

| TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires | |
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| Report Reference No..... | EED31J000376 |
| Compiled by (+ signature)..... | Sain Chen  |
| Reviewed by (+ signature)..... | Torres He  |
| Approved by (+ signature)..... | Amo Liu  |
| Date of issue..... | Feb. 28, 2017 |
| Testing Laboratory | Centre Testing International Group Co., Ltd. |
| Address..... | Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China |
| Applicant's name | Shenzhen Runlite Technology Co.,Ltd |
| Address..... | Building A15, Tantou the 4th Industrial Estate, SongGang Town, BaoAn District, ShenZhen, China |
| Manufacture's name | Shenzhen Runlite Technology Co.,Ltd |
| Address..... | Building A15, Tantou the 4th Industrial Estate, SongGang Town, BaoAn District, ShenZhen, China |
| Test specification: | |
| Standard..... | IEC TR 62778:2014 (Second Edition) |
| Test procedure..... | Test report |
| Non-standard test method..... | N/A |
| Test Report Form No. | IEC62778A |
| TTRF Originator..... | CTI |
| Master TTRF..... | Dated 2016-02 |
| Test item description | SMD LED |
| Model/Type reference..... | SMD LED |
| Ratings..... | 60mA DC, 3V, 0,2W, Ra=70 |



Lab Supervisor

Check No.: 2447629933

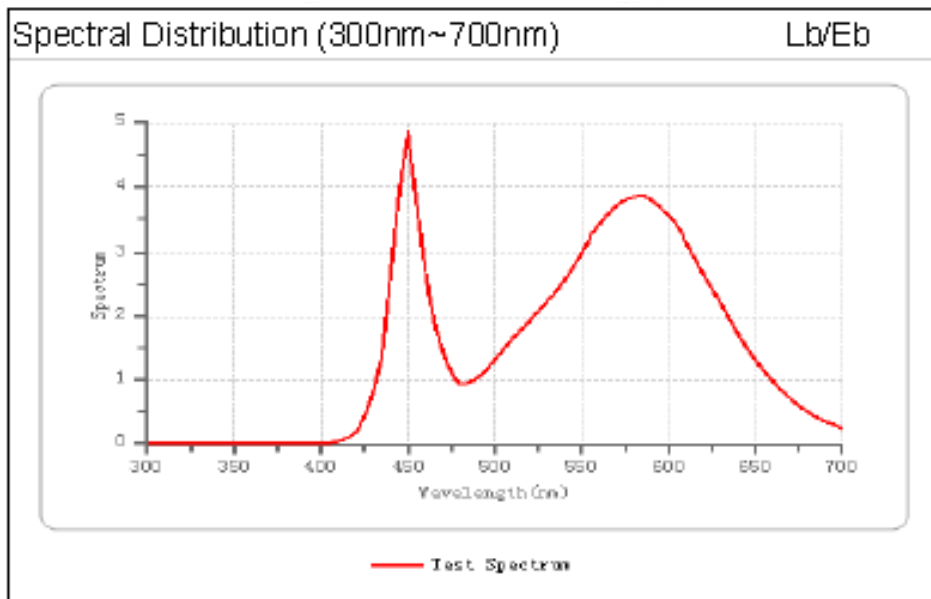
| IEC TR 62778 | | | |
|--------------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

Summary of testing:

Test conditions:

1. Ambient temperature: 25°C; Humidity: 49%;
2. Measurement distance: 200mm;
3. Aperture stop: 7mm

Spectral Distribution



Conclusion: Sample tested is considered as **Exempt Group**.

Tests performed (name of test and test clause):

All applicable tests as described in Test Case and Measurement Sections were performed.

Testing location:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District, Shenzhen,
Guangdong, China

Summary of compliance with National Differences:

N/A

Copy of marking plate:

