

**Digital Monochrom (b/w)
High Speed Camera**

System: **CameraLink® Interface**

Baumer HXC13

**11008792 (C-Mount)
11008791 (F-Mount)
Art. No: 11053411 (M42-Mount)**

- Base, medium or full CameraLink® interface
- 1280 x 1024 pixel
- Up to 500 full frames per second
- Up to 120.000 frames per second at reduced resolution
- Very high photo sensitivity
- Up to three regions of interest
- X- and Y-Mirroring of image data
- C-, F- or M42-Mount interface
- Compact and lightweight aluminum housing



1. Overview

Model Name	HXC13					
Sensor	1.4" high speed CMOS image sensor (LUPA-1300-2)					
Shutter	electronic "Freeze Frame" shutter					
Number of pixel	1280 x 1024					
Scan area	17.92 mm x 14.34 mm					
Pixel size	14 µm x 14 µm					
Photo Sensitivity	2500 ASA					
Color filter	-					
Operation modes						
Trigger mode	yes, overlapped operation					
Free running mode	yes, overlapped operation					
Signal processing	real-time software programmable					
Pixel clock	80 MHz					
Exposure control (t_{exp})	total: 2 µsec .. 1 sec, 1024 steps					
Frame rate	500 frames per second at full frame, up to 120.000 frames per second at reduced resolution (20 x 1 pixel)					
Image acquisition						
Profile number	Format (pixel)	Video data width (MByte/s)	Mode	CameraLink® configuration	Pixel clock MHz	Frames per sec. *)
0	640 x 480	148	2 x 10	Base	80	405
1	1280 x 1024	172	2 x 10	Base	80	110
2	640 x 480	119	2 x 8	Base	80	405
3	1280 x 1024	138	2 x 8	Base	80	110
4	640 x 480	297	4 x 10	Medium	80	811
5	1280 x 1024	353	4 x 10	Medium	80	226
6	640 x 480	468	8 x 8	Full	80	1599
7	1280 x 1024	540	8 x 8	Full	80	432
User	1280 x 1024	625	10 x 8	Full	75	500
User	20 x 1	2	10 x 8	Full	75	> 120.000
Standard features						
Image size controls						
Pixel format	Mono8, Mono10					
Test image	yes					
Partial scan	yes, format freely programmable in all modes					
Analog controls						

Technical specifications subject to change

Gain	Digital 1 – 4 times, 1/1024 steps
Black Level (Offset)	yes
Acquisition and Trigger	
Trigger source	HardwareTrigger (via CameraLink®)
Counters and Timers	
Framecounter	yes, 2 ¹⁶ can be set by user
Data quality	
Dynamic range	up to 90 dB
Optical interface	
Optical filter	C-Mount, F-Mount or M42-Mount
Optical filter	no filter
Process interface functions	
Camera configuration	Serial interface via CameraLink® 9,6 – 115 k Bd, n, 8, 1
Async. Trigger	yes (via CameraLink®)
Electrical interface	
Data / control	Base CameraLink®, 2 x 8bit, 2 x 10bit Medium CameraLink®, 4 x 10bit Full CameraLink®, 8 x 8bit, 10 x 8bit (two 26-pin CameraLink® connectors)
Power	6-pin Hirose power connector VCC: 8 VDC .. 24 VDC
Power consumption	Approx. 5 Watt
Digital output	Strobe, opto decoupled UEXT = 4 VDC typical, IOU = max. 150 mA, high active
LED	Orange: Internal configuration Green: Active Red: Error Red blinking: Loading or Verifying data
Environmental	
Storage temperature	-10 °C .. +70 °C
Operating temperature	+5 °C .. +50 °C
Housing operating temperature	between +25 °C .. +50 °C, note the max. housing temperature max. +50 °C **) (measurement point, see item 3)
Humidity	10 % .. 90 % non condensing
Conformity	CE, RoHS compliant
Housing	
Dimensions	63 x 63 x 33 mm ³
Weight	247 g (C-Mount), 308 g (F-Mount), tbd g (M42-Mount)
Software	Baumer HX series configuration tool for Windows XP (32/64 bit) / Windows Vista (32/64 bit)

