

COHU HD

Series 5970^{SD} Thermal LWIR PTZ Camera Positioner System

Helios



ONVIF
Profile S

- VOx Microbolometer FPA Technology
- 640x480 and 320x240 Image Resolutions
- Wide Range of Lens Options
- Remote Focus Control
- Hybrid IP / Analog Operating Mode
- Dual H.264 / MJPEG Video CODECS
- Analog Video, Serial Control
- Web Server Configuration Operation and Viewing
- Variable Speed Positioning System
- Presets, Tours, Sector/Privacy Zones
- IP67 Camera Ingress Protection
- Nema TS2 Rated -40°C to 74°C Operation

CohuHD's 5970^{SD} series combines the advantages of thermal imaging, efficient H.264 compression, a proven variable speed positioner and advanced environment protection delivering a best in class thermal camera positioner system.

The 5970^{SD} is the latest addition to CohuHD's Helios family of products, offering a choice of uncooled VOx 320p30 or 640p30 LWIR FPA detectors and a wide selection of hard carbon coated lenses.

The 5970^{SD} delivers high quality video, even in extreme conditions such as total darkness, smoke, atmospheric haze or dust, rain, light foliage, and most types of fog.

The 5970^{SD} includes a variable hi-speed pan and tilt drive, with 360° continuous pan and ±90° tilt movements. Fast positioning speeds of up to 80°/sec, results in 180° movements in less than 3 seconds. Camera control functions

are accomplished over IP or the RS422 serial interface.

Providing dual output stream capability, the 5970^{SD} can deliver two independently configured H.264 streams, or H.264 with MJPEG or H.264 with analog output.

While delivering IP and analog outputs, the 5970^{SD} can integrate with legacy analog based systems today while providing a smooth transition over to IP tomorrow.

Administrative features include configuring network settings, user password assignments, setting video streaming properties, configuring thermal imaging properties, defining camera positioning presets/tours and assigning camera ID labels.

The 5970^{SD} is designed to operate in extreme weather with its IP67 and IP66 protection,

eliminating the effects of water intrusion, pollutants and corrosives, and withstands the effects elevated temperature, electrical and mechanical environments complying with Nema TS-2 standards.

CohuHD delivers years of clean, reliable images and backs it with a world-class warranty.

   
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THERMAL CAMERA

Detector	Uncooled VOx Microbolometer
Image Resolution	640x480, 320x240
Pixel	17µm (640 core), 25µm (320 core)
Spectral Band	7.5 - 13.5 µm
Sensitivity (NEΔT)	<50 mK @ F1.0 w/noise reduction
Time to Image	<60 Seconds
Frame Rate	30Hz or 7.5Hz
Digital Zoom	2x, 4x, 8x (640 core) 2x, 4x (320 core)
Palettes	12, (White Hot, Black Hot, 10 Color Palettes)
Image Orientation	Normal, Invert, Revert, Both
Scene Range	-40°F to 320°F, -40°C to 160°C
Supplemental Offset	Selectable ON or OFF
Detail Enhancement	Adjustable from 1 to 63
Flat Field Correction	External, Manual/Auto [Interval/Temp Change]
Auto Gain	Plateau Value: 10 to 1000 ITT Mean: 0 to 255
Max AGC	0 to 255
AGC Presets	Default Values Low Scene Contrast Indoors

THERMAL LENS

Lens Options	35mm, F1.25 60mm, F1.25 100mm, F1.6
Lens Field of View	
35mm f/1.2	320x240 13.0° x 9.8° 640x480 17.7° x 13.3°
60mm f/1.25	320x240 7.6° x 5.7° 640x480 10.4° x 7.8°
100mm f/1.6	320x240 4.6° x 3.4° 640x480 6.2° x 4.7°
Lens Type	Athermalized, Hard Carbon Coated
Ingress Protection	IP67
Focus Type	Motorized [Near/Far control, with preset pots]

POSITIONER

Pan Range	360° continuous rotation
Tilt Range	+90° to -90°
Pan Speed	0.1° to 80°/second
Tilt Speed	0.1° to 34°/second
Preset Speed	< 3 seconds for 180° movement
Repeatability	+/- 0.25°

Resolution	+/- 0.1°
Presets	64, Includes pan, tilt, focus and preset ID
Tours	8, Includes 32 presets with individual dwell times
Patterns	Not Available
Auto Park	Returns to a preset or tour after timer expires, Timer Value [Off, 1 Minute to 999 Hours]
Sector Zones	8, Includes left/right boundary, enable/disable state, 24 character title
Privacy Zones	8, Includes left/right boundary, enable/disable state, blanks out video
Inverted Mounting	Field Configurable

IP VIDEO

Streams	Two (2) Individually configurable streams
Codecs	H.264 and MJPEG
Configurations	H.264 + H.264, H.264 + MJPEG, H.264 + Analog, MJPEG + Analog
Resolutions	Stream 1 [D1] Stream 2 [D1, CIF]
Frame Rates	30, 15, 7.5, 6, 5, 3.75, 3, 2, 1.875, 1
Data Rates	Stream 1 (4 Mb to 256 Kb) Stream 2 (2 Mb to 256 Kb)
Camera Latency	Four (4) Frames (0.133 sec.)

