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Find the *Cohu Incorporated 4992-2030* at our website: *Click HERE*

HIGH PERFORMANCE REMOTE-HEAD MONOCHROME CCD CAMERA

4990 SERIES

High Sensitivity On-Chip-Microlens Imager

Cohu's 4990 Series High Performance Monochrome Remote-Head CCD cameras are the perfect solution for video applications requiring high performance in a compact package. The lightweight remote head is easily incorporated into microscopes, medical instruments, and machine vision systems, and is ideal for specialized security/surveillance applications.

Available in RS-170 and CCIR models, these high resolution cameras employ a half-inch format interline transfer imager with on-chip microlenses for unparalleled sensitivity and minimal blooming. For additional sensitivity in low-light conditions, they provide 26 dB AGC and variable field/frame integration capabilities.

For video applications prone to streaking problems, the sensor provides a 1000:1 overload capability, which allows transmission of clear video signals even when bright incidental light is present in the scene.

4990 Series cameras are backed by a two-year warranty. They're rugged, yet lightweight and compact — ideal for fast system integration. For easy access to camera controls, they have a removable trim plate on the camera control unit.

Cohu has been a leading U.S. manufacturer of closed circuit video cameras and systems for over 40 years. We welcome requests for special products and complete CCTV systems.

APPLICATIONS

- **Image Processing**
- **Machine Vision**
- **Microscopy**
- **Endoscopy**
- **Process Control**
- **Quality Control**
- **Image Analysis**
- **Security/Surveillance**



Cohu 4990 Series Monochrome High Performance Interline Transfer CCD Camera.

FEATURES AND BENEFITS

- **Compact, Lightweight Remote Head** - maximum flexibility for end users or OEMs
- **High Resolution** - for better definition, error-free results
- **On-Chip-Microlens Interline Transfer Imager** dramatically increases sensitivity and virtually eliminates streaking and blooming
- **Eight-Speed Electronic Shutter** reduces blurred images of fast-moving objects
- **High Sensitivity** permits operation over a broad range of light levels
- **Choice of Synchronization Options** for greater versatility
- **High Signal-to-Noise Ratio** for clear, noise-free video
- **Asynchronous Reset** provides random vertical reset capability for production line applications
- **Optional Electronic Iris** automatically controls exposure
- **Made In U.S.A.** - direct factory support
- **1000:1 Overload Capability** permits incidental light overloads up to ten times that of other CCD cameras
- **No Lag or Image Retention** - provides fast, clean images
- **Zero Geometric Distortion** for consistent corner-to-corner linearity
- **26 dB AGC** for increased sensitivity at low light levels
- **Optional IR Filter**
- **Field or Frame Integration** - for added sensitivity in low-light-level imaging applications
- **State-of-the-Art Design and Construction** for total, solid-state

Designed and manufactured in U.S.A.

COHU
Cohu, Inc., Electronics Division

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4990 SERIES HIGH PERFORMANCE REMOTE-HEAD CCD CAMERA

SPECIFICATIONS

ELECTRICAL

Image Area
6.4 x 4.8 mm (corresponding to 1/2" image tube)

Active Picture Elements
RS-170: 768 H x 494 V
CCIR: 752 H x 582 V

Imager Type
Interline transfer CCD with on-chip microlenses

Cell Size
RS-170: 8.4 x 9.8 microns
CCIR: 8.6 x 8.3 microns

Resolution
RS-170: 580 horizontal TVL, 350 vertical TVL
CCIR: 560 horizontal TVL 450 vertical TVL

Sensitivity (faceplate) @ 2850 K
0.65 lux at full video, AGC off
0.05 lux at 80% video, AGC on

Electronic Shutter
Eight steps from 1/50 or 1/60 to 1/10,000 second (1/50 or 1/60, 1/125, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000 second)

Integration
Integration period controllable through external input pulse
Grab pulse output
Field (1/60 or 1/50 second) or Frame (1/30 or 1/25 second) integration selected by internal jumper

Video Output
1.0 V p-p @75 ohms, unbalanced

AGC
26 dB, variable gain

Signal-to-Noise Ratio
≥56 dB at gamma 1, gain 0 dB
38 dB at gamma 1, AGC On

Auto Lens
Separate lens video signal tracks AGC peak/average adjustment to eliminate AGC/auto lens interaction
Power: +15V, 35 mA maximum

