Ningbo TengLi Testing Co., Ltd

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Tel: 86574-8783 6802
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ACCREDITED
Certificate#4703.02

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 BALLARDVALE STREET WILMINGTON, MA 01887

Model name(s): LEDRT6G1000SC3

draft

Report Type:	Testing and Report According to IES LM-79-2008
Type of Luminaire:	Directional downlights
Report Date:	2021-11-15
Prepared By:	Ningbo TengLi Testing Co., Ltd 2nd floor, Block B, Ningbo Testing and Certification Base, No. 66 Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang

Test & Report By:

Engineer: Nick Song

Review By:

Manager: Garman Mo

Note: 1. The results contained in this report pertain only to the tested samples

2. This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.

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1.1 Product Information:		
Model Number	LEDRT6G1000SC3	
Remark	N/A	
Representative (Tested) Model	LEDRT6G1000SC3	
Model Difference	N/A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Directional downlights	
LED Manufacturer	Bridgelux,Inc.	
LED Model	BXFN-XXG-13H-98	
Dimming	Dimmable	
Sample Number	STD210933NB-C1	
Date of Receipt	Oct.10,2021	
Luminaire Aperture (for Downlight Retrofits)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:	
Rated Voltage / Frequency	120Vac,60 Hz
Nominal Power	13W
Rated Initial Lamp Lumen	--
Declared CCT	2700K/3000K/3500K/4000K/5000K

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1.3 Test Specifications:

Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source

1.4 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25°C ± 1°C, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º C. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25º C ± 1º C. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

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2.1.1 Electrical, Photometric and Chromaticity Measurements

Test date	2021-10-11	**Test Ambient:**	25±1 ° C
Test Orientation	As intended	**Stabilization Time (min)**	45
Model Number	LEDRT6G1000SC3 /2700K setting	**Total Operating Time(min)**	55

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
STD210933 NB-C1	120.1	60.01	0.1045	12.27	0.9778

Chromaticity Measurement - Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	2799
Duv	0.0023
Chromaticity (x, y)	x=0.4557 y=0.4157
Chromaticity (u', v')	u'=0.2575 v'=0.5287
Color Rendering Index (CRI)	91.9
R9	68

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1088.9
Luminous Efficacy (lm/W)	88.73
Beam Angle (°)	44.3
Center Beam Candle Power (cd)	1488

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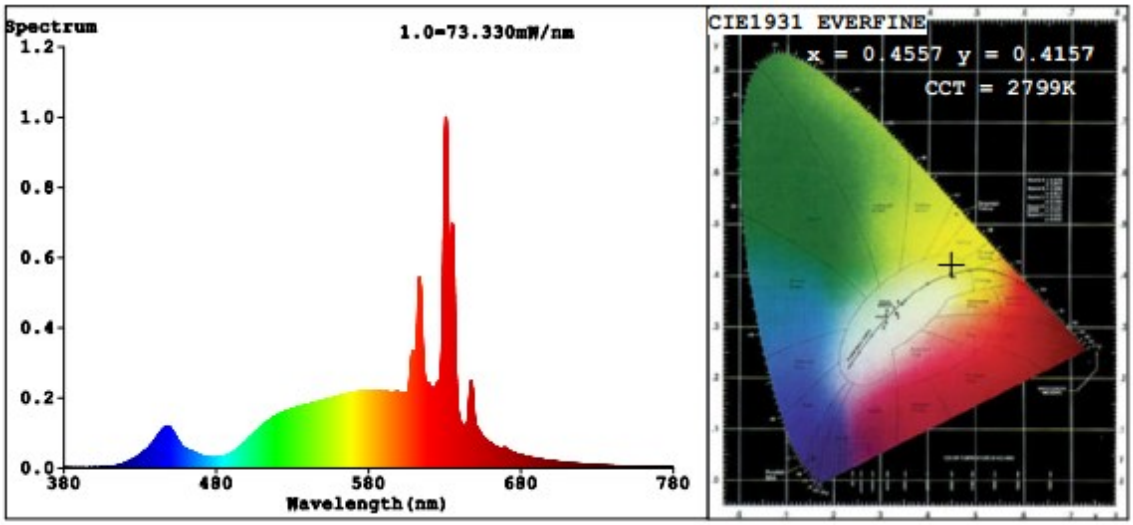
Spectral Power Distribution & Chromaticity Diagram



