Ningbo TengLi Testing Co., Ltd

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ACCREDITED
Certificate#4703.02

Energy Star Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 BALLARDVALE STREET WILMINGTON, MA 01887

Model name(s): LEDRT6G1000SC3

Report Type:	Testing and Report According toENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2
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:	Review By:
Engineer: Nick Song	Manager: Garman Mo

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

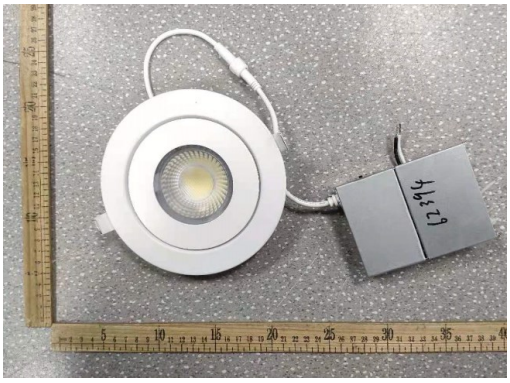
2. This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.

3. This report contains data that are not covered by the A2LA accreditation.

1.1 Product Information:		
Model Number	LEDRT6G1000SC3	
Remark	The defult CCT setting is 2700K The most consumptive CCT setting is2700K. The most ineffective CCT setting is 2700K.	
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	
Mounting Type	Recessed	
Indoor/Outdoor	Indoor	
LED Manufacturer	Bridgelux,Inc.	
LED Model	BXFN-XXG-13H-98	
Dimming	Dimmable	
Dimming range	10%-100%	
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 (Color tunable)

1.3 Product Photos



1.4 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. ANSIC78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring andSpecifying Colour RenderingProperties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA Technical Memorandum on Light Emitting Diode (LED) Sources and Systems 7. ANSI/UL 1598:2008,Luminaire 8. IEC 62301:2011 Household Electrical Appliances – Measurement of Standby Power 9. NEMA 77-2017 Standard for Temporal Light Artifacts: Test Methods and Guidance for Acceptance Criteria
Remark	Below test and data are not covered by A2LA accreditation: - Operating Frequency - Flicker - Noise

1.5 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method: Photometricparameters 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 120or 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: Chromaticityparameters 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 120or 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 goniophotometeror sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25º C ± 1º C. The sample was operated at 120or 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.

2.1Summary of Test Result

Criteria Item	The Type of Luminaires	Requirement (ES for Luminaires V2.2)	MeasuredValue	Status
Input Wattage	All	≤ Rated Wattage	12.27W	Pass
Luminous Efficacy	Downlights	≥ 55 lm/W	88.73lm/W	Pass
Luminaire Minimum Light Output	Downlights	≤4.5" aperture: 345 lumens > 4.5" aperture: 575 lumens	1088.9lm	Pass
Luminaire Zonal Lumen Density Requirement	Downlights	≥75% of total initiallumens within the 0-60° zone	96.4%	Pass
Correlated Color Temperature(CCT)	Solid State	Shall be capable of providing at least one of the following nominal correlated color temperatures (CCTs): • 2700 Kelvin • 3000 Kelvin • 3500 Kelvin • 4000 Kelvin • 5000 Kelvin	2799K Duv=0.0023	Pass
Color Rendering Index (CRI)	Solid State	Ra ≥ 80R9 >0	Ra =91.9 R9 =68	Pass
Color Angular Uniform	Directional Solid State Indoor Luminaires	The variation of chromaticity shall be within 0.006 from the weighted average point on the CIE 1976(u',v') diagram	0.0012	Pass
Lumen Maintenance	Solid State Option 1:	L70 lumen maintenance: ≥ 25,000 hours for indoor ≥ 35,000 hours for outdoor ≥50,000 hours for inseparable luminaires	50,000 86.25% >72000	Pass
Light Source Life	Solid State	L70 lumen maintenance: ≥ 25,000 hours for indoor ≥ 35,000 hours for outdoor ≥50,000 hours for inseparable luminaires	50,000 86.25% >72000	Pass

