

## ❖ **LT-200 CL** 3 CMOS RGB Line Scan Camera



- 3 CMOS line scan camera with Camera Link output
- Dichroic RGB beam splitter prism with 3 sensors
- 3 sensors with 2048 pixels, 14.0  $\mu\text{m}$  x 14.0  $\mu\text{m}$
- Low-noise operation (S/N: 57 dB) providing superior image quality
- 28.672 mm sensor scan width
- 3 x 8 bits or 3 x 10 bits output through Camera Link interface
- Line rate up to 30383 lines per second at 80 MHz pixel clock
- One-push auto white balance
- Flat field correction and color shading correction
- Knee and binning functions for extended dynamic range and sensitivity
- Sub-sampling and windowing readout
- Set-up and installation aid with built-in test generator
- Available with M52 mount (standard) or Nikon F-mount
- Short ASCII commands for set-up via RS 232C or Camera Link
- Setup by Windows XP/Vista/Windows 7 software



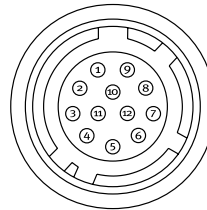
# Specifications for LT-200 CL

Specifications		LT-200 CL
Scanning system		Line sensor with internal clock
Pixel clock		80.00 MHz
Line rate	Standard Programmable	32.9µs (Full resolution/binning/internal trigger) 32.9µs to 16.844ms, 12.5ns increments
Sensor		3 CMOS line sensors mounted on RGB beam splitter prism
Sensor scanning width		28.672 mm
Cell size		14.0 (h) x 14.0 (v) µm
Active pixels		3 x 2048 (h) 3 x 1024 (h) with 2:1 binning
Sensitivity (sensor)		Radiometric: 27nJ/cm <sup>2</sup>
Sensitivity (standard)		2800 Lux (7800K, gain = low, shutter = OFF, G = 0 dB, F2.8, 100% video)
S/N ratio		57 dB on green with gain = 0 dB
Video output		24 bit (3 x 8) in CL base configuration 30 bit (3 x 10) in CL medium configuration
Gain	Ref. set Master tracking Individual mode	Analog gain= Low (0dB) or High (+6dB) Master: 0 dB to +8 dB R, B: -2 dB to +6 dB R/G/B: -2 dB to +14 dB
White balance		Manual, fixed or one-push Adjustable range 5000 K to 9000 K Fixed: 4000 K, 4600 K or 5600 K
Knee correction		Individual RGB knee point and slope
Shading correction		Individual RGB flat or RB to G
Flat-field correction		Two point pixel-to-pixel correction
Synchronization		Internal X-tal or external trigger
Trigger modes		No-shutter, shutter-select and pulse width control
Programmable exposure		25.8µs to 13.209 msec. in 12.5 ns increments
Functions controlled by RS 232C or CL		Trigger modes, scan rate, exposure time, gain/black level, shading correction, flat-field correction, white balance, knee-function, diagnostics
Diagnostics		Test pattern generator (Color bar, gray pattern and white). LED for power
Lens mount		M-52 mount. (Standard) Nikon F-mount. (Factory option)
Sensor alignment		Better than ±0.1 mm
Operating temperature		-5°C to +45°C/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		Emission: CE CISPR Pub. 22 (EN55022) Immunity: CISPR Pub. 24 IEC61000-4-2 Conforming level 4 FCC Part15 Class B RoHS
Power		12V DC -10% to 24V DC +10% 450 mA (Typical) – 480 mA (Max.)
Dimensions		90 mm (H) x 90 mm (W) x 90 mm (D) (without connector and lens mount protrusion)
Weight		830 g

Ordering Information	
LT-200 CL-M52	3 CMOS RGB Line Scan Camera. M52-mount (Standard)
LT-200 CL -F	3 CMOS RGB Line Scan Camera. F-mount (Optional)

## Connection Pin-out

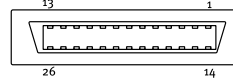
### DC In / Trigger



HIROSE HR10A-10R-12PB-71

- Pin 1 Ground  
 Pin 2 +12V to +24V DC  
 Pin 3 Ground  
 Pin 4 Reserved  
 Pin 5 Ground  
 Pin 6 RXD RS 232C\*  
 Pin 7 TXD RS 232C\*  
 Pin 8 Ground  
 Pin 9 XEEN output  
 Pin 10 Trigger input (TTL)\*  
 Pin 11 —  
 Pin 12 Ground

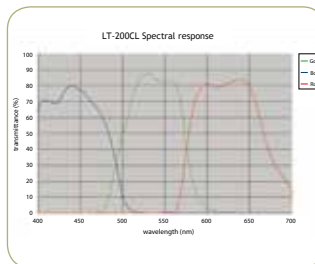
### Camera Link Interface



- | Pin | Signal | Function                     |
|-----|--------|------------------------------|
| 1   | 14     | GND                          |
| 2   | 15     | X0-/X0+                      |
| 3   | 16     | X1-/X1+                      |
| 4   | 17     | X2-/X2+                      |
| 5   | 18     | Xclk-/Xclk+                  |
| 6   | 19     | X3-/X3+                      |
| 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                          |

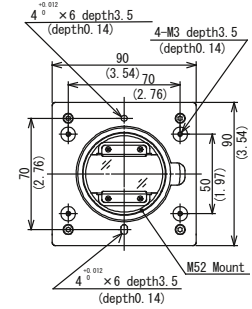
\* In Camera Link or 12 pin Hirose  
**Note:**  
 Camera Link base configuration shown.  
 For medium configuration refer to Camera Link specifications or operation manual.

## Spectral Response

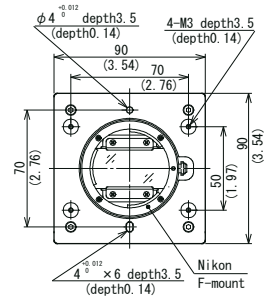


## Dimensions

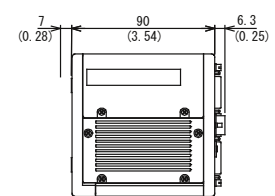
### Front view (M52 mount)



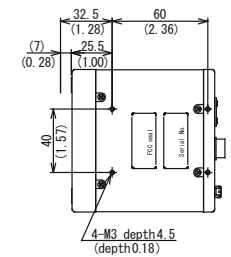
### Front view (Nikon F-mount)



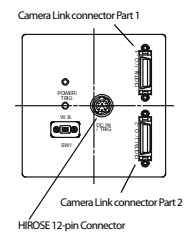
### Side view



### Bottom view



### Rear view



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