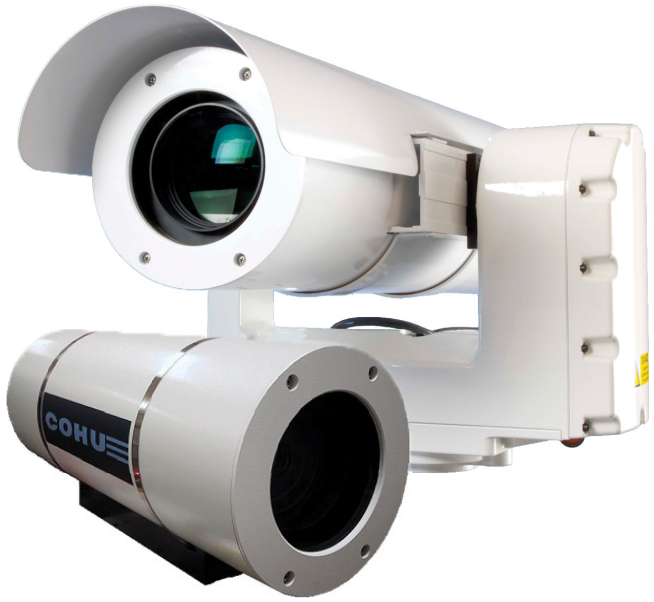
COHU | HD

Series 8800HD

HDTV 1080p H.264 Long Range Positioning System

Helios



- Full 1080p30 HDTV Image Resolution
- CMOS Progressive Scan Sensor, 1/2.7”
- True Day/Night Operation with Removable IR Cut Filter
- HD Quality 55x Optical Zoom Lens with 2.5x Extender
- Narrow HAFOV of 0.2 Degrees
- H.264/MJPEG Video Standards
- Web Server Configuration, Operation and Viewing
- Wide Range, Variable Speed, Smooth Positioning Movements
- Camera Presets and Tours
- IP66/IP67 Ingress Protection
- -32°C to 60°C Operation
- 24Vdc Power Input
- Single Field Connector Installation
- Pendent, Wall, Pole and Corner Mounting Options

CohuHD’s 8800HD series combines full HD image resolution with high powered HD performance lens optics for delivering unprecedented image quality and detail for long range surveillance applications in the visible spectrum.

By comparison, CohuHD’s 8800HD series can deliver up to six times the resolution and detail of traditional standard definition long range camera systems.

In addition to the superior image quality and excellent long range zoom optic capabilities, the 8800HD series delivers video across standard network infrastructures, with H.264 image compression technology using fractions of the bandwidth traditional MPEG4 or MJPEG requires.

The 8800HD superior image quality is centered around a 1/2.7” CMOS 1080p30 progressive scan sensor. Image performance and color reproduction are superb even under challenging lighting conditions. In night mode, the camera enhances low light viewing by switching the IR (infrared) filter out of the optical path and providing a monochrome image. The camera switches from color to monochrome mode automatically by sensing the illumination level or by remote operator command. Image properties including exposure, gain, backlight and white balance are controlled automatically, or may be overridden for precise user adjustments as needed.

Long range surveillance is achieved by the integrated 55x HD quality zoom lens optics, with focal range from 12mm to 660mm. The lens includes a remotely controlled 2.55x extender which can be inserted in the optical path increasing the maximum focal range to 1680mm. Horizontal angular field of views as low as 0.2 degrees are possible with full zoom and extender inserted. The focus assist function insures crisp video with the touch of a button as scene views change.

The 8800HD series offers a standalone camera system or a fully integrated long range HD camera positioning system. The 8800HD camera positioner includes a variable hi-speed pan and tilt drive, 360° continuous pan (azimuth) and +/- 30° tilt (elevation) movements. Manual control positioning speeds range from 0.05° to 45° per second, with preset speeds reaching a maximum 90° /sec, resulting in 180° movements in less than 3 seconds. Preset and directed absolute position movement accuracies are precise to within 0.05°, insuring camera views are on target.

The 8800HD provides a full function web server, allowing complete administrative and operator control capabilities. Administrative features include configuring network settings, user password assignments, setting video and streaming properties, defining camera positioning presets/tours, assigning camera ID labels.

The 8800HD is designed to operate in extreme weather, with its IP67 sealed and pressurized enclosure protection. This eliminates the effects of water intrusion, pollutants and corrosives. It is designed to operate in a broad temperature range, from winter in the Arctic to summer in the desert, with heaters and fans, and electrical and mechanical components that are rated for the full range.

The 8800HD Series will deliver years of reliable service and clean images. It is backed by a two-year limited warranty.

