KP-MA3

HITACHI

he KP-MA3 is a compact, high sensitivity camera designed for the image processing, instrumentation, and robotics markets. A direct replacement for the popular KP-140, the KP-MA3 retains the same package size and footprint, along with the same input / output connectors and pin assignments as the KP-140. The KP-MA3 features a 2/3 inch microlens IT CCD to provide excellent sensitivity and a high resolution of 570 TV lines. A low vertical smear of minus 80db, allows operation under the presence of strong highlights. A selectable AGC mode allows operation under varying levels of illumination. For operation in machine vision systems, gamma can be set to the off position. Field or frame integration can be selected depending on the specific application. In the frame integration mode, vertical resolution is increased by approximately 40 percent.

Features

Direct Replacement

The KP-MA3 is a high performance direct replacement for the KP-140. The camera size, and footprint, along with the connectors and their pin assignments match those of the KP-140, with the exception of the auto iris connector, which has been changed to the industry standard rectangular 4 pin.

Improved Resolution

The KP-MA3 features a horizontal resolution of 570 TV lines (CCIR = 560 TV lines) with a vertical resolution of 485 lines in the frame mode of integration (CCIR = 575 TV lines).

Improved Performance

The signal-to-noise ratio has been improved to 56db. Minimum illumination is 0.3 lux at f1.4, and vertical smear is a minus 80db, allowing operation under the presence of strong highlights.

Synchronization

The camera's synchronization and scanning modes are automatically selected depending on the input sync signal supplied as a reference. Internal or external sync, along with interlaced or non-interlaced operation is possible.

Mode Switches

Switches are provided for selection of AGC, gamma, and field or frame integration modes, enabling the camera to be used in a wide variety of applications.

Multiple Step Electronic Shutter

The eight step electronic shutter can be selected in the range of 1/100 (1/120 CCIR) to 1/10000 second to allow blur free imaging of fast moving objects.

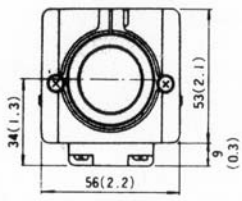
Specifications

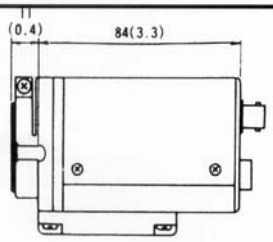
Imaging Device	Interline CCD with Microlens
Total Number of Pixels	EIA : 818(H) x 513(V) CCIR: 816(H) x 606(V)
Pixel Pitch	EIA : 11.0(H) x 13.0(V) CCIR: 11.0(H) x 11.0(V)
Effective Number of Pixels	EIA : 768(H) x 493(V) CCIR: 756(H) x 581(V)
Imaging Area	8.8 x 6.6mm (2/3-inch size)
Signal System	Conforms to EIA / CCIR at normal operation
Lens Mount	C-Mount
Flange Focal Distance	17.526mm (adjustable)
Scan Frequency	EIA : 15,734KHz (H) x 59.94Hz (V) CCIR: 16,625KHz (H) x 50Hz (V)
Synchronization	Auto Selection (internal / external)
Scan System	2 : 1 interlaced, 525 horizontal lines (625 lines for CCIR)
External Sync Input	HD / VD, 2 to 6 Vp-p, negative polarity Input Impedance = 1K ohm Frequency Deviation = ±1%
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, 1 Fld 61 to 15KHz CCIR: 310 to 1023 lines/ 1Fld, 1 Fld 51 to 15KHz
Video Output	1.0 Vp-p 75 ohm unbalanced Video = 0.7 Vp-p Sync = 0.3 Vp-p negative polarity

Horizontal Resolution	EIA: = 570 TV lines CCIR: = 560 TV lines
Vertical Resolution	EIA: = 485 lines CCIR: = 575 lines
Sensitivity	400 lx f4.0, 3200K
Minimum Illumination	0.3 lx, f1.4 (AGC: ON, Gamma: 0.45 without IR cut filter)
S/N Ratio	56db
Electronic Shutter	1/100 EIA, (1/120 CCIR), 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 seconds Selectable by external switch OFF State = Normal Exposure
Integration Mode	Field / Frame mode, switch selectable, set to frame at factory
Gamma Correction	0.45 or 1.0 switch selectable, set to 0.45 at factory
AGC	Fixed gain or AGC, switch selectable, set to fixed gain at factory
Power Requirements	12 Volts DC ±1 volt, at approx. 300ma
Ambient Temperature and Humidity	Operating: -10 to 50° C, RH less than 90% Storage: -20 to 60° C, RH less than 70%
Dimensions and Mass	56 (W) x 53 (H) x 84 (D) mm, approx. 400g
Standard Composition	Tripod Adapter Plug for auto iris Plug for external sync Plug for power supply Operation Manual
Optional Accessories	Power Supply: AP12-C1 45752-C1

Note: The products and their specifications herein described are subject to change without notice. When placing an order, please make sure the information presented in this brochure is current.

External View
KP-MA3





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