AUTODOME IP 4000 HD

www.boschsecurity.com

BOSCH
Invented for life

- ▶ Perfect combination of style and technology for indoor installations that require high-quality imaging in a compact and aesthetic dome housing
- ▶ Choice of HD resolution (720p25/30 or 1080p25/30)
- ▶ Integrated 12x optical zoom with high-end imaging platform for monitoring details under typical indoor lighting conditions
- ▶ Simple installation with flexible mounting options (in-ceiling or surface mounting)
- ▶ Full ONVIF Profile S and third party software support for easy integration with Video Management Systems (VMS)

The AUTODOME IP 4000 HD is a compact, indoor PTZ dome camera with a high-resolution 720p25/30 (1MP) or 1080p25/30 (2MP) HD sensor and a powerful 12x optical zoom that allows operators to monitor wide scenes without losing any details. The camera's aesthetic design and flexible mounting options allow unobtrusive surveillance of large halls, reception areas, or waiting areas that would otherwise require multiple cameras for effective surveillance.

The AUTODOME IP family makes it easier for you to stay in control of your security even when you're on the go. When used in combination with the Video Security App from Bosch, the camera supports Dynamic Transcoding technology, which allows you to stream high-resolution H.264 video, to pan/tilt/zoom the camera, and to search recorded clips remotely through mobile devices such as smart phones or tablets, all on a low-bandwidth network connection (up to 50% less than other H.264 PTZ cameras).

The camera provides complete network-based control of all functionality including pan/tilt/zoom operation, presets, tours, alarms, and web-based configuration of all camera settings.

Functions

Superior imaging performance

Built on the robust digital imaging technology from Bosch, the camera is carefully tuned to maintain accurate color reproduction and to deliver high-resolution HD video with flexibility to zoom in to small details of faces or objects in scenes with bright ambient lighting.

Three (3) pre-programmed user modes

The camera comes with three (3) pre-tuned scene modes to match various lighting conditions found in indoor scenes. Users can complete the configuration without going through multiple imaging settings.

- Indoor: For indoor fluorescent lighting
- Outdoor: For outdoor scenarios where light varies through the day
- Vibrant: For enhanced contrast, sharpness, and saturation

PTZ drive and mechanism
The camera supports 256 pre-positions and two styles of Guard Tours: Preset and Record/Playback. The preset tour has capability for up to 64 pre-positions with a configurable dwell time between pre-positions and can be customized as to the order and frequency each preset is visited. The camera also provides support for two (2) recorded tours, which have a total duration of 15 minutes of movements. These are recorded macros of an operator's movements, including pan, tilt, and zoom activities, and can be played back in a continuous manner
Pan and tilt preset repeatability are accurate to within ±0.2 degrees to ensure that the correct scene is captured every time. The camera delivers maximum pan speed of 160 degrees per second and maximum tilt speed of 120 degrees per second. The camera is capable of manual speeds (pan and tilt) of 0.1 to 120 degrees per second. The camera provides a pan range of up to 360 degrees continuous rotation.
The camera's tilt angle is from 0° to ±90°.

Intelligent Dynamic Noise Reduction reduces bandwidth and storage requirements
The camera uses Intelligent Dynamic Noise Reduction which actively analyzes the contents of a scene and reduces noise artifacts accordingly.
The low-noise image and the efficient H.264 compression technology provide clear images while reducing bandwidth and storage by up to 50% compared to other H.264 cameras. This results in reduced-bandwidth streams that still retain a high image quality and smooth motion. The camera provides the most usable image possible by cleverly optimizing the detail-to-bandwidth ratio.

Bitrate optimized profile
The average typical optimized bitrate in kbits/s for various frame rates is shown in the table:

IPS	1080p	720p	480p
30	2600	1300	1000
15	2100	1100	800
10	1800	1000	700
5	1250	600	450
2	500	270	200

Actual bitrate may vary depending on the scene complexities and encoding configurations.