N/A

| IEC TR 62778 | | | |
|--------------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | |
|--|--|
| Test item particulars..... : | |
| Product evaluated..... : | <input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire |
| Rated voltage (V)..... : | 3 |
| Rated current (mA)..... : | 60 |
| Rated CCT (K)..... : | N/A |
| Rated Luminance (Mcd/m ²)..... : | N/A |
| Component report data used | <input type="checkbox"/> Not applicable <input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp |
| Possible test case verdicts: | |
| - test case does not apply to the test object..... : N/A | |
| - test object does meet the requirement..... : P (Pass) | |
| - test object does not meet the requirement..... : F (Fail) | |
| Testing | |
| Date of receipt of test item..... : | Feb. 21, 2017 |
| Date (s) of performance of tests..... : | Feb. 22, 2017 |
| General remarks: | |
| "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. The tested sample(s) and the sample information are provided by the client. Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator. | |
| Manufacturer's Declaration per sub-clause 4.2.5 of IEC60904-2: | |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... : | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable |
| When differences exist; they shall be identified in the General product information section. | |
| Name and address of factory (ies)..... : | N/A |
| General product information: | |
| Test current is 60mA DC. | |

| IEC TR 62778 | | | |
|--------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 7 | MEASUREMENT INFORMATION FLOW | | P |
| 7.1 | Basic flow | | N/A |
| | 'Law of conservation of luminance' applied | | N/A |
| | Use of only true luminance/radiance values | | N/A |
| | In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component | | N/A |
| | In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution | | N/A |
| 7.2 | Conditions for the radiance measurement | | P |
| | Standard condition applied (200mm distance, 0,011rad field of view) | | P |
| | Non-standard condition applied | | N/A |
| 7.3 | Special cases (I): Replacement by a lamp or LED module of another type | | N/A |
| | Light source is a white light source | | N/A |
| | Evaluation done based on highest luminance | | N/A |
| | Evaluation done based on CCT value | | N/A |
| 7.4 | Special cases (II): Arrays and clusters of primary light sources | | P |
| | LED package is evaluated as : <input checked="" type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited | | P |
| | E_{thr} of LED package applies to array | | N/A |
| 8 | RISK GROUP CLASSIFICATION | | N/A |
| | Risk group achieved: | | N/A |
| | -... Risk Group 0 unlimited | | P |
| | -... Risk Group 1 unlimited | | N/A |
| | - E_{thr} (lx) : Distance to reach RG1..... (m) : | | N/A |

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| TABLE: Spectroradiometric measurement | | | P |
|---------------------------------------|---|--------------------------------------|-----------|
| Measurement performed on: | <input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire | | |
| Model number..... | SMD LED | | |
| Test voltage (V)..... | 3,0 | | — |
| Test current (mA)..... | 60 | | — |
| Test frequency (Hz)..... | N/A | | — |
| Ambient, t (°C)..... | 25 | | — |
| Measurement distance..... | <input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm | | — |
| Source size | <input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small : 17 mm | | — |
| Field of view | <input checked="" type="checkbox"/> 100 mrad <input type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources) | | — |
| Item | Symbol | Units | Result |
| Correlated colour temperature | CCT | K | / |
| x/y colour coordinates | / | / | / |
| Blue light hazard radiance | L _B | W/(m ² •sr ¹) | 2,804E+01 |
| Luminance | L | cd/m ² | 2,954E+06 |

Photo Document

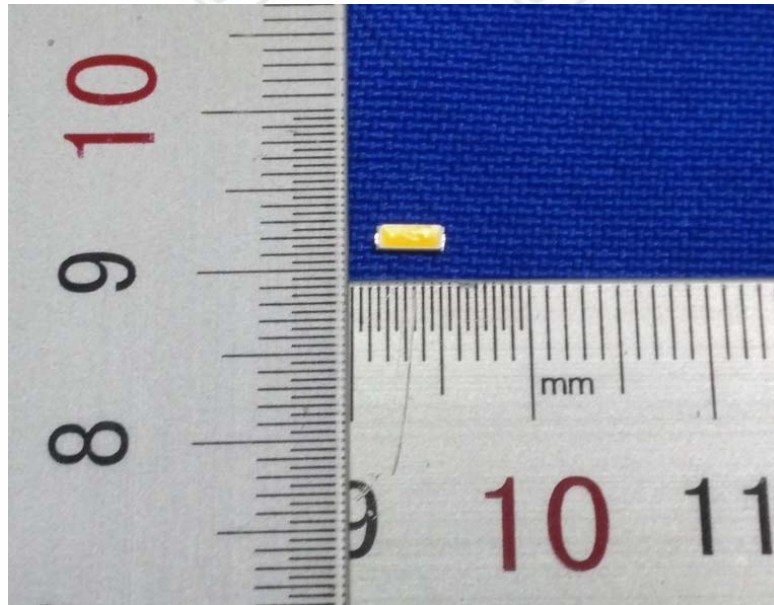


Fig. 1 - Overall view

*** End of Report ***

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