



INFRARED PRODUCT BROCHURE

ONE-STOP OPTOELECTRONIC SYSTEM SOLUTION PROVIDER



WeChat

VITAL OPTICS TECHNOLOGY CO., LTD.

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To Empower Humans To
Perceive The World In More Dimensions

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CORPORATE CULTURE



MISSION

TO EMPOWER HUMANS TO PERCEIVE THE WORLD IN MORE DIMENSIONS



VISION

BECOME A GLOBAL LEADER IN THE OPTOELECTRONICS FIELD



VALUES

RESPECT, COLLABORATION, PERSEVERANCE, INNOVATION

COMPANY INTRODUCTION

Vital Optics Technology Co., Ltd. was listed on the Growth Enterprise Market of the Shenzhen Stock Exchange in July 2015, with the stock code: 300489.

VOT is a dedicated national high-tech enterprise specializing in optoelectronic technology, positioning us at the vanguard of innovation in this field. With comprehensive capabilities spanning the entire industry chain, we are capable of full-scale production from the growth of optoelectronic materials, chip design, key sensor manufacturing, to system integration. We offer a diverse range of products and solutions tailored to the needs of the global market: Infrared materials and components, MEMS and detectors, customized core and lens assemblies, multifunctional thermal imaging cameras, tailored integrated optoelectronic systems and solutions.

Our product applications span a diverse array of cutting-edge fields: Artificial Intelligence, semiconductor technology, advanced materials science, renewable energy solutions, medical diagnostics, sophisticated scientific instruments, large-scale research equipment, night vision for outdoor applications, industrial thermal measurement, machine vision technology, internet of Things devices, environmental monitoring systems, Unmanned Aerial Vehicle payloads, assisted driving technologies.

VOT's commitment to innovation and quality ensures that our products meet the rigorous demands of these industries, positioning us as a trusted partner for customers seeking advanced optoelectronic solutions.

Total Number of Employees **2000+** Ratio of R&D personnel **26%**



QUALIFICATIONS AND AWARDS

Led by a team of doctoral experts

Applied for **1164** patents

631 patents
Invention patents

498 patents
Utility model patents

35 patents
Design patents



- **ISO 9001:2015** Quality Management System Certificate
- **ISO 14001:2015** Environmental Management System Certificate
- **ISO 45001:2018** Occupational Health and Safety Management System Certificate

CORE TECHNOLOGY



- 01 All Industries**
Empower national security, smart cities, low-altitude economy and natural resources; drive industrial intelligent upgrading, unlock tech value in diverse scenarios, and co-build a new intelligent era.
- 02 Intelligent Platform**
With leading algorithms as core engine, build an evolvable, adaptable intelligent platform; continuously deliver innovation and supply "intelligent fuel" for industrial intelligent transformation.
- 03 Intelligent Perception**
Integrate diverse perception devices, cover infrared, laser, radio frequency and other multi-modal dimensions; enable comprehensive, real-time and accurate capture of the physical world, and serve as "acute nerves" for intelligent systems.
- 04 Independent Chips**
Leverage full-stack independent R&D (from MEMS sensors to Class I superlattice chips) to build Chinese chips' "core strength"; secure full hardware independence and create a safe, efficient perception fortress for the intelligent era.
- 05 Material Foundation**
Build on material innovation, break performance boundaries at the atomic level; lay a solid "performance foundation" for the entire industrial chain and endow tech innovation with differentiated competitiveness from the source.

STRATEGIC LAYOUT

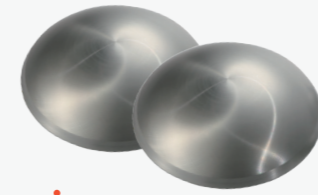


Upstream Photoelectric Materials

VOT is a leading enterprise in the field of crystal materials. We possess a variety of growth technologies, enabling the growth of high-quality crystals. Our company provides full-process services such as processing, coating, and product testing for various components, with a sound quality assurance system. We have obtained ISO 9001 quality certification and established a comprehensive quality management system. As one of the few global suppliers capable of producing and supplying zinc selenide (ZnSe) materials in batches, VOT has developed 13N high-purity germanium with independent intellectual property rights, which fills the domestic gap and represents a major breakthrough in the field of electronic materials.



Infrared Optical Materials



Germanium

Germanium features high refractive index, wide infrared transmission range, low absorption coefficient, low dispersion, and is easy to process. Germanium is the most commonly used material for producing IR optical lenses and IR optical windows. Due to its excellent transmittance in the infrared spectrum and opacity in the visible spectrum, Germanium is highly suitable for fabricating optical components used in infrared lasers and thermal imaging applications. It can be used as a material for windows, lenses, prisms, and filters for thermal imagers and infrared radar, and in other infrared optical devices used in critical civilian applications.



13N High Purity Germanium

The high-purity germanium detector, which is using high-purity germanium crystal as the detection medium, has the advantages of superior energy resolution, wide energy measurement range, and high detection efficiency. It has a broad application prospect in the fields of dark matter detection, nuclear power, material science, trace element analysis and security inspection. VOT is committed to continuously innovating and developing the production technology of the high-purity germanium crystal and detector, and provides customers with the best solutions.



Fiber Grade GeCl_4

Ordinary GeCl_4 is the raw material for producing GeO_2 , fiber grade GeCl_4 is an important dopant in the production of optical fiber preforms. Its role is to increase the refractive index of the core, thereby enabling lossless transmission of light.



GeO_2 is widely used in the manufacture of high-purity metallic Ge, organic Ge, BGO, GeCl_4 for optical fiber, chemical catalysts, the pharmaceutical industry, PET resins, and electronic devices, etc.



