

Ain Shams University
University College for Women
for Art, Science and Education



Title

**"The Realization of Luminous Flux Scale and Its Application in
Preparing Calibrated and Tested Lamps"**

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ABSTRACT

In this work the realization of total luminous flux is being carried out through the calibration of incandescent transfer standard lamps directly from (NRC) primary standards of total luminous flux such lamps were used for an international comparison of the total luminous flux scales of five national institute.

The design, construction and characterization of new temperature controlled photometer to be used with the NRC three meter integrating sphere in calibration of incandescent working standard lamps.

The final results of the uncertainties are

- 1- The relative expanded ($k=2$) uncertainty budget for the total luminous flux for the incandescent transfer standard lamps which is 2,10%.
- 2- The relative expanded ($k=2$) uncertainty budget for the total luminous flux for the incandescent working standard lamps which is 2,4%.
- 3- The uncertainty budget for the spectral responsivity of the new temperature controlled photometer is mentioned in the text.

List of Abbreviations

- ANSI:** American National Standards Institute.
- BIPM:** Bureau International des Poids et Mesures.
- CCPR:** Consultatif de Photometrie et Radiometrie.
- CGPM:** Conference Generale des Poids et Mesures.
- IEC:** International Electrotechnical Commission.
- IEEE:** Institute of Electrical and Electronics Engineers.
- IES:** Illuminating Engineering Society.
- IENSA:** Illuminating Engineering Society of North America.
- ISO:** International Standards Organization.
- NIST:** National Institute of Standards and Technology.
- NRC:** National Research of Canada.

LIST OF FIGURES

Figure No.	Page
Figure (I. 1). The Human Eye.	3
Figure (I. 2). The Photopic Vision $V(\lambda)$ and the Scotopic Vision $V'(\lambda)$ Functions.	4
Figure (I. 3). The Spectral Exitance Versus Wavelength for Several Blackbody Temperatures.	14
Figure (I. 4). The Incandescent Lamp.	16
Figure (I. 5). The Fluorescent Lamp.	17
Figure (I. 6). Relative Spectral Power Distribution of CIE Standard Illuminants.	22
Figure (I. 7). Goniophotometric Flux Measurements.	25
Figure (I. 8). (a) Three Axis Goniophotometer and (b) Two Axis Goniophotometer.	27
Figure (I. 9). The Integrating Sphere for the Luminous Flux Unit Realization.	29
Figure (I. 10). The Integrating Sphere for the Luminous Flux Measurement.	31
Figure (I. 11). The Band pass, Long pass, Short pass and Neutral density Filters.	35

Figure (I. 12). Shapes of Sphere Baffles for Linear Fluorescent lamps (a) The Perpendicular Arrangement and (b) The Coaxial Arrangement.	36
Figure (I. 13). Typical Configuration for Spectral Responsivity Measurements Using a Monochromator.	41
Figure (I. 14). Schematic Diagram of the Apparatus used at NRC for Routine Spectral Responsivity Measurements.	42
Figure (I. 15). Spectral Responsivity Curves and Wavelength Ranges for Optimal use of the Reference Detectors used at NRC for Routine Detector Calibrations.	44
Figure (I. 16). Schematic Diagram of the Apparatus used at NRC for Linearity Measurements.	48
Figure (II. 1). CIE 1931 Chromaticity Diagram Showing the Spectrum Locus, the Purple Boundary, the Locus of Blackbody Radiators, and Standard Illuminants A, B, C and D65	73
Figure (II. 2). The NRC Integrating Sphere Photometer System	76
Figure (II. 3). (a) The Lamp Baffle and the Photometer	

Port, and (b) the Lamp Holder and the Lamp Socket.	۷۸
Figure (II. ۴). The Auxiliary Lamp with Baffle in the Integrating Sphere.	۷۹
Figure (II. ۵). The Setup for Measuring Correlated Color Temperatures (CCT) for the Auxiliary Lamp.	۸۰
Figure (II. ۶). (a).The Relative Spectral Responsivity Curve of the Photometer (EGG#۱) used in the Comparison and (b) The Difference Values Between the Responsivity Curve and the $V(\lambda)$ Curve.	۸۳
Figure (II. ۷). (a) The Experimental Setup for Measuring the Cosine Response of the Photometer (EGG#۱) and (b) the Cosine Response Curve of the Photometer.	۸۶
Figure (II. ۸). The NRC Transimpedance Amplifier.	۸۷
Figure (II. ۹). The NRC ۳۴۵۸A Multimeter.	۸۹
Figure (II. ۱۰) The NRC Lamp Control Unit.	۹۰
Figure (II. ۱۱). LM۱۳۵ Temperature Sensor in the Integrating Sphere.	
۹۲ Figure (II. ۱۲). The Polaron Type LF۲۰۰L Luminous Flux	

Standard Lamps.	१६
Figure (II. १३). The Aging Curve of NRC-१.	१०
Figure (II. १४). The Aging Curve of NRC-२.	१६
Figure (II. १०). The Aging Curve of NRC-३.	१६
Figure (II. १६). The Aging Curve of NRC-४.	११
Figure (II. ११). The Aging Curve of NRC-०.	११
Figure (II. १२). The Aging Curve of NRC-६.	१२
Figure (II. १३). The Aging Curve of NRC-१.	१२
Figure (II. १०). The Aging Curve of NRC-२.	१३
Figure (II. ११). The Aging Curve of NRC-३.	१३
Figure (II. १२). The Aging Curve of NRC-१०.	१३
१.०.	
Figure (II. १३). Measuring the Correlated Color Temperature.	
१.१	
Figure (II. १४). Spectral Irradiance Calibration using a Reflecting Diffuser.	१.३
Figure (II. १०). The NRC Spectroradiometer PR-१०.	
१.४	
Figure (II. १६). Measuring the Relative Spectral Output of the Lamp in the Bench.	
१.१	
Figure (II. ११). Measuring Relative Spectral Output of the	

Lamp Inside the Integrating Sphere.

