

## Architectural and Engineering Specifications

GV-VD320D / GV-VD321D / GV-VD322D / GV-VD323D

3M H.264 IR Vandal Proof IP Dome

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### A. General Requirements

1. The 3 M GV-Vandal Proof IP Dome shall include four models: GV-VD320D (IK10+, transparent cover), GV-VD321D (IK10+, smoked cover), GV-VD322D (transparent cover) and GV-VD323D (smoked cover).
2. The 3 M GV-Vandal Proof IP Dome shall be a dual-stream, day/night, network camera utilizing a progressive scan CMOS imager with a 1/2.5-inch optical format.
3. The main stream shall utilize H.264 and MJPEG video compression methods with a resolution up to 2048 x 1536 at a maximum frame rate of 20 fps. However, If the maximum resolution 2048 x 1536 is selected for the main stream, the maximum frame rate for the sub stream shall be 15 fps.
4. The sub stream shall utilize H.264, MPEG4 and MJPEG video compression methods with a resolution up to 640 x 512 at a maximum frame rate of 30 fps.

5. Live view shall be accessible through network and TV monitor using a video-out wire. For TV-out to work properly, the video resolution shall be set to 1280 x 1024 or lower. If both streams are enabled, the video resolution shall be set as 640 x 480.
6. Up to seven (7) streams shall be supported simultaneously over the network. When the 3 M GV-Vandal Proof IP Dome is connected to IE browser or any other application, it shall take up one (1) stream. When the 3 M GV-Vandal Proof IP Dome is connected to GV-System, it shall take up two (2) streams. The maximum number of streams and the streams taken up shall be based on 3 M resolution and H.264 codec type.
7. The 3 M GV-Vandal Proof IP Dome shall provide administrator and guest level settings on the Web interface. The administrator account shall have full access to all the functions, and the guest account shall only have access to camera live video and network status information.

#### B. Alarm and Notification Requirements

1. The 3 M GV-Vandal Proof IP Dome shall be capable of motion detection.
2. A privacy mask function shall be provided to allow users to specify areas of the image to be blocked off on the camera view for privacy purpose.
3. The 3 M GV-Vandal Proof IP Dome shall support tampering alarm such that an E-mail notification, an alarm or an output device shall be triggered when the camera is being tampered with.
4. The 3 M GV-Vandal Proof IP Dome shall support visual automation function such that connected output devices can be automated from live view.
5. The 3 M GV-Vandal Proof IP Dome shall be capable of triggering an output device or sending E-mail alert when recording errors occur and when the memory card is full.
6. The 3 M GV-Vandal Proof IP Dome shall have E-mail and FTP ability for alert notification.

**C. Recording and Playback Requirements**

1. The 3 M GV-Vandal Proof IP Dome shall be capable of beginning recording according to a schedule, upon input trigger, and upon motion detection.
2. The 3 M GV-Vandal Proof IP Dome shall be capable of storing recorded data on an inserted micro SD/SDHC memory card, an FTP server or GV-Systems.
3. Scheduled backup shall be supported when connected to a server installed with the GV-Backup Center program.
4. Pre-recording and post-recording functions shall be available.
5. Users shall be able to play back recorded data on a GV-System or over network.

**D. Video Requirements**

1. The 3 M GV-Vandal Proof IP Dome shall support both constant bitrate (CBR) and variable bitrate (VBR). For variable bitrate (VBR), the maximal bit rate shall be selectable to restrict the system from exceeding a specified bit rate.
2. The following white balance settings shall be selectable on the Web interface: auto, indoor, outdoor, fluorescent and manual. The manual white balance range shall be approximately 2800 degrees to 8500 degrees Kelvin.
3. The 3 M GV-Vandal Proof IP Dome shall have an automatic and manual shutter with a speed range of 1/5 – 1/8000 seconds.
4. The image brightness, contrast, sharpness, gamma, white balance, flicker-less and image orientation shall be adjustable through the Web interface.
5. The 3 M GV-Vandal Proof IP Dome shall support three (3) aspect ratios: 4:3, 16:9 and 5:4.

Main Stream	4:3	2048 x 1536 1600 x 1200 1280 x 960 640 x 480 320 x 240
	16:9	1920 x 1080 1280 x 720 640 x 360 448 x 252

	5:4	1280 x 1024 640 x 512 320 x 256
Sub Stream	4:3	640 x 480 320 x 240
	16:9	640 x 360 448 x 252
	5:4	640 x 512 320 x 256

#### E. Audio Requirements

1. The 3 M GV-Vandal Proof IP Dome shall support audio codec G.711.
2. The 3 M GV-Vandal Proof IP Dome shall support bi-directional audio transmission.
3. The 3 M GV-Vandal Proof IP Dome shall be equipped with connectors to support external microphone and speaker.