Area-based encoding
Area-based encoding is another feature which reduces bandwidth. Compression parameters for up to eight user-definable regions can be set. This allows uninteresting regions to be highly compressed, leaving more bandwidth for important parts of the scene. User can configure encoding regions for every configured preset (preposition/scene), to increase or decrease the encoding quality for selectable areas of the video image. These regions give better control of the bit rate. Important parts of the scene (identified as objects in the GUI) are encoded at high resolution and therefore have an enhanced encoding quality. Less important parts (such as the sky and trees in the background, all identified as backgrounds in the GUI) are encoded at lower quality and therefore have a decreased encoding quality.

Advanced streaming
The camera offers advanced streaming capabilities so that you can configure the camera to take advantage of the latest network technology.
The camera is designed on an efficient and powerful H.264 encoding platform capable of delivering high-quality HD video with very low network load. The new intelligent encoding capabilities drop the bandwidth consumption to extremely low levels if the camera detects no motion in the scene.
The camera is capable of quad streaming which allows the camera to be configured to deliver independent, configurable streams for live viewing, recording, or remote monitoring on over bandwidth-constrained networks.

Recording and storage management
A memory card (a maximum of 32 GB microSDHC / 2 TB microSDXC) can be used for local alarm recording or for scheduled local recording to improve the overall recording reliability. Recording management can be controlled by the Bosch Video Recording Manager (VRM), or the camera can use iSCSI targets directly without any recording software.

Alarm handling and Motion Detection
A wide range of configuration options is available for alarms signaling the camera. A built-in algorithm for detecting movement on presets can also be used for alarm signaling, or the camera can interface to an external alarm source using the built-in alarm I/O ports. In addition, a user can also schedule virtual alarms. Any of the available external alarm, motion alarm or scheduled virtual alarms can then be used to trigger a relay output or to force the camera to do certain tasks (for example, to start a guard tour or to go to a preset location).

Access security
Password protection with three levels and 802.1x authentication is supported. To secure Web browser access, use HTTPS with a SSL certificate stored in the camera.

Complete viewing software
There are many ways to access the camera's features: using a web browser, with the Bosch Video Management System, with the free-of-charge Bosch Video Client, with the Video Security App, or via third-party software.

Bosch Video Security app

The AUTODOME IP cameras fully support Dynamic Transcoding technology from Bosch, which – in combination with the Video Security App from Bosch– provides 24/7 remote access to camera controls, live video streams, recordings and HD images from anywhere, regardless of available bandwidth. Dynamic Transcoding automatically adjusts the bit rate to the available bandwidth to ensure smooth video streaming. When the video is paused at an incident, a full HD still image is shown instantly. To gain all benefits of Dynamic Transcoding, simply expand the IP video surveillance system with either a DIVAR IP recording solution or a VIDEOJET XTC from Bosch.

System integration

The camera conforms to the ONVIF Profile S specifications. This ensures interoperability between network video products regardless of manufacturer. Third-party integrators can easily access the internal feature set of the camera for integration into large projects. Visit the Bosch Integration Partner Program (IPP) website (ipp.boschsecurity.com) for more information.

Ease of installation and servicing

The camera has been designed for quick and easy installation, a key feature from Bosch IP video security products.

Bosch designed the camera with the knowledge that field cables and mounts are installed before the camera is mounted. The new installation concept allows a single person to connect the cables directly to the camera without re-routing cables. The camera is easily secured to the mount with a single screw. The three-step installation process can save up to 5 minutes per camera installation compared to any conventional PTZ dome.

The AUTODOME IP 4000 HD models are available with a choice of in-ceiling or surface mount.

In-ceiling models are ideal for suspended ceilings, flush-in for an aesthetic look.

Surface-mount models are designed for easy installation on hard ceilings or can be pendant-mounted on a wall or a pipe with the proper mounting hardware (sold separately).

Dual power options

All models can be powered by a IEEE 802.3at PoE+ switch or a 24 VAC power supply. When powered using PoE+ (IEEE 802.3at class 4) configuration, only a single cable connection is required to power and to control the camera while also viewing images from the camera. For additional system reliability, users also have the option to connect the 24 VAC power supply to the camera while using PoE+.