R1 =95	R2 =93	R3 =87	R4 =93	R5 =93	R6 =91	R7 =94	
R8 =88	R9 =68	R10=79	R11=94	R12=75	R13=94	R14=91	R15=92

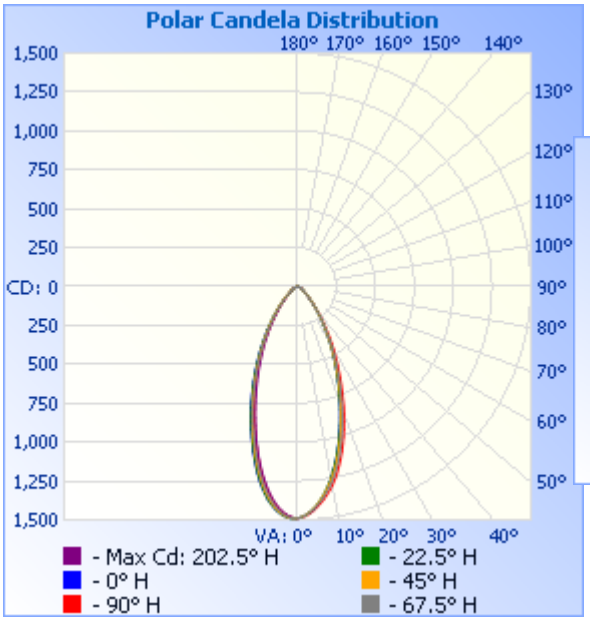
Zonal Lumen Tabulation

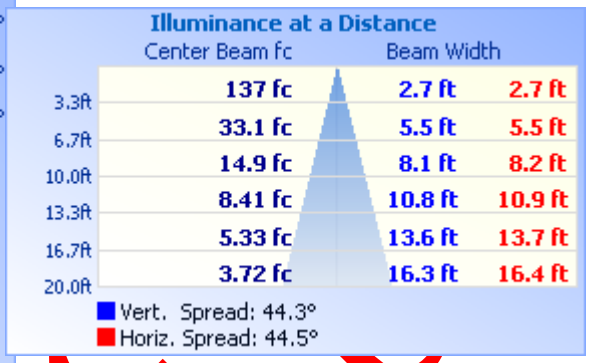
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	711.4	65.4%
0-40	903.4	83%
0-60	1,049.2	96.4%
60-90	39.3	3.6%
70-100	14.4	1.3%
90-120	0.0	0%
0-90	1,088.6	100%
90-180	0.0	0%
0-180	1,088.6	100%

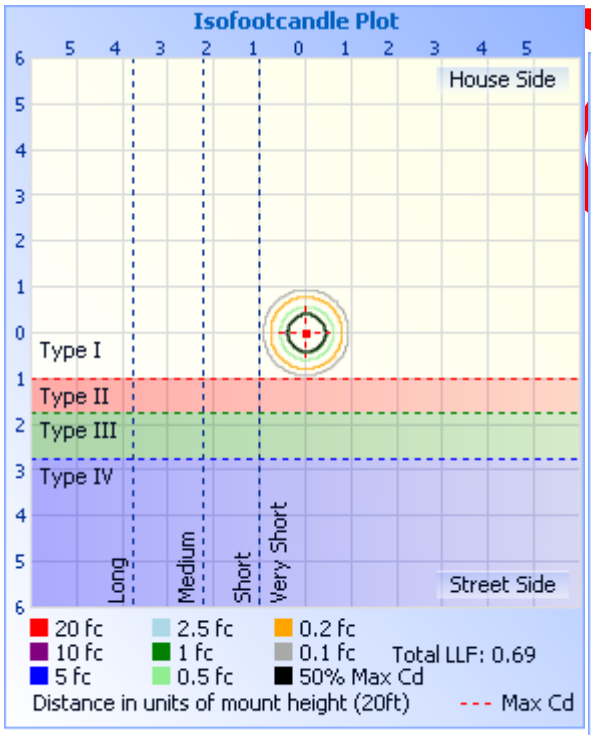
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	131.4	12.1%	90-100	0.0	0%
10-20	293.6	27.0%	100-110	0	0%
20-30	286.5	26.3%	110-120	0	0%
30-40	192.0	17.6%	120-130	0	0%
40-50	98.3	9.0%	130-140	0	0%
50-60	47.5	4.4%	140-150	0	0%
60-70	24.9	2.3%	150-160	0	0%
70-80	11.6	1.1%	160-170	0.0	0%
80-90	2.8	0.3%	170-180	0.0	0%