Color Maintenance	Solid State Indoor Luminaires	Δu'v' ≤ 0.007	Max.0.0036 in LM-80 report*	Pass
Source Start Time	Solid State	<750 ms	388ms	Pass
Power Factor	Solid State	Total luminaire input power ≤ 5 watts: PF ≥ 0.5 Total luminaire input power > 5 watts: PF ≥ 0.7	0.9778	Pass
Transient Protection	Solid State	The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode.	Survival	Pass
Standby Power Consumption	All Luminaires	Luminaires shall not draw power in the off state.	0W	Pass
Operating Frequency	Solid State	Frequency ≥ 120 Hz	120.0Hz	Pass
Maximum Measured Driver Case Temperature	Solid State	shall not exceed the driver manufacturer's maximum recommended temperature during in situ operation. ≤ 105 °C	72.3°C	Pass
Maximum In-Situ Source Temperature	Solid State	Maximum permitted Ts temperature for L70≥50,000 hrs ≤105°C	86.0°C	Pass
Dimming	Solid State	The luminaire and its components shall provide continuous dimming from 100% to 20% of total light output. Luminaire shall not emit noise above 24dBA at 1 meter or less at the minimum output.	Validated	Pass

Warranty Requirements	Solid State	incorporating replaceable drivers: ≥3 years incorporating non-replaceable drivers: ≥5 years	5 years	Pass
CCT	Solid State	Packaging shall clearly describe the nominal color designation in units of Kelvin (e.g. 2700K,3000K).	2700K 3000K 3500K 4000K 5000K	Pass

Note: The information or data with an "*" are provided by the manufacturer.
Our laboratory has no responsibility for the decision of compliance with specification that based on the data or information with the "*".

2.2.1 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 /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

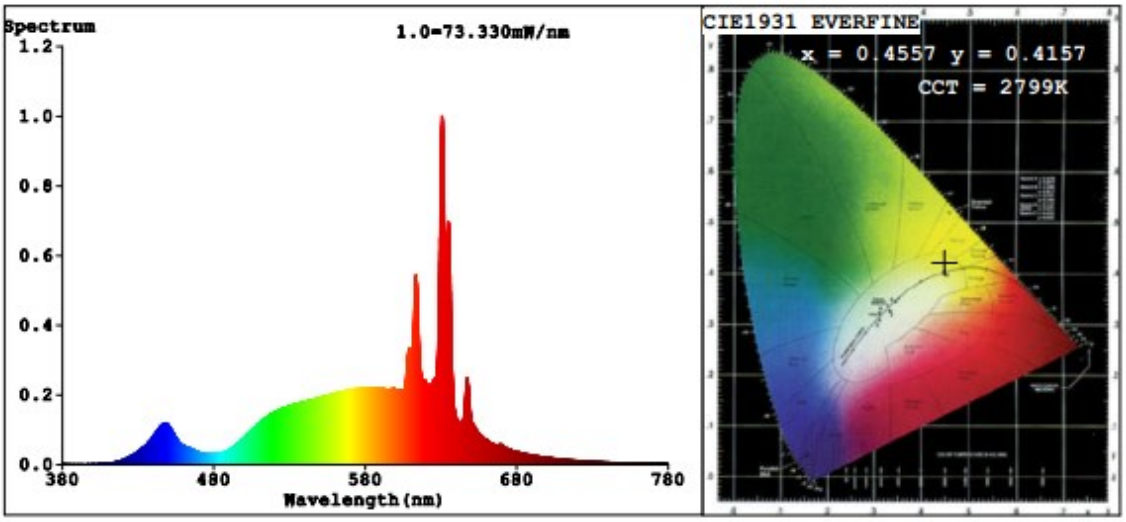
Sphere-Spectroradiometer Method: (Self-absorption: 1.0336) (4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	91.9
R9	68
CCT (K)	2799
Duv	0.0023

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

Spectral Power Distribution and Chromaticity Diagram



Colorimetric Parameters

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Chromaticity Coordinate:x=0.4557  y=0.4157/u'=0.2575 v'=0.5287
CCT=2799K(Duv=0.0023) Dominant WL:Ld =583.0nm WL:Lc = --nm Purity=61.6%
Ratio:R=26.3% G=72.0% B=1.7%  Peak WL:Lp=630.8nm  FWHM=7.5nm
Render Index:Ra=91.9   AvgR=88.5  TM30:Rf=88 Rg=102


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
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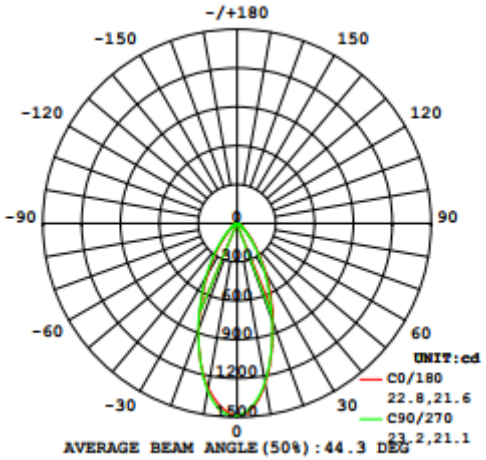
Zonal Lumen Tabulation



