

Calibration Report :

Eppley Black And White Pyranometer (Model 8-48)

Summary

Calibration date : May, July 2000

Next calibration due : May, July 2001

Serial Number : 32953

Resistance: 352 Ω at 23 °C

Temperature Compensation Range: -20 to +40 °C

Sensitivity : 8.94×10^{-6} V/W/m²
6.23 mv/cal/cm²/min

Serial Number : 32954

Resistance: 348 Ω at 23 °C

Temperature Compensation Range: - 20 to +40 °C

Sensitivity : 9.61×10^{-6} V/W/m²
6.70 mv/cal/cm²/min

Serial Number : 32955

Resistance: 350 Ω at 23 °C

Temperature Compensation Range: -20 to +40 °C

Sensitivity : 9.36×10^{-6} V/W/m²
6.53mv/cal/cm²/min

These radiometers have been compared with a Standard Black and White Pyranometer, S/N 14061 in Eppley's Integrating Hemisphere under radiation intensities of approximately 700 W/m² (roughly one-half the solar constant). The adopted calibration temperature is 25 °C.

The calculation of this constant is based on the fact that the relationship between radiation intensity and emf is rectilinear to intensities of 1400 W/m². These radiometers are linear to within +/- 1.0% 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/cm²/min = 697.3 W/m²
1 BTU/ft²-hr = 3.153 W/m²

THE EPPLEY LABORATORY, INC.

12 Sheffield Ave., P.O. Box 419, Newport, RI 02840 USA

Telephone: 401-847-1020

Fax: 401-847-1031



Scientific Instruments
for Precision Measurements
Since 1917

STANDARDIZATION OF EPPLEY BLACK AND WHITE PYRANOMETER Model 8-48

Serial Number: 32953

Resistance: 352 Ω at 23 $^{\circ}\text{C}$

Temperature Compensation Range: -20 to + 40 $^{\circ}\text{C}$

This radiometer has been compared with Standard Black & White Pyranometer, Serial Number 14061 in Eppley's Integrating Hemisphere under radiation intensities of approximately 700 watts meter⁻² (roughly one-half the 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:

8.94 $\times 10^{-6}$ volts/watts meter⁻²

6.23 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 $\pm 1.0\%$ 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 Eighth International Pyrhemometric 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
Hampton, VA

Date of Test: May 8, 2000

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

S.O. Number: 58139
Date: September 11, 2000

Reviewed by: *Thomas D. Kulk*

Remarks:

THE EPPLEY LABORATORY, INC.

12 Sheffield Ave., P.O. Box 419, Newport, RI 02840 USA

Telephone: 401-847-1020

Fax: 401-847-1031



Scientific Instruments
for Precision Measurements
Since 1917

STANDARDIZATION OF EPPLEY BLACK AND WHITE PYRANOMETER Model 8-48

Serial Number: 32954

Resistance: 348 Ω at 23 $^{\circ}\text{C}$

Temperature Compensation Range: -20 to +40 $^{\circ}\text{C}$

This radiometer has been compared with Standard Black & White Pyranometer, Serial Number 14061 in Eppley's Integrating Hemisphere under radiation intensities of approximately 700 watts meter⁻² (roughly one-half the 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:

9.61 $\times 10^{-6}$ volts/watts meter⁻²

6.70 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 $\pm 1.0\%$ 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 Eighth International Pyrhemometric 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
Hampton, VA

Date of Test: July 25, 2000

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

S.O. Number: 58139
Date: September 11, 2000

Reviewed by: *Thomas D. Kutz*

Remarks:

THE EPPLEY LABORATORY, INC.

12 Sheffield Ave., P.O. Box 419, Newport, RI 02840 USA

Telephone: 401-847-1020

Fax: 401-847-1031



Scientific Instruments
for Precision Measurements
Since 1917

STANDARDIZATION OF EPPLEY BLACK AND WHITE PYRANOMETER Model 8-48

Serial Number: 32955

Resistance: 350 Ω at 23 $^{\circ}\text{C}$

Temperature Compensation Range: -20 to + 40 $^{\circ}\text{C}$

This radiometer has been compared with Standard Black & White Pyranometer, Serial Number 14061 in Eppley's Integrating Hemisphere under radiation intensities of approximately 700 watts meter⁻² (roughly one-half the 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:

9.36 $\times 10^{-6}$ volts/watts meter⁻²

6.53 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 $\pm 1.0\%$ 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
Hampton, VA

Date of Test: May 22, 2000

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

S.O. Number: 58139

Date: September 11, 2000

Reviewed by: *Thomas D. Keib*

Remarks: