

# Infrared Product Brochure

- Covering—Long-wave/Mid-wave/Short-wave spectrum
- Record invisible spectrum
- Applicable to industrial, safety, scientific research fields

# CONTENTS

---

- Infrared Camera .....1**
  - Near-Infrared (NIR) Industrial Cameras.....1
  - Short-Wave Infrared (SWIR) Industrial Cameras.....2
  - Cooled Mid-Wave Infrared (MWIR) Cameras.....3
  - Long-Wave Infrared (LWIR) Industrial Cameras.....4
  - Micro High-Performance Long-Wave Infrared (LWIR) Cameras.....5
- Industrial Infrared Lens.....6**
  - Short-Wave industrial (SWIR) infrared Lens.....6
- Infrared Illumination.....7**

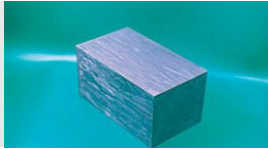
# Near-Infrared (NIR) Industrial Cameras

## ► Main Features

- 300 to 1100 nm spectrum
- High sensitivity and signal to noise ratio
- High contrast imaging in complex lighting environments
- Easy access to feature images with filters



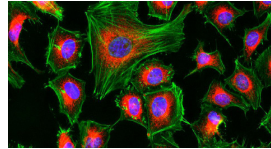
## ► Applications



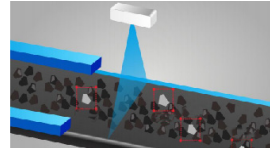
Silica ingot impurity detection



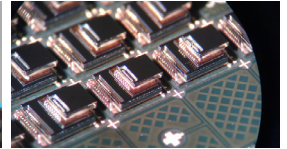
Photovoltaic chip crack detection



Biology fluorescence imaging



Foreign body recognition



Semiconductor detection

## ► Specifications

Model	Sensor	Sensor Technology	Sensor Size	Pixel Size (µm)	Resolution (H*V)	Frame Rate	Interface	Mount
<b>Mars1300-75gm-NIR</b>	PYTHON 1300	CMOS	1/2"	4.8	1280 x 1024	75fps	GigE, PoE	C-Mount
<b>Mars2000-50gm-NIR</b>	PYTHON 2000	CMOS	2/3"	4.8	1920 x 1200	50fps	GigE, PoE	C-Mount
<b>Mars5000-20gm-NIR</b>	PYTHON 5000	CMOS	1"	4.8	2592 x 2048	20fps	GigE, PoE	C-Mount
<b>LEO 25MG-5gm-NIR</b>	GMAX0505	CMOS	1.1"	2.5	5120 x 5120	4.5fps	GigE, PoE	C-Mount
<b>GAL 5000-105xcNIR</b>	-	CMOS	2/3"	3.4	2592 x 2056	105Hz	CoaXPress	C-Mount
<b>GAL-5000-60ucNIR</b>	-	CMOS	2/3"	3.4	2592 x 2056	60fps	USB3.0	C-Mount
<b>GAL 4K-40CCNIR</b>	-	CMOS	28.6mm	7	4096 x 4	40KHz	CameraLink	M42

# Short-Wave (SWIR) Industrial Cameras

## ► Main Features

- 400 to 1800 nm spectrum
- Low noise and high frame rate data output
- Rich lens adaptation interface
- Excellent fog penetration performance



