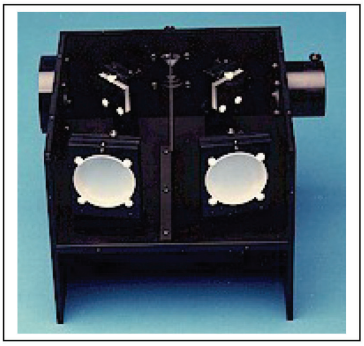
OPTRONIC®
LABORATORIES

OL SERIES 740-71

Detector QE/ Reflectance Attachment



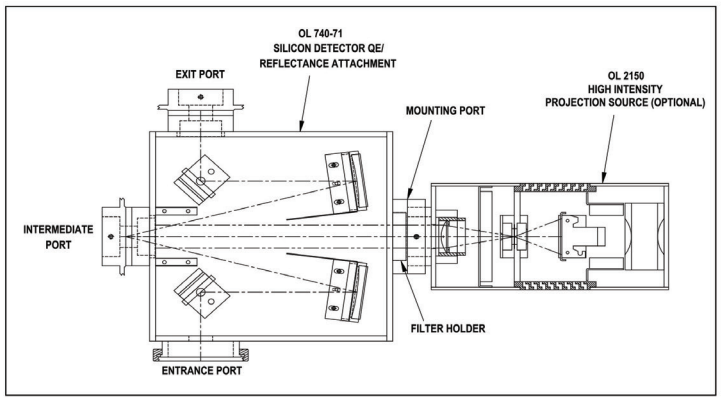
The OL 740 71 Detector QE/ Reflectance Attachment is used to measure the spectral reflectance and quantum efficiency of detectors. It is especially useful for measuring the internal QE of solar cells. This reflectance attachment is designed to be used as an exit optics accessory for the OL 746, OL 740A and OL Series 750 Spectroradiometric Measurement Systems. The OL 740 20A or 740 20D/IR Source Attachment should be used as the input light source. A detector's internal quantum efficiency can be determined from dual measurements of spectral response and reflectance. Wavelengths from .28 to 20 µm can be measured.

The OL 740 71 consists of a machined aluminum enclosure with (2) flat mirrors and (2) spherical mirrors in precision. An opening in one side allows the placement of test detectors or solar cells in the intermediate image plane. Custom fixtures are available for holding test detectors. An optional white light bias source (OL 2150) is available for biasing solar cells with 0.5 – 1.5 solar constant radiation.

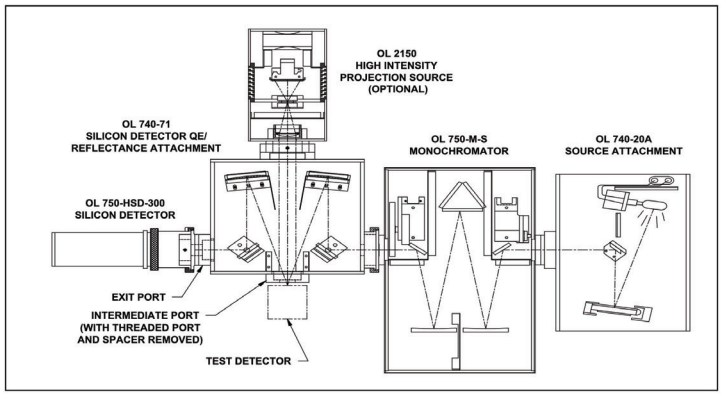
A calibrated reference detector is positioned at the intermediate port to determine the watts incident on the test detector. The test detectors' response to the calibrated beam can then be recorded.

The flux reflected from the polished surface of a test detector is collected by a spherical mirror and re imaged at the exit port of the attachment. The reflected flux is then measured by an appropriate detector. The spectral reflectance of a test detector or solar cell is also a two step process. First, the reference reflectance standard scan measures the reflectance of a calibrated mirror using a reference detector. Then, the standard mirror is replaced by the test detector and the reflected signal is measured.

The detector spectral response and reflectance measurements are computerized by the OL 750 428 Measurement Application Software Package. In addition to the detector's reflectance, the program calculates and prints out the detector's quantum efficiency and internal quantum efficiency.



OL 740-71 Detector QE/Reflectance Attachment shown with Optional Bias Source (OL 2150)



OL 750 Detector Quantum Efficiency Measurement

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