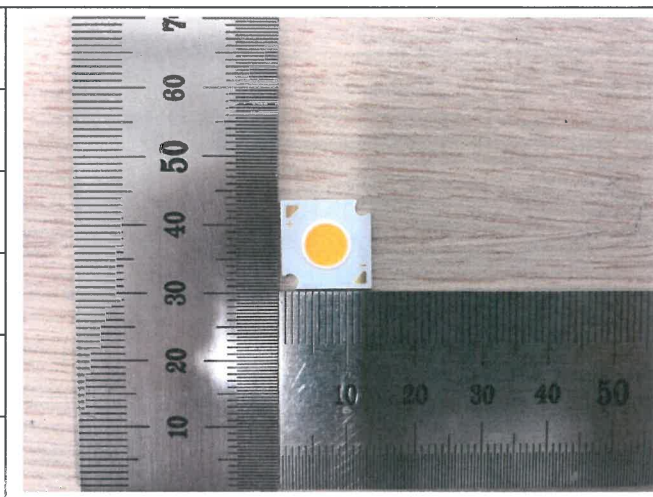




Prüfbericht - Nr.: <i>Test Report No.:</i>	50171566 001	Auftrags-Nr.: <i>Order No.:</i>	133056726	Seite 1 von 9 <i>Page 1 of 9</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum.: <i>Order date.:</i>	2018-07-23	
Auftraggeber: <i>Client:</i>	Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677 Rep. of Korea			
Prüfgegenstand: <i>Test item:</i>	Integral LED module			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	SPHWAHDNC2yYZz3C2 (y=5,7; z=W,V,U,T,R)			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	IEC TR 62778:2014			

Wareneingangsdatum: <i>Date of receipt:</i>	2018-07-23
Prüfmuster-Nr.: <i>Test sample No.:</i>	N/A
Prüfzeitraum.: <i>Testing period:</i>	2018-08-02
Or der Prüfung: <i>Place of testing:</i>	Seoul, Rep. of Korea
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Korea Ltd.
Prüfergebnis*: <i>Test Result*:</i>	Pass



geprüft von / tested by:			kontrolliert von / reviewed by:		
					
2018-08-13	Eun-Hye Park / Project Engineer		2018-08-13	Hyun-Seok Oh / Technical Reviewer	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>

Sonstiges/ Other:

Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition fo the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende: 1 = sehr gut P(ass) = entspricht o.g.	2 = gut Prüfgrundlage(n)	3 = befriedigend F(all) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
Legend: 1 = very good P(ass) = passed a.m.	2 = good test specification(s)	3 = satisfactory F(all) = failed a.m. test specification(s)	4 = sufficient N/A = not applicabie	5 = poor N/T = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

List of Attachments (including a total number of pages in each attachment): None	
Summary of testing:	
Tests performed (name of test and test clause): All test according to IEC TR 62778:2014	Testing location: TÜV Rheinland Korea Ltd. Test Center, 4F, E&C Venture Dream Tower 6, 197-28, Guro-dong, Guro-gu, Seoul, 152-719, Rep. of Korea
Summary of compliance with National Differences (List of countries addressed): None	
Copy of marking plate: N/A	

Test item particulars.....:	
Product evaluated.....:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire
Rated voltage (V)	DC 35 V
Rated current (mA)	0.3 A
Rated CCT (K).....	5000 K
Rated Luminance (Mcd/m²)	N/A
Component report data used	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp Report number:
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	2018-07-23
Date (s) of performance of tests	2018-08-02
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC62778A:	
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) : Guangzhou LEDteen Optoelectronics Co., Ltd.
 2F, A4 Building, NO. 11 Kaiyuan Avenue, Science
 City, Guangzhou, Guangdong, 510663, P.R. China

General product information:

This product is a constant current type integral LED module using LED as a light source.