Gamma
Variable 0.45 to 1.0

Synchronization
Genlock, revert to variable phase line lock with zero crossing detector
Genlock, revert to crystal
Crystal Lock
H & V Drive
Asynchronous Reset
Internal Clock Speeds
RS-170: 28.6363 MHz
CCIR: 28.375 MHz

Power Requirements
12V ac or dc (standard)
115V ac (optional on RS-170 models, includes wall transformer and connector)
230V ac (optional on CCIR models, includes wall transformer and connector)
4.2 watts dc power consumption
LED Power Indicator, Green

MECHANICAL

Dimensions (less lens)
Camera Head: 1.50" dia. x 2.00" length (38.1 x 50.8 mm)
CCU: 1.7" (H) x 5.0" (W) x 6.9" (D) (43.2 x 127 x 175.3 mm)

Weight
Camera Head (less lens and cable): 4 ounces (113 grams)
15' Remote Cable: 17 ounces (483 grams)
CCU: 27.5 ounces (780 grams)

Lens Mount
Adjustable "C" mount

CCU Controls
Electronic Shutter
AGC peak/average
AGC On/Off
Manual Gain
Gamma
Sharpness

Connectors
Video (BNC)
Power (2 circuit screw terminal)
Lens (3 pin Mini-DIN)
External Sync (8 pin DIN)
Pin 1. External Vertical Trigger In
Pin 2. External Sync/Horizontal Trigger In
Pin 3. Grab Pulse Out (–)
Pin 4. Ground
Pin 5. Ground
Pin 6. Vertical Reset In
Pin 7. Grab Pulse Out (+)
Pin 8. Integrate Input
Camera Head (15 pin "D" subminiature)

ORDERING INFORMATION

499X – X X X XXXX

Power Options
2 12V ac or dc
3 230V ac, 50 Hz, with ac wall adapter (CCIR models)
4 24V ac, 24V-28 V dc
5 115 V ac, 60 Hz, with ac wall adapter (RS-170 models)

Sync Options
2 RS-170 Genlock/revert to crystal
3 RS-170 Genlock/revert to phase adjust line lock
4 RS-170 Async reset
5 CCIR Genlock/revert to crystal
6 CCIR Genlock/revert to phase adjust line lock
7 CCIR Async Reset
**Genlock can be composite sync or separate H&V drive.*

Optical Filters
0 None
1 IR Filter (Non-removable)

Options
00 None (Standard TV Rate)
10 Frame Integration Mode
30 Electronic Iris*
**Electronic Iris option is designed for use with manual iris lenses only. With this option, the camera operates in the field integration mode. Use of the electronic iris defeats electronic shutter positions.*

Lens Options
Manual Iris, C Mount
***AL04** 4.5mm, f/2.0, 2/3"
AL16 16mm, f/1.4, 2/3"
AL25 25mm, f/1.4, 1"
AL50 50mm, f/1.4, 1"
**Wide Angle*

Auto Iris, C Mount
ES04 4.2mm, f/1.6, 1/2"
ES05 4.8mm, f/1.8, 2/3"
ES08 8mm, f/1.4, 2/3"
ES12 12.5mm, f/1.4, 1"
ES16 16mm, f/1.4, 2/3"
ES25 25mm, f/1.4, 1"
ES50 50mm, f/1.4, 1"
ES75 75mm, f/1.8, 1"
Other lenses are available. Please consult factory.

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ENVIRONMENTAL

Ambient Temperature Limits
Operating: -20 to 60°C (-4 to 140°F)
Storage: -30 to 70°C (-22 to 157°F)

Humidity
Up to 95% relative humidity

Vibration (less lens)
Sine vibration from 5 to 2,000 Hz, 5G peak, all 3-axis, 1/2 hour per axis per MIL-E-5400T, para. 3.2.24.5.1.2, fig. 2, curve IIIa.
Random vibration from 10 to 2,000 Hz, 11G RMS all 3-axis, 1/2 hour per axis, meets MIL-E 5400T, para. 3.2.24.5.1.2, category 6.

Shock
Up to 15G in any axis under nonoperating conditions

ISO-9001 Certified
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