

COHU

Series 3920^{HD} H.264 HDTV Dome Positioning System



- ▶ HD 720p30 and 1080p30 Camera Options
- ▶ Optical Zoom up to 30x Power*
- ▶ Electronic Image Stabilization*
- ▶ Image Defog Capability*
- ▶ H.264/MJPEG Video Standards
- ▶ Web Server Configuration, Operation and Viewing
- ▶ Wide Range, Variable Speed, Smooth Positioning Movements
- ▶ Camera Presets, Tours and Sector/Privacy Zones
- ▶ Two Sensor Inputs, One Control Output
- ▶ Automated I/O Event Actions
- ▶ Sealed and Pressurized IP67 Ingress Protection
- ▶ -40°C to 60°C Operation
- ▶ NTCIP 1205 over IP Communication Support
- ▶ 120Vac or 24Vac Power Input
- ▶ Single Field Connector Install
- ▶ Pendant, Wall and Pole and Mounting Options

Cohu's 3920^{HD} dome positioning system combines crystal clear HD image quality, bandwidth efficient H.264 compression, smooth variable speed positioning and IP67 protection delivering the Cohu quality and performance you expect!

The 3920^{HD} includes a choice of 720p30 or 1080p30 HD cameras with up to 30x* optical zoom power, delivering full frame rate HD images over the entire zoom range.

The built-in zoom capability enables up to 30x optical magnification in high definition and achieves quick subject tracking through its high speed auto focusing system. True day/night technology using a removable IR cut filter produces exceptional low light sensitivity down to 0.005 lx*.

For installations subject to wind or vibration movement, electronic image stabilization* assures a steady, clear

image and enables the system designer to potentially utilize existing bridge signs and traffic light poles for camera mounting.

The 3920^{HD} includes a defog* image processing capability, enhancing video performance in foggy conditions encountered in surveillance and traffic monitoring applications.

The 3920^{HD} includes a variable hi-speed pan and tilt drive, with 360° continuous pan and +5 to -90° tilt. Fast positioning speeds result in 180° movements in less than 2.5 seconds.

Providing multiple video stream capability, the 3920^{HD} delivers two independently configured H.264 streams or an H.264 with MJPEG or an H.264 with analog output.

Use of the IP and analog output allows integrating with analog based systems today while providing a smooth transition to HD Video over IP tomorrow.

The 3920^{HD} provides a full function web server, allowing complete administrative and operator control capabilities. Administrative features include configuring network settings, user password assignments, setting video streaming properties, configuring camera imaging properties, defining presets, tours and assigning camera ID labels.

The 3920^{HD} is designed to operate in harsh weather with its IP67 enclosure protection. This minimizes the effects of water intrusion, pollutants and corrosives.

Cohu delivers years of clean, reliable images and backs it with a world class two year warranty.

* Camera Model Dependent





S P E C I F I C A T I O N S

Camera

(See Camera Specifications Table, next page)

Dome Drive

MOVEMENTS

Pan Range: 360° Continuous Rotation
Tilt Range: 5° to -90° [Continuous Tilt with Image Flip via Camera Rotation]

SPEED

Pan Speed: 0.1° to 80°/sec
Tilt Speed: 0.1° to 40°/sec
Preset Speed: < 2.5 seconds for 180° movement

ACURACY

Repeatability: +/- 0.1°
Resolution: +/- 0.1°

Dome Positioning

Presets: 64, Includes pan, tilt, zoom, focus coordinate
Tours: 8, Includes up to 32 presets with individual dwell per preset
Sector Zones: 16, Each includes left/right boundary, enabled/disable state
Privacy Zones: 8, Each zone Includes left/right boundary, enabled/disable state

IP Video Encoding

Video Streams: Two (2) Individually Configurable Streams
Video Compression: H.264 (MP/L4.1) and MJPEG
Video Stream Configurations:
[H.264 + H.264], [H.264 + MJPEG], [H.264 only], [MJPEG only],
[H.264 + Analog Video], [MJPEG + Analog Video]
Video Stream Resolutions:
Stream 1: 1080p¹, 720p
Stream 2: 720p², D1, CIF
Video Stream Frame Rates³: 30, 15, 7.5, 6, 5, 3.75, 3, 2, 1.875, 1
Video Stream Data Rates: (Mbs)
Stream 1: 8⁴, 6, 4, 3, 2, 1.5, 1, 0.512, 0.256
Stream 2⁵: 2, 1.5, 1, 0.512, 0.256
IP Video Latency: 4 frames (133 msec)
(Does not include network routing or client rendering latency)

