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NORMAL INCIDENCE PYRHELIOMETER
MODEL sNIP

A pyrheliometer mounted on a solar tracker is used to measure the Direct Beam Solar Irradiance (DNI) from the sun. Historically, the preferred field of view for Pyrheliometers was based on a 10:1 ratio which equated to approximately 5.7º. Due in part to the commercialization of the Eppley AHF Cavity Radiometer as a Primary Standard and advances in accuracy of Automatic Solar Trackers (such as the Eppley SMT Tracker), the preferred FOV for pyrheliometers is now 5º which the Eppley sNIP uses. In fact, the sNIP has the exact same geometric dimensions as used in the AHF. Compared to the older NIP, the sNIP also has a faster response time, reduced conduction and convection effects and a thermistor is included for those who wish to measure the instrument temperature.

As a result, the Normal Incidence Pyrheliometer, Model sNIP meets the performance specifications of an ISO Secondary Standard* and a WMO High Quality Pyrheliometer

MODEL sNIP SPECIFCATIONS

Application:	**Standard/Network Measurements**
Classification:	**Secondary Standard*/High Quality**
Traceability	**World Radiation Reference (WRR)**

Spectral Range	**250-3000 nm**
Field of View	**5º**
Output	**0-10 mV**
Sensitivity	**approx. 8 µV / Wm^{-2}**
Impedance	**approx. 200 Ω**

95% Response Time	**5 seconds**
Zero Offset	**1 Wm^{-2}**
Non-Stability	**0.5%**
Non-Linearity	**0.2%**
Spectral Selectivity	**0.5%**
Temperature Response	**0.5%**

Calibration Uncertainty**	**< 1%**
Measurement Uncertainty**	
Single Point	**< 5 Wm^{-2}**
Hourly Average	**approx. 1%**
Daily Average	**approx. 1%**

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* To officially be considered a Secondary Standard, the pyrheliometer in question must be calibrated with WRR traceability through a Primary Standard Pyrheliometer such as the Eppley AHF Cavity Radiometer. EPLAB Calibrations are typically performed against a Secondary Standard Pyrheliometer. At the customer's request and for an additional fee, this calibration can be performed against our WRR traceable AHF Cavity Radiometer. Please contact Eppley for additional information.

** There has been much discussion on "uncertainty" and how it pertains to solar measurements. The RSS of the 9060 specifications results in an uncertainty of approximately 1.5%. The typical uncertainty of Eppley's factory calibrations are less than 1%. The stated uncertainty of the WRR is 0.4%. Evidence from direct comparisons of sNIP to AHF show the sNIP is capable of hourly and daily averages better than 1% (assuming proper tracking and clean windows).

Since the dawn of time, man has studied the sun…
…and Eppley has been providing the best instruments since 1917!