

KP-M2 / KP-M3

HITACHI



The KP-M2 and KP-M3 are compact monochrome cameras developed using state-of-the-art technology, and feature a microlens CCD sensor. Identical in design and features, the KP-M2 is equipped with a 1/2 inch CCD sensor, while the KP-M3 has a 1/3 inch sensor. These cameras complement and complete the line, started by the KP-M1 with a 2/3 inch CCD Sensor. Each camera is available in a CCIR version. Side view and separated head versions are also available for each

These high-performance CCD cameras are designed to offer excellent sensitivity and superb resolution, making them ideal for use in machine vision and other industrial applications. Equipped with a large variety of functions, such as multiple step electronic shutter, field on demand, integration mode selection, external HD / VD synchronization, and non-interlace scanning, the cameras can be configured for most applications. Custom modifications, such as long term integration, are available for OEM customers.

Features

Compact, Lightweight

The KP-M2 and KP-M3 CCD cameras provide a variety of versatile functions with superb performance. With the addition of a 12 volt DC source, the cameras will output video signals.

High Resolution

Both cameras provide a horizontal resolution of 570 TV lines (CCIR = 560 TV lines), with a vertical resolution in the frame integration mode of 485 TV lines (CCIR = 575 TV lines).

Multiple-Step Electronic Shutter

A multiple step electronic shutter is provided. The eight step shutter speed can be selected from 1/100 sec to 1/10,000 sec (CCIR = 1/120 to 1/10,000 sec).

Internal/External Synchronization and Interlaced/Non-Interlaced Capabilities

The cameras synchronization and scanning modes are automatically selected dependent on the type of external sync signal supplied as a reference.

Field-on-Demand Function

A picture can be acquired and immediately displayed by the use of an external trigger pulse. The integration time of the acquired picture can be varied by the trigger or the shutter function.

Frame / Field Integration Mode

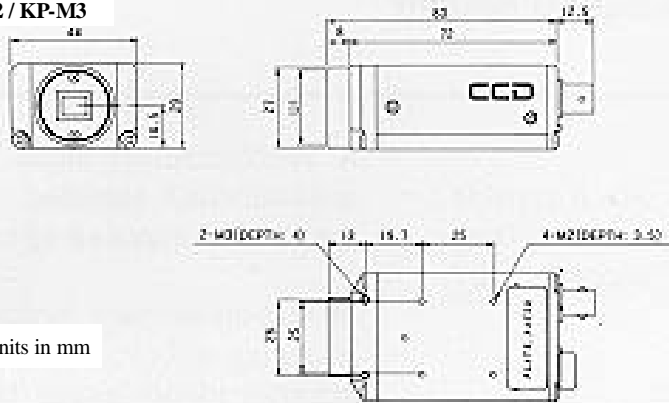
The CCD integration mode can be switched between the field and frame mode. In combination with the selected scanning system and electronic shutter speed selection, the desired video signal can be obtained.

Specifications

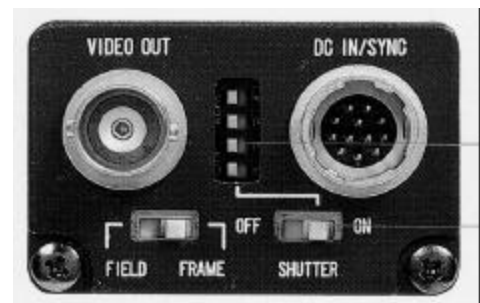
Imaging Device	Interline CCD sensor with Microlens	Horizontal Resolution	EIA: 570 TV lines CCIR: 560 TV lines
Total Number of Pixels	EIA : 811(H) x 508(V) CCIR: 795(H) x 596(V)	Vertical Resolution	EIA: 485 TV lines CCIR: 575 TV lines
Pixel Pitch	KP-M2 EIA : 8.4(H) x 9.8(V) KP-M3 EIA : 6.35(H) x 7.4(V) KP-M2 CCIR: 8.6(H) x 8.3(V) KP-M3 CCIR: 6.5(H) x 6.25(V)	Sensitivity	400 lx f4, 3200K
Number of Effective Pixels	KP-M2 EIA : 768(H) x 494(V) KP-M3 EIA : 752(H) x 582(V) KP-M2 CCIR : 752(H) x 582(V) KP-M3 CCIR : 752(H) x 585(V)	Minimum Illumination	0.5 lx, f1.4 AGC = ON, Gamma = ON without IR cut filter
Imaging Area	KP-M2 EIA : 6.45mm x 4.84mm CCIR : 6.47mm x 4.83mm KP-M3 EIA : 4.88mm x 3.09mm CCIR : 4.89mm x 3.64mm	S/N Ratio	56 db
Signal System	Conforming to EIA / CCIR signal format (normal operation)	Electronic Shutter	1/10000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/125, 1/120(CCIR), 1/120(EIA) seconds OFF State = Normal exposure Selectable external switch mode
Lens Mount	C mount	Integration Mode	Field / Frame mode, selectable by external switch
Flange Focal Distance	17.526mm (not adjustable)	Gamma Correction	Gamma = 1.0 or 0.45 (internal switch)
Scan Frequency	EIA : 15.734KHz (H) x 59.94Hz (V) CCIR: 15.625KHz (H) x 50Hz (V)	AGC	Fixed gain or AGC (internal switch)
Synchronization	Auto selection (internal/external)	Field-on-Demand	ON / OFF (internal switch)
Scan System	2 : 1 interlaced, 525 horizontal lines (625 lines for CCIR)	Restart / Reset	ON / OFF (internal jumper)
External Sync Input	HD / VD, 2 to 6V p-p, negative polarity. Input impedance = 1K ohm Frequency deviation = ±1%	Power Requirement	12V DC ± 1 v, at 180ma approx.
External Sync H Lock Range	2 : 1 interlace EIA : 521 to 2047 lines / 2Fld, 1Fld 61 to 15KHz CCIR : 621 to 2047 lines / 2Fld, 1Fld 51 to 15KHz Non-Interlaced EIA : 260 to 1023 lines / 1Fld, 1Fld 61 to 15KHz CCIR : 310 to 1023 lines / 1Fld, 1Fld 51 to 15KHz	Ambient Temperature and Humidity	Operating: -10 to +60C < 90% RH Storage : -20 to +60C < 70% RH
Video Output	1.0 Vp-p 75 ohm unbalanced Video = 0.7Vp-p Sync = 0.3Vp-p negative polarity	Vibration Resistance	9 G maximum (10 to 60Hz, amplitude: constant at 0.98mm) 7 G constant (60 to 150Hz, amplitude: variable) (10 to 150Hz, sweeping for one minute, each of X, Y, and Z directions for 30 minutes)
		Dimensions and mass	44(W) x 29(H) x 72(D)mm 120g approx.
		Standard Composition	Camera (with IR cut filter).....1 C Mount cap.....1 Operation Manual.....1
		Optional Accessories	Tripod adaptor, TA-M1 12 pin plug, HR10A-10P-12S(01) AC adaptor, AP12-C4 or 45752-C4 Camera Cables 2m C-201KS 5m C-501KS 10m C-102KS

External View

KP-M2 / KP-M3



KP-M2 / KP-M3 Rear View



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