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| IALA RECOMMENDATION |

R0200-4 (E200-4)

marine signal lights - Determination and Calculation of Effective Intensity

Edition 2.0

December 2017

Revisions to this IALA Document are to be noted in the table prior to the issue of a revised document.

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| Date | Details | Approval |
| December 2008 | First edition | Council |
| October 2017 | Entire document to align with IALA strategy |  |
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THE COUNCIL

**RECALLING** the function of IALA with respect to Safety of Navigation, the efficiency of maritime transport and the protection of the environment;

**RECOGNISING** that for the adequate performance of marine signal lights the performance of flashing lights needs to be determined;

**RECOGNISING ALSO** that there are several methods of determining the performance of flashing lights at the threshold of visual perception;

**RECOGNISING FURTHER** that there are no adequate methods for determining the performance of flashing lights at observer levels above the threshold of illuminance;

**NOTING** that defined standards for the determination of the performance of flashing lights should be used worldwide to ensure the quality of signal lights for mariners;

**NOTING ALSO** that this document only applies to marine Aid-to-Navigation signal lights that are installed after the publication date of this document;

**CONSIDERING** the proposals of the ENG Committee, their lights experts and the IALABATT/IALALITE working group;

**ADOPTS** the Recommendation on Marine Aid-to-Navigation Signal Lights in the annexes of this recommendation; and,

**RECOMMENDS** that IALA Members and other appropriate Authorities providing marine aids to navigation adopt the Modified Allard Method described in ANNEX A for the determination and calculation of effective intensity of a rhythmic light.

1. Modified Allard Method
2. Mathematical description

In the Modified Allard Method, the effective intensity, *Ie*, of a finite length flash is determined by the maximum value of the convolution result between the flash profile and the visual system response function. Thus,

1. : Modified Allard Method

Where:

is the instantaneous luminous intensity of the flash at a time

is the visual system response function.

The visual system response function, , is determined by:

|  |  |
| --- | --- |
|  | for |
| for |

1. : Visual System Response Function

Where:

|  |  |
| --- | --- |
|  | for all signal colours except blue at night |
| for blue signal colour at night |