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%

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Table--1 UNIT: cd

C(DEG) / (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		

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
Total Luminous (lm)	1092
Luminous Efficacy (lm/W)	89.29

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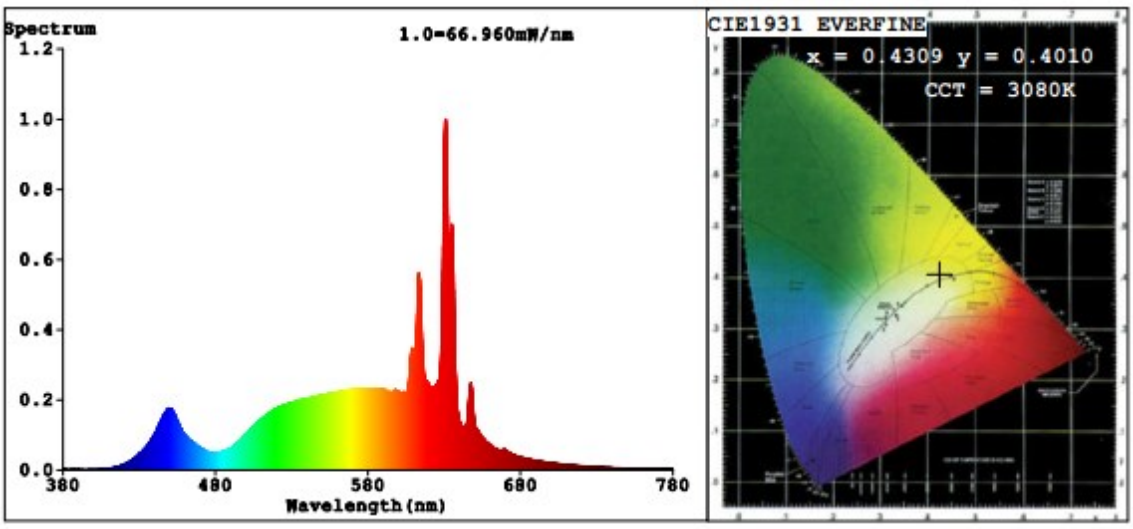
Spectral Power Distribution and Chromaticity Diagram



Colorimetric Parameters

Chromaticity Coordinate:x=0.4309 y=0.4010/u'=0.2480 v'=0.5193
CCT=3080K(Duv=-0.0004) Dominant WL:Ld =582.6nm WL:Lc = --nm Purity=49.7%
Ratio:R=24.8% G=72.8% B=2.3% Peak WL:Lp=631.0nm FWHM=7.5nm
Render Index:Ra=93.8 AvgR=91.2 TM30:Rf=90 Rg=104

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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2.2.3 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	LEDRT6G1000SC3 /3500K setting	Total Operating Time(min)	55

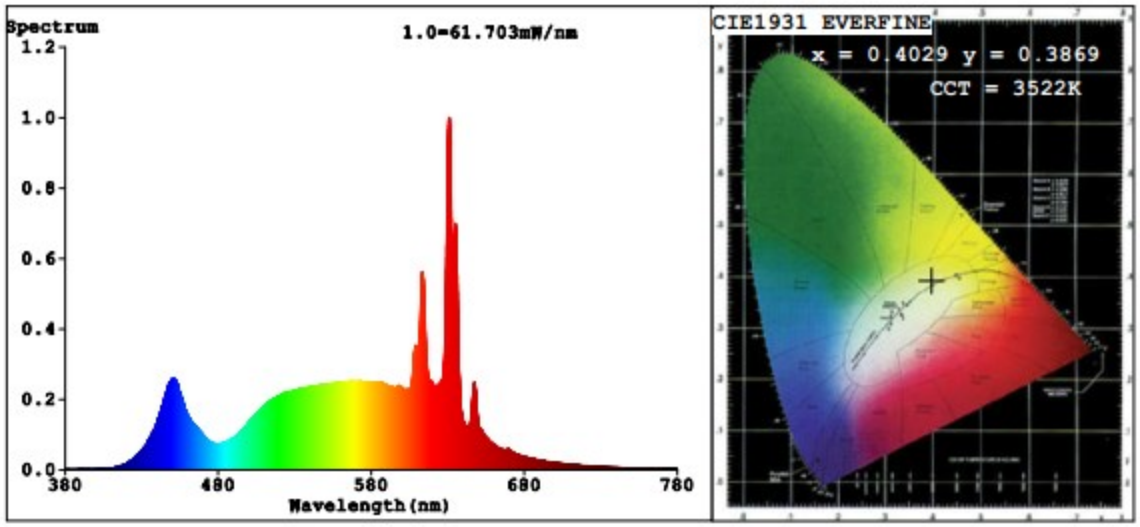
Electrical Measurement:

