

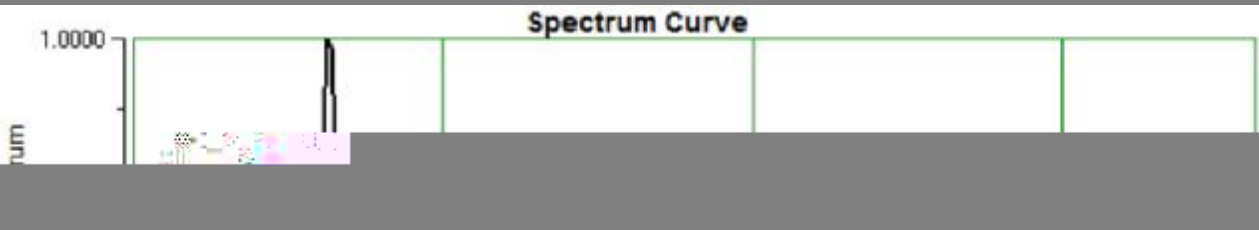
| TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires | |
|--|--|
| Report Reference No..... | EED31K002715 |
| Compiled by (+ signature)..... | Carrie Lin  |
| Reviewed by (+ signature)..... | Torres He  |
| Approved by (+ signature)..... | Amo Liu  Lab Supervisor |
| Date of issue..... | Sept. 03, 2018 |
| Testing Laboratory..... | Centre Testing International Group Co., Ltd. |
| Address..... | Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China |
| Applicant s name..... | Shenzhen Refond Optoelectronic Co., Ltd. |
| Address..... | 1 to 8 th Floor, Building #1,10th Industrial Zone, Tian Liao Community, Gong Ming Area, Guang Ming New District, SHENZHEN, CHINA. |
| Manufacture s name..... | Shenzhen Refond Optoelectronic Co., Ltd. |
| Address..... | 1 to 8 th Floor, Building #1,10th Industrial Zone, Tian Liao Community, Gong Ming Area, Guang Ming New 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 | LED |
| Model/Type reference..... | RF-22HI32DS-**-Q-**, RF-27HI32DS-**-Q-**, RF-30HI32DS-**-Q-**, RF-40HI32DS-**-Q-**, RF-50HI32DS-**-Q-**, RF-57HI32DS-**-Q-**, RF-65HI32DS-**-Q-** Remark: The first "***" denotes the different customer code, it can be one any capital letter such as FH, FF, EF or FD and so on. The second "***" denotes the different project application, it can be EH or O1 and so on. |
| Ratings..... | 150mA, 3,1V DC |

Summary of testing:

Test conditions:

1. Ambient temperature: 24,3°C; Humidity: 54%;
2. Measurement distance: 200mm;
3. Aperture stop: 7mm

Spectral Distribution



Conclusion: Sample tested is considered as **Risk1 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

| | |
|--|--|
| 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)..... : | 3,1V DC |
| Rated current (mA)..... : | 150mA |
| 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..... : | Aug. 25, 2018 |
| Date (s) of performance of tests..... : | Aug. 28, 2018 |
| General remarks: | |
| <p>"(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. Remark:"#" indicates the testing item(s) was (were) fulfilled by subcontracted lab.</p> | |
| Manufacturer s Declaration per sub-clause 4.2.5 of IEC62471: | |
| 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: | |
| <p>These models are same except the different color temperature, customer code and project application. According to the differences and with the request of applicant, all the tests are performed on the main model RF-65HI32DS-FH-Q-01. The test current is 150mA .</p> | |

| Product information | | | | |
|----------------------|-------------------|-------------------|-------------------|-----------------|
| Model | Color temperature | Rated voltage (V) | Rated current (A) | Rated power (W) |
| RF-22HI32DS-**-Q-**- | 2200K | 3,1 | 0,15 | 0,465 |
| RF-27HI32DS-**-Q-**- | 2700K | 3,1 | 0,15 | 0,465 |
| RF-30HI32DS-**-Q-**- | 3000K | 3,1 | 0,15 | 0,465 |
| RF-40HI32DS-**-Q-**- | 4000K | 3,1 | 0,15 | 0,465 |
| RF-50HI32DS-**-Q-**- | 5000K | 3,1 | 0,15 | 0,465 |
| RF-57HI32DS-**-Q-**- | 5700K | 3,1 | 0,15 | 0,465 |
| RF-65HI32DS-**-Q-**- | 6500K | 3,1 | 0,15 | 0,465 |

| 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 valR62ua6j-9oliedd | | |

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

TABLE: Spectroradiometric measurement

Measurement performed on:

- LED package
- LED module
- Lamp
- Luminaire

Model number..... RF-65HI32DS-FH-Q-01

Test voltage (V)..... 3,1

Test current (mA)..... 150

Test frequency (Hz)..... N/A

Ambient, t (°C)..... 24,3

Measurement distance..... 20 cm
 ... cm

Source size Non-small
 S

| P |
|-----|
| |
| 3/4 |
| 3/4 |
| 3/4 |
| 3/4 |
| 3/4 |

Photo Document

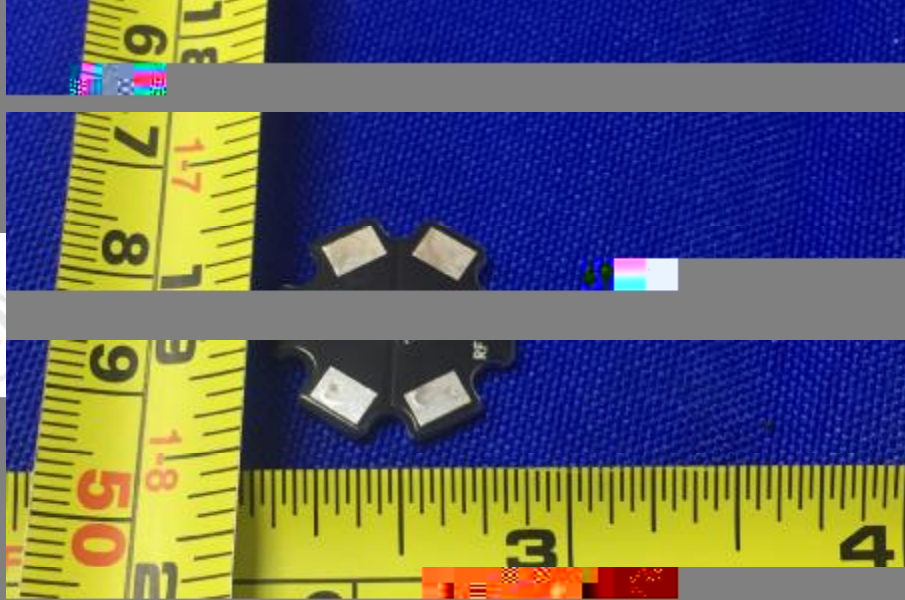


Fig. 1 - Overall view of the sample

*** End of Report ***

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