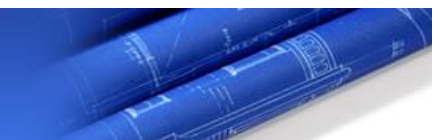


**Model: CBI2109IRF**

Architectural and  
Engineering Specifications

Version 1.0



## **PART 1: PLEASE REFER TO ATTACHED DOCUMENTS - OVERVIEW & FORMAT SAMPLES**

## **PART 2: PRODUCTS**

### **Division 28 – Electric Safety and Security**

### **Section 28 23 29 – Video Surveillance Remote Devices and Sensors**

#### **2.1.0 Manufacturer**

1. Costar Video Systems  
101 Wrangler Drive, Suite 201  
Coppell, Texas 75019  
Tel: 469-635-6800  
Fax: 469-635-6822

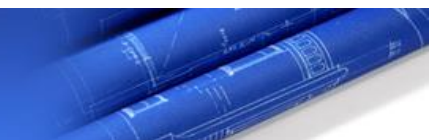
#### **2.2.0 General**

##### **2.2.1 Product Description**

CBI2109IRF is a Network Camera (IP Camera) designed and manufactured by Costar Video Systems. This camera provides Full HD (1920 x 1080) resolution at 30IPS (images per second) with H.264/MJPEG compression. This camera is equipped with Motorized Vari-focal, True Day/Night, PoE (IEEE 802.3af Class 3), IR LED, Vandal-proof bullet enclosure design and IP66 rated

##### **2.2.2 General Specification**

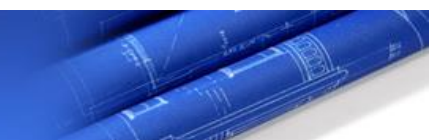
1. The IP camera shall be equipped with 2 Megapixel 1/2.8" CMOS Sensor.
2. The IP camera shall be equipped with 3.3mm – 10mm Motorized Vari-focal lens, F1.3 – 2.5.
3. The IP camera shall be a true day/night camera with a mechanical filter for low light performance. The filter can be switched remotely, or automatically via a light level sensor or contact input (ICR).
4. The IP camera shall have Wide dynamic range compensation (Digital WDR) for improved video quality in high-contrast situations (74.7 dB).
5. The IP camera shall be equipped with 42ea Infrared LED with range up to 30m (98.4ft).
6. The IP camera shall utilize 2DNR (Dynamic Noise Reduction) technology to reduce the bitrate and storage requirements by removing noise artifacts.
7. The IP camera shall be Vandal-Proof and IP rating 66 complied dome enclosure design.
8. IP camera shall be equipped with 10/100 Base-T, auto-sensing, half/full duplex, RJ45 Ethernet connection.
9. The IP camera shall support industry standard Power over Ethernet (PoE) IEEE 802.3af, Class 3 to supply power to the camera over the network and 12VDC input.
10. The IP camera shall have video out feature (NTSC/PAL).



11. The IP camera shall be equipped with video stream buffer memory (60MB) to counter pre/post event buffering and network delays for improved network recording reliability.
12. The IP camera shall deliver maximum video resolution of 1920 x 1080 at rates up to 30 images per second (IPS).
13. The IP camera shall provide direct network connection using H.264 and MJPEG\*\* compression (\*\* iNEX Protocol only).
14. The IP camera shall support Quadruple Streams in DirectNET protocol mode.
15. The IP camera shall support Triple Streams in iNEX Protocol mode.
16. The IP camera shall conform to the ONVIF\*\* Profile S Ver 2.4.0 standard (\*\* iNEX Protocol only).
17. The IP camera shall be equipped with embedded web server (Webguard\*\*) which works independently using a Web Browser with ActiveX plug-in (\*\* iNEX Protocol only).
18. The IP camera shall have IP filtering, HTTPS, SSL, IEEE 802.1X, and configurable user authority levels for greater security.
19. The IP camera shall have network bandwidth limitation and MAT features for more efficient use of network bandwidth.
20. The IP camera shall have Easy network access via UPnP (Universal Plug and Play) function and embedded mDNS (Multicast DNS) protocol.
21. The IP camera shall have Intelligent Video Analysis (VA): Motion Detection, Active Tampering Alarm and Trip Zone.