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
Total Luminous (lm)	1102
Luminous Efficacy (lm/W)	90.11

Spectral Power Distribution and Chromaticity Diagram



Colorimetric Parameters

Chromaticity Coordinate:x=0.4029 y=0.3869/u'=0.2357 v'=0.5093
CCT=3522K(Duv=-0.0011) Dominant WL:Ld =581.3nm WL:Lc = --nm Purity=37.1%
Ratio:R=22.7% G=74.3% B=3.1% Peak WL:Lp=631.0nm FWHM=7.5nm
Render Index:Ra=94.8 AvgR=92.4 TM30:Rf=91 Rg=103

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

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

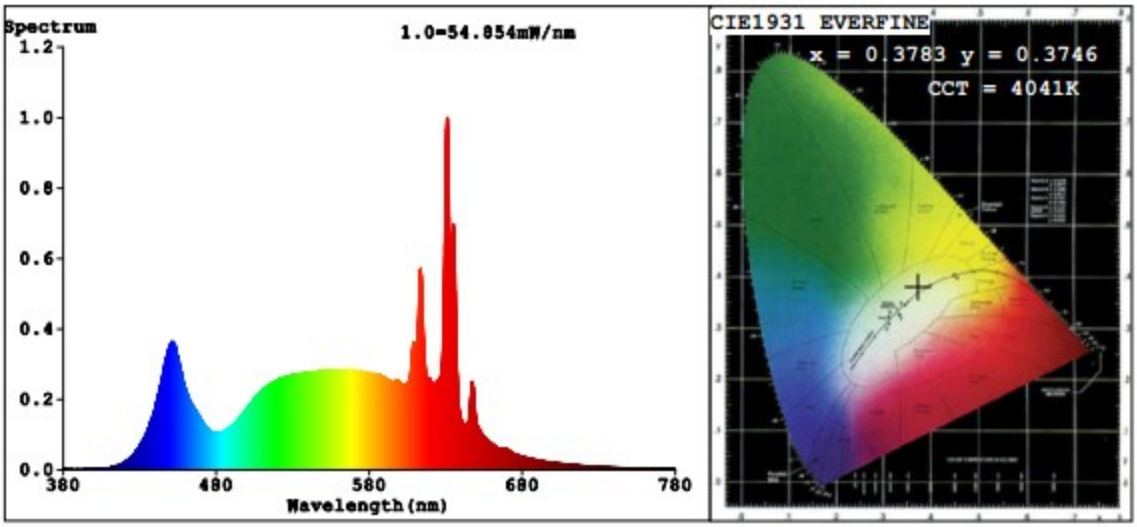
Electrical Measurement:

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
Total Luminous (lm)	1106
Luminous Efficacy (lm/W)	90.66

Spectral Power Distribution and Chromaticity Diagram



Colorimetric Parameters

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Chromaticity Coordinate:x=0.3783  y=0.3746/u'=0.2246 v'=0.5003
CCT=4041K(Duv=-0.0004) Dominant WL:Ld =579.2nm WL:Lc = --nm Purity=25.9%
Ratio:R=20.6% G=75.6% B=3.8%  Peak WL:Lp=631.0nm  FWHM=7.6nm
Render Index:Ra=95.0   AvgR=92.3  TM30:Rf=92 Rg=102


