



**Thermal Solution in  
Long Distance Perimeter Protection**

# Why we use thermal cameras ?



**Long Range and Darkness Environment**

# Why we use thermal cameras ?



**Hidden object detection**

# Johnson Criteria : Definition of “See Clearly”



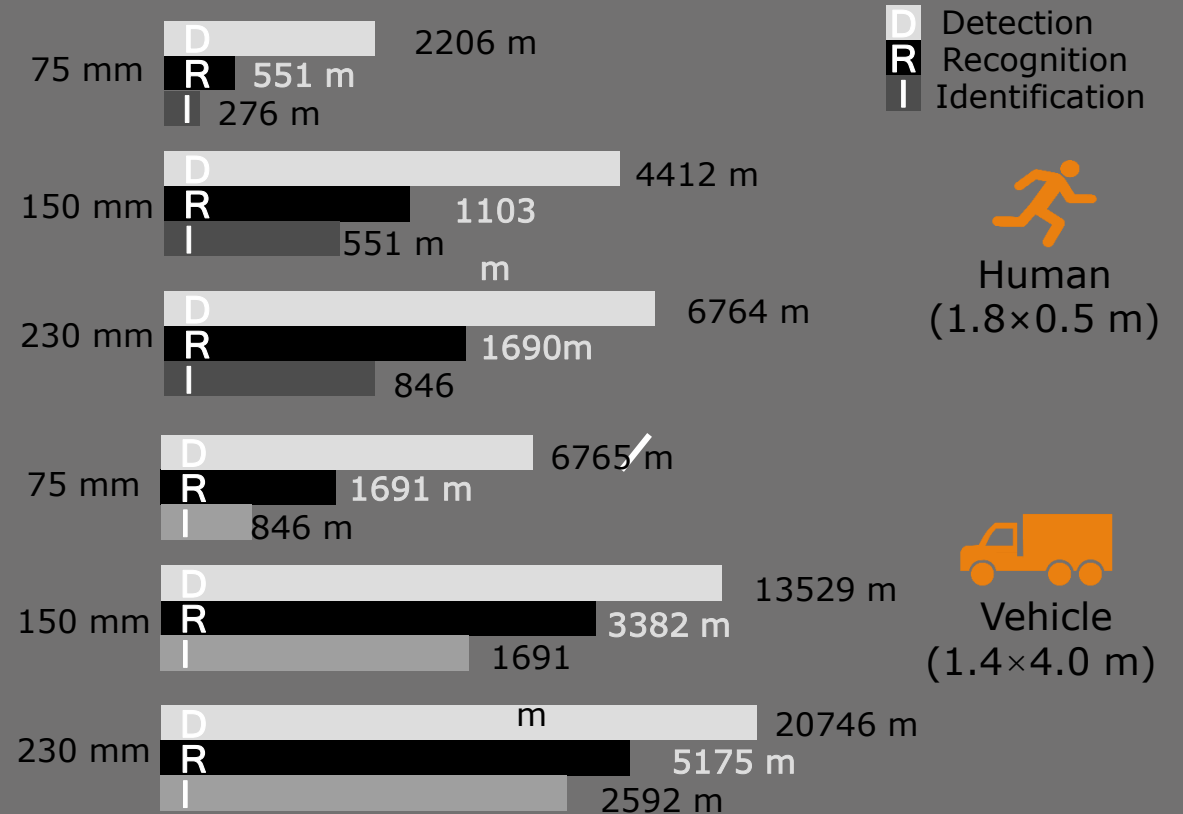
**D:Detection**  
**(1.5 pixels)**

**R:Recognition**  
**(6 pixels)**

**I:Identification**  
**(12 pixels)**

Johnson criteria is an internationally accepted standards for visually see targets by human eye, it defines the standard of “See clearly”

- When a target shows more than 1.5 pixels in the view, we are able to locate it. This distance of the target currently we call it **detection distance**.
- When a target reach to 6 pixels in the view, the distance of target we name it **recognition distance**. In this distance we are able to classify the target, for example classify a tank or a person, but still we don't have details.
- When a target reach to 12 pixels in the view, we are able to identify the target, such as the model of vehicle, etc. This distance of target is



