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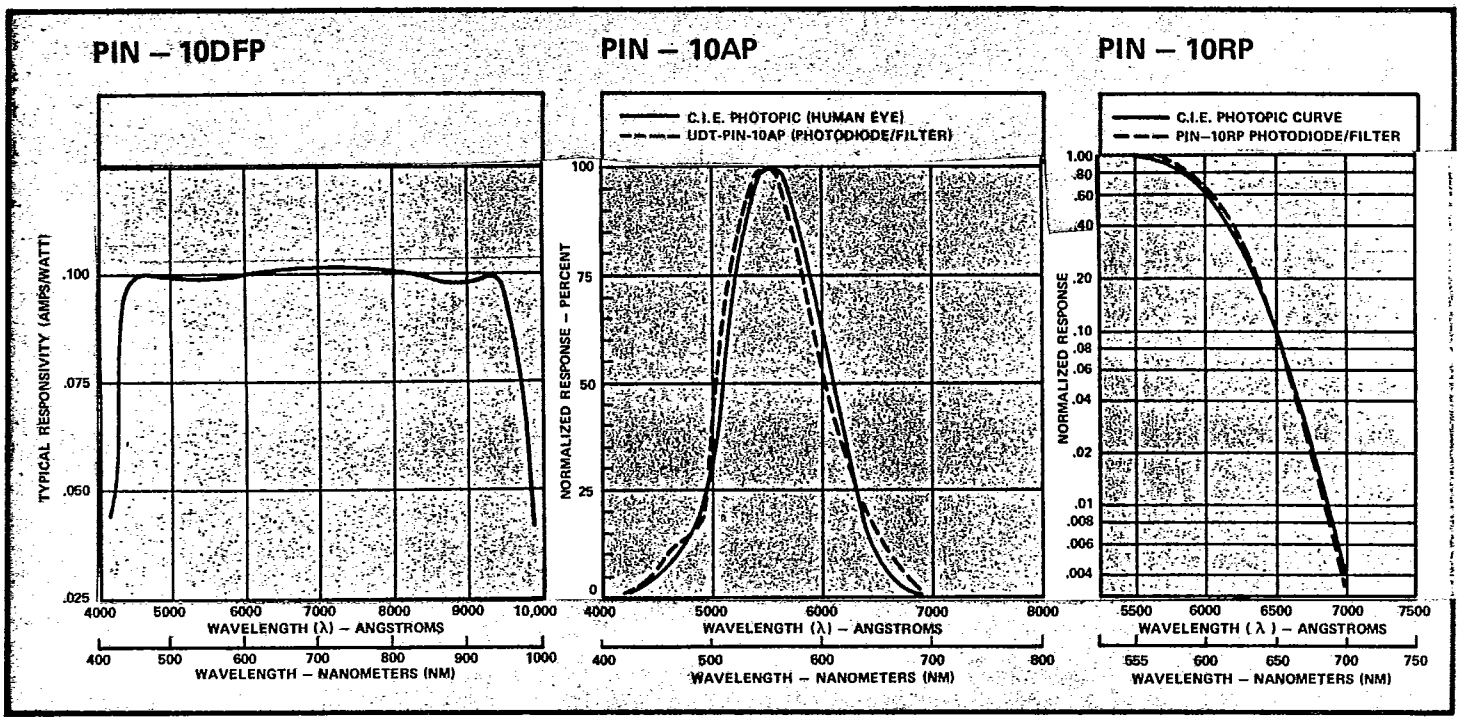
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Find the *OSI Optoelectronics / United Detector Technology PIN-10AP* at our website: *Click HERE*

UNITED DETECTOR TECHNOLOGY

DATA SHEET 9F006

DETECTOR/FILTER COMBINATIONS



THESE DETECTOR/FILTER COMBINATIONS combine PIN silicon photodiode and a multiple element colored glass subtractive filter. With the glass filter element mounted in front of the detector, the spectral response curves shown above are produced. The glass subtractive filter is computer designed to correct the detector spectral response to the desired spectral response. This is accomplished by cementing together as many as five separately polished colored glass types and then individually mating this filter to a spectrally selected photodiode. Since UDT is a volume manufacturer of PIN photodiodes, the spectral selection of photodiodes from production runs is possible. All three of the combinations, PIN-10DFP, PIN-10AP, and PIN-10RP, are mounted in identical housings, shown in the photograph (Lower Right). The detector has a BNC output.

