

## Calibir™ GX Family Uncooled Infrared Cameras



### Features

- » Radiometric operation for precise temperature output
- » 21 bit ADC for immense intrascene dynamic range
- » Gigabit Ethernet (GigE)
- » General purpose opto-coupled input/output (external trigger user, count, or timer driven triggering). **Contact us for other options (MIPI-CSI2)**
- » Flexible general purpose Counter and Timer functions for internal/external controls
- » Defective Pixel replacement
- » Adaptive Image Enhancement
- » **IEEE1588-2008 Precision Time Protocol synchronization capable**
- » Built-in Pseudo-color for enhanced visualization
- » Image metadata supported
- » Application development with the freely available Sopera™ LT software libraries
- » Internal mechanical shutter for remote recalibration
- » Made in Canada

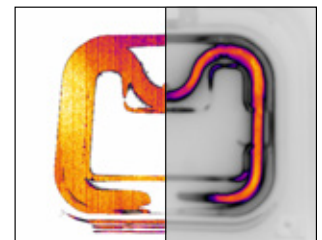
## Teledyne's Latest Microbolometer Technology

The Calibir GX camera family features our latest microbolometer sensor, designed, fabricated, and packaged in our own foundry. It features both shutter and shutterless operation and rapid image output on power up while delivering uniform response over the entire operating temperature range, making it ideal for thermal imaging applications requiring uninterrupted image acquisition. The GX series also offers our own advanced 21-bit ADC design for unparalleled intra-scene dynamic range without the need for a gain reduction, allowing for the best possible NETD over a vast range of temperature (>600°C).

Calibir GX has nonuniformity correction and is factory calibrated for precise, accurate radiometric performance to give you reliable absolute temperature data. Contact sales for more info.

### General Specifications

<b>Resolution</b>	320 (H) x 240 (V) pixels 640 (H) x 480 (V) pixels
<b>Frame Rate</b>	30/60 Hz
<b>Pixel Size</b>	17 µm
<b>Temp. Accuracy</b>	<b>GXM</b> non-radiometric <b>GXF</b> +/- 1°C accuracy from 25 to 45°C
<b>NETD</b>	≤50 mK; F/1.0, at 30 fps
<b>Size</b>	29 mm x 37 mm x 59 mm
<b>Mass</b>	66.7 g (without lens)
<b>Operating Temp.</b>	-35°C to 60°C
<b>I/O Options</b>	GigE Vision, CSI-2

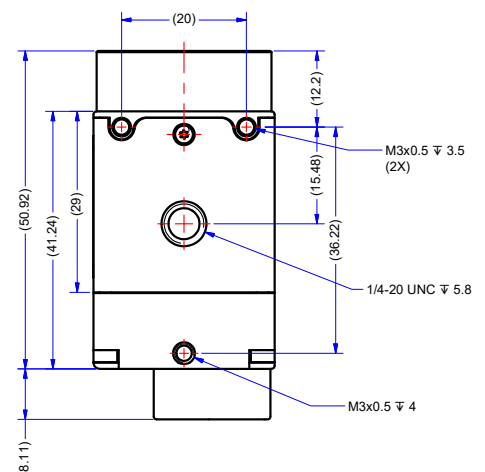
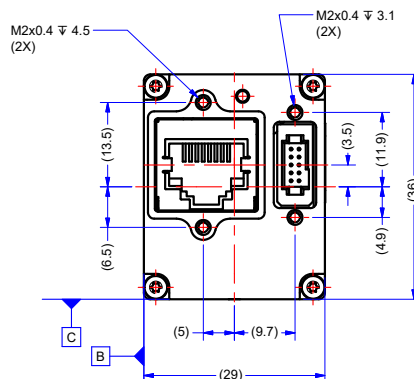
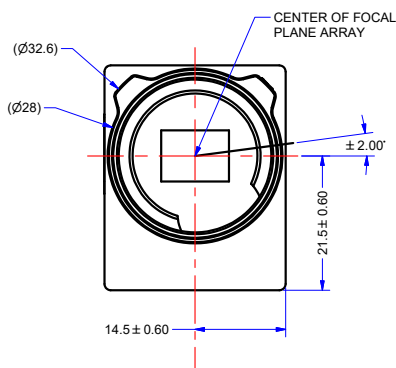


Third Party Sensor      DALSA's Deep ADC Technology


### Regulatory Compliance

- » CE, FCC and RoHS
- » MIL-STD 810G Compliant
  - Shock and vibration
  - Thermal Shock
- » NON-ITAR, Subject to Canadian Export Regulations. Calibir is categorized as a dual use item (group 1) under the Wassenaar Arrangement.

