GANZ® THERMAL
POWERED BY DRS TECHNOLOGIES

Security Driven by Intelligence.

- 320 x 240 or 640 x 480 resolution
- Lens options ranging from 6° to 44° FOV
- Image Contrast Enhancement (ICE™) features
- Thermal imaging powered by DRS Technologies®
- IP and analog connectivity
- 30 fps or 9 fps versions for global commercial applications
- 802.3af Power over Ethernet (PoE)
- Low energy consumption
- Uncooled 17um VOx Detector

Thermal Imaging: There Is No Comparison

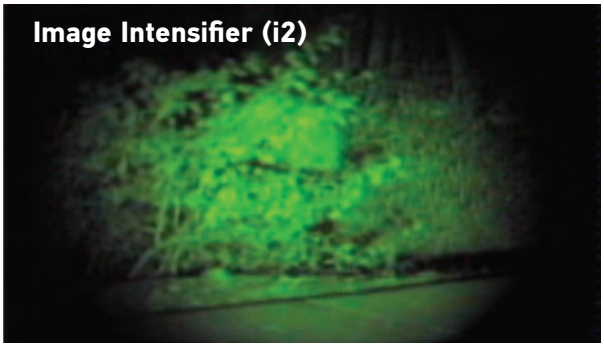
The diagram below depicts images from the same scene captured with various imaging equipment common in today's surveillance market. Conventional video surveillance options such as CCTV with Infrared Illuminators, Active Visible (Day TV) and Image Intensifiers (i2) cannot adequately define the scene with clarity, as thermal cameras can.

Several types of imaging technologies are available for security applications, but thermal cameras offer particular advantages that can extend the surveillance and monitoring capabilities of security systems and personnel. All competing technologies – visible-light camera, night vision and near-infrared – have limited viewing capacity.

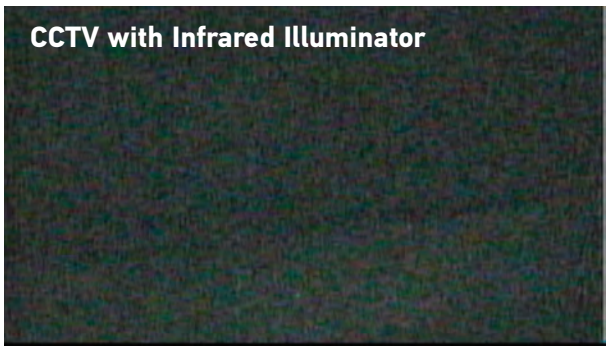
Ganz Thermal Infrared

These low-light devices amplify the available ambient light to produce an image of the scene. Consequently, image intensifiers need a source of illumination to operate effectively and cannot perform well in total darkness. Their effectiveness also is hampered by their limited range. Image intensifiers are subject to a "blooming" effect that results from brightly lit objects in the scene. These light sources appear as intense glows that may hide nearby detail and, if sufficiently strong, may blind the camera by flooding the scene with light.

Image Intensifier (i2)



CCTV with Infrared Illuminator



For security operations, closed circuit TV systems are often coupled with infrared illuminators, such as diodes, infrared lamps and lasers. With these illuminators, CCTV offers an improvement in imaging compared with day TV devices, but it still requires enhanced illumination when detecting images in semi-darkness and other low-light conditions. Additionally, CCTV's capabilities often are limited by range and weather conditions.

Active Visible Lighting (Day TV)

Day cameras, employing active visible lighting, detect the portion of the electromagnetic spectrum that is visible to the human eye, a segment ranging from 350 nm to 750 nm in wavelength. Using conventional video cameras, these systems splash light on the targeted area to identify intrusions. The light source, however, draws attention to the device, and intruders may breach security simply by evading the light. Moreover, as with any illuminated source, visible-lighting systems are hindered by limited reliability and duration for both the camera and the lighting source.