Easy upgrade

Remotely upgrade the camera whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

Unsurpassed reliability

As with all Bosch products, the camera is designed using the industry's best design process and is subjected to the most stringent testing standards such as HALT (highly accelerated life testing), which pushes the limits of products to ensure reliability throughout their lifetime.

Certifications and approvals
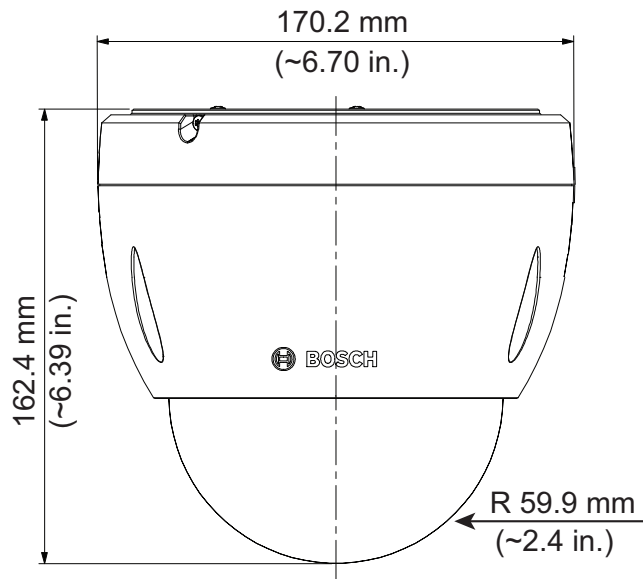
HD standards
- Complies with the SMPTE 274M-2008 Standard in:
  - Resolution: 1920x1080
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25 and 30 frames/s
- Complies with the 296M-2001 Standard in:
  - Resolution: 1280x720
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25 and 30 frames/s

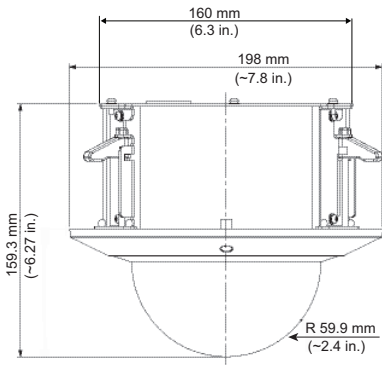| Marking	Applicable Standard
cULus	• UL60950-1 (ed 2) (Includes CSA 22.2 No. 60950-1)
FCC Part 15 (USA)	• 47CFR Part 15 • ICES-003 (Canada)
CE (Europe)	**Electromagnetic Compatibility (EMC) Directive** • EN 55022:2010 • EN 50130-4:2011 • EN 61000-3-2:2014 • EN 61000-3-3:2013 **Product Safety: Low Voltage Directive** (IECEE CB scheme certificate and report are required) • EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 (with national differences) • IEC 60950-1 (ed 1)
Other labels / markings	• RCM

Other requirements are defined in the *Technical specifications* section.

Region	Certification	
Europe	CE	- AUTODOME IP 4000 HD
USA	UL	- AUTODOME IP 4000 HD

Installation/configuration notes

170.2 mm
(~6.70 in.)

162.4 mm
(~6.39 in.)

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R 59.9 mm
(~2.4 in.)

Pendant

160 mm
(6.3 in.)

198 mm
(~7.8 in.)

159.3 mm
(~6.27 in.)

R 59.9 mm
(~2.4 in.)

In-ceiling

104 mm
(4.1 in.)

199 mm
(7.8 in.)

