

# Falcon2 12M, 8M and 4M

CMOS Color and Monochrome Area Scan Cameras



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

The new Falcon2 12M, 8M and 4M—Teledyne DALSA's new generation of color and monochrome area scan cameras—incorporate large resolutions and faster frame rates enabling high speed image capture with superb spatial resolution and improved image quality. Global shuttering removes unwanted smear and time displacement artifacts related to rolling shutter CMOS devices. These features make the Falcon2 cameras the best choice for applications where throughput, resolution and high pixel capacity matter most.

Inside the Falcon2 camera is our latest CMOS sensors, which has reduced dark noise levels and improved dark offset, FPN (fixed pattern noise) and PRNU (Pixel Response Non-Uniformity) levels.

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). Further, the M42x1 thread opening allows the use of your lens of choice.

### Key Features

- 12, 8 and 4 mega pixels
- Selectable 4:3 or 1:1 aspect ratios
- Global Shutter
- Exposure control
- Faster frame rates through windowing
- Good NIR response
- Built-in FPN and PRNU correction
- GenICam compliant
- Color and monochrome models available

### Programmability

- Adjustable digital gain and offset
- 8 or 10 bit selectable output
- Adjustable integration time and frame rate
- Test patterns and camera diagnostics

### Typical Applications

- Semiconductor wafer inspection
  - Surface and bump inspection
- Electronics manufacturing
  - 3D solder paste inspection
  - Package and bump inspection
  - Automated Optical Inspection (AOI)
- 3D imaging—Laser profiling
- Solar panel inspection
- General machine vision

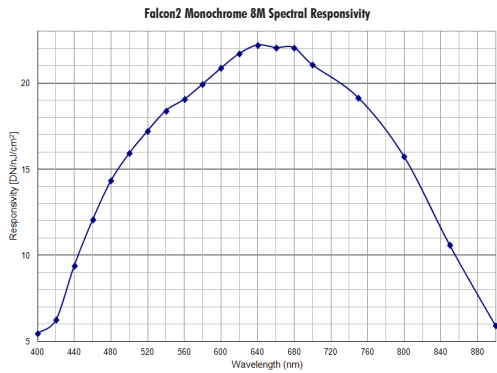
### Specifications

Resolution	4:3 aspect ratio:	12M—4096 (H) x 3072 (V) 8M—3328 (H) x 2502 (V) 4M—2432 (H) x 1728 (V)
	1:1 aspect ratio:	8M—2816 (H) x 2816 (V) 4M—2048 (H) x 2048 (V)
Pixel Rate		8 x 76 MHz or 10 x 76 MHz
Max. Frame Rate		12M—58 fps / 8M—90 fps / 4M—168 fps, all at 8-bits *
Pixel Size		6 $\mu\text{m}$ x 6 $\mu\text{m}$
Bit Depth		8 bits or 10 bits
Lens Mount		M42 x 1
Dynamic Range		58 dB (monochrome) and 50 dB (color)
Exposure Time		20 $\mu\text{s}$ minimum
Size		60 mm (H) x 60 mm (W) x 80.5 mm (D) (75 mm deep excluding the back fins)
Mass		< 300 g
Operating Temp		0 °C to 50 °C, front plate temperature
Power Supply		12 V to 24 V DC
Power Dissipation		9.5 W
Regulatory Compliance		CE and RoHS
Data Interface		2 x Full Camera Link—SDR26
Power Connector		Hirose 12-pin circular
Example Part Number		FA-80-12M1H-xx-R (monochrome), FA-81-12M1H-xx-R (color)

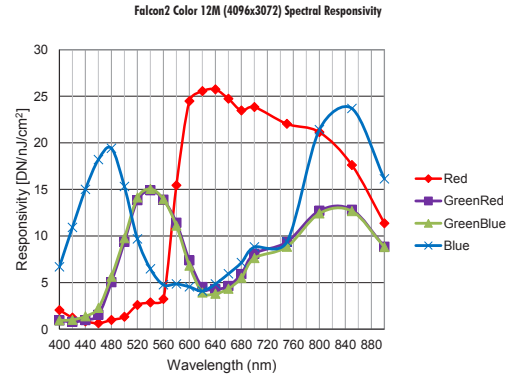
\* Maximum frame rates are dependent on the aspect ratio used.

