

InGaAs multichannel detector head



C10854

**High-speed operation: 5 MHz
(Line rate: 39000 lines/s)**

The C10854 is a multichannel detector head optimized for applications where high-speed infrared imaging is required, such as SD-OCT (spectral domain-optical coherence tomography) and sorting machines. The HAMAMATSU G10768-1024D InGaAs near-infrared linear image sensor (sold separately) can be easily installed in the C10854.

The C10854 comes with application software that runs on Windows 2000 or XP and is specifically programmed to operate the C10854 from the PC. The application software also includes a function library exclusively for C10854, allowing you to develop your own software more efficiently.

Features

- High-speed operation: 5 MHz
- Line rate: 39000 line/s
- Number of pixels: 1024 pixels (128 pixels × 8 port)
- CameraLink

Applications

- OCT (optical coherence tomography)
- Foreign object screening
- Near infrared spectroscopy

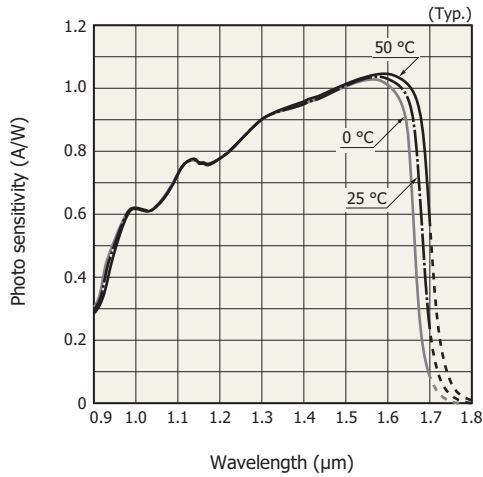
The table below shows InGaAs linear image sensor applicable for the C10854 [sold separately].

Type No.	InGaAs linear image sensor			
	Spectral response range (μm)	Number of pixels	Pixel size (μm)	Effective active area length (mm)
G10768-1024D	0.9 to 1.7	1024	25 × 100	25.6

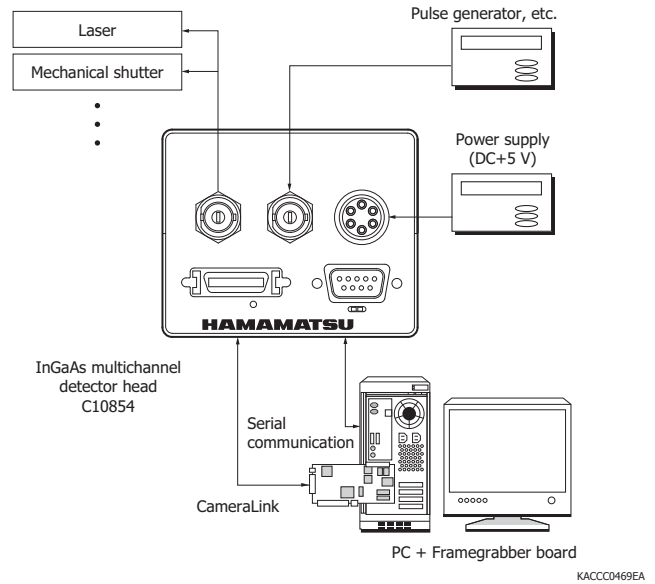
Specifications (Unless otherwise noted, Typ. Ta=25 °C)

Parameter	Condition	Specification	Unit
Clock frequency		5	MHz
Line scan rate		39000	lines/s
Line readout time		30	μs
Data transfer time		17.07	μs
Total transfer time		47.07	μs
A/D conversion resolution		16	bit
Video output		16-bit, CameraLink (Base configuration)	-
Interface		RS-232C	-
Supply voltage	±5 %, 5 W Max.	+5	Vdc
Operating temperature	No condensation	0 to +50	°C
Storage temperature		-20 to +70	°C
Dimension		80 (W) × 65 (H) × 71.5 (D)	mm
Weight		330	g

