The new SU1024-LDH Linear Digital High speed InGaAs Camera increases line rates for 1024 pixels to over 46,000 lines per second for spectral-domain optical coherence tomography (SD-OCT), NIR spectroscopy and machine vision. This versatile high speed camera provides 14-bit digital capture into base format Camera Link® interface cards. It utilizes the new LC series of linear arrays, which feature double-sampling, integrate-while-read acquisition and low noise, delivering the high dynamic range demanded by these applications. The camera is available with 500 μm tall pixels for easy alignment in SD-OCT systems, or square 25 μm pixels for high-time resolution machine vision or for PS-OCT.

**FEATURES**
- Wavelength response over 0.8 μm to 1.7 μm
- 25 μm pixel pitch with aperture heights of 25 μm or 500 μm
- 1024 pixel arrays
- Over 46,000 lps for 1024 pixels
- Integrate-while-read snapshot acquisition
- 14-bit base Camera Link® compatible output and control
- Operating temperature range of -10 to +50°C
- High dynamic range and quantum efficiency
- Mounts easily to spectrometers
- Optional adapters for C-mount, F-mount or FD mount lenses

**APPLICATIONS**
- Optical Coherence Tomography (OCT)
- Agricultural and food product inspection
- Machine vision for inspection, and monitor of continuous processes
- High-speed spectroscopy for moisture or other molecular vibration bands in the 800-1700 nm range
- Telecommunications fiber and waveguide alignment
- Materials classification and sorting
- Remote ground sensing

**Typical Linear Array QE**

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Model No: SU1024-LDH
MECHANICAL
Length x Width x Height: 14.5 cm x 7.62 cm x 7.62 cm
5.7 in x 3.00 in x 3.00 in
Length includes I/O connectors, excludes lens adapter
Weight: < 1 kg or 2.2 lbs (no lens or adapter)

ENVIRONMENTAL AND POWER
Operating temperature: -10°C to +50°C case temperature
Storage temperature: -20°C to 70°C
Humidity: Non-condensing

Power requirements:
AC adapter supplied
DC (voltage/power):
100-240 VAC, 47-63 Hz, < 1.0 A
7-28 V, < 7 W at 25°C, <11 W at 50°C
< 1.5 A peak

REGULATORY COMPLIANCE
CE: Meets class A level for emission, immunity and ESD standards
FCC: Meets requirements for Part 15, Subpart B, Class A, 2006

INTERFACES
Control:
MDR 26-pin connector (Camera Link®)
Image Data:
MDR 26-pin connector (Camera Link®)
Power:
Hirose HR25-7TR-85 connector
Sync Output:
BNC: 5 V, 50.0 series terminated, active high; integration active
Trigger: Input
BNC, Low < 0.5, 3 V > high < 5 V
Status LED:
Green: TEC locked at setpoint
Red: TEC unlocked
Blinking: Timing or triggering error

ELECTRO-OPTICAL PERFORMANCE
Sensor format:
1024 pixels on 25 µm pitch with 4 readout ADCs
Optical aperture (pixel height):
500 µm or 25 µm
Peak quantum efficiency:
> 70%
Gain capacitor setting
Typical 0.1 pF
Specification
0.1 pF
1 pF
10 pF
Net full well capacity (Me-)
Typical
1.6
15.9
150
Specification
>1.1
>9.2
>110

Gain (e-/cnt)
107
1000
9600
Temporal noise (rms counts)
8
< 10.5
3.5
< 4.5
2.5
< 3.5
Dynamic range
2000:1
>1500:1
4500:1
>3500:1
5300:1
>4500:1
Differential non-linearity
/+ 1%
< +/- 2%
+/ 1%
< +/- 2%
+/- 0.8%
< +/- 2%

Bad pixel specification
White, dark, noisy or pixels exceeding +/- 10 of the mean value when illuminated at 50% of full well. Number of bad pixels limited to a maximum of 1% of array total; no bad neighbors within 5 pixels

Digital Output Format
14-bit base Camera Link® compatible

ORDERING INFORMATION
Camera Model
SU1024LDH-1.7RT-XXXX/LC
Max. Line rate
>46,000 lps
Pitch
25 µm
Pixels
1024
FPA length
25.6 mm
Aperture (height)
0025 or 0500

1 LDV/LDH accessory kits are available that consist of the user-specified lens adapter, power supply, case, manual, o-ring and cables.