

# VEI-30 Dinion Infrared Imager

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**BOSCH**  
Invented for life



- ▶ Certified all-weather active IR surveillance camera specifically designed for perimeter surveillance and other outdoor low-light applications
- ▶ Dinion 2X imaging with wide dynamic capability to handle the most demanding lighting situations
- ▶ Variable Field Illumination technology provides unmatched low-light and no-light performance
- ▶ Integrated junction box, remote control, and complete external adjustments minimize installation time and cost

The Dinion Infrared Imager is a rugged, active infrared surveillance camera designed to master perimeter surveillance and other outdoor low-light applications. The IR Imager provides best-in-class images day and night covering up to 160 meters (525 feet) with unrivaled illumination quality throughout the field of view.

From the most challenging daylight conditions to zero lux night environments, the VEI-30 gives you the details you need. Our Dinion 2X technology provides optimal 20-bit imaging in natural and artificial light, giving you a powerful wide dynamic range camera solution capable of handling the most demanding lighting situations, 24 hours a day.

Variable Field Illumination allows IR beam pattern adjustments in the field, allowing for wide area coverage and greatly reducing maintenance and setup time and effort. Variable Field Illumination also provides even illumination not only across the field of view but also from foreground to background. To ensure this performance never fades over time, the IR Imager features Constant Light technology, using closed loop feedback to control infrared performance throughout the life of the unit.

The IP67-rated junction box and the camera can be hung and connected in seconds, reducing time and energy on the ladder. The Bilinx (up-the-coax) remote control further reduces time needed for adjustments during and after installation by allowing for adjustments to be made remotely on the ground.

## Functions

### DCRI Zero Lux Performance

	850 nm		940 nm	
	Range	Horizontal Field of Illumination	Range	Horizontal Field of Illumination
<b>Detection</b>	160 m (525 ft)	28 m (90 ft)	80 m (260 ft)	14 m (45 ft)
<b>Classification</b>	120 m (390 ft)	21 m (70 ft)	60 m (195 ft)	10 m (35 ft)
<b>Recognition</b>	90 m (295 ft)	16 m (50 ft)	45 m (150 ft)	8 m (25 ft)
<b>Identification</b>	50 m (165 ft)	9 m (30 ft)	25 m (80 ft)	4 m (15 ft)

Note: DCRI values given are with narrow IR beam configuration at maximum focal length.

**Dinion Integrated Imaging – reveal every detail**

- More detail in difficult lighting featuring superior 120dB (20-bit image processing) wide dynamic range
- 24/7 performance around the clock with 2X image processing that dynamically adapts to scene changes in addition to infrared illumination compensation

**High Performance Illumination**

- Variable Field Illumination allows wider area coverage for even illumination across the field of view and from foreground to background
- Constant Light technology ensures consistent imaging throughout the life of the product
- 850 nm and 940 nm infrared wavelength options

**Installer-Friendly Features**

- Lightweight junction box can be preinstalled to minimize time “on the ladder”
- Integrated OSD, complete external adjustment, and Bilinx remote control reduces service and installation time

**Ready for All Environments<sup>1</sup>**

- IP67 – dust proof and protection against temporary submersion
- NEMA4X – all weather rated and corrosion resistant
- EN60068-2-6 – shock and vibration tested
- IK10 – impact resistant (except for window)
- MIL-STD-810F<sup>2</sup> – tested to operate in conditions exceeding A1 environments (harshest desert classification) for exposure to solar radiation

1. The camera is designed to be installed on static structures using the specified mounting adapters. It should not be installed in dynamic environments or on moving objects such as vehicles, ships or elevators.

