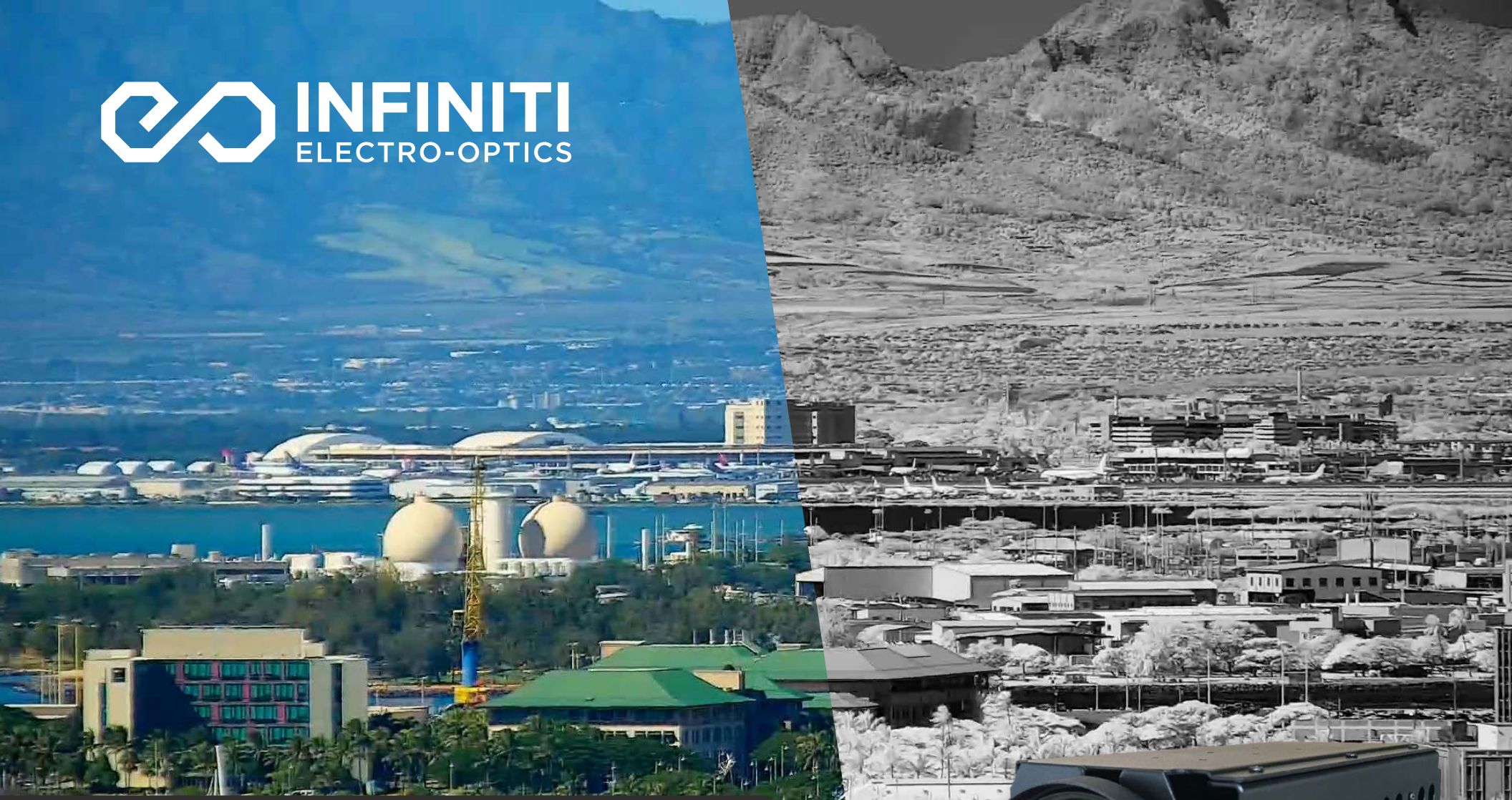
INFINITI
ELECTRO-OPTICS



VIS/NIR Zoom Cameras Brochure

Infiniti's Visible/Near-Infrared Camera Options

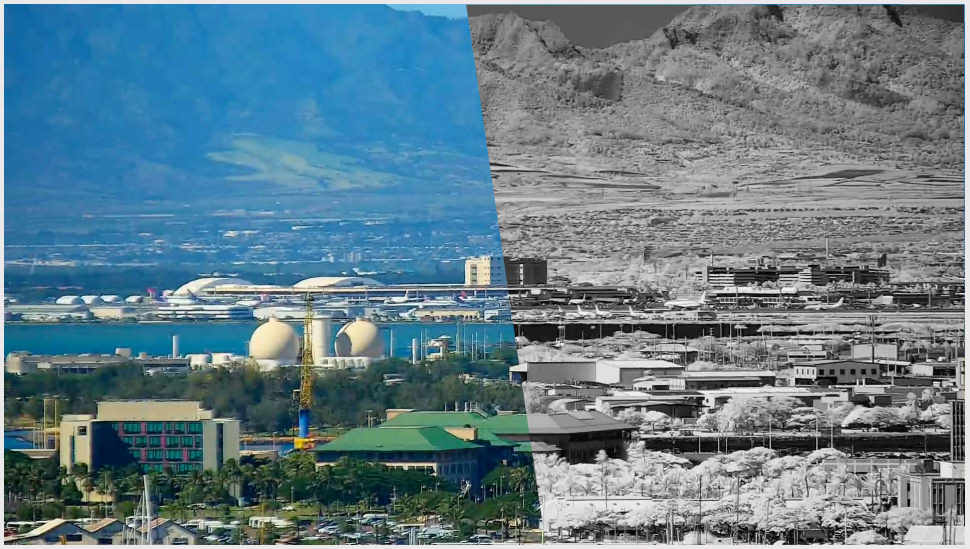
TECHNOLOGY

VIS/NIR Sensors & Fog Filter

Infiniti's VIS/NIR zoom cameras utilize the visible and near-infrared bands of light to provide high-quality images optimized for long-range surveillance. They are designed to provide industry-leading performance and quality, with image resolutions ranging from HD 2MP (1080p) to UltraHD 4K/8MP.

Sensors

The Sony progressive scan CMOS sensors offer excellent spectral sensitivity for both visible and NIR wavelengths. We use various sensor sizes depending on the application. Our 1/2.8" sensor is often selected for maximum range as the smaller sensor maximizes the long-range zoom capabilities of the camera, while still offering good low-light performance. Our 1/2" and larger sensors offer even better low-light performance and increase the effectiveness of our ZLID™ illumination.



Standard Color Visible Image
(Optical Fog Filter Disabled)

NIR Image
(Optical Fog Filter Enabled)

Optical Fog Filter (NIR Only Mode)

While all of our surveillance sensors offer a nighttime NIR+visible mode for optimized sensitivity in low light, the cameras equipped with our NIR bandpass filter (also referred to as a "fog filter") allow users to isolate the NIR (near-infrared) wavelength of light during the day for clearer long-range daytime imaging.

