**CAM1420, 3 Megapixel Compact Dome Network Camera**

**Architectural and Engineering Specification**

1. **General Network Camera Description**

The CAM1420S2 WDR compact dome camera is part of Surveon Economical Network Camera Series. The CAM1420S2 provides 2048 x 1536 resolution at 25fps and dual streams at H.264 high profile, MPEG-4 and MJPEG simultaneously. The advanced functions include WDR, ROI video cropping, 2D/3D noise reduction, and edge enhancement. The CAM1420S2 comes with Power over Ethernet, and the cableless network connector allows the camera to be installed on the ceiling or wall in a visually unobtrusive manner. It is the ideal choice for megapixel surveillance in the indoor applications.

* 1. **General Camera Requirements**

1. The camera shall utilize a 1/3" 3 megapixel progressive scan CMOS sensor.
2. The camera shall output at a maximum resolution of 2048(H) x 1536(V) pixels at a maximum frame rate of 25fps.
3. The camera shall support the sensor/ISP WDR (Wide Dynamic Range) for at least 70dB to ensure a true clear image even in a complexity lighting environment.
4. The Camera shall support the auto Wide Dynamic Range (WDR) detection to turn on/off the WDR function automatically.
5. The camera shall have a dynamic range of up to 48db at full resolution.
6. The camera shall have 2.8 mm lens, F1.8.
7. The camera shall support minimum illumination 0.01 [Lux@F1.](mailto:Lux@F1.2)8 (B&W mode) and 0.1 [Lux@F1.](mailto:Lux@F1.2)8 (Color mode).
8. The camera’s shutter speed shall be 1/2 – 1/50,000s.
9. The camera shall provide wide angle of view:

Diagonal: 890

Horizontal: 71°  
Vertical: 49.5°

1. The camera shall have the ability to limit the maximum exposure time to avoid blurry images.
2. The camera shall have dual standard compression support with simultaneous streaming of the H.264, MPEG-4 and MJPEG formats.
3. The camera shall be able to provide the H.264 high profile to reduce bandwidth and comply with HDTV standard.
4. The camera shall support configurable frame rates:

25 fps at QXGA (2048 x 1536)  
30 fps at 1080P (1920 x 1080)  
30 fps at SXGA (1280 x 1024)  
30 fps at HD720 (1280 x 720)  
30 fps at D1 (720 x 480)  
30 fps at VGA (640 x 480)  
30 fps at QVGA (320 x 240)

* 1. **Camera Network Requirement**

1. The camera shall incorporate a built-in web server.
2. The camera shall support IPv4, IPv6, ARP, TCP, UDP, ICMP, SNMP, DHCP, NTP, DDNS, SMTP, FTP, HTTP, HTTPS, CIFS, PPPoE, UPnP, RTP, RTSP, RTCP, and 3GPP network protocols.
3. The camera shall support ONVIF Profile S and ONVIF Test Tool v13.12.
4. No unique or proprietary client software shall be required for viewing or controlling the camera.
5. The camera shall support network Auto Port Forward (NAT pass through) for the Internet connection.
6. The camera shall support Network IP Filter function (Blacklist / Whitelist Settings).
   1. **Camera Audio Requirements**
7. The camera shall support 16KHz, ADPCM & G.711.  
   1. **Camera Video Requirements**
8. The camera shall be able to be cropped to any resolution divisible by 2 and maintain H.264 compression. It shall be possible to crop the camera to output a variety of lower resolution images.
9. The camera shall support multiple streams simultaneously in different resolutions, frame rates, and image qualities for viewing on different platforms, reducing file sizes and conserving valuable network bandwidth with H.264, MPEG-4 and MJPEG compatibility for versatile applications.
10. The camera shall support 32K~10Mbps (manually input supported), fixed quality (CBR), adjustable five different image quality (VBR), controller frame rate and quality.
11. The camera shall feature automatic exposure, automatic multi-matrix white balance, shutter speed control, 50/60Hz selectable flicker control, programmable brightness, saturation, gamma, sharpness, windowing and decimation, simultaneous delivery of full-field view and zoomed images at video frame rate, instantaneous electronic zoom, pan and tilt, and electronic image rotation.
12. The camera shall support various video controls, such as AGC (Auto Gain Control), AWB (Auto White Balance), AES (Auto Electronic Shutter), WDR, 2D/3D De-noise, ROI, Edge Enhancement, and image adjustment (brightness, contrast, saturation, sharpness, chroma back, etc).
13. The camera shall support maximum brightness of the overall image to avoid images out of focus due to the depth of field is too short.
14. The camera shall incorporate necessary algorithms and circuits to detect motion in low-light with clarity.
15. The camera shall support the Auto Denoise function to smooth the static or dynamic moving parts and to ensure better images.
16. The camera shall support two interchangeable profiles with items including iris, exposure, and shutter. The two profiles can be switched automatically by day/night to maintain quality image and cover various lighting conditions.
17. The camera shall support Region of Interest (ROI) encoding to reduce the camera bit rate. It shall support at least 8 different ROIs with different frame rates and image qualities to meet various monitored target demands.
18. The camera shall allow users to decode different frame rates from a single connection to save bandwidth.
19. The camera shall support a configurable lower frame rate and bit rate when no motion detected to reduce the bandwidth for network and storage. And when there is a motion triggered, the camera can switch to the standard frame rate and bit rate within 1 sec.
20. The camera shall support motion detection with 3 zones, each with different detecting rules and sensitivities.
21. The camera shall support tampering detections (blocked, redirected, defocused, or spray-painted), 5 levels of detecting sensitivities.
    1. **Connector Specifications**
22. The camera shall support RJ45, 10/100 Base-T Ethernet connector.
    1. **Electrical Specifications**
23. The camera’s power source shall support Power over Ethernet (PoE) complying with the IEEE 802.3af standard.
    1. **Mechanical Specifications**
24. The camera shall have installed dimensions (WxHxD) of ø100mm x 43mm (H) (3.94" x 1.69").
25. The camera shall weigh 190g Net, 305g Gross.
    1. **Environmental Specifications**
26. The camera’s operating ambient temperature is -10˚C ~ 50ºC (14 °F ~ 122ºF).
27. The camera’s operating humidity is 5%~90%.
    1. **Certifications and Approvals**
28. The camera shall be compliant with safety LVD, and EMC: FCC, and CE.
    1. **Warranty**
29. Surveon offers a three-year hardware and software warranty service and replacement parts free of charge during the warranty period, depending on requirements to extend the warranty period.

*Surveon reserves the right to change products or specifications without notice.*