THE PIN-10DFP (DETECTOR/FILTER COMBINATION) produces a flat spectral response from 450 nanometers to 950 nanometers. This is the spectral response required for radiometric measurements, and is the response exhibited by thermopiles. The advantages of the PIN-10DFP over thermopiles are stability and sensitivity. The PIN-10DFP is a thousand times more sensitive than a thermopile, and ten times more stable than a thermopile. The PIN-10DFP can be calibrated by UDT (traceable to NBS) in terms of microamps out per microwatts of light into the PIN-10DFP. The PIN-10DFP is supplied uncalibrated unless otherwise ordered.

THE PIN-10AP (DETECTOR/FILTER COMBINATION) produces a spectral response that duplicates the human eye (C.I.E. standard photopic curve). This is the spectral response required for photopic measurements. The unit can be calibrated by UDT in terms of microamps out per ft. candle incident. The PIN-10AP is supplied uncalibrated unless otherwise ordered.

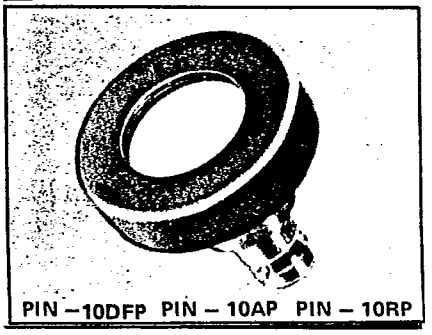
THE PIN-10RP (DETECTOR/FILTER COMBINATION) produces a spectral response that duplicates the C.I.E. photopic curve in the red region, from 5800Å to 7200Å. By concentrating the filter design on this region only, an extremely close match has been achieved. The deviation between the PIN-10RP spectral response and the C.I.E. curve is less than 5%. This close match is especially useful for visible LED measurements in photopic units. A correct value for LED photopic output is obtained independent of LED peak wavelength. The PIN-10RP can be calibrated by UDT in terms of microamps out per ft. candle. The PIN-10RP is supplied uncalibrated unless otherwise ordered.

UNIQUE CHARACTERISTICS

- Spectral matching to ±5% (PIN – 10RP)
- Linear output: 10^{-11} watts to 10^{-3} watts
  10^{-5} ft. candles to 10^{3} ft. candles
- Frequency Response: DC to 15 megahertz
- Active Areas: $1cm^2$

APPLICATIONS INCLUDE

- Photometers
- Spectroradiometers
- Laser power meters
- LED calibrators
- Thermopile replacement



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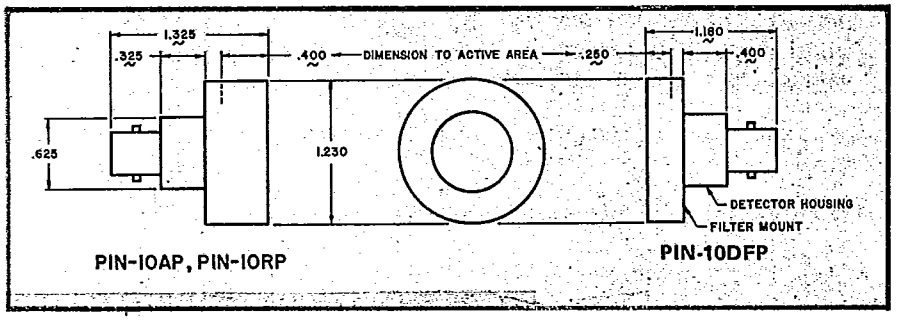
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DETECTOR/FILTER COMBINATIONS

