

# OL SERIES 740-17 & OL 740-17C

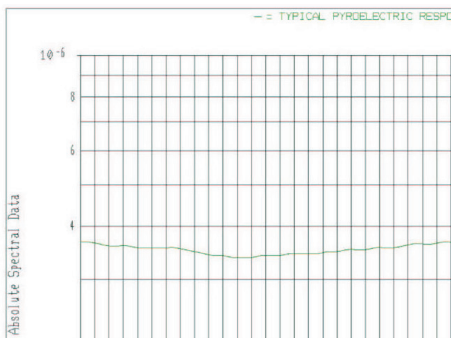
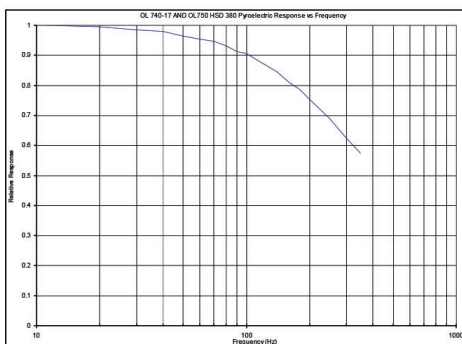
Pyroelectric Detectors

The OL 740-17 is a moderately sensitive, broadband pyroelectric detector. The spectral response is relatively constant over a wide wavelength range. The pyroelectric detector has a 5 mm diameter, blackened lithium tantalate crystal and a high-sensitivity current mode preamplifier sealed into a TO-99 transistor housing with an infrared transmitting KRS-5 window. This preamplifier converts the extremely small AC current signal to millivolt levels suitable for voltage mode amplifiers. The detector is stable, non-hygroscopic and relatively insensitive to ambient temperature changes. The detector is mounted in an acoustically dampened housing.

The OL 740-17C consists of the OL 740-17 calibrated for spectral response from 1 to 14.5  $\mu\text{m}$ . The OL 740-17EC is calibrated from 1 – 30  $\mu\text{m}$ . It is particularly useful as a working standard for calibration of other infrared detectors.

The relative spectral response of the OL 740-17C is based on spectral evaluation of the blackened coating and the transmittance of the KRS-5 window. An absolute calibration is performed relative to a NIST-traceable standard detector at a wavelength of 1.0  $\mu\text{m}$ .

SPECIFICATIONS	
<b>Active Area</b>	5 mm Dia (0.196 cm <sup>2</sup> )
<b>Optical Window</b>	KSR-5
<b>Wavelength Range</b>	0.6 to 30 $\mu\text{m}$
<b>Noise</b> (Relative to Detector, 163 HZ)	Typ. $5.0 \times 10^{-15}$ A $\sqrt{\text{Hz}}$
<b>Noise</b> (Relative to BNC output, 163 HZ)	Typ. $5.0 \times 10^{-6}$ V $\sqrt{\text{Hz}}$
<b>Noise Equivalent Power</b>	Typ. $1.5 \times 10^{-8}$ W $\sqrt{\text{Hz}}$
<b>Noise Equivalent Radiance</b>	Typ. $8.2 \times 10^{-9}$ (W/cm <sup>2</sup> ) $\sqrt{\text{Hz}}$
<b>Responsivity</b> (Relative to Detector)	Typ. $3.3 \times 10^{-7}$ A/W $\sqrt{\text{Hz}}$
<b>Responsivity</b> (Relative to BNC Output)	Typ. $3.3 \times 10^{-2}$ V/W $\sqrt{\text{Hz}}$
<b>Irradiance Responsivity</b> (Relative to Detector)	Typ. $6.1 \times 10^{-8}$ A/(W/cm <sup>2</sup> ) $\sqrt{\text{Hz}}$
<b>Irradiance Responsivity</b> (Relative to BNC Output)	Typ. $6.1 \times 10^{-1}$ V/(W/cm <sup>2</sup> ) $\sqrt{\text{Hz}}$
<b>Operating Temperature</b>	10°C to 30°C
<b>Internal Gain</b>	$1.0 \times 10^{19}$ V/A
<b>Output Impedance</b>	75 $\Omega$
<b>Frequency Response</b>	1 Hz to 2kHz
<b>Supply Voltage</b>	12 VDC (P5-2.1 mm)



Thermal detector response vs frequency