LED Package:

Manufacturer/ trademark	Type/model	Technical data
SAMSUNG ELECTRONICS CO., LTD.	LC010C(Gen.2)	5000K, 4000K, 3500K, 3000K, 2700K

Model Differences

SPHWAHDNC2y²YZz³3C2

(y=5,7; z=W,V,U,T,R)

- 1) y (CRI and Sorting Temperature) : 5(Min. 80; 85°C), 7(Min 90; 85 °C)
- 2) z (Correlated Color Temperature) : W(2700K), V(3000K), U(3500K), T(4000K), R(5000K)

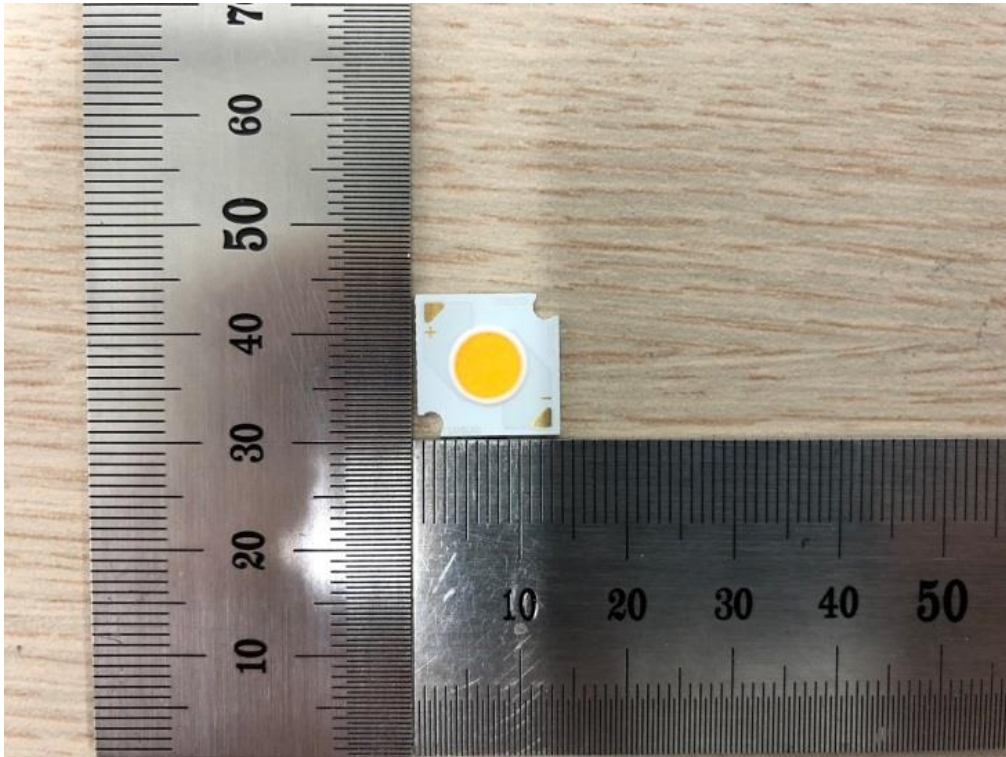
Model SPHWAHDNC25YZR3C2 was considered as the most unfavourable condition with highest CCT.

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
7	MEASUREMENT INFORMATION FLOW		P
7.1	Basic flow		P
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	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		N/A
	LED package is evaluated as	<input type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A
8	RISK GROUP CLASSIFICATION		P
	Risk group achieved:		P
	- .. Risk Group 0 unlimited		N/A
	- .. Risk Group 1 unlimited		P
	- E_{thr} (lx) : Distance to reach RG1 (m) :		N/A

TABLE: Spectroradiometric measurement					P
Measurement performed on:		<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
Model number		SPHWAHDNC25YZR3C2			
Test voltage (V)		DC 35 V			—
Test current (mA)		0.3 A			—
Test frequency (Hz).....		-			—
Ambient, t (°C)		25±1 °C			—
Measurement distance		<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm			—
Source size		<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small : mm			—
Field of view		<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)			—
Item	Symbol	Units	Result	Remark	
Correlated colour temperature	CCT	K	5940	-	
x/y colour coordinates	-	-	0.3232 / 0.3337	-	
Blue light hazard radiance	L _B	W/(m ² •sr ¹)	8.37E+03	-	
Blue light hazard irradiance	E _B	W/m ²	-	-	
Luminance	L	cd/m ²	1.03E+07	-	
Illuminance	E	lx	-	-	
Supplementary information:					

	TABLE: Angular light distribution	N/A

Photographs



<Fig.1>

Measuring equipment list				
Inst. ID No.	Category	Maker	Type/Model	Next calibration date
1809044	Spectroradiometer	BENTHAM	IDR300	2018-08-10
1809146	Telescope	BENTHAM	TEL310	2018-08-10
Note:				