Image Contrast Enhancement (ICE™) Selections

AGC

Firefighter is visible with minimal contrast. Background of scene is washed out and nothing is visible through the window.

ICE™ Low

Firefighter and background are clearly visible with added contrast and edge enhancement. No visibility through the window.

ICE™ High

Maximum edge enhancement brings out details of firefighter and reveals elements in the distant background through the window.

AGC- Automatic Gain Control adjusts the image gain to the optimal range.
ICE™ Low- Provides moderate levels of contrast and edge enhancement.
ICE™ High- Additional local area contrast and edge enhancement to enrich background and foreground content.

Mounting Options

Pan/Tilt mounting:

WMK3-1W
Wall Mount Bracket

Fixed mounting:

WB-1W
Wall Mount Bracket

JB-1W
Ceiling J Bracket

Fixed Thermal Series

Powered by DRS Technologies®

ZNT6-H SERIES FEATURES

FOCAL PLANE ARRAY

Array Size	320 x 240	640 x 480
Detector Type	DRS Technologies Uncooled VOx Microbolometer	
Detector Pitch	17 µm	
Spectral Response	8 – 14 µm (LWIR)	
Sensitivity	< 50 mK at f/1.0	

VIDEO

Frame Rate	Configurable for up to 30 Frames Per Second (FPS) or Fixed at 9 fps	
Format	Analog: NTSC / PAL IP: H264 / MJPEG	
Gain/Level Control	Automatic	
Thermal Image Display	White Hot / Black Hot / Color Pallet with more than 12 options	
Image Orientation	Normal / Flip	
Symbology	On screen display with date, time and user defined text	
Zoom	4x Digital Zoom with ePan / eTilt	
Image Processing	Image Contrast Enhancement (ICE™)	

COMMUNICATION INTERFACE

Protocols	Internet Protocol (IP):	ONVIF™ Conformant (v2.0 / Profile S) RTP, RTSP, TCP, UDP, DHCP, FTP, HTTP and NTP
	Analog:	PELCO-D
Interfaces	Internet Protocol (IP):	Ethernet (10/100 BaseT), RJ-45
	Analog:	RS-485
Security	802.1X Network Access Control and HTTPS	

ELECTRICAL

Voltage	12 - 24 VDC; 24 VAC; 802.3af Power over Ethernet (PoE), UL Listed
Power Consumption	< 12.95 W

ENVIRONMENTAL

Operating Temperature	-40°F to +140°F (-40°C to +60°C)
Storage Temperature	-58°F to +167°F (-50°C to +75°C)

MECHANICAL

Dimensions (L x H x W)	11.5" x 4.1" x 3.7" (29.2 x 10.4 x 9.5 cm)
Weight	< 3.3 lbs. (1500 grams)
Enclosure	IP66, Tamper Resistant

SOFTWARE

Web Interface	Administrator and User with Password Protection

HARDWARE

Embedded Memory	2 GB for Video Storage and Image Capture

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Specifications subject to change without notice.
Mounting options can be found on page 3. Lens options can be found on page 6 and 8.

Pan / Tilt Thermal Series

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ZNT6-P SERIES FEATURES

FOCAL PLANE ARRAY

Array Size	320 x 240	640 x 480
Detector Type	DRS Technologies Uncooled VOx Microbolometer	
Detector Pitch	17 µm	
Spectral Response	8 – 14 µm (LWIR)	
Sensitivity	< 50 mK at f/1.0	

VIDEO

Frame Rate	Configurable for up to 30 Frames Per Second (FPS) or Fixed at 9 fps
Format	Analog: NTSC / PAL IP: H264 / MJPEG
Gain/Level Control	Automatic
Thermal Image Display	White Hot / Black Hot / Color Pallet with more than 12 options
Image Orientation	Normal / Flip
Symbology	On screen display with date, time and user defined text
Zoom	4x Digital Zoom with ePan / eTilt
Image Processing	Image Contrast Enhancement (ICE™)

COMMUNICATION INTERFACE

Protocols	Internet Protocol (IP):	ONVIF™ Conformant (v2.0 / Profile S) RTP, RTSP, TCP, UDP, DHCP, FTP, HTTP and NTP
	Analog:	PELCO-D
Interfaces	Internet Protocol (IP):	Ethernet (10/100 BaseT), RJ-45
	Analog:	RS-485
Security	802.1X Network Access Control and HTTPS	

ELECTRICAL

Voltage	12 - 24 VDC; 24 VAC; 802.3af Power over Ethernet (PoE), UL Listed
Power Consumption	< 12.95 W

ENVIRONMENTAL

Operating Temperature	-4°F to +140°F (-20°C to +60°C)
Storage Temperature	-58°F to +167°F (-50°C to +75°C)

MECHANICAL

Dimensions (ø x H)	7.9" x 10.6" (20 cm x 27 cm)
Volume	480 cubic inches (8000 cm)
Weight	< 6.6 lbs. (3 kilograms)
Enclosure	IP66 (Ball-down Configuration), Tamper Resistant
Motion Mechanics	Pan Range (Azimuth): Continuos 360° Tilt Range (Elevation): ± 120° Pan-and-Tilt Speed: 30° per second Pan-and-Tilt Accuracy: ± 2.5°