**In real conditions, R distance is widely used as the visual distance for thermal devices.**

# Long Range Thermal Cameras Overview



Bi-spectrum Bullet



Long Range Bullet



Speed Dome



Mobile PT



Thermal Panoramic Scanner



Thermal Positioning System



Thermal Stable PTZ



Thermal HD Sphere



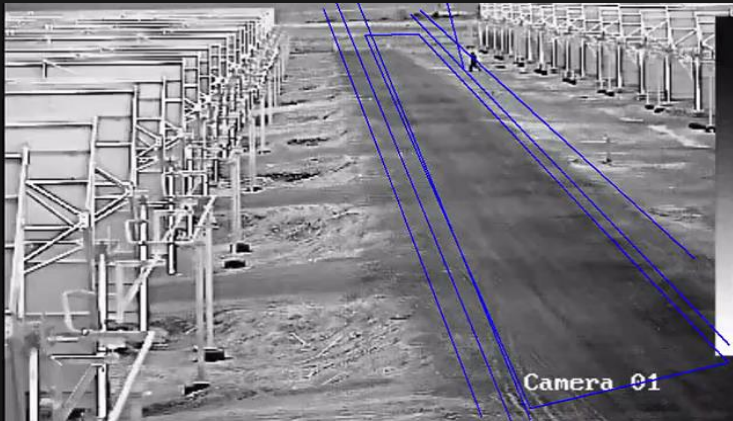
Thermal Cooled Sphere

# Long Range Bullet Camera

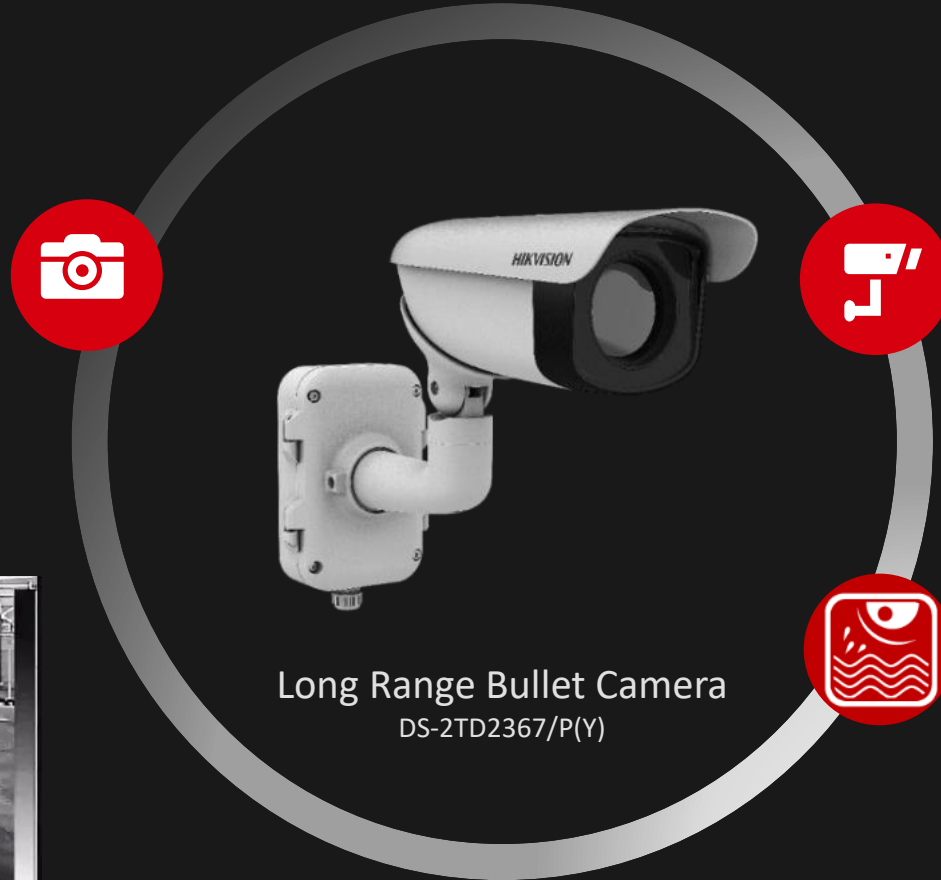


## High Accuracy

**24/7 online intrusion detection.** Advanced algorithm to reduce false alarm while video solution is more convenient for double check.