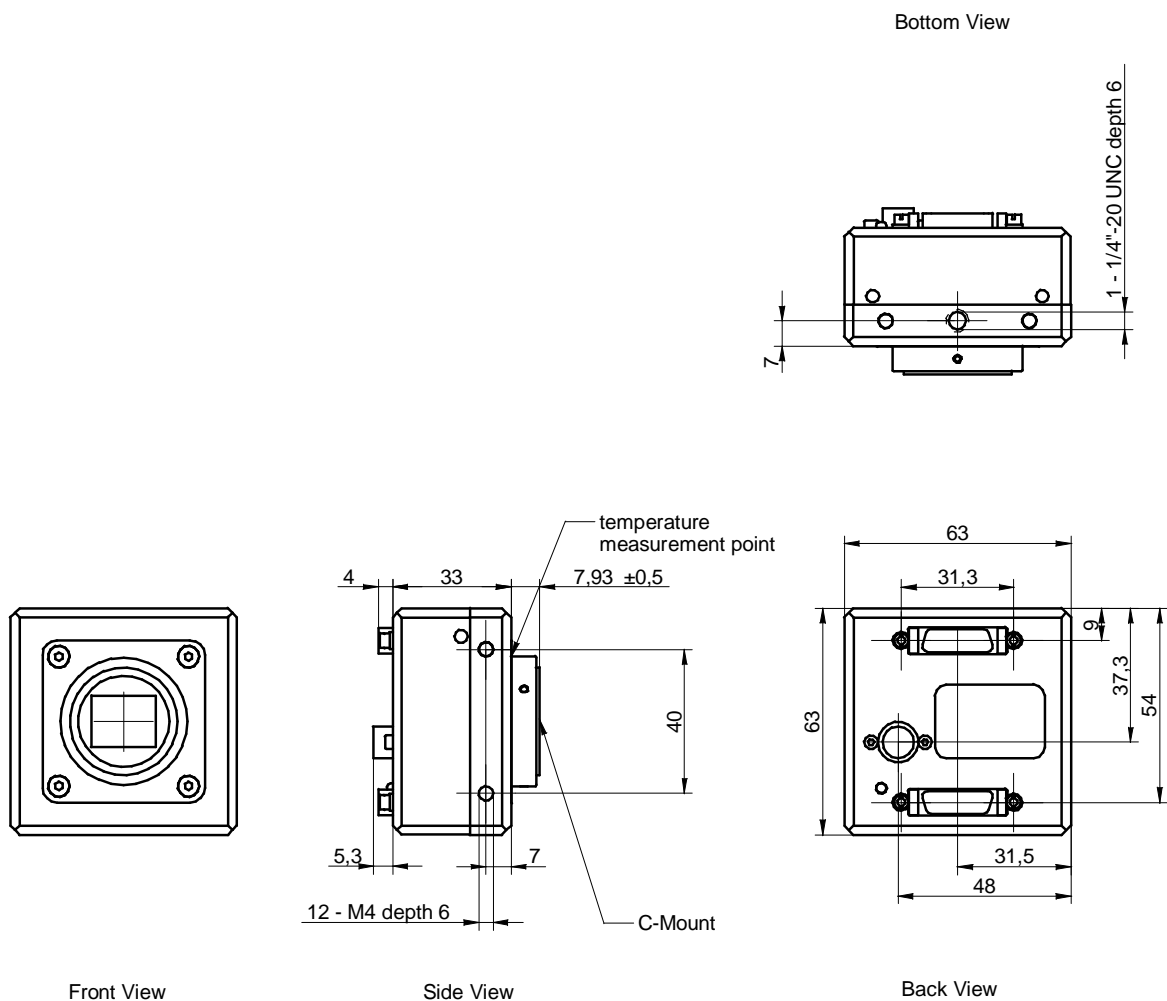
- *) maximum frame rate in free running mode, effective frame rate depending on camera image format mode settings and set exposure time ($t_{exp} < t_{readout}$)
- **) housing temperature is limited by CMOS sensor specification