ZnSe

ZnSe is an optical material featuring high purity, strong environmental adaptability, ease of processing. ZnSe is widely used in laser and infrared thermal imaging systems. It possesses low light transmission loss and excellent transmission properties. ZnSe has a low absorption rate at 10.6 microns, making it the preferred material for high-power CO₂ laser optical components.



ZnS

ZnS can be divided into raw ZnS and multispectral ZnS. Multispectral ZnS is obtained from native ZnS through a hot isostatic pressing treatment. Multispectral ZnS has a transmission range covering visible and infrared light. ZnS features high hardness and strong resistance to wind and sand erosion, and is widely applied in the manufacture of IR windows and IR optical components.



Chalcogenide Glass

Chalcogenide glass features superior refractive index uniformity and stability, making it an ideal optical material for chromatic aberration correction of infrared optical lenses and avoidance of thermal defocus in the range of 2~12 μm. Chalcogenide glass is mainly used in monitoring equipment and systems as well as marine/maritime, fire/police, sensors and infrared products.



Silicon

Silicon is commonly used as an IR reflector and window material in the 1.5~8 micron range. As one of the most widely used infrared materials, silicon has characteristics such as good durability, high thermal conductivity, and low density. It is extensively applied in infrared windows for optoelectronic components. VOT's silicon products include silicon wafers, blank lenses. VOT is positioned to offer both FZ and CZ Grades of silicon based on your particular requirements.



InAs

InAs single crystals can be used as the substrates for the growth of InAsSb/InAsPSb, InNAsSb, heterojunction and InAs/GaSb superlattice structure, which can be used to produce infrared light-emitting devices with the wavelengths of 2~14μm, and mid-infrared quantum cascade lasers, and these infrared devices have a good prospect of application in the field of gas monitoring and low-loss fiber communication. In addition, InAs single crystals has electron mobility, which



CZT

Cadmium Zinc Telluride single crystal (Cd_{1-x}Zn_xTe, CZT) is a wide-band II-VI compound semiconductor, which can be regarded as solid solution of CdTe and ZnTe, with sphalerite structure at room temperature and pressure, belonging to the cubic crystal system. Its melting point varies from 1092°C and 1295°C depending on the Zn content. Its lattice constant can be modulated by changing the Zn composition, and it can perfectly match with the narrow-band HgCdTe material in the lattice, so it can be used as the preferred substrate material for HgCdTe epitaxy. Cadmium Zinc Telluride has been widely used in the preparation of high-performance infrared focal plane detectors.



GaAs

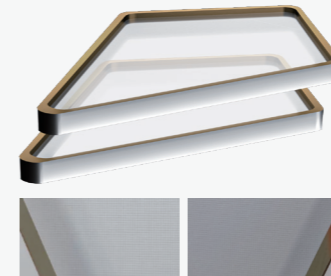
High purity GaAs single crystals produced by the vertical gradient freeze (VGF) growth method, after cutting, grinding, and polishing, can reach ≥55% transmittance in the 2~12μm infrared band. In case of relatively thick products (≥3 mm), the transmittance will gradually decrease as the thickness increases, generally around 51% to 55%. GaAs can be used in practical applications where the strength and stiffness of the IR material are critical factors, and can also be used in CO₂ laser applications as an alternative to ZnSe optical lenses or mirrors.



Fluorides

VOT is capable of growing and producing ideal crystalline materials for manufacturing various optical components such as optical windows, prisms, and lenses, including sapphire, calcium fluoride, magnesium fluoride, and barium oxide.

Semiconductor Substrate Materials



Semiconductor Substrate Materials

Metal mesh-based infrared transparent EMI shielding window of VOT exhibits frequency selection characteristics for electromagnetic waves while maintaining high transmittance in a specific band, enabling effective regulation of the reflection and transmission of electromagnetic waves. The semiconductor lithography process is applied to etch a grid with a specific line width and period. Through vacuum coating technology, a specific material is evaporated and deposited on the grid to form a metal mesh film with a specific structure on the material surface, thereby realizing efficient electromagnetic shielding for radar waves.

Semiconductor Substrate Materials



GaSb

GaSb is a very important III-V group direct bandgap semiconductor material with a bandgap width of 0.72eV, which it is an ideal substrate for the development of Class II superlattice detectors and mid-infrared band lasers.



InSb

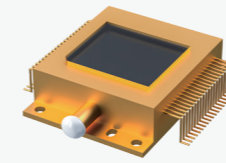
Indium Antimonide (InSb), as a kind of III-V semiconductor crystal material, has a very narrow band gap a very small effective mass of electrons and a very high electron mobility, which has gained important applications in the field of magnetoresistive components and Hall devices and other industrial technologies. InSb-based infrared detectors have very high quantum efficiency and response rate in the 3~5μm band, which makes it the preferred material for mid-wave infrared detectors.

Midstream Core Components

We have built an 8-inch silicon-based MEMS infrared detector chip production line and 2-6 inch various cooled infrared detector chips production lines (including mid-wave MCT, InSb, mid-wave high-temperature, and long-wave type II superlattice detector chips, etc.), forming a complete detector industry chain covering infrared materials, chips, packaging, and devices. The infrared camera cores feature advantages such as small size, low power consumption, high cost-effectiveness, and customizability, and are suitable for the development and integration of infrared thermal imaging equipment/systems in various fields.

