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 µm x 7.04 µm
- **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 / cm² @ 12-bit, peak
- **Power Consumption**: 4 W
- **Operating Temperature**: 0 °C to +60 °C
- **Package**: FR4
- **Regulatory Compliance**: RoHS

**Models**

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<tr>
<th>Part Number</th>
<th>Resolution</th>
<th>Maximum Line Rates</th>
<th>Pixel Size</th>
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<td>8240 x 1</td>
<td>70 kHz</td>
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Camera part number for sensor evaluation: LA-CM-08K08
IT-K1-08240
8K Single Line Monochrome CMOS Imaging Sensor

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