A Fast and Responsive 8K Bilinear Color CMOS Imaging Sensor

The IT-L3-08240 sensor is a high performance, digital, bilinear color CMOS image sensor. The sensor is optimized for a high line rate and low noise, while providing high responsivity through two lines of image capture, and high quantum efficiency (QE). A solid green line can be used for color and/or intensity information and a blue-red line to capture the remaining colors. 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-L3 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 having pin compatibility.

Specifications

- Line Rate: 70 kHz, maximum
- Output: 12-bit digital LVDS
- Resolution: 8240 x 2 (8K bilinear)
- Pixel Size: 7.04 µm x 7.04 µm
- Random Noise: 1.9 DN
- Dynamic Range: 66 dB
- Conversion Gain: 0.2 DN / e
- Full Well: 19 ke
- Shutter Type: Global shutter
- Responsivity: 140 DN / nJ / cm² @ 12-bit, peak
- Power: 8 W
- Operating Temperature: 0 °C to +60 °C
- Package: FR4
- Regulatory Compliance: RoHS

Key Features

- Two pixel rows with independent exposure control
- High speed: 2 x 70 kHz line rate
- High responsivity and full well
- 100% fill factor
- Low noise
- Ease of integration
- Common electrical and mechanical interface

Typical Applications

- Food sorting
- Recycling
- Web inspection
- Document scanning

Models

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Resolution</th>
<th>Maximum Line Rate</th>
<th>Pixel Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-L3-08240-01-R</td>
<td>8240 x 2</td>
<td>70 kHz</td>
<td>7.04 µm x 7.04 µm</td>
</tr>
</tbody>
</table>

Camera part number for sensor evaluation: LA-CC-08K05B
IT-L3-08240
8K Bilinear Color CMOS Imaging Sensor

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

© 2017 Teledyne DALSA
All information provided in this document is believed to be accurate and reliable. No responsibility is assumed by Teledyne DALSA for its use. Teledyne DALSA reserves the right to make changes to this information without notice. Reproduction of this document in whole or in part, by any means, is prohibited without prior permission having been obtained from Teledyne DALSA. All trademarks or intellectual property mentioned herein belong to their respective owners.

About Teledyne DALSA
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.

www.teledynedalsa.com

Americas
Boston, USA
+1 978-670-2000
sales.americas@teledynedalsa.com

Europe
Krailling, Germany
+49 89-89-54-57-3-80
sales.europe@teledynedalsa.com

Asia Pacific
Tokyo, Japan
+81 3-5960-6353
sales.asia@teledynedalsa.com

Shanghai, China
+86 21-6427-9081
sales.asia@teledynedalsa.com