

❖ LQ-200 CL

4 CCD RGB/NIR Line Scan Camera



- 4 CCD line scan camera with Camera Link output
- Dichroic RGB/NIR beam splitter prism with 4 sensors
- 4 sensors with 2048 pixels, 14 μm x 14 μm pixel size
- 28.67 mm effective image length
- Scan rate up to 19048 lines per second at 40 MHz pixel clock
- 4 x 8 bits or 4 x 10 bits output through Camera Link interface
- Three shutter operating modes including pulse width control mode
- Very low-noise operation ($S/N > 58$ dB) providing superior image quality
- One-push automatic white balance
- Flat-field correction and color shading compensation
- Binning functions for increased sensor sensitivity
- Gamma correction using LUT table
- Set-up and installation aid with built-in test pattern generator
- Available with M52 mount or Nikon F-mount
- Short ASCII set-up commands via RS 232C or Camera Link
- Setup by Windows XP software

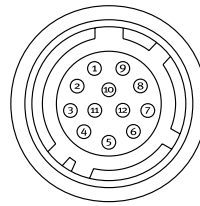


Specifications for LQ-200 CL

Specifications	LQ-200 CL
Scanning system	Line sensor with internal clock
Pixel clock	40.00 MHz
Scan rate	Max. 19048 lines/second (internal trigger) (2100 pixels per line)
Sensor	4 line sensors mounted on RGB/NIR beam splitter prism
Sensor scanning width	28.67 mm
Cell size	14 (h) x 14 (v) μm
Active pixels	4 x 2048 (h) 4 x 1024 (h) with 2:1 binning
Sensitivity (sensor)	27 nJ/cm ²
Sensitivity (standard)	RGB: 2800 Lux (7800k white LED light) (Gain 0 dB, 600 μs exp., 100% video on f2) NIR: 20 $\mu\text{W}/\text{cm}^2$ @ 800 nm
S/N ratio	58 dB on green with gain = -0 dB
Video output	4 x 8 bits or 4 x 10 bits in CL medium configuration
Gain Master mode:	G -3 dB to +12 dB R/B/NIR -6 dB to +6 dB
Individual mode:	R/G/B/NIR -9 dB to +18 dB
White balance	Manual, fixed or one-push Adjustable range 4000 K to 9000 K Fixed: 4000 K, 4600 K or 5600 K
Shading correction	Flat field: R/G/B/NIR individual Color: R/B/NIR match with G
Flat-field correction	Pixel uniformity (PRNU) and Dark signal (DSNU) correction on each channel
Synchronization	Internal X-tal or external trigger
Trigger modes	No-shutter, shutter-select and pulse width control
Line rate adjustment	Internal trigger 52.5 μs (1L) to 53.683 ms (1024L)
Programmable exposure	50 nsec. to 51.23 msec. in 25 ns increments
Functions controlled by RS 232C or CL	Trigger modes, line rate, exposure time, gain/black level, shading correction, flat-field correction, white balance, diagnostics
Diagnostics	Test pattern generator. (Color bar, gray pattern and white) LED for power
Lens mount	M52-mount (Standard) F-mount (Optional)
Sensor alignment	Better than ± 0.1 pixel
Operating temperature	-5°C to +45°C
Humidity	20 – 80% non-condensing
Storage temp./humidity	-25°C to +60°C, 20 – 80% non-condensing
Vibration	3G (20Hz to 200Hz, XYZ direction)
Shock	50G
Regulations	CE (EN61000-2 and EN61000-3) IEC61000-4-2 Conforming level 4 FCC Part15 Class B RoHS
Power	12V DC to 24V DC \pm 10% 12W at +12V (saturated)
Dimensions (W x H x D)	90 mm x 90 mm x 120 mm
Weight	1050 g

Connection Pin-out

DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin

- 1 Ground
- 2 +12V DC
- 3 Ground
- 4 Reserved
- 5 Ground
- 6 RXD RS 232C*
- 7 TXD RS 232C*
- 8 Ground
- 9 XEEN output
- 10 Trigger input (TTL)*
- 11 +12V DC
- 12 Ground

Camera Link Interface



Pin	Signal	Function	
1	14	GND	
2	15	X ₀ -/X ₀ +	CL Data
3	16	X ₁ -/X ₁ +	CL Data
4	17	X ₂ -/X ₂ +	CL Data
5	18	Xclk-/Xclk+	CL Clk
6	19	X ₃ -/X ₃ +	CL Data
7	20	SerTC+/SerTC-	Serial in *
8	21	SerTFG-/SerTFG+	Serial out *
9	22	CC1-/CC1+	Trigger *
10	23	CC2-/CC2+	Reserved
11	24	CC3-/CC3+	Not used
12	25	CC4-/CC4+	Not used
13	26	GND	

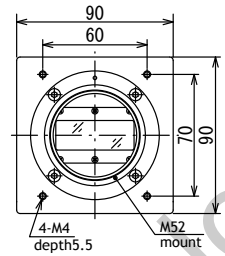
*) In Camera Link or 12 pin Hirose

Note:

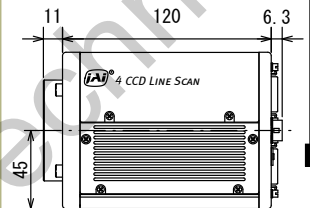
Camera Link base configuration shown.
For medium configuration refer to Camera Link specifications or operation manual.

Dimensions

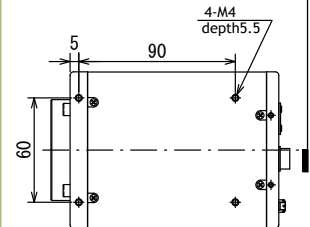
Front view



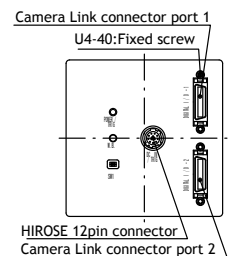
Side view



Bottom view



Rear view



JAI 4CCD/prism Technology

The LQ-200CL is a 4 CCD line scan camera capable of simultaneous imaging of the Red, Blue, Green and NIR wavelengths through a single optical axis. The incoming light is split into 4 separate sensors using JAI's 4 CCD/prism-based technology with dichroic filters.

Ordering Information

- LQ-200 CL 4 CCD RGB/NIR Line Scan Camera. M52-mount
- LQ-200 CL 4 CCD RGB/NIR Line Scan Camera. F-mount

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