

Applications

- Pulsed or continues Solar Radiation Measurement
- Solar simulator testing and classification
- Light source metrology

Features

- Fast data acquisition and easy operation
- UV-Vis-IR spectral range 300-2000nm
- Integration time ≥ 0.5 ms
- UV-VIS detector array and IR-InGaAs arrays
- Spectral resolution UV-Vis 2 nm, IR 6 nm
- Holographic concave flat field gratings and beam splitting optics
- 16bit digitization
- TE cooled sensors

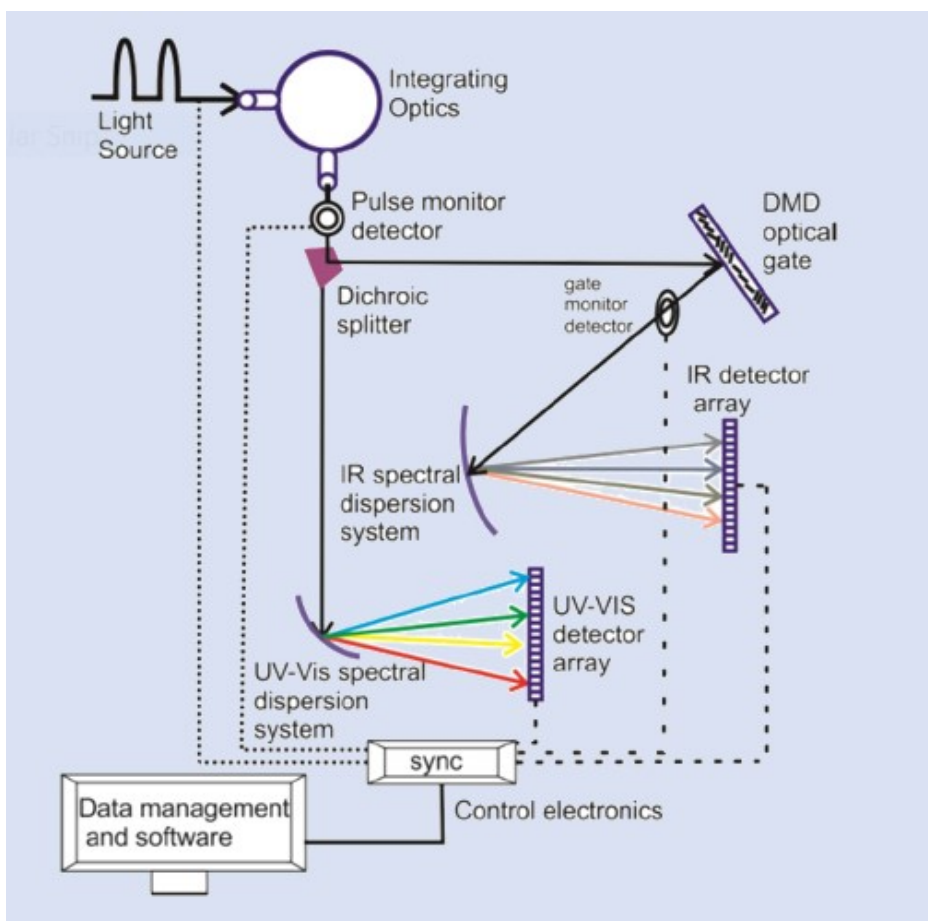
Scientific Spectroradiometer SCI-VIDI

SCI-VIDI Scientific Spectroradiometer

OVERVIEW

Sciencetech spectroradiometers provide fast and accurate measurements of radiometric quantities of pulsed or continuous solar simulators. Sci Vidi uses two detectors (UV-Vis CCD linear image sensor and In-GaAs linear array detector) to cover the spectral range of 300-2000 nm. The instrument includes a NIST-traceable irradiance calibration for consistent and accurate spectral irradiance measurements. A pulse monitor detector is aligned with the integrating optics to receive the entire pulse profile. Electronic gating combined with digital micromirror device provides a 0.5 ms integration window for UV-Vis and IR spectrum. Photometric, colorimetric, and UV radiometric quantities can be determined using software to integrate and weight measurement values.

Configuration



SCI-VIDI Scientific Spectroradiometer

SPECIFICATIONS

Model	Sci—VIDI
Spectral range	300-2000 nm
Arrangement	Flat field concave holographic gratings for UV-Vis and IR channel
Spectral resolution	2 nm @ UV-Vis 6 nm @ IR
Wavelength Uncertainty	<0.5nm
Wavelength reproducibility	0.1 nm
UV-VIS Detector	Back thinned CCD linear image sensor, 2048 pixels, 14 um pixel size Read out speed 10 MHz, Operating temperature -50 to 60 °C, non-cooled
NIR-SWIR Detectors	Hamamatsu G9208-512 WB InGaAs linear array detector, 512 pixels 25um pixel size, TE cooled, Operating temperature -40 to 70 °C
IR Optical gate	5.29-mm diagonal micromirror array, Polarization-independent aluminum surface
Trigger	Trigger input, TTL
Shutter input	TTL, programmable state and delay (dark current shutter pulse standard) Optional high speed shutter available
Integration time	>=0.5 ms
Communications interface	USB
A/D Converter	16 bit
Software	SciSolarQ operates on Windows 10
Input power	120-230VAC
Compliance calibration	Designed for compliance with ASTM G 138-12 Factory calibrated to NIST traceable irradiance source

