



Griffin VGA5-R™ MWIR Camera Core

HOT MWIR Camera Core with Small Pixels for Low System SWaP-C



The Griffin VGA5-R™ camera core is a VGA format (640x512), cryocooled camera core featuring the industry's smallest MWIR VGA sensor made to enable the smallest of infrared imaging systems. The Griffin VGA5-R™ captures snapshot MWIR imagery using Attollo Engineering's HOT Type-II Superlattice (T2SL) detector material. The extremely small pixel pitch of 5 μm enables more pixels on target with a short focal length optic, reducing overall sensor size. It uses a rotary cooler for fast cooldown and high power efficiency. The Griffin VGA5-R™ sensor is also capable of supporting broadband imaging along with day and night laser see-spot capabilities. The Griffin VGA-R™ MWIR Core is built for low SWaP applications and offers a significant opportunity for cost savings at the system level compared to competing MWIR cameras. With a volume of 134 cm^3 and weight of 221 grams, this rotary cooled camera is ideal for small gimbal integration as well as use in SWaP-constrained handheld and soldier-carried systems.

Highlights

- Technology: HOT T2SL MWIR provides imagery with smaller cooler— 3-5 μm wavelength
- Small pitch: 640x512/5 μm pixel pitch reduces the lens size
- Small: 4.2 x 4.6 x 8.6 cm and 221 grams
- Fast cooldown: 2.5 minutes to operating temp
- Low power consumption: < 10 W cooldown and < 4.5 W with room temperature ambient
- Easy to talk to: Multiple output interfaces including USB3 and Camera Link
- Export friendly: has US Commerce classification as EAR 6A003.b.4.a

Applications

- Thermal imaging
- Soldier borne and handheld systems
- Security / surveillance
- Small gimbals and SUAS
- Laser See-Spot
- Precision agriculture
- Gas leak detection
- Microscopy
- Medical – tissue analysis
- Structural non-destructive fatigue assessment

The Griffin VGA5-R™ is designed and manufactured in Attollo's 34,000 ft^2 facility in Camarillo, California. Attollo Engineering specializes in sensors that combine infrared and laser imaging as well as standard and custom IDCA designs for your applications. Attollo is AS9100 certified.

SYSTEM FEATURES

Top Level

Sensor Type	HOT MWIR T2SL
Sensor Size	640x512, 5 μ m
Spectral Band	3.0—5.2 μ m Standard (shorter wavelengths available)
Sensitivity	< 30 mK (50% well fill at T_{bb} = 30°C)
Frame Rate Options	Typical: 30 Hz Max: 220 Hz
Time to Image	< 2.5 min

Mechanical

Size (L x W x H)	8.6 cm x 4.2 cm x 4.6 cm
f/#	f/1.8, f/1.4, f/1.2
Cold Aperture Height	9.5 mm from FPA
Weight	< 221 grams

FPA Characteristics

Shutter Mode	Snapshot
Well Capacity	2.2×10^6 electrons (effective)
Quantum Efficiency	> 70%
Readout Mode	Integrate then read
Integration Time	0.1 usec—frame time less 4.5 msec
Max Frame Rate	220 Hz full frame
Windowing Capable	Yes, max frame rate increases as a function of row reduction
External Sync	Sync In and Sync Out
Operability	> 99.5%

Video Interface

Parallel (16 bit)	Included
USB-C	With personality board
Camera Link	With personality board
Image Processing	AEC, AGC, averaging, histogram equalization, unsharp

Interfacing

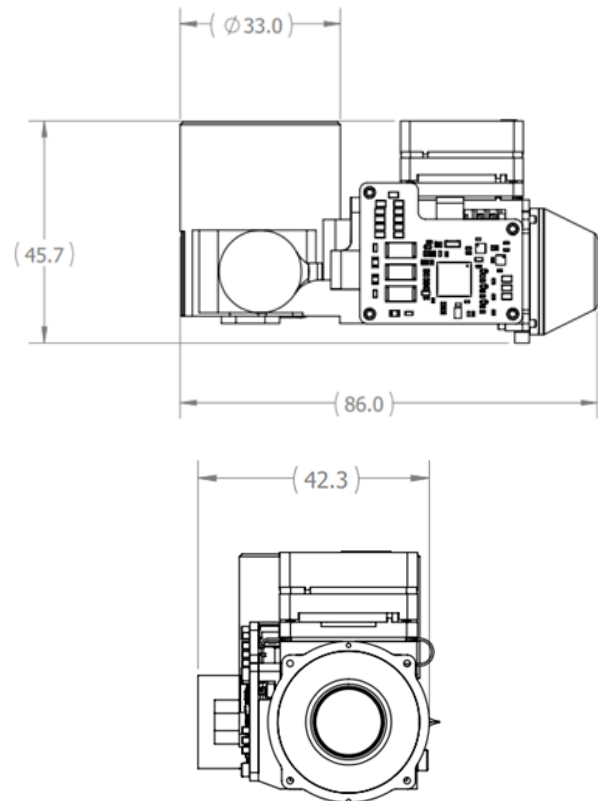
Parallel	50 pin Hirose DF40-50
Input Voltage	Camera: 5V \pm 10%; Cooler: 12V \pm 10%
Power Dissipation	< 10 W cooldown, < 4.5 W steady state
Communication	USB, UART, SPI or I2C
SDK and GUI Available	Yes

Cooler Reliability

Cooler MTTF	>10,000 hours
-------------	---------------

Environmental

Operating Temperature	-40°C to +71°C
Storage Temperature	-50°C to +85°C
Max Altitude	40,000 feet
Humidity	5-95% relative humidity (non-condensing)



Please scan QR code for more information

Equipment described herein is subject to US export regulations under EAR and may require a license prior to export under ECCN 6A003.b.4.a. Specifications are subject to change without notice. © 2022 Attollo Engineering LLC. All rights reserved. XM000020 REV.2022.09.06