Accurate Behavior analysis based on deep learning algorithm: line crossing, intrusion, region entrance and exit



## Long Range Detection

Thermal resolution:  $640 \times 512$   
Thermal focal length: 50mm/75mm/100mm

**Detection: vehicles 9KM, humans 3KM**  
\*Above range figure is for 100mm model

## Anti-corrosive coating

Anti-corrosive Coating  
NEMA-4X

# Thermal & Optical Bi-spectrum Network PTZ Camera

## Thermal imaging zoom lens

81X7/W :

Thermal focal length:

30~150mm/36~190mm/23~230mm

Thermal resolution:  $640 \times 512$

Optical resolution:  $1920 \times 1080$

62X7/W:

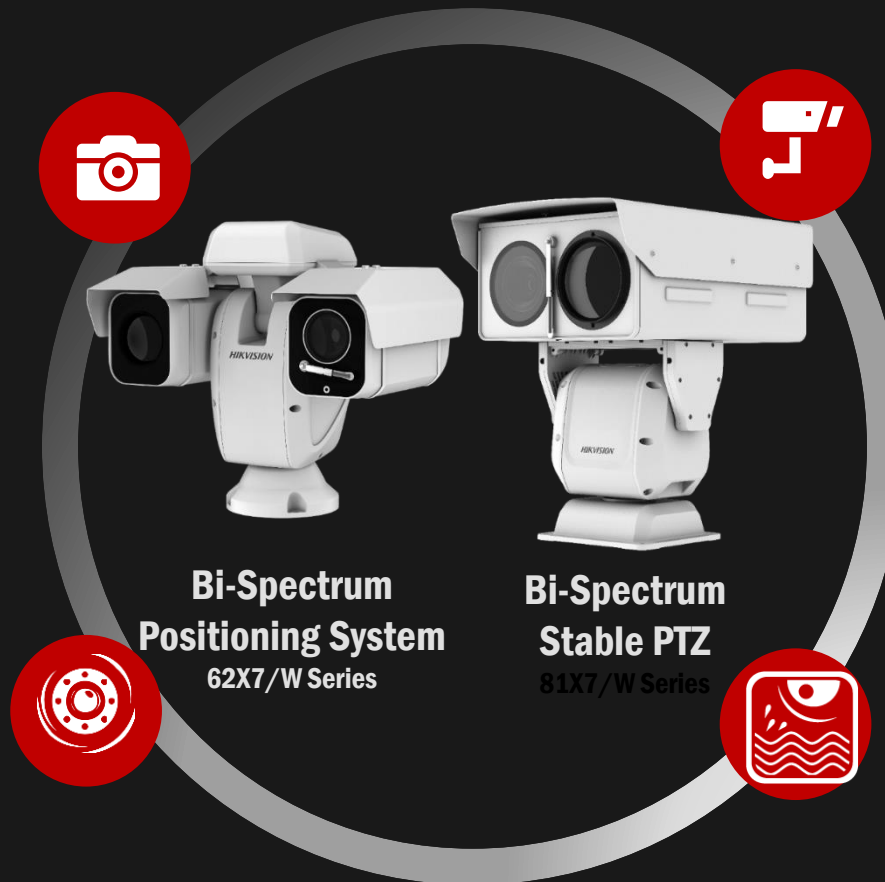
Thermal resolution:  $384 \times 288/640 \times 512$

Thermal focal length:

50mm/75mm/100mm

## Laser Illuminator(Optional)

800m/3KM laser supplement which Increasing the effect distance of the optical lens



**Bi-Spectrum  
Positioning System**  
62X7/W Series

**Bi-Spectrum  
Stable PTZ**  
81X7/W Series

## Long Detection Range

Detection: vehicles 13.2KM, humans 6.3KM

Recognition: vehicles 4.6KM, humans 2.1KM

\*Above range figure is for 8167/W 23~230mm model

## Anti-corrosive coating

Anti-corrosive Coating

NEMA-4X

# Image Performance



the bridge is 1.1 km away



100mm thermal camera



100mm thermal camera (with 2x digital zoom)

# New-launched Security Thermal Camera

## Security Thermal

### Positioning System



2025.Q1

1 2 3

2025.Q2

4 5 6

HM-TD63x8-C4L/G0/W2Y/P

#### Thermal:

- 6338: 384 x 288@12um, NETD<25mk, Lens: 50/75mm
- 6368: 640 x 512@12um, NETD<25mk, Lens: 50/75/100/**130Z(26-130mm)**
- 63C8: **1280 x 1024**@12um, NETD<25mk, Lens: 75/100mm

#### Optical:

4MP, 6~336mm, 56X  
**2km Laser illumination**  
Smart Wiper  
Anti-corrosion

# Light Positioning System Self-Cleaning Module



Guanlan



## TEC (Thermo electric Cooler) For Water Generation

A heat dissipation device made based on the thermoelectric effect, forming units of a pair of semiconductors.

When it is powered, the temperature will decrease and then generate water mist, which would be collected in the water tank.

50ml water tank is used for remote cleaning when dirt is covered.

