

Zhaga Book 15

“Rectangular LED modules for lenses”

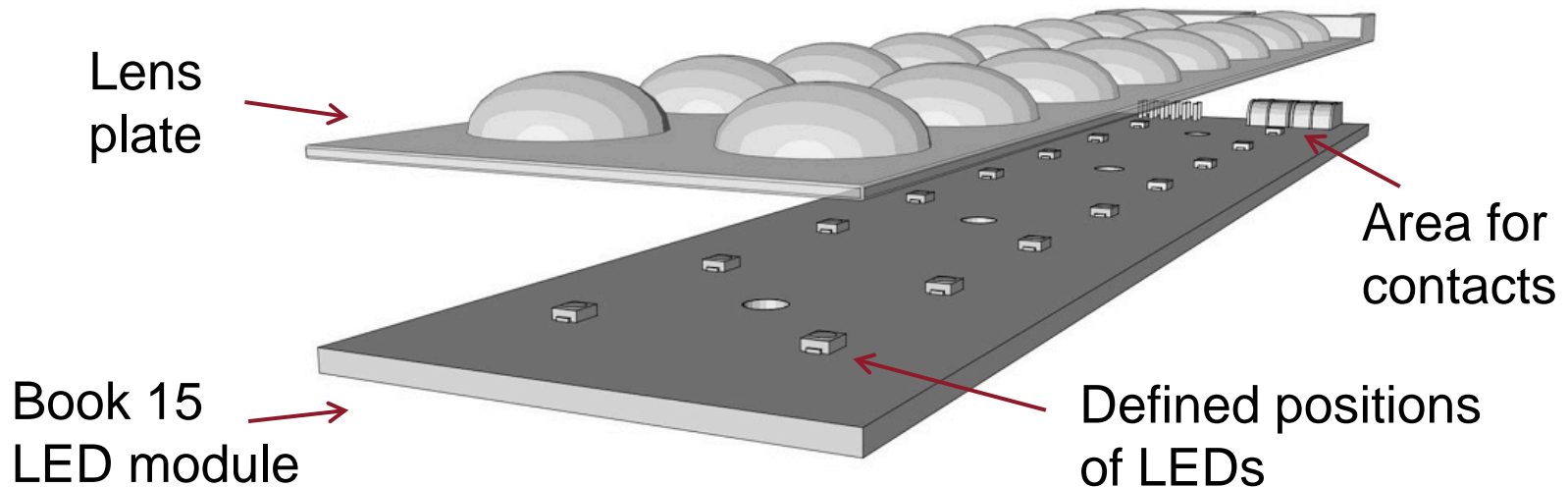
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Book 15 overview

- Book 15 defines a **family of rectangular LED modules** that are intended to be **used with lenses or arrays of lenses** (also known as lens plates).



- The **lenses are NOT defined** in this specification.

Book 15 overview

- The modules require a **separate LED driver** (electronic control gear), and usually will be mounted on a heat sink.
- Book 15 modules with lenses are typically used for **outdoor lighting applications**, including roadway, pathway and outdoor-area lighting.
- The LED modules are intended to be installed and replaced by luminaire makers only.