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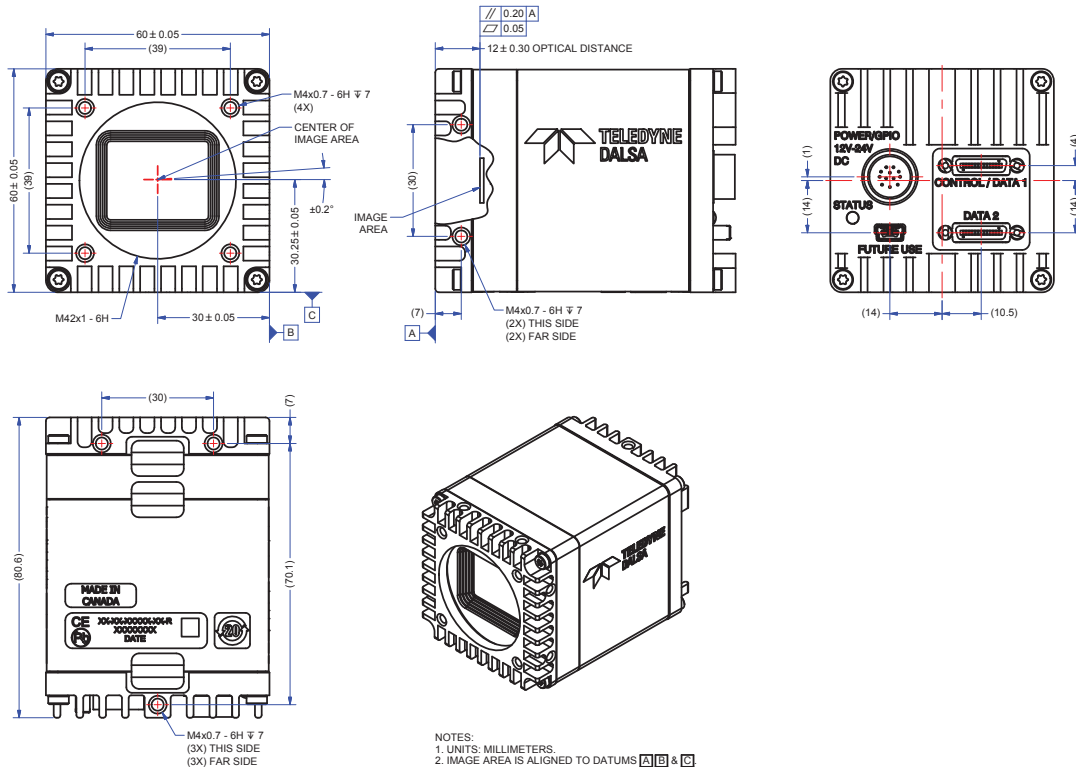
## CMOS Color and Monochrome Area Scan Cameras



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



Note: 8 taps 10 bits Camera Link, 9 Bit sensor digitization, FFC 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), BG 38 filtered light



[www.teledynedalsa.com](http://www.teledynedalsa.com)

### Americas

Boston, USA  
 +1 978-670-2000  
[sales.americas@teledynedalsa.com](mailto:sales.americas@teledynedalsa.com)

### Europe

Krailling, Germany  
 +49 89-89-54-57-3-80  
[sales.europe@teledynedalsa.com](mailto:sales.europe@teledynedalsa.com)

### Asia Pacific

Tokyo, Japan  
 +81 3-5960-6353  
[sales.asia@teledynedalsa.com](mailto:sales.asia@teledynedalsa.com)

Shanghai, China  
 +86 21-3368-0027  
[sales.asia@teledynedalsa.com](mailto:sales.asia@teledynedalsa.com)