

EYE RESPONSE DETECTORS

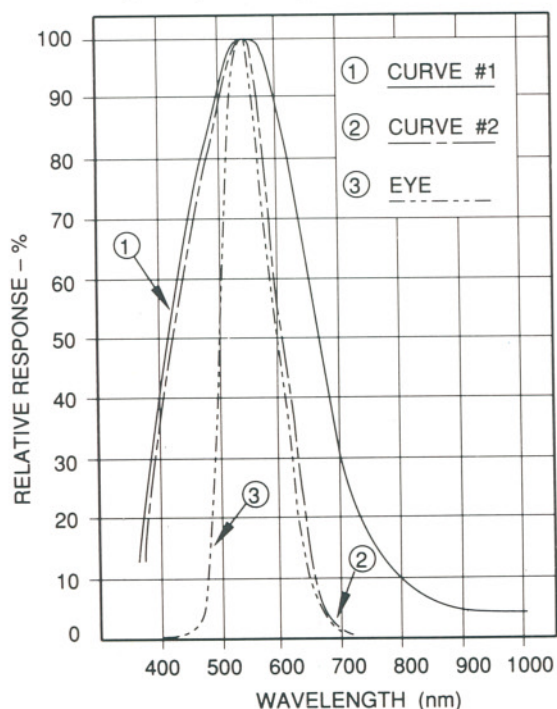
Centronic Series E photodetectors use the successful Series 5T chip together with high quality glass colour correcting filters. The resulting spectral response approximates to that of the human eye making this device ideal for use in general photometric applications.



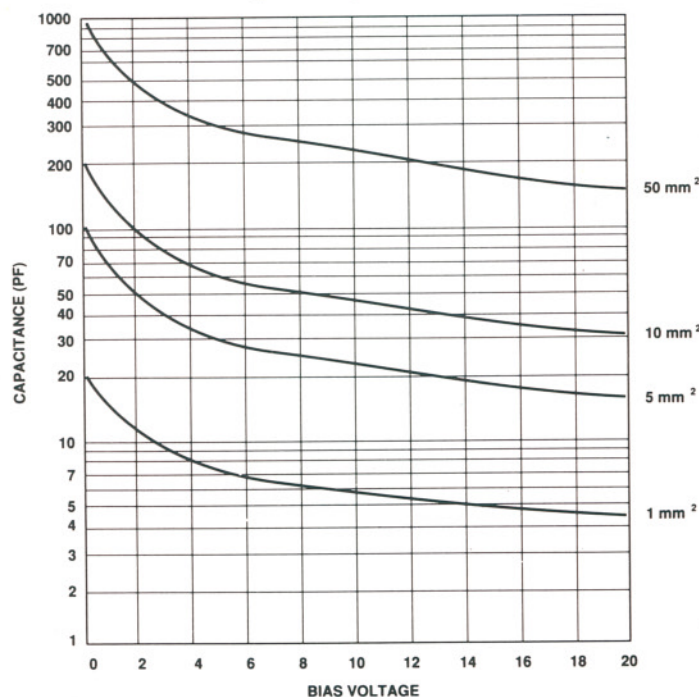
ABSOLUTE MAXIMUM RATINGS

| | Max. Rating |
|---|----------------|
| DC Reverse Voltage | 15V |
| Peak Pulse Current (1 μ s, 1% duty cycle) | 200mA |
| Peak DC Current | 10mA |
| Storage Temperature Range | -25°C to +85°C |
| Operating Temperature Range | -25°C to +75°C |
| Soldering Temperature for 5 seconds max. | 200°C |

Series E - Typical Spectral Response
(for equal energy source)



Series E - Typical Capacitance versus
Bias Voltage for a given Detector area



Electrical / Optical Specifications

Characteristics measured at 22° C (±2) ambient, and a reverse bias of 12 volts, unless otherwise stated.
Shunt Resistance measured at ±10mV.

Single Elements

| Type No. | Active Area | | Responsivity nA Lux ⁻¹ | | Dark Current nA | | NEP WHz ^{-1/2} λ = 550 nm Typ. | Capacitance pF | | Shunt Resistance Megohms | | Spectral Curve (Page 22) | Risetime ns λ = 630 nm R _L = 50 Ω Typ. | Package |
|----------|-----------------|-------------|--------------------------------------|------|--------------------|------|---|----------------|------------------|-----------------------------|------|--------------------------------|--|---------|
| | mm ² | mm | Min. | Typ. | Max. | Typ. | | Vr = 0 Max. | Vr = 12V Max. | Min. | Typ. | | | |
| OSD1-E | 1 | 1.13 dia | 1.5 | 2 | 2 | 0.5 | 1.5 x 10 ⁻¹⁴ | 30 | 6 | 100 | 1000 | 1 | 7 | 1 |
| OSD3-E | 3 | 2.16 x 1.4 | 4 | 5 | 5 | 1 | 1.8 x 10 ⁻¹⁴ | 80 | 20 | 60 | 700 | 1 | 9 | 1 |
| OSD5-E | 5 | 2.52 dia | 6 | 7.5 | 10 | 2 | 1.9 x 10 ⁻¹⁴ | 130 | 35 | 40 | 600 | 1 | 9 | 3 |
| OSD7.5-E | 7.5 | 2.75 x 2.75 | 8 | 11 | 10 | 2 | 2.7 x 10 ⁻¹⁴ | 150 | 40 | 30 | 300 | 1 | 10 | 3 |
| OSD15-E | 15 | 3.8 x 3.8 | 16 | 22 | 10 | 3 | 5.2 x 10 ⁻¹⁴ | 390 | 80 | 5 | 80 | 1 | 12 | 3 |
| OSD50-E | 50 | 7.98 dia | 22 | 30 | 40 | 5 | 9.3 x 10 ⁻¹⁴ | 1300 | 270 | 1.5 | 25 | 2 | 26 | 9 |
| OSD60-E | 62 | 7.9 x 7.9 | 26 | 35 | 50 | 9 | 1.3 x 10 ⁻¹³ | 1800 | 310 | 1 | 12 | 2 | 30 | 9 |
| OSD100-E | 100 | 11.3 dia | 45 | 60 | 100 | 20 | 1.2 x 10 ⁻¹³ | 2500 | 520 | 1 | 15 | 2 | 45 | 13 |

Note: In addition to the Series E listed above, Centronic can provide any other detector in this catalogue with optical filters. Contact factory directly for more information.

Unit Conversion Table for Illuminance

The Series E photodiodes have been colour corrected to provide a photopic response. They can be used as low cost illuminance monitors for many instrument and industrial applications. The following table provides useful conversion factors for various illuminance units.

| lux lx(lm/m ²) | phot ph(lm/cm ²) | foot-candle fc(lm/ft ²) | watt per square centimetre* W/cm ² |
|-------------------------------|---------------------------------|--|---|
| 1 | 1.000 x 10 ⁻⁴ | 9.290 x 10 ⁻² | 5.0 x 10 ⁻⁶ |
| 1.000 x 10 ⁴ | 1 | 9.290 x 10 ² | 5.0 x 10 ⁻² |
| 1.076 x 10 ¹ | 1.076 x 10 ⁻³ | 1 | 5.4 x 10 ⁻⁵ |
| 2.0 x 10 ⁵ | 2.0 x 10 ¹ | 1.9 x 10 ⁴ | 1 |

* Total irradiance (measured value) by the CIE standard light source "A".

Highlighted items are Centronic standard products generally available from stock