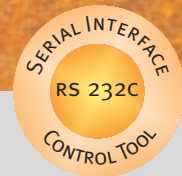




CV-M40

Double Speed Progressive Scan Monochrome Camera



- **1/2" Hyper HAD CCD with 659 (h) x 494 (v) square pixels**
- **60 full progressive frames every second**
- **120 frames readout every second with vertical binning**
- **Partial scan from frame rate up to 233 Hz**
- **Partial scan from 30 to 480 lines controlled by RS 232C**
- **Internal, external, HD, VD, or random synchronization**
- **Edge and pulse width external trigger modes**
- **Frame-delay readout**
- **Shutter speed 1/250 to 1/12,000 second**
- **24.5 MHz pixel frequency and 31.468 kHz line frequency**
- **Video output with or without synchronization**
- **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	60 Hz, 648 (h) x 492 (v) pixels
Vertical binning	120 Hz, 648 (h) x 242 (v) pixels
Partial 1/2	106 Hz, 648 (h) x 240 (v) pixels
Partial 1/4	156 Hz, 648 (h) x 120 (v) pixels
Partial 1/8	200 Hz, 648 (h) x 60 (v) pixels
Partial 1/16	233 Hz, 648 (h) x 30 (v) pixels
Line frequency	31.468 kHz
Pixel frequency	24.54 MHz
CCD sensor	Monochrome 1/2" Hyper HAD 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 μ m
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 or Video without sync. 0.7 Vpp, 75 Ohm
Readout system:	
Normal	1 progr. frame 1/60 sec. 525 lines
Vertical binning	1 progr. frame 1/120 sec. 262 lines
Partial scan	Full, 1/2, 1/4, 1/8, 1/16
With RS 232C	From 30 to 480 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, Pulse width, Frame-delay readout
Trigger input	>2 μ sec. <1 msec. 4V, 75 Ohm or TTL
Shutter	Off, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/12,000 sec.
WEN output	TTL
Pixel clock output	TTL
Serial control	RS 232C
Controls and functions:	
Gamma	0.45 - 1.0
Gain	Fixed, Manual, Auto
Scanning format	Full, 1/2, 1/4, 1/8, 1/16
Readout mode	Normal, Vertical binning
Trigger/Readout modes	Normal, Edge, Pulse width, Frame-delay readout
Shutter	Off to 1/12,000 sec. in 8 steps
Manual gain	Potentiometer on rear plate
Gain	Relative 0 - 255
Setup	Relative 0 - 255
White clip	Relative 0 - 255
File	Load to and from file
Memory	Restore and store user setup
Memory	Restore factory setup
Operating temperature	-5°C to +45°C
Humidity	20 - 80% non-condensing
Power	12V DC \pm 10%, 0.5 Amp.
Lens mount	C-mount
Dimensions	40 x 50 x 80 mm (HxWxD)
Weight	245 g

Ordering Information

CV-M40 1/2" Double Speed Progressive Scan Monochrome Camera. EIA 6s Hirose Plug*
12s Hirose Plug*
Cable for RS 232C Interface*

* Must be ordered separately

JAI A-S, Denmark
Phone +45 4457 8888
Fax +45 4491 3252
www.jai.com

JAI Corporation, Japan
Phone +81 45 933 5400
Fax +81 45 931 6142
www.jai-corp.co.jp

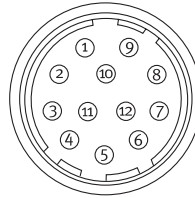
JAI UK Ltd., England
Phone +44 1442 879 669
Fax +44 1442 879 281
www.jai.com

JAI America Inc., USA
Phone +1 949 472-5900
Fax +1 949 472-5908
www.jai.com

JAI OY, Finland
Phone +358 9 8256220
Fax +358 9 870 3345

Connection Description

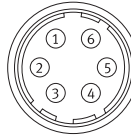
DC-IN/SYNC.



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

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

RS 232C/TRIGGER

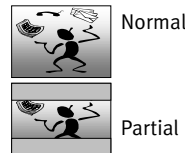


Hirose HR 10A-7P-6S. Male

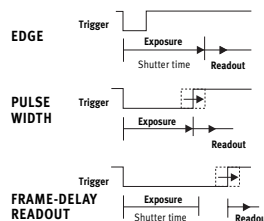
- Pin 1 TXD
- 2 RXD
- 3 Ground
- 4 Ground
- 5 Trigger input
- 6 WEN output

** Pixel clock output by internal jumper setting.

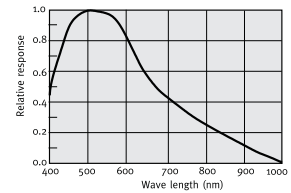
Partial Scan Example



Trigger/Readout Modes

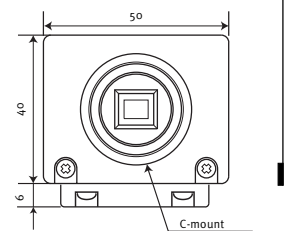


Spectral Sensitivity

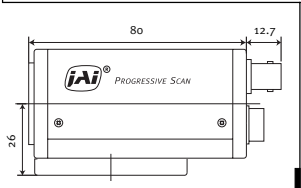


Dimensions

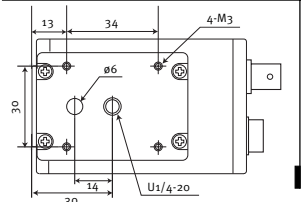
Front view



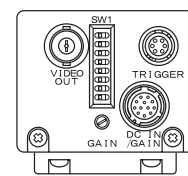
Side view



Bottom view



Rear view



Switch Setting

SWITCH	SETTING	FUNCTION
SHUTTER	1	OFF
	2	1/250
	3	1/500
READOUT	4	Normal
	5	Binning
TRIGGER	6	norm
MODE	7	Full
FORMAT	7	Partial
CONTROL	8	Local
		RS 232C

