



COHU

5930 Series

fixed position thermal camera system

High performance microbolometers for precision imaging

640x480 and 320x240 FPA detector resolution options

Flexible lens choices of 13mm up to 150mm provide wide to narrow fields of view

Efficient and rugged f1.0 hard carbon coated lenses

Configurable image settings include color palette, polarity, digital zoom and image freeze functions

Remote focus and image setting control over serial RS422 channel

IP67-rated enclosure for maximum weather protection

Single MS-style cable connector for power, data and video

- *High value asset surveillance and detection*
- *Access Control*
- *Border Protection*
- *Power Plants*
- *Water Departments / Reservoirs*
- *Process / Effluent Monitoring*



Cohu's 5930 Series brings no-light surveillance to the next level: a combination of function, reliability, style, and performance that security professionals need in our changing world. When radiated energy is all you can count on, you can count on the five decades of experience that Cohu brings to high value asset surveillance.

The camera's imager 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. And its high thermal sensitivity and image resolution let you see important details quickly and clearly. There is a choice of two detector resolutions (320 x 240 or 640 x 480) and a wide selection of lenses to suit nearly any situation.

Combined with Cohu's IP67 camera enclosure, you are assured of high

performance and reliable service at a competitive price. The enclosure system prevents damage to critical internal components caused by destructive environmental elements. A single MS connector for power, video and data provides simple connectivity of the camera to the transmission system.

Cohu also can provide the interface to an IP network, as well as digital recording and archiving components with i-Linx[®]. The 5930 answers the growing needs of increased security and homeland protection for a broad range of applications, including military facilities, nuclear power plants, bridges, airports, seaports, and subways.

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COHU PERFORMANCE

The Cohu 5930 is an IP67 protected integrated thermal camera with lens that provides what you always expect from Cohu Electronics: performance, quality, and style. This camera system has been designed to meet the requirements of today's security professionals operating in challenging environments. The uncooled camera is well suited to continuous operation.

MICROBOLOMETER THERMAL IMAGER

The Cohu 5930 may be ordered in one of two Focal Plane Arrays (FPA): 320 x 240 and 640 x 480. The size of the FPA does not affect image quality, rather the degree of detail that can be observed. There are five different color palettes available within the camera.

The microbolometer image sensor provides 8-14 μ m spectral range, best for short-to-medium distances and for wide areas of view. It's perfect for those applications where the distance being monitored is less than 5 Km.

Cohu offers a variety of different lenses, from 13 mm to 150 mm, to optimize the camera's field of view to the applications.

The thermal imager features a remote focusing technique that moves the focal plane array, allowing the use of fixed focus lenses rather than costly motorized lens assemblies. The result is a simplified design with a sealed lens assembly.

Flexible image setting adjustments allow operators to remotely control the appearance of the image, including color palette selection, inverting polarity, brightness, contrast, AGC intensity and digital zoom functions.

HIGHER STANDARDS

Cohu designed this next generation camera system to meet the technical objectives of security professionals.

There are two thermal imagers to choose from, plus a variety of lens options to precisely match the surveillance requirement.

See the chart below to help define your imaging requirement, or your Cohu Sales or Applications Engineer can assist you in determining the best possible sensor and lens combination for both size and range of temperature detection.

Because it's made by Cohu Electronics, the camera is protected by our legendary IP67 camera enclosure that shields your investment from intrusion of water, pollutants and corrosives that degrade the camera.

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

What will LWIR imaging get me?

The process of actually seeing an object with a thermal imager is categorized as detecting, recognizing, or identifying the object. To detect a moving target, the critical dimension of the object must be covered

by two or more pixels of the camera sensor. An increasing number of pixels covering the object determines the ability to recognize or identify the object. The figures shown below are generalities based upon NV-Therm, a commonly-accepted form of measurement used by the US Army. Use these figures as an estimate only.

| LWIR Cameras | | | | | | | | |
|--------------------|------------------------|-------------|------------------------|-----------|----------|--------------------------|-----------|----------|
| OBJECT OF INTEREST | | | HUMAN (1m x 1m target) | | | VEHICLE (3m x 3m target) | | |
| Lens | Sensor | AFV (Deg°) | Detect | Recognize | Identify | Detect | Recognize | Identify |
| 13mm | 320 x 240 (35 μ m) | 50 x 38 | 260m | 42m | 16m | 728m | 119m | 67m |
| | 640 x 480 (25 μ m) | 70 x 55 | 265m | 57m | 26m | 780m | 156m | 68m |
| 25mm | 320 x 240 (35 μ m) | 25 x 20 | 500m | 80m | 30m | 1.4km | 230m | 130m |
| | 640 x 480 (25 μ m) | 36 x 28 | 510m | 110m | 50m | 1.5km | 300m | 130m |
| 50mm | 320 x 240 (35 μ m) | 12.6 x 9.8 | 1.0km | 150m | 60m | 2.7km | 450m | 230m |
| | 640 x 480 (25 μ m) | 18 x 14 | 1.0km | 220m | 100m | 2.9km | 600m | 270m |
| 75mm | 320 x 240 (35 μ m) | 9.5 x 7.4 | 1.45km | 230m | 90m | 3.95km | 685m | 330m |
| | 640 x 480 (25 μ m) | 13.5 x 10.5 | 1.5km | 345m | 150m | 4.2km | 900m | 410m |
| 100mm | 320 x 240 (35 μ m) | 6.3 x 4.9 | 1.9km | 310m | 120m | 5.2km | 920m | 430m |
| | 640 x 480 (25 μ m) | 9 x 7 | 2.0km | 470m | 200m | 5.5km | 1.2km | 550m |
| 150mm | 320 x 240 (35 μ m) | 3 x 2.4 | 2.8km | 500m | 160m | 7.2km | 1.3km | 573m |
| | 640 x 480 (25 μ m) | 6 x 4.7 | 2.8km | 600m | 266m | 7.2km | 1.7km | 730m |