VIDEO CONNECTIONS

RTP/RTSP	Eight (8) H.264, Eight (8) MJPEG
RTSP/Interleave	Eight (8) H.264, Eight (8) MJPEG
RTSP Multicast	Eight (8) H.264, Eight (8) MJPEG
HTTP Multicast	Unlimited, H.264 and MJPEG
HTTP Tunneling	Two (2) H.264, Ten (10) MJPEG
MPEG2 TS	Unlimited, H.264 and MJPEG

NETWORK INTERFACE

Network Format	Ethernet 802.3, 100BaseT-TX
Network Protocol	TCP, UDP, IPv4, IGMP, ICMP, DNS, DHCP, RTP, RTSP, NTP, HTTP, ARP, ONVIF Profile S
Media Players	VLC, Quick Time or any media player compliant with RFC 2326, 3984, 3550, 2435, ISO/IEC 13818-1
ONVIF Support	Profile S
Camera Protocols	Cohu T, Profile S, NTCIP 1205
Security	Yes, 4 Levels

ANALOG INTERFACE

Video	NTSC or PAL
Serial PTZ	RS422, 4 wire half duplex, 9600 baud
Camera Protocols	CohuHD

ON SCREEN DISPLAY (OSD)

IP VIDEO OSD

Up to four OSD elements are selectable for inclusion in the camera's two IP video streams. (Note: Three elements maximum on a single stream. The OSD elements display on top or bottom of image, on right side of video. The logo element displays on top or bottom of image on left side.

Standard Font Size

Camera Title	24 characters
Preset ID	24 characters
Sector Zone	24 characters
Position	3 characters, absolute or compass reading
Time/Date	24 Hour Format, Time Zone
Logo Display	xxx.bmp format, 96 x 96 pixels maximum, in multiples of 32 pixels

Large Font Size

Camera Title	15 characters
Position	3 characters (pan absolute or compass reading)

ANALOG VIDEO OSD

Camera Title	24 Characters
Preset ID	24 Characters
Sector Zone	24 Characters
Position	24 Characters

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EVENT MANAGEMENT

DIGITAL I/O

Digital Inputs	Two (2) Sensor Inputs, Dry contact, N.O or N.C
Digital Outputs	One (1) Control Output, Open collector

TRIGGERS

Internal Timer	Interval [Off, 1 Second to 999 hours], Duration [Off, 1 Second to Indefinite]
Digital Inputs	Active Input Triggers Action

ACTIONS

Presets	Activates a Camera Preset
FTP Snapshot	Captures Image and sends to FTP site folder
Digital Output EMAIL	Activates a Digital Output Sends message to EMAIL address

MECHANICAL

Construction	Powder coated aluminum. External parts corrosion protected with stainless steel fasteners.
Weight	18 lbs [8.4 Kg]
Dimensions	See Dimensional Diagrams
Connector Type	18 Pin MS
Shipping Dims	29 lbs [13.5 Kg], 23" x 18" x 13" [584mm x 457 mm x 330 mm]

ELECTRICAL

Input Voltage	120 Vac or 24 Vac (Model dependent)
Power	40 W, 160 W with P/T Heater Option
Line Variation	120Vac Complies with Nema TS2 para 2.1.2

ENVIRONMENTAL

Protection Rating	Camera - IP67 Positioner Body - IP66
Operating Temp	-40°F to 165°F (-40°C to 74°C) Per NEMA TS2, para. 2.2.7.3 - 2.2.7.7 Note: Minimum operating temperatures are with a 2 hour warm-up.
Water Spray	Per IEC 60529+A1, 1999, Para 14.2.6
Humidity	0-100% N.C., per MIL-E-5400T, paragraphs 3.2.24.4
Vibration	Per Nema-TS2 paragraphs 2.1.9, 2.2.3, 2.2.8
Shock	Per Nema-TS2 paragraphs 2.1.10, 2.2.4
Corrosion Prot.	Per Nema 250-2003, paragraphs 5.10
External Icing	Per Nema-TS2 250-2003, paragraphs 5.6 (Note:requires P/T Heater Option, available on 120Vac models only)