Original

Photometric Data







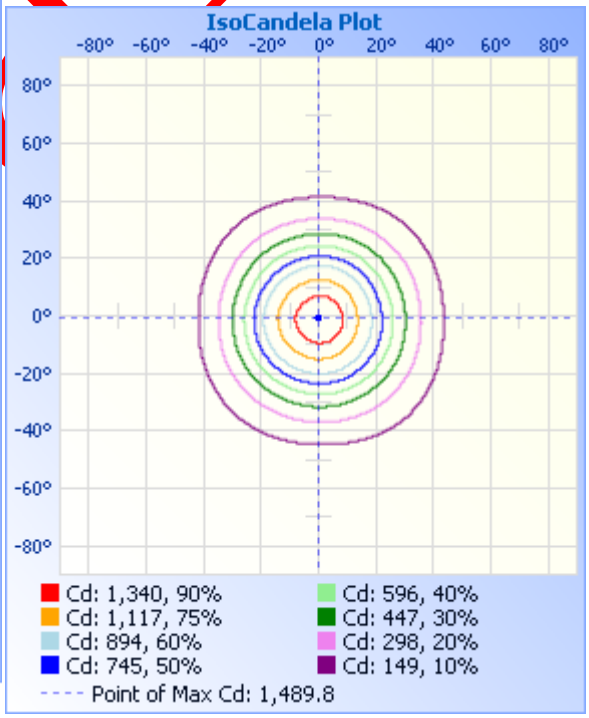


Table--1 UNIT: cd

T (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5		
0	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488	1488		
5	1427	1422	1420	1416	1412	1409	1408	1413	1424	1431	1439	1447	1453	1452	1447	1438		
10	1258	1250	1248	1247	1244	1242	1251	1270	1294	1299	1299	1306	1313	1309	1295	1280		
15	1032	1023	1020	1022	1022	1025	1041	1067	1098	1104	1099	1098	1101	1095	1078	1060		
20	809	792	793	795	792	794	807	834	874	883	875	877	882	873	855	840		
25	614	591	585	591	585	586	596	615	648	659	659	663	670	663	644	637		
30	442	427	417	423	416	416	421	433	459	466	472	477	488	482	467	461		
35	304	292	286	285	277	277	282	287	304	314	320	328	338	336	328	320		
40	199	192	189	181	174	176	180	180	186	199	208	215	221	225	223	212		
45	124	125	122	111	106	110	111	109	111	121	132	136	138	144	147	138		
50	75.9	80.4	78.8	69.1	65.9	70.1	70.1	68.0	69.0	73.5	83.9	84.9	84.1	90.8	95.0	86.3		
55	50.7	52.8	52.6	46.5	44.8	47.0	46.4	46.0	46.6	48.7	55.0	55.6	55.2	59.1	63.0	56.0		
60	35.5	36.3	35.9	32.7	31.1	32.6	32.3	31.7	32.6	34.0	37.8	38.4	38.6	40.5	42.8	38.9		
65	24.8	25.0	24.6	22.7	21.5	22.4	22.2	21.8	22.6	23.8	26.3	26.8	27.1	28.2	29.4	27.2		
70	16.4	16.4	16.0	15.2	14.5	15.0	14.9	14.9	15.5	16.3	17.8	18.3	18.6	19.0	19.4	18.0		
75	10.2	10.0	9.90	9.60	9.34	9.70	9.86	10.1	10.6	11.2	11.9	12.2	12.4	12.5	12.4	11.3		
80	5.18	5.04	5.08	5.08	5.06	5.26	5.57	5.96	6.42	6.77	7.03	7.08	7.15	7.07	6.65	5.91		
85	1.65	1.58	1.66	1.74	1.85	2.02	2.29	2.65	3.06	3.23	3.26	3.25	3.22	3.03	2.60	2.13		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.10	0.17	0.09	0.01	0.00	0.00	0.00	0.00		
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00		
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01		
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00		
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

dr

2.2.2 Electrical, Photometric and Chromaticity Measurements	IES LM-79 2008

Test date	2021-10-11	Test Ambient:	25±1 ° C
Test Orientation	As intended	Stabilization Time (min)	45
Model Number	LEDRT6G1000SC3 /3000K setting	Total Operating Time(min)	55