178.6 mm
(7 in.)
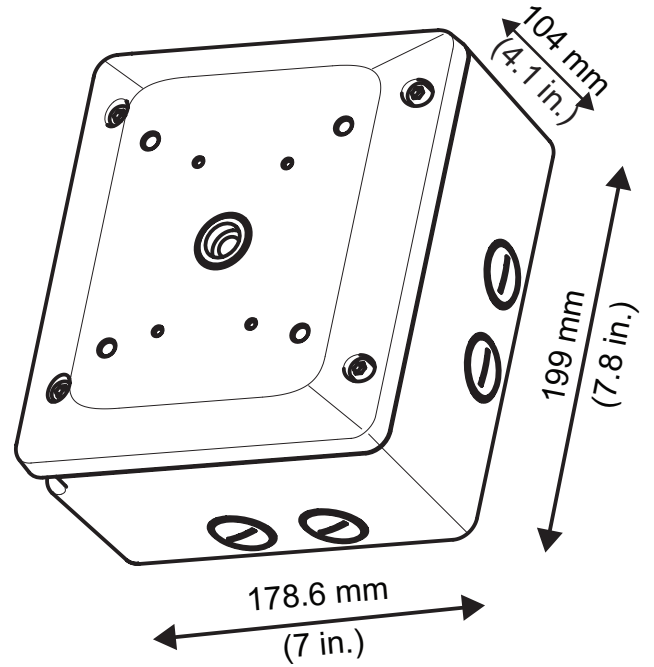
VDA-AD-JNB dimensions (outer box)

101.6 mm
(4 in.)

136.1 mm
(5.4 in.)

M25   G 3/4
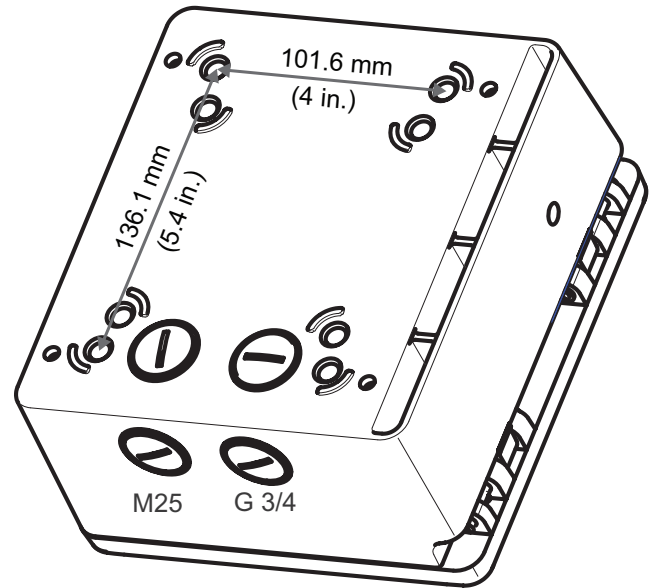
VDA-AD-JNB mounting hole measurements - back/rear
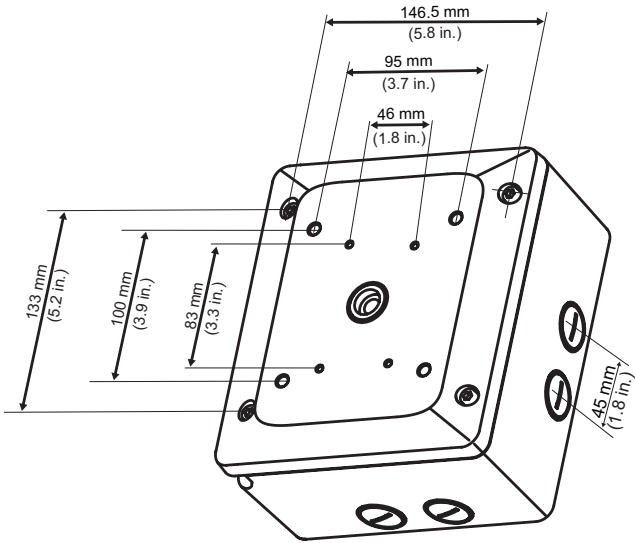
VDA-AD-JNB mounting hole measurements - front
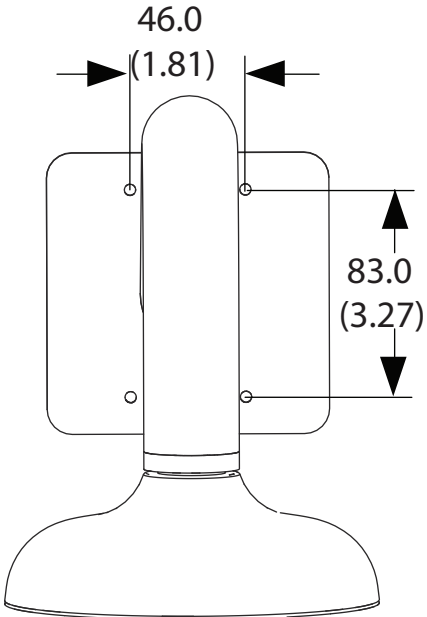
146.5 mm (5.8 in.)
95 mm (3.7 in.)
46 mm (1.8 in.)
133 mm (5.2 in.)
100 mm (3.9 in.)
83 mm (3.3 in.)
45 mm (1.8 in.)