### Dimensions



## SPECIFICATIONS

FEATURES	CALIBIR GX FAMILY	
		
<b>Key Features</b>		
Temperature Zone	2 Overlapping, independent controls and stats for min, max, average and std	
Contrast Enhancement	ROI Based Adaptive Contrast Enhancement Engine	
Alarms	1 per Temp. Zone Software message and/or electrical output	
Overlay	Text (stats/frame count), Temp. scale, bounding box or cross-hair	
Pseudo-color	Built-in or User supplied	
Pixel Formats	Mono: 8 or 16-bit/pixel	Color: YUV
<b>Mechanical Interface</b>		
Camera with M25/M34 Lens Mount (W x H x L)	29 mm x 36 mm x 59 mm (with lens mount)	
Mass (without lens)	67.2 g	
Power Connector	via Samtec 10-pin connector (or optionally using PoE)	
<b>Electrical Interface</b>		
Data and Video	Gigabit Ethernet with Power Over Ethernet (PoE)	
Input Voltage	12/24 V DC (min 9 V, max 57 V)	
Power Consumption	<b>Typical</b> (typically due to shutter activation)	<b>Maximum</b> (typically due to shutter activation)
12 V	2.8 W	4.4 W
24 V	2.8 W	4.4 W
Power over Ethernet (48 V)	3.5 W	4.8 W
<b>Environmental Conditions</b>		
Operating Relative Humidity	maximum 80% non-condensing	
Storage Temperature	-40° C to +80° C	
Storage Relative Humidity	maximum 80% non-condensing	
<b>Sensor Information</b>		
Spectral Response	8-14 μm (LWIR)	
Pixel Pitch	17 μm	
Focal Plane Array	320 x 240 (QVGA), 640 x 480 (VGA)	
<b>Camera Information</b>	<b>GXM</b>	<b>GXF</b>
Internal mechanical shutter activation time	<100 ms to change from open/closed position	
Operating Temperature (Ambient)	-35° C to 60° C	15° C to 45° C
NETD (25° C ambient)	<50 mk	
Radiometric Accuracy and Scene Range (°C)	+/- 5° C, 10° C to 90° C	+/- 1° C, 25° C to 45° C

Contact our sales for more info on a model without lens, or other lens options.

**SUPPORTED LENSES: Calibir GXM/F 640 (VGA)**

Model Part Numbers	Lens Mount	EFL (mm)	Aperture (1/f)	HFOV (degrees)	VFOV (degrees)	Lens Weight (g)	Min Focus Dist (meter)	Total Mass (g)
IR-G*ZG-4101000	M25	7.48**	1.23	90.8	65.1	35	1	101.7
IR-G*ZG-4102000	M25	8.52	1.24	73.2	54.4	34	0.4	100.7
IR-G*ZG-4103000	M25	14.2	1.24	42.1	31.9	25	1.3	91.7
IR-G*ZG-4104000	M25	19.0	1.03	32.3	24.4	31.2	2.4	97.9
IR-G*ZG-4104500	M25	25.0	1.20	24.2	18.4	40	2.0	106.7
IR-G*ZG-4105000	M25	35.0**	1.14	16.9	12.9	45.9	5.0	112.6
IR-G*ZG-5505000	M34	50.0**	1.00	12.3	9.3	143	5.0	210.0

\*Standard M and F model. \*\* GXM only

Contact our sales for more info on a model without lens, or other lens options.

**SUPPORTED LENSES: Calibir GXM/F320 (QVGA)**

Model Part Numbers	Lens Mount	EFL (mm)	Aperture (1/f)	HFOV (degrees)	VFOV (degrees)	Lens Weight (g)	Min Focus Dist (meter)	Total Mass (g)
IR-G*QG-4101000	M12	3.7**	1.3	90	65	23	0.2	69
IR-G*QG-4101500	M25	8.1	1.1	40.1	29	27	1.5	93.7
IR-G*QG-4102500	M25	13.0	1.0	24	18.1	23	0.4	89.7
IR-G*QG-4104000	M25	19.0	1.0	16.4	12.3	31.2	2.4	97.9
IR-G*QG-4104500	M25	25.0	1.20	12.4	9.3	40	2.0	106.7
IR-G*QG-4105000	M25	35.0**	1.14	8.9	6.7	45.9	5.0	112.6

\*Standard M and F model. \*\* GXM only

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