# Thermal HD Sphere PTZ



## Super High Resolution with zoom lens

Thermal resolution: 1280x1024

Thermal focal length: 30~150mm/36~190mm/  
30~300mm

Optical lens: 10-800mm,80X/10-1000mm,100X

## Accurate and Fast Control

High PT movement accuracy for radar: 0.01°

High PT speed for radar linkage



### HD Sphere PTZ

HM-TD95C8-300ZK4FL

DS-2TD95C8-190,300ZK2FL/W

## Super Long Detection Distance

Detection: vehicles 14.9km, humans 8.7km

Recognition: vehicles 8.5km, humans 4km

\*Above range figure is for 30~300mm model

## Laser Illuminator

3KM laser supplement which Increasing the effect  
distance of the optical lens

## Anti-corrosive coating

Anti-corrosive Coating  
NEMA-4X

# Cooled Sphere PTZ

## High definition & Long focal length

- Thermal: 640\*512, 15μm & 4MP Optical
  - Thermal lens: 22~510mm  
15~760mm  
40~900mm  
40~1200mm
  - Optical lens: 10-1100mm
- Optical Fixed lens: 4MP, 4mm(FOV: 94°), overlaid on PTZ optical lens

## Accurate and fast control

- High accuracy PTZF control for radar, (0.01°)
- High accelerated speed: 120 degree/s<sup>2</sup>



Guanlan

## Cooled Sphere HM-TD966A-ZK4FD/G0/T2



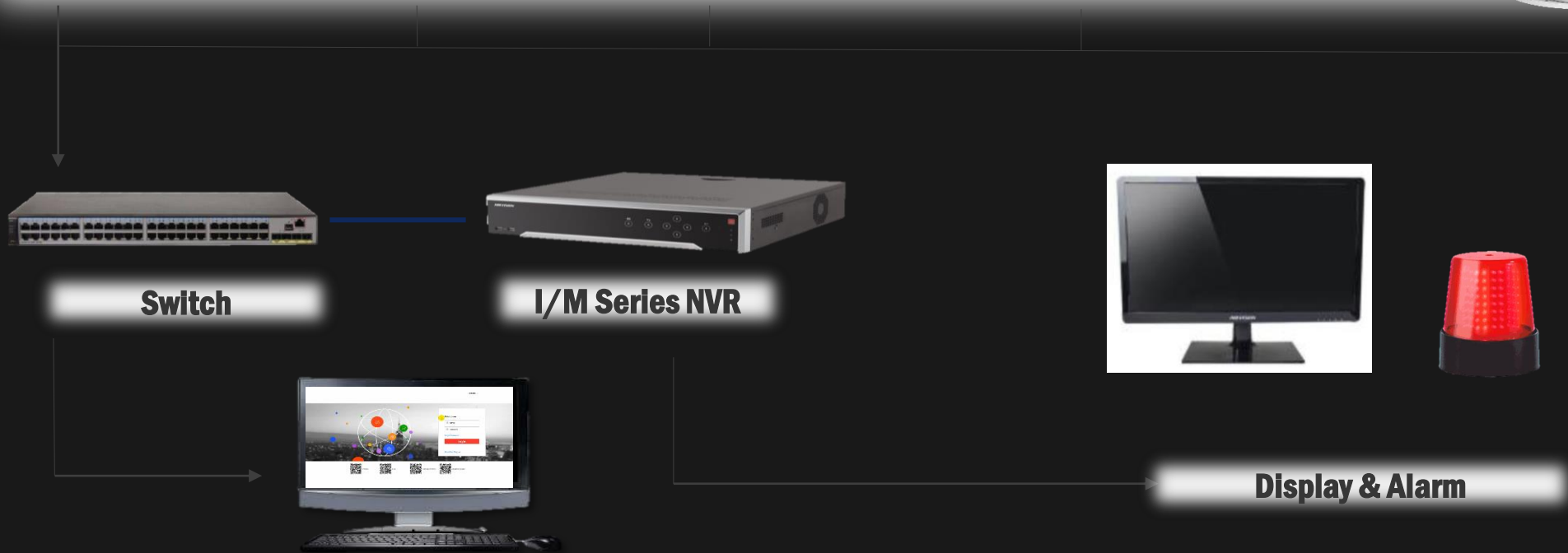
## Super Long detection distance (TBD)

- Ships 32km detection/28km recognition distance (20x5m)
- Vehicle 25.7km detection/16.2km recognition distance
- Human 22km detection/9.8km recognition distance

## Rugged design for various scenarios

- Sphere space: IP 67; Base: IP66
- Anti-corrosion painting
- Deicing heating
- Defog/defog on Thermal & optical channel