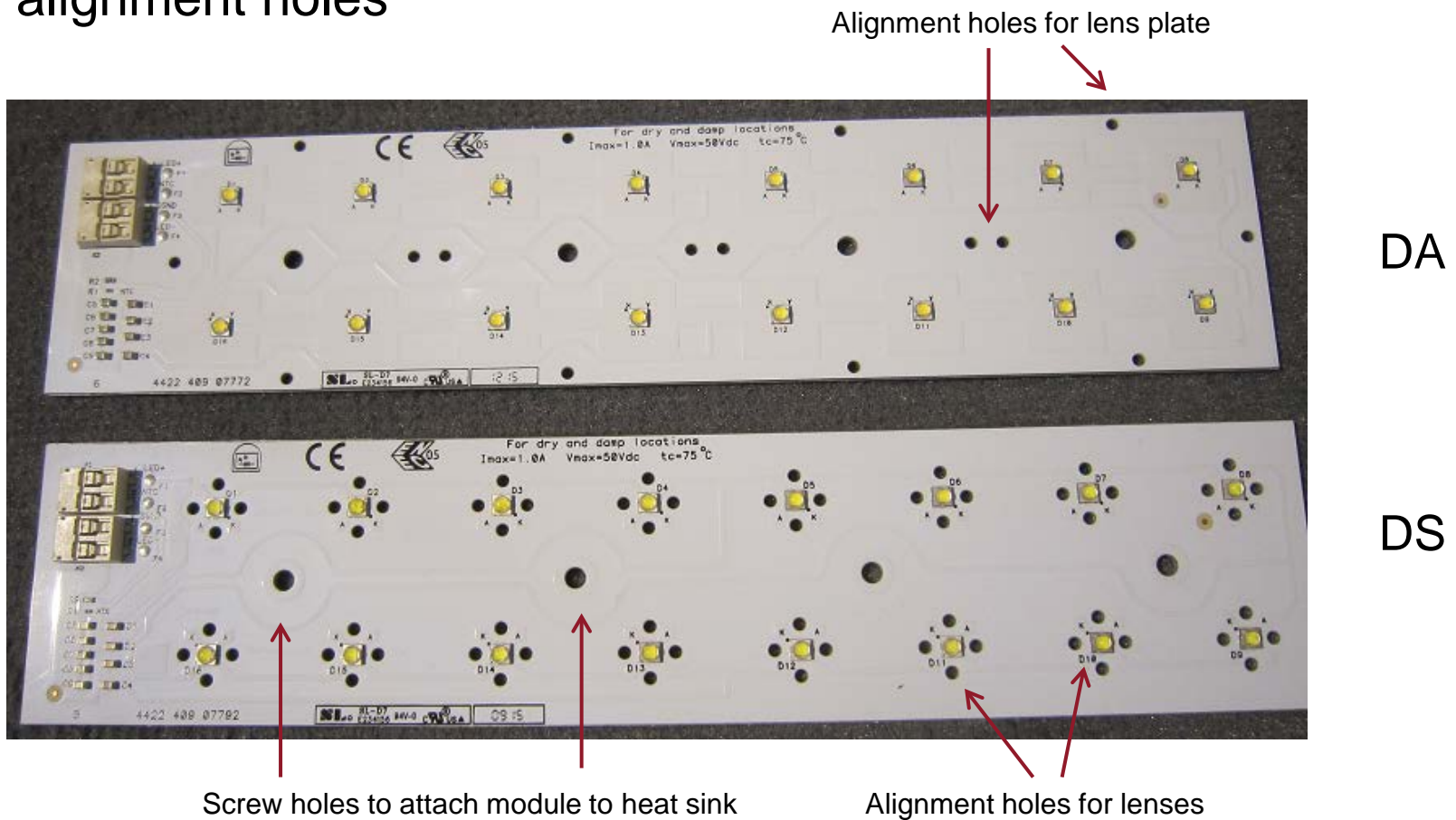
Book 15 module categories

- 6 LED module categories are defined
 - There are 3 sizes, with either 2x2, 2x4 or 2x8 LEDs
 - DA modules are intended to be used with a lens plate
 - DS modules are intended to be used with individual lenses

Category	Number of LEDs	LED pitch (mm)	Maximum width of module (mm)
2x2-DA / DS	2 x 2	25.4	50
2x4-DA / DS	4 x 2	25.4	50
2x8-DA / DS	8 x 2	25.4	50

Book 15 module categories

- DA and DS categories differ in the quantity and position of alignment holes



Further specification details

MECHANICAL:

The Book defines

- Maximum outline
- Alignment hole positions
- Mounting hole positions
- Position of LEDs (recommendation)
- Optics Contact Area (OCA) and keep-in for connector

ELECTRICAL:

- Electrical interface compliant with MD-SIG specification

PHOTOMETRIC:

- No requirements for: light-emitting surface (LES), luminous intensity distribution, uniformity
- Refer to Book 1 for requirements for: Flux, CRI, CCT

THERMAL:

- Simple thermal interface based on total thermal power.

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