

Model 420M3

5mmØ Pyroelectric Laser Detector for UV/Vis/IR



Manufactured under one or more of the following U.S. patents: 3,839,640 - 4,218,620 - 4,326,663 - 4,384,207 - 4,437,003 - 4,441,023 - 4,523,095

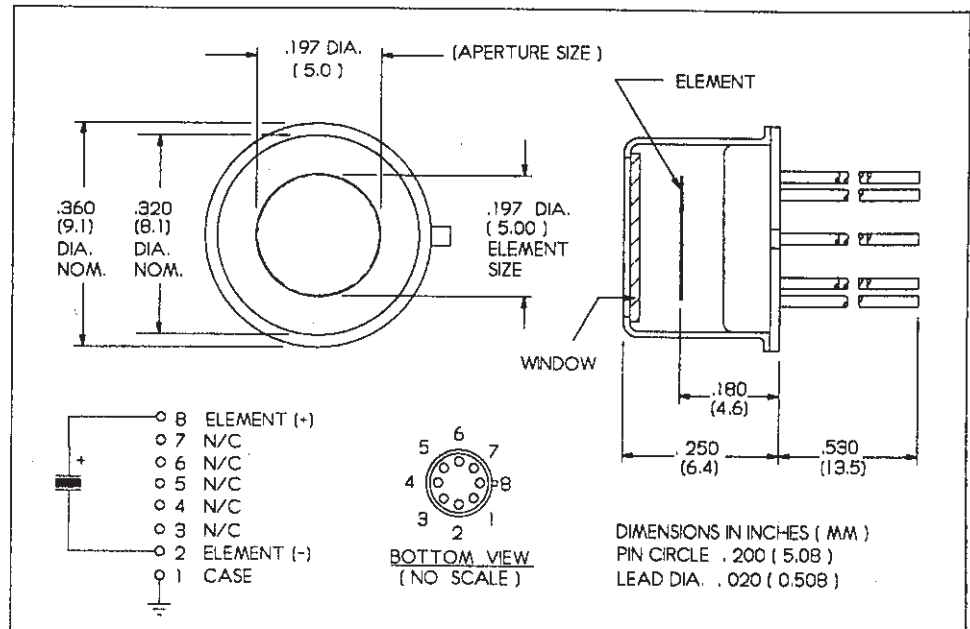
Model 420M3 consists of a single lithium tantalate sensing element sealed into a TO-5 transistor housing with optical filter (window). See EltecData #101 for window selection guide.

A special element mounting technique is used to heat sink the sensing element, allowing detection at higher power levels.

Short pulse resolution is possible in the voltage mode with low value (50Ω or higher) load resistance. The current mode (current to voltage converter) may also be used for short pulse resolution with feedback resistor (R_F) values between 1K and 100KΩ. The voltage mode may also be used to integrate the detector output by using a very high value load resistance and an impedance converter, such as Eltec Model 320. Load resistance values may range from $1 \times 10^6 \Omega$ to $1 \times 10^{11} \Omega$. See EltecData #109 for more information.

Applications

- Laser Pulse Profile Studies
- Pulse Energy Measurements
- Useful with Monochromatic, Tunable or Multi-Laser Systems
- Laser Power Monitoring (when used with a beamsplitter)
- Millimeter Wave Studies
- UV Laser Detector

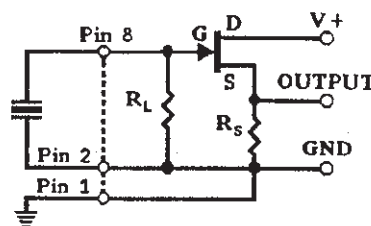


Detector Specifications - - Model 420M3

Detector Type:	Single Element
Element Size:	5mmØ
Element Type:	Lithium Tantalate
Optical Bandwidth (Window Dependent):	0.001 to 1000 μm
Responsivity (Min):	0.319 $\mu\text{A/W}$, @25°C, 8.3 - 14 μm , 10Hz
Thermal Breakpoint (Typ):	5 Hz
Recommended Operating Temperature:	- 55 to + 125 °C
Storage Temperature:	- 55 to + 125 °C
Incident Power Limit:	5 W/cm ²
Output Polarity:	Positive for Positive Change
Output Resistance:	> 5 X 10 ¹² Ω
Capacitance (Min / Max):	76 to 140 pF

Rise time and frequency response dependent on electronics employed.

Voltage Mode Operation



Current Mode Operation