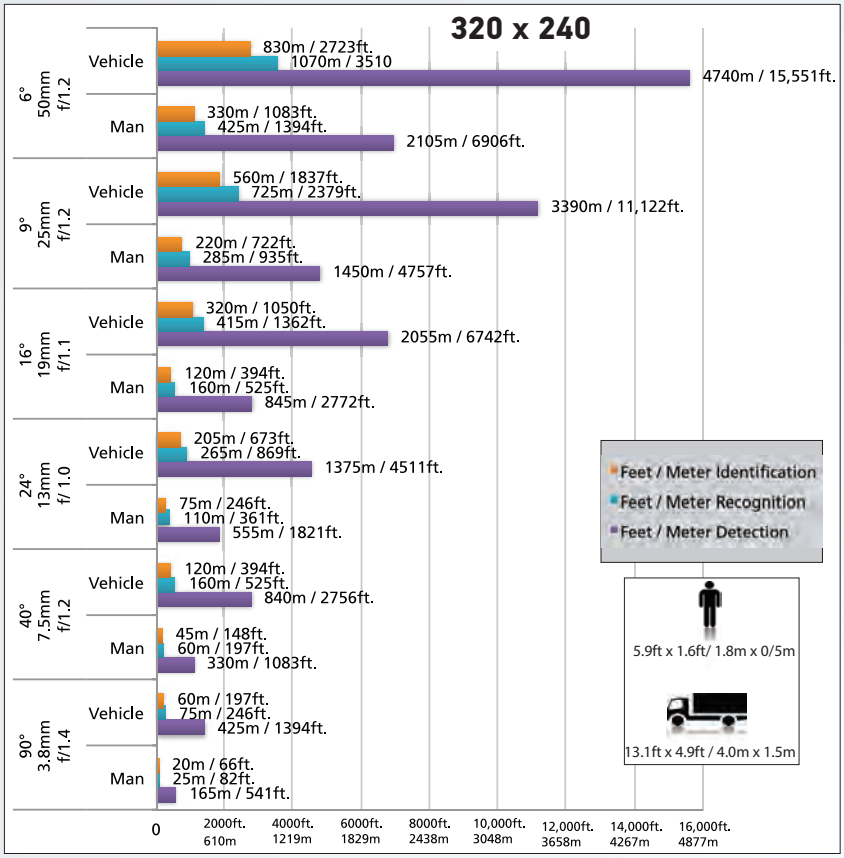
SOFTWARE

Web Interface	Administrator and User with Password Protection

HARDWARE

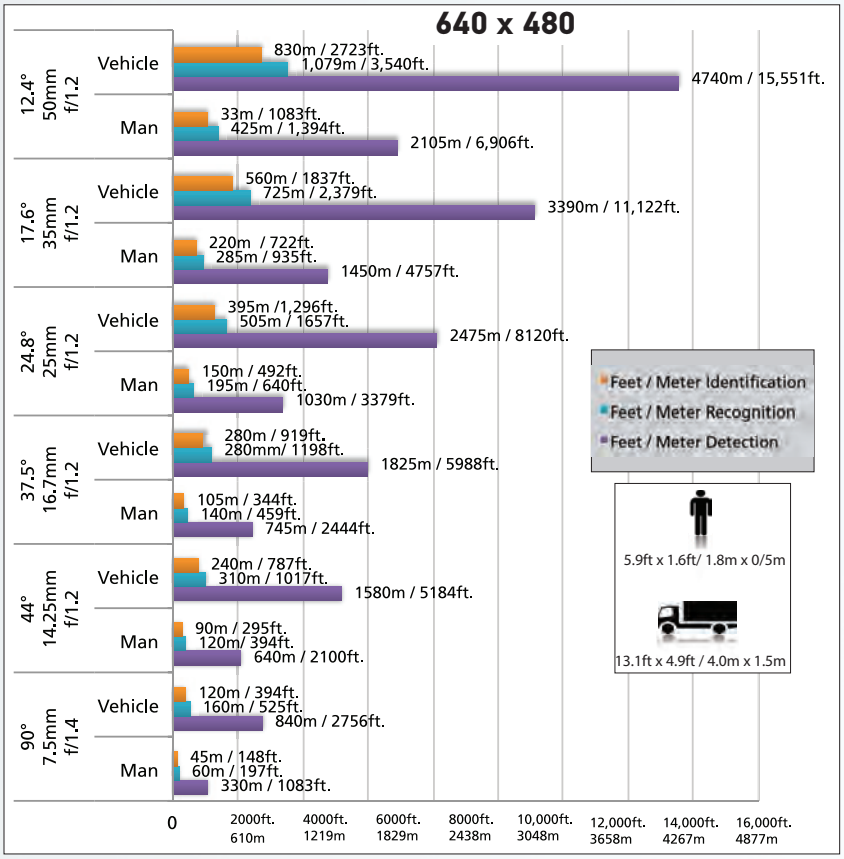
Embedded Memory	2 GB for Video Storage and Image Capture

Thermal Series Range Performance Data – at 50% Probability



NVTherm IP 2009: Modeled inputs include actual detector NETD (≤30mK), Lens (EFL, MTF,f/#,Transmission), 2°delta T (target vs. background) Atmospheric Transmission 90% @ 1Km, Image viewed in its native resolution no scaling, no e-zoom applied. Other factors and assumptions apply.

See page 8 for full list of camera models and lens options. Some lenses are not available on all models.



NVTherm IP 2009: Modeled inputs include actual detector NETD (≤30mK), Lens (EFL, MTF,f/#,Transmission), 2°delta T (target vs. background) Atmospheric Transmission 90% @ 1Km, Image viewed in its native resolution no scaling, no e-zoom applied. Other factors and assumptions apply.

Environmental Testing Data

All tests listed below were conducted on the Ganz Thermal Fixed and Ganz Thermal Pan / Tilt cameras. The cameras passed all tests.