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz	Current (A)	Power (W)	Power Factor
STD210933 NB-C1	120.01	60	0.1046	12.23	0.9744

Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	93.8
R9	77
CCT (K)	3080
Duv	-0.0040
Chromaticity (x, y)	x=0.4309 y=0.4010
Chromaticity (u', v')	u'=0.2480 v'=0.5193
Total Luminous (lm)	1092
Luminous Efficacy (lm/W)	89.29

draft

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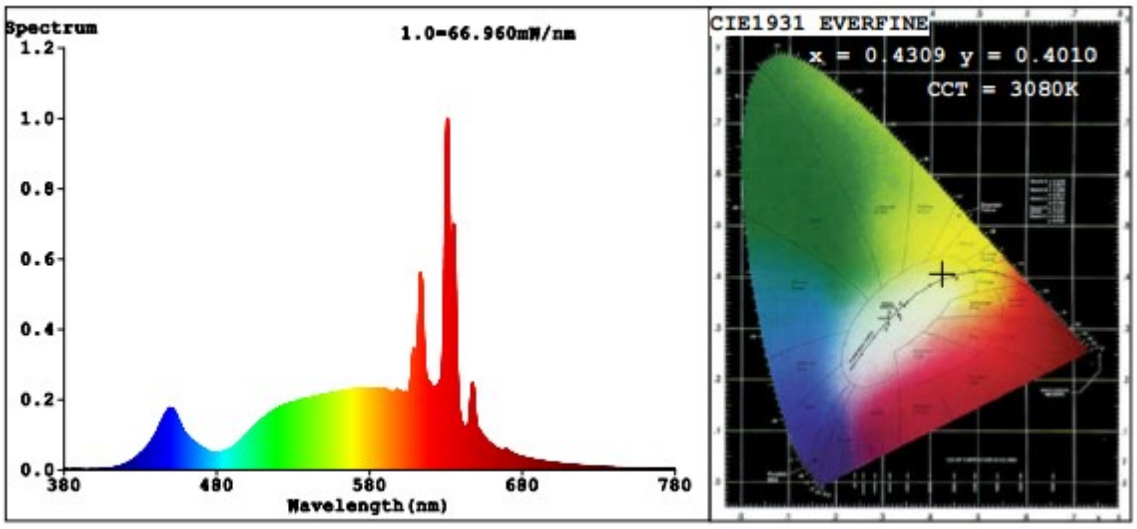
Spectral Power Distribution and Chromaticity Diagram



R1 =98	R2 =95	R3 =89	R4 =94	R5 =96	R6 =94	R7 =94	
R8 =92	R9 =77	R10=84	R11=93	R12=79	R13=96	R14=92	R15=95

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.2.3 Electrical, Photometric and Chromaticity Measurements	IES LM-79 2008

Test date	2021-10-11	Test Ambient:	25±1 ° C
Test Orientation	As intended	Stabilization Time (min)	45
Model Number	HT-G65ERRD5-812-35D-ZZ1 /3500K setting	Total Operating Time(min)	55

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz	Current (A)	Power (W)	Power Factor
STD210933 NB-C1	120.04	60	0.1040	12.23	0.9801

Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	94.8
R9	83
CCT (K)	3522
Duv	-0.0011
Chromaticity (x, y)	x=0.4029 y=0.3869
Chromaticity (u', v')	u'=0.2357 v'=0.5093
Total Luminous (lm)	1102
Luminous Efficacy (lm/W)	90.11

