

WREN UNCOOLED PYROELECTRIC DETECTOR FOR INFRARED MICROSCOPY

SELEX Galileo designs, develops and manufactures InfraRed (IR) detectors at its dedicated facility in Southampton, UK. With a reputation for providing customers with the best in high performance and cost-effective technology for infrared detection systems, SELEX Galileo offers a unique level of expertise.

The Wren detector is a high performance single element DLATGS pyroelectric infrared detector, designed for use in infrared microscopy and spectroscopy applications. The detector has been developed to replace conventional cooled single element technologies. It operates at ambient temperature to offer the user the benefit of a broad band IR response (0.1 to $>100\mu\text{m}$) without the inconvenience or cost of maintaining a cooling system.

The Wren detector's active area directly replicates that of existing technologies in order to minimise the instrument modifications needed to integrate this detector. It is available with a variety of window filters to suit customer applications.

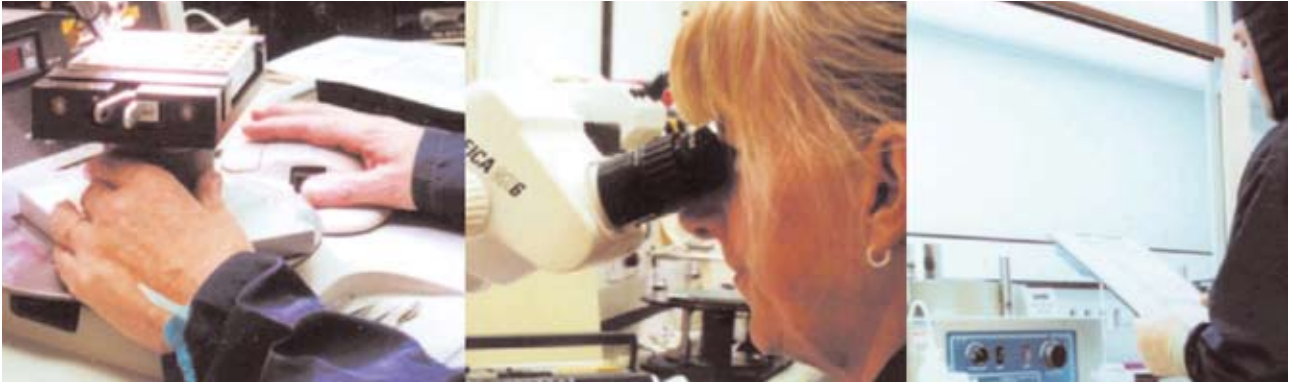
MAIN FEATURES

- DLATGS is one of the highest performing commercial pyroelectric materials available
- Doped with Deuterium to raise Curie temperature to $\sim 59^\circ\text{C}$
- Doped with L-alanine to prevent permanent depoling after excursions above Curie temperature
- Broad spectral response 0.1 to $>100\mu\text{m}$
- Standard detector supplied in a TO5 package
- Element size $250\mu\text{m} \times 250\mu\text{m}$
- 10ms Thermal Time Constant (Nominal)
- Choice of windows
- Choice of pinning (3 or 4 pin header)
- Variety of pinning configurations available
- Hermetic sealing or Parylene coating for improved environmental durability
- TE Stabilisation option.

KEY BENEFITS

- No cooling necessary
- No maintenance
- Low cost.

WREN Uncooled pyroelectric detector for infrared microscopy



Detector manufacture and analysis facilities

TECHNICAL SPECIFICATIONS

Active Area

| | |
|---------------------|-------------|
| Number of Elements: | 1 |
| Element Size: | 250 x 250µm |

Electrical

| | |
|---|----------------|
| Recommended Supply Voltage: | +8 to 10V |
| Maximum Supply Voltage: | +25V |
| Typical Output Impedance: | 360Ω |
| Recommended Source Load Resistor: | 470Ω |
| Integral JFET Pre-amplifier Gate Resistance of: | 100GΩ |
| Operating Frequency Range: | 10 to >3000 Hz |
| Signal Polarity: | -ve |

Performance

Measured with a 1000K Black Body and at ambient temperature of 22°C, with KBr window

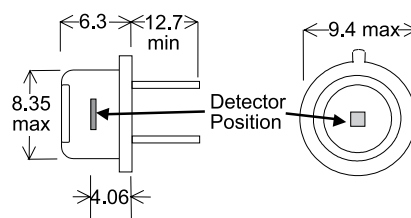
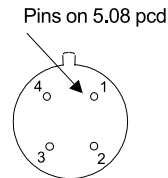
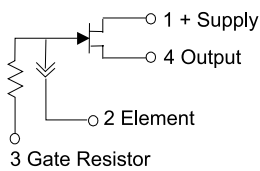
| | |
|---------------------------------|---|
| Typical Responsivity at 1000Hz: | 580 V/W |
| Typical D* at 1000Hz: | $1.9 \times 10^8 \text{ cm}^2 \text{ Hz/W}$ |
| Typical Responsivity at 100Hz: | 4200 V/W |
| Typical D* at 100 Hz: | $2.9 \times 10^8 \text{ cm}^2 \text{ Hz/W}$ |

Environmental

| | |
|------------------------|-------------|
| Operating Temperature: | -20 to 55°C |
| Storage Temperature: | -20 to 70°C |
| Storage Humidity: | <50% RH |

Pinning

(Dimensions in mm)



For more information please email sales.marketing@selexgalileo.com

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