- High sensitivity with a high signal-to-noise ratio
- Adjustable integration and scan averaging time
- Compact, lightweight design – portable and easy to fit in any experimental setup
- Spectral calibration (Hg (Ar) and HeNe laser) and NIST traceable calibration for spectral irradiance with source of known spectral irradiance
- No internal fiber optics or movable gratings that can break, drift, or fail during mission critical experiments

SCI-VIDI Scientific Spectroradiometer

SPECIFICATIONS

Calibration Options

Wavelength Calibration

All Sciencetech Sci-Vidi systems are calibrated for wavelength to the given specifications using Hg(Ar) gas emission lamp, and HeNe laser lines

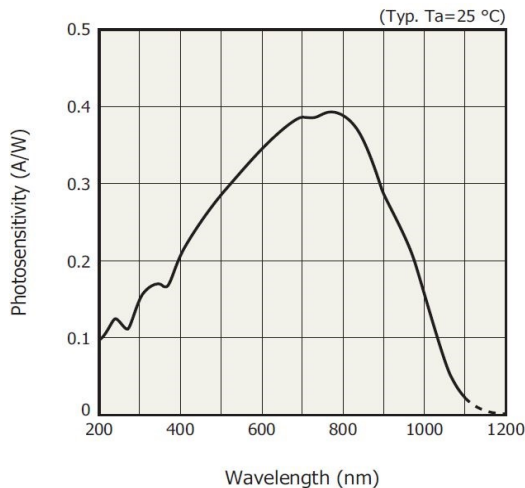
Radiometric Calibration

Sciencetech Sci-Vidi systems are calibrated to NIST traceable standards using Optronic Laboratories OL220 calibrated reference lamp over the range of 350-2500nm

On Board Sensors

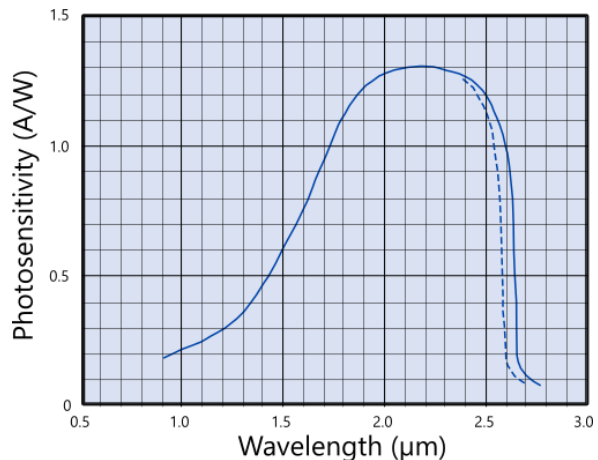
The Sci-VIDI instrument uses two high photosensitive linear array sensors to optimize system sensitivity and minimize dark noise. The array sensors cover large spectral range and exhibit wide dynamic range and simple operation. With precise control over integration parameters, trigger in and out (with programmable offset), the sensors display reliable synchronization from & to external devices (e.g. pulsed lasers), and gold-plated SMB connectors.

Normalized spectral sensitivity (T= 25 °C) of Back thinned CCD linear image sensor



VIS Detector Array

Spectral response of InGaAs linear image sensors of Hamamatsu (G9208 series)

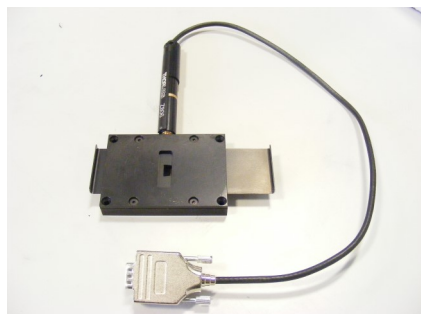


IR Detector Array

SCI-VIDI Scientific Spectroradiometer

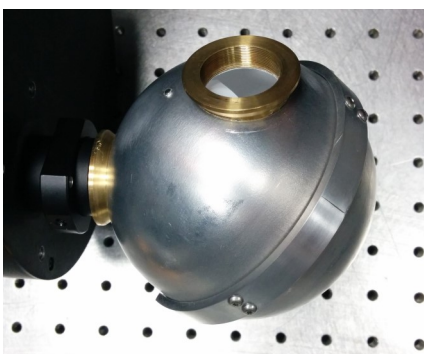
ACCESSORIES

Input Port Options



Motorized Slit SS-80 (120-9035 + 120-9038)

The SS-80 slit has straight, bilaterally adjustable jaws with spacing between 0 and 6.5mm. The motor has an accuracy of 10um. A manual curtain slider can be used to adjust the height of the slit.



Integrating Sphere (various options available)

Integrating spheres are used with radiometers to produce uniform angle correct illumination at the entrance port of the monochromator. Sciencetech integrates both 4" diameter and 2" diameter integrating spheres. Spheres with 3 or 4 ports can be accommodated.



Fiber Input (SMA or FC)

Fiber optics (with standard 250 field of view) can be mated to the input port of the Sci-Vidi. Fiber optic inputs allow for the greatest flexibility in selecting what the Sci-Vidi instrument is looking at.