Silicon Photodetectors

Series E

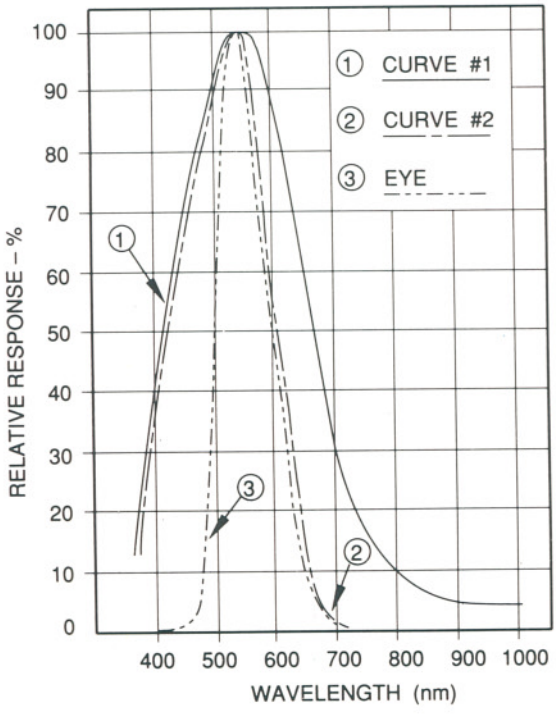
EYE RESPONSE DETECTORS

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.

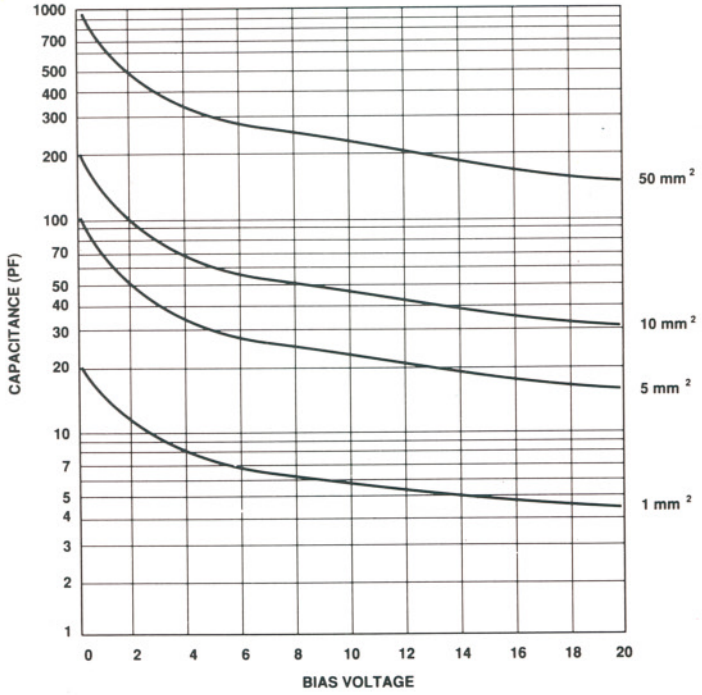
ABSOLUTE MAXIMUM RATINGS

	Max. Rating
DC Reverse Voltage	15V
Peak Pulse Current (1 µs, 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



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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$^{-\frac{1}{2}}$ λ = 550 nm	Capacitance pF		Shunt Resistance Megohms		Spectral Curve (Page 22)	Risetime ns λ = 630 nm R_L = 50 Ω	Package
	mm^2	mm	Min.	Typ.	Max.	Typ.	Typ.	Vr = 0 Max.	Vr = 12V Max.	Min.	Typ.		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

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