2. Camera Factory Settings after Camera Start-up

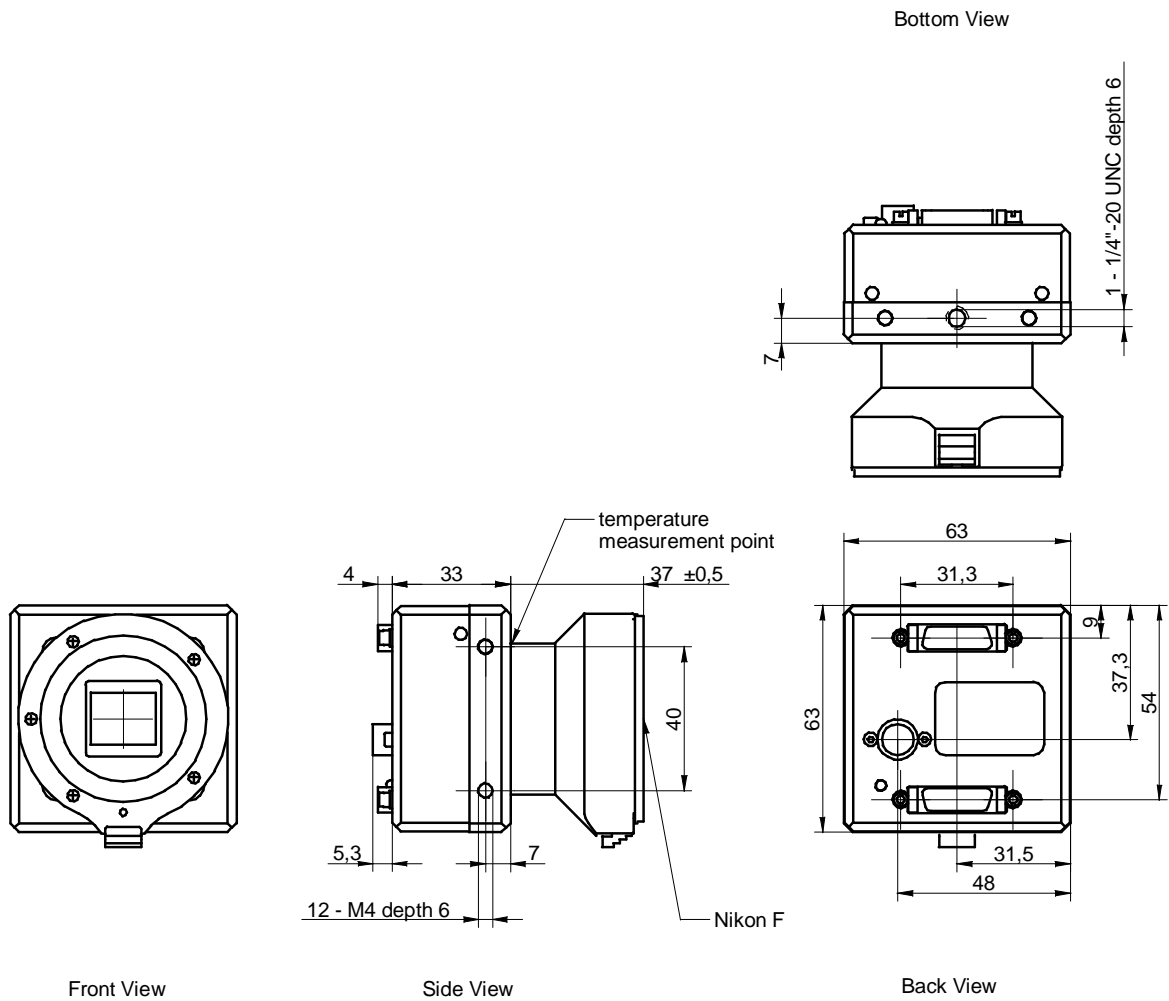
	Camera factory settings after camera start-up
Operation modes	free running mode
Signal processing	
Exposure control	9 msec
Gain control	factor 1 = 0 dB
Offset (black level)	128
Image acquisition	
Camera image format mode	Profile number 3 (1280 x 1024, 110 fps)
Partial scan function	not active
Test image selector	Off
Electrical interface	
Async. Trigger	Disabled

