



Date of issue 2021-02-20

Version 1.0

Total pages 39

Test report of

IES LM-79-08

Approved Method: Electrical and Photometric

Measurements of Solid-State Lighting Products

Applicant:

LIGHT EFFICIENT DESIGN

Address:

188 S. Northwest Highway Cary, IL 60013 USA

For Product:

2'T8 Lamps -- 2-Lamp External Driver (UL Type C) Lamps

Product Model No.:

RP-T8C-G2-15W-2FT-2L-830-[OCN, Blank]-10V,
RP-T8C-G2-15W-2FT-2L-850-[OCN, Blank]-10V,
RP-T8C-G2-18W-2FT-2L-830-[OCN, Blank]-10V,
RP-T8C-G2-18W-2FT-2L-850-[OCN, Blank]-10V,
RP-T8C-G2-20W-2FT-2L-830-[OCN, Blank]-10V,
RP-T8C-G2-20W-2FT-2L-850-[OCN, Blank]-10V,
RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V,
RP-T8C-G2-25W-2FT-2L-850-[OCN, Blank]-10V

Test laboratory: Shenzhen Belling Efficiency Testing Lab Co.,Ltd, 1Floor, No.1 Building, Meibaohe Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong Prov.518101 China.

Complied by: Jarvis zhang

Review by: Jason zhou

Project Engineer

Technical Manager

Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen Belling Efficiency Testing Lab Co.,Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement By NVLAP, NIST, or any agency of the U.S. Government.



1 General

1.1 Product Information

Manufacturer	LIGHT EFFICIENT DESIGN
Manufacturer Address	188 S. Northwest Highway Cary, IL 60013 USA
Brand Name	REMPHOS OR LIGHT EFFICIENT DESIGN
Luminaire Type	2'T8 Lamps -- 2-Lamp External Driver (UL Type C) Lamps
Test Model Number	RP-T8C-G2-15W-2FT-2L-830-[OCN, Blank]-10V, RP-T8C-G2-15W-2FT-2L-850-[OCN, Blank]-10V, RP-T8C-G2-18W-2FT-2L-830-[OCN, Blank]-10V, RP-T8C-G2-18W-2FT-2L-850-[OCN, Blank]-10V, RP-T8C-G2-20W-2FT-2L-830-[OCN, Blank]-10V, RP-T8C-G2-20W-2FT-2L-850-[OCN, Blank]-10V, RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V, RP-T8C-G2-25W-2FT-2L-850-[OCN, Blank]-10V
Rated Inputs	AC 100-277V 50/60Hz
Field-Adjustable Product	Yes, Wattage setting: 15W, 18W, 20W, 25W
Nominal CCT	3000K, 5000K
Dimming Capability	Continuous
Integral Control Sensors	Optional
Date of Receipt Samples	2020-12-21
Date of test	2020-12-23 to 2021-01-22
Burning Time Before Test	0hour(For New Products)

1.2 Standards or methods

- ANSI C78.377-2017:Specifications for the Chromaticity of Solid State Lighting Products
- ANSI C82.77-10:2014:Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment - Solid State
- CIE Publication No.13.3-1995:Method of Measuring and Specifying Color Rendering of Light Sources
- IESNA LM-79-08 Approved Method: Electric & Photometric Measurement of Solid-state Lighting Products



1.3 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometric System	SENSING	GMS-3000	N.A	2021-04-02
AC Power Source	ALL POWER	APW-110N	992257	2021-04-02
Total Luminous Flux Standard Lamp	SENSING	110V/100W	S1510065	2021-04-08
Total Spectral Radiant Flux Standard Lamp	SENSING	12V/20W	LSD12201731	2021-04-08
Digital Power Meter	YOKOGAWA	WT310	C2QM02030V	2021-04-02
Integral Sphere	SENSING	SPR-600M	N.A	2021-04-02
Digital Power Meter	YOKOGAWA	WT210	91L929742	2021-04-02
Optical Color and Electrical Measurement System	SENSING	SPR-3000	S1101108	2021-04-02
Environment Measurer	XUYAO	HS-1	N/A	2021-04-08
Environment Measurer	XUYAO	HS-1	N/A	2021-04-08
Stop watch	KISLO	K610	N/A	2021-04-27
Digital Anemometer	TECMAN	TD8901	026141	2021-09-09

Statement of Traceability: Shenzhen Belling Efficiency Testing Lab Co.,Ltd attests that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit (SI).



2 Test conducted and method

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, the air flow around the sample(s) being tested did not affect the performance.

2.2 Power Supply Characteristics

The AC power supply had a sinusoidal voltage wave shape at the prescribed frequency (60 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

The voltage of AC power supply (RMS voltage) applied to the device under test was regulated to within ± 0.2 percent under load.

2.3 Seasoning and Stabilization

No seasoning was performed in accordance with IESNA LM-79-08. And before the measurement, the sample was stabilized until the light output and power variations were less than 0.5% in 30 minutes intervals (3 readings, 15 minutes apart).

2.4 Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The integrating sphere system is calibrated by standard light source before measurement. The system and standard light source has been calibrated regularly and traceable to the National Primary Standards. 4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

Integrating Sphere Uncertainty: The uncertainty of the light output (luminous flux) measurements is $U=1.8\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=20\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=1.8(K=2)$, at the 95% confidence level. The uncertainty of power meter AC current $U=0.18\%$ of rdg, AC Voltage $U=0.16\%$ of rdg, Power $U=0.20\%$ ($K=2$), at the 95% confidence level.



2.5 Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement. The standard light source has been calibrated regularly and traceable to the National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. The method according to IESNA LM-79-08 following chapter.

