The Falcon2 CMOS area scan cameras deliver up to 12 megapixels of resolution at 58 fps with global shutter.

Teledyne DALSA’s Falcon2 12M, 8M and 4M color and monochrome area scan cameras incorporate large resolutions (12 megapixel, 4k resolution) and fast frame rates, enabling high speed image capture with superb spatial resolution and improved image quality. Global shuttering is used to remove unwanted image smear and time displacement artifacts related to rolling shutter CMOS devices. These features make the Falcon2 camera the best choice for applications where throughput, resolution and high pixel capacity matter most.

Inside the Falcon2 camera is our leading-edge CMOS sensor with reduced dark noise levels and improved dark offset, fixed pattern noise (FPN) and pixel response non-uniformity (PRNU) levels. Additionally, advanced embedded flat-field calibration and pixel replacement algorithms ensure the highest image quality at a wide range of exposure times.

The Falcon2 cameras are compliant with GenICam™ and full Camera Link™ specifications—delivering 8 or 10 bits of data on 8 taps (frame rates are specified at 8 bits). The M42x1 thread opening allows for your choice of lens to use.

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>12M</th>
<th>8M</th>
<th>4M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>4096 (H) x 3072 (V)</td>
<td>3328 (H) x 2502 (V)</td>
<td>2432 (H) x 1728 (V)</td>
</tr>
<tr>
<td>Max. Frame Rate</td>
<td>58 fps</td>
<td>90 fps</td>
<td>168 fps</td>
</tr>
<tr>
<td>Pixel Size</td>
<td>6 μm x 6 μm</td>
<td>6 μm x 6 μm</td>
<td>6 μm x 6 μm</td>
</tr>
<tr>
<td>Bit Depth</td>
<td>8 bits or 10 bits</td>
<td>8 bits or 10 bits</td>
<td>8 bits or 10 bits</td>
</tr>
<tr>
<td>Lens Mount</td>
<td>M42x1</td>
<td>M42x1</td>
<td>M42x1</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>58 dB (monochrome)</td>
<td>50 dB (color)</td>
<td>50 dB (color)</td>
</tr>
<tr>
<td>Exposure Time</td>
<td>20 μs minimum</td>
<td>20 μs minimum</td>
<td>20 μs minimum</td>
</tr>
<tr>
<td>Size</td>
<td>60 mm (H) x 60 mm (W) x 80.5 mm (D)</td>
<td>60 mm (H) x 60 mm (W) x 80.5 mm (D)</td>
<td>60 mm (H) x 60 mm (W) x 80.5 mm (D)</td>
</tr>
<tr>
<td>Mass</td>
<td>&lt; 300 g</td>
<td>&lt; 300 g</td>
<td>&lt; 300 g</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>0 °C to 50 °C, front plate temperature</td>
<td>0 °C to 50 °C, front plate temperature</td>
<td>0 °C to 50 °C, front plate temperature</td>
</tr>
<tr>
<td>Power Supply</td>
<td>12 V to 24 V DC</td>
<td>12 V to 24 V DC</td>
<td>12 V to 24 V DC</td>
</tr>
<tr>
<td>Power Dissipation</td>
<td>9.5 W</td>
<td>9.5 W</td>
<td>9.5 W</td>
</tr>
<tr>
<td>Regulatory Compliance</td>
<td>CE and RoHS</td>
<td>CE and RoHS</td>
<td>CE and RoHS</td>
</tr>
<tr>
<td>Data Interface</td>
<td>2 x Full Camera Link—SDR26</td>
<td>2 x Full Camera Link—SDR26</td>
<td>2 x Full Camera Link—SDR26</td>
</tr>
<tr>
<td>Power Connector</td>
<td>Hirose 12-pin circular</td>
<td>Hirose 12-pin circular</td>
<td>Hirose 12-pin circular</td>
</tr>
<tr>
<td>Example Part Number</td>
<td>FA-80-12M1H-xx-R (monochrome), FA-81-12M1H-xx-R (color)</td>
<td>FA-80-12M1H-xx-R (monochrome), FA-81-12M1H-xx-R (color)</td>
<td>FA-80-12M1H-xx-R (monochrome), FA-81-12M1H-xx-R (color)</td>
</tr>
</tbody>
</table>

* Maximum frame rates are dependent on the aspect ratio used.
Falcon2 12M, 8M and 4M
CMOS Color and Monochrome Area Scan Cameras

**Note:** 8 Taps, 10-bit Camera Link, FCC on, 24 fps (except 400 nm, measured at 10 fps), ND 0.3 filtered light

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**Falcon2 Monochrome 8M Spectral Responsivity**

![Graph of Falcon2 Monochrome 8M Spectral Responsivity](image)

**Falcon2 Color 12M (4N6a087J) Spectral Responsivity**

![Graph of Falcon2 Color 12M (4N6a087J) Spectral Responsivity](image)

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**Falcon2 Color 12M (4N6a087J) Spectral Responsivity**

- Red
- Green Red
- Green Blue
- Blue

Note: 8 taps, 10-bit Camera Link, 9-bit sensor digitization, FCC on, color corrected, 4 fps (except for color red, which used different frame rate at wavelength 560nm and below: 400~480nm was done at 1.8fps, 500nm was done at 4fps and 520~560), ND 0.3 filtered light

**Falcon2 Monochrome 8M Spectral Responsivity**

- Note: 8 Taps, 10 bits Camera Link, FCC on, 24 fps (except 400 nm, measured at 10 fps), ND 0.3 filtered light

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**Notes:**
1. UNITS: MILLIMETERS.
2. IMAGE AREA IS ALIGNED TO DATUMS A, B, & C.

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