Cooled Infrared Detector

InGaAs



VS0615I

Array size: 640x512
 Pixel size: 15μm
 Spectral range: 0.9~1.7μm
 Effective pixel rate: ≥99.5%
 Operating temperature: -40°C~70°C

Infrared Detectors



	Photovoltaic Infrared Detector	Photoconductive Infrared Detector
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Active element material :	InAsSb	HgCdTe
Active area:	1mm×1mm	0.25mm×0.25mm
Spectral range:	2μm~5μm	2μm~5μm
Working condition:	bias voltage:0V	bias current: 1mA
Working temperature:	253K	213-220K

MCT Cooled Infrared Detector



VM0615M

Array: 640x512
 Pixel Pitch: 15μm
 Detector spectral response: 3.7μm ~4.8μm
 Array Operability: ≥99.5%
 FPA Operating Temperature: 80K | 100K

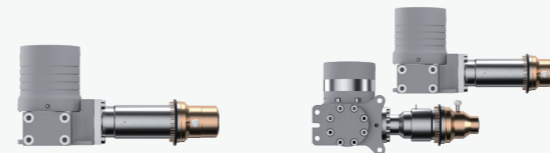
MCT Cooled Infrared Detector



	VM1215M	VM1210M
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Array:	1280x1024	1280x1024
Pixel Pitch:	15μm	10μm
Detector spectral response:	3.7μm ~4.8μm	3.7μm ~4.8μm
Array Operability:	≥99.5%	≥99.5%
FPA Operating Temperature:	80K	80K

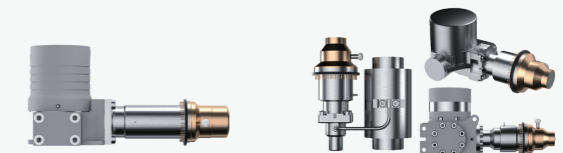
InSb Cooled Infrared Detector



	VM0330A	VM0615A
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Array:	320x256	640x512
Pixel Pitch:	30μm	15μm
Detector spectral response:	3.2μm ~3.5μm	3.7μm ~4.8μm
Array Operability:	≥99.5%	≥99.5%
FPA Operating Temperature:	80K	80K

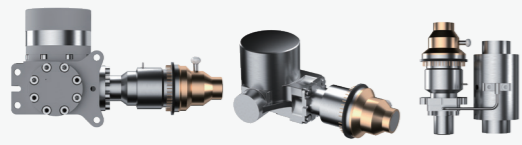
T2SL Cooled Infrared Detector



	VL0615S	VM0615R
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Array:	640x512	640x512
Pixel Pitch:	15μm	15μm
Detector spectral response:	7.7μm ~9.5μm 7.7μm ~10.5μm	3.7μm ~4.8μm
Array Operability:	≥99%	≥99.5%
FPA Operating Temperature:	80K	120K

InAsSb Cooled Infrared Detector



Cooled High-temperature Blue Medium Wave Infrared Detector - VM0615B

Array: 640x512
 Pixel Pitch: 15μm
 Detector spectral response: 3.6μm ~4.2μm
 Array Operability: ≥99.5%
 FPA Operating Temperature: 150K

InAsSb Cooled Infrared Detector



High Operating Temperature Gas Detector - VM0615B

Array: 640x512
 Pixel Pitch: 15μm
 Detector spectral response: 3.2μm ~3.5μm
 Array Operability: ≥99.5%
 FPA Operating Temperature: 120K

HOT Miniaturized Thermal Camera Core



HTE30/HTQ15

Resolution: 320x256 | 640x512
 PixelsSize: 30μm | 15μm
 Spectral Band: 3.7μm ~4.8μm
 NETD@F4: <20mk
 Frame Frequency: 25Hz/30Hz/50Hz

Scorpio Cooled Thermal Camera Core



SMQ15-R

Resolution: 640x512
 PixelsSize: 15μm
 Spectral Band: 3.7μm~4.8μm
 NETD@F4: <20mk
 Frame Frequency: 25Hz/30Hz/50Hz

Cooled Infrared Camera Core

SWIR camera core



Te0615D

Array: 640x512
 Pixel Pitch: 15μm
 Spectral Band: 0.9~1.7μm
 Array Operability: ≥99.8%
 Dark current: ≤10nA/cm² @20°C

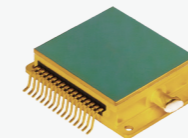
Medium Wave Cooled Infrared Camera Core



	Te0615A	Te0615B
Array:	640x512	640x512
Pixel Pitch:	15μm	15μm
FPA spectral band:	3.7μm ~4.8μm	3.7μm ~4.8μm
Typical NETD:	≤20mK	≤25mK
Max. full frame rate:	100Hz	100Hz

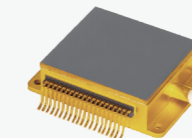
Metal Packaging Infrared Detector

Metal Packaging Infrared Detector



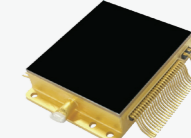
VL0617VM

Array: 640x512
 Output Signal: Analog Output
 Pixel Pitch: 17μm



VL0612VM

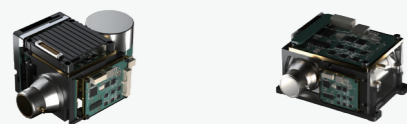
Array: 640x512
 Output Signal: Digital Output
 Pixel Pitch: 12μm



VL1212VM

Array: 1280x1024
 Output Signal: Digital Output
 Pixel Pitch: 12μm

HOT Miniaturized Cooled Camera Core



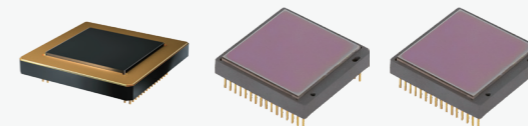
	Te0615C	Te0615E
Array:	640x512	640x512
Pixel Pitch:	15μm	15μm
FPA spectral band:	3.7μm ~4.8μm	3.7μm ~4.8μm
Typical NETD:	640x512 mode: ≤25mK	640x512 mode: ≤25mK
Max. full frame rate:	25Hz, 50Hz	50Hz, 100Hz