#### F. Networking Requirements

1. Network interface shall be via a 10/100 Ethernet, RJ-45 connector.
2. A built-in Web server shall be incorporated for the camera view be accessible using Microsoft Internet Explorer (version 7.0 or higher required), without the need for special viewer software.
3. The 3 M GV-Vandal Proof IP Dome shall support the following network protocols: HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, 3GPP/ISMA, RTSP, PSIA, SNMP, QoS (DSCP).
4. Port settings shall be configurable.
5. The 3 M GV-Vandal Proof IP Dome shall be capable of setting IP filtering to restrict access to the camera.
6. QoS (DSCP) shall be supported to allow differentiated bandwidth control.

#### G. Lens Requirements

1. The maximum aperture of the 3 M GV-Vandal Proof IP Dome shall be F/1.3.
2. The 3 M GV-Vandal Proof IP Dome shall have the following angle of view: diagonal 118.4°-36.3°, horizontal 94.7°-29°, vertical 71.1°-21.8°.

3. The 3 M GV-Vandal Proof IP Dome shall have a minimum illumination of 1 lux at 1/30 second and 0.5 lux at 1/5 second in color mode; and a minimum illumination of 0 lux in the B/W mode with IR on.
4. The 3 M GV-Vandal Proof IP Dome shall have a varifocal lens with a DC-drive auto iris and a focal length of 2.7 ~ 9 mm.
5. The 3 M GV-Vandal Proof IP Dome shall be equipped with 15 IR LEDs at a maximum IR distance of 15 m / 50 ft.

#### H. Mechanical Requirements

1. The 3 M GV-Vandal Proof IP Dome shall adopt a 3-axis design and be able to pan, tilt and roll.
2. The 3 M GV-Vandal Proof IP Dome shall be equipped with interface for 1 digital input (dry contact) and 1 digital output.
3. The 3 M GV-Vandal Proof IP Dome shall have a dimension of 165 (diameter) x 125 (height) mm / 6.49 x 4.92 in.
4. The 3 M GV-Vandal Proof IP Dome shall have a weight of 1.7 kg / 3.75 lb.
5. The 3 M GV-Vandal Proof IP Dome shall have a  $\varnothing$  14 mm lens mount.
6. The 3 M GV-Vandal Proof IP Dome shall have a built-in temperature detector to detect the chipset temperature inside the camera.
7. The 3 M GV-Vandal Proof IP Dome shall support three mounting methods, on the wall, on the ceiling surface and partially embedded in the ceiling.
8. The 3 M GV-Vandal Proof IP Dome shall have an internal IR filter to switch from color to monochrome mode automatically by sensing the illumination level or via an input device.

#### I. Power Requirements

1. Power shall be connected using the supplied power adapter or the Power over Ethernet (PoE).
2. The 3 M GV-Vandal Proof IP Dome shall be capable of receiving power from 12V DC / 24V AC and IEEE802.3af Power over Ethernet (PoE).
3. The power consumption of 3 M GV-Vandal Proof IP Dome shall be 12 W maximum (1A at 12V DC).

J. Environmental Requirements

1. The operating temperature shall be within the range of -20°C ~ 50°C / -4°F ~ 122 °F.
2. The humidity shall be within the range of 10% to 90% with no condensation.
3. The 3 M GV-Vandal Proof IP Dome shall comply with IP66 protection classification.
4. The GV-VD320D / GV-VD321D shall have a vandal resistance of IK10+.

K. System Requirements

1. Supported operating systems shall include Windows XP, Windows Vista, Windows 7 and Windows Server 2008.
2. Microsoft Internet Explorer version 7.0 or higher is required to access the Web interface.

L. Packing List shall include:

1. 3 M GV-Vandal Proof IP Dome
2. Screw Adjuster x 1
3. Screw Anchor x 4
4. Silica Gel Bag x 2 (one shall be already placed inside the camera)
5. Ceiling Screw x 4
6. Blue Screw x 3
7. Short Screw x 4
8. Small Screw Cap x 3
9. Big Screw Cap x 4
10. T-Cap Screw x 3
11. T-Cap x 3
12. Plastic Clip x 3
13. Focus Adjustment Cap
14. DC 12V Power Adapter
15. 2-Pin Terminal Block
16. GV-IPCAM H.264 Software CD containing User Manual and setup programs
17. GV-IPCAM H.264 Quick Start Guide
18. GV-NVR Software DVD
19. GV-NVR Quick Start Guide

M. Certifications and Approvals

1. CE, FCC, C-Tick, RoHS Compliant

Specifications are subject to change without notice.