mounting hole measurements

46.0 (1.81)
83.0 (3.27)

Wall Mount Dimensions

349.7 (13.8)
316.7 (12.5)
204.1 (8.0)
203.5 (8.01)
280.0 (11.02)

Pipe Mount Dimensions

88.8 (3.5)
88.8 (3.5)
3/4-14 NP SM Threads
Ø11.2 (4x) (0.44)
751.9 (29.6)
544.9 (21.5)
444.9 (17.5)
Ø153.0
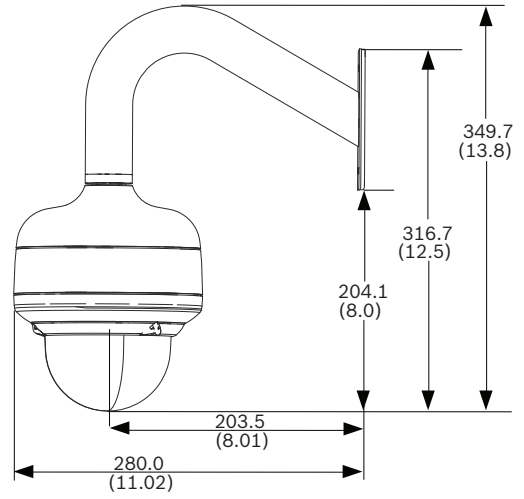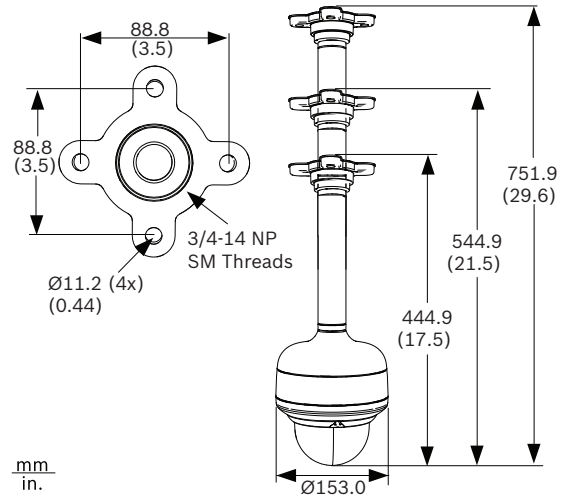
mm
in.
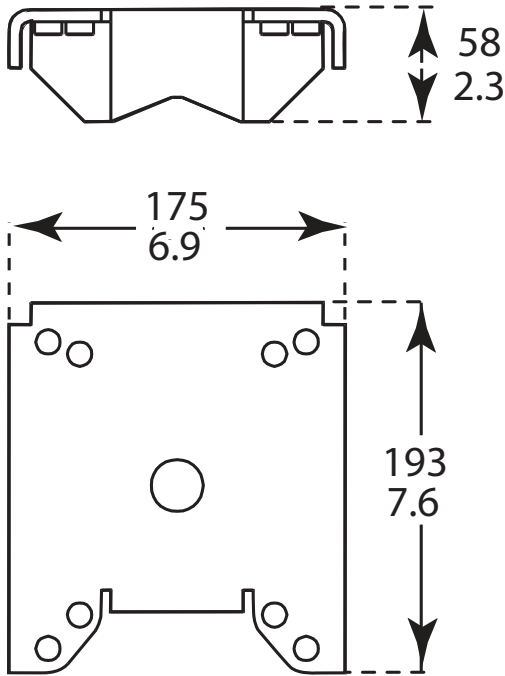
VG4-A-9541_Pole-Mount-Adapter_dimensions
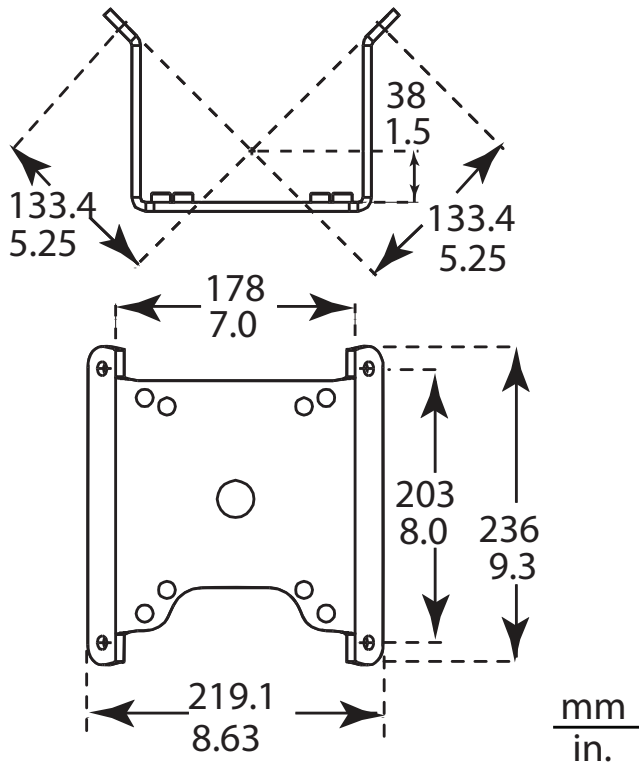
VG4-A-9542_Corner-Mount-Adapter_dimensions

