# Architectural and Engineering Specifications

## GV- Fisheye IP Camera

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*The document is written using industry standard formatting and language, and is designed for use by architects, consultants, and specifying engineers who are preparing bid specifications for security cameras, surveillance systems and access control systems.*

*The electronic version of these specifications may be copied into the appropriate sections of a complete bid specification by using the "cut and paste" method. They are written to highlight the features and specifications of GeoVision products. Section headings mention specific models only for clarity – these may be deleted after insertion into the complete specification.*

*Products covered in this document include:*

- *Indoor: GV-FE2302, GV-FE3402, GV-FE5302, GV-FE3403, GV-FE5303*
- *Outdoor: GV-FER3402, GV-FER5302, GV-FER3403, GV-FER5303*

*For more information on GeoVision products, please visit www.geovision.com.tw.*

# GV- Fisheye IP Camera


**Hard Ceiling Mount**
**(Without IR LED ring)**

**Hard Ceiling Mount**
**(With IR LED ring)**


**In-Ceiling Mount**

**Wall Mount**


**Ground Mount**

A. General Requirements

1. The camera shall be capable of producing a circular fisheye image that captures an extremely wide viewing angle. Using the Web interface or a GV software, the circular fisheye image shall be converted into a rectilinear projection that supports digital zoom and PTZ function without any mechanical moving parts.
2. The camera shall support auto pan function where the top-left PTZ view rotates automatically at the specified rotation speed.
3. The camera shall support object tracking function under Geo Fisheye: 360 degree mode. When motion is detected, the top-right PTZ view shall track the moving object, and the moving object shall be highlighted in the 360 degree view at the bottom.
4. Multiple users shall be able to access different angles of live view at the same time.
5. The camera shall be a fisheye network camera utilizing a progressive scan CMOS imager with the following image sensor types:
   a. GV-FE2302 / FE5302 / FE5303 / FER5302 / FER5303: 1/2.5-inch
   b. GV-FE3402 / FE3403 / FER3402 / FER3403: 1/3.2-inch
6. The camera shall utilize H.264 and MJPEG video compression methods with the following resolutions.
   a. GV-FE2302: 1440 x 1376, 1280 x 1200
   b. GV-FE3402 / FE3403 / FER3402 / FER3403: 2048 x 1536, 1440 x 1376, 1280 x 1200
   c. GV-FE5302 / FE5303 / FER5302 / FER5303: 2560 x 1920, 2048 x 1944, 1440 x 1376, 1280 x 1200
7. The camera shall support the following frame rate capacity.
   a. Maximum frame rate capacity of GV-FE2302 shall be up to 15 frames per second at the resolution of 1440 x 1376 (60/50 Hz).
   b. Maximum frame rate capacity of GV-FE3402 / FE3403 / FER3402 / FER3403 shall be up to 15 frames per second at the resolution of 2048 x 1536, 1440 x 1376 and 1280 x 1200 (60/50 Hz).
   c. Maximum frame rate capacity of GV-FE5302 / FE5303 / FER5302 / FER5303: shall be 10 frames per second at the resolution of 2560 x 1920 and 15 frames per second at the resolution of 2048 x 1944, 1440 x 1376 and 1280 x 1200 (60/50 Hz).

8. GV-FE2302 / FE3402 / FE5302 / FE3403 / FE5303 shall be designed for indoor environment, while GV-FER3402 / FER5302 / FER3403 / FER5303 shall be designed for outdoor environment.
9. GV-FE3402 / FE3403 / FER3402 / FER3403 shall support up to four (4) streams simultaneously over the network. GV-FE2302 / FE5302 / FE5303 / FER5302 / FER5303 shall support up to five (5) streams simultaneously over the network. When the camera is connected to IE browser, GV-System or any other application, it takes up one (1) stream. The maximum number of streams shall be based on the maximum resolution of the camera and H.264 codec.
10. The camera shall provide administrator and guest level settings on the Web interface. The administrator account shall have full access to all functions, and the guest account shall have access to camera live video and network status information only.

B. Alarm and Notification Requirements

1. The camera 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 camera shall support tampering alarm such that an E-mail notification or an alarm shall be triggered when the camera is being tampered.
4. The camera shall be capable sending E-mail alert when recording errors occur and when the memory card becomes full.
5. The camera shall have E-mail and FTP ability for alert notification. When motion is detected, a captured still image will be sent by E-mail or to the FTP server.
6. The camera shall be capable of integration with video management software or a central monitoring station. The video or text alerts shall be sent upon alarm event.

C. Recording and Playback Requirements

1. The camera shall be capable of beginning recording according to a schedule and upon motion detection.
2. The camera shall be capable of storing recorded data on the inserted micro SD / SDHC memory card, an FTP server, GV-Systems, GV-Backup Center and GV-Recording Server, GV-NAS System.

3. Indoor models shall support mini USB slot to connect to GV-Wifi Adapter or an external USB drive.
4. Scheduled backup shall be supported when connected to a server installed with the GV-Backup Center program.
5. Pre-recording and post-recording functions shall be available.
6. Users shall be able to play back recorded data on a GV-System or over network.
7. Users shall be able to play back the circular source image from any view angle and zoom level.

D. Video Requirements

1. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR). For variable bitrate (VBR), the maximal bitrate shall be selectable to restrict the system from exceeding a specified bitrate.
2. The following white balance settings shall be selectable on the Web interface: auto, outdoor, florescent, tungsten, and manual. The manual white balance range shall be approximately 2800 - 8500 degrees Kelvin.
3. The camera shall have an automatic shutter with a speed range of 1/5 – 1/8000 seconds. Users shall be able to set a Slowest Shutter Speed for the camera.
4. The following image settings shall be adjustable from the Web interface: brightness, contrast, saturation, sharpness, gamma, white balance, flicker-less, image orientation, backlight compensation, D/N sensitivity, wide angle lens distortion adjustment and defog.
5. GV-FE3402 / FE3403 / FER3402 / FER3403 shall support WDR Pro with WDR sensor to process scenes with strong backlight.

6. The camera shall support the aspect ratio of 4:3.

| | | |
|---|---|---|
| **GV-FE2302** | **Main Stream** | 1440 x 1376 (Default),<br>1280 x 1200 |
| | **Sub Stream** | 640 x 480 |
| **GV-FE3402**<br>**GV-FE3403**<br>**GV-FER3402**<br>**GV-FER3403** | **Main Stream** | 2048 x 1536 (Default),<br>1440 x 1376, 1280 x 1200 |
| | **Sub Stream** | 640 x 480 |
| **GV-FE5302**<br>**GV-FE5303**<br>**GV-FER5302** | **Main Stream** | 2560 x 1920 (Default),<br>2048 x 1944, 1440 x 1376,<br>1280 x 1200 |
| **GV-FER5303** | **Sub Stream** | 640 x 480 |

7. The S/N ratio for the camera shall be as described below.

| Models | S/N Ratio |
|---|---|
| GV-FE2302<br>GV-FE5302<br>GV-FE5303<br>GV-FER5302<br>GV-FER5303 | 45 dB |
| GV-FE3402<br>GV-FE3403<br>GV-FER3402<br>GV-FER3403 | 47 dB |

E. Audio Requirements

1. The camera shall support audio codec G.711.
2. The camera shall be equipped with a built-in speaker.
3. The camera shall be equipped with a built-in microphone.
4. Indoor models shall be equipped with a stereo phone jack (3.5 mm / 0.14”) for an external speaker.
5. The camera shall support bi-directional audio transmission.

F. Networking Requirements

1. Network interface shall be via an Ethernet (10/100 Base-T), RJ-45 connector.
2. A built-in Web server shall be incorporated that allows users to view the camera view using Web browsers without the need for special viewer software.
3. Indoor models shall support wireless connectivity with a GV-WiFi adapter.
4. The camera shall support the following network protocols: FTP, DHCP, DynDNS, HTTP, HTTPS, NTP, ONVIF(Profile S), PSIA, QoS (DSCP), RTSP, SMTP, SNMP, TCP, UDP, UPnP
5. Users shall be able to configure port settings.
6. The camera shall be capable of setting IP filtering to restrict access to the camera.
7. QoS (DSCP) shall be supported to allow differentiated bandwidth control.

G. Lens Requirements

1. The camera shall have fixed focus.
2. The camera shall be shall be equipped with a removable IR-cut filer.
3. The camera shall have the following aperture.
   a. The aperture of GV-FE2302 / FE3402 / FE3403 / FER3402 / FER3403 shall be F/2.0.
   b. The aperture of GV-FE5302 / FE5303 / FER5302 / FER5303 shall be F/2.8.
4. The camera shall require the following minimum illumination:
   a. GV-FE2302 / FE5302 / FE5303 / FER5302 / FER5303: 0.15 lux in color mode and 0.10 lux in black and white mode.
   b. GV-FE3402 / FE3403 / FER3402 / FER3403: 0.08 lux in color mode and 0.05 lux in black and white mode.
5. GV-FE5302 / FE5303 / FER5302 / FER5303 shall have a fixed iris lens with a focal length of 1.05 mm. GV-FE2302 / FE3402 / FE3403 / FER3402 / FER3403 shall have a fixed iris lens with a focal length of 1.19 mm.
6. GV-FE3403 / FE5303 / FER3403 / FER5303 shall have 6 IR LEDs that support a maximum IR distance of 10 m / 32.81 ft. The IR LEDs shall be turned on in 0 lux.

