP systems. Super MARKOS mini is much smaller than other existing HD detectors which enables the user to integrate High Definition IR Cameras.

Detector

OEM Module

Applications

Security | Night Observation | Long-range Surveillance | Reconnaissance



Array format	1280x1024
Pixel pitch	7.5㎛
Detector type	T2SL
Spectral Range	MWIR (3㎛~5㎛)
No. of output channel	4 channels
Operability	≥ 99.5 %
NETD	≤ 25mK @ f/2.4 Half well-fill
Frame rate	55Hz @ 1280x1024 Full frame
Cool-down time	≤ 5 min
Environmental condition	MIL-STD-810
Operating temperature	-40~+71℃
FPA operating temperature	130K

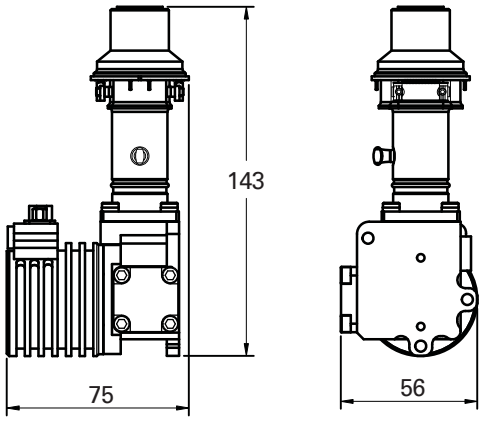
Super MARKOS

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

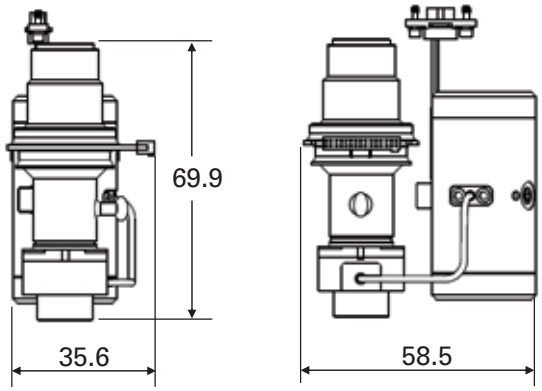
900mm	1.8 x 0.5m	2.3 x 2.3m
D	21.5km	38.8km
R	6.0km	12.2km
I	4.8km	10.0km

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

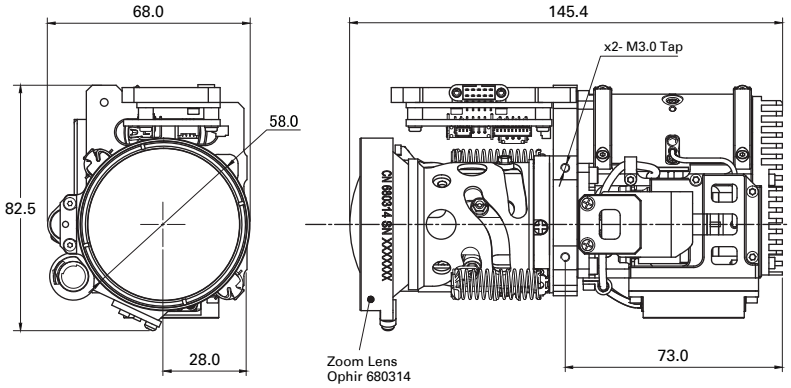
MARKOS Camera Core

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

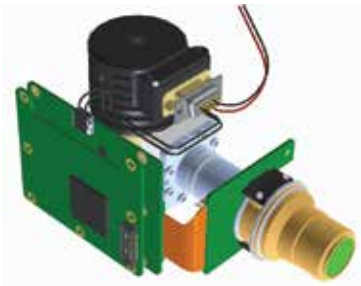
275mm	1.8 x 0.5m	2.3 x 2.3m
Detection	10.4km	23.7km
Recognition	2.0km	4.8km
Identification	1.5km	3.7km

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)

Super LUKAS

LWIR 1280 x 1024 10㎛

Super LUKAS is a T2SL LWIR SXGA detector which shows an excellent performance especially for ground vehicles with its anti-blooming capability and strong penetration in foggy & dusty area. This SXGA 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	1280 x 1024
Pixel pitch	10㎛
NETD	≤ 30mK @ Half well-fill
Wavelength band	LWIR (7.7㎛ ~ 9.4㎛)
Max Frame rate	110 Hz
Cool-down time	≤ 8min