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
```

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
Total Luminous (lm)	1095
Luminous Efficacy (lm/W)	89.90

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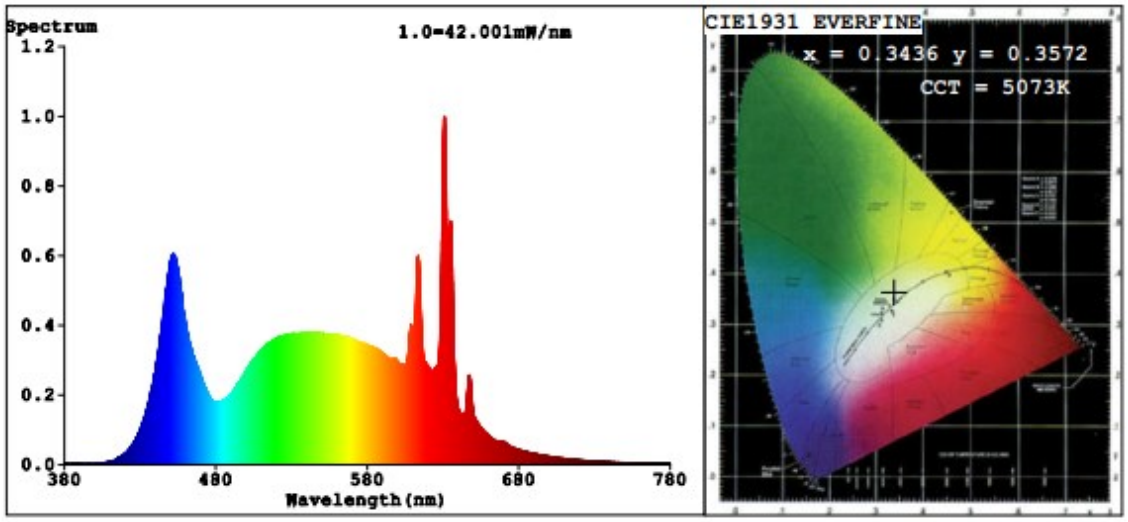
Certificate#4703.02

Spectral Power Distribution and Chromaticity Diagram



Colorimetric Parameters

Chromaticity Coordinate:x=0.3436 y=0.3572/u'=0.2083 v'=0.4872
CCT=5073K(Duv=0.0034) Dominant WL:Ld =568.5nm WL:Lc = --nm Purity=10.3%
Ratio:R=17.4% G=77.8% B=4.8% Peak WL:Lp=631.0nm FWHM=7.6nm
Render Index:Ra=92.9 AvgR=89.5 TM30:Rf=91 Rg=100

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

2.3 Color Spatial Uniformity	IES LM-79 2008 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2

Test Data:

Test date	2021-10-11	Test Ambient	25±1 ° C
Sample No.		Maximum Δu'v'	
STD210933NB-C1		0.0012	

Gamma\C	CIE u'	CIE v'	du'v'	CIE u'	CIE v'	du'v'
-23	0.2579	0.5295	0.0006	0.2574	0.5298	0.0012
-22	0.258	0.5294	0.0005	0.2575	0.5298	0.0011
-21	0.2579	0.5294	0.0006	0.2575	0.5298	0.0011
-20	0.2579	0.5294	0.0006	0.2577	0.5297	0.0009
-19	0.2581	0.5293	0.0004	0.2577	0.5297	0.0009
-18	0.2581	0.5293	0.0004	0.2577	0.5296	0.0009
-17	0.258	0.5292	0.0004	0.2578	0.5296	0.0008
-16	0.258	0.5292	0.0004	0.2578	0.5296	0.0008
-15	0.2581	0.5292	0.0003	0.2578	0.5295	0.0007
-14	0.2581	0.5291	0.0003	0.2579	0.5295	0.0006
-13	0.2581	0.5291	0.0003	0.2579	0.5295	0.0006
-12	0.2581	0.529	0.0003	0.2579	0.5295	0.0006
-11	0.2581	0.529	0.0003	0.258	0.5295	0.0006
-10	0.2581	0.529	0.0003	0.258	0.5294	0.0005
-9	0.2581	0.529	0.0003	0.258	0.5294	0.0005
-8	0.2581	0.529	0.0003	0.2581	0.5294	0.0004
-7	0.2582	0.5289	0.0003	0.2581	0.5294	0.0004
-6	0.2582	0.5289	0.0003	0.2581	0.5293	0.0004
