

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: 33028F3

Resistance: 728 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:

8.65 $\times 10^{-6}$ volts/watts meter⁻²

5.81 millivolts/cal cm⁻² min⁻¹

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 pyrheliometers in terms of the Systems Internationale des Unites (SI units), which participated in the Eighth International Pyrheliometric Comparisons (IPC VIII) at Davos, Switzerland in October 1995.

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:
NASA Langley Research Center
Hampton, VA

Date of Test: June 21, 2000

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

S.O. Number: 58064
Date: June 23, 2000

Reviewed by: *Thomas D. Kueh*

Remarks: