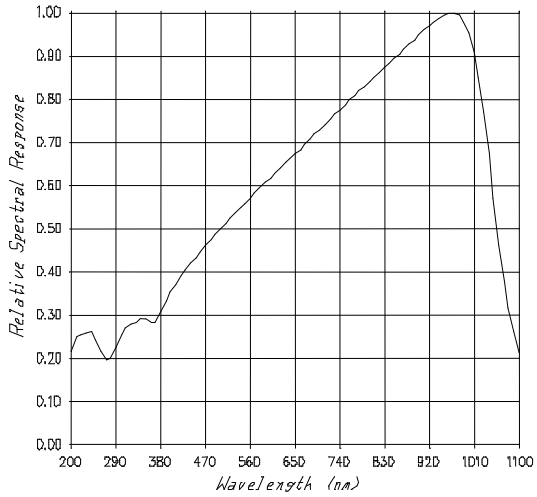
OL 730-5A and OL 730-5C
UV-Enhanced Silicon Detector



The OL 730-5A and OL 730-5C UV Enhanced Silicon Detectors are 1 cm^2 active area, high impedance, low capacitance, planar diffusion photodiodes. These detectors, which are sensitive over the wavelength range of 200 to 1100 nm, exhibit superior uniformity over the receiver and are linear from a few femtowatts to a few milliwatts. The maximum incident irradiance level is 10 milliwatts/cm^2. The detector response exclusive of the filter and measurement circuitry will change 0.1% every 1° C in temperature change below 1um typical.

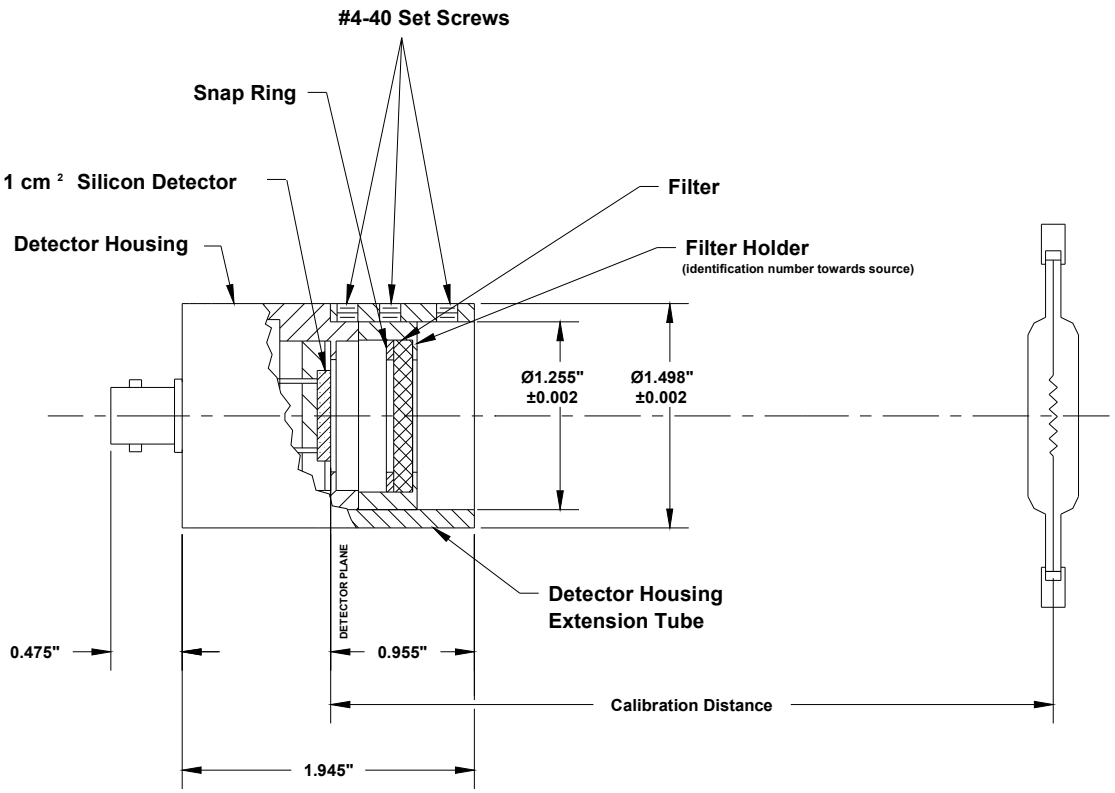
The OL 730-5s are mounted in rugged, machined, aluminum housings that reduce EMI and enhance overall performance. The cylindrical housing consists of a removable filter extension tube capable of accepting two, 1-inch diameter filter holders. The detector is terminated into a BNC at the end of the housing.