Images from the 2D IR detector

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

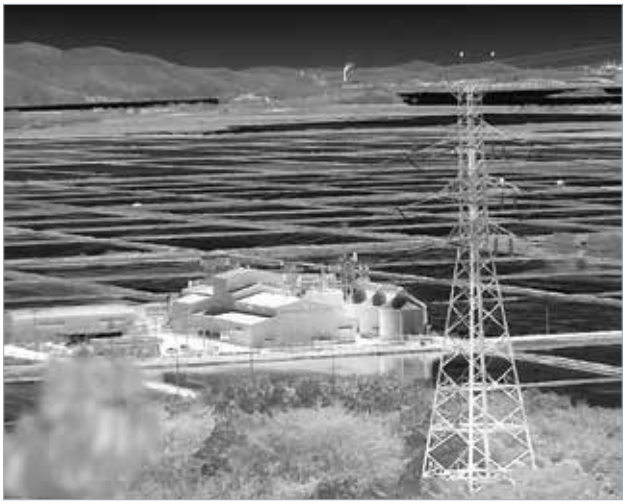
Night Observation

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

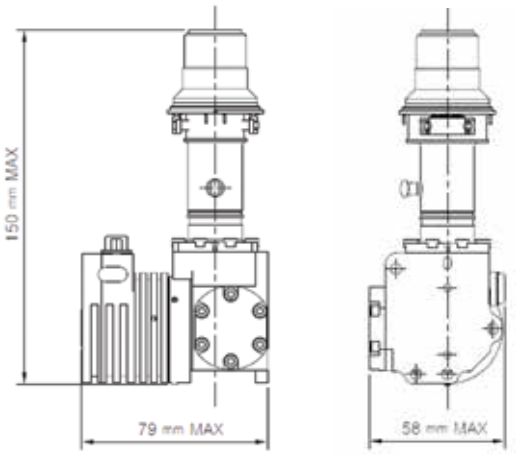
Proxy board

iCE1280P

OEM Module

Applications

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



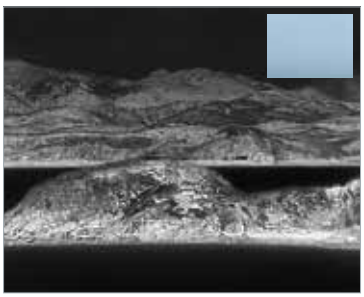
DRI Information

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

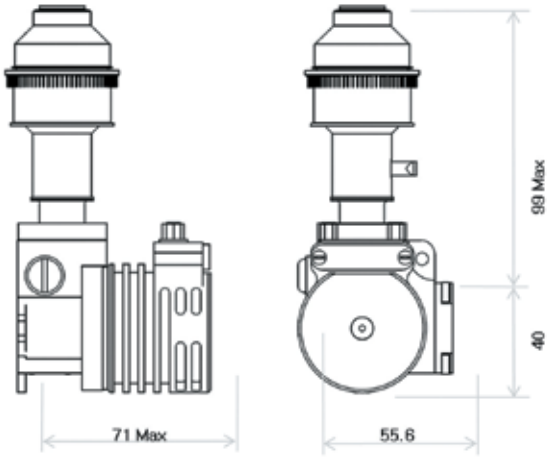
Proxy board

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

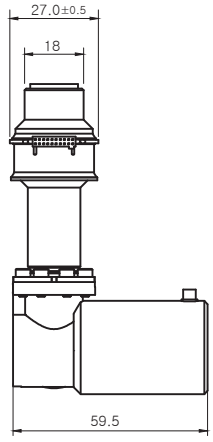
900mm	1.8 x 0.5m	2.3 x 2.3m
D	20.8km	36.8km
R	6.0km	11.9km
I	4.8km	9.8km

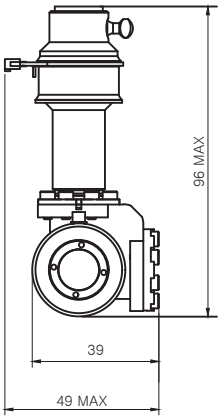
Array format	640 x 512
Pixel pitch	15㎛
Detector type	InSb
Spectral Range	MWIR (3㎛ ~ 5㎛)
No. of output channel	1 or 4 channels
Operability	≥ 99.5 %
NETD	≤ 20mK @ Half well-fill
Frame rate	200Hz @ 640x512 Full frame
Readout mode	ITR or IWR
Cool-down time	≤ 7 min
Environmental condition	MIL-STD-810
Operating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

T2SL Dual Band Detector

MWIR / LWIR 640 x 512 20㎛

Dual Band detector is New Generation Infrared based on T2SL. It acquires each MWIR and LWIR bands by selecting the applied bias direction. The New Generation Dual Band detector will enhance the system performance in various operating environments.