5930 Series Specifications

THERMAL CAMERA/DETECTOR

Type

Uncooled microbolometer

Array Format Options

NTSC: 320 x 240; PAL: 384 x 288

NTSC: 640 x 480; PAL: 640 x 480

Pixel Size / Fill Factor

320 x 240: 35 x 35µm / 80%

640 x 480: 25 x 25µm / 70%

Spectral Range

8 - 14µm

Dynamic Range

>1000:1 typical

Operability

> 99.9%

FPA Operating Temperature

30°C

NEΔT (camera level)

< 60 mK (w/f1.0 optic)

Video Format Options

NTSC or PAL (model-dependent)

FPA Rate

60 fields/sec NTSC

50 fields/sec PAL

LENS

Options (all f1.0)

13mm, 25mm, 50mm, 75mm, 100mm,

150mm

Type

Hard Carbon-coated Germanium

Focus

Motorized, Remote Manual Control

THERMAL CONTROL FUNCTIONS

Focus

Manual Control of Near / Far

One-Point Refresh Calibration Modes

Auto on startup

Auto w/ 2°C internal temp change

Auto timer – Adjustable from 60-240 minutes

Manual (User selectable one-time refresh)

Image Refresh Period

<2 second image freeze

Color Palette

Five (5) palette selections: (Mono, Low Boost,

Red Hot, Sepia, Fusion)

Digital Zoom

320x240 Detector; Off/ 2x

640x480 Detector; Off/ 2x / 4x

Image Freeze

On/Off

Image Polarity

Normal/Inverted

Color Bar

On/Off

ELECTRICAL

Power Input

12 Vdc ±10%

Power Consumption

5 watts @ steady state

COMMUNICATIONS

Data Format

RS-422 (4-wire) Half Duplex, 9600 baud

Protocol

Cohu 5930 Series

MECHANICAL

Construction / Finish

Powder Coated Aluminum. External parts corrosion protected with stainless steel fasteners. Internal screws/ fasteners nylon or loctite thread-locking

Dimensions [L x H x W] (mm)

13 /25 /50 mm lens versions

13.4" x 4.9" x 5.2" (340 x 124.5 x 132.1)

75 /100 mm lens versions

13.4" x 6.1" x 5.2" (340 x 154.9 x 132.1)

150 mm lens versions

16.0" x 7.3" x 7.5" (406.4 x 185.4 x 190.5)

Weight

7.7 lbs (3.5 kg) maximum

Field Connector

PT06E-14-18P (SR) 18-Pin MS environmental connector on rear of enclosure. Mating connector included

ENVIRONMENTAL

Protection Ratings

Thermal Camera

IP-67/NEMA-4X/ASTM-B117

Operating Temperature

-34°C to 50°C (-29.2°F to 122°F)

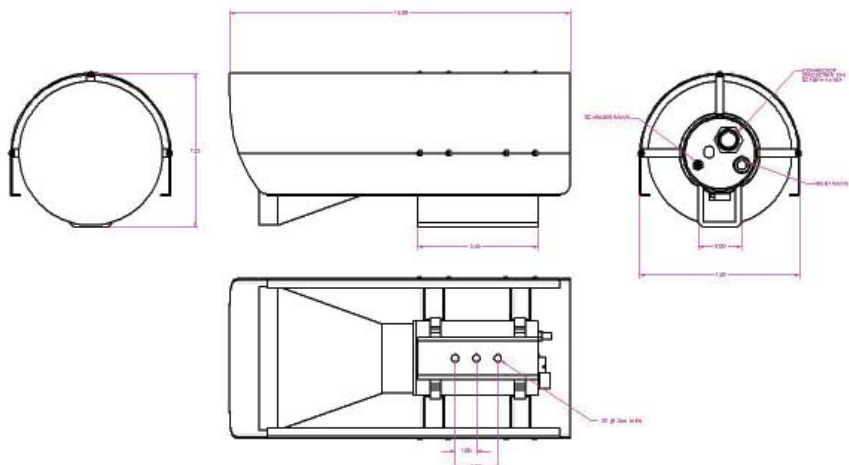
Humidity

Up to 100% relative humidity

Wind

Survivability: Up to 110 mph (mounting bracket not included)

DIMENSIONAL OUTLINE EXAMPLE (5932-X900/NONE)



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ORDERING INFORMATION

593X-XX00/XXXX

Power

2 - 12Vdc

Detector

3 - 320 x 240 35µm NTSC

4 - 384 x 288 35µm PAL

6 - 640 x 480 25µm NTSC

7 - 640 x 480 25µm PAL

Lens

3 - 13mm F1.0, Hard Carbon Coated

5 - 25mm F1.0, Hard Carbon Coated

6 - 50mm F1.0, Hard Carbon Coated

7 - 75mm F1.0, Hard Carbon Coated

8 - 100mm F1.0, Hard Carbon Coated

9 - 150mm F1.0, Hard Carbon Coated

Unassigned

00 - None

Mount

NONE - No mounting bracket

PEDD - Pedestal mounting
bracket

CEIL - Ceiling mount bracket

POLE - Pole mount bracket

MAST - Mast arm bracket

HDWM - Heavy-duty wall
bracket

Cohu reserves the right to change specifications without notice.
Trademark names are used for reference only.

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Cohu, Inc. / Electronics Division