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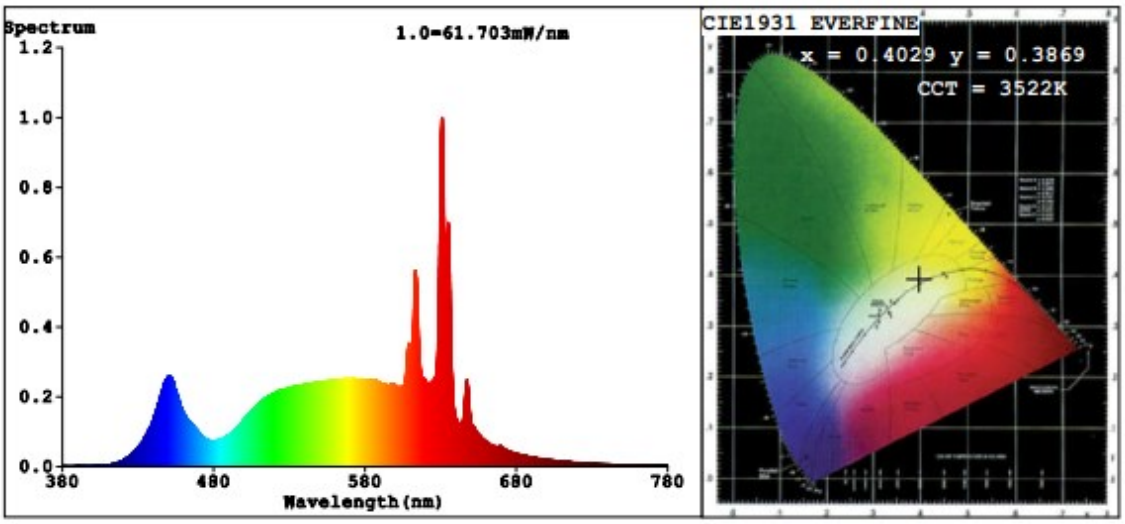
Spectral Power Distribution and Chromaticity Diagram



R1 =99	R2 =95	R3 =89	R4 =94	R5 =97	R6 =94	R7 =95	
R8 =95	R9 =83	R10=86	R11=93	R12=77	R13=97	R14=93	R15=97

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2.2.4 Electrical, Photometric and Chromaticity Measurements	**IES LM-79 2008**

Test date	2021-10-11	**Test Ambient:**	25±1 ° C
Test Orientation	As intended	**Stabilization Time (min)**	45
Model Number	LEDRT6G1000SC3 /4000K setting	**Total Operating Time(min)**	55

Electrical Measurement:

Sample No.	**Voltage (Vac)**	**Frequency (Hz**	**Current (A)**	**Power (W)**	**Power Factor**
STD210933 NB-C1	120.02	60	0.1041	12.20	0.9768

Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	**Result**
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	95.0
R9	85
CCT (K)	4041
Duv	-0.0004
Chromaticity (x, y)	x=0.3783 y=0.3746
Chromaticity (u', v')	u'=0.2246 v'=0.5003
Total Luminous (lm)	1106
Luminous Efficacy (lm/W)	90.66

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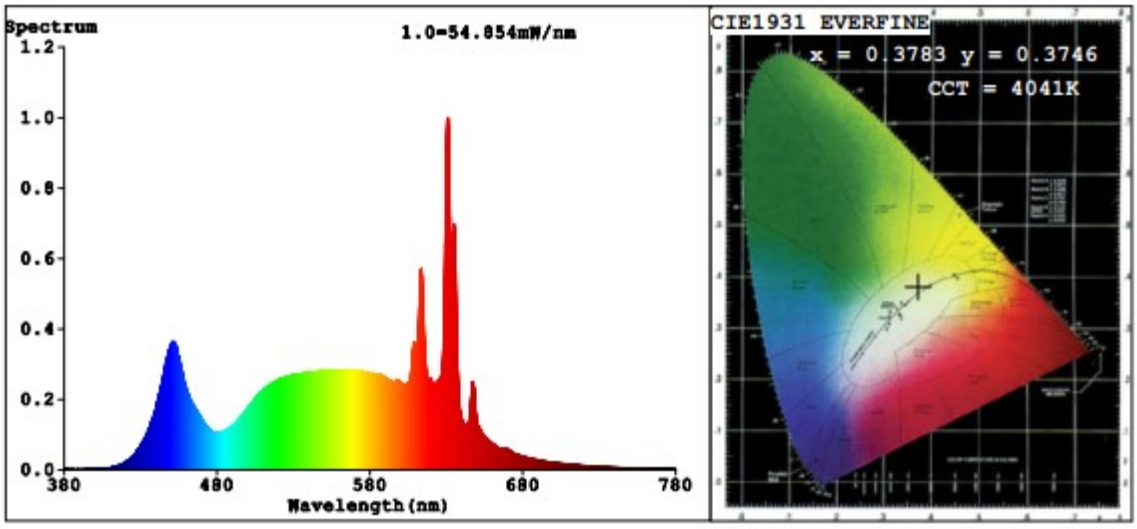
Spectral Power Distribution and Chromaticity Diagram