SYSTEM FEATURES

Test	Conditions
Altitude	Operational 500 to 9,000 feet
Operational Temperature	Fixed Thermal Series: -40°C to 60°C (-40°F to 140°F) Pan / Tilt Series: -20°C to 60°C (-4°F to 140°F)
Storage Temperature	Fixed Thermal Series: -50°C to 75°C (-58°F to 167°F) Pan / Tilt Series: -50°C to 75°C (-58°F to 167°F)
Temperature Shock	Fixed Thermal Series: -40°C to 60°C (-40°F to 140°F) and 60°C to -40°C (140°F to -40°F) Pan / Tilt Series: -20°C to 60°C (-4°F to 140°F) and 60°C to -20°C (140°F to -4°F)
Icing, Fogging, Frosting	Fixed Thermal Series: -40°C to 40°C (-40°F to 104°F), 2 Hrs at 2°C per minute Pan / Tilt Series: -20°C to 40°C (-4°F to 104°), 2 Hrs at 2°C per minute
Solar Radiation	60°C (inherent in high temp extreme)
Humidity	95% humidity 7 days
Salt Fog	5% solution for 48 hours
Protection for Water and Dust	IEC 60529 IP66
Functional Vibration	20Hz to 600Hz
Handling Shock	1 meter drop; 3 sides (in shipping container)
EMI Testing	FCC Part 15 Subpart B Class A, CISPR22 Class B, EN55022 Class A
Safety	UL 60065 7th Edition 2007-12-11, CAN/CSA-C22.2 No.60065-03, 1st Edition, 2006-04+A1:2006
RoHS Compliance	European RoHS directive, 2011/65/EU
CE Mark Certification	IEC 60065 (Edition 7), IEC 60065 (Edition 7) Am 1

Testing is indicative only and test conditions may vary depending on the model.

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2 Year Warranty. *See website for details*

Fixed Thermal Series

Fixed Thermal - 320x240 Resolution			
Models	**fps**	**FOV**	**Standard**
ZNT6-HAT1FN20-N	30	40° x 30°	NTSC
ZNT6-HAT1FN29-N	30	24° x 18°	NTSC
ZNT6-HAT1FN23-N	30	16° x 12°	NTSC
ZNT6-HAT1FN25-N	30	9° x 7°	NTSC
ZNT6-HAT1FN26-N	30	6° x 5°	NTSC
ZNT6-HBT1FN20-N	9	40° x 30°	NTSC
ZNT6-HBT1FN29-N	9	24° x 18°	NTSC
ZNT6-HBT1FN23-N	9	16° x 12°	NTSC
ZNT6-HBT1FN25-N	9	9° x 7°	NTSC
ZNT6-HBT1FN26-N	9	6° x 5°	NTSC
ZNT6-HAT1FN20-P	30	40° x 30°	PAL
ZNT6-HAT1FN29-P	30	24° x 18°	PAL
ZNT6-HAT1FN23-P	30	16° x 12°	PAL
ZNT6-HAT1FN25-P	30	9° x 7°	PAL
ZNT6-HAT1FN26-P	30	6° x 5°	PAL
ZNT6-HBT1FN20-P	9	40° x 30°	PAL
ZNT6-HBT1FN29-P	9	24° x 18°	PAL
ZNT6-HBT1FN23-P	9	16° x 12°	PAL
ZNT6-HBT1FN25-P	9	9° x 7°	PAL
ZNT6-HBT1FN26-P	9	6° x 5°	PAL

Fixed Thermal - 640x480 Resolution			
Models	**fps**	**FOV**	**Standard**
ZNT6-HAT2FN32-N	30	90° x 67°	NTSC
ZNT6-HAT2FN21-N	30	44° x 33°	NTSC
ZNT6-HAT2FN22-N	30	37° x 28°	NTSC
ZNT6-HAT2FN24-N	30	25° x 19°	NTSC
ZNT6-HAT2FN25-N	30	18° x 13°	NTSC
ZNT6-HAT2FN26-N	30	12° x 9°	NTSC
ZNT6-HBT2FN32-N	9	90° x 67°	NTSC
ZNT6-HBT2FN21-N	9	44° x 33°	NTSC
ZNT6-HBT2FN22-N	9	37° x 28°	NTSC
ZNT6-HBT2FN24-N	9	25° x 19°	NTSC
ZNT6-HBT2FN25-N	9	18° x 13°	NTSC
ZNT6-HBT2FN26-N	9	12° x 9°	NTSC
ZNT6-HAT2FN32-P	30	90° x 67°	PAL
ZNT6-HAT2FN21-P	30	44° x 33°	PAL
ZNT6-HAT2FN22-P	30	37° x 28°	PAL
ZNT6-HAT2FN24-P	30	25° x 19°	PAL
ZNT6-HAT2FN25-P	30	18° x 13°	PAL
ZNT6-HAT2FN26-P	30	12° x 9°	PAL
ZNT6-HBT2FN32-P	9	90° x 67°	PAL
ZNT6-HBT2FN21-P	9	44° x 33°	PAL
ZNT6-HBT2FN22-P	9	37° x 28°	PAL
ZNT6-HBT2FN24-P	9	25° x 19°	PAL
ZNT6-HBT2FN25-P	9	18° x 13°	PAL
ZNT6-HBT2FN26-P	9	12° x 9°	PAL

