

HIKVISION®



SEEING THE UNSEEN HIKVISION THERMAL CAMERAS



ABOUT HIKVISION

Hikvision is the world's leading supplier of video surveillance products and solutions. Featuring the industry's strongest R&D capacity, Hikvision excels in providing complete and comprehensive vertical market security solutions. Product suites include Smart IP cameras, HD analog cameras, speed domes, NVRs, DVRs, video management software, access control and alarm systems, encoders, decoders, and many other elements of sophisticated security systems and CCTV technology for any security need. Working with our partners, we're winning ever-increasing recognition internationally, honing our advanced project customization abilities and professional services. Throughout the world, thousands of customers in every critical surveillance sector – cities, airports, banking, harbors, and more – have chosen Hikvision's industry-leading solutions.



GREAT PRODUCTS, GREAT PARTNERS

Hikvision continually focuses on the development of its partnerships – a core value of the company. Through its complete product offerings – already recognized worldwide – and through helpful, knowledgeable customer support, the company ensures partners and customers can grow together at the same pace.

HIKVISION'S CORE TECHNOLOGIES



Audio & Video
Storage
Technology



Video Analysis &
Pattern Recognition
Technology



Application-specific
integrated circuit(ASIC)
technology



Cloud
Computing



Audio & Video
Codec Technology



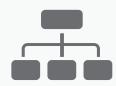
Embedded system
development technology



Big Data Analysis
Technology



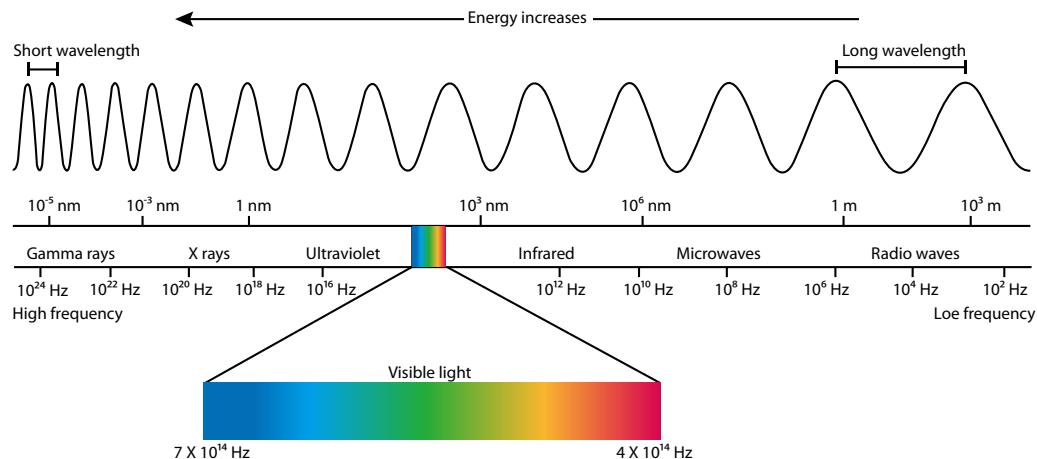
Video Image Processing
Technology



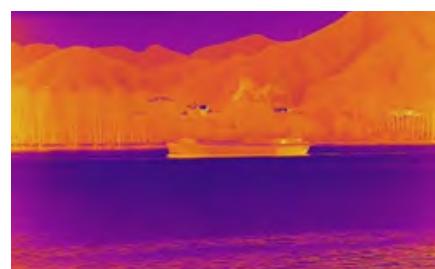
Streaming media network &
control technology

BASIC PRINCIPLES OF THERMAL CAMERAS

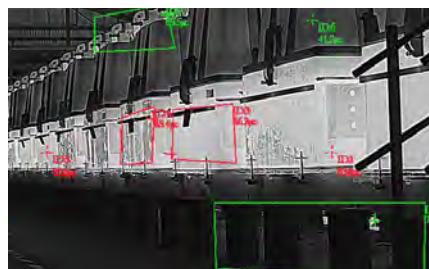
The electromagnetic spectrum contains radiation from gamma rays, X-rays, ultraviolet, visible light, infrared, microwaves, and radio waves. Each one has its unique wavelength. Any object with a temperature above absolute zero can emit a detectable amount of infrared radiation. The higher an object's temperature, the more infrared radiation is emitted.



While invisible to human eyes, thermal cameras detect this kind of radiation (from wavelength 8 to 14 μm , or 8,000 – 14,000 nm) and produce images (thermograms) using temperature differences. Thermography makes it possible to see the environment with or without visible light, and thus is widely used in such areas as video surveillance, fire detection, environmental control, building analyses, medical analyses, and others.



Perimeter Defense Fire Protection – Temperature Anomaly Fire Protection – Fire Detection