R1 =98	R2 =95	R3 =90	R4 =95	R5 =96	R6 =93	R7 =96	
R8 =96	R9 =85	R10=86	R11=94	R12=73	R13=97	R14=93	R15=97

draft

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2.2.5 Electrical, Photometric and Chromaticity Measurements	IES LM-79 2008

Test date	2021-10-11	Test Ambient:	25±1 ° C
Test Orientation	As intended	Stabilization Time (min)	45
Model Number	LEDRT6G1000SC3 /5000K setting	Total Operating Time(min)	55

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz	Current (A)	Power (W)	Power Factor
STD210933 NB-C1	120.02	60	0.1036	12.18	0.9800

Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	92.9
R9	73
CCT (K)	5073
Duv	0.0034
Chromaticity (x, y)	x=0.3436 y=0.3572
Chromaticity (u', v')	u'=0.2083 v'=0.4872
Total Luminous (lm)	1095
Luminous Efficacy (lm/W)	89.90

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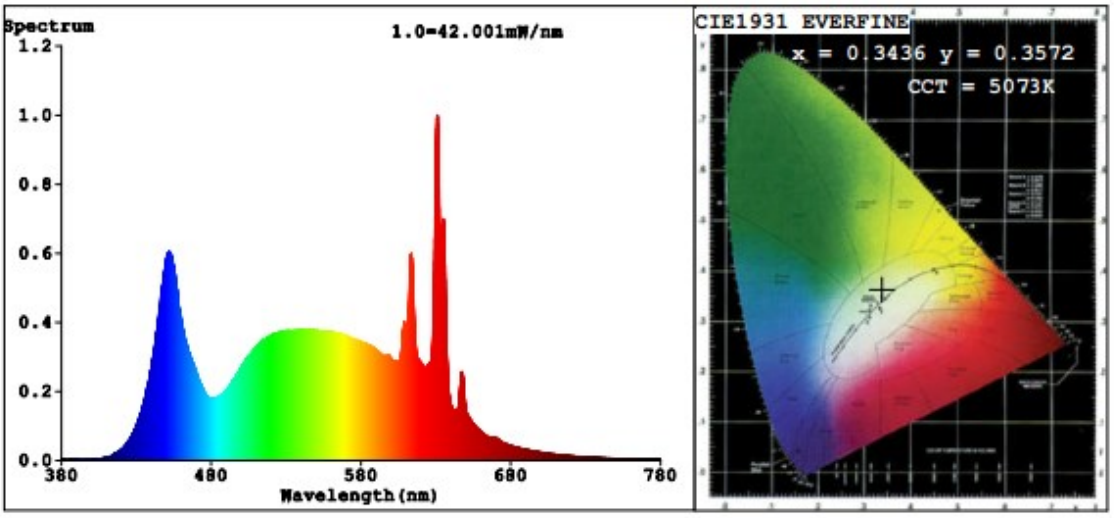
Spectral Power Distribution and Chromaticity Diagram



R1 =94	R2 =93	R3 =91	R4 =94	R5 =93	R6 =91	R7 =96	
R8 =91	R9 =73	R10=82	R11=93	R12=71	R13=94	R14=94	R15=93

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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-702	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-701	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-703	Standard Lamp D204	2021-02-21	2022-02-20
ST-R-704	Power Meter for Integrating Sphere	2021-01-04	2022-01-03
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp D908S	2021-02-21	2022-02-20
ST-R-711	Power Meter for Goniophotometer	2021-01-04	2022-01-03
Uncertainty(K=2): Photometric Measurement (Sphere):3.94% Chromaticity Measurement(Sphere):48.2K Photometric Measurement(Goniophotometer):3.96%			

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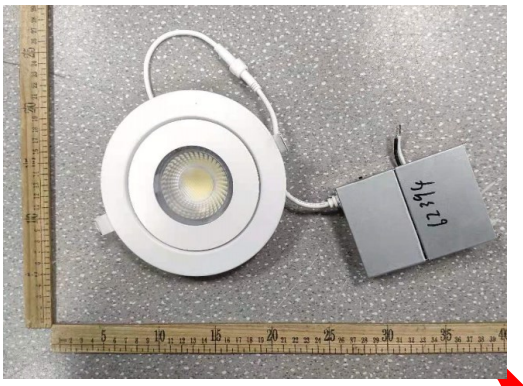
4. Product Photo



******** END OF REPORT ********

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