High-Temperature Medium Wave Gas Detection Camera Core



	Te0615B-G	Te0615F-G
Array:	640x512	
Pixel Pitch:	15μm	
FPA spectral band:	3.2μm ~3.5μm	
Typical NETD:	640x512 mode: ≤20mK 320x256binning mode: ≤15mK	
Max. full frame rate:	640x512 mode: 90Hz 640x512 mode: 100Hz 320x256binning mode: 200Hz	

Ceramic Packaging Detector



	VL1212VC	VL0612VC	VL0312VC
Array:	1280x1024	640x512	384x288
Output Signal:	Digital Output	Digital Output	Digital Output
Pixel Pitch:	12μm	12μm	12μm

Wafer Packaging Detector



	VL0612VW	VL0312VW
Array:	640x512	384x288
Output Signal:	Digital Output	Digital Output
Pixel Pitch:	12μm	12μm

Uncooled Infrared camera core

UCC3 Series Camera Core



UCC3843/UCC6403

Pixel: 640x512 | 384x288
 Pixel Pitch: 12μm
 NETD: ≤40mK
 Frame rate: ≤60Hz
 Optical Lens: 25mm (standard)
 6/9/13/19/35/50/75mm (selectable)

UCW Series



UCW SE Series

Pixel: 640x512
 Pixel Pitch: 12μm
 NETD: ≤40mK
 Frame rate: ≤50Hz
 Optical Lens: 4.6/6.6/9.1/13/15/19/25/35mm

Fireye Series



FE-S-E/FE-S-Q/FE-SL-E/FE-SL-Q

Resolution: 384x288 | 640x512
 PixelsSize: 12μm
 NETD: ≤50mK, @F1.0, 300K
 Frame Frequency: ≤50Hz
 Objective Lens: 9.1/13/19/25/35/50mm, F1.0

Spiritpupil Series



SP-S-E/SP-S-Q/SP-SL-E/SP-SL-Q

Resolution: 640x512
 PixelsSize: 12μm
 NETD: ≤50mK, @F1.0, 300K
 Frame Frequency: ≤50Hz
 Objective Lens: 9.1/13/19/25/35/50mm, F1.0

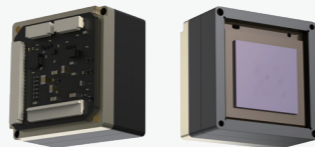
Fireye V2 Series



FE-S-E V2/FE-S-Q V2/FE-SL-E V2/FE-SL-Q V2

Resolution: 384x288 | 640x512
 PixelsSize: 12μm
 NETD: ≤50mK, @F1.0, 300K
 Frame Frequency: ≤50Hz
 Objective Lens: 9.1mm, F1.0

Fireye A Series



FE-SL-E-A/FE-SL-Q-A

Resolution: 384x288 | 640x512
 PixelsSize: 12μm
 NETD: ≤50mK@300K
 Frame Frequency: ≤50Hz
 Weight: ≤21g (Without Lens)

Infrared Optical Lens

Customizable according to customer needs

Athermalized Lenses



Continuous Zoom Lenses



Manual Focus Lenses



Dual-Field-of-View Lenses



Motorized Focus Lenses



Mid-Wave Cooled Lenses



Laser Rangefinding Core Components



LMS Series Circular Semiconductor Laser Rangefinding Modules

LMS-1200C

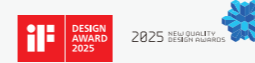
Human Eye Safety Class: Class1 / 1M
 Wavelength: 905nm
 Maximum Range (2.3m×2.3m) : 1.5km
 Minimum Range: 5m
 Ranging Accuracy: ±0.5 (<400m) , ±1 (>400m)

Downstream Cameras and Systems

We can provide customers with personalized integrated optoelectronic systems and solutions. We have developed a series of products for different industry applications such as outdoor, security, industrial temperature measurement, intelligent driving, gas detection. With independent intellectual property rights, these products can be applied in scenarios such as outdoor observation, forest fire prevention, gas leakage detection, fire warning, security monitoring, power detection, and warehouse management.

Outdoors

SMART Series Handheld Thermal Monocular



S-IR

Resolution: 384×288/640×512
Objective Lens: 9.7/19/25mm
NETD: ≤25mK@300K
Weight: ≤260g
Digital Zoom: 1x, 2x, 4x
Protection Rating: IP67

NE Series Handheld Thermal Binocular



NE-Q55

Infrared sensor: 640×512/12μm + 2592×1944/2.0μm
Objective Lens: 55mm F1.0 + 25mm F1.8
Laser Ranging: human/2300m; car/5000m
Accuracy: ±0.5m~±2m
Display: 0.39" OLED 1024x768
NETD: ≤ 25mK@300K
Protection Rating: IP67

MINI Series Thermal Imager



M-IR

Resolution: 384×288/12μm | 640×512/12μm
Objective Lens: 25/35mm | 35mm
NETD: ≤25mK@300K
Display: 0.39" OLED 1024x768
Digital Zoom: 1x, 2x, 4x
Protection Rating: IP67

LK Series Thermal Imager



LK-IR

Resolution: 384×288 | 640×512
Objective Lens: 19/25/35/50mm | 35/55/75mm
NETD: ≤ 25mK@300K
Display: 0.39" OLED 1024x768
Digital Zoom: 1x, 2x, 4x
Protection Rating: IP67

MIGHT Series Cooled Handheld Thermal Binocular



MT-LR-QM40220V2

Infrared Resolution: 640x512
Infrared Lens: 18~275mm
NETD: 25mK
Laser Ranging: 6km
Objective Lens: 5-megapixel, 30x optical zoom
Display: 0.72 OLED 1920x1080
Weight: 2.3kg
Protection Rating: IP67

LK Series Thermal Imager
(Laser Rangefinding)



LK-LR
Resolution: 384x288 | 640x512
Objective Lens: 19/25/35/50mm | 35/55/75mm
NETD: ≤ 25mk@300K
Display: 0.39" OLED 1024x768
Digital Zoom: 1x, 2x, 4x
Protection Rating: IP67
Laser Rangefinding: 1200m

Demon Series Thermal Imager



D-IR
Resolution: 640x512
Objective Lens: 19/25/35mm
NETD: ≤ 25mk@300K
Display: 0.39" OLED 1024x768
Digital Zoom: 1x, 2x, 4x, 8x
Protection Rating: IP67

Laser Rangefinder Monocular



Valiant
Magnification: 6x
Objective Lens: 20mm
Maximum Range: 914m
Minimum Range: 4.5m
Accuracy: ±1m@100m

Laser Rangefinder Binocular



Heroic
Magnification: 10x
Maximum Range: 2286m
Minimum Range: 5m
Accuracy: ±1m (<300m) , ±2 (300m-1500m)

Demon Series Thermal Imager



T-IR
Resolution: 384x288 | 640x512
Objective Lens: 35/50mm
NETD: ≤ 25mk@300K
Display: 0.39" OLED 1024x768
Digital Zoom: 1~4x
Protection Rating: IP67

Multi-purpose Thermal Monocular



ND-IR
Resolution: 384x288/12μm | 640x512/12μm
Display: 0.39" OLED 1024x768
Objective Lens: 9.6/16/26.7mm
Laser Pointer Light Spot Range: >100m
Digital Zoom: 1x, 2x, 4x
NETD: ≤25mK@300K
Weight: ≤260g

Temperature Measurement

Dual-spectrum Temperature Measurement T-type PTZ



VOT-M6DT
Detector resolution: 640x512
Pixel pitch: 12μm
NETD: ≤40mK
Lens: 13/15/19/25/35/50mm
Temperature Measurement Range: -20°C~+150°C, 140°C~600°C
Temperature Measurement Accuracy: ±2°C or ±2% of the reading

Dual-spectrum Temperature Measurement Dome Camera



VOT-M6DD
Detector resolution: 640x512
Pixel pitch: 12μm
NETD: ≤40mK
Lens: 13/15/19/25/35/50mm
Temperature Measurement Range: -20°C~+150°C, 150°C~600°C
Temperature Measurement Accuracy: ±2°C or ±2% of the reading

Night Vision



ND-NV31
Objective Lens: 26.8mm/ F1.28
LED Indicator (In The Field Of View) :
Infrared auxiliary illumination/low battery indicator
Operating Time: 15h
Protection Rating: IP67
Image Intensifier: GEN 2+ (≥64lp/mm)
Signal-to-Noise Ratio: 28
Phosphor: P43 (Green Phosphor)/P45 (White Phosphor)

Night Vision



ND-NV14
Objective Lens: 26.8mm/ F1.28
LED Indicator (In The Field Of View) :
Infrared auxiliary illumination/low battery indicator
Operating Time: 20h
Protection Rating: IP67
Image Intensifier: GEN 2+ (≥64lp/mm)
Signal-to-Noise Ratio: 28
Phosphor: P45 (White Phosphor)

Dual-spectrum Temperature Measurement Explosion-proof Bullet



VOT-M6DE
Detector resolution: 640x512
NETD: ≤55mK
Pixel pitch: 12μm
Lens: 6.1/9.1mm; Free focus
Temperature Measurement Range: -20°C~+150°C
Temperature Measurement Accuracy: Max (±2°C, ±2%)

Dual-spectrum Temperature Measurement Bullet



VOT-M6DA
Detector resolution: 640x512
NETD: ≤40mK
Pixel pitch: 12μm
Lens: 6.1/9.1mm; Fixed-focus Athermal Lens, F=1.0
Temperature Measurement Range: -20°C~+150°C
Temperature Measurement Accuracy: Max (±2°C, ±2%)

PTM Portable Temperature Measurement Thermal Imager



VOT-PTM304/VOT-PTM204

Resolution:320x240/256x192
 Frame Rate:25Hz
 Field of View:52°x34°/42°x32°
 Temperature Measurement Range:Standard:
 -10°C to +450°C
 Temperature Measurement Accuracy:
 ±2°C or ±2% of the reading

PTM Portable Temperature Measurement Thermal Imager



VOT-PTM640C

IR Resolution:640x512
 Pixel pitch:12µm
 Frame rate:25Hz
 NETD:≤40mK (@F/1.0, 25°C)
 Measurement range:-20°C~+150°C (standard)
 150°C~600°C (optional),550°C~1600°C (optional)
 Measurement accuracy:Max. (±2 °C, ±2%)

Duo-vision Ball PTZ



VOT-MD6C

Resolution: 640x512
 Pixel Pitch: 12µm
 Focal Length: 19mm
 Field of View: (H) 22.85°x (V) 18.37°

Duo-vision Surveillance Speed Dome



VOT-D600

Resolution: 640x512
 Pixel Pitch: 12µm
 Focal Length: 35mm
 Field of View: (H) 12.48°x (V) 10.03°

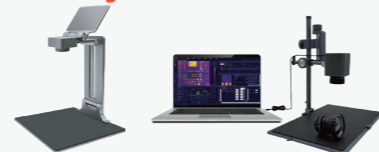
DV Portable Temperature Measurement Thermal Imager



VOT-640G / VOT-1000G

Detector Resolution:640x512 | 1024x768
 Temperature Resolution:
 Lens:24°x18°(standard),6°/12°/48°(optional)
 Standard Temperature Measurement Parameters:
 Standard: -20°C~150°C, 0°C~410°C
 Optional: +300°C~+650°C\+300°C~+2000°C
 Temperature Measurement Accuracy:
 ±2°C or ±2% of the reading