## ► Applications



Fruit spoilage detection

Photovoltaic circuit MAKE point detection

Fog penetration

Inspection of contents in packaging

Liquid impurity detection

## ► Specifications

Model	Sensor	Spectral Range	Type	Sensor Size	Pixel Size (μm)	Resolution (H*V)	Frame Rate	Interface	Mount
iBoost10CSW05KM	InGaAs	900-1700nm	Line Scan	-	25	512 x 1	10KHz	CameraLink	C-Mount
iBoost10GSW05KM	InGaAs	900-1700nm	Line Scan	-	25	512 x 1	10KHz	GigE	C-Mount
iBoost20GSW05KM	InGaAs	900-1700nm	Line Scan	-	20	512 x 1	20KHz	GigE	C-Mount
iBoost20CSW05KM	InGaAs	900-1700nm	Line Scan	-	25	512 x 1	20KHz	CameraLink	C-Mount
iBoost15GSW1KM	InGaAs	900-1700nm	Line Scan	-	12.5	1024 x 1	15KHz	GigE	C-Mount
iDatum90GSWC130M	IMX990	900-1700nm	Area Scan	1/2"	5	1280 x 1024	91fps	GigE	C-Mount
iBoost134CSWC130M	InGaAs	400-1700nm	Area Scan	1/2"	5	1280 x 1024	134fps	CameraLink	C-Mount
iBoost134USWC130M	InGaAs	400-1800nm	Area Scan	1/2"	5	1280 x 1024	134fps	USB3.0	C-Mount
iBoostX-257GSW32M-SA/J <sup>1</sup>	IMX991	400-1800nm	Area Scan	1/4"	5	640 x 512	257.8fps	GigE	C-Mount
iBoostX-400USW32M-SA/J <sup>1</sup>	IMX991	400-1800nm	Area Scan	1/4"	5	640 x 512	400fps	USB3.0	C-Mount
iBoostX-90GSW130M-SA/J <sup>1</sup>	IMX990	400-1800nm	Area Scan	1/2"	5	1280 x 1024	90fps	GigE	C-Mount
iBoostX-200USW130M-SA/J <sup>1</sup>	IMX990	400-1800nm	Area Scan	1/2"	5	1280 x 1024	200fps	USB3.0	C-Mount
iBoostX-533CSW33M-CM/HP <sup>1</sup>	InGaAs	900-1700nm	Area Scan	3/4"	15	640 x 512	533fps	CameraLink	C-Mount
iBoostX-726CSW33M-CM/HP <sup>1</sup>	InGaAs	900-1700nm	Area Scan	3/4"	15	640 x 512	726fps	CameraLink	C-Mount
iBoostX-22GSW500M-SA/J <sup>1</sup>	IMX992	400-1800nm	Area Scan	1/1.4"	3.45	2592x2056	22fps	GigE	C-Mount
iBoostX-71USW500M-SA/J <sup>1</sup>	IMX992	400-1800nm	Area Scan	1/1.4"	3.45	2592x2056	61.9fps	USB3.0	C-Mount

Note 1: Different sensor level options.

# Cooled Mid-Wave Infrared (MWIR) Cameras

## ► Main Features

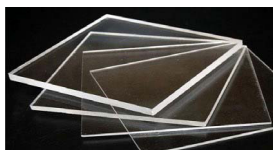
- 1500 to 5200 nm spectrum
- High strength industrial structure design
- Embedded on-board image preprocessing
- Low cost high precision detector
- GigE and Camera Link data interface



## ► Applications



Aerospace



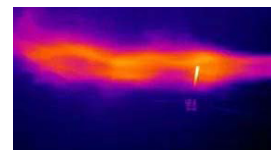
Glass plastics



Automobile engineering



Medical science



Gas flame imaging

## ► Specifications

Model	Sensor type	Spectral range	Pixel spacing (μm)	Resolution	Frame rate	F/#	Lens interface	Digital image output
Venus-MW640-3748GS	Cooled MCT	3700-4800nm	15	640 x 512	1-117Hz	F2.0/F4.0 (Customizable)	M34	Cameralink/ Cameralink & GigE
Venus-MW640-1552GS	Cooled MCT	1500-5200nm	15	640 x 512	1-117Hz	F2.0/F4.0 (Customizable)	M34	Cameralink/ Cameralink & GigE

# Long-Wave Infrared (LWIR) Industrial Cameras

## ► Main Features

- 8000 to 14000 nm spectrum
- High precision temperature measurement
- Rich color display mode
- Low cost high sensitivity uncooled sensor
- GigE Vision protocol support



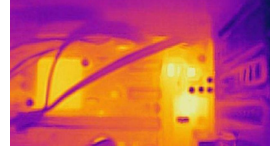
## ► Applications



Food and beverage packaging sealing inspection



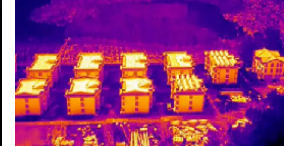
Pipeline inspection



Production temperature detection



Medical drug testing



Building inspection

## ► Specifications



Model	Sensor Technology	Temperature measuring function	Pixel Size (μm)	Resolution (H*V)	Frame Rate (fps)	Interface	Mount	EFL(mm)
LEO 64006LW-50gm	Uncooled VOx Detector	-	17	640 x 512	50	GigE	C-Mount	6.3
LEO 64006LWT-50gm	Uncooled VOx Detector	●	17	640 x 512	50	GigE	C-Mount	6.3
LEO 64015LW-50gm	Uncooled VOx Detector	-	17	640 x 512	50	GigE	C-Mount	15
LEO 64025LW-50gm	Uncooled VOx Detector	-	17	640 x 512	50	GigE	C-Mount	25
LEO 64035LW-50gm	Uncooled VOx Detector	-	17	640 x 512	50	GigE	C-Mount	35

- With accurate temperature measuring function, temperature measuring range -20°C ~150°C or 0°C ~550°C (accuracy ±0.2%)

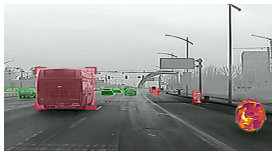
# Micro High-Performance Long-Wave Infrared (LWIR) Cameras