Long-range imaging needs to see through large amounts of atmosphere which often contains particulates like smoke, haze/fog, and other atmospheric distortions. Cutting out the visible wavelength and isolating the NIR can mitigate the effects of smoke, haze and light fog, producing an image with better contrast and less distortion. Our Optical Fog Filter lenses incorporate a motorized filter that is used with the camera's monochrome mode and de-haze image processing to see through smoke, smog and haze, it is available on our -NX models.

TECHNOLOGY

Zoom Lenses & Video Formats

Continuous Zoom Lenses

Infiniti's precision engineered IR-corrected zoom lenses offer a wide range of focal lengths with optical zoom factors from 20X up to 135X zoom and a maximum focal length of 2075mm. With the surveillance-optimized 1/2.8" sensor, our 2075mm lens has the equivalent field of view of a "full-frame" DSLR camera with a 13,700mm lens. Infiniti's zoom optics are built with the highest quality Japanese fluorite ELD low dispersion glass, and the integrated rapid auto focus allows long-range surveillance of targets without operator intervention.

Video Formats

Infiniti's network zoom cameras feature ONVIF and RTSP video streams for compatibility with most VMS and C2 softwares. Video streams can be accessed anywhere in the world using a variety of devices including mobile phones/tablets. When paired with our Octagon platform, advanced control of zoom cameras, pan/tilts, ZLID illuminators, and other devices can all be performed over standard IP networks.