### **2.2.3 Protocol Specification: DirectNET and iNEX Protocol**

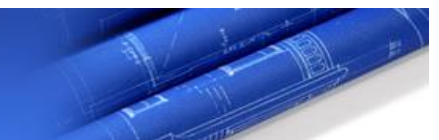
1. The IP camera shall have 2 protocol modes, DirectNET and iNEX Protocol, and DirectNET is set as main protocol by default.
2. The protocol modes shall be selectable between DirectNET and iNEX Protocol mode to meet specific needs with iNIT Discovery tool.
  - DirectNET Protocol
    - A. DirectNET protocol shall provide easy connection to DirectNET NVR for automatic discovery and video streaming configuration.
    - B. DirectNET protocol shall provide Quadruple streams.
    - C. The bitrate shall be automatically adjusted by recording profile of DirectNET NVR.
    - D. DirectNET protocol shall support H.264 only as primary compression.
  - iNEX Protocol
    - A. iNEX Protocol shall provide the compatibility with StarNET VMS, iNEX VMS or ONVIF for third-party software solutions.
    - B. iNEX Protocol shall provide triple streams.
    - C. iNEX Protocol shall support H.264 and MJPEG compression



## 2.3.0 Technical Specification

### 2.3.1 Video Specification

1. Image Sensor: 1/2.8" CMOS
2. Maximum Resolution: 1920 x 1080
3. Scanning Mode: Progressive Scan
4. Lens Type: Motorized Vari-focal (f= 3.3 ~ 10mm, F1.3 ~ 2.5)
5. IRIS Control: DC Auto Iris
6. Angular Field of View (H: Horizontal, V: Vertical, D:Diagonal):
  - A. Wide : 99.8°(H), 52.2°(V), 118.2°(D)
  - B. Tele : 33.5°(H), 18.6°(V), 38.3°(D)
7. Minimum Illumination:
  - A. COLOR : 0.1 lux @ F1.3
  - B. B/W : 0 lux (IR LED ON)
8. S/N Ratio: 31.2dB
9. Maximum Frame Rate: 30ips @ 1920 x 1080
10. Video Resolution:
  - A. DirectNET protocol mode: 1920x1080, 1280x720, 704x480, 640x360, 352x240
  - B. iNEX Protocol mode: 1920x1080, 1280x720, 704x480, 352x240
11. Video Compression: H.264, MJPEG\*\* (\*\* iNEX Protocol only)
12. Video Compression Level: 4 levels - Basic, Standard, High, Very High
13. Multi-Video Streaming:
  - A. DirectNET protocol mode: Quadruple streams
  - B. iNEX Protocol mode: Triple streams
14. Dynamic Range: 74.7dB
15. True Day & Night: Yes (ICR)
16. IR Distance (The number of LEDs, IR wavelength): 98.4ft (42ea, 30m)
17. Intelligent Video Analytic: Video Motion Detection, Active Tampering Alarm, Trip Zone
18. Analog Video Output: 1 BNC



### **2.3.2 Audio Specification**

1. Audio Compression Algorithm: N/A
2. Audio Input / Output: N/A
3. Two-way Audio Communication: N/A
4. Pre-recorded Voice Alert: N/A

### **2.3.3 Network Specification**

1. Port: RJ-45 10/100 Base-T 1 port
2. Network Protocols:
  - A. DirectNET Protocol Mode: DirectNET Protocol
  - B. iNEX Protocol Mode: RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/UDP RTSP/TCP, HTTP, HTTPS, FTP, SNMP, SMTP, FEN, mDNS, uPNP
3. Streaming Mode: Unicast, Multicast

### **2.3.4 Security Specification**

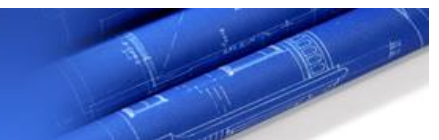
1. DirectNET Protocol Mode: SSL Encryption
2. iNEX Protocol Mode: Multi-User Authority, IEEE 802.1x, IP Filtering, HTTPS, SSL Encryption
3. Maximum User Access:
  - A. DirectNET protocol mode: Direct camera access is unavailable.
  - B. iNEX Protocol mode: 10 (Live), 1 (Recording), 1 (Search), 2 (Admin)

### **2.3.5 Alarm and Event Specification**

- A. Alarm Input / Output: N/A
- B. Trigger Events: Motion detection, Tampering, TripZone
- C. Event Notification: Remote Software, Email (with Image)
  - i. Encryption type: SSL, TLS

### **2.4.0 Environmental Specification**

1. Operating Temperature: -10°C ~ +50°C (14°F ~ +122°F) / \*Starting up at above 0°C (32°F)
2. Operating Humidity: 0% to 90% non-condensing
3. Vandal-proof Enclosure: yes
4. Outdoor Ready: IP66

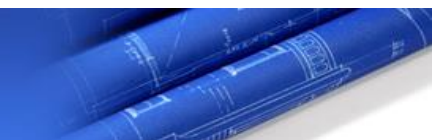


### **2.5.0 Electrical Specification**

1. Power Source: 12VDC, PoE(IEEE 802.3af class 3)
2. Power Consumption: 9.24W
3. Regulatory Approvals: FCC, CE (50130-4), KC, UL

### **2.6.0 Mechanical Specification**

1. Dimensions (Ø x H): Ø73.5mm x 290.2mm (Ø2.9" x 11.43")
2. Unit Weight: 1.17 Kg (2.58 lb)



## Version History

Version	Writer	Revision Date	Remarks
1.0	TS Team	Feb. 11, 2016	Initial Release

