CV-M40

Double Speed Progressive Scan Monochrome Camera

- *1/2" monochrome CCD camera with 659 (h) x 494 (v) square pixels*
- *60 full progressive frames every second*
- *120 frames readout every second with vertical binning*
- *Partial scan for frame rate up to 234 frames per second*
- *Partial scan from 30 to 240 lines controlled by RS 232C*
- *Internal, external HD/VD or random synchronization*
- *Random trigger with edge pre-select and pulse width control shutter*
- *Frame delay readout mode*
- *H reset and H non-reset trigger mode*
- *Shutter speed 1/250 to 1/12,000 second*
- *24.5 MHz pixel frequency and 31.468 kHz line frequency*
- *Setup by RS 232C or switches*
- *Windows 95/98/NT setup software*

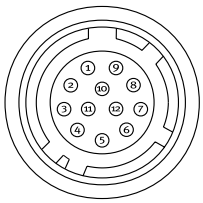
The leading manufacturer of high performance camera solutions

Specifications for CV-M40

Specifications	CV-M40
Scanning system	Progressive 525 lines, 60 frames/sec.
Frame rate: Normal Vertical binning Partial 1/2 Partial 1/4 Partial 1/8 Partial 1/16	 60 Hz, 648 (h) x 492 (v) pixels 120 Hz, 648 (h) x 242 (v) pixels 106 Hz, 648 (h) x 240 (v) pixels 157 Hz, 648 (h) x 120 (v) pixels 201 Hz, 648 (h) x 60 (v) pixels 234 Hz, 648 (h) x 30 (v) pixels
Line frequency	31.468 kHz
Pixel frequency	24.54 MHz
CCD sensor	Monochrome 1/2" IT progressive scan CCD
Sensing area	6.4 (h) x 4.8 (v) mm
Picture elements	659 (h) x 494 (v)
Effective pixels	648 (h) x 486 (v)
Cell size	9.9 x 9.9 µm
Resolution (horizontal)	480 TV lines
Resolution (vertical)	486 TV lines
Sensitivity on sensor	0.23 Lux, Max gain, 50% video
S/N ratio	>48 dB (AGC off, Gamma 1)
Gamma	0.45 or 1.0
Gain	Auto or manual (0 to +12 dB)
Video output	Composite VS signal 1.0 Vpp, 75 Ohm
Readout system: Normal Vertical binning	 1 progr. frame 1/60 sec. 525 lines 1 progr. frame 1/120 sec. 262 lines
Partial scan With RS 232C	Full, 1/2, 1/4, 1/8, 1/16 From 30 to 240 lines
Synchronization	Int. X-tal. or Ext HD/VD or random trigger
HD/VD sync. input/output	4V, 75 Ohm or TTL
Trigger/readout modes	Normal, Edge pre-select, Pulse width control and Frame delay readout mode
Trigger input. H non-reset	>2 H to <1300 H, 4V, 75 Ohm or TTL (With ext. HD input)
Trigger input. H reset	>2 µsec. to <1300 H, 4V, 75 Ohm or TTL (No ext. HD input)
Shutter	Off, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/12,000 sec.
Pulse width control	2 H to 525 H (H = 31.77 µsec.)
Frame delay readout	>Shutter time (3H to 1300 H)
WEN output	4 V from 75 Ohm source
Pixel clock output	4 V from 75 Ohm source
Serial control	RS 232C
Controls and functions: Gamma Gain Scanning format Readout mode Trigger/Readout modes Shutter Manual gain Gain Setup White clip File Memory Memory	 0.45 – 1.0 Fixed, Manual, Auto Full, 1/2, 1/4, 1/8, 1/16 Normal, Vertical binning Normal, Edge pre-select, Pulse width control and Frame delay readout Off to 1/12,000 sec. in 8 steps Potentiometer on rear plate Relative 0 – 255 Relative 0 – 255 Relative 0 – 255 Load to and from file Restore and store user setup Restore factory setup
Operating temperature	-5°C to +45°C
Humidity	20 – 80% non-condensing
Power	12V DC ±10%. 0.5 Amp.
Lens mount	C-mount
Dimensions	40 x 50 x 80 mm (HxWxD)
Weight	245 g

Connection Description

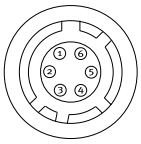
DC-IN/SYNC.



Hirose HR 10A-10R-12P. Male

Pin	1	Ground
	2	+12V DC
	3	Ground
	4	Video output
	5	Ground
	6	HD in/output
	7	VD in/output/Trigger input/ WEN output
	8	Ground
	9	Pixel clock output **
	10	Ground
	11	+12V DC
	12	Ground

RS 232C/TRIGGER

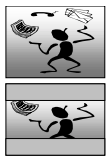


Hirose HR 10A-7R-6P. Male

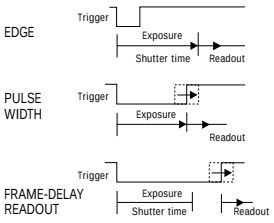
Pin	1	TXD
	2	RXD
	3	Ground
	4	Ground
	5	Trigger input
	6	WEN output

** Pixel clock output by internal jumper setting.

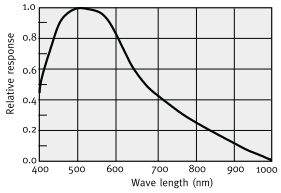
Partial Scan Example



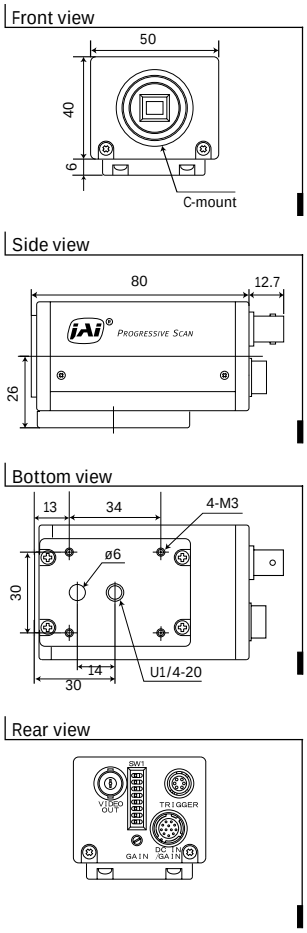
Trigger/Readout Modes



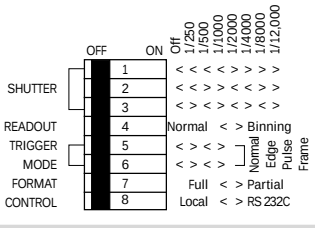
Spectral Sensitivity



Dimensions



Switch Setting



Ordering Information

CV-M40 1/2" Double Speed Progressive Scan Monochrome Camera. EIA

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