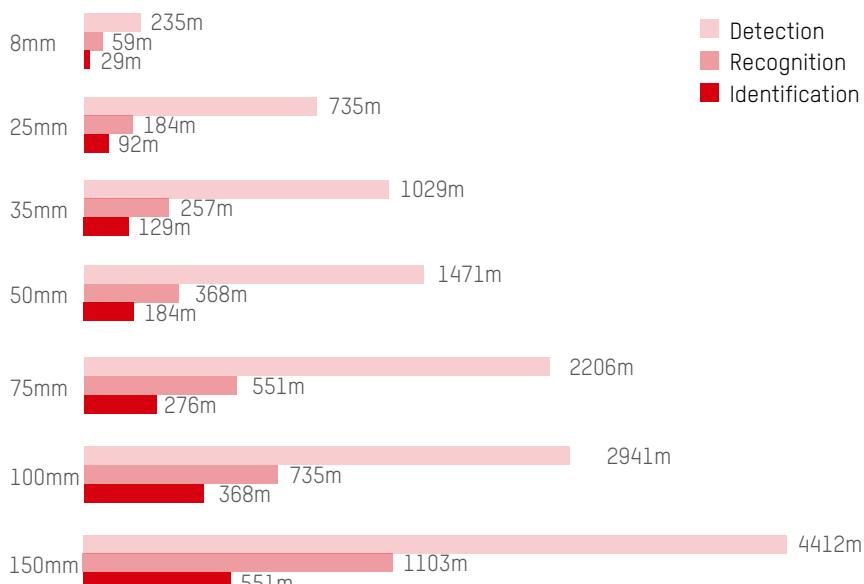


How far can a thermal camera “see”?

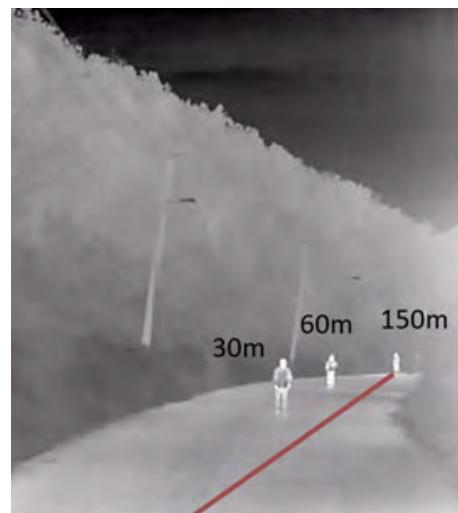
An infrared camera's effective range is what is meant by “seeing an object”. Defined thresholds, known as Johnson's Criteria, refer to the minimum number of line pairs necessary to either detect, recognize, or identify targets captured by scene imagers. The lower limits of detection, recognition, and identification (DRI), according to Johnson criteria are:

- **Detection:** In order to distinguish an object from the background, the image must be covered by 1.5 or more pixels.
- **Recognition:** In order to classify the object (animal, human, vehicle, boat, etc.), the image must have at least 6 pixels across its critical dimension.
- **Identification:** In order to identify the object and describe it in details, the critical dimension must have at least 12 pixels across.

Detection distance

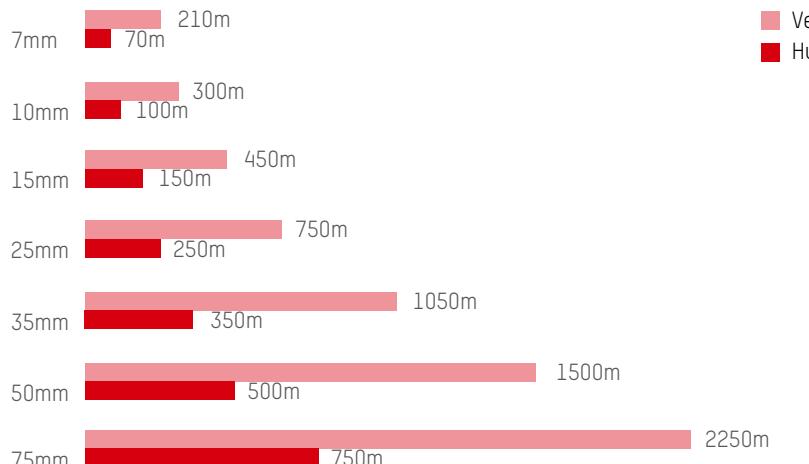


Notice: this distance is based on 17μm sensor



Detection, recognition and identification distance (Under 8mm lens)

VCA trigger distance



Notice: this distance is based on 17μm sensor.

VCA rules: line crossing, intrusion.

HIKVISION THERMAL PRODUCTS

Hikvision has come a long way to deliver the best thermal products in the security market. Since 2008, considerable investments have been made in continuous research and development of thermal technology and products.

HIKVISION THERMAL DEVELOPMENT HISTORY

2008	2010	2014	2016
Research and development of thermal technology begun	The first thermal network camera released	Comprehensive development in thermal imaging, algorithms, intelligence, and products	A complete series of thermal products, with fully optimized imaging, algorithms, and intelligence launched



SECURITY GROUP PRODUCTS

Integrating technology from Hikvision's image processing and intelligent applications, the security group's thermal products meet the rigorous demands of sophisticated security. These cameras provide superb solutions for fire protection and perimeter defense by combining the advantages thermal imaging and visible image processing.



THERMOGRAPHY GROUP PRODUCTS

Hikvision is devoted to providing easy-to-use, high quality products to the public security market. These temperature measurement products utilize the world's leading imaging technology and intelligent analysis algorithms to create efficient thermometric solutions – solutions that improve industry safety and efficiency.



OBSERVATION PRODUCTS

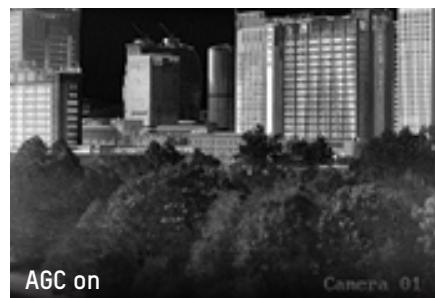
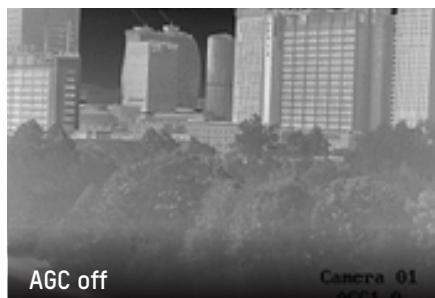
Hikvision is devoted to bringing advanced thermal technology to more people – both professional and personal users. With the observation thermal products, we help you to see clearer and to build better.