2. Long term continuous exposure in worst case conditions can impact component life.

**Certifications and approvals**

Region	Classification
Europe	CE (Declaration of Conformity)
USA	UL, FCC
Canada	CSA
Australia	C-Tick

**Electromagnetic Compatibility**

Emission	EN55022 class B, FCC part 15 class B, EN6100-3, IC ICES-03
Immunity	EN50130-4 (CE), EN6100-6-3 (CE)

**Safety**

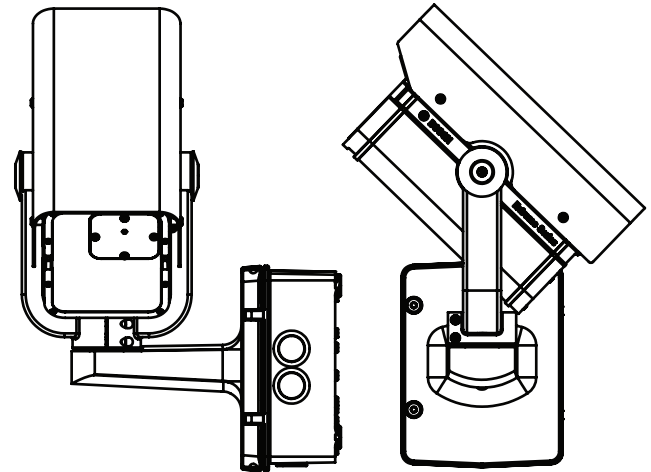
UL60065-07, CAN/CSA 60065-03, EN60065 (CE)

**Environmental**

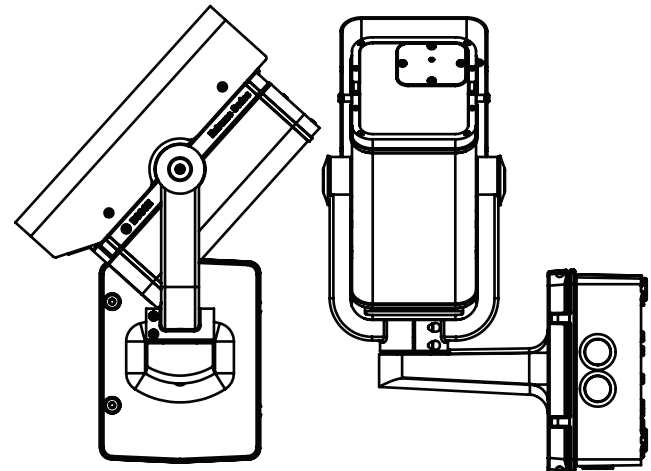
Weatherproofing	IP67, Type 4X (NEMA 4X), CSA 22.2 No. 94-M91, UL 50
Impact Resistance	IK10 (except window)
Solar Radiation	Tested for MIL-STD-810F (for A1 environments)

**Installation/configuration notes**

**Canting Directions**

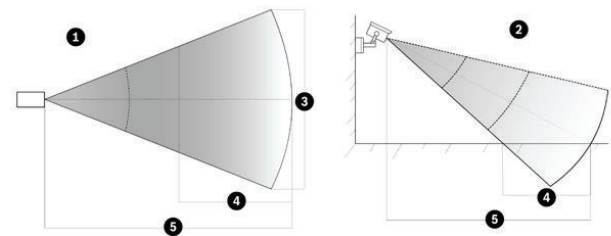


Camera Rotated 90° Left, Tilted 44° Up



Camera Rotated 90° Right, Tilted 48° Down

**Use Cases**



1	Horizontal Angle (H)
2	Vertical Angle (V)
3	Horizontal Field of Illumination (HFOI) / Horizontal Field of View (HFOV)
4	Depth of Field (DoF) Range
5	Distance

**General Area Surveillance: RECOGNITION**

IR Beam Pattern (Full Width Half Maximum) <sup>2</sup>	43° x 20°
Camera Focal Length; FOV <sup>2</sup>	6 mm focal length; 44° x 33°
DoF Range	5–23 m (16–75 ft)
HFOI <sup>3</sup>	17 m (56 ft)
HFOV <sup>3</sup>	17 m (56 ft)

**Critical Asset and Entry/Exit Monitoring: RECOGNITION**

IR Beam Pattern (Full Width Half Maximum) <sup>2</sup>	10° x 10°
Camera Focal Length; FOV <sup>2</sup>	24 mm focal length; 11° x 9°
DoF Range	23–90 m (75–300 ft)
HFOI <sup>3</sup>	16 m (53 ft)
HFOV <sup>3</sup>	17 m (56 ft)

