JC Labs, Inc.

HSC-250 x2

High speed video cameras

JC Labs' HSC-250 x2 is a low cost, high frame rate, monochrome video camera. Designed for motion analysis, the camera has no moving parts and is ruggedly built for field use. Applications include the analysis of packing machinery, vehicle dynamics, impact tests, and bio-metric uses in motion studies and sports medicine.

The CCD image pick-up on the HSC-250 x2 features 765 pixels across by 246 pixels, giving a resolution of 570 television lines horizontally in an RS-170 compatible format. The full resolution of the camera is available at any speed from 60 to 250 pictures per second.

Camera speed may be selected by either an externally supplied synchronizing signal (RS-170 format Horizontal Drive and Vertical Reset,) or by a default setting on the control panel on the camera's rear. The HSC-250 x2 has default speeds of 60 and 180, or 60 and 200* pictures per second. The x2 setting on the camera gives two sub-fields for each normal field; allowing twice as many images to be captured where the full vertical image size is not required. Externally supplied sync overrides the default setting, and may be any number of whole or half lines from 130 to 263 lines per field length. The choices of 262, 262½, or 263 lines per field assure compatibility with all other equipment. The externally supplied signal allows the synchronization of multiple cameras for simultaneous views and simplifies the use of a wide range of frame grabbers available from other vendors.

The sensitivity of the CCD imager combined with the electronic shutter eliminates the need for expensive strobe lighting in many applications. Excellent results can be obtained in ordinary light since the camera is comparable to ASA 1000 film in sensitivity. The spectral sensitivity extends from 400 nm to 1000 nm, allowing biological studies to be performed with near infra red illumination from low cost diode sources. The electronic shutter also allows the study of luminous or brightly lit objects such as arcs or flames that can not be imaged using strobe illumination. Should an application require strobes, a synchronizing signal is provided by the camera.

Two analog outputs (RS-170 format) with separate line drivers provide a flexible interface to storage and display devices. The signals can easily be sent long distances on coaxial cable, transmitted by radio, or digitized directly from the camera. Three coaxial cables and a modest power supply (approximately ½ Amp. at 12 Volts) are the only requirements for full control of camera timing in multi camera set-ups. An anti-aliasing filter is built into the camera so that any sampling rate may be used, up to the full resolution of the imager, without the need for a sampling clock.

* The default high speed of 180 or 200 fps must be specified when the camera is ordered. Other high speeds may be special ordered. Consult factory for details.

JC Labs, Inc., 1059 Wright Ave., Mountain View, CA 94043, Tel: 650-967-3431, Fax: 650-967-3439, E-mail: info@jclabs.com

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FEATURES:

High speed CCD imager.

Full frame display from 60 to 250 pps.
Half height display from 120 to 500 pps.

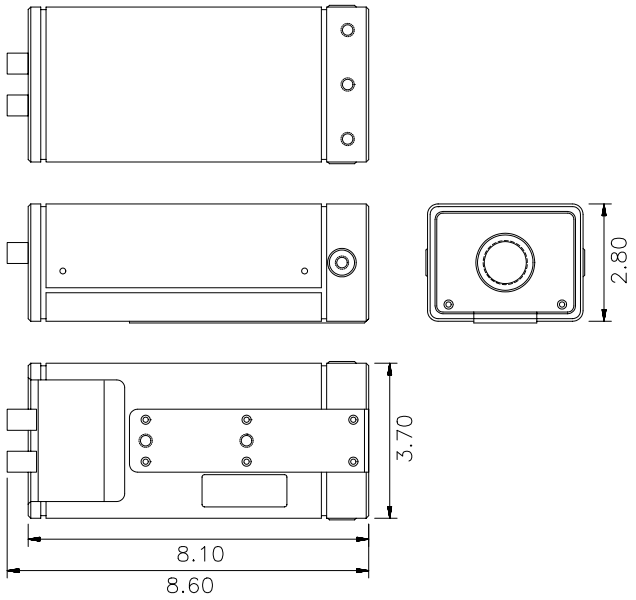
RS-170 composite video output.

High Sensitivity - 1 fc @ 200 pps.

High resolution -765 X 246 pixels.

H and V lock from 60 to 250 pps.

Sub-field imaging to 500 pps.



SPECIFICATIONS:

Imager:	½ inch interline transfer CCD.
Lens Mount:	"C" mount with adjustable back focus.
Synchronization:	Internally generated or external H and V drive.
Video System:	EIA RS-170 standard.
Horizontal Resolution:	570 TV lines minimum.
Signal to Noise:	45 dB minimum.
Electronic Shutter:	Off, 1/500, 1/1,000, 1/2,000, 1/5,000, 1/10,000 sec. (to 1/100,000 sec optional)
Power Requirement:	11 to 15 Volts DC, ½ Amp.
Operating Temperature:	-10 C to 50 C.
Humidity:	20% to 80%
Size:	2.8 inch X 3.7 inch X 8.6 inch.
Weight:	3.5 pounds.

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