H. Mechanical Requirements

1. The camera shall have the following dimensions.
   a. The camera body of GV-FE2302 / FE3402 / FE5302 / FER3402 / FER5302 shall have a dimension of Ø 160.25 (diameter) x 48.36 (height) mm / 6.31 x 1.93 in using Hard-Ceiling Mount and a dimension of 166.48 (diameter) x 48.36 (height) mm / 6.55 x 1.93 in using In-Ceiling Mount.
   b. The camera body of GV-FER3402 / FER5302 / FER3403 / FER5303 shall have a dimension of Ø 175 (diameter) x 48.36 (height) mm / 6.89 x 1.93 in using Hard-Ceiling Mount with IR LED ring.
2. The camera shall have the following weights.
   a. GV-FE2302 / FE3402 / FE5302 shall have a weight of 410 g / 0.9 lb.
   b. GV-FE3403 / FE5303 shall have a weight of 870 g / 1.92 lb without PoE converter and a weight of 1.045 kg / 2.3 lb with PoE converter.
   c. GV-FER3402 / FER5302 shall have a weight of 500 g / 1.1 lb.
   d. GV-FER3403 / FER5303 shall have a weight of 960 g / 2.12 lb.
3. The camera shall have a M12-type lens mount with 0.5 mm pitch.
4. The camera shall have a built-in temperature detector to detect the chipset temperature inside the camera.
5. The camera shall have four mounting methods, on the wall, on the ground, and on the ceiling surface. The models without IR LED ring (GV-FE2302 / FE3402 / FE5302 / FER3402 / FER5302) shall also support in-ceiling mount, where the camera is partially embedded in the ceiling.

I. Power Requirements

1. The camera shall be capable of receiving power from 12V DC, 24V AC, and IEEE802.3af Power over Ethernet (PoE). The IR LED ring of GV-FE3403 / FE5303 / FER3403 / FER5303 shall be capable of receiving power from 12V DC.
2. GV-FE3403 / FE5303 shall come with a PoE converter that allows the camera to be connected to a PoE switch and also supplies power to the IR LED ring. The PoE converter shall be capable of receiving power from IEEE802.3at Power over Ethernet (PoE).

3. camera have the following maximum power consumption:
    a. GV-FE2302 / FE3402 / FE5302: 8.6 W
    b. GV-FE3403 / FE5303: 22 W without PoE converter and 30 W with PoE converter
    c. GV-FER3402 / FER5302: 3.6 W
    d. GV-FER3403 / FER5303: 22 W

J. Environmental Requirements
1. The operating temperature of indoor models shall be within the range of 0°C - 50°C / 32°F - 122°F. The operating temperature of outdoor models shall be within the range of -30°C - 50°C / -22°F - 122°F.
2. The humidity shall be within the range of 10% to 90% with no condensation.
3. Outdoor models shall comply with IP67 protection classification.
4. The metal casing of the camera shall have a vandal resistance of IK10+.

K. System Requirements
1. Supported operating systems shall include 64-bit Windows 7 and Windows Server 2008 and 32-bit Windows XP, Vista, 7 and Server 2008.
2. The camera's Web interface shall be accessible through Web browsers including Microsoft Internet Explorer (version 7.0 or later), Google Chrome, Mozilla Firefox and Safari.

L. Language Requirements
1. The camera shall support 31 languages on the Web interface, including Arabic, Bulgarian, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hebrew, Hungarian, Indonesian, Italian, Japanese, Lithuanian, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Simplified Chinese, Slovakian, Slovenian, Spanish, Swedish, Thai, Traditional Chinese and Turkish

M. Applications

1. The camera shall support GV-System (GV-DVR/NVR), GV-Backup Center, GV-Recording Server, and GV-NAS System as network storage.
2. The camera shall support smart device access using GV-Eye. GV-Eye shall support Fisheye Dewarp functions optionally.
3. The camera shall allow remote access from GV-Control Center, GV-Center V2 and GV-VSM for central management.

N. Packing list shall include:

1. Camera body
2. Three support brackets
3. Camera cover (Hard ceiling mount)
4. Camera cover (In-ceiling mount)
5. Three screws (Hard ceiling mount)
6. Three screws (In-ceiling mount)
7. Three plastic screw anchors
8. Torx wrench
9. Installation sticker
10. Mini USB extension cable (GV-FE2302 / FE3402 / FE5302 / FE3403 / FE5303 only)
11. IR LED ring (GV-FE3403 / FE5303 / FER3403 / FER5303 only)
12. PoE Converter set (including 1 module, 1 DC Power Y-cable, 1 RJ-45 cable and 3 PoE Screws) (GV-FE3403 / FE5303 only)
13. Waterproof rubber (GV-FER3402 / FER5302 / FER3403 / FER5303 only)
14. Power cable (GV-FER3402 / FER5302 / FER3403 / FER5303 only)
15. Terminal block (GV-FER3402 / FER5302 / FER3403 / FER5303 only)
16. IR power adaptor GV-FER3403 / FER5303 only)
17. Cable connector (GV-FER3402 / FER5302 / FER3403 / FER5303 only)
18. Two silica gel bag and two adhesive tapes (GV-FER3402 / FER5302 / FER3403 / FER5303 only)

O. Certifications and Approvals:

1. CE, FCC, RCM, RoHS compliant

All specifications are subject to change without notice.