Video Streaming Methods

RTSP/RTP: Eight (8), H.264 or MJPEG
RTSP Interleave: Eight (8), H.264 or MJPEG
RTSP/SDP Multicast: Eight (8), H.264 or MJPEG
HTTP/SDP Multicast: Unlimited, H.264 or MJPEG
HTTP Tunneling: Two (2) H.264, Ten (10) MJPEG
MJPEG Push (HTTP): Ten (10) MJPEG
MJPEG Pull (HTTP): Ten (10) MJPEG
MPEG2 TS: Unlimited, H.264 or MJPEG

Video On-Screen Display (OSD)

IP VIDEO

GENERAL

Up to Four OSD elements are selectable for inclusion in the camera's IP video streams.

OSD ELEMENTS

Camera Title: Up to 24 characters
Preset ID: Up to 24 characters
Sector Zone: Up to 24 characters
Position: Azimuth and Elevation
Time/Date: 24 Hour Format, Time Zone [NTP Server Required]
Logo Display: .bmp format, 96 x 96 pixels maximum in multiples of 32 pixels

The OSD elements display on top or bottom of image, on right hand side of video. The Logo element displays on top or bottom of image, on left hand side.

ANALOG VIDEO

OSD ELEMENTS

Camera ID: Up to 24 characters
Preset ID: Up to 24 characters
Sector Zone: Up to 24 characters
Position: Azimuth and Elevation

Security/Authentication

Four (4) Access Levels [Admin, Privilege, User, Guest]

Web Server Functions

Configuration Settings: Network, Video Stream, OSD, Presets/Tours, Security Settings and Upgrades
Camera Control: Pan/Tilt, Lens, Presets, Tours, Digital Zoom, Auxiliary Controls and Recording

Media Player Support

Browser: Recommend Internet Explorer 8.x or newer
Media Player: VLC, QuickTime or any media player compliant with RFC 2326, 3984, 3550, 2435, ISO/IEC 13818-1

Network Interface

Ethernet: 802.3u (100BASE-TX)
Network Protocols: TCP, UDP, IP IGMP, DNS, DHCP, RTP, RTSP, NTP, IPv4, HTTP, ARP
Camera Protocols over IP: Cohu, Cohu T, NTCIP 1205, ONVIF

Analog Interface

Video: NTSC or PAL, using full 16:9 image compressed into 4:3.
Stream 2 must be configured for analog video
Serial Data Communication: RS422, 4 wire half duplex, 9600 baud
Camera Protocols over Serial: Cohu



Camera Option Specifications

Function	720p30 x18	720p30 x30	1080p30 x20
Sensor	1/3" CCD	1/3" CCD	1/3" CMOS
Scanning	Progressive	Progressive	Progressive
Pixel Array	1296 x 966	1296 x 966	2096 x 1097
Resolution	1280 x 720	1280 x 720	1920 x 1080
Frame Rate	30	30	30
Camera Format	Day/Night (Removable IR Cut)	Day/Night (Removable IR Cut)	Day/Night (Removable IR Cut)
Day/Night Modes	Auto, Color, Mono	Auto, Color, Mono	Auto, Color, Mono
Sensitivity	See Sensivity Chart	See Sensivity Chart	See Sensivity Chart
Zoom Lens	18x, 4.7 to 84.6mm	30x, 4.4 to 132mm	20x, 4.7 to 94mm
Aperture	f1.6 -> f2.8	f1.4 -> f4.6	f1.6 -> f3.5
HAFOV	55.2° to 3.2°	62.9° to 2.2°	55° to 2.9°
Focus	Auto / Manual [Near, Far]	Auto / Manual [Near, Far]	Auto / Manual [Near, Far]
Iris	Auto / Manual [Open, Close]	Auto / Manual [Open, Close]	Auto / Manual [Open, Close]
Digital Zoom	n/a	2x	n/a
Image Stabilization	n/a	Off/On [5hz or 10hz]	n/a
Dynamic Range Mode	On/Off	On/Off	On/Off
Back Light Comp Mode	On/Off	On/Off	On/Off
Shutter/Integration	1/4 -> 1/10,000	1/4 -> 1/10,000	1/2 -> 1/30,000
Defog Mode	n/a	Off/On [3 Levels + Color Saturation Adjust]	n/a

