Imperx: C2880

The C2880 incorporates the On Semiconductor KAC-06040 CMOS image sensor with a native resolution of 2832 x 2128 in a 1” optical format delivering up to 129 frames per second in either global or rolling shutter mode with a Camera Link® Deca, Power over Camera Link (PoCL)® output. Extended dynamic range technology coupled with extremely robust blooming suppression provide clean imagery in even the most severe uncontrolled lighting applications. Cheetah cameras incorporate “smart” wide dynamic range technology which monitors each pixel’s exposure and sets the exposure to one of four user selectable values based on the intensity of the source at the pixel. CMOS technology eliminates smear columns from areas of ultra-bright intensity and specular reflections in uncontrolled lighting applications.

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Interface</td>
<td>Camera Link® Base, Medium, Full/Deca (CLF) w/PoCL®</td>
</tr>
<tr>
<td>Resolution</td>
<td>2832 x 2128</td>
</tr>
<tr>
<td>Sensor</td>
<td>KAC-06040, CMOS Color/Mono</td>
</tr>
<tr>
<td>Sensor Format</td>
<td>13.1 mm (H) x 10.0 mm (V) 16.65 mm diagonal 1” optical format</td>
</tr>
<tr>
<td>Pixel Size</td>
<td>4.7 microns square</td>
</tr>
<tr>
<td>NIR Sensitivity</td>
<td>850 nm: 15%, 950 nm: 5%</td>
</tr>
<tr>
<td>Shutter</td>
<td>Global shutter (GS), rolling shutter (RS)</td>
</tr>
<tr>
<td>Sensor Digitization</td>
<td>10-bit or 12-bit</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>129 fps (8-bit), 105 fps (10-bit), 50 fps (12-bit)</td>
</tr>
<tr>
<td>Camera Link Clock Rate</td>
<td>85 MHz</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>74 dB (RS), 57 dB (GS)</td>
</tr>
<tr>
<td>Output Bit Depth</td>
<td>8, 10, 12 bit</td>
</tr>
<tr>
<td>Analog Gain Control</td>
<td>12-bit: 0-12 dB (16 steps); 8 or 10-bit: 0-18 dB (32 steps)</td>
</tr>
<tr>
<td>Digital Gain</td>
<td>24 dB (128 steps)</td>
</tr>
<tr>
<td>Black Level Offset</td>
<td>Manual, 0 to 2048, 1/step</td>
</tr>
<tr>
<td>White Balance</td>
<td>Manual, Auto, Off</td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>1 μs/step, 5 μs to 1.0 s (GS), 2 μs to 1.0 s (RS)</td>
</tr>
<tr>
<td>Exposure Control</td>
<td>Off, Internal, External</td>
</tr>
<tr>
<td>Regions of Interest (ROI)</td>
<td>1 ROI</td>
</tr>
<tr>
<td>Averaging Decimation</td>
<td>4:1, 9:1 (both color and monochrome)</td>
</tr>
<tr>
<td>Sub-sampling Decimation</td>
<td>N pixels: 2, 4, 6…30 by every M pixels: 2, 4, 6…32</td>
</tr>
<tr>
<td>Trigger Inputs</td>
<td>External, Pulse generator, Software, Computer</td>
</tr>
<tr>
<td>Trigger Options</td>
<td>Edge, Debounce</td>
</tr>
<tr>
<td>Trigger Modes</td>
<td>Internal, External, Computer</td>
</tr>
<tr>
<td>Wide Dynamic Range</td>
<td>100 dB (typ.) GS, up to 3 knee points, piecewise linear</td>
</tr>
<tr>
<td>External Inputs/Outputs</td>
<td>2 IN (OPTO, LV TTL) / 2 OUT (OPTO, TTL)</td>
</tr>
</tbody>
</table>

2 strobes, programmable position and duration
Yes, programmable
Vertical/Horizontal flip. Two 12-bit LUTs pre-programmed with Gamma 0.45
Defective/hot pixel correction (static, dynamic)
C-Mount (Default), F-Mount, M42, EF Canon (Passive)
12 V DC (5 V – 30 V), 1.5 A inrush
Typical: 0.44 A, Maximum: 0.46 A
PoCL capable in Medium/Full mode
72.0 mm (W) x 72.0 mm (H) x 33.5 mm (L)
385 g
Compiles with IEC60068-2-64 and IEC60068-2-27
-40 °C to +85 °C Operating
-50 °C to +90 °C Storage
10% to 90% non-condensing
>323,000 hours @ 40°C (Telcordia RS-332)
MIL-STD-810G
FCC Part 15 Class A, CE, RoHs
**Imperx: C2880 Applications**

The CLF-C2880 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

**Absolute Quantum Efficiency**

<table>
<thead>
<tr>
<th>Color Spectral Response</th>
<th>Mono Spectral Response</th>
</tr>
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<tbody>
<tr>
<td><img src="image1.png" alt="Color Spectral Response" /></td>
<td><img src="image2.png" alt="Mono Spectral Response" /></td>
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</tbody>
</table>

**Dimensions**

**FRONT**

- IMAGE CENTER IS NOMINALLY AT CENTER OF LENS
- R6.0 (TYP)
- 72.0
- 72.0
- 50.4
- 10.8
- M2.5 X 0.45(BX) SCREWS

**BACK**

- 64.0
- 22.5
- 14.5
- 22.1
- 45.0
- 36.0
- 10.8
- 50.4
- 72.0
- 72.0
- IMAGE CENTER IS NOMINALLY AT CENTER OF LENS

**TOP**

- 8.5 [4X]
- 17.4 [5X]
- 2.1
- 5.0
- 55.0 [4X]
- M3.0 X 0.5 THREAD 7.5 DEEP (8X) EVERY SIDE
- 33.5 x 0.55

**Ordering Information**

**Output Interface**
- Camera Link® Full (CLF)

**Sensor Types available**
- Monochrome
- Bayer Color

**Lens Mounts**
- C-Mount (Default)
- F-Mount
- M42
- EF Canon (Passive)

**Accessories (Sold separately)**
- PS12V04A-Power Supply w/ 1 input and 1 output

**Software/Drivers/Interface**

- Hirose Connectors
  - Power and I/O Interface
    - 1. 12V DC Return
    - 2. +12V DC
    - 3. Reserved
    - 4. Reserved
    - 5. OUT2 OPTO -
    - 6. OUT1 TTL Gnd
    - 7. OUT1 TTL Signal
    - 8. IN1 OPTO +
    - 9. IN2 TTL Signal
    - 10. IN1 OPTO -
    - 11. IN2 TTL Gnd
    - 12. OUT2 OPTO +

**Connector**: Hirose HR10A-10R-12PB(71)

Rev: cl_c2880_r2_2019

**Quality Management System** ISO 9001:2015 Registered
**Environmental Management System** ISO 14001:2015 Registered
**DDTC Registered** (Directorate of Defense Trade Controls, US Department of State)