



UNCOOLED PYROELECTRIC DETECTOR FOR INFRARED MICROSCOPY

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 μm) 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.

Leonardo 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, Leonardo offers a unique level of expertise.

MAIN FEATURES

- DLATGS is one of the highest performing commercial pyroelectric materials available
- Doped with Deuterium to raise Curie temperature to -59°C
- Doped with L-alanine to prevent permanent depoling after excursions above Curie temperature
- Broad spectral response 0.1 to >100 μm
- Standard detector supplied in a TO5 package
- Element size 250 μm x 250 μm
- 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.

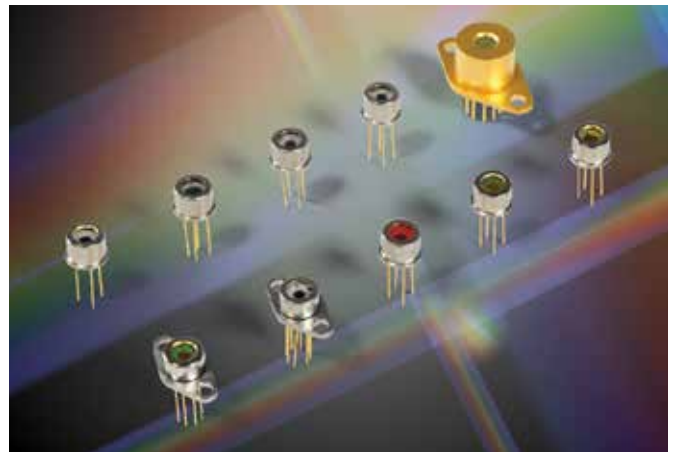
WREN

KEY BENEFITS

- No cooling necessary
- No maintenance
- Low cost

TECHNICAL SPECIFICATION

ACTIVE AREA	
Number of elements	1
Element size	250µm x 250µm
ELECTRICAL	
Recommended supply voltage	+8V 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 >3000Hz
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 x 10 ⁸ cm√ Hz/W
Typical responsivity at 100Hz	4200 V/W
Typical D* at 100Hz	2.9 x 10 ⁸ cm√ Hz/W
ENVIRONMENTAL	
Operating temperature	-20°C to 55°C
Storage temperature	-20°C to 70°C
Storage humidity	<50% RH



Pinning (Dimensions in mm)