Spectral response (G10768-1024D)



Connection example

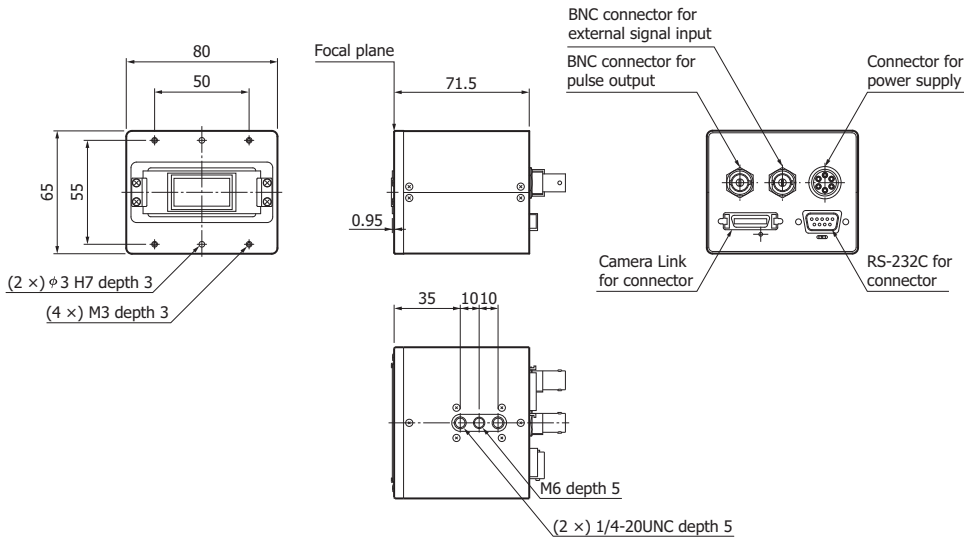


Functions

Parameter	Specifications	
Operating mode	"Standby" mode (white LED lighting)	It is standby state. At this moment, the InGaAs linear image sensor is sweeping out dark current, by performing so called dummy scan operation.
	"Date transfer" mode (LED-Green, Aqua, Blue)	In this mode the multichannel detector head sends the data to PC. Color of LED changes depending upon the data acquisition mode.
Data acquisition mode	Internal synchronous mode ("INT" mode)	Data is acquired on the basis of the trigger timing generated by application software.
	External synchronous mode 1 ("EXT.EDGE" mode)	Data is acquired in synchronization with the external trigger signal input from the built in BNC connector. InGaAs linear image sensor performs dummy scan until external trigger signal is received.
	External synchronous mode 2 ("EXT.LEVEL" mode)	
External synchronous mode 2 ("Gated free-run" mode)	Data is acquired in synchronization with the external trigger signal input from the built in BNC connector.	
Offset adjustment	The offset value can be varied in the range of [0 to 511] with the step of 1. Default value is "0".	
Pulse output signal setting	It is possible to perform the timing setup of the "pulse output signal (PULSE-OUT)" outputted from the BNC connector used as PULSE_OUT of the multichannel detector head.	
Selection logic of conversion efficiency *	Conversion efficiency can be selected from 4 different levels.	

* Refer to the datasheet "InGaAs linear imagesensor G10768-1024D"

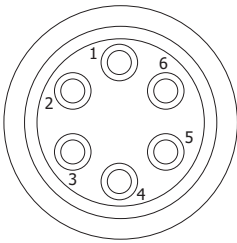
Dimensional outline (unit: mm)



KACCA0238EA

Pin connection

"POWER" for connector [HIROSE RM12BRD-6PH (71)]



KACCC0470EA

Pin No.	Signal
1	+5 V
2	+5 V
3	+5 V
4	GND
5	GND
6	GND

Accessories

- Application software (C10854DCamAPL)

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2009 Hamamatsu Photonics K.K.

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