$$\frac{mm}{in.}$$
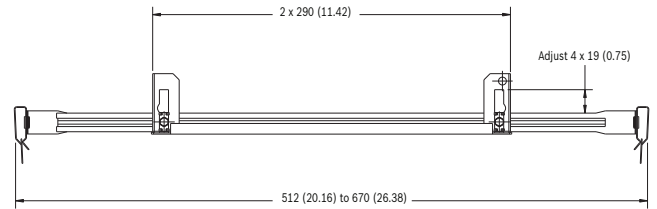
VGA-IC-SP dimensions

Parts included

1	AUTODOME IP 4000 HD camera
1	Camera mounting plate (pendant models only)
1	Mounting template (in-ceiling model only)
1	Screwdriver, T10 Torx
1	Screwdriver, T15 Torx
4	MAC address labels
1	Quick Installation Guide

Technical specifications

Full product functionality is expected for specified conditions under general requirements for the operating temperature range and power supply.

AUTODOME IP 4000 HD camera

Imager	1/2.8" progressive scan CMOS
Total sensor pixels	2.48M pixels
Effective pixels	1080p: 1984 (H) x 1105 (V) (approximately 2.43M pixels) 720p: 1344 (H) x 745 (V)
Lens Focal Length	12x Zoom 5.1 mm - 61.2 mm (F 1.6 - F 3.0)
Field of View (FOV)	4.6° - 51.3°
Focus	Automatic with manual override
Iris	Automatic
Digital Zoom	16x

