

Near-infrared Monochrome CCD Camera

**HITACHI**

# KP-M2R



The KP-M2R is a monochrome camera using a 1/2" image size CCD with near infra red sensitivity and features high resolution and performance. Various functions are provided including multiple step electronic shutter, field on demand, integration mode switching, auto sync switching and non-interlaced scanning. The KP-M2R is suitable for a wide variety of industrial vision application including infra red microscopy and is compatible with the KP-M2

## Major Features

- **Compact and Lightweight** 44(W) x 29(H) x 72(D) mm 120 grams approx
- **High Resolution** Horizontal resolution 560 TV lines Vertical resolution 575 TV lines
- **1/2" Image Size**
- **Near Infra Red Sensitive** Peak sensitivity at 620nm and to over 900nm
- **Multiple step Electronic Shutter** Provided with an 8 step electronic shutter from 1/120th to 1/10,000th second
- **Internal or External Sync** Automatic selection of internal or external sync
- **Non-interlace Capabilities** Non-interlaced operation with external non-interlaced sync input
- **Field on Demand Function** Near instant acquisition using an external trigger
- **Frame or Field Integration** Field or frame integration can be selected in combination with the shutter speeds
- **Resistant to Vibration** A die-cast aluminium base is used to ensure vibration proof performance

The KP-M2R is available in either CCIR or EIA format

The KP-M2R is compatible with the KP-M2

# KP-M2RP Specification (CCIR)

**Sensor pick up device:** 1/2" Interline transfer CCD

**Sensing scanning area:** 6.47 (H) x 4.83 (V) mm

**Total number of pixels:** 795 (H) x 596 (V)

**Number of effective pixels:** 752 (H) x 582 (V)

**Pixel pitch:** 8.6 (H) x 8.3 (V)  $\mu\text{m}$

**Scanning system:** 2:1 interlaced / 625 lines / 50 fields per second / 25 frames per second or non-interlaced (only in external sync mode or with modification)

**Scanning frequency:** 15.625 kHz (H), 50Hz (V)

**Signal standard:** CCIR Monochrome

**Sync system:** Internal or external (automatic switching)

**External sync input:** HV/VD 2 to 6 volts p-p input impedance 1kohm, frequency deviation  $\pm 1\%$ , negative polarity

**Resolution:** 560 (H), 575 (V) TV lines

**Standard sensitivity:** 30 lux @ f4 (3200K)

**Minimum sensitivity:** 0.3 lux at f1.4 (with AGC on, gamma 0.45)

**Electronic Shutter:** off, 1/120th, 1/125th, 1/250th, 1/500th, 1/1,000th, 1/2,000th, 1/4,000th, 1/10,000th (selectable by external switch)

**Gamma correction:** 0.45 or 1.0 (selectable by internal switch)

**Signal to noise ratio:** 56dB

**AGC:** Normal or AGC (selectable by internal switch)

**Video output:** VS 1.0 volt p-p 75 ohms unbalanced. (0.7 volts p-p video and 0.3 volts p-p sync negative polarity)

**Integration mode:** Field or frame integration (selectable by external switch)

**Field on demand function:** Switchable on/off by internal switch

**Restart reset operation:** On/Off selectable by component change

**Lens mount:** C

**Flange focal distance:** 17.526 mm

**Ambient temperature and humidity:**

**Operating:** -10° C to +50°C, RH 90% or less

**Storage:** -20° C to +60°C, RH 70% or less

**Resistance to vibration:** 9G max (10 to 60Hz amplitude constant at 0.98mm)

7G constant (60 to 200Hz amplitude variable), 10 to 200Hz (sweeping for one minute, each of X,Y and Z directions for 30 minutes)

**Dimensions:** 44 (W) x 29 (H) x 72 (D) mm

**Weight:** 120 grams (approx)

**Supply voltage:** 12 volts dc  $\pm 1$  volt

**Current consumption:** 180 mA (approx)

**Composition:** Camera head (with dummy glass AR coated), operation manual

**Design and specification are subject to change without notice**

# KP-M2RU Specification (EIA)

**Sensor pick up device:** 1/2" Interline transfer CCD

**Sensing scanning area:** 6.45 (H) x 4.84 (V) mm

**Total number of pixels:** 811 (H) x 508 (V)

**Number of effective pixels:** 768 (H) x 494 (V)

**Pixel pitch:** 8.4 (H) x 9.8 (V)  $\mu\text{m}$

**Scanning system:** 2:1 interlaced / 525 lines / 60 fields per second / 30 frames per second or non-interlaced (only in external sync mode or with modification)