Network zoom cameras are often preferred for their flexibility and ease of transmission over standard IP networks. However, Infiniti also recognizes the need to support existing infrastructure and installations where an IP solution is not preferable; for these applications we offer a selection of SDI and LVDS zoom cameras which provide real-time uncompressed video without the need for any network infrastructure.

Image Processing

Infiniti's zoom cameras integrate the latest technology in real-time image processing such as WDR (Wide Dynamic Range), BLC (Backlight Compensation), HLC (Highlight Compensation), EIS (Electronic Image Stabilization), 3D DNR (Digital Noise Reduction), Digital Defog/Haze Reduction, etc. These allow users to achieve the best image quality possible in various applications with minimal operator intervention.

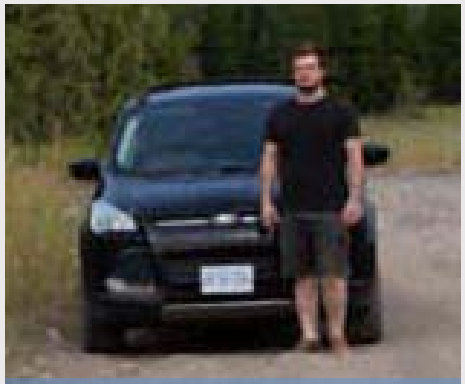
RATING STANDARDS

DORI Ratings

The DORI standard (based on the IEC EN62676-4: 2015 International Standard) defines different levels of detail for Detection (25PPM), Observation (62PPM), Recognition (125PPM), and Identification (250PPM). By using these PPM (pixel per meter) values, it is possible to select a specific camera sensor/lens combination and verify that it will provide the performance needed in each application. Below are examples of each level of detail.

Detection
25ppm

At the detection distance, an operator will be able to determine a human presence, although few details about that human will be visible.

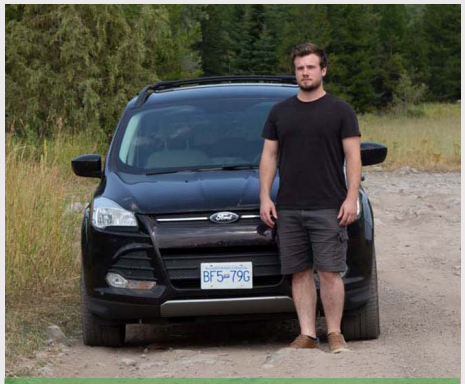


Observation
62ppm

At the observation distance, some characteristic details of the individual, such as distinctive clothing, can start to be seen.

Recognition
125ppm

At this distance, verify with a high degree of certainty whether an individual shown is the same as someone you know. License plates also become legible at this distance under good conditions.



Identification
250ppm

The ability to positively identify a person beyond reasonable doubt. This level of detail provides sufficient image quality to identify an individual or clearly read a license plate.

The examples here simulate the amount of detail if you were to digitally zoom into the image. **Please note that these image simulations assume optimum imaging conditions, however many factors such as atmospheric conditions, heat waves, available light, subject motion or camera shake can degrade image clarity, and most of these issues are amplified at longer distances.**

