Illuminating
ENGINEERING SOCIETY

ANSI/IES TM-33-18

Standard Format for the Electronic Transfer of Luminaire Optical Data

Approved American National Standard
ANSI

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

Prepared by the File Format Subcommittee of the IES Computer Committee

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1.0 INTRODUCTION AND SCOPE

1.1 Introduction

The architectural and roadway lighting communities have long relied on standardized data formats for the electronic transfer of far-field photometric data and related information. These data formats include IES LM-63-02, CIBSE TM14, and EULUMDAT. Apart from a few minor revisions, these data formats have remained essentially unchanged for the past several decades.

With the introduction of solid state lighting with color-changing capabilities, there is a need to include spectral power distributions in these data representations. There is also a need to represent radiant and photosynthetically active radiation (PAR) intensity distributions for horticultural, aquacultural, and animal husbandry lighting applications.

Unfortunately, it is difficult to impossible to incorporate such information in existing photometric data standards. It is also unreasonable to develop new standards specifically for specialized applications, such as horticultural lighting. This document therefore presents a standardized data format for use with all lighting applications.

The represented data may be obtained when testing or simulating the optical characteristics of a luminaire, which may then be used with lighting design and analysis software, architectural visualization software, or optical design software.

The data are formatted in accordance with W3C Extensible Markup Language (XML) 1.1 Recommendation and the W3C XML Schema Definition Language (XSD). This allows end users to utilize and view the data directly without the need for proprietary software.

In the event of any ambiguity or discrepancy with respect to the textual specification and the XML Schema in this document, the XML Schema shall take precedence.

In the event of any ambiguity or discrepancy with respect to the description of XML or XML Schema in this document, the W3C Recommendations shall take precedence.

1.2 Scope

This document specifies an electronic (XML-based) data format for the transfer of luminaire optical data useful for lighting design and analysis.

Details about the XML document format, XML schema, XSLT transforms and more can be found at the website of the W3C (see **Sections 2.15** and **2.16**), the authority for the XML document format. This document is intended as a description of a specific implementation of an XML document, and is not a tutorial on the XML document format itself.

2.0 NORMATIVE REFERENCES

2.1 ANSI C78.377-2017

National Electrical Manufacturers Association. American National Standard for Electric Lamps – Specifications for the Chromaticity of Solid-State Lighting Products. Rosslynn, Virginia: The Association; 2017.

2.2 ANSI/ASABE S640

American Society of Agricultural and Biological Engineers. Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms). St. Joseph, MI: The Society; 2017.