CLEAR IMAGING

With advanced features such as automatic gain control, digital detail enhancement, and 3D digital noise reduction, Hikvision thermal cameras offer crystal clear thermal imaging unparalleled in the industry.

Auto Gain Control (AGC)

AGC adjusts the dynamic range of an image and retains its permeability. "Adaptive" AGC – a feature unique to Hikvision thermal cameras – is a more advanced algorithm than "linear" AGC.



Digital Detail Enhancement (DDE)

DDE is an advanced technology based on enhanced algorithms. This feature renders details more sharply in low contrast in any given region of interest.



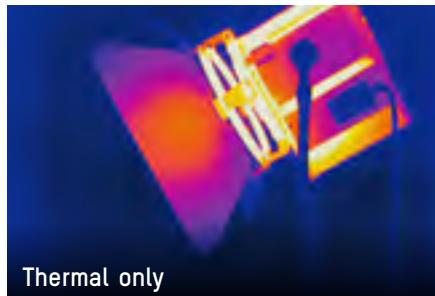
3D Digital Noise Reduction (3D DNR)

3D DNR effectively removes the grainy or fuzzy quality in images under low-light, rendering much clearer and finer images compared with 2D DNR.



Bi-Spectrum Image Fusion

Hikvision's signature thermal technology – bi-spectrum image fusion – combines features from both thermal and visible images, and creates a unique hybrid that provides extra details for more precise detection and decision-making.



Thermal only

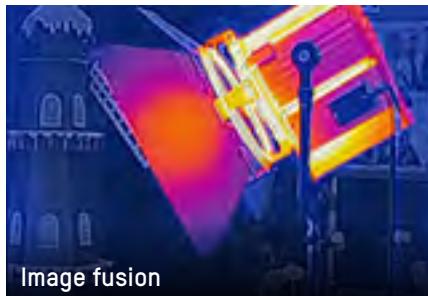


Image fusion



ADVANCED INTELLIGENCE

Based on deep learning algorithms, Hikvision's thermal products deliver powerful and accurate behavior analyses, including detections such as line crossing, intrusion, region entrance and exit, and more. The intelligent human/vehicle detection feature helps reduce false alarms caused by animals, camera shake, falling leaves, or other irrelevant objects, significantly improving alarm accuracy.

Deep learning-based dynamic fire source detection takes advantage of Hikvision's security big data, containing over 100,000 samples of global climate information to provide the highest possible detection accuracy. This front-end device can detect fire based on raw, frame-by-frame data, ensuring firsthand image analysis and rapid alarm triggering.

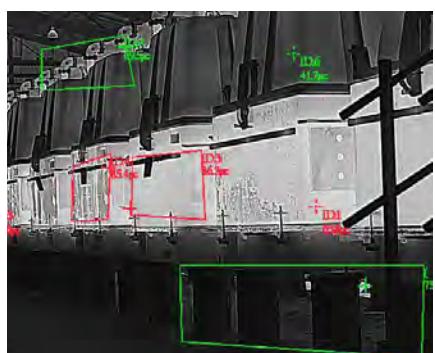


ACCURATE TEMPERATURE MEASUREMENT

Hikvision's signature thermal technology – bi-spectrum image fusion – combines features from both thermal and visible images, and creates a unique hybrid image that provides extra details for detection.

Through strict calibration and standardized testing procedures, Hikvision has established a temperature measurement model that offers great stability and high accuracy – up to $\pm 2^\circ \text{C}$ or $\pm 2\%$ (whichever is greater).

In addition, Hikvision thermal products support multiple temperature measurement rules including point, line, and frame measurements. Users can select rules for various scenarios to reach maximum accuracy.



ROBUST DESIGN

- **Self-protection mechanism for harsh environments:**

Proven capability to work under extreme environments (-40° C to 60° C); self-protective temperature control with intelligent heating/cooling adjustment to prevent freezing and fog; non-stop year-round operation.

- **Stable long-distance transmission:**

Normal cameras can only withstand $\pm 10\%$ voltage fluctuation. Hikvision thermal products are specially designed to adapt to as much as $\pm 20\%$ voltage fluctuation and 5% packet loss.

- **Easy positioning for visible-light module:**

For most bi-spectrum products, the visible-light module cannot be accurately positioned, requiring constant manual adjustment. Hikvision's optical & thermal PTZ products are equipped with an axis adjustment technology that ensures both thermal and visible imaging maintain precisely the same view. When the thermal module detects anomalies, the visible module can automatically locate and track relevant details.

- **Stable imaging:**

The integrated design improves device stability and reduces false alarms caused by shaking.

RELIABLE PRODUCTION

All materials in Hikvision products are carefully selected and tested against various standards. To ensure maximum product quality and stability, all Hikvision production processes are strictly controlled, core components are assembled using automation, and products packaged in dust-free environments using strict testing such as aging, air tightness, etc.



APPLICATION SCENARIOS

► RECOMMENDED APPLICATIONS FOR THERMAL SECURITY PRODUCTS PERIMETER PROTECTION



Residential



Mining



Car Dealerships



Border Protection



Farming



Airports



Railways



Solar Power Plants

ADVANTAGES

• Superior environmental adaptability:

Thermal products are capable of capturing images all day and night, regardless of environmental factors such as darkness, bright light, backlight, fog, and haze.