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NETWORK CAMERA

Specifications

INFINITI ELECTRO-OPTICS

		INF-2075-LSM-NX	INF-1000-LSM-NX	INF-4M-95X-ZM-NX	INF-92X-ZM-NX
Resolution		2MP/1080p @ 60fps (1920×1080)	2MP/1080p @ 60fps (1920×1080)	4MP/1440p @ 60fps (2560×1440)	2MP/1080p @ 60fps (1920×1080)
Pixels Per Meter @ 2km		357ppm	172ppm	169ppm	125ppm
Simulated FOV @ 2km					
DORI	D: 25ppm	28,559m Detection	13,763m Detection	13,549m Detection	9,970m Detection
	O: 62ppm	11,516m Observation	5,550m Observation	5,463m Observation	4,020m Observation
	R: 125ppm	5,712m Recognition	2,753m Recognition	2,710m Recognition	1,994m Recognition
	I: 250ppm	2,856m Identification	1,376m Identification	1,355m Identification	997m Identification
Image Sensor		1/2.8" 2.1 Megapixel CMOS	1/2.8" 2.1 Megapixel CMOS	1/1.8" 4.1 Megapixel CMOS	1/1.9" 2.4 Megapixel CMOS
Lens	Focal Length	15.4–2075mm 135X (with integrated IZE doubler)	30–1000mm 33X Zoom	95X 10–950mm 95X Zoom	9.5–875mm 92X Zoom
	Angle of View	19.3°–0.15°	10.6°–0.32°	38°–0.4°	42°–0.44°
	Focus	Auto / Manual			
S/N Ratio		≥55dB	≥55dB	≥55dB	≥55dB
Minimum Illumination		Color: 0.003 Lux @ f/1.2 (1/3s); 0.03 Lux @ f/1.2 (1/30s) B&W: 0.0009 Lux @ f/1.2 (1/3s); 0.01 Lux @ f/1.2 (1/30s)		Color: 0.02 Lux @ f/2.1; B&W: 0.001 Lux @ f/2.1	Color: 0.02 Lux @ f/2.0; B&W: 0.001 Lux @ f/2.0
Optical Fog Filter (NIR)		Yes	Yes	Yes	Yes
Video Network	Compression	H.265/H.265 Ultrastream/H.264/H.264 Ultrastream/MJPEG		H.265/H.264/MJPEG	
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP		ONVIF, HTTP, RTSP, RTP, TCP, UDP	
EIS		Electronic Image Stabilization (On/Off)		Electronic Image Stabilization (On/Off)	
Image Enhancements		White Balance, 2D/3D DNR, BLC, HLC, and Digital Defog		White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog	
Digital Zoom		16x Digital Zoom		4x Digital Zoom	
Edge Storage		Supports MicroSD Card up to 128GB		Supports MicroSD Card up to 256GB	
Operating Conditions		-30°C to +60°C / < 95%RH		-30°C to +65°C / 20% to 80%RH	
Power Supply		DC 12V±15%		DC 12V±15%	
Dimensions		795mm × 365mm × 245mm*		396mm × 146mm × 150mm	396mm × 146mm × 150mm
Weight		20kg*	15kg*	5.6kg	5kg

*Dependent on full system configuration.

NETWORK CAMERA

Specifications

INFINITI ELECTRO-OPTICS

		INF-8M-49X-ZM(-NX)	INF-88X-ZM(-NX)	INF-39X-ZM	INF-4M-49X-ZM
Output Resolution		4K @ 30fps (3840×2160)	2MP/1080p @ 60fps (1920×1080)	2MP @ 30fps (1920×1080)	4MP/1080p @ 60fps (2560×1440)
Pixels Per Meter @ 2km		84ppm	74ppm	54ppm	56ppm
Simulated FOV @ 2km					
DORI	D: 25ppm	6,739m Detection	5,883m Detection	4,335m Detection	4,492m Detection
	O: 62ppm	2,717m Observation	2,372m Observation	1,748m Observation	1,811m Observation
	R: 125ppm	1,348m Recognition	1,177m Recognition	867m Recognition	898m Recognition
	I: 250ppm	674m Identification	588m Identification	434m Identification	449m Identification
Image Sensor		1/1.8" 8.4 Megapixel CMOS	1/1.8" 8.4 Megapixel CMOS	1/2.8" 2.4 Megapixel CMOS	1/1.8" 4.1 Megapixel CMOS
Lens	Focal Length	6.4–315mm 49X Zoom	6.2–550mm 88X Zoom	8–315mm 39X Zoom	6.4–315mm 49X Zoom
	Angle of View	59°–1.8°	59°–0.8°	39°–1°	62°–1.6°
	Focus	Auto / Manual	Auto / Manual	Auto / Manual	Auto/Manual
S/N Ratio		≥55dB	≥55dB	≥55dB	≥55dB
Minimum Illumination		Color: 0.1 Lux @ f/1.4; B&W: 0.01 Lux @ f/1.4	Color: 0.1 Lux @ f/1.4; B&W: 0.001 Lux @ f/1.4	Color: 0.005 Lux @ f/1.6; B&W: 0.0005 Lux @ f/1.6	Color: 0.001 Lux
Optical Fog Filter (NIR)		Optional	Optional	No	Optional
Video Network	Compression	H.265/H.264/MJPEG			
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP			
EIS		Electronic Image Stabilization (On/Off)			
Image Enhancements		White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog			
Digital Zoom		4x Digital Zoom	None	4x Digital Zoom	4x Digital Zoom
Edge Storage		Supports MicroSD Card up to 256GB			
Operating Conditions		-30°C to +65°C / 20% to 80%RH			-30°C to +60°C / 20% to 80%RH
Power Supply		DC 12V±15%			DC 12V
Dimensions		176mm × 72mm × 78mm	176mm × 72mm × 78mm	146mm × 54mm × 64mm	176mm × 73mm × 78mm
Weight		900g	900g	620g	900g

