IMAGINE THE POSSIBILITIES

PLANNED HARDWARE EXPANSIONS*:

- QVGA version: A 320(H) x 240(V) resolution Calibir platform, with various interface modules and lenses
- Optics driver module: A module for driving motorized optical components (e.g. zoom lens)
- Image Processing Module: Additional processing power in a compact package

*Please contact Teledyne DALSA for more information

PLANNED SPECIFIC FEATURE SETS

Calibir is a flexible platform that supports a wide range of applications.
For the following, applications specific feature sets are in development*

- Vehicle applications: Graphic Image Overlay, Frame memory, Optics driver module
- Thermograph and Machine Vision applications: Graphic Image Overlay, Radiometric design
- Portable and Autonomous Sensor Applications: Battery operated, wireless interface
- Unmanned Airborne Vehicle applications: GPS/Gyro inputs, HDMI interface
- Unmanned Ground Vehicle/Robotics applications: Object avoidance, Dual band/image fusion

Please contact us to discuss these expansions and /or other needs

*Subject to change

FOR INQUIRIES

Please visit our web site and provide your contact data on the Inquiry Form at **www.teledynedalsa.com/contact**.
In order to support a quick response on your inquiries, please mention the part number for the camera from Table 1 and provide the Lens ID of the desired lens from Table 2.

www.teledynedalsa.com/calibir

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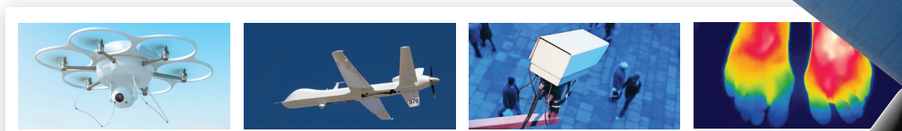
THE MOST VERSATILE
UNCOOLED LWIR CAMERA

CALIBIR™



SETTING A NEW STANDARD FOR MULTI-APPLICATION SYSTEM INTEGRATION

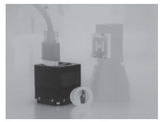
The **Calibir**™ uncooled Long Wave Infrared camera platform offers outstanding shutterless imaging performance and is optimized for Size, Weight and Power (SWAP). As a first member of the Calibir family, the Calibir 640 Series introduces an easy-to-use modular design with a 29 mm x 29 mm x 29 mm camera core that can be integrated into tight spaces for compact solutions. For greater flexibility, the Calibir 640 Series microbolometer-based platform supports a variety of industry standard video formats, physical interconnects, LWIR lenses and state-of-the-art on-board processing engine. The Calibir 640 Series is ideal for a wide range of imaging applications requiring long wave IR detectors in the field of surveillance and monitoring, defense and security, maintenance and general machine vision.

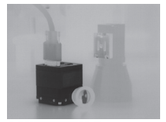
ADVANCED FEATURES, ADVANCED PERFORMANCE

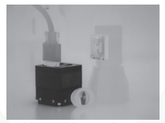
The Calibir series sets new benchmarks in uncooled imaging with its shutterless operation and Adaptive Contrast Enhancement, both of which contribute not only to excellent imaging performance but also to the ease of integration and use of the cameras.

SHUTTERLESS OPERATION

The Calibir camera requires no mechanical shutter for calibration, meaning instant image output and no interruption for recalibration. The image output of the Calibir camera remains stable across time and temperature range, freeing your application from the inconvenience, size, and additional complexity of failure prone mechanical shutters.


3 SECONDS, 21° C


1 MINUTE, 21° C


15 MINUTES, 34° C


24 HOURS, 37° C

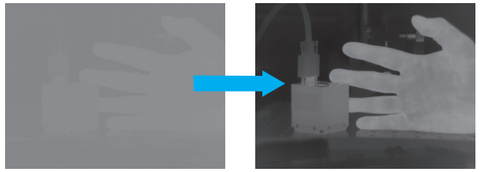
FLEXIBLE OUTPUT OPTIONS

The Calibir 640 series supports analog and digital output formats. Analog camera models support BNC or a straight 10-pin connector; digital camera models support GigE Vision output using RJ-45. The Calibir 640 core supports RGMII for digital output using a 60-pin connector and is also capable of supporting CPI (Camera Parallel Interface), BT656 and CSI-2 (Camera Serial Interface Ver. 2) formats*.

**Contact Teledyne DALSA sales for availability.*

ADAPTIVE CONTRAST ENHANCEMENT

The Calibir 640 series features advanced image processing algorithms that adapt to the image content, optimizing contrast to show the finest details regardless of conditions or intra-scene variations. With no manual intervention required, the Calibir 640 series delivers high quality images reliably, wherever and whenever you deploy it.