**Perimeter Monitoring (100 m/330 ft zone spacing): RECOGNITION/CLASSIFICATION**

IR Beam Pattern (Full Width Half Maximum) <sup>2</sup>	10° x 10°
Camera Focal Length; FOV <sup>2</sup>	20 mm focal length; 14° x 10°
DoF Range	20–120 m (65–400 ft)
HFOI <sup>3</sup>	21 m (69 ft)
HFOV <sup>3</sup>	29 m (95 ft)

2. Measurements are H x V.

3. At maximum range.

**Parts included**

Quant.	Component
1	VEI-30 Dinion Infrared Imager
1	Cable-managed pan/tilt bracket
1	Junction box
1	Sunshield
1	Installation kit

**Technical specifications****Electrical**

Model No.	Rated Voltage	Rated Frequency
VEI-308V05-13W	12 VDC/24 VAC (± 10%)	50 Hz
VEI-308V05-23W	12 VDC/24 VAC (± 10%)	60 Hz
VEI-309V05-13W	12 VDC/24 VAC (± 10%)	50 Hz
VEI-309V05-23W	12 VDC/24 VAC (± 10%)	60 Hz

Power Consumption	
• at 12 VDC	35 W (2.9 A)
• at 24 VAC	35 W (1.5 A)

Sensor	
CCD Type	1/3-in. interline, WDR dual shutter
Active Pixels:	PAL: 752 x 582 NTSC: 768 x 494

**Sensitivity (3200 K, scene reflectivity 89%, F1.2)**

	Full video (100 IRE)	Usable picture (50 IRE)	Usable picture (30 IRE)
Color	2.4 lx (0.223 fc)	0.47 lx (0.044 fc)	0.15 lx (0.0139 fc)
Color + SensUp 10x	0.24 lx (0.0223 fc)	0.047 lx (0.0044 fc)	0.015 lx (0.0014 fc)
Monochrome	0.98 lx (0.091 fc)	0.188 lx (0.0174 fc)	0.06 lx (0.0056 fc)
Monochrome + SensUp 10x	0.098 lx (0.0091 fc)	0.019 lx (0.0017 fc)	0.006 lx (0.0006 fc)
Monochrome + IR Illumination	0 lx (0 fc)	0 lx (0 fc)	0 lx (0 fc)

**Interfaces**

Analog (video)	PAL or NTSC BNC Fiber Optic interface (with accessory)
On-screen Display	OSD with soft-key operation (multilingual)
Alarm Output Relay	30 VAC or +40 VDC, max. 0.5 A continuous, 10 VA Tamper: Open/close, normally closed voltage free relay
Analog Remote Control	Bilinx coaxial bi-directional communication

**Video**

Horizontal Resolution	540 TVL
Signal-to-Noise Ratio	>50 dB
Video Output	Composite video 1 Vpp, 75 ohm
Synchronization	Internal, Line Lock
Shutter	Auto (1/50 [1/60] to 1/10000) selectable Auto (1/50 [1/60] to 1/50000) automatic flickerless, fixed selectable
Sensitivity up	Adjustable from Off up to 10x
Day/Night	Color, Mono, Auto Video, Auto Photocell
Day/Night Photocell Control	Day/Night switch adjustable: 25 lux to 64 lux (default at 48 lux) Night/Day switch adjustable: 43 lux to 82 lux (default at 63 lux)