NETWORK CAMERA

Specifications

INFINITI ELECTRO-OPTICS

		INF-3M-49X-ZM	INF-8M-30X-ZM	INF-49X-ZM	INF-5M-30X-ZM
Output Resolution		3MP @ 50fps (2048×1536)	8MP/4K @ 30fps (3840×2160)	2MP/1080p @ 30fps (1920×1080)	5MP @ 30fps (2560×1920)
Pixels Per Meter @ 2km		45ppm	46ppm	45ppm	32ppm
Simulated FOV @ 2km					
DORI	D: 25ppm	3,594m Detection	3,638m Detection	3,418m Detection	2,567m Detection
	O: 62ppm	1,449m Observation	1,467m Observation	1,378m Observation	1,035m Observation
	R: 125ppm	719m Recognition	728m Recognition	684m Recognition	513m Recognition
	I: 250ppm	359m Identification	364m Identification	342m Identification	257m Identification
Image Sensor		1/1.8″ 3.2 Megapixel CMOS with Global Shutter	1/1.7″ 12.4 Megapixel CMOS	1/1.9″ 2.1 Megapixel CMOS	1/1.8″ 6.4 Megapixel CMOS
Lens	Focal Length	6.4–315mm 49X Zoom	6–180mm 30X Zoom	6.4–315mm 49X Zoom	6–180mm 30X Zoom
	Angle of View	60°–1.8°	63°–2.5°	58.4°–1.4°	61°–2.3°
	Focus	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
S/N Ratio		≥55dB	≥55dB	≥55dB	≥55dB
Minimum Illumination @ f/1.5		Color: 0.002 Lux @ f/1.4; B&W: 0.0001 Lux @ f/1.4	Color: 0.1 Lux; B&W: 0.01 Lux	Color: 0.001 Lux	Color: 0.05 Lux; B&W: 0.005 Lux;
Optical Fog Filter (NIR)		Optional	No	Optional	No
Video Network	Compression	H.265/H.264/MJPEG			
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP			
EIS		Electronic Image Stabilization (On/Off)			
Image Enhancements		White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog			
Digital Zoom		4x Digital Zoom	4x Digital Zoom	4x Digital Zoom	4x Digital Zoom
Edge Storage		Supports MicroSD Card up to 256GB			
Operating Conditions		-30°C to +65°C / 20% to 80%RH			
Power Supply		DC 12V±15%			
Dimensions		176mm × 72mm × 78mm	126mm × 56mm × 70mm	176mm × 73mm × 78mm	126mm × 56mm × 70mm
Weight		900g	405g	900g	415g

