



Infrared Camera System for Very Low Background Instrumentation

Camera Components

- Focal Plane Array (FPA): Detector array integrated with Read out integrated circuit (ROIC) in a hybrid unit
- Dewar: LN2 pour filled dewar with no internal optics, other than a limiting cold aperture defining the F/# and a AR coated sapphire entrance window
- Orientation: Available in Sideward looking, Downward looking or Upward looking options
- LN2 Cooling System: Includes dewar interface bulb, hoses and tank valve
- Control Electronics: Provide all clocking and biases to the FPA and digitizing array in multiple video taps at selected pixel rates
- Cables: Data, Communication and Power
- Temperature sensor/control electronics: Internally mounted temperature sensor and heater

Available Options

- Power supply
- Image acquisition system



Upward Looking Configuration

Specifications

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|----------------------------|--|
| FPA format | 256 x 256 with 40 micron pixel pitch (PICNIC ROIC) 640 x 512 or 1016 x 1016 with 18 micron pixel pitch (HAWAII ROIC) |
| Detector material | Silicon for visible band from 400 nm to 1.0 mm InGaAs for NIR from 900 to 1600 nm HgCdTe for SWIR to MWIR from 900 nm to 5.0 mm |
| Mean QE | Wavelength, AR coating and temperature dependent. >80% peak QE achievable. |
| Frame rate | Range from 1Hz to >60 Hz, depending on FPA array size, clock speed and ROIC type |
| Mean dark current | Detector material and temperature dependent (e.g. < 2e- for HgCdTe at 77K) |
| Total Noise per frame | ROIC dependent (e.g. < 20 e- for HAWAII ROIC achievable) |
| Mean well capacity | >80,000 e- depending on system gain |
| Response operability | ≥98% |
| Integration and triggering | Can be triggered by TTL compatible input signal. Integration time will be Pattern Generator register entry controlled by customer |
| Windowing mode | ROIC type dependent |
| Electrical interface | 16-bit data digitization with either CameraLink or AIA 16 bit RS422 w/ RS232 differential serial link, electrically isolated from camera electronics |

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