Camera Option Sensitivity

720p30 x18 Camera	Video Level	Mode	Shutter	Aperture
1.8 lux (0.18 fc)	50 IRE	Color	1/60	f1.6
0.74 lux (0.074 fc)	30 IRE	Color	1/60	f1.6
0.18 lux (0.018 fc)	50 IRE	Mono	1/60	f1.6
0.02 lux (0.002 fc)	30 IRE	Mono	1/4	f1.6
720p30 x30 Camera	Video Level	Mode	Shutter	Aperture
0.5 lux (0.05 fc)	50 IRE	Color	1/60	f1.4
0.3 lux (0.03 fc)	30 IRE	Color	1/60	f1.4
0.05 lux (0.005 fc)	50 IRE	Mono	1/60	f1.4
0.005 lux (0.0005 fc)	30 IRE	Mono	1/4	f1.4
1080p30 x20 Camera	Video Level	Mode	Shutter	Aperture
1.7 lux (0.17 fc)	50 IRE	Color	1/60	f1.6
0.8 lux (0.08 fc)	30 IRE	Color	1/60	f1.6
0.3 lux (0.03 fc)	50 IRE	Mono	1/60	f1.6
0.04 lux (0.004 fc)	35 IRE	Mono	1/4	f1.6

Field Connector Pin-Out

PIN	SIGNAL
D	Ethernet Tx+
E	Ethernet Tx-
F	Ethernet Rx+
H	Ethernet Rx-
L	Video Signal
A	Video Ground
P	I/O Gnd
C	I/O Input 1
J	I/O Input 2
K	I/O Output 1
M	RS-422 Rx+
N	RS-422 Rx-
S	RS-422 Tx+
R	RS-422 Tx-
G	AC GND
B	24 VAC HI
U	115 VAC HI
T	115 VAC or 24VAC LO

Series 3920^{HD}

H.264 HDTV Dome Positioning System

SPECIFICATIONS



Event I/O Interface

Inputs: Two (2) Sensor Inputs (Dry Contact)
Outputs One [1] Control Output (Open Collector, 500ma Sink)

Event Management

INPUT TRIGGERS

External Sensor Input
User Command
Periodic Timer

OUTPUT EVENTS

Activate Control Output
Camera Preset Activation
FTP Snapshot

Electrical

INPUT VOLTAGE

120 Vac or 24 Vac (Model dependent)

POWER

40 W (max) with Heater Off, 110 W (max) with Heater On
Variation: Complies with Nema TS2 para 2.1.2
Transients: Complies with Nema TS2 para 2.1.6

Mechanical

Construction/Finish: Powder coated aluminum. External parts corrosion protected with stainless steel fasteners.

Weight: 14 lbs (6.3 kg)

Dimensions: 11.0" D x 13.8" H [281 mm x 349 mm]

Connector: 18-pin MS Connector Bulkhead

Environmental

TEMPERATURE

-40°F to 140°F (-40°C to 60°C)

Note: Minimum operating temperatures are with a 2 hour warm-up.

HUMIDITY

0-100%

INGRESS/PROTECTION STANDARDS

IP67, Pressurized to 3.5 psi with dry nitrogen

SALT SPRAY PROTECTION

Compliant to ASTM-B117

Environmental (cont.)

VIBRATION

Compliant to Nema TS2 para 2.1.9

SHOCK

Compliant to Nema TS2 para 2.1.10

Certifications

CE (24Vac), FCC Class A

Shipping Information

Weight: 18 lbs (8.2 kg)

Volume: 15" x 15" x 20" (381mm x 381mm x 508mm)

Accessories

MOUNTS

Wall: 7411420-001

Pole: 8518-2

MATING CONNECTOR

MS Type: 1310230-011

CABLES

CA252 Series: 120Vac, MS connector

CA255 Series: 24Vac, MS connector

Ordering Model Numbers

HD24-1000	Dome System, 24Vac 720p30 x18 Camera
HD24-2000	Dome System, 24Vac 1080p30 x20 Camera
HD24-3000	Dome System, 24Vac 720p30 x30 Camera
HD25-1000	Dome System, 120Vac 720p30 x18 Camera
HD25-2000	Dome System, 120Vac 1080p30 x20 Camera
HD25-3000	Dome System, 120Vac 720p30 x30 Camera

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