-5	0.2582	0.5289	0.0003	0.2582	0.5293	0.0003
-4	0.2582	0.5289	0.0003	0.2582	0.5293	0.0003
-3	0.2582	0.529	0.0002	0.2582	0.5293	0.0003
-2	0.2584	0.529	0.0001	0.2582	0.5293	0.0003
-1	0.2584	0.529	0.0001	0.2582	0.5293	0.0003
0	0.2584	0.5291	0	0.2584	0.5291	0
1	0.2584	0.529	0.0001	0.2584	0.5293	0.0002
2	0.2584	0.529	0.0001	0.2584	0.5293	0.0002
3	0.2584	0.5291	0	0.2584	0.5294	0.0003
4	0.2584	0.5291	0	0.2584	0.5293	0.0002
5	0.2585	0.5292	0.0001	0.2584	0.5293	0.0002

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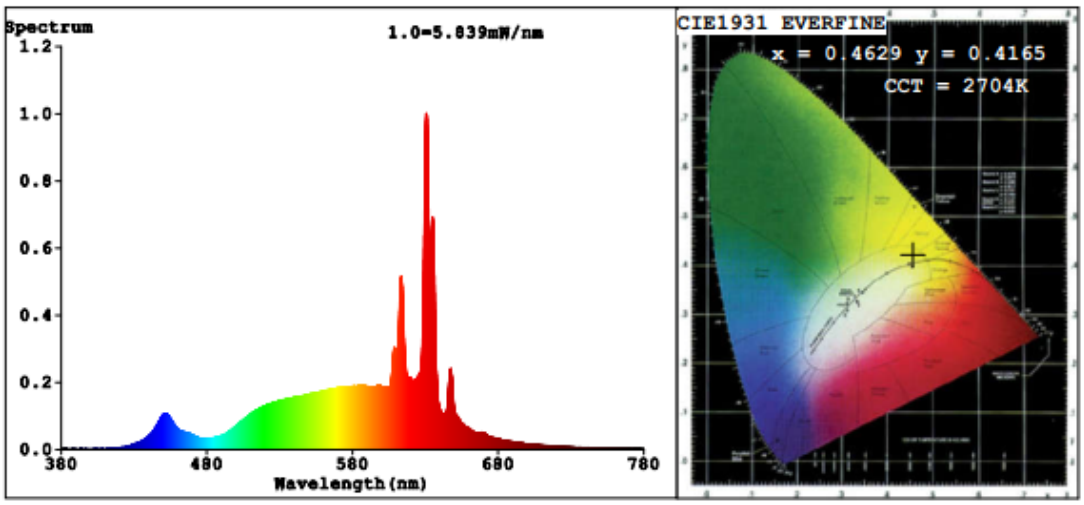
6	0.2585	0.5292	0.0001	0.2584	0.5293	0.0002
7	0.2585	0.5292	0.0001	0.2585	0.5293	0.0002
8	0.2585	0.5293	0.0002	0.2585	0.5293	0.0002
9	0.2585	0.5293	0.0002	0.2585	0.5293	0.0002
10	0.2585	0.5293	0.0002	0.2585	0.5293	0.0002
11	0.2586	0.5293	0.0003	0.2585	0.5294	0.0003
12	0.2586	0.5293	0.0003	0.2586	0.5293	0.0003
13	0.2586	0.5293	0.0003	0.2586	0.5293	0.0003
14	0.2586	0.5294	0.0004	0.2586	0.5293	0.0003
15	0.2586	0.5293	0.0003	0.2586	0.5293	0.0003
16	0.2586	0.5294	0.0004	0.2587	0.5293	0.0004
17	0.2586	0.5294	0.0004	0.2587	0.5293	0.0004
18	0.2586	0.5294	0.0004	0.2587	0.5293	0.0004
19	0.2586	0.5293	0.0003	0.2587	0.5292	0.0003
20	0.2585	0.5294	0.0003	0.2587	0.5292	0.0003
21	0.2586	0.5294	0.0004	0.2587	0.5292	0.0003
22	0.2586	0.5294	0.0004	0.2587	0.5292	0.0003
23	0.2586	0.5294	0.0004	0.2587	0.5291	0.0003

2.4 Electrical and Photometric Measurements, with dimming	IES LM-79 2008 ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2

Test date	2021-10-11		Test Ambient:	25±1 ° C
Dimmer Technology			Forward phase-cut	
Sample No.			Maximum Level	Minimum Level
STD210933NB-C1	Input: 120.0 V / 60 Hz	Light outout (Lumen)	1060	73.34
		Percentage	97.35%	6.92%



Color Parameters:

