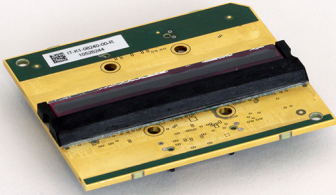


# IT-K1-08240

8K Single Line Monochrome CMOS Imaging Sensor



## Key Features

- High speed: 70 kHz line rate
- 100% fill factor
- Low noise
- Ease of integration
- Common electrical and mechanical interface

## Typical Applications

- Web inspection
- Recycling
- Document scanning

## High Performance 8K Single Line Monochrome CMOS Imaging Sensor

The IT-K1-08240 sensor is a high performance, digital, single line monochrome CMOS image sensor. The sensor is optimized for a high line rate and low noise, while providing high responsivity and high quantum efficiency (QE). The sensor is designed for ease-of-integration and uses FR4 packaging.

The pixel features global shutter capability, 100% fill factor, and true correlated double sampling (CDS) for low noise.

FR4 packaging offers high signal integrity and simple interfacing for quick system integration. The interface consists of two 60-pin connectors, which contain input signals, such as EXSYNC (trigger), clocks and voltages, and output signals, such as data and strobe (s-LVDS). Access to the registers of the sensor is handled through a serial-peripheral interface (SPI), plus the temperature of the sensor can be monitored.

The two 60-pin connectors on the IT-K1 share the same electrical and mechanical interface with the entire IT-K and IT-L sensor series, whereby the two 60-pin connectors and four mounting holes are positioned identically relative to one another as well as pin compatibility.

## Specifications

|                       |  |
|-----------------------|--|
| Line Rate             | 70 kHz, maximum                              |
| Output                | 12-bit digital LVDS                          |
| Resolution            | 8240 x 1 (8K single line)                    |
| Pixel Size            | 7.04 $\mu\text{m}$ x 7.04 $\mu\text{m}$      |
| Random Noise          | 1.9 DN                                       |
| Dynamic Range         | 66 dB  |
| Conversion Gain       | 0.20 DN/e                                    |
| Full Well             | 19 ke  |
| Shutter Type          | Global shutter                               |
| Responsivity          | 210 DN / nJ / cm <sup>2</sup> @ 12-bit, peak |
| Power Consumption     | 4 W  |
| Operating Temperature | 0 °C to +60 °C                               |
| Package               | FR4  |
| Regulatory Compliance | RoHS   |

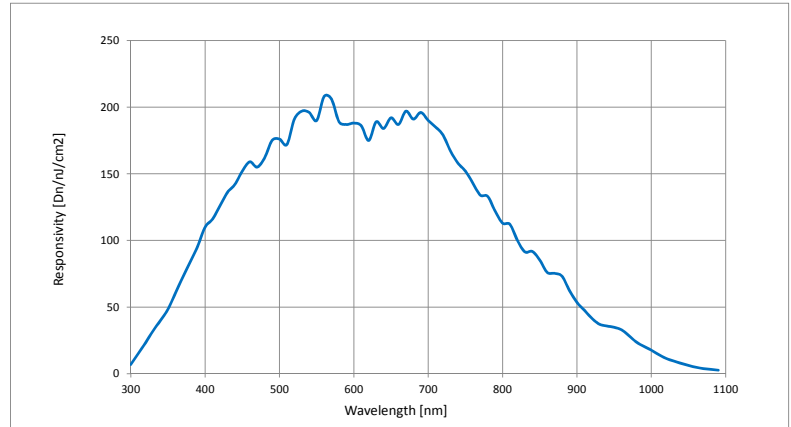
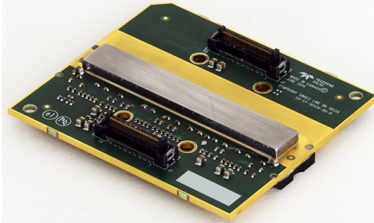
## Models

| Part Number | Resolution | Maximum Line Rates | Pixel Size                              |
|-------------|------------|--------------------|---|
| IT-K1-08240 | 8240 x 1   | 70 kHz             | 7.04 $\mu\text{m}$ x 7.04 $\mu\text{m}$ |

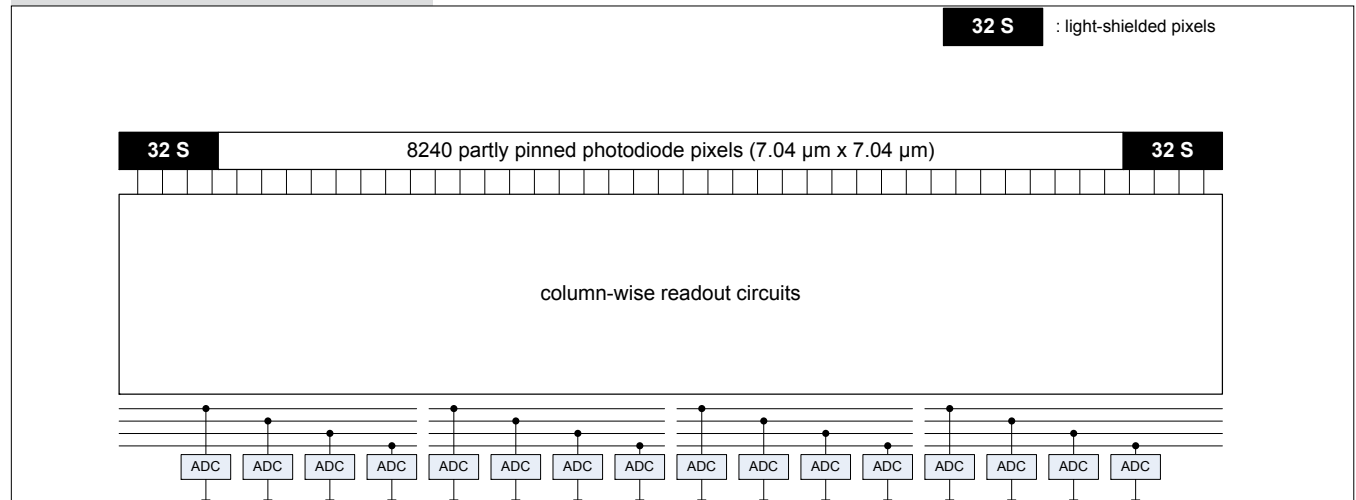
Camera part number for sensor evaluation: LA-CM-08K08

# IT-K1-08240

8K Single Line Monochrome CMOS Imaging Sensor



Note: Savitsky-Golay filtering applied, with 40 nm window and 1st order polynomial.



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Teledyne DALSA is an international high performance semiconductor and electronics company that designs, develops, manufactures, and markets digital imaging products and solutions, in addition to providing wafer foundry services.

Teledyne DALSA Digital Imaging offers the widest range of machine vision components in the world. From industry-leading image sensors through powerful and sophisticated cameras, frame grabbers, vision processors and software to easy-to-use vision appliances and custom vision modules.

Teledyne DALSA is headquartered in Waterloo, Ontario, Canada. We have sales offices in the USA, Europe and Asia, plus a worldwide network of representatives and agents to serve you efficiently.

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