



UC320U OEM MICROBOLOMETER INFRARED CAMERA SPECIFICATION

Lumitron introduces the fully customizable OEM Microbolometer Infrared Camera Module. This product includes a baseline FPA and allows the customer to select an optic, select a housing, select the I/O requirements and select their own product name (since this is your product). This camera will have your company's look and feel including any labeling that you desire. These options can be selected from our existing solutions, can be fully developed by the customer and integrated into the product or designed to your requirements by our engineering staff.



The Lumitron ECS320A Embeddable Camera Electronics System provides the foundation of the camera module. The ECS320A is comprised of three primary printed circuit board assemblies (each 2 inches x 2 inches). The ECS320A architecture includes an FPA-specific FPA Support Electronic PCB, a universal Camera Controller PCB and a universal Camera Support Electronic PCB.



The ECS320A provides high-functionality imaging capabilities which include: FPA clocking / biasing / power generation, FPA analog video conditioning, FPA video analog-to-digital conversion (14-Bit), FPA non-uniformity correction (two point with ambient temperature compensation and run-time refresh), defective pixel replacement, dual 14-Bit in / 16-Bit out intensity transformation tables (contrast enhancement / radiometric transforms), automatic gain and level control (linear or histogram equalization), interpolated horizontal remapping, display freeze and 2x zoom, standard format analog video generation (NTSC or PAL),

15 color full-screen bit-mapped symbology overlay onto video output, thermoelectric cooler control, calibration flag controller, and input power conditioning / regulation. An application specific Panel I/O PCB connects the ECS320A primary electronics to the external environment.

FPA Specifications

| | |
|---------------------------|-------------------------------------|
| Manufacturer and Part No. | ULIS UL 03 08 1 |
| Detector Type | Microbolometer |
| Array Format | 320 x 240 (NTSC) 384 x 288 (PAL) |
| Detector Material | aSi |
| Pixel Size / Fill Factor | 35 x 35 μm / 80% |
| Spectral Range | 8 - 14 μm |
| Dynamic Range | > 1000:1 Typical |
| Operability | >99.9% |
| FPA Operating Temperature | 30°C |
| NEdT (camera level) | <60 mK (typical w/ f1.0 optic) |

Packaging / Cooler Specifications

| | |
|------------------------|--|
| Cooler Type | Thermoelectric Cooler (TEC) Temperature Stabilizer |
| TEC Stabilization Time | < 60 seconds (at 25°C Ambient) |
| Package Type | Hermetically Sealed Vacuum Package |
| Package Window | AR Coated |

Camera Performance

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|----------------------------------|---|
| Analog Video | NTSC or PAL (factory set) |
| FPA Frame Rate | 59.94 frames/sec NTSC, 50 frames/sec PAL |
| Digital Video | 14 – Bit (uncorrected, corrected, pixel replaced) 8 or 16 – Bit (post transform) |
| Non-Uniformity Correction Tables | Up to 3 available |
| Video A/D Resolution | 14 Bits |
| Calibration Flag | Ambient and Elevated Temp, Automated / Periodic One Point Refresh |
| External Timing | External Sync and External Clock |
| Remote Control | RS232, RS422 full duplex or RS485 half duplex (factory set) |
| Power Input | +6 to +16 VDC, +16 to +25 VDC, or +25 to + 28 VDC (range factory set) |
| Power Consumption | <4 W Steady State (3.6 W typical @ 25°C amb), <12 W at Startup (1 min) |

Enclosure Specifications (overall camera packaging determined by OEM Customer)

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|-----------------------|--|
| Dimensions | 3.00 in H x 3.00 in W x 5.50 in L minimal (w/o lens) |
| Weight | 2.5 lbs minimal (w/o lens) |
| Operating Temperature | -20 to 50°C (depending on Customer design) Contact Factory for Extended Temperature Range |
| Storage Temperature | -40 to 70°C |
| Water Resistance | NEMA 4 (depending on Customer design) |
| Humidity | 10 to 95% non-condensing (depending on Customer design) |
| Connectors | Quantity and Type determined by Customer |

f/1.0 Optics (other focal lengths, f #s, and focus options are available)

| Focal Length | Minimal Focus | FOV |
|--------------|---------------|--------------|
| 25 mm | 12 inches | 25° x 19° |
| 50 mm | 22 inches | 12.5° x 9.5° |
| 100 mm | 36 inches | 6.2° x 4.7° |
| 150 mm | 60 inches | 4.1° x 3.2° |

These Features and Specifications are subject to change without notice.