Sensitivity / Minimum Illumination (typical)	30 IRE	50 IRE
Day Mode (Color)		
SensUp off	0.17 lux	0.3 lux
SensUp on (1/7.5)	0.04 lux	0.07 lux
Night Mode (Black and white (monochrome))		
SensUp off	0.039 lux	0.07 lux
SensUp on (1/7.5)	0.009 lux	0.016 lux

WDR	76dB (DWDR)
Signal-to-noise Ratio (SNR)	>50dB (AGC off)
Noise Reduction	Intelligent Dynamic Noise Reduction
Backlight Compensation (BLC)	On/Off
White Balance	Standard Auto, Sodium Vapor Auto, Basic Auto, Manual, Hold, Dominant Color Auto
Day/Night	Mechanical switchable IR filter (Auto/On/off) Monochrome

Mechanical

Pan/Tilt Modes	Normal: 0.1°/s - 120°/s Turbo: Pan: 0.1°/s - 160°/s; Tilt: 0.1°/s - 120°/s
Preset Speed	Pan: 160°/s Tilt: 120°/s
Pan Range	360° continuous
Tilt Range	0° to ±90°
Preset Accuracy	± 0.2° typ.
Presets	256
Tours	Two (2) types of tours: • Recorded tours – two (2), maximum total duration 15 minutes (depending on the amount of commands sent during recording) • Preset tour – one (1) consecutive, one (1) custom

Electrical

Input Voltage	24 VAC and POE+
Power Consumption	24 VAC: 12W POE+: 12W

Network

Video compression	H.264 (ISO/IEC 14496-10) M-JPEG
Streaming Capability	Quad Stream (2x H.264, 1x MJPEG, 1x i-Frame only)
Frame Rate	1080P (1 - 25/30fps) 720P (1 - 25/30fps)

When the option in field "Property" for Stream 1 is:	The available options in field "Property" for Stream 2 are:
H.264 MP SD	- H.264 MP SD
H.264 MP 720p fixed	- H.264 MP SD - H.264 MP 720p fixed - H.264 MP 400x720 upright (cropped)

When the option in field "Property" for Stream 1 is:	The available options in field "Property" for Stream 2 are:
	- H.264 MP D1 4:3 (cropped) - H.264 MP 1280x960 (cropped)* - H.264 MP 640x480
H.264 MP 1080p fixed*	- Copy Stream 1* - H.264 MP SD* - H.264 MP 720p8/10 fixed* - H.264 MP 1080p4/5 fixed* - H.264 MP 400x720 upright (cropped)* - H.264 MP D1 4:3 (cropped)* - H.264 MP 640x480
H.264 MP 720p50/60 fixed	- Copy Stream 1* - H.264 MP SD* - H.264 MP 720p6/7 fixed* - H.264 MP 400x720 upright (cropped)* - H.264 MP D1 4:3 (cropped)* - H.264 MP 640x480

*This option is available for 1080p models only.

Non-recording profiles	Two (2) streams, I-frame only Options are: - HD Image Optimized; - HD Balanced; - HD Bit Rate Optimized; - SD Image Optimized; - SD Balanced; - SD Bit Rate Optimized; - DSL Optimized; - 3G Optimized

Resolution	Models NEZ-4112-xxxW4	Models NEZ-4212-xxxW4
	720P (1280×720) D1 (704×576/704×480)	1080P (1920×1080) 720P (1280×720) D1 (704×576/704×480)

Ethernet	10/100BASE-T
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, APIPA (Auto-IP, link local address), NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Interoperability	ONVIF Profile S; GB/T 28181

Audio

Compression	G.711, 8kHz sampling rate L16, 16kHz sampling rate AAC, 16kHz sampling rate
Interface	1/1 Channel In/Out

Local Storage

Local storage	Memory card (a maximum of 32 GB microSDHC / 2 TB microSDXC). (An SD card of Class 6 or higher is recommended for HD recording.)

