The Griffin™ 5-L Series camera cores include the Griffin™ VGA5-L (640x512) and Griffin™ HD5-L (1280x1024), featuring the industry’s smallest MWIR sensors made to enable the smallest of cryocooled infrared imaging systems. The Griffin™ 5-L Series 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. The Griffin™ 5-L series uses a linear cooler for short optical axis length and high power efficiency. The Griffin™ VGA5-L and Griffin™ HD5-L sensors are also capable of supporting broadband imaging along with day and night laser see-spot capabilities. The Griffin™ 5-L series MWIR Cores are 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 169 cm³ and a weight of 340 grams, these linear cooled cameras are 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 3–5.2 µm (MW) and 0.9–5.2 µm (SW/MW) wavelength bands
- Small pitch: 640 x 512, 5 µm and 1280 x 1024, 5 µm pixel pitch reduces the lens size
- Small: 62.35 x 58.25 x 51.21 mm and 340 grams
- Fast cooldown: less than 4 minutes to operating temp
- Low power consumption: 12 W cooldown and 6.5 W typical with room temperature ambient
- Easy to talk to: Multiple output interfaces including USB-C, MIPI, 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-L and Griffin™ HD5-L camera cores are designed and manufactured in Attollo’s 34,000 ft² 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 a merchant supplier of standard and custom format III-V detector arrays, hybridized focal plane arrays, and camera assemblies. Attollo Engineering is AS9100 certified.
SYSTEM FEATURES

Griffin™ 5-L Series: Griffin™ VGA5-L Griffin™ HD5-L

Top Level

Sensor Type HOT MWIR T2SL
Sensor Size 640 x 512, 5 µm 1280 x 1024, 5 µm
Spectral Band 3.0—5.2 µm (Standard)
0.9—5.2 (Broadband)
shorter wavelengths available
NEDT < 35 mK (50% well fill at T_{bb} = 20°C)
Frame Rate Options Typical: 30Hz
Max: 220Hz
Max: 60Hz (HD720p)
Time to Image < 4.0 min

Mechanical

Size (L x W x H) 62.35 x 58.25 x 51.21 mm
f/# f/1.2, f/1.4, f/1.8
Cold Aperture Height 9.5 mm from FPA
Weight 340 grams

FPA Characteristics

Shutter Mode Snapshot
Well Capacity 2.2 x 10^6 electrons (effective)
Quantum Efficiency > 70%
Readout Mode Integrate then read
Min Integration Time 0.1 µsec
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
MIPI With personality board
Camera Link With personality board
Image Processing AEC, AGC, averaging, histogram equalization

Interfacing

Parallel 50 pin Hirose DF40-50
Input Voltage Camera: 5V±10%; Cooler: 12V±10%
Power Dissipation 12 W cooldown, 6.5 W steady state (23°C), typical
Communication USB (USB-C or Camera Link)
UART, SPI or I2C (Parallel)
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)

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