Rapid Maintenance or Professional Thermal Analyzer



VOT-R20T / VOT-R30T/VOT-R60T

Resolution: 256x192 | 384x288/640x512
 Frame Rate: 25Hz
 Field of View: 56°x42° | 29.2°x21.7°/48.7°x38.6°
 Temperature Range: 15°C~+600°C(-4°F+1112°F) | -20°C~550°C
 Temperature Accuracy: ±2°C or 2% (without macro lens) |
 -20°C~120°C (2°C or ±2%) ,120°C~550°C (±3%)

Gas Detection

Handheld gas detection thermal imager



HGD3615-B25

Resolution:640 x 512
 Pixel Size:15µm
 Spectral Band:3.2µm~3.4µm
 NETD:25mm
 Focal Length:25mm
 Gas Detection: over 20 types

Online gas detection thermal imager



NGD3330-M3090 | NGD3615-M3090

Resolution:320x256 | 640x512
 Pixel Size:30µm | 15µm
 Spectral Band:3.2µm~3.5µm
 NETD:≤15mK | ≤25mK
 Focal Length:30mm~90mm
 Gas Detection: over 20 types

Security & Protection

Duo-vision Surveillance PTZ



M3SP / M6SP / M3DP / M6DP

Detector resolution: 384x288 | 640x512 | 384x288 | 640x512
 Pixel pitch: 12µm
 NETD: ≤40mK
 Focal length: 50/75mm,50/75/100mm,
 25-75/25-100/30-150/25-225mm

Duo-vision Surveillance PTZ



VOT-M6DP-V / Medium Wave Cooled CTIM-DV6230

Detector Type: Uncooled Vanadium Oxide Detector | MCT
 Resolution: 640x512 | 640x512 | 640x512 | 640x512
 Thermal Imaging Lens:
 50mm F1.0 | 75mm F1.0 | 100mm F1.0 | 17-230mm

Infrared Panoramic Radar



ESSD Series Infrared Panoramic Radar

ESSD-Q75

Resolution, pixels: 640x512
 Objective Lens: 75mm
 Horizontal field of view: 360°
 Detection Range(UAV): 1880m
 Detection Range (Human): 7090m
 Detection Range(car): 9590m



ESPT Series Infrared Panoramic Radar

ESPT-Q19

Resolution, pixels:640x512
 Objective Lens:19mm
 Horizontal Field of View:360°
 Detection Range (Human):600m
 Detection Range (Car):1200m

Thermal Imager for Phones

Dual-Spectrum Thermal Imager for Phones



VOT-SP3A

Resolution: 256x192
 Lens: 3.2mm
 Temperature range: -15°C~600°C
 Temperature Accuracy: ±2°C or ±2% of reading

Petite Series Thermal Imager for Phones



PT-Q19

Resolution : 640x512
 PixelsSize: 12µm
 Focal Length: 19mm
 Power Wastage: <1W

Assisted Driving

IVS Series Intelligent In-vehicle AI System (5.5-inch Screen)



IVS05-Q09

Resolution/pixels: 640×512/12µm
 Objective Lens: 9mm/6.6mm
 Recognition Range (Human1.7m): 200m (150m)
 Recognition Range (Car2m): 250m (200m)

IVS Series Intelligent In-vehicle AI System (4-inch Screen)



IVS4G-Q09

Resolution/pixels: 640×512/12µm
 Objective Lens: 9mm/6.6mm
 Recognition Range (Human1.7m): 200m/150m
 Recognition Range (Car2m): 250m/200m
 4G: reserved 4G module

IVS Series Intelligent In-vehicle AI System (10-inch Screen)



IVS10G-Q09

Resolution/pixels: 640×512/12µm
 Objective Lens: 9mm/6.6mm
 Recognition Range (Human1.7m): 200m/150m
 Recognition Range (Car2m): 250m/200m
 4G: reserved 4G module

LiDAR

Full Solid-State LiDAR



MF150

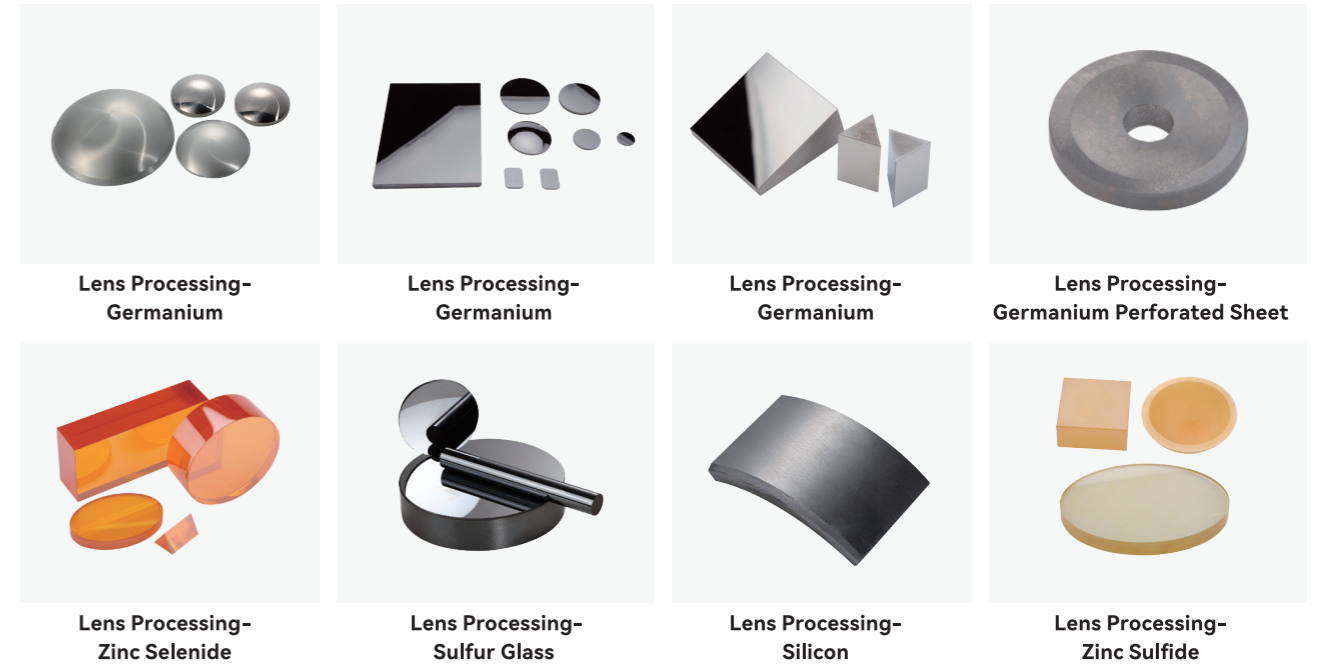
Main Wavelength: 905nm
 Vertical Laser Beams: 150lines
 Detection Range: 1~50m
 Field of View (FOV): 120°(H)×50°(V)
 Operating Temperature: -30°C~+65°C

