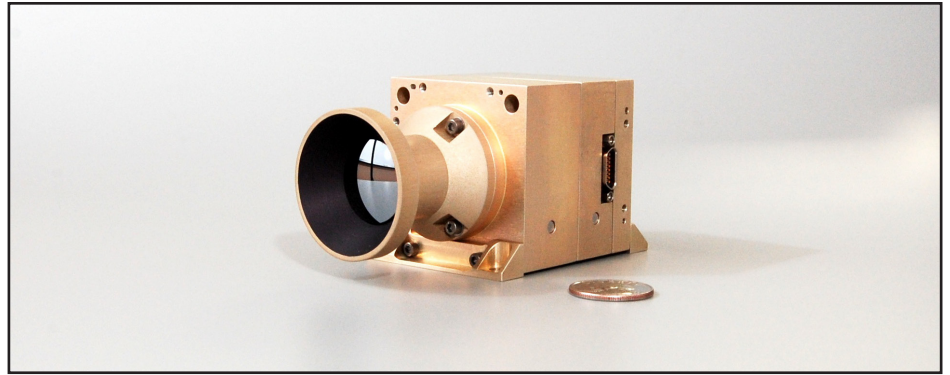


Features

- Uncooled operation
- Amorphous silicon microbolometer
- Acquire still images and video
- Small and lightweight
- 384 (H) x 288 (V) active pixels
- Frame rates up to 50 Hz
- NETD $\leq 100\text{mK}$ @ f/1, 300K, 50Hz
- Adjustable integration time, gain, and microbolometer bias
- Programmable windowing and mirroring
- Standardized optics interface
- False-color post-processing available in DVR
- Radiation tolerant design

ECAM-IR1

Long Wave Infrared Camera



ECAM-IR1

The ECAM-IR1 is a compact Long-Wave Infrared (LWIR) uncooled microbolometer camera, providing thermal images and video as an in-flight engineering diagnostic tool, to detect objects with thermal signatures, or to make general observations in complete darkness.

The IR1 utilizes an uncooled Long-Wave Infrared (LWIR) microbolometer sensor array with integral Read-Out Integrated Circuit (ROIC). The sensor outputs 12-bit pixels that are transmitted to the DVR on a 100 Mbit/s serial link. Within the DVR, video is pre-processed and compressed in real-time, then buffered to memory for playback at a later time. The video is reformatted as needed for input to either a JPEG (lossy) or Huffman First Difference (lossless) compressor.

The IR1 can be programmed for variable window size and mirroring. Video frame rate is fully adjustable up to 50 Hz.

Images may be post-processed with scalable false-color output.

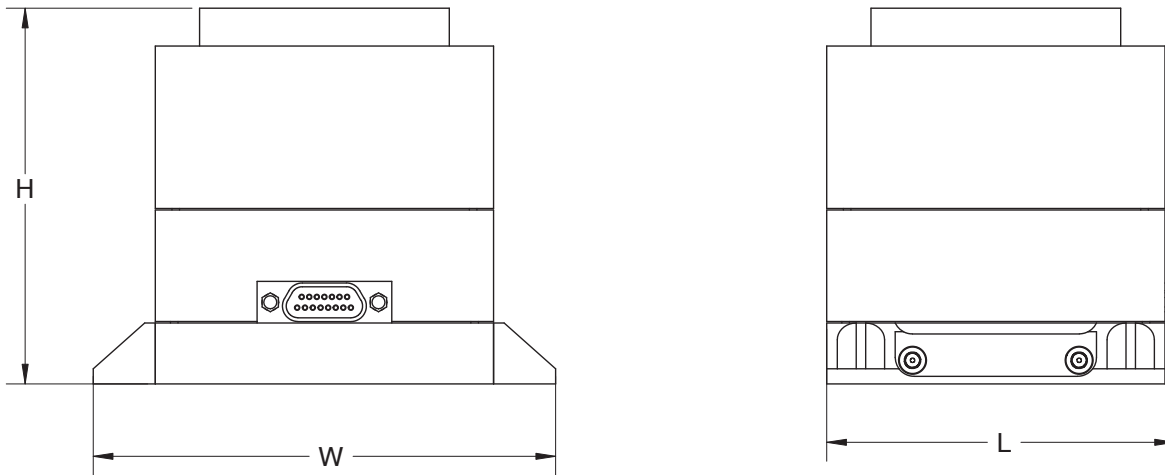
A standard F/1 lens option is available for the ECAM series LWIR-band cameras.



Example IR1 Image with Thermal False Color

ECAM optics are designed for the rigors of space flight, utilizing proven design and manufacturing methodologies with decades of heritage across more than a dozen missions. Our standard lens options have no moving parts, are athermalized to provide stable performance over a wide range of temperatures, and are built to withstand the hazards of launch and long-term operation in orbit.

The IR1 includes mounting flanges that may be configured to mount the camera in one of four orientations.



MSSS FACTS

Headquarters: **San Diego**
 Type: **Small Business**
 Quality: **ISO9001:2008 Compliant**
 DUNS Number: **62-680-9032**
 CAGE Code: **OR9V5**
 NAICS Codes: 333316, 336419, 541512, 541690, 541712, 927110

Version: 20130506
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| Parameter | ECAM-IR1 |
|-----------------------------------|--|
| Mass (without optics) | 330 g |
| Dimensions | 78(W) x 58(L) x 63(H) mm |
| Power Consumption, Idle | 6.5 W |
| Power Consumption, Imaging | 8.75 W |
| Color Bands | 8-13 μ m (LWIR) |
| Frame Size | 384 x 288 |
| Pixel Size | 25 μ m |
| Pixel Rate | 5.5 Mpixel/s |
| Frame Rate | 50 frames/s, |
| NETD | ≤ 100 mK @ f/1, 300K, 50Hz |
| Readout Type | Unbuffered (Buffered in DVR) |
| Preprocessing | Performed in DVR |
| Compression | Performed in DVR |
| Data Interface | Spacewire |
| Supply Voltage | 5 V |
| Design Life | Nominal 10 year (radiation determined) |
| Radiation Dose | 5 years (GEO) |
| Recommended Operating Temperature | -40°C to 50°C |