۱۱۰

Figure (II.۲۸). The Relative Sphere Responsivity the Integrating Sphere.

۱۱۱

Figure (II.۲۹). The Calibration of the Comparison Lamp in the Integrating Sphere-Photometer.

۱۱۳

Figure (II.۳۰). The Self-Absorption Measurements for the Transfer Standard Lamp.

Figure (II. ۳۱). The Schematic Diagram for the Parts of the Photometer.

۱۱۸

Figure (II.۳۲). Photometer components (a) Inner Copper Housing , (b) Inner Copper Housing Covered with the Heater, (c) Foam Insulator Housing, and (d) Aluminum Outer Housing.

۱۲۱

Figure (II. ۳۳). The Transmittance of the Diffusers.

Figure (II.۳۴). The Transmittance of the Four Filters Used in the New Photometer (BG ۳۸, ۳۳.۷, OGR ۳ and OG ۴).

۱۲۳

Figure (II. ۳۵). The Filter Responsivity Curve of the New Photometer and $V(\lambda)$ Curve by using the Custom NRC Filter Design Program.

۱۲۶

Figure (II. ۳۶). The Lambda ۹۰۰ UV/VIS/NIR Spectrophotometer and the Spectrophotometer Design.

۱۲۹

Figure (II. ۳۷). The Photosensitivity of Different types of Hamamatsu Silicon Photodiodes.

۱۳۱

Figure (II. ۳۸). The Schematic Diagram of the Temperature Control Circuit. ۱۳۳

Figure (II. ۳۹). The Setup of the First Method for Measuring Responsivity.

۱۳۵

Figure (II. ۴۰). (a) The Relative Spectral Responsivity Curve of the New Temperature Controlled Photometer and (b) Difference Values between the Responsivity Curve and the $V(\lambda)$ Curve of the New Temperature Controlled Photometer using the First

Method.

137

Figure (II. 41). (a) The Relative Spectral Responsivity Curve of the New Temperature Controlled Photometer and (b) Difference Values between the Responsivity Curve and the $V(\lambda)$ Curve of the New Temperature Controlled Photometer using the Second Method.

140

Figure (II. 42). The Linearity of the Si Photodiode Detector.

142

Figure (II. 43). The Photometer Temperature Variation.

143

Figure (II. 44). The Difference Values Between the Two Photometers to the $V(\lambda)$.

145

Figure (II. 45). The Nine Incandescent Working Standard Lamps.

147

Figure (II. 46). Current with Correlated Color Temperatures for Lamp (S-100-1).

154

Figure (II. 47). Current with Correlated Color Temperatures
for Lamp (S-100-2).

104

Figure (II. 48). Current with Correlated Color Temperatures
for Lamp (S-100-3).

10

Figure (II. 49). Current with Correlated Color
Temperatures
for Lamp (S-300-10).

100

Figure (II. 50). Current with Correlated Color Temperatures
for Lamp (S-300-11).

106

Figure (II. 51). Current with Correlated Color Temperatures
for Lamp (S-300-12).

106

Figure (II. 52). Current with Correlated Color Temperatures
for Lamp (S-500-1).

107

Figure (II. 53). Current with Correlated Color Temperatures
for Lamp (S-500-2).

107

Figure (II. 54). Current with Correlated Color Temperatures
for Lamp (S-500-3).

108

Figure (II. ๕๕). The preheat lamp circuit.	
๑๖๗	
Figure (II. ๕๖). The Rapid Start	๑๖๘
Figure (II. ๕๗). The Fluorescent Working Standard Lamps.	
๑๖๙	
Figure (II. ๕๘). The Fluorescent Lamp Holder.	
๑๗๐	
Figure (III. ๑). Sphere-Photometer Calibration Factor (SPCF) for the Standard Lamps on Day One of the Pre- CENAM Measurements.	๑๗๓
Figure (III. ๒). Sphere-Photometer Calibration Factor (SPCF) for the Standard Lamps on Day Two of the Pre- CENAM Measurements.	๑๗๔
Figure (III. ๓). Sphere-Photometer Calibration Factor (SPCF) for the Standard Lamps on Day One of the Post- CENAM Measurements.	๑๗๕
Figure (III. ๔). Sphere-Photometer Calibration Factor (SPCF) for the Standard Lamps on Day Two Post- CENAM Measurements.	๑๗๖
Figure (III. ๕). Total Uncertainty (K=๒)(%) With the Wavelength (nm) Using Xenon Source.	๑๗๙

Figure (III.ϳ). Total Uncertainty ($K=ϳ$)(%) With the Wavelength (nm) Using Tungsten Source.	191
Figure (III.Ϸ). Sphere-Photometer Calibration Factor (SPCF) for the Incandescent Working Standard Lamps on Day one.	194
Figure (III.⋈). Sphere-Photometer Calibration Factor (SPCF) for the Incandescent Working Standard Lamps on Day two.	195