Customization Services

Relying on its outstanding professional capabilities and abundant technical resources, VOT is able to provide customers with a full range of customized services in an all-round manner. In terms of material customization, it covers a series of delicate and crucial links such as lens processing, polishing, ultra-precision single-point diamond turning, precision molding and coating. In terms of lens customization, VOT can carry out personalized customization according to the unique needs of customers. In terms of movement customization, it can provide customers with high-quality, high-performance and highly adaptable movement products, so as to meet the diverse customization needs of different customers in different fields.

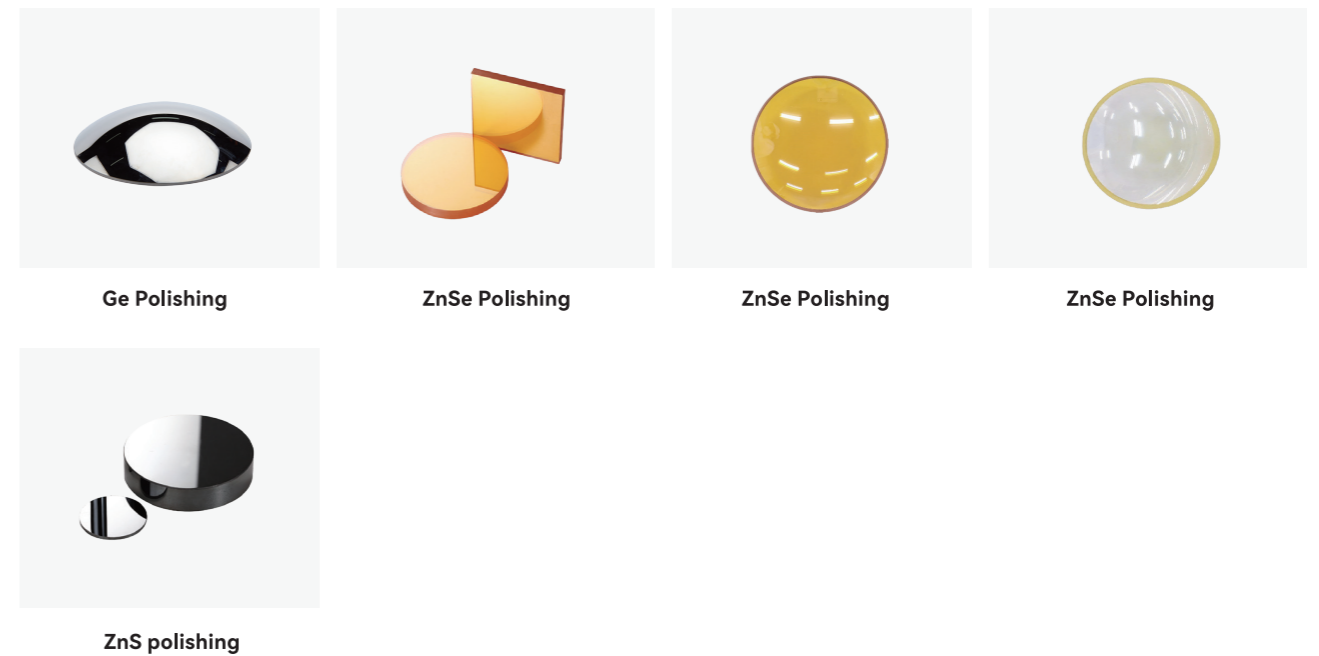
Material Customization-Lens Processing

Adopting a series of high-precision processing equipments such as advanced five-axis CNC machining centers, high-precision CNC lathes, precision wire-cutting equipments and high-efficiency vertical milling and grinding equipments, we carry out diversified processing techniques for germanium, zinc selenide, sulphur glass, silicon, zinc sulphide, gallium arsenide, and other kinds of infrared materials such as square pieces, round pieces, lenses, shaped pieces, and spherical shields.