ADAPTIVE CONTRAST ENHANCEMENT OFF

ADAPTIVE CONTRAST ENHANCEMENT ON

WIDE RANGE OF LENS OPTIONS

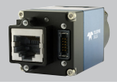
The Calibir 640 series supports 11 different lenses, ranging from 7.5 to 100 mm focal length. Any of the Calibir series products are supplied with lens of choice and fully calibrated over an operational range of -40 to 60 °C ambient temperature.

EXPORT CONTOLS

The Calibir 640 Series Camera is currently classified as a "Dual Use" item under Group 1 (1-6.A.3.B.4.B) of the Canada Export Control List and Category 6 (6.A.3.B.4) under the Wassennaar Arrangement on Export Control for Conventional Arms and Dual-Use Goods and Technologies. As such, the Camera is subject to export control – export authorization is required to export the Camera from Canada, whether on a permanent or temporary basis.

TELEDYNE DALSA
Everywhereyoulook™

SPECIFICATIONS

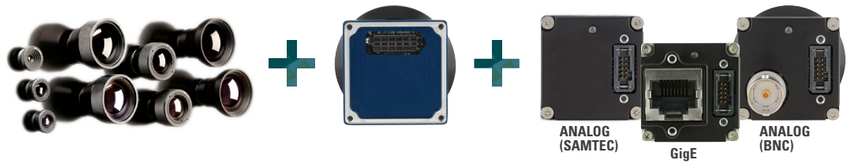
FEATURE	CALIBIR 640 CORE	CALIBIR 640 GigE	CALIBIR 640 AS	CALIBIR 640 AB
				
Mechanical Interface				
Camera body (W x H x L)	29 mm x 29 mm x 29 mm (body without lens mount)			
Lens Mount	M34 & M25			
Dimensions				
With M25 lens Mount (W x H x L)	29 mm x 29 mm x 46.15 mm	29 mm x 29 mm x 59.72 mm	29 mm x 29 mm x 46.15 mm	29 mm x 29 mm x 61.13 mm
With M34 lens Mount (W x H x L)	37 mm x 37 mm x 37.6 mm	37 mm x 37 mm x 57.85 mm	37 mm x 37 mm x 44.28 mm	37 mm x 37 mm x 59.26 mm
Mass	38 g (without lens mount)	58 g (without lens mount)		
Power connector	via SAMTEC® 60-pin connector	via 10-pin connector, or RJ-45 in PoE mode	via 10-pin connector	via 10-pin connector
Interface Connector	SAMTEC® connector SS4-30-3.00-L-D-K-TR 60-pin	RJ-45 with locking screws	1-pin on SAMTEC® 10-pin connector	BNC
Sensor Information				
Focal Plane Array	VGA, 640 (H) x 480 (V)			
Spectral Response	8-14 µm (LWIR)			
Pixel Pitch	17 µm			
Camera NETD				
High Gain[1]	70 mK @ f/1.0, 300 K, 30 Hz			
Low Gain (default)	100 mK @ f/1.0, 300 K, 30 Hz			
Typical Response	20 DN in 14-bit/image (unstreched)			
Time to 1st image	<1.7s (core)			
Electrical Interface				
Input Voltage	3.3 V DC	12/24 V DC (min 9 V, max 57 V)	12/24 V DC (min 9 V, max 57 V)	12/24 V DC (min 9 V, max 57 V)
Power Consumption (max)	~2.5 W	3.7 W	3.5 W	
Environmental Conditions				
Operating Temperature	-40°C to 60°C (Ambient Temperature)			
Operating Relative Humidity	20% to 80% non-condensing			

SUPPORTED LENSES

HFOV(deg)	90°	73.2°	42.1°	36°	24.2°	16.9°	12.4°	10.3°	9.6°	8.2°	6.2°
Focal Length	7.5 mm	8.52 mm	14.2 mm	16.8 mm	25 mm	35 mm	50 mm	60.1 mm	65 mm	75 mm	100 mm
F/#	1.4	1.24	1.24	1.24	1.2	1.14	1.2	1.25	1.2	1.13	1.5
Lens Mount	M34	M25	M25	M25	M25	M25	M34	M34	M34	M34	M34
Lens Weight	45 g	34 g	25 g	23.6 g	40 g	45.9 g	238 g	218 g	490 g	274 g	369 g
Lens ID	A2	B1	R1	D1	F1	H1	I2	J2	K2	L2	N2

Notes: 1 Contact Teledyne DALSA SALES for more information

CHOICE OF LENS + **CALIBIR CORE** + **CHOICE OF CAMERA INTERFACE**



Calibir P/N: