



IES Approved Method: **Photometry of Reflector Type Lamps**

IES LM-20-13

IES Approved Method for Photometry of Reflector Type Lamps

Publication of this Committee Report
has been approved by the IES.
Suggestions for revisions should be
directed to the IES

Prepared by:
Photometry of Light Sources Subcommittee of the
IES Testing Procedures Committee

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FOREWORD

This approved method is a revision of *IESNA Approved Method for Photometric Measuring and Reporting Tests on Reflector-Type Lamps*, LM-20, published in 1994. Changes have been made to update information, to give clearer guidelines for requirements and to promote uniformity in measurement procedure.

INTRODUCTION

This method describes photometric testing procedures and reporting guidelines for reflector-type lamps. It is intended that these procedures and guidelines be adopted as the basis of photometry for reflector-type lamps. The application of the described procedures and guidelines will improve reproducibility within a laboratory, improve measurement agreement and facilitate comparison of results between laboratories.

1.0 SCOPE

As used in this laboratory method, a *reflector-type lamp* is a lamp having a reflective element(s) intended to redirect flux from the emitting element (e.g., filament, arc) to form the intended spatial distribution of the light. For example, a reflective element might take the form of a reflective coating applied to the lamp bulb, or a reflector positioned relative to the emitting element and permanently affixed in this position. This laboratory method does not apply to the following: lamps of standard bulb shape to which an integral reflector is added such as silver-bowl and silvered-neck lamps; reflector-type lamps that are designed for special applications, such as automotive headlamps and projection lamps, for which lamp specific test procedures have been established; or lamps that are known to have special testing requirements beyond those addressed in this laboratory method such as linear fluorescent reflector lamps that have special temperature or orientation requirements.

2.0 NORMATIVE REFERENCES*

IESNA Approved Method for Photometric Testing of Floodlights Using High Intensity Discharge or Incandescent Filament Lamps, LM-35-02. New York: Illuminating Engineering Society of North America, 2002.

IES Approved Method for Electrical and Photometric Measurements of General Service Incandescent Filament Lamps, IES LM-45-09. New York: IESNA Illuminating Engineering Society of North America, 2009.

IESNA Approved Method for Electrical and Photometric Measurements of High Intensity Discharge Lamps, IESNA LM-51-00. New York: Illuminating Engineering Society of North America, 2000.

IESNA Guide to Lamp Seasoning, IESNA LM-54-99. New York: Illuminating Engineering Society of North America, 1999.

ANSI/IESNA Standard File Format for Electronic Transfer of Photometric Data and Related Information, LM-63-02 (Reaffirmed 2008). New York: ANSI/IESNA Illuminating Engineering Society of North America, 2002.

IES Approved Method: Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, IES LM-66-11. New York: Illuminating Engineering Society of North America, 2011.

IESNA Approved Method for Total Luminous Flux Measurement of Lamps Using an Integrating Sphere Photometer, IES LM-78-07. New York: Illuminating Engineering Society of North America, 2007.

IES Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products, IES LM-79-08, New York: Illuminating Engineering Society of North America, 2008.

ANSI/IES Nomenclature and Definitions for Illuminating Engineering, ANSI/IES RP-16-10. New York: Illuminating Engineering Society of North America, 2010.

* For documents not currently listed in the IES publications online catalog please contact ies@ies.org.

3.0 DEFINITIONS

3.1 Measurement Units:

Electrical measurement units are the volt, the ampere and the watt. The unit of photometric flux is the lumen. The unit of luminous intensity is the candela. The thermal temperature measurement unit is degrees Celsius.