



Spectral DNI Measurements

Where the pyrheliometer is most suitable to quantify the total DNI of the solar spectrum. The spectroradiometer gives details about the energy distribution which is important for PV or CPV cell research. The solar spectrum will change with the angle of incidence and its path through the atmosphere. Photons will be reflected, scattered or absorbed. Big absorbers of infrared irradiance are water vapor, carbon dioxide, and ozone.

Spectral DNI measurements can be obtained from the MS-700 DNI which provides 10 nm data in the range of 350 nm to 1050 nm. Since the solar spectrum will substantially vary as a function of air mass and composition of the atmosphere, the spectroradiometer reveals those features.

HOW-TO Application Guide

1

In order to obtain representative measurements from spectroradiometers, several criterias with respect to setup and mounting of the instruments have to be considered. The ideal mounting position for the spectroradiometer is a location which has a full hemispheric field-of-view without any obstructions

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Select a mounting position which it is free from obstructions at 5° above horizon. The setup location should be easily accessible for periodic maintenance (quartz dome cleaning, desiccant replacement, etc.). Avoid surrounding towers, poles, walls or billboards with bright colors that can reflect solar radiation onto the spectroradiometer.