

SPECTRAL DISTRIBUTIONS OF DIFFUSE AND GLOBAL IRRADIANCE FOR CLEAR AND CLOUDY PERIODS

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ABSTRACT

An LI1800 Portable Spectroradiometer is used to measure solar spectral irradiance for solar zenith angles of 53.5° to 86.3° during the months of January, February, and March. Data is collected showing global horizontal and diffuse irradiance for clear and cloudy days, and then used in the analysis of an LI200 pyranometer to predict responsivities under different conditions. It is shown that the global horizontal irradiance has a similar spectral distribution for both clear and overcast periods and that the diffuse horizontal component is significantly affected by clear and cloudy periods.