The OL 730-5C is calibrated for spectral response over the wavelength range of 250 to 1100 nm. An optional calibration from 200 to 250 nm is also available. All spectral response calibrations are traceable to detector standards supplied by the NIST (National Institute of Standards and Technology) and are performed by irradiating the central 7 mm diameter area of the detectors with monochromatic flux.

OL 730-5 Specifications (Typical)	
Wavelength range	200 to 1100 nm
Responsivity (peak)	0.5 A/W @ 960 nm
NEP (peak)	2 x 10^{-14} W @ 960 nm
Active area	1 cm^2 (1 X 1 cm)
Output impedance	0.2 giga-ohms
Output capacitance	1100 pf
Response time	3 µs
Linearity	≤ 0.2% (10-15 –10-3 Amps)
Uniformity	≤ 1% (250 to 960 nm)
Size (detector housing)	1½ dia. X 1¼ inches (cylindrical)
Connector	BNC

OL 730-5C Specifications	
Wavelength range (standard)	250 to 1100 nm
Wavelength range (optional)	200 to 1100 nm
Calibrated area	7 mm dia.
Long term stability	± 1% for 6 months
Uncertainty (relative to NIST)	
200 to 250 nm	± 1.5%
250 to 400 nm	± 1.0%
400 to 960 nm	± 0.5%
960 to 1000 nm	± 1.0%
1000 to 1060 nm	± 1.5%
1060 to 1100 nm	± 2.0%

Opto-Mechanical Layout of the OL 730-5A Silicon Detector



Optional Filters

A wide selection of optical filters are available for use with the OL 730-5A/730-5C UV-Enhanced Silicon Detectors. The filters have 1-inch diameters and are mounted in holders that insert into the detector housing. The available filters consist of:

- **OL 730-5-PF Photopic Filter** - A photometric correction filter that produces an f_1' factor of 4% when used with the OL 730-5A/730-5C.
- **OL 730-5-PF-LED High Accuracy Photopic Filter** - A photometric correction filter specifically matched to an OL 730-5A/730-5C Detector. This combination produces an f_1' factor of < 1.6%.

  f_1' = Mean deviation of the spectral match between the photopically corrected detector and the CIE Standard Illuminant "A".

- **OL 730-5-RF Radiometric Filter** - A subtractive filter combination that modifies the spectral response of the OL 730-5A/730-5C Detector such that it is relatively flat (± 5%) over the wavelength range of 460 nm to 980 nm. Typical sensitivities of the detector/radiometric filter combination are 0.14 A/W.
- **OL 730-5-RB Color Temperature Filters** - Set of 2 filters for determining color temperature of incandescent light sources over the temperature range of 2000 K to 3100 K.
- **OL 730-1, 730-2, and 730-3 Neutral Density Filters** - 10%, 1%, and 0.1% nominally transmitting neutral density filters (quartz) with calibrations for spectral transmittance over the wavelength range of 250 nm to 1100 nm.
- **OL 730-5-XXX Spectral Bandpass Filters -** Narrow bandpass interference filters with peak wavelength transmittance and bandpass specified by customer.

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