• More accurate alarms:

Powerful behavior analyses (line crossing, intrusion, region entrance and exit) are based on a deep learning algorithm, which provides higher alarm accuracy and reduces false alarms.

• Extended distances:

Compared to optical cameras, thermal detection covers much longer distances and requires fewer devices to install.

• Better visuals:

With thermal cameras, you can easily discover objects and potential risks otherwise invisible to normal cameras. In addition to thermal images, the built-in visible-light module can provide supplementary recorded evidence – lowering costs for installation.

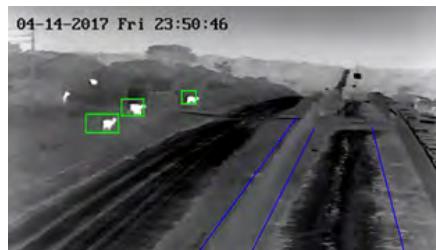
SUCCESS STORIES

Farming in South Africa

Application: End user used a Hikvision thermal camera to stop illegal rhinoceros poachers.

Construction: Camera + NVR + iVMS-4200

Advantage: The thermal camera can detect heat over long distances, lowering costs and providing high accuracy perimeter defense.



BMW Auto Dealership in Europe

Application: End user used Hikvision thermal camera to prevent theft of auto parts.

Construction: Camera + iVMS-4200

Advantage: The thermal camera uses line-crossing and intrusion detections to protect the BMW dealership, 24 hours a day.



Solar Plant in Italy

Application: End user used Hikvision thermal cameras to prevent unlawful break-ins and theft.

Construction: Camera + NVR + iVMS-4200

Advantage: The end user used more than 200 thermal cameras to protect all areas of solar plants to ensure protection of valuable equipment.



More Success Stories

- High-end custom home security
- Border security in Iraq
- High-end power plants
- Government site in Italy
- Farming in USA
- Mining in New Caledonia
- City exhibition area in Malaysia
- Fishing port & maritime crime prevention
- Water management in Italy
- University in Malaysia

FIRE PROTECTION



Warehouse



Waste Recycling Center



Tunnel



Charging Station

ADVANTAGES

• Temperature anomaly detection:

Detects and reports abnormal temperature in key areas to prevent fires.

• Dynamic fire detection:

For areas where temperatures are undetectable, the dynamic fire detection function can detect fire at early stages.

SUCCESS STORIES

Substation in Eastern Europe

Application: End user used Hikvision thermal cameras to detect the temperature of equipment in the substation.

Construction: Camera + a 3rd-party platform

Advantage: The PTZ camera detects the temperature with high accuracy so the substation can operate normally, year-round.



Refuse Area in Denmark

Application: End user used Hikvision thermal cameras to detect fires in the waste dump.

Construction: Camera + Mirasys

Advantage: The thermal camera can detect fires inside the waste areas to prevent property loss.

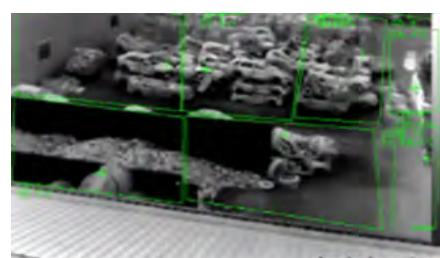


Refuse Area in Slovenia

Application: End user used Hikvision thermal cameras to detect fire in the waste dump.

Construction: Camera + iVMS-4200

Advantage: The thermal camera can detect temperature changes at the site to prevent property loss.



More Success Stories

- Waste site in Slovenia
- Tanimura farms
- Waste site in Italy
- Church in Norway
- Municipal in Denmark

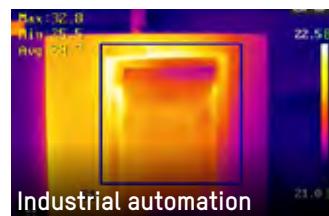
► RECOMMENDED APPLICATIONS FOR THERMOGRAPHY PRODUCTS TEMPERATURE MEASUREMENT



Component integration



Inspection and quarantine



ADVANTAGES

- **Accurate temperature measurement:**

Wide measurement range (-20 to 550° C or -4 to 1,022° F) with high accuracy (up to ± 2° C or ± 2%, whichever is greater).

- **Easy to operate:**

Full screen temperature difference comparison, flexible rule settings (point, line, and frame-based), less manual calibration.

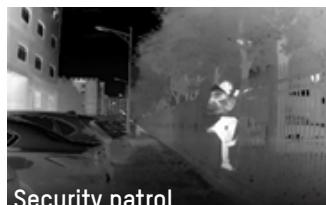
- **Fast alarm:**

Online, 24-hour, real-time alarm.