## ► Main Features

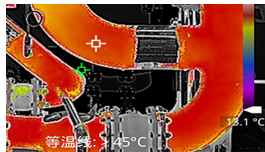
- 8000 to 14000 nm spectrum
- Ultra-light module weight < 10g, lightweight design
- The latest generation of image algorithms for amazing details and contrast performance
- Efficient and accurate temperature measurement ability, ensures quickly obtaining accurate temperature information when starting the device
- Provide Windows, Linux, Android SDK, easy to rapid back-end development



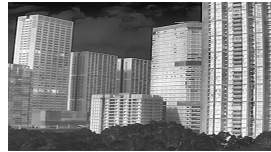
## ► Applications



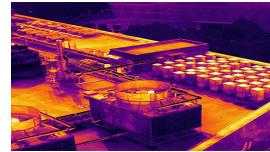
Assisted driving



Industrial temperature measurement



Security monitoring



Night vision image



Drone

## ► Specifications

Model	Sensor Type	Temperature measuring function	Pixel spacing (μm)	Resolution	Frame rate	Dimension/Weight	Focal length
iVaster50BPLW11M-Pro	Uncooled VOx Detector	Observation	12	384×288	50 <sup>1</sup>	26x26/20g±3g	4.4-100mm
iVaster50BPLWT11M-Pro	Uncooled VOx Detector	Temperature Measurement	12	384×288	50 <sup>1</sup>	26x26/20g±3g	4.4-35mm
iVaster50BPLW30M-Pro	Uncooled VOx Detector	Observation	12	640×512	50 <sup>1</sup>	26x26/20g±3g	4.1-100mm
iVaster50BPLWT30M-Pro	Uncooled VOx Detector	Temperature Measurement	12	640×512	50 <sup>1</sup>	26x26/20g±3g	4.1-35mm
iVaster50BPLW30M	Uncooled VOx Microbolometer	Observation	12	640 × 512	50	21x21/8g	4.1-45mm
iVaster25BPLWT30M	Uncooled VOx Microbolometer	Temperature Measurement	12	640 × 512	25	21x21/8g	4.1-45mm
iVaster30BPLW120M	Uncooled VOx Microbolometer	Observation	12	1280 × 1024	30	29x29/24.5g	10-35mm
iVaster30BPLWT120M	Uncooled VOx Microbolometer	Temperature Measurement	12	1280 × 1024	30	29x29/24.5g	10-35mm

Note <sup>1</sup>:Detector frame rate 50Hz, video frame rate 50Hz(observation type)/25Hz(temperature measurement type)

Digital video interface	14Bit or 8Bit LVCMOS/BT.1120/BT.656/LVDS	Only Pro models are supported
	14Bit or 8Bit LVCMOS/BT.1120MIPI/UVC	Other
Analog video: PAL @ 25Hz / NTSC @ 30Hz Serial communication interface: UART / I2C (optional) USB-Type C port: Typical voltage 5V, support image and temperature data transmission, support control protocol		

- **Standard version: One interface only, providing USB/BT656/Analog interface optional. Pro version: Support multi-interfaces installation(providing more interfaces and sd card optional)**

# Short-Wave Infrared (SWIR) Lens

## ► Main Features

- Specifically designed for short wave spectrum
- High strength fixed structure
- High penetration anti-stripping coating
- Excellent consistency