2.1 Housing

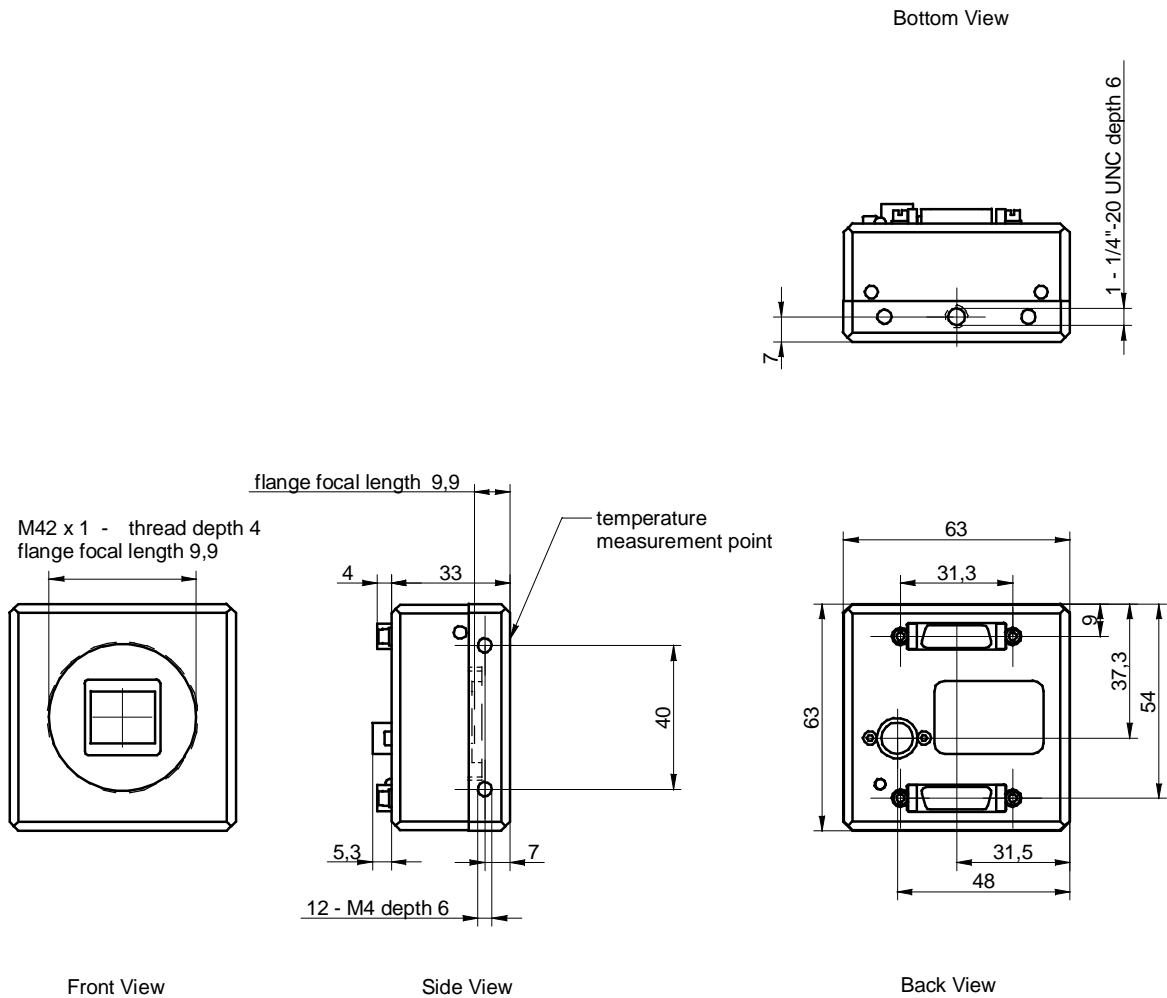
2.2 C-Mount



2.3 F-Mount

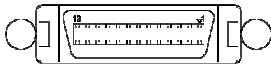
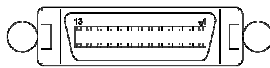


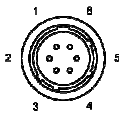
2.4 M42-Mount



3. Connectors / Electrical Interfaces

3.1 Pin assignment:

Base Configuration (with Camera Control and Serial Communications)	Type: 3M MDR-26	Medium and Full Configurations	Type: 3M MDR-26
	1: GND 2: X0- 3: X1- 4: X2- 5: XCLK- 6: X3- 7: SERTC+ 8: SERTFG- 9: CC1- 10: CC2+ 11: CC3- 12: CC4+ 13: GND 14: GND 15: X0+ 16: X1+ 17: X2+ 18: XCLK+ 19: X3+ 20: SERTC- 21: SERTFG+ 22: CC1+ 23: CC2- 24: CC3+ 25: CC4- 26: GND		1: GND 2: Y0- 3: Y1- 4: Y2- 5: YCLK- 6: Y3- 7: 100 Ω Term. 8: Z0- 9: Z1- 10: Z2- 11: ZCLK- 12: Z3- 13: GND 14: GND 15: Y0+ 16: Y1+ 17: Y2+ 18: YCLK+ 19: Y3+ 20: 100 Ω Term. 21: Z0+ 22: Z1+ 23: Z2+ 24: ZCLK+ 25: Z3+ 26: GND

Power	Type: Hirose HR10A-7P-6S / 6 pin
	1: VCC 2: VCC 3: STRB 4: DGND *) 5: GND 6: GND *) digital GND for signal STRB Power / Strobe cable wires color *): 1 = white 2 = brown 3 = green 4 = yellow 5 = grey 6 = pink

*) shielded power / strobe cable should be used and ordered separately