Applications

Security

Night Observation

Long-range Surveillance

Reconnaissance

Specifications

Detector type	T2SL
Array format	640 x 512
Pixel pitch	20㎛
Spectral Range	MWIR + LWIR
MWIR NETD	≤ 20mK
LWIR NETD	≤ 30mK
Operability	≥ 99.5%
Max Frame Rate	200 Hz @ 640 x 512 Full frame
Cool-down time	≤ 7min

Images

MWIR

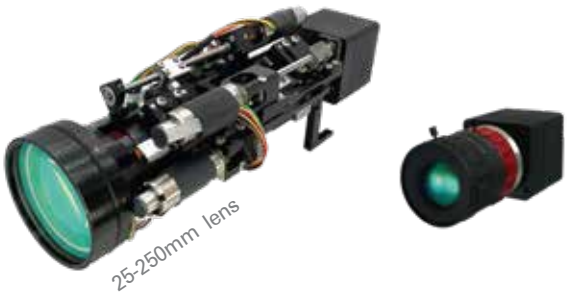
LWIR

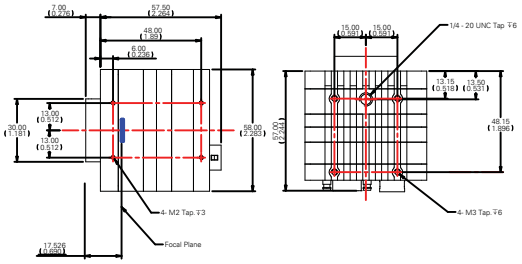
Visible

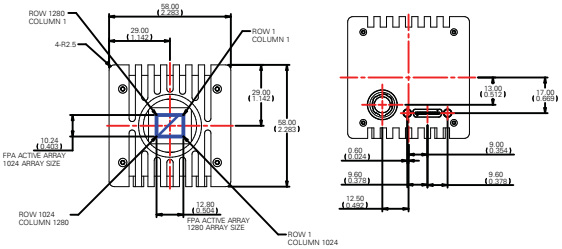
InGaAs SWIR Camera Core

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

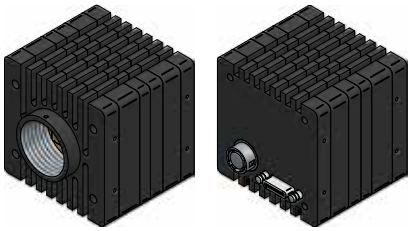
DRI Information

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

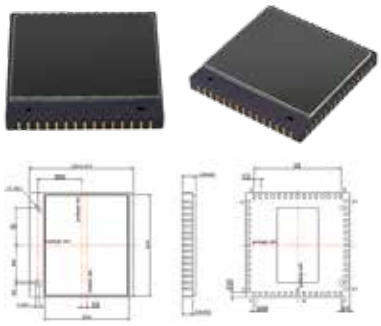
1000mm	1.8 x 0.5m	2.3 x 2.3m
D	16.8km	24.6km
R	7.2km	12.8km
I	6.1km	11.2km



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

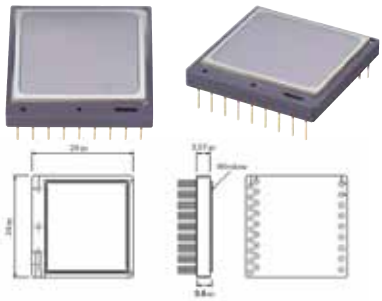
* LG : Low Gain / MG : Mid Gain / HG : High Gain

Uncooled Infrared Detector



DB1280-8C-A

1280 x 1024, 8㎛



DB1024-12C-A

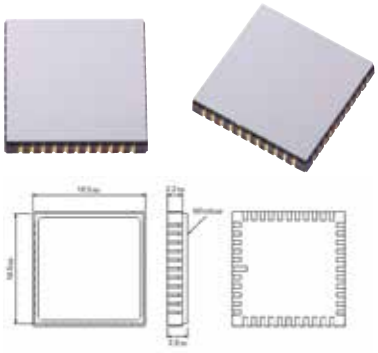
1024 x 768, 12㎛

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℃		

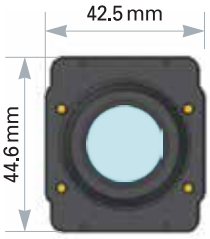
THERMAL EXPERT™

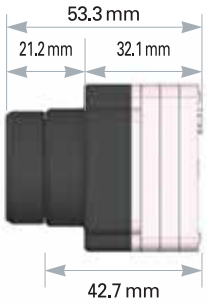
Uncooled Infrared Camera Core

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

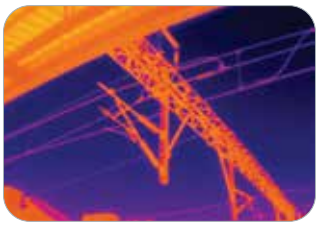
Security / Surveillance

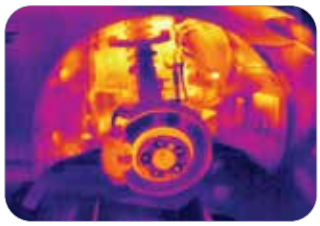
Night Vision

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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