Miscellaneous

Sectors / Titling	16 independent sectors with 20 characters per title
Privacy Masking	24 individually configurable privacy masks
Video Analysis	MOTION+
Supported Languages	English, German, Spanish, French, Italian, Dutch, Polish, Portuguese, Russian, Japanese, Chinese (simplified)

User Connections

Power, Network	RJ45 (10/100BASE-T)
Power, Camera	24 VAC
Alarm Inputs	2
Alarm Outputs	1 relay output
Audio input	1
Audio output	1

Environmental

Ingress Protection Rating/ Standard	IP65 (pendant models) IP51 (in-ceiling model)
IK Rating	IK10 (pendant models)
Operating Temperature	-10 ºC to +60 ºC (+14 ℉ to +140 ℉)
Humidity	Less than 90% RH
Storage Temperature	-40 ºC to +60 ºC (-40 ℉ to +140 ℉)

Construction

Dimensions	Pendant models: Φ 170.2 mm x 162.4 mm (~6.70 in. x ~6.39 in.) In-ceiling model: Φ 198 mm x 159.3 mm (~7.80 in. x ~6.27 in.)
Weight	Pendant models: 1.88kg (4.14 lb) In-ceiling model: 1.81kg (3.99 lb)

Construction Material	Housing, Pendant models: Aluminum Housing, In-ceiling model: SPCC Trim ring: Polycarbonate Bubble: Polycarbonate
Standard Color	White (RAL 9003)

Ordering information

AUTODOME IP 4000 HD
AUTODOME IP 4000 HD, 12x 720p30 HD camera with indoor housing suitable for pendant installation, clear bubble
Order number **NEZ-4112-PPCW4**

AUTODOME IP 4000 HD
AUTODOME IP 4000 HD, 12x 1080p30 HD camera with indoor housing suitable for pendant installation, clear bubble
Order number **NEZ-4212-PPCW4**

AUTODOME IP 4000 HD
AUTODOME IP 4000 HD, 12x 1080p30 HD camera with indoor housing suitable for in-ceiling installation, clear bubble
Order number **NEZ-4212-CPCW4**

Accessories

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

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

High PoE Midspan, 60 W, single port, AC in
High Power, 60 W Single Port PoE Midspan with AC in
Order number **NPD-6001A**

Junction Box for AUTODOME IP 4000/5000 (VDA-AD-JNB)
Aluminum Junction Box without power supply for AUTODOME 4000 and 5000 cameras. Compatible with VEZ-A5-WMB and NEZ-A4-WW wall mounts, VG4-A-9542 corner mount, and VG4-A-9541 pole mount. Three M25 conduit holes, three G ¾ conduit holes. Wall-mountable. White.
Order number **VDA-AD-JNB**

NEZ-A4-SMB Surface Mount Kit
Surface mount kit for AUTODOME IP 4000 HD. White.
Order number **NEZ-A4-SMB**

NEZ-A4-WW Wall Mount (White)
Wall mount kit for AUTODOME cameras. White.
Order number **NEZ-A4-WW**

NEZ-A4-PW Pipe Mount (White)
Pipe mount kit for AUTODOME cameras. White.
Order number **NEZ-A4-PW**

VG4-A-9541 Pole Mount Adapter
Pole mount adapter for a VDA-AD-JNB Junction box
Order number **VG4-A-9541**

VG4-A-9542 Corner Mount Adapter
Corner mount adapter for a VDA-AD-JNB Junction Box
Order number **VG4-A-9542**

NEZ-A4-BUB-PTIP
Tinted bubble for pendant models (NEZ-4x12-PPxW4)
of AUTODOME IP 4000 HD cameras.
Order number **NEZ-A4-BUB-PTIP**

NEZ-A4-BUB-CTIP
Tinted bubble for in-ceiling model of AUTODOME IP
4000 HD cameras.
Order number **NEZ-A4-BUB-CTIP**

VGA-IC-SP In-ceiling Support Kit
Suspended ceiling support kit for dome cameras.
Aperture Ø177 mm (Ø7 in); maximum supported
weight 11.3 kg (25 lb)
Order number **VGA-IC-SP**