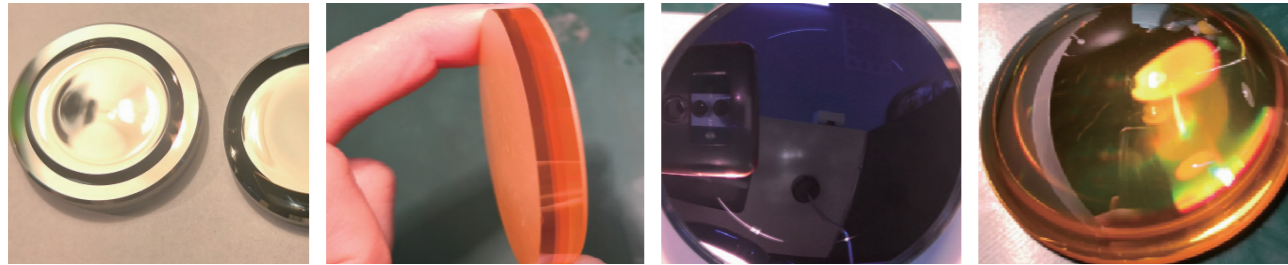
Material Polishing

VOT has High-speed, classical and aspheric polishing line, capable of mass-producing high-precision products, covering different product types such as lenses, plane mirrors, preform, special-shaped pieces, ultra-thin mirrors, cylindrical mirrors, domes, etc.



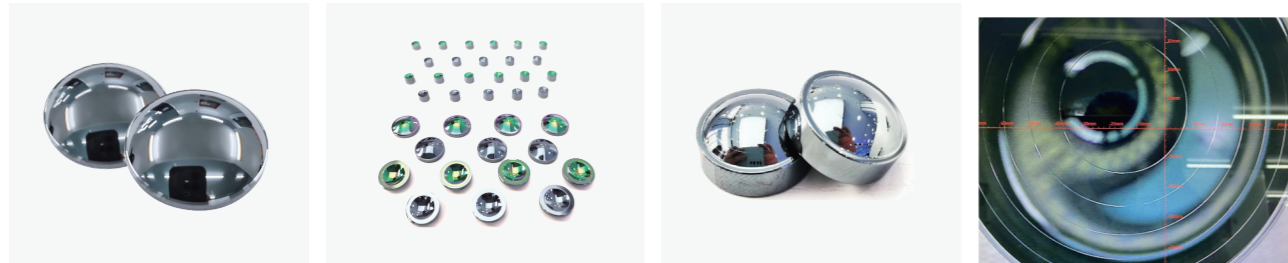
Material Ultra-precision Single-point Diamond Turning

VOT has mature ultra-precision single-point machining capabilities to respond quickly to the market, and is capable of ultra-precision diffractive surface machining, ultra-high precision aspheric surface machining, ultra-precision arrays, cylindrical mirrors, and free-form mirrors.



Material Precision Molding

VOT has proven precision molding technology to produce customized sulfur-based glass molded lenses of all types.



Large-aperture molded aspheric lens + binary surface lens

Aspheric lens

Customized lens

Concave aspheric + binary surface lens

Material Coating

VOT has proven coating technology to produce Various types of infrared films: AR coating to improve the infrared spectral transmittance of lenses and enhance optical imaging effects; HD coating to improve the lens's resistance to friction and extend service life; DLC coating to enhance the hardness and corrosion resistance of lenses; HR coating to improve the ultra-high reflectance of lenses. IR coating to achieve different spectral band pass-through effects.



Ge Coating

ZnSe Coating

ZnS Coating

Infrared Lens Customization

The infrared lens product has been selected into the list of the tenth batch of information consumption innovative products in Anhui Province. VOT has completed the innovative design and development of more than 600 infrared lens models. From conventional fixed-focus lenses, athermalized lenses, manual/electric focusing lenses, and infrared microscopic lenses, to various types of infrared optical lens products with complex structures such as dual-field/triple-field switching lenses, continuous zoom lenses with large zoom ratios, reflective Cassegrain systems, and catadioptric infrared lenses.



Athermalized Lens

Manual Focus Lens

Motorized Focus Lens

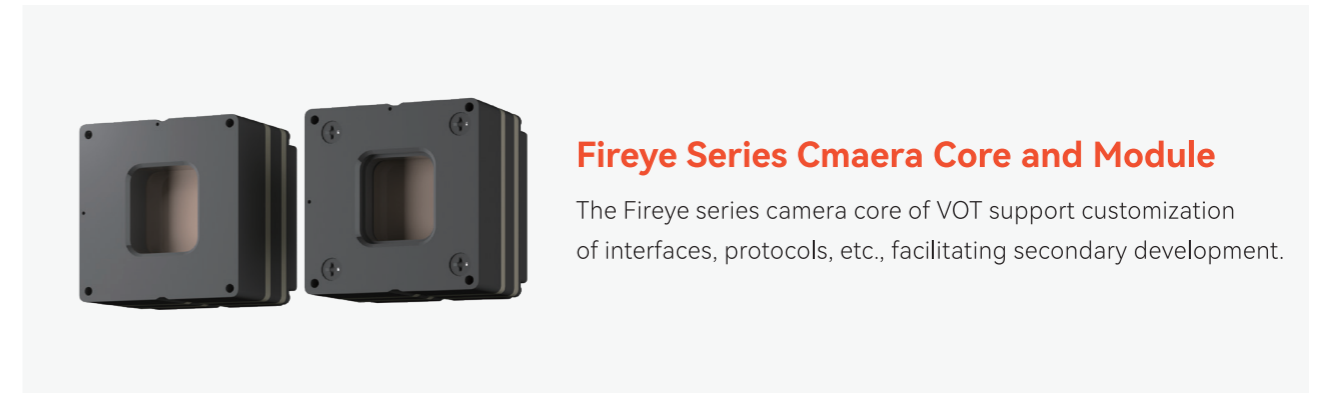
Continuous zoom lens



Dual-field-of-view Lens

Medium-wave Cooled Lens

Module Customization



Fireye Series Camera Core and Module

The Fireye series camera core of VOT support customization of interfaces, protocols, etc., facilitating secondary development.