



The C5948-70/-71 laser measurement CCD camera is a 2/3-inch CCD camera developed specifically for laser beam measurement.

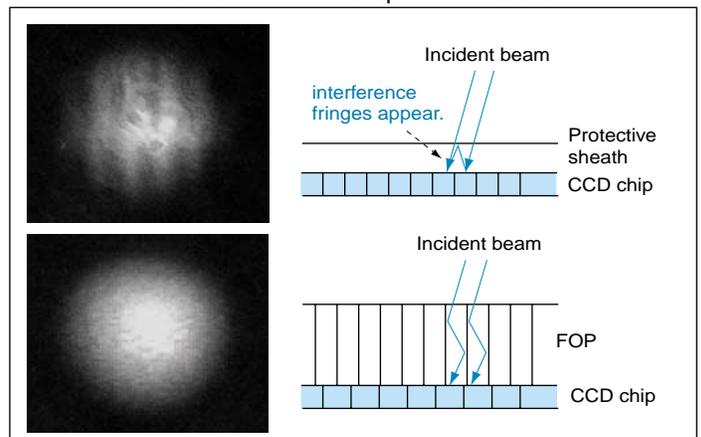
The basic performance is equivalent to that of the C3077-70/-71 visible camera, but the CCD element carries out special processing to enable measurement of the laser beam without interference fringes occurring. Using this camera enables high-precision laser measurement.

OPERATING PRINCIPLE AND FEATURES

When a laser beam is directed into an ordinary CCD camera for imaging, interference fringes appear on the image, making it impossible to monitor beam images precisely. This happens because lasers are coherent, so the incident beam and the beam reflected back from the protective sheath covering the CCD element and the glass filter are cause interference.

In order to solve this problem, the C5948-70/-71 has the protective sheath and filter removed from the CCD element, and instead, an FOP (fiber optic plate) is placed directly on the CCD element as the window material. (Patent pending: 6-05461)

The FOP is a glass panel made of hundreds of glass fibers sliced thinly, and is an optical device which allows the incident image to be conveyed to the output surface with no distortion. The incident laser beam is propagated in the various fibers and then output, but each fiber has a different propagation mode, so the coherency is lost on the FOP output surface. Consequently, no interference fringes are produced when the image is formed with the CCD. The FOP pitch is sufficiently small in relation to the CCD pixel size that there is no deterioration of the spatial resolution.

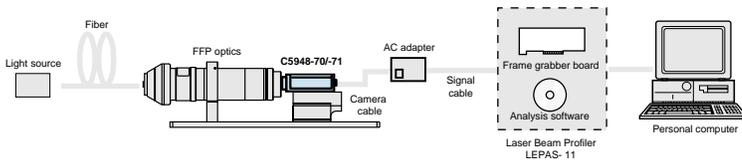


SPECIFICATIONS

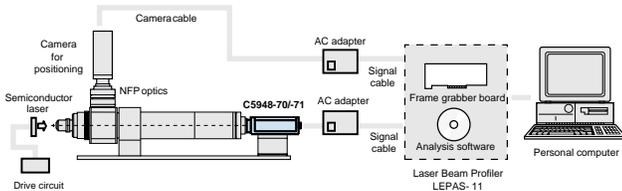
Type number	C5948-70	C5948-71
Pickup device	2/3" Interline transfer CCD	
Scan type	Interlace scan	
Wavelength range	400 nm to 1100nm	
Measurement area	approx. 8.7 mm × 6.5 mm	approx. 8.5 mm × 6.4 mm
Number of pixels (H) × (V)	768 × 494	752 × 582
Cell size (H × V)	11.6 μm × 13.5 μm	11.6 μm × 11.2 μm
Effective number of pixels	756 × 485	739 × 575
Resolution (H × V) TV lines	570 × 485	560 × 575
Lens mount (F,B)	C-mount	
Sync system	EIA	CCIR
Internal sync	Yes	
External sync	HD/VD	Yes
	SYNC	Yes
	R.R.	Yes
	Impedance	75 Ω (High)
AGC	ON / OFF / Fixed	
Gamma	1 / 0.45	
Camera output	Video (HD / VD)	
Minimum sensitivity	0.3 lux, F1.4, (AGC = ON, γ = OFF)	
Power requirements	DC 12 V (12P)	
Power consumption	2.1 W	
Typical sensitivity	400 lux, F16 (2856 K)	
S/N ratio	60 dB	58 dB
Electronic shutter	Flickerless, 1/125 to 1/10,000 sec.	
On-chip integration	Yes	

SYSTEM CONFIGURATION EXAMPLES

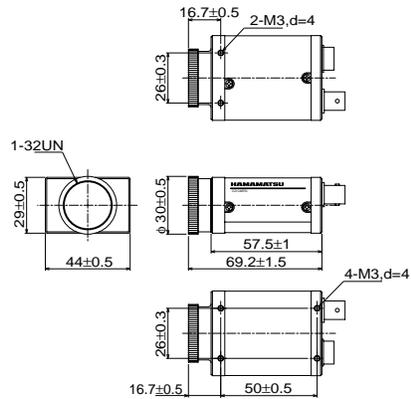
• Measurement system for NA of fibers



• Measurement system for NFP of Semiconductor Laser



DIMENSIONAL OUTLINES (UNIT: mm)



(Weight: approx. 110g)



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