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Zhaga interface specification Book 1 and Book 10

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National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ZHAGA INTERFACE SPECIFICATION BOOK 1 AND BOOK 10

FOREWORD

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IEC PAS 63324 has been processed by subcommittee 34A: Electric light sources, of IEC technical committee 34: Lighting.

The text of this PAS is based on the following document:	This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document
Draft PAS	**Report on voting**
34A/2194/DPAS	34A/2204/RVDPAS

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned may transform it into an International Standard.

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IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This PAS is a reproduction of Zhaga Book 1 Edition 1.8 and Book 10 Edition 1.0 with no changes introduced.

The document layout, terms and definitions, etc within this PAS therefore do not follow the normal IEC drafting rules that would be applied for an International Standard.

Subdivision 1 comprises Zhaga Book 10 Edition 1.0 – Circular LED modules for spot lighting.

Subdivision 2 comprises Zhaga Book 1 Edition 1.8 – Overview and common information, which is essential to the interpretation of Zhaga Book 10 (and future Zhaga books).

The future intention is for the content of this PAS to be incorporated within one or more International Standards and at this time any conflict with IEC Directives and drafting rules will be addressed.

Subdivision 1

Zhaga Interface Specification Book 10

Summary (informative)

Background

The Zhaga Consortium is a global lighting-industry organization that aims to standardize LED light engines and associated components such as LED modules, Holders and electronic control gear (LED drivers).

Zhaga has created a set of interface specifications, known as Books. Each Book defines an LED light engine and/or associated components by means of the mechanical, photometric, electrical, thermal, and control interfaces of the product to its environment. This makes such products interchangeable in the sense that it is easy to replace one product with another, even if they have been made by different manufacturers.

Contents

The LED Modules defined in this Book have an essentially circular outer shape with a small, also preferably circular Light Emitting Surface, so that they are well suited to be used with collimating Luminaire Optics in spot lighting applications. The LED Modules are disc shaped, and are grouped into several size categories, to allow for different LES sizes and flux categories. The LED Modules are intended to be used with a separate Electronic Control Gear, which is specified in Zhaga Book 13.

This Book should be read together with Zhaga Book 1.

Intended Use

The LED module defined in this specification is intended to be screwed to a heat sink and to be connected to a separate electronic control gear. The light output is essentially Lambertian to enable the luminaire optics to shape the application’s desired light distribution from a defined input.

The LED modules defined in this Book 10 are intended to be installed and replaced by luminaire manufacturers only.

1 General

1.1 Introduction

The Zhaga Consortium is a global organization that aims to standardize LED Light Engines and associated components. An LED Light Engine is a light source for general lighting that is based on solid state technology, and typically consists of one or more LEDs combined with Electronic Control Gear. Examples of associated components are LED Modules, Electronic Control Gear, and Holders. Zhaga has created a set of interface specifications, known as “Books” defining interfaces between LED Light Engines, associated components and Luminaires.

Book 1 is a special Book that provides common information relevant to all other Books in the series. In addition, Book 1 defines requirements and compliance tests which are applicable across multiple Zhaga Books. The Books refer to these requirements and compliance tests as applicable.

1.2 Scope

This Book 10 defines interfaces between LED Modules, associate components (Holders) and luminaires. Not all interface descriptions are applicable to LED Modules or Holders, but where applicable they are identical.

The scope of the interface descriptions is focused on a range of LED Modules with a circular shape and high luminance LES. A LED Module is intended to be fixed to a luminaire heat sink by means of screws. Its light output distribution is primarily Lambertian, to enable Luminaire Optics to shape an application-specific light distribution independently of that of the LED Module.

Zhaga Book 12 defines an LED (Chip on Board) Array component, which shares certain interface descriptions with this Book 10 (mainly photometric). It is possible to combine a Book 12 compliant LED Array with a Holder that ensures mechanical and electrical fit of the assembly. The Holder provides its own set of mechanical/electrical/thermal interfaces to a luminaire. If these interfaces are compliant with the interface descriptions in this Book 10, the Holder+LED Array assembly can be used in the same way as an LED Module compliant with this Book. Thus this Book can also be used to check compliance of Holders with respect to the Holder-Luminaire interface.

This Book 10 defines several size categories of the LED Module

- 35 mm, 50 mm maximum outer diameter

The size categories can have different LES diameters and different LES categories:

- LES6.3, LES9, LES13.5, LES19, LES23

The LED Modules are intended to be installed and replaced by professionals only.

1.3 Conformance and references

1.3.1 Conformance

All provisions in the Zhaga interface Specifications are mandatory, unless specifically indicated as recommended, optional or informative. Verbal expressions of provisions in the Zhaga interface specifications follow the rules provided in Clause 7 of ISO/IEC Directives, Part 2:2018. For clarity, the word “shall” indicates a requirement that is to be followed strictly in order to conform to the Zhaga interface specifications, and from which no deviation is permitted. The word “should” indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is discouraged but not prohibited. The word “may” indicates a course of action