



## MS-711 Spectroradiometer

Reference for spectral measurements UV-VIS-NIR

High optical resolution  $<7\text{nm}$

Operating temperature range  $-10$  to  $50^{\circ}\text{C}$

Made for outdoor solar research

Robust design no moving parts

The new generation grating spectroradiometer MS-711 is designed to provide the most accurate solar spectral data outdoors. The MS-711 is a unique all-weather sensor, without any moving parts. The detector core is temperature controlled to provide accurate irradiance measurement data within the spectral range from 300nm to 1100nm (UV-Visible-NIR). MS-711 is accurately calibrated with traceability to the International Standards and issued with a calibration uncertainty budget. The rugged optical design of the diffusor and input optics make the MS concept superior to any fiber optic spectroradiometer which will be susceptible to mechanical vibration and handling. The MS spectroradiometers are designed for permanent installation but are perfectly suited as a traveling reference.

MS-711 has a separate power supply unit and can be controlled through RS232 / 422 by a PC

or data logger. The PC software provides different functions for operating, data management and visualization. Through the open command protocol of the defined system control functions, software can be developed by the individual user. Measuring spectral irradiance is a must to understand the effect of the non-uniform energy distribution of the sun. Since the solar spectrum varies as a function of air-mass and composition of the atmosphere, the MS-711 reveals those details. While thermopile pyrheliometers and pyranometers are most suitable to quantify the total DNI or global radiation ( $\text{W}/\text{m}^2$ ), spectroradiometers give detail about the energy distribution ( $\text{W}/\text{m}^2/\text{nm}$ ), which is most important for PV or CPV cell research and performance analysis.



<b>Specifications</b>	<b>MS-711</b>
<b>Wavelength range</b>	300 - 1100 nm
<b>Optical resolution FWHM</b>	< 7 nm
<b>Wavelength accuracy</b>	+/- 0.2 nm
<b>Directional response at 1000W/m<sup>2</sup></b>	< 5 %
<b>Temperature response -10°C to 50°C</b>	< 2 %
<b>Temp. control</b>	25 °C
<b>Operating temperature range</b>	-10 - 50 °C
<b>Exposure time</b>	10 - 5000 msec
<b>Dome material</b>	Quartz
<b>Communication</b>	RS-422 / 232C
<b>Power supply</b>	12VDC, 50VA
<b>Dimensions mm</b>	220 (D) x 197 (H)
<b>Weight</b>	4.5 kg
<b>Ingress protection IP</b>	65
<b>Power supply (Power Adapter)</b>	100-240VAC, 50/60Hz
<b>Power consumption</b>	50 W
<b>Power supply operating conditions</b>	-10 to 40°C / 0 to 90 %RH
<b>Power supply dimensions (mm)</b>	320 (W) x 240 (D) x 80 (H)
<b>Power supply weight</b>	1 kg
<b>Program</b>	Analysis software WSDAc
<b>OS</b>	Microsoft Windows 7/8/9/10
<b>Functions</b>	Display and analyze data
<b>Cable length</b>	10 m

<b>Field of View FOV</b>	180 °
<b>Options</b>	<b>MS-711</b>
<b>Cable length</b>	20 / 30 m

Specifications are subject to change without further notice.