Pan / Tilt Thermal Series

P/T Thermal - 320x240 Resolution			
Models	**fps**	**FOV**	**Standard**
ZNT6-PAT1FN20-N	30	40° x 30°	NTSC
ZNT6-PAT1FN29-N	30	24° x 18°	NTSC
ZNT6-PAT1FN23-N	30	16° x 12°	NTSC
ZNT6-PAT1FN25-N	30	9° x 7°	NTSC
ZNT6-PBT1FN20-N	9	40° x 30°	NTSC
ZNT6-PBT1FN29-N	9	24° x 18°	NTSC
ZNT6-PBT1FN23-N	9	16° x 12°	NTSC
ZNT6-PBT1FN25-N	9	9° x 7°	NTSC
ZNT6-PAT1FN20-P	30	40° x 30°	PAL
ZNT6-PAT1FN29-P	30	24° x 18°	PAL
ZNT6-PAT1FN23-P	30	16° x 12°	PAL
ZNT6-PAT1FN25-P	30	9° x 7°	PAL
ZNT6-PBT1FN20-P	9	40° x 30°	PAL
ZNT6-PBT1FN29-P	9	24° x 18°	PAL
ZNT6-PBT1FN23-P	9	16° x 12°	PAL
ZNT6-PBT1FN25-P	9	9° x 7°	PAL

P/T Thermal - 640x480 Resolution			
Models	**fps**	**FOV**	**Standard**
ZNT6-PAT2FN21-N	30	44° x 33°	NTSC
ZNT6-PAT2FN22-N	30	37° x 28°	NTSC
ZNT6-PAT2FN24-N	30	25° x 19°	NTSC
ZNT6-PAT2FN25-N	30	18° x 13°	NTSC
ZNT6-PBT2FN21-N	9	44° x 33°	NTSC
ZNT6-PBT2FN22-N	9	37° x 28°	NTSC
ZNT6-PBT2FN24-N	9	25° x 19°	NTSC
ZNT6-PBT2FN25-N	9	18° x 13°	NTSC
ZNT6-PAT2FN21-P	30	44° x 33°	PAL
ZNT6-PAT2FN22-P	30	37° x 28°	PAL
ZNT6-PAT2FN24-P	30	25° x 19°	PAL
ZNT6-PAT2FN25-P	30	18° x 13°	PAL
ZNT6-PBT2FN21-P	9	44° x 33°	PAL
ZNT6-PBT2FN22-P	9	37° x 28°	PAL
ZNT6-PBT2FN24-P	9	25° x 19°	PAL
ZNT6-PBT2FN25-P	9	18° x 13°	PAL

All specifications are subject to change without notice

9 Hz models are export controlled by the U.S. Department of Commerce under ECCN 6A993. 30 Hz models are export controlled by the U.S. Department of Commerce under ECCN 6A003b.4.b. The commodities described herein may require U.S. Government authorization prior to export or re-export.

Made in the USA

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CBC GROUP
CBC AMERICAS Corp.

GANZ Security Solutions

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