Auto Black	Automatic continuous, Off
Dynamic engine	XF-Dynamic, 2X-Dynamic, SmartBLC
Dynamic range	120 dB (20-bit image processing)
Dynamic Noise Reduction	Auto, On/off selectable
Sharpness	Sharpness enhancement level selectable
SmartBLC	On (includes 2X-Dynamic) / Off
AGC	AGC On or Off (0–30 dB) selectable
Peak White Invert	On/Off
White Balance	ATW, ATWhold and manual (2500 to 10000K)
Alarm Output	VMD or Bilinx and dedicated Tamper (for junction box)
Cable Compensation	Up to 1000 m (3000 ft) coax without external amplifiers (automatic set-up in combination with Bilinx coaxial communication)
Camera ID	17-character editable string, position selectable
Test Pattern Generator	Color bars 100%, Grayscale 11-step, Sawtooth 2H, Checker board, Cross hatch, UV plane
Lens	5–50 mm IR-corrected Varifocal auto-iris
Angular Field of View (H x V)	5 mm FOV: 51° x 40° 50 mm FOV: 6° x 4°
Modes	6 preset programmable modes
Remote Control	Bilinx coaxial bi-directional communication
Video Motion Detection	One area, fully programmable
Privacy Masking	Four independent areas, fully programmable

### Illuminator Specifications

LEDs	7 SMT type LED array with Variable Field Illumination
Beam Patterns (H x V)	Wide beam: 42° x 10° (with 3D diffuser) Narrow beam: 10° x 10°
Wavelength	850 nm or 940 nm
Intensity Adjustment	31 step adjustments from min. to max.
On/Off Control	Slave to camera mode Manual on/off control via OSD and Bilinx
Illumination Tilt Adjustment	Maximum: 13° tilt above camera axis Minimum: 3° tilt above camera axis

### IR Performance Ranges (0 Lux Environment)

	850 nm		940 nm	
	Range	HFOI	Range	HFOI
<b>Detection</b>	160 m (525 ft)	28 m (90 ft)	80 m (260 ft)	14 m (45 ft)
<b>Classification</b>	120 m (390 ft)	21 m (70 ft)	60 m (195 ft)	10 m (35 ft)
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DCRI values are narrow IR beam configuration at max. focal length.

### Mechanical

<b>Dimensions (H x W x L)</b>	
• Camera and Bracket	402 x 193 x 309 mm (15.8 x 7.6 x 12.2 in.)
• Total Assembly	402 x 193 x 406 mm (15.8 x 7.6 x 16.0 in.)
<b>Weight</b>	
• Camera and Bracket	6.6 kg (14.5 lb)
• Junction Box	1.4 kg (3.1 lb)
Construction	Corrosion-resistant aluminum
Color	RAL 9010 pure white with RAL 9005 jet black detail
Finish	Wet paint
Window	3.3-mm (1/8-in.) thick glass
Bracket	Corrosion-resistant, cable-managed
Bracket Pan/Tilt Range	Pan: ±90° Tilt: -48°/+44°
Junction Box	Separate from bracket allowing for wiring and cabling prior to camera installation