ELECTRO·OPTICAL CHARACTERISTICS (TYPICAL)

	PIN–10DFP	PIN–10AP	PIN–10RP	UNITS
Responsivity:	.1			μA/μW
		.4	.4	mA/L
Capacitance	10	10	10	nF @ 0 bias
Dark Current @ 3V (typ.)	—	1.0	1.0	μA
Rise Time:	1.0	1.0	1.0	μs @ 0 bias
Active Area:	1	1	1	cm^2
Spectral Match:	±7% (point by point)	±2% (area)	**±5% (point by point)	
Source Impedance	1.0	1.0	1.0	MΩ (min.)
Source Resistance	—	5MΩ	5MΩ	@ 3V
NEP	$1x10^{-11}$	$1x10^{-11}$	$1x10^{-11}$	W/√Hz @ 850 nm

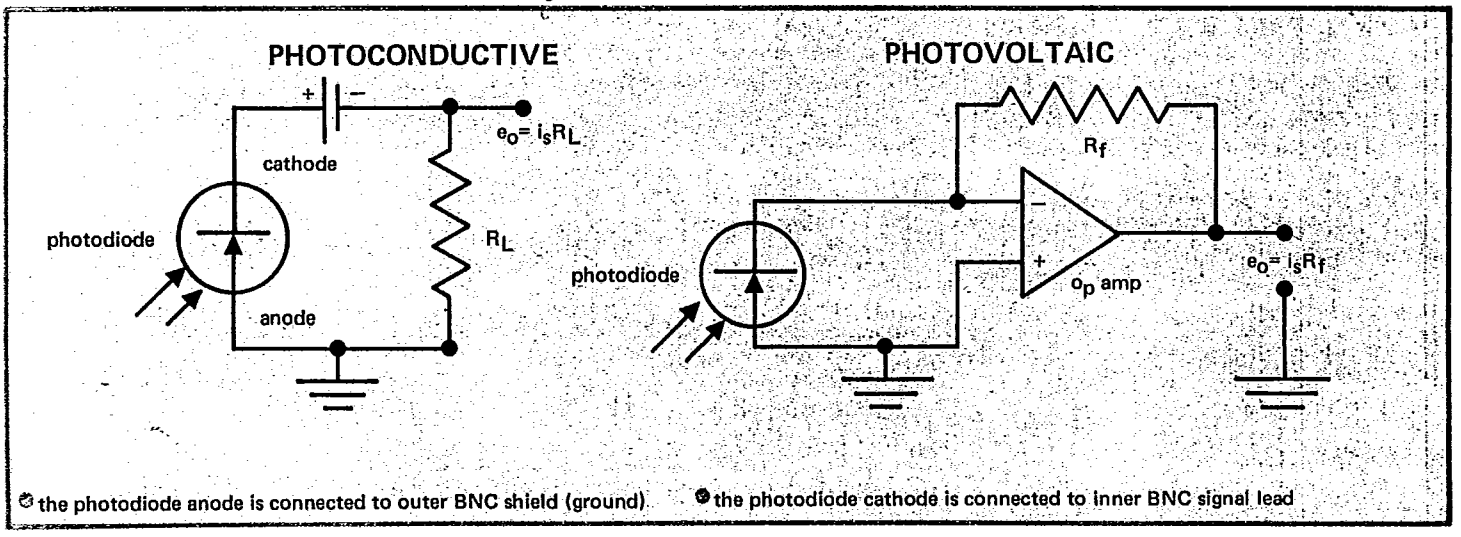
MECHANICAL DETAILS



** this is the maximum deviation point by point from 570 to 730 nanometers.

NOTE: PIN-10DFP, PIN-10AP and PIN-10RP have been optimized to photovoltaic operation.

TYPICAL HOOKUPS



❶ the photodiode anode is connected to outer BNC shield (ground). ❷ the photodiode cathode is connected to inner BNC signal lead

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