



APPROVED METHOD:
PHOTOMETRIC TESTING OF
INDOOR FLUORESCENT LUMINAIRES
AN AMERICAN NATIONAL STANDARD

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ANSI/IES LM-41-20

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has been approved by IES.
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should be directed to IES.

**Prepared by the
IES Testing Procedures Committee**



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CONTENTS

1.0	Introduction and Scope	1
1.1	Introduction	1
1.2	Scope	1
2.0	Normative References	1
2.1	ANSI C78.375A-2014	1
2.2	ANSI C78.81-2016	1
2.3	ANSI C82.3-2016	1
2.4	ANSI/IES LS-1-20	1
2.5	ANSI/IES LM-9-20	1
2.6	ANSI/IES LM-54-20	1
3.0	Definitions	1
4.0	Ambient and Physical Conditions	1
4.1	General	1
4.2	Temperature	2
4.3	Air Movement	2
5.0	Electrical Conditions and Instrumentation	2
5.1	Wave Shape	2
5.2	Voltage Regulation	2
5.3	Power Source Impedance	2
5.4	Instrumentation for Electrical Measurements	2
5.4.1	Uncertainties	2
6.0	Test Requirements	2
6.1	Selection and Preparation of Luminaire	2
6.2	Luminaire Luminance Characteristics	3
6.3	Test Lamps	3
6.3.1	Special Considerations for Luminaires with Compact Fluorescent Lamps (CFLs)	3
6.3.2	Lamp Transfer	3
6.3.3	Lamp Seasoning	4

6.4	Photometric Equipment	4
6.4.1	The Goniophotometry System.....	4
6.4.2	Photometer.....	4
6.4.3	Automated Goniophotometer.....	4
6.4.4	Photometer Head (Photodetector).....	4
6.5	Luminaire Mounting	4
6.6	Lamp Circuit Connections	4
6.7	Stray Light	4
6.8	Luminaire or Lamp – Pre-burning and Stabilization	4
6.8.1	Pre-burning.....	4
6.8.2	Stabilization.....	5
7.0	Photometric Test Procedures	5
7.1	Test Distance	5
7.2	Position Sensitivity	5
7.3	Calibration of Photometer – Relative and Absolute Photometry	6
7.3.1	Relative Photometry – Calibration Factor.....	6
7.3.2	Relative Photometry – The Calibration Process.....	7
7.3.3	Relative Photometry – Special Considerations When Testing Lamps That Produce Maximum Light Output in an Ambient Temperature Other Than 25 °C.....	8
7.3.4	Absolute Photometry.....	8
7.4	Ballast Factor	8
7.4.1	Ballast Factor Defined.....	8
7.4.2	Determination of Ballast Factor.....	9
7.4.3	Effect of Ballast Factors on Photometric Test Results.....	9
7.4.4	Application of Ballast Factors.....	9
7.5	Luminaire Photometry	9
7.5.1	Mounting.....	9
7.5.2	Position of Luminaire during Test.....	10
7.5.3	Angles for Measurement.....	10
7.5.4	Planes for Measurement.....	10
7.5.5	Polarization Measurements.....	10
7.6	Luminance Measurements	10
7.7	Computation of Luminous Intensity Distribution Test Results	10
7.8	Computing Zonal Lumens	11
7.9	Overall Luminaire Efficiency	11
7.10	Coefficients of Utilization	11
8.0	Test Reports	11
9.0	Additional Reading	12

Annex A – Zonal Lumen Constants 13
Annex B – Special Considerations for Compact Fluorescent Lamps (CFLs) 13
Informative References 16

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1.0 Introduction and Scope

1.1 Introduction

This guide is intended to provide uniform guidance useful for evaluating the performance of fluorescent luminaires for general lighting. Luminaire characteristics are to be reported in terms of intensity distribution, flux distribution and efficiency. These performance data may be developed into factors and/or tables that allow the predetermination of illuminance and luminance for any conventional plane or boundary surface.

1.2 Scope

This guide provides adequate and uniform methods for determining and reporting the photometric characteristics of indoor fluorescent luminaires. It describes characteristics of luminaires and some components, as well as the requirements for the thermal environment and proper control of the electrical and mechanical systems involved in testing. This document is also concerned with general test conditions and the testing procedure best suited for achieving accurate and consistent photometric results.

2.0 Normative References

2.1 ANSI C78.375A-2014

American National Standards Institute. American National Standard for Electric Lamps – Fluorescent Lamps – Guide for Electrical Measurements. New York: National Electrical Manufacturers Association; 2014.

2.2 ANSI C78.81-2016

American National Standard for Electric Lamps – Double-Ended Fluorescent Lamps – Dimensional and Electrical Characteristics. New York: National Electrical Manufacturers Association; 2016.

2.3 ANSI C82.3-2016

American National Standards Institute. American National Standard Specification for Electric Lamps – Reference Ballasts for Fluorescent Lamps. New York: National Electrical Manufacturers Association; 2016.

2.4 ANSI/IES LS-1-20

Illuminating Engineering Society. Lighting Science: Nomenclature and Definitions for Illuminating Engineering. New York: IES; 2020.

2.5 ANSI/IES LM-9-20

Illuminating Engineering Society. Approved Method: Electrical and Photometric Measurements of Fluorescent Lamps. New York: IES; 2020.

2.6 ANSI/IES LM-54-20

Illuminating Engineering Society. Approved Method: Guide to Lamp Seasoning. New York: IES; 2020.

3.0 Definitions

The units of electrical measurement used in this approved method are the volt, the ampere, and the watt. The units of photometric measurement are the lumen and the candela (see ANSI/IES LS-1-20; see **Section 2**). Color is specified in terms of CIE recommended systems.

The industry-accepted point for making an initial rating of a discharge lamp occurs after the lamp's first 100 hours of operation per ANSI C78.81-2016 (see **Section 2**).

The cold chamber or cold spot is the location inside a fluorescent lamp with the lowest operating temperature. Both the location and temperature of the cold spot are critical for optimizing lamp performance.

4.0 Ambient and Physical Conditions

4.1 General

The photometric values and electrical characteristics of fluorescent lamps and luminaires are sensitive to ambient temperature and air movement.