### Environmental

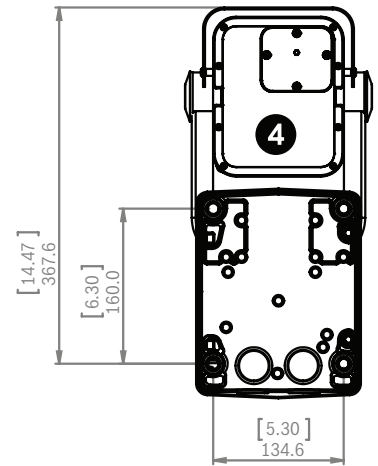
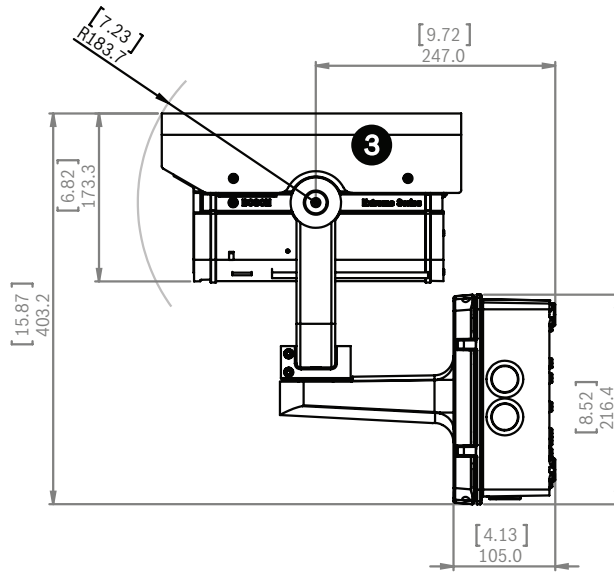
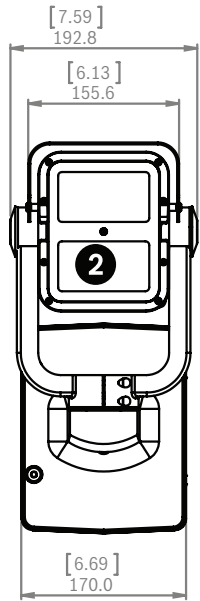
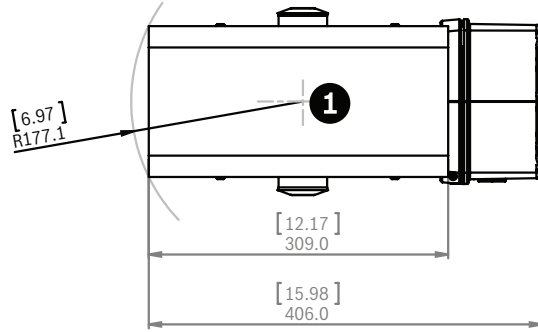
Operating Temperature <sup>4</sup>	-40°C to +50°C (-40°F to 122°F)
Storage Temperature	-40°C to +70°C (-40°F to 158°F)
Operating Humidity	20% to 100% (condensing)
Storage Humidity	up to 100%
Weatherproofing	Type 4X (NEMA 4X) and IP67

Solar Radiation

Tested to MIL-STD-810F test standard for solar radiation (for A1 rated environments)

4. Warm-up period required for cold start at -40°C (-40°F).

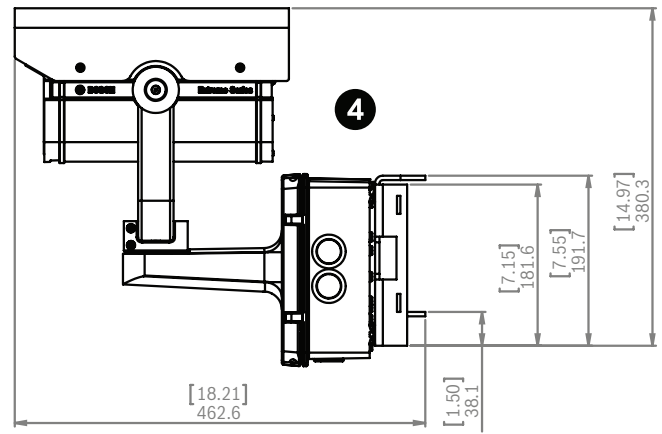
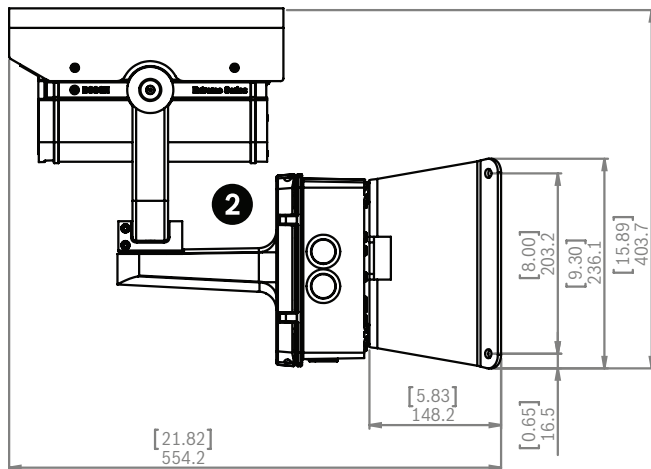
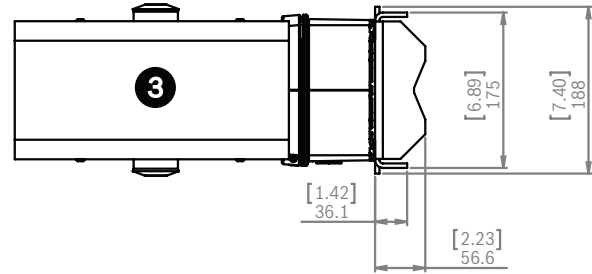
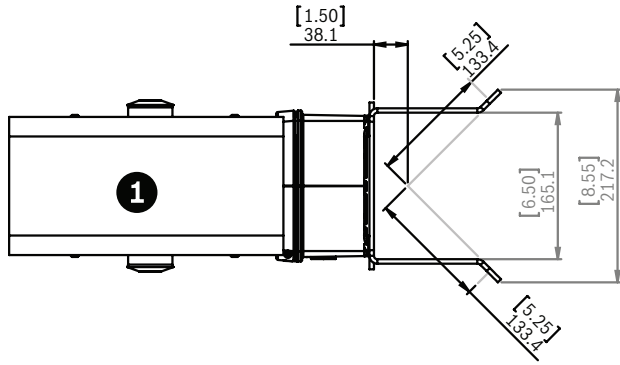
**Dimensions**