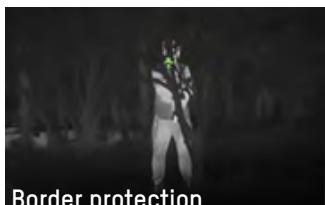
► RECOMMENDED APPLICATIONS FOR DUAL-USE PRODUCTS HANDHELD PRODUCTS



Law enforcement



Security patrol



Border protection



Smuggling prevention



Fire detection



Port patrol



Search and rescue

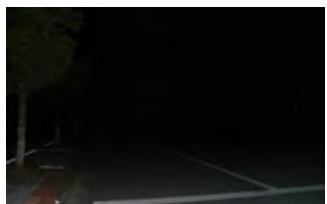


Hunting

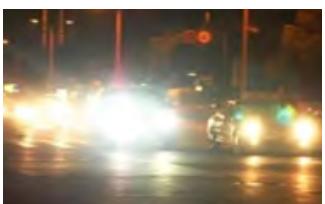
ADVANTAGES

- High quality:** IP67 protection, -30 to 55°C or -22 to 131°F detection range, extreme heat and cold resistance, suitable for harsh environments.
- Distance measurement:** Target distance measurement for accurate location.
- Target tracking:** Quick detection and tracking of target objects.
- Great user experience:** High resolution OLED display and ocular design provides larger field of view, finer images, and better user experience.

DRIVING ASSISTANCE



Night



Backlight



ADVANTAGES

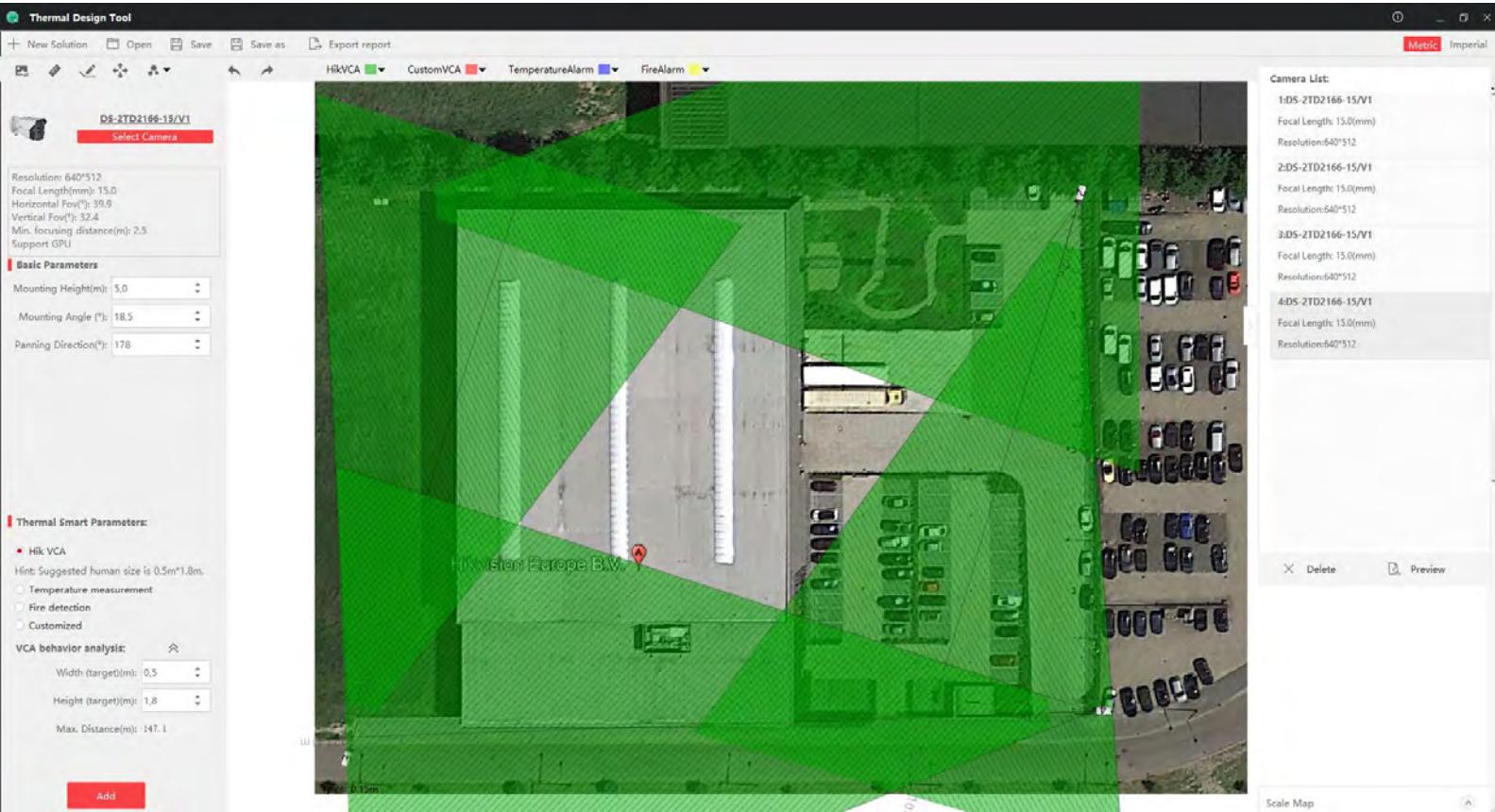
- High Quality:** IP67 protection, extreme heat and cold resistance (-40 to 55°C or -22 to 131°F), suitable for harsh environments
- Bi-spectrum Image Fusion:** The image fusion function combines both thermal and visible image features. It can efficiently detect targets and provide rich detail, making drivers aware of potential risks and prevent traffic accidents.
- Pedestrian Detection and Lane Marking:** Intelligent detection of pedestrians prevents potential accidents; automatic sound and visual alarms for precaution; assistive driving lane markings during extreme conditions for safe driving.

THERMAL DESIGN TOOL

This tool can provide simulations from the entire Hikvision thermal product line, valuable for professional site planning. Users can upload drawings, maps or other bird's-eye view images. Setting the mounting height, rotation and tilt enables users to find the best solution for the given environment and customer needs. This tool can also create a final site planning report in pdf format.