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Camera

SENSOR

Sensor Type: 1/2.7" C M O S
Scanning Mode: Progressive
Active Pixels: 1920 x 1080
Pixel Size: 3um x 3um
Resolution/Frame Rate: 1080p30
Shutter: Rolling
S/N Ratio: 39dB
Dynamic Range: 69dB
Camera Format: Day/Night, [Removable IR Filter]

SENSITIVITY

Camera/Lens System [f/4, 30% Video, Max Gain]
0.23 fc, 2.25 lux, 1/30 Shutter
0.7 fc, 0.70 lux, 1/15 Shutter
0.035 fc, 0.35 lux, 1/8 Shutter
Sensor Faceplate [50% Video, 28db Gain]
0.1 fc, 1.0 Lux, 1/30 Shutter

BACK FOCUS

Type: Remote Motorized Back Focus. Provides the ability to compensate for changes in lighting conditions. (i.e. Day / Night mode changes and IR Illumination)

EXPOSURE CONTROL

Shutter: Auto / Manual [1/30 ~ 1/8,000]
Auto: Adjustable MIN / MAX Setting
Minimum Vlaue: 1/8, 1/15 or OFF (1/30)

GAIN CONTROL

Auto: Adjustable MIN / MAX Levels
Manual: Selectable Fixed Gain Level; 0 ~ 36dB

BACKLIGHT COMPENSATION

On/Off with level adjust 1.0 to 3.0

WHITE BALANCE

Auto: 2800K~7500K
Manual: Adjustable Red / Blue (0-16384)

IMAGE CONFIGURATION PROPERTIES

Contrast: 0-100
Brightness:0-100
Saturation: 0-100
Sharpness: 0-100
Hue: 0-100

Lens

MAGNIFICATION

55x, with 2.5x Extender (137.5x with Extender Inserted)

FOCAL LENGTH

12 ~ 660mm (30.5mm ~ 1680mm with extender inserted) (+/- 5%)

APERTURE @ FOCAL RANGE;

12mm: f/4.0 (wide),
660mm: f/7.2 (tele)
30.5mm: f/10.0 (wide - with extender inserted)
1680mm: f/18.2 (tele - with extender inserted)

MINIMUM OBJECT DISTANCE

23 Feet (7 meters)

IRIS CONTROL

Auto with Manual Overide [Open/Close]

FOCUS CONTROL

One Shot Focus Assist: Optimum focus requires the scene to contain sufficient detail and contrast. The scene illumination must be sufficient to produce a minimum video level of at least 50%.
Manual Control [Near/Far]
Lens Speed [Slow, Medium, Fast]

ANGULAR FIELDS OF VIEW

12.0mm	27.4°h x 15.7°v
660.0mm	0.51°h x 0.29°v
1680.0mm	0.20°h x 0.11°v (2.5x extender engaged)

BORE SIGHTING

Without Extender: The Bore sighting shift from Narrow Angle (660mm @ 0.5°) to Wide Angle (12mm @ 27.4°) shall be less than ± 0.1 mRad per degree of the Horizontal Angle of View.

Positioner (Optional)

MOVEMENTS

PAN RANGE

360 Degrees Continuous Rotation

TILT RANGE

+/- 30 Degrees [Without Wiper]

SPEED

Resolution: 2,048 speeds (2047 plus stop)
Pan: Variable from 0.05° to 45° deg/sec
Tilt; Variable from 0.05° to 45° deg/sec
Pan Preset Speed: 180° in less than 3 seconds
Tilt Preset Speed: From up limit to down limit, or down limit to up limit in less than 3 seconds.

REPEATABILITY

Pan: +/- 0.06 degree precision
Tilt: +/- 0.06 degree precision

Features

PAN/TILT CONTROL

Variable: Variable speed pan/tilt control without factoring zoom position.
Variable Proportional; Variable pan/tilt speed control with factoring of zoom position. This mode scales the maximum pan/tilt speed, while maintaining variable speed capability, throughout the zoom range of the camera.

PRESETS

Up to 64, with each preset consisting of a pan, tilt, zoom and focus coordinate.
Video freeze between presets: User selectable to allow selection of freeze or live video during preset movements.

TOURS

8 tours available, with each tour consisting of up to 32 pre-programmed presets, with individual dwell time property per preset per tour.
Tours stop upon receipt of any pan, tilt, zoom, focus, preset, or go to command.

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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]
Video Stream Resolutions:
Stream 1: 1080p, 720p
Stream 2: D1, CIF
Video Stream Frame Rates: 30, 15, 7.5, 6, 5, 3.75, 3, 2, 1.875, 1
Video Stream Data Rates: (Mbs)
Stream 1: 8, 6, 4, 3, 2, 1.5, 1, 0.512, 0.256
Stream 2: 2, 1.5, 1, 0.512, 0.256
Camera Video Latency: 4 frames (133 msec)
(Does not include network routing or client rendering latency)

IP Video On-Screen Display (OSD)

GENERAL

Up to Four OSD Elements are Selectable for Inclusion in the Camera's Two Video Streams.