## ► Specifications

Model	Focal Length	Aperture (F/#)	Sensor Size	Wavelength	Field of View	Mount
VT-LEM0814SWIR	8.5 mm	F1.4	2/3"	/	61° /54.8° /42.8°	C-Mount
VT-LEM1214SWIR	12.5 mm	F1.4	2/3"	/	46.8° /38.2° /29.2°	C-Mount
VT-LEM1614SWIR	16.3 mm	F1.4	2/3"	/	36.6° /29.6° /22.4°	C-Mount
VT-LEM2514SWIR	25.9 mm	F1.4	2/3"	900-1700nm	23.6° /19° /14.4°	C-Mount
VT-LEM3514SWIR	35 mm	F1.4	2/3"	900-1700nm	17.44° /13.99° /10.51°	C-Mount
VT-LEM5020SWIR	50 mm	F2.0	2/3"	900-1700nm	12.36° /9.92° /7.45°	C-Mount
VT-LEM0618SWIR-H1	6 mm	F1.8-F22	1"	/	104.6°/95.1°/78.7°	C-Mount
VT-LEM1214SWIR-H1	12.25 mm	F1.4-22	1"	/	66.83°/54.58°/44.10°	C-Mount
VT-LEM2514SWIR-H1	25 mm	F1.49	1"	900-1700nm	36°/27.8°/21°	C-Mount
VT-LEM2518SWIR-H1	25 mm	F1.8	1"	900-1700nm	35.49° /28.5° /21.74°	C-Mount
VT-LEM3514SWIR-H1	35 mm	F1.4	1"	900-1700nm	31.2° /25.4° /18.7°	C-Mount
VT-LEM5014SWIR-H1	50 mm	F1.4	1"	900-1700nm	18.18° /14.48° /10.97°	C-Mount
VT-LEM7525SWIR-H1	75 mm	F2.5	1"	900-1700nm	9.08° /7.26° /5.45°	C-Mount
VT-LEM20040SWIR-H1	200 mm	F4-22	1"	900-1700nm	4.57°×3.66°×2.75°	C-Mount
VT-LEM30040SWIR-H1	300 mm	F4-22	1"	400-1700nm	3.06°×2.44°×1.83°	C-Mount
VT-LEM40056SWIR-H1	400 mm	F5.6	1"	900-1700nm	2.29°×1.83°×1.37°	C-Mount
VT-LEM2520SWIR-H2	25 mm	F2.0	28 mm	900-1700nm	48.04°/39.19°/29.8°	C-Mount
VT-LEM3514SWIR-H2	35 mm	F1.4	4/3"	900-1700nm	31.2°/25.4°/18.7°	M42
VT-LEM5014SWIR-H2	50 mm	F1.4	28.6 mm	900-1700nm	23.18°/18.66°/14.05°	M42 x 1
VT-LEM10021SWIR-H2	100 mm	F2.1	25.6 mm	800-1700nm	14.33°/11.52°/8.72°	M42/C/F-Mount
VT-LEM1616022SWIR-H1	16-160mm	F2.2-Close	1"	900-1700nm	4.6 X 3.4°. at 160mm	C-Mount
VT-LEM2036060SWIR	20-360mm	F6-10	12.3 mm	400-1700nm	1.1X 0.84°. at 360mm	C-Mount
VT-LEM2050036SWIR	20-500mm	F3.6-Close	1/1.8"	900-1700nm	0.84 X 0.63°. at 500mm	C-Mount
VT-LEM2075036SWIR	20-750mm	F3.6-Close	1/1.8"	900-1700nm	0.6 X 0.4°. at 750mm	C-Mount
VT-LEM25120048SWIR	25-1200mm	F4.8-10	12.3 mm	400-1700nm	0.34 X 0.2°. at 1200mm	C-Mount



# Infrared Illumination

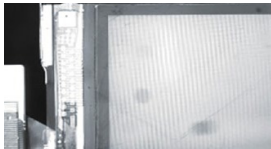
## ► Main Features

- The wavelength and size can be customized flexibly
- High-power red external lamp beads, forming high output, high stability infrared lighting

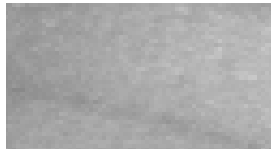
\*Infrared light sources are not suitable for infrared cameras



## ► Applications



Screen detection



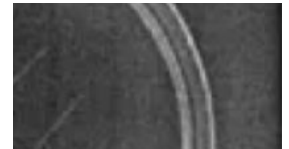
Vascular detection



Dark liquid detection



Filter complex ink information



Cap scratch detection

## ► Products

### Coaxial Illumination

- High-density led provide high levels of light.
- High precision optical glass is used for lens Windows and spectroscopes.



### Bar Illumination

- Standard die and seam installation ensures structural stability.
- Equipped with special optical lenses to focus light



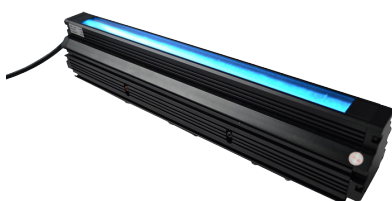
### Bottom Flat Backlight Illumination

- Flat lights provide domain lighting through LED beads distributed on the bottom.



### Line Illumination

- Use optical cylindrical lenses to focus light to reduce diffusion.
- The width of the luminous surface is variable because the distance between the LED plate and the lens is adjustable.



### Ring Illumination

- Multiple angles provide the right lighting for realistic images.
- High-density LED arrays for intense lighting.
- Diffuser plates can be used to increase lighting uniformity.



### Dome Shape Illumination

- High-density SMD LED beads provide high-intensity light that is homogenized through dome-shaped reflective panels.
- Large irradiation area, high uniformity, suitable for bending objects and mirror imaging.



# Vision And More Available

让工业更智能，让视觉更简单！



SWIR Camera  
Industrial Camera



Macro Lens  
Industrial Lens



Microscope



System Solution  
No-programming Software



CONTRASTTECH

ADD: No 8, Xiyuan 9th Road Hangzhou 310030 China  
TEL: 86-571-89712238  
Email: market@contrastech.com  
Web: www.contrastech.com



Ver.24.04