CERTIFICATIONS

FCC Class A
ASTM-B117 Marine

ACCESSORIES

Mounts

Pedestal	7411542-001
Wall	8425-7
Pole	8503-0
Corner	8503-1
Parapat	8503-2
7.0" BC Adapter	8481-9

Cables

CA252 Series, 120Vac, MS connector
CA255 Series, 24Vac, MS connector

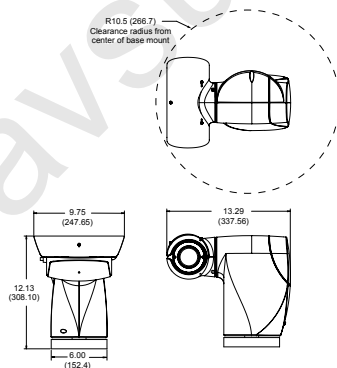
Connectors

MS Type	1310230-011
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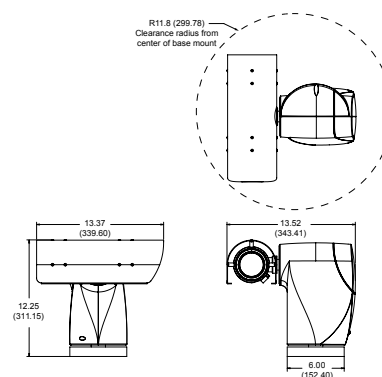
Power Supplies

24Vac (IP66)	7411543-010 (96 Watts, 115Vac or 220Vac Input)
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DIMENSIONS WITH 35 OR 60MM LENS



DIMENSIONS WITH 100MM LENS



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ORDERING MODEL NUMBERS

PRODUCT MODEL STRUCTURE											
597	X	-	X	X	X	-	X	X	X	OPTIONS	OPTION DESCRIPTION
										PRODUCT SERIES	
										597	HELIOS IP67/IP66 LWIR POSITIONING SYSTEM
										OPERATING POWER	
										4	24VAC OPERATING POWER, MS CONNECTOR, NO PT HEATER
										5	120VAC OPERATING POWER, MS CONNECTOR, NO PT HEATER
										6	120VAC OPERATING POWER, MS CONNECTOR, WITH PT HEATER
										CAMERA OPTIONS	
										1	320 X 240 25 MICRON CAMERA (30HZ)
										2	640 X 480 17 MICRON CAMERA (30HZ)
										3	640 X 480 17 MICRON CAMERA (7.5HZ)
										SOFTWARE OPTIONS	
										4	35MM LENS, F1.4
										6	60MM LENS, F1.2
										7	100MM LENS, F1.6
										UNASSIGNED	
										0	NONE
										UNASSIGNED	
										0	NONE

VIEWING DISTANCE COMPARISON MATRIX - HUMAN, 6 FT.

Classification	Image Format	Resolution	Sensor	Focal Length	HAFOV	Identify (25 VPoT)		Recognize (8 VPoT)		Detection (2 VPoT)	
						Imperial (ft)	Metric (m)	Imperial (ft)	Metric (m)	Imperial (ft)	Metric (m)
Thermal	CIF	320 x 240	25 u	35 mm	13	330	100	1,120	340	5,600	1,702
Thermal	CIF	320 x 240	25 u	60 mm	7.6	565	171	1,920	583	9,600	2,919
Thermal	CIF	320 x 240	25 u	100 mm	4.6	940	285	3,200	973	16,000	4,865
Thermal	VGA	640 X 480	17 u	35 mm	17.7	483	146	1,645	500	8,220	2,499
Thermal	VGA	640 X 480	17 u	60 mm	10.3	828	251	2,820	857	14,090	4,284
Thermal	VGA	640 X 480	17 u	100 mm	6.2	1,380	419	4,670	1,420	23,480	7,139

Calculation Criteria:

Moving Person, 6ft [1.8m]

- Detection = 2 vertical Pixels on Target

- Recognition = 8 vertical Pixels on Target

- Identification = 26 vertical Pixels on Target

CONNECTOR PINOUT OPTIONS

MS Connector Pinouts		
Pin	120Vac	24Vac
L	Video Out	
A	Video Ground	
U	115 VAC High	Spare
G	AC Ground	
T	115 VAC Low	24 VAC Low
B	Spare	24 VAC High
P	Alarm Common	
C	Alarm In	
J	Relay Out	
K	Relay In	
M	RS-422 RX +	
N	RS-422 RX -	
S	RS-422 TX +	
R	RS-422 TX -	
D	Ethernet TX +	
E	Ethernet TX -	
F	Ethernet RX +	
H	Ethernet RX -	

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