[in.]  
mm

**VEI-30 Dimensional Views**

1	Top	3	Side
2	Front	4	Rear



[in.]  
mm

VEI-30 Dimensional Views – Mounts

1	Corner Mount - Top	3	Pole Mount - Top
2	Corner Mount - Side	4	Pole Mount - Side

**Ordering information**

**VEI-308V05-13W Dinion Infrared Imager, 850 nm, PAL**  
Dinion 2X imaging, 850 nm, 3D diffuser and Constant Light illumination, PAL, white  
Order number **VEI-308V05-13W**

**VEI-308V05-23W Dinion Infrared Imager, 850 nm, NTSC**  
Dinion 2X imaging, 850 nm, 3D diffuser and Constant Light illumination, NTSC, white  
Order number **VEI-308V05-23W**

**VEI-309V05-13W Dinion Infrared Imager, 940 nm, PAL**  
Dinion 2X imaging, 940 nm, 3D diffuser and Constant Light illumination, PAL, white  
Order number **VEI-309V05-13W**

**VEI-309V05-23W Dinion Infrared Imager, 940 nm, NTSC**  
Dinion 2X imaging, 940 nm, 3D diffuser and Constant Light illumination, NTSC, white  
Order number **VEI-309V05-23W**

**VG4-A-9541 Pole Mount Adapter**

Pole mount adapter for an AUTODOME pendant arm or a DINION imager, designed for poles with a diameter of 100-380 mm (4-15 in.), white  
Order number **VG4-A-9541**

**VG4-A-9542 Corner Mount Adapter**

Corner mount adapter for an AUTODOME pendant arm or a DINION imager  
Order number **VG4-A-9542**

**Accessories**

**UPA-2450-60 Power Supply, 120 V, 60 Hz**  
Indoor, 120 VAC, 60 Hz In; 24 VAC, 50 VA Out  
Order number **UPA-2450-60**

**UPA-2450-50 Power Supply, 220 V, 50 Hz**  
Indoor, 220 VAC, 50 Hz In; 24 VAC, 50 VA Out  
Order number **UPA-2450-50**

**VG4-SBOX-COVER Cover for Power Supply Box**  
Spare cover for AutoDome power supply boxes and for the VEI-30 and NEI-30 junction boxes  
Order number **VG4-SBOX-COVER**

**VDA-455UTP**  
Adaptor for UTP twisted pair output  
Order number **VDA-455UTP**

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**Software Options**

**VP-CFGSFT Configuration Tool for Imaging Devices**

Camera configuration software for use with Bilinx cameras

Order number **VP-CFGSFT**

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