**Scanning frequency:** 15.734 kHz (H), 59.94Hz (V)

**Signal standard:** EIA Monochrome

**Sync system:** Internal or external (automatic switching)

**External sync input:** HV/VD 2 to 6 volts p-p input impedance 1kohm, frequency deviation  $\pm 1\%$ , negative polarity

**Resolution:** 570 (H), 575 (V) TV lines

**Standard sensitivity:** 30 lux @ f4 (3200K)

**Minimum sensitivity:** 0.3 lux at f1.4 (with AGC on, gamma 0.45)

**Electronic Shutter:** off, 1/100th, 1/125th, 1/250th, 1/500th, 1/1,000th, 1/2,000th, 1/4,000th, 1/10,000th (selectable by external switch)

**Gamma correction:** 0.45 or 1.0 (selectable by internal switch)

**Signal to noise ratio:** 56dB

**AGC:** Normal or AGC (selectable by internal switch)

**Video output:** VS 1.0 volt p-p 75 ohms unbalanced. (0.7 volts p-p video and 0.3 volts p-p sync negative polarity)

**Integration mode:** Field or frame integration (selectable by external switch)

**Field on demand function:** Switchable on/off by internal switch

**Restart reset operation:** On/Off selectable by component change

**Lens mount:** C

**Flange focal distance:** 17.526 mm

**Ambient temperature and humidity:**

**Operating:** -10° C to +50°C, RH 90% or less

**Storage:** -20° C to +60°C, RH 70% or less

**Resistance to vibration:** 9G max (10 to 60Hz amplitude constant at 0.98mm)

7G constant (60 to 200Hz amplitude variable), 10 to 200Hz (sweeping for one minute, each of X,Y and Z directions for 30 minutes)

**Dimensions:** 44 (W) x 29 (H) x 72 (D) mm

**Weight:** 120 grams (approx)

**Supply voltage:** 12 volts dc  $\pm 1$  volt

**Current consumption:** 180 mA (approx)

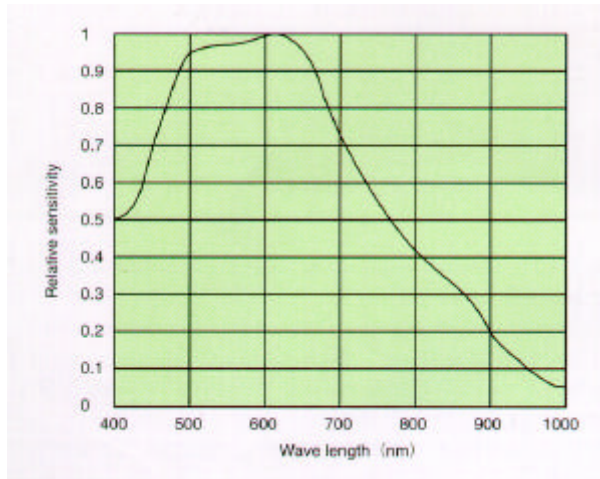
**Composition:** Camera head (with dummy glass AR coated), operation manual

**Design and specification are subject to change without notice**

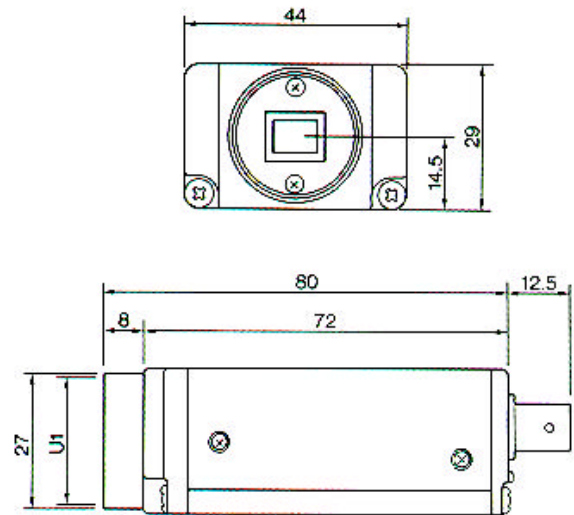
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### Spectral Sensitivity Response



### Dimensions



## Optional Accessories

**Tripod Adaptor:** TA-M1

**12 pin dc/sync plug:** HR10A-10A-12S

**AC Mains Adaptor:** PSU-13-/12P

**Junction Unit:** JU-M1A

**Camera Cables:**

2 metre - C201KS

5 metre - C501KS

10 metre - C102KS