Chromaticity Coordinate:x=0.4629 y=0.4165/u'=0.2618 v'=0.5300
CCT=2704K(Duv=0.0019) Dominant WL:Ld =583.6nm WL:Lc = --nm Purity=64.0%
Ratio:R=27.6% G=70.6% B=1.8% Peak WL:Lp=630.7nm FWHM=7.3nm
Render Index:Ra=95.4 AvgR=92.4 TM30:Rf=92 Rg=102

R1 =99	R2 =96	R3 =89	R4 =96	R5 =97	R6 =96	R7 =97	
R8 =93	R9 =78	R10=86	R11=94	R12=80	R13=98	R14=92	R15=95

The luminaires [can] ~~[can not]~~ provide less than 20% of total light output with continuous dimmer.

Dimmer	Peak Noise Reading (dBA)	Test Condition	Distance between the microphone and the UUT
LEVITON MFG CO INC (E31373), Cat. No. 6681	16.9	Dimmer adjusted to lowest light output	< 1 m

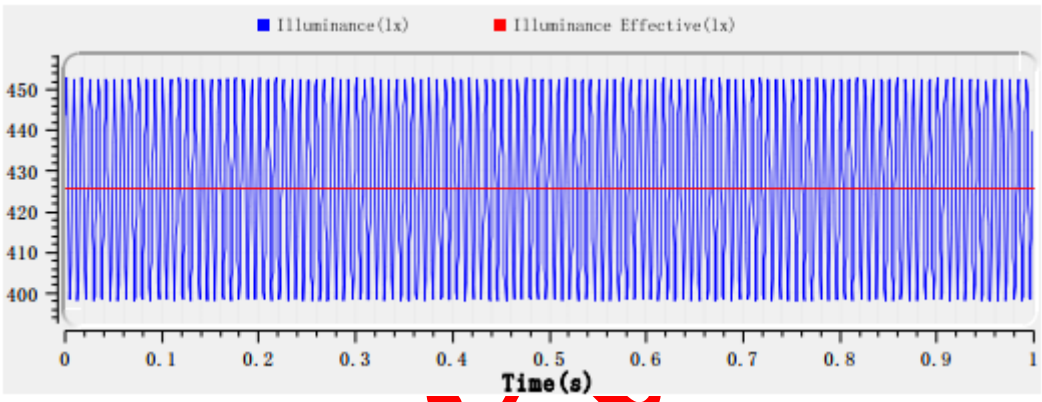
2.5Flicker	**NEMA 77-2017** **ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2**
Noted: This test and data are not covered by A2LA accreditation	

Dimming Technology	phase-cut
Dimmer	LEVITON MFG CO INC (E31373), Cat. No. 6681

Item	Short Term Flicker Indicator (Pst)	Stroboscopic Visibility Measure (SVM)
Maximum Conduction	0.283	0.311
Intermediate Conduction	1.759	0.384
Minimun Conduction	2.708	0.252

2.6Operating Frequency	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2
Noted: This test and data are not covered by A2LA accreditation	

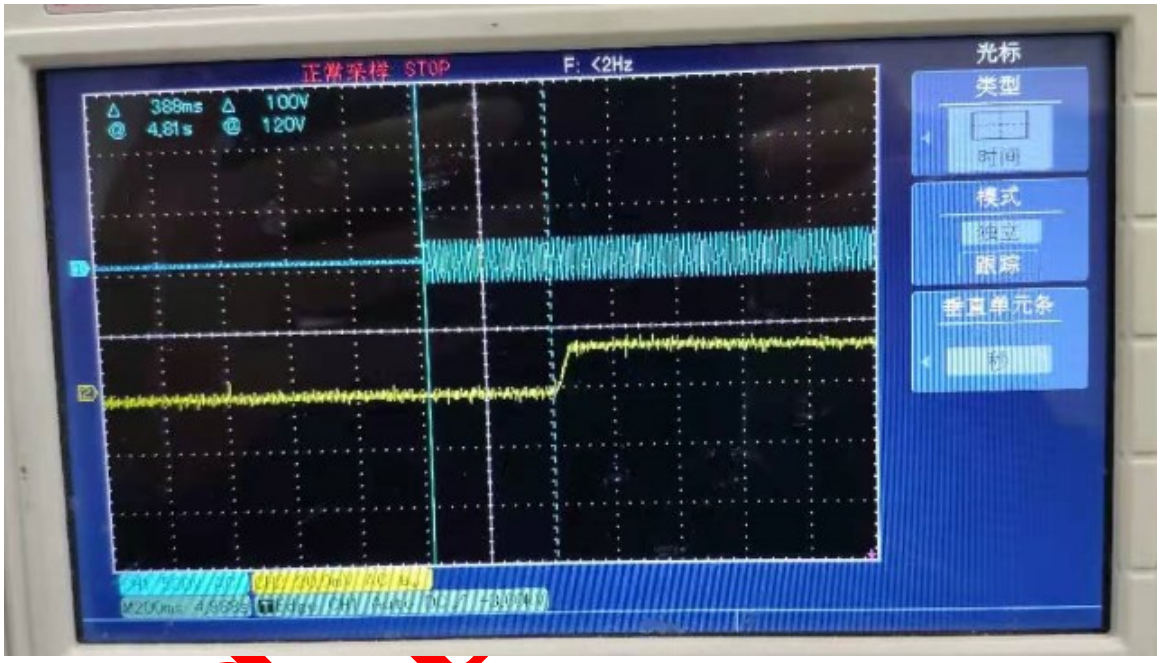
Test date	2021-10-11	Test Ambient:	25±1 ° C
Sample No.	Operating Frequency (Hz)		
STD210933NB-C1	120.0		



2.7Starting Time	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2

Test date	2021-10-11	Test Ambient:	25±1 ° C
Sample No.	**Start Time (ms)**		
STD210933NB-C1	388		

Graph (Start Time):



2.8 Transient Protection Test	ANSI/IEEE C62.41 ENERGY STAR® Program Requirements for Luminaires – Version 2.2

Test voltage: 120V,60Hz