The tool can show:

- HikVCA to create perimeter detection (green)
- Custom VCA (third party) for perimeter protection (red)
- Temperature Alarm to detect elevation of temperature (blue)
- Fire Alarm to detect forest fires (yellow).

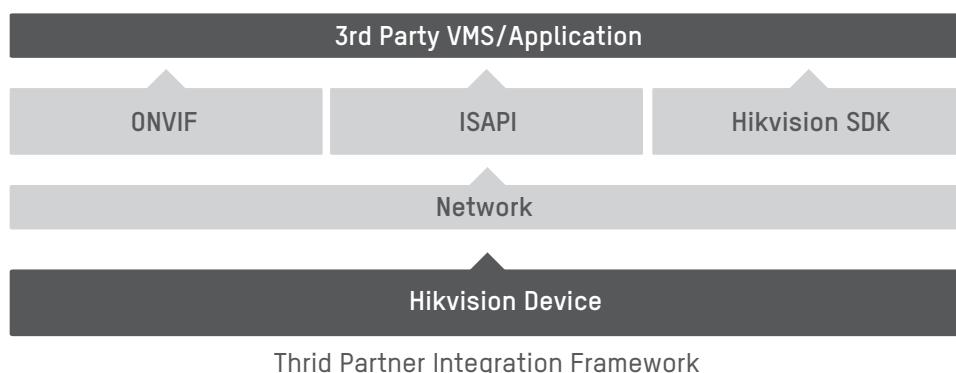


INTEGRATION WITH HIKVISION THERMAL CAMERAS

Hikvision is dedicated to encouraging third-party integration with existing products. We are continually developing third-party collaboration by offering a range of integrated solutions, providing multiple options for customers and delivering quality integrated service to our partners and customers.

A full-fledged member of ONVIF, Hikvision not only fully supports open standard protocols, but also created a dedicated team to focus on building the integration protocol and related development tools. With Hikvision Private SDKs, we provide comprehensive programming sources to help customers developing their own uniquely successful solutions.

Additionally, we have released the ISAPI, an open standard protocol that suits any Hikvision Partner, providing even more possibilities for customers.



Open Standard – ONVIF



ONVIF is a leading international standardization initiative for IP-based physical security products. Hikvision closely works with all the ONVIF members across the physical security industry to develop an open standard Eco-System that works effortlessly with third-party manufacturers, delivering fully integrated solutions that propel your business forward.



Hikvision SDK

The Hikvision SDK is designed for the remote connection and configuration of embedded DVRs, Encoders, IPCs and the other IP devices, Access Control, Alarm products, Video intercom products, and much more. The SDK Hikvision device features on most Hikvision products with comprehensive development programming tools.

Hikvision Open Standard – ISAPI



The ISAPI is an Application Layer Protocol designed by Hikvision. It uses standard format – Http + XML – to allow easy access and control to Hikvision devices. It's an open protocol that suits all Hikvision Partners and offers strong capabilities for development with various software architecture from 3rd-party systems, and it's easy to implement. Additionally, the ISAPI protocol contains Hikvision Smart Events metadata, and allows metadata extraction using standard RTSP.

- High portability: No need for other embedded 3rd SDK
- More practicality and easy to use.
- Supports most of Hikvision products
- Comprehensive R&D programming tools
- Good downward compatibility

PRODUCT SHOWCASE

SECURITY



DS-2TD2117

Thermal Network
Bullet Camera

- 160×120 17um
- 3mm/ 6mm
- 160×120@50fps
- Hikvision VOx sensor, NETD <40mk
- VCA: Line crossing/ Intrusion detection/ Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range: -20~150° C; Temperature Accuracy: ±8° C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F);
- Ingress protection:IP66



DS-2TD2136VP

Thermal Network
Bullet Camera

- 384×288 17um
- 10mm/15mm/25mm/35mm
- 384×288@50fps
- Support HEOP, integrate with the 3rd party behavior analyse
- Temperature exception; (Temperature measuring range: -20~150° C; Temperature Accuracy: ±8° C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F)
- Ingress protection:IP66



DS-2TD2136V1

Thermal Network
Bullet Camera

- 384×288 17um
- 7mm/10mm/15mm/25mm/35mm
- 384×288@50fps
- VCA:Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range : -20~150° C; Temperature Accuracy: ±8° C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F)
- Ingress protection:IP66



DS-2TD2137V1

Thermal Network
Bullet Camera

- 384×288 17um;
- 7mm/ 10mm/ 15mm/ 25mm/ 35mm
- 384×288@50fps
- Hikvision VOx sensor, NETD<35mk
- VCA:Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range : -20~150°C; Temperature Accuracy: ±8°C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F);
- Ingress protection: IP66



DS-2TD2137VP

Thermal Network
Bullet Camera

- 384×288 17um
- 7mm/ 10mm/ 15mm/ 25mm/ 35mm
- 384×288@50fps
- Hikvision VOx sensor, NETD<35mk
- Support HEOP, integrate with the 3rd party behavior analyse.
- Temperature exception; (Temperature measuring range : -20~150°C; Temperature Accuracy: ±8°C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F);
- Ingress protection: IP66



DS-2TD2166V1

Thermal Network
Bullet Camera

- 640×512 17um
- 7mm/15mm/25mm/35mm
- 640×512@50fps
- VCA:Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range: -20~150° C; Temperature Accuracy: ±8° C)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F)
- Ingress protection:IP66

**DS-2TD2615**

Thermal Bi-spectrum
Network Bullet Camera

- Thermal: 160 × 120 (output image resolution 320 × 240), 25 µm
- Visible: 1920 × 1080
- Thermal: 7 / 10 mm, Visible: 6 / 8 mm
- 320 × 240 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Bi-spectrum image fusion, picture in picture preview
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP67

**DS-2TD2636**

Thermal Bi-spectrum
Network Bullet Camera

- Thermal: 384 × 288 17 µm, Visible: 1920 × 1080
- Thermal: 10 / 15 mm, Visible: 6 / 8 mm
- 384 × 288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exiting; Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Bi-spectrum image fusion, picture in picture preview
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP67

**DS-2TD2836**

Thermal & Optical
Bi-spectrum
Network Bullet

- Thermal: 384 × 288, 17 µm, Visible: 1920 × 1080
- Thermal: 25 / 50 mm, Visible: 13 / 25 mm
- 384 × 288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Bi-spectrum image fusion, picture in picture preview
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66

**DS-2TD2866**

Thermal & Optical
Bi-spectrum
Network Bullet

- Thermal: 640 × 512, 17 µm, Visible: 1920 × 1080
- Thermal: 25 / 50 mm, Visible: 13 / 25 mm
- 640 × 512 @ 50 fps;
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Bi-spectrum image fusion, picture in picture preview
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66

**DS-2TD2466-25Y****DS-2TD2466-50Y**

Anti-corrosion
Thermal Network
Bullet Camera

- 640 × 512 17 µm
- 25 / 50 mm
- 640 × 512 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Operating temperature: -40° C to 65° C (-40° F to 149° F)
- Ingress protection: IP66
- 316L Stainless Steel material, meets standard anti-corrosion requirements



DS-2TD1117/V1 series
Thermal Dome

- Thermal: 160 × 120, 17um
- Thermal: 2mm/ 3mm/ 6mm
- 160×120@50fps
- Hikvision VOx sensor, NETD<40mk
- VCA:Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range : -20~150° C; Temperature Accuracy: ±8° C
- Working temperature: -40 °C to 60 °C (-40 °F to 140 °F);
- Ingress protection: IP67



DS-2TD1217/V1 series
Thermal & Optical Bi-spectrum Dome

- Thermal: 160 × 120, 17um, Visible: 1920×1080
- Thermal: 2mm/ 3mm/ 6mm, Visible: 2mm/ 4mm/ 6mm
- 160×120@50fps
- Hikvision VOx sensor, NETD<40mk
- VCA:Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range : -20~150° C; Temperature Accuracy: ±8° C
- Support bi-spectrum image fusion, picture in picture preview
- Working temperature: -40 °C to 60 °C (-40 °F to 140 °F);
- Ingress protection: IP67



DS-2TD4136
Thermal Speed Dome

- Thermal: 384 × 288 17 µm, Visible: 1920 × 1080
- Thermal: 25 / 50 mm, Visible: 5.7–205.2 mm
- 384 × 288 @ 50 fps
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / smart tracking linkage (thermal + visible)
- Fire detection
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD4166
Thermal Speed Dome

- Thermal: 640 × 512 17 µm, Visible: 1920 × 1080
- Thermal: 25 / 50 mm, Visible: 5.7–205.2 mm
- 640 × 512 @ 50 fps
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / smart tracking linkage (thermal + visible)
- Fire detection
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD6236
Thermal & Optical Bi-spectrum Network Positioning System

- Thermal: 384 × 288 17 µm, Visible: 1920 × 1080
- Thermal: 50 / 75 mm, Visible: H (5.6–208 mm) / C (6.7–330 mm)
- 384 × 288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (thermal + visible)
- Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD6266
Thermal & Optical Bi-spectrum Network Positioning System

- Thermal: 640 × 512 17 µm, Visible: 1920 × 1080
- Thermal: 50 / 75 / 100 mm, Visible: H (5.6–208 mm) / C (6.7–330 mm)
- 640 × 512 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (thermal + visible)
- Fire detection
- Temperature anomaly: Range: -20 to 150° C; Accuracy: ±8° C
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66

**DS-2TD8166**

Thermal & Optical
Bi-spectrum Network
Stable PTZ Camera

- Thermal: 640×512 17 μm , Visible: 1920×1080
- Thermal: 75 / 100 / 30-150 mm / 45-180 mm,
- Visible: C (6.7-330 mm) / E (12.5-775 mm) 640×512 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (thermal + visible)
- Fire detection
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66

**DS-2TX3636**

Thermal Smart Linkage
Tracking System

- Thermal: 384×288 17 μm , Visible: 1920×1080
- Thermal: 15 / 25 / 35 mm, Visible: 5.7-205.2 mm
- 384×288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / smart linkage Tracking System (thermal + visible)
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66

THERMOGRAPHY

**DS-2TD2136T**

Thermal Network Bullet
Camera

- 384×288 17 μm
- 10 / 15 / 25 mm
- 384×288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to $\pm 2^\circ \text{C}$, $\pm 2\%$
- Operating temperature: -40° C to 65° C (-40° F to 149° F)
- Ingress protection: IP66

**DS-2TD2166T**

Thermal Network Bullet
Camera

- 640×512 17 μm
- 15 / 25 mm
- 640×512 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit; Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to $\pm 2^\circ \text{C}$, $\pm 2\%$
- Operating temperature: -40° C to 65° C (-40° F to 149° F)
- Ingress protection: IP66

