

THE EPPLEY LABORATORY, INC.

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Scientific Instruments
for Precision Measurements
Since 1917

STANDARDIZATION OF EPPLEY PRECISION SPECTRAL PYRANOMETER Model PSP

Serial Number: 29099F3

Resistance: 694 Ω at 23 $^{\circ}\text{C}$
Temperature Compensation Range: -20 to 40 $^{\circ}\text{C}$

This radiometer has been compared with Standard Precision Spectral Pyranometer, Serial Number 21231F3 in Eppley's Integrating Hemisphere under radiation intensities of approximately 700 watts meter⁻² (roughly one-half a solar constant). The adopted calibration temperature is 25 $^{\circ}\text{C}$.

As a result of a series of comparisons, it has been found to have a sensitivity of:

$$8.38 \times 10^{-6} \text{ volts/watts meter}^{-2}$$

The calculation of this constant is based on the fact that the relationship between radiation intensity and emf is rectilinear to intensities of 1400 watts meter⁻². This radiometer is linear to within $\pm 0.5\%$ up to this intensity.

The calibration of this instrument is traceable to standard self-calibrating cavity pyrhemometers in terms of the Systems Internationale des Unites (SI units), which participated in the Ninth International Pyrhemometric Comparisons (IPC IX) at Davos, Switzerland in September-October 2000.

Useful conversion facts: 1 cal cm⁻² min⁻¹ = 697.3 watts meter⁻²
1 BTU/ft²-hr⁻¹ = 3.153 watts meter⁻²

Shipped to:
Oregon State University
Corvallis, OR

Date of Test: January 3, 2007

In Charge of Test: *R.T. Gyuma*

S.O. Number: 60980
Date: January 5, 2007

Reviewed by: *George L. Kirk*

Remarks: Sensitivity before repainting 7.98.