OSD ELEMENTS

Camera Title: Up to 24 characters
Time/Date: 12/24 Hour Fomat, Time Zone [NTP Server Required]
Logo Display [96 x 96 pixels maximum]

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.

Video Streaming Methods and Connection

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
MPEG2TS: Unlimited, H.264 or MJPEG

Security/Authentication

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

Web Server Functions

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

Media Player Support

Browser: Recommend Internet Explorer 8.x or newer
Media Player: VLC, QuickTime

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 T, NTCIP 1205, ONVIF

Electrical

INPUT VOLTAGE

24 Vdc +/- 10%

POWER

Camera
20W Heater OFF, 75W with Heater ON
Surge Current at Power On: < 2.5A
Camera and Positioner
60W Heater OFF, 113W with Heater ON

Mechanical

Construction/Finish: Powder Coated Aluminum.
Weight:
Camera Only: 35 lbs (15.9 kg)
Camera and Positoner: 75 lbs (34 kg)
Camera Dimensions: 27" x 8" Diameter (Less Sunshield)
Positioner with Camera Dimensions:
23.5" H x 18.1" W x 27" D [597mm x 460mm x 686mm]
Connector:
39-pin MS Connector on Camera Housing

Environmental

TEMPERATURE

-25F to 140F [-32 C to 60 C]

SALT FOG

MIL-STD-810F, Method 509.4, Procedure I (4 x 24 hour periods, 2 wet, 2 dry), 5%NaCl, 48 hours aggravated test.

IMMERSION

MIL-STD-810F, Method 512.4. Depth 1.0m duration 0.5 hours.

SAND/DUST

MIL-STD-810F, Method 510.4, Procedure I, with 10.6 ± 7g per cubic meter of dust, at an air velocity of 8.9 ± 1.3m/sec and maximum temperature of +51°C, for a period of 6 hours.

VIBRATION

Nema-TS2 paragraphs 2.1.9, 2.2.3, 5-30Hz sweep @ 0.5g applied in each of 3 mutually perpendicular planes.

SHOCK

Nema-TS2 paragraphs 2.1.10, 2.2.4, 10g applied in each of 3 mutually perpendicular planes.

EXTERNAL ICING

Nema-TS2 250-2003, paragraphs 5.6

CORROSION PROTECTION

Per Nema 250-2003, paragraphs 5.10

HUMIDITY

0-100% N.C per MIL-E-5400T, paragraphs 3.2.24.4 0-100%

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Accessories

MOUNTS

HD84-1000, HD84-2000 Models
- 8186-1 Pedestal Mount
- 8186-2 Wall Mount Bracket Set
- 8186-3 Pole Mount Bracket Set
- 8186-4 Corner Mount Bracket Set
- 8186-5 Parapet Mount Bracket Set

HD84-3000, HD84-4000 Models
- 8185-3 Wall Mount Bracket Set
- 8185-4 Pole Mount Bracket Set
- 8185-5 Corner Mount Bracket Set
- 8185-6 Parapet Mount Bracket Set

CONTROL CABLES

CA288 Series
CA289 Series

CONNECTOR KITS

Field Cable Connector: 1310230-105

Certifications

ENVIRONMENT PROTECTION

IP67
ASTM-B117 Marine

CERTIFICATIONS

CE, FCC Class A

Ordering Information

HD84-1000	Stand-alone camera system
HD84-2000	Stand-alone camera system with faceplate wiper
HD84-3000	Camera positioner system
HD84-4000	Camera positioner system with faceplate wiper

Shipping

Weight: (Shipped in Separate Containers)
- Camera: 40 lbs (18.1 kg)
- Positoner: 40 lbs (18.1 kg)

Dimensions: inches [cm]
- Camera: 32 x 13 x 16 [81.3 x 33 x 40.6]
- Positoner: 21 x 17 x 25 [53.3 x 43.1 x 63.5]

Viewing Distances (Detection - Recognition - Identification)

Calculation Criteria:
- Object = Moving Person, 5.8ft [1.76m]
- Detection = 20 vertical Pixels on Target
- Recognition = 56 vertical Pixels on Target
- Identification = 107 vertical Pixels on Target

Camera Resolution	Zoom Lens Optics	HAFOV	Identification	Recognition	Detection
1080p	660 mm	0.5 Degree	2.2 Miles [3.5 km]	4.2 Miles [6.75 km]	11.8 Miles [19.0 km]
1080p	1680 mm	0.2 Degree	5.65 Miles [9.1 km]	10.7 Miles [17.2 km]	30 Miles [48.3 km]

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