**DS-2TD2466-9X**

Explosion-Proof
Thermal Network
Bullet Camera

- 640×512 17um
- 9 mm
- 640×512 @50fps
- VCA: Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature exception; (Temperature measuring range : -20 to 150° C; Temperature Accuracy: $\pm 8^\circ \text{C}$)
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F)
- Ingress protection: IP66
- 316L stainless steel material to meet the requirements of used in Explosion-Proof environment

**DS-2TD2466T-25X**

Explosion-Proof
Thermal Network
Bullet Camera

- 640×512 17um
- 25 mm
- 640×512 @50fps
- VCA: Line crossing/Intrusion detection/Region entrance/ Region exiting
- Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to $\pm 2^\circ \text{C}$, $\pm 2\%$
- Working temperature: -40 °C to 65 °C (-40 °F to 149 °F)
- Ingress protection: IP66
- 316L stainless steel material to meet the requirements of used in Explosion-Proof environment



DS-2TD4136T
Thermal Speed Dome

- Thermal: 384×288 17 μm , Visible: 1920×1080
- Thermal: 9 / 25 mm, Visible: 5.7–205.2 mm
- 384×288 @ 50 fps
- Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to ±2° C, ±2%
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (Thermal + Visible)
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD4166T
Thermal Speed Dome

- Thermal: 640×512 17 μm , Visible: 1920×1080
- Thermal: 9 / 25 mm, Visible: 5.7–205.2 mm
- 640×512 @ 50 fps
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to ±2° C, ±2%
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / smart tracking linkage (thermal + visible)
- Fire detection
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD6236T
Thermometric Positioning System

- Thermal: 384×288 17 μm , Visible: 1920×1080
- Thermal: 25 / 50 mm, Visible: H (5.6–208 mm)
- 384×288 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (thermal + visible)
- Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to ±2° C, ±2%
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TD6266T
Thermometric Positioning System

- Thermal: 640×512 17 μm , Visible: 1920×1080
- Thermal: 25 / 50 mm, Visible: H (5.6–208 mm)
- 640×512 @ 50 fps
- VCAs: Line crossing / Intrusion detection / Region entrance / Region exit / Smart tracking linkage (thermal + visible)
- Fire detection
- Temperature anomaly: Range: -20 to 550° C; Accuracy up to ±2° C, ±2%
- Operating temperature: -40° C to 60° C (-40° F to 140° F)
- Ingress protection: IP66



DS-2TA03
Thermographic Automation Thermal Camera

- 384×288 17um;
- 7mm/15mm;
- 384×288 @50fps;
- Temperature measurement:-20 °C to 550 °C;Temperature accuracy: Max (±2, ±2%)
- Dimension Size: $120 \times 60 \times 60$ mm
- Ethernet: Gigabit Ethernet
- Working temperature: -20 °C to 50 °C (-4 °F to 122°F)



DS-2TA06
Thermographic Automation Thermal Camera

- 640×512 17um;
- 25mm;
- 640×512 @50fps;
- Temperature measurement:-20 °C to 550 °C;Temperature accuracy: Max (±2, ±2%)
- Dimension Size: $120 \times 60 \times 60$ mm
- Ethernet: Gigabit Ethernet
- Working temperature: -20 °C to 50 °C (-4 °F to 122°F)

OBSERVATION

DS-2TP23
Handheld thermography
thermal camera

- 384×288; 17um; 15mm; 64G SD card;
- 640×480 resolution 3.5" LCD touch display;
- Temperature measurement: -20 °C to 550 °C;
- Up to 4 hours continuous running
- Support Wi-Fi
- Ingress protection: IP54



DS-2TS03
Handheld Observational
Thermal Camera

- 384×288; 17um; 16G SD card
- 15mm/25mm/35mm
- 0.39-inch OLED display
- Working temperature:-40 °C to 55 °C (-40 °F to 131 °F)
- Hot track, Wi-Fi, Ranging, GPS
- Up to 5 hours continuous running (with GPS and Wi-Fi hot spot off)
- IP67



DS-2TS16
Handheld Thermal & Optical
Bi-spectrum Binocular

- Thermal: 640×512 17um, Visible: 1280×960
- Thermal: 35mm/50mm, Visible: 12mm
- 0.39-inch OLED display, 32G
- Working temperature: -40 °C to 55 °C (-40 °F to 131 °F)
- Video recording, replay, picture snapshot and search
- Image Fusion, Object Highlight
- Wi-Fi hot spot, GPS, cursor display
- IP67, Battery Operating Time ≥7h



DS-2TR03
Thermal Weapon Sight

- 384×288; 17um; 16G SD card
- 35mm/50mm
- 0.39-inch OLED display
- Up to 8 hours continuous running
- Working temperature: -40 °C to 55 °C (-40 °F to 131 °F)
- Hot track, Wi-Fi, Ranging, GPS
- IP67, Battery Operating Time ≥8h



DS-2TV03
Thermal Driving
assistance

- 384×288 17um; 10mm
- Screen: 800*480 LCD
- 9~36V supplied by automobile cigar lighter plug
- Working temperature:-40 °C to 55 °C(-40 °F to 131 °F)
- Shutterless non-uniformity calibrating technology, support pedestrian detection and lane marking



DS-2TV13
Thermal & Optical
Bi-spectrum Driving
assistance

- Thermal: 384×288 17um; 10mm
- Screen: 800*480 LCD
- 9~36V supplied by automobile cigar lighter plug
- Working temperature:-40 °C to 55 °C(-40 °F to 131 °F)
- Shutterless non-uniformity calibrating technology