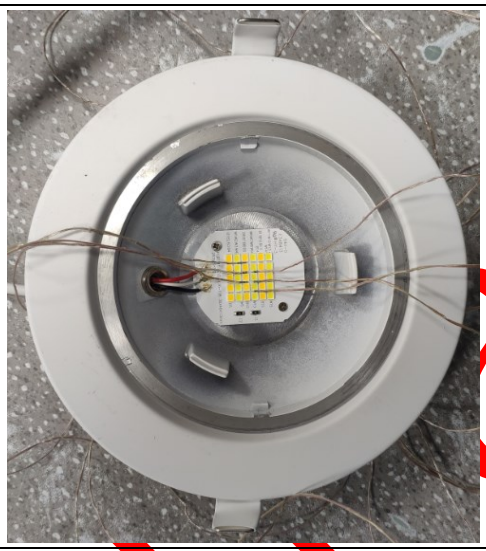
Test date	2021-10-11	Test Ambient	25±1 ° C
Sample No.		Transient Protection Test - Seven Strikes	
STD210933NB-C1		Survival	

2.9In-Situ Temperature Measurement Test (ISTMT)	**UL1598-2008, 3rd Edition**

Test date	2021-10-11	**Test Ambient**	25.1 ° C
Input Vol./Frequency	120 V / 60 Hz	**Output Current of Single LED (mA)**	79

Sample No.	**LED Package Model**	**Maximum Measured LED Ts Point Temperature (°C)**	**Maximum permitted Ts temperature for L70≥ 50,000 hrs (°C)**
STD210933NB-C1	BXFN-XXG-13H-98	86.0	105

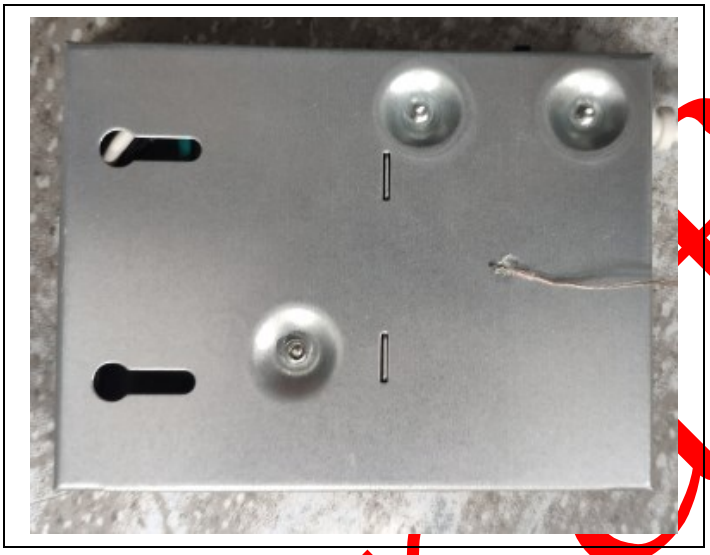
In-Situ Picture - Ts:



2.10Maximum Measured Ballast or Driver Case Temperature	UL1598-2008, 3rd Edition

Test date	2021-10-11	Test Ambient	25.1 º C
Sample No.	Maximum Measured Driver Case Temperature (°C)	Maximum Driver Case Temperature Limited (°C)	
STD210933NB-C1	72.3	105	

In-Situ Picture - Ts:



2.11Off-State Power Consumption:	ENERGY STAR® Program Requirements Product Specification for Luminaires (Light Fixtures) - Version 2.2

Test date	2021-10-11	Test Ambient:	25±1 ° C
Model Number	LEDRT6G1000SC3	Stabilization Time (min)	90

Electrical Measurement – when the luminaires turned off:

Sample No.	Power (W)
STD210933NB-C1	0

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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
ST-R-720	Digital Luxmeter	2021-01-04	2022-01-03
ST-R-622	Oscillograph	2021-01-04	2022-01-03
ST-R-721	EMS61000-12C	2021-01-04	2022-01-03
ST-R-725	LFA-3000	2021-01-04	2022-01-03
ST-R-607	Temperature Tester	2021-01-04	2022-01-03

Uncertainty(K=2):
Photometric Measurement (Sphere):3.94%
Chromaticity Measurement(Sphere):48.2K
Photometric Measurement(Goniophotometer):3.96%

******** END OF DATASHEET PACKAGE ********