NETWORK CAMERA

Specifications

INFINITI ELECTRO-OPTICS

		INF-36X-ZM(-NX)	INF-30X-ZM	INF-32X-ZM	INF-24X-ZM
Output Resolution		2MP/1080p @ 30fps (1920×1080)	2MP/1080p @ 30fps (1920×1080)	2MP/1080p @ 30fps (1920×1080) (60fps optional)	2MP/1080p @ 30fps (1920×1080)
Pixels Per Meter @ 2km		31ppm	25ppm	24ppm	21ppm
Simulated FOV @ 2km					
DORI	D: 25ppm	2,484m Detection	1,982m Detection	1,954m Detection	1,652m Detection
	O: 62ppm	1,002m Observation	799m Observation	788m Observation	666m Observation
	R: 125ppm	497m Recognition	396m Recognition	391m Recognition	330m Recognition
	I: 250ppm	248m Identification	198m Identification	195m Identification	165m Identification
Image Sensor		1/1.9" 2.1 Megapixel CMOS	1/2.8" 2.4 Megapixel CMOS	1/2.8" 2 Megapixel CMOS	1/2.8" 2.4 Megapixel CMOS
Lens	Focal Length	6–218mm 36X Zoom	4.8–144mm 30X Zoom	4.4–142mm 32X Zoom	5–120mm 24X Zoom
	Angle of View	62°–1.9°	61°–2.3°	61.8°–2.2°	58°–2.8°
	Focus	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
S/N Ratio		≥55dB	≥55dB	≥50dB	≥55dB
Minimum Illumination @ f/1.5		Color: 0.001 Lux; B&W: 0.0001 Lux	Color: 0.005 Lux; B&W: 0.0005 Lux	Color: 0.05 Lux; B&W: 0.005 Lux	Color: 0.005 Lux; B&W: 0.0005 Lux
Optical Fog Filter (NIR)		Optional	No	No	No
Video Network	Compression	H.265/H.264/MJPEG			
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP			
EIS		Electronic Image Stabilization (On/Off)			
Image Enhancements		White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog		White Balance, 120dB WDR (150dB optional), 3D DNR, BLC, HLC, Digital Defog	White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog
Digital Zoom		4x Digital Zoom	4x Digital Zoom	32x Digital Zoom	4x Digital Zoom
Edge Storage		Supports MicroSD Card up to 256GB			
Operating Conditions		-30°C to +65°C / 20% to 80%RH		-10°C to +55°C / 0% to 90%RH	-30°C to +65°C / 20% to 80%RH
Power Supply		DC 12V±15%		DC 12V	DC 12V±15%
Dimensions		126mm × 56mm × 70mm	96mm × 54mm × 60mm	136mm × 72mm × 64mm	96mm × 54mm × 60mm
Weight		415g	300g	480g	300g

SDI/LVDS CAMERA

Specifications

INFINITI ELECTRO-OPTICS

		INF-88X-ZM-SDI(-NX)	INF-3M-39X-ZM-SDI	INF-36X-ZM-SDI	INF-30X-ZM-SDI
Output Resolution		2MP/1080p @ 60fps (1920×1080)	3MP @ 50fps (2048×1536)	2MP/1080p @ 30fps (1920×1080)	
Pixels Per Meter @ 2km		74ppm	45ppm	31ppm	25ppm
Simulated FOV @ 2km					
DORI	D: 25ppm	5,883m Detection	3,594m Detection	2,484m Detection	1,982m Detection
	O: 62ppm	2,372m Observation	1,449m Observation	1,002m Observation	799m Observation
	R: 125ppm	1,177m Recognition	719m Recognition	497m Recognition	396m Recognition
	I: 250ppm	588m Identification	359m Identification	248m Identification	198m Identification
Image Sensor		1/1.8" 8.4 Megapixel CMOS	1/1.8" 3.2 Megapixel CMOS with Global Shutter	1/1.9" 2.4 Megapixel CMOS	1/2.8" 2.4 Megapixel CMOS
Lens	Focal Length	6.2-550mm 88X Zoom	8–315mm 39X Zoom	6–218mm 36X Zoom	4.8-144mm 30X Zoom
	Angle of View	59°–0.8°	60°–1.8°	62°–1.9°	61°–2.3°
	Focus	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
S/N Ratio		≥55dB	≥55dB	≥55dB	≥55dB
Minimum Illumination		Color: 0.1 Lux @ f/1.4; B&W: 0.01 Lux @ f/1.4	Color: 0.002 Lux @ f/1.4; B&W: 0.0001 Lux @ f/1.4	Color: 0.001 Lux @ f/1.5; B&W: 0.0001 Lux @ f/1.5	Color: 0.001 Lux @ f/1.5; B&W: 0.0001 Lux @ f/1.5
Optical Fog Filter (NIR)		Optional	No	Optional	No
Video Output		LVDS, SDI and IP (Optional)		LVDS or SDI	
EIS		Electronic Image Stabilization (On/Off)			
Image Enhancements		White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog			
Digital Zoom		4x Digital Zoom			
Operating Conditions		-30°C to +65°C / 20% to 80%RH			
Power Supply		DC 12V±15%			
Dimensions		176mm × 72mm × 78mm	176mm × 72mm × 78mm	126mm × 56mm × 70mm	96mm × 54mm × 60mm
Weight		900g	900g	415g	300g

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