Falcon2 12M, 8M and 4M
CMOS Area Scan Cameras

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

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

Overview

The new Falcon2 CMOS area scan cameras deliver 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 area scan cameras—incorporate large resolutions and faster frame rates enabling high speed image capture with superb spatial resolution. Important features, such as, global shutter and improved image quality make these Falcon2 cameras the camera of choice in applications where throughput, resolution and dynamic range matter. Global shuttering removes unwanted smear and time displacement artifacts related to rolling shutter CMOS devices. Inside these Falcon2 cameras is our latest CMOS sensor, which has reduced dark noise levels and improved dark offset, FPN (fixed pattern noise) and PRNU (Pixel Response Non-Uniformity) levels. In addition, region of interest features will offer opportunities for higher frame rates and new applications.

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.

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 μm x 6 μm	
Bit Depth	8 bits or 10 bits	
Lens Mount	M42 x 1	
Dynamic Range	57 dB	
Exposure Time	20 μs minimum	
Size	60 mm (H) x 60 mm (W) x 80.5 mm (D)	
Mass	< 300 g	
Operating Temp	0 °C to 50 °C, front plate temperature	
Power Supply	12 V to 24 V DC	
Power Dissipation	10 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-00-R, FA-80-8M100-00-R, FA-80-4M180-00-R	

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

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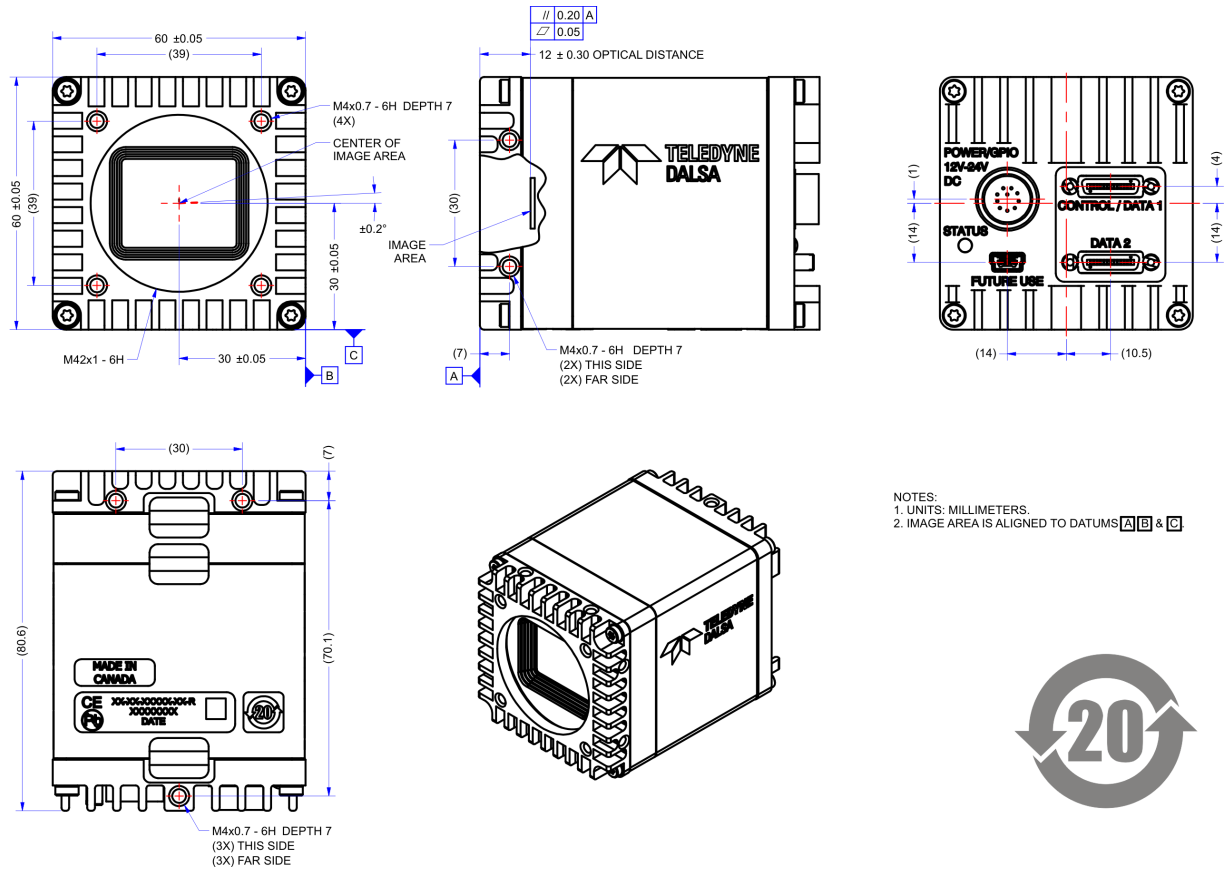
The large resolutions and faster frame rates of the Falcon2 cameras enable high speed image capture with superb spatial resolution.

Mechanical Dimensions

- 60 mm (H) x 60 mm (W) x 80,5 mm (D) (75 mm deep excluding the back fins)
- M42x1 lens opening

Connectors

- SDR26 for Full Camera Link
- Power—Hirose 12-pin circular
- Mini-USB—future use



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TELEDYNE DALSA
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Teledyne DALSA is an international leader in digital imaging and semiconductors and has its corporate offices in Waterloo, Ontario, Canada.