# Hikvision Thermal Topology: One-stop Solution



**Switch**

**I/M Series NVR**

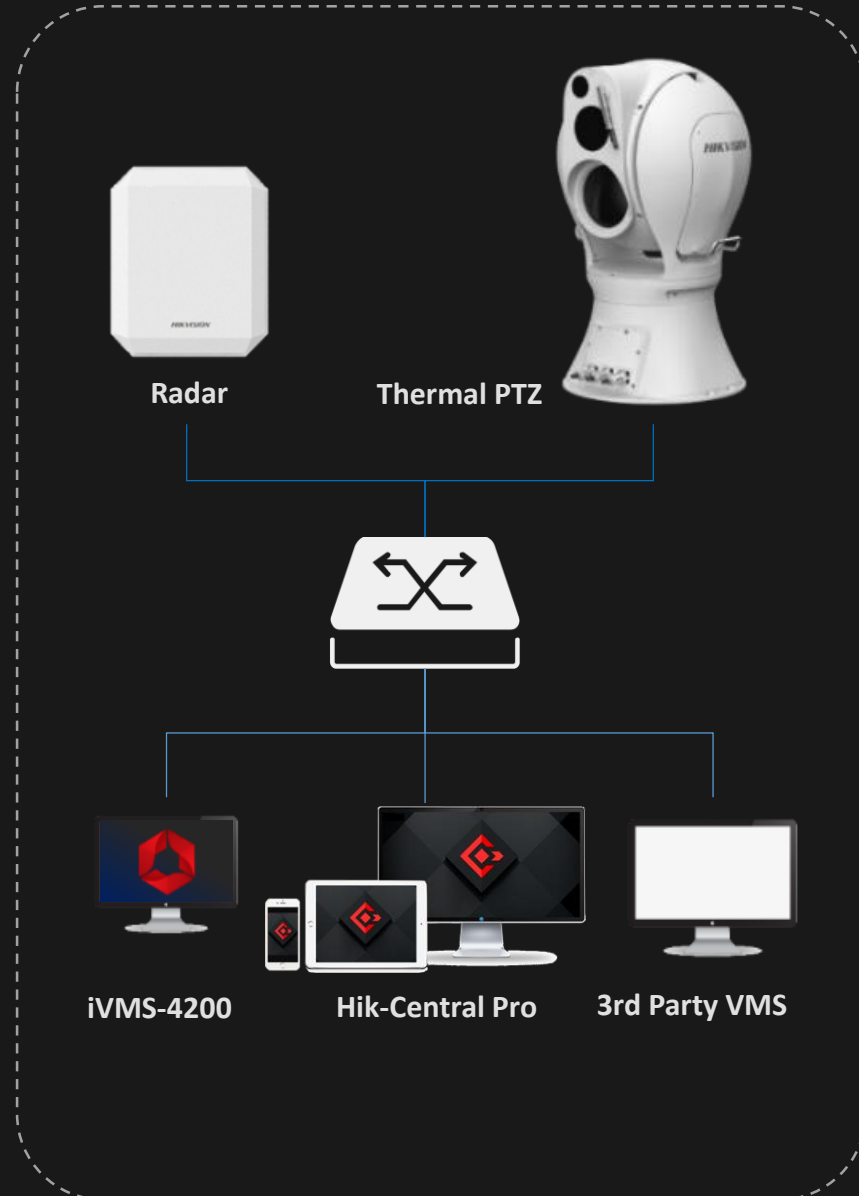
**Hik-Central / IVMS-4200**

**Display & Alarm**



# Thermal Integration Solutions

# Radar Linkage (Fast & Accurate Target Tracking)



We recommend HIKVISION thermal sphere shape PTZ to integrate with radar because of the sphere PTZ's faster and accurate pan & tilt movement.



## Target locating and tracing

Supports getting information such as the distance, speed, and angle of the object



## Multi-target locking

Supports 32 targets detection, 16 detection zones, and 4 warning lines.



## Security Radar

DS-TDSB0G-FX/1km  
DS-TDSB0G-FC/2km



## Powerful videos analysis

Local videos analysis recheck and pictures capture to filter the false alarms such as the swaying trees and pets



## Multi-scene modes selectable.

Multi-scene modes selectable. Sensitivity configurable.

# Thermal PTZ + Radar Image Performance



Radar linkage 2km vehicle detection



Radar linkage 600m human detection

# Border Surveillance Application



**Thermal Bullet Camera**  
Long Distance Smart Surveillance



**Thermal PTZ**  
Large Area Patrolling



**Thermal Individual Equipment**  
Individual Flexible Patrolling