Goniophotometer Uncertainty :The uncertainty of the luminous intensity is $U=1.6\%$ ($K=2$), at the 95% confidence level.



3 Test Result Summary

3.1 Integrating Sphere System (Total operating time for integrating sphere test: 1.0 hour)

3.1.1 Model Number: RP-T8C-G2-15W-2FT-2L-830-[OCN, Blank]-10V(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.08	60	0.061	7.33	0.993

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
900.68	122.96	3008

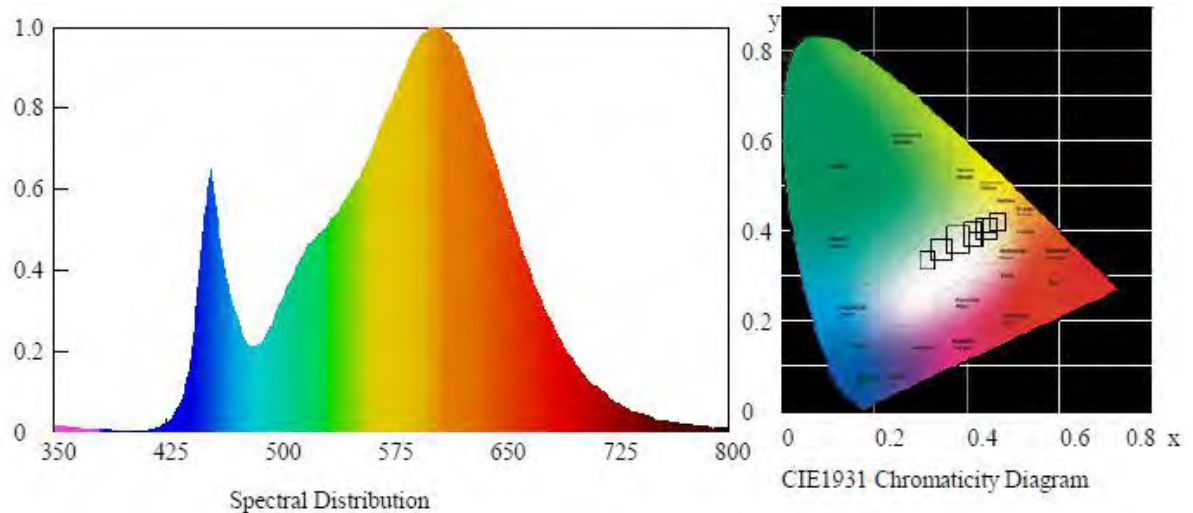
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00211	0.4333	0.3976	0.2510	0.5183

Color Rendering

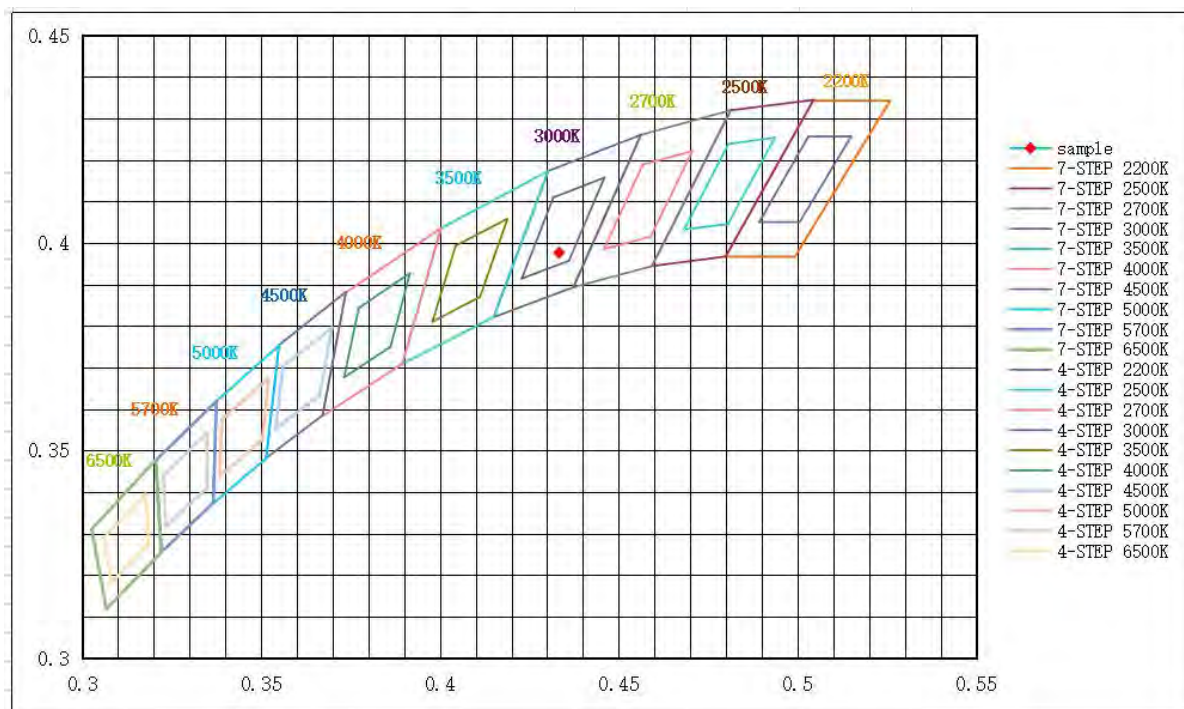
CRI	R9	Rf	Rg	Rcs,h1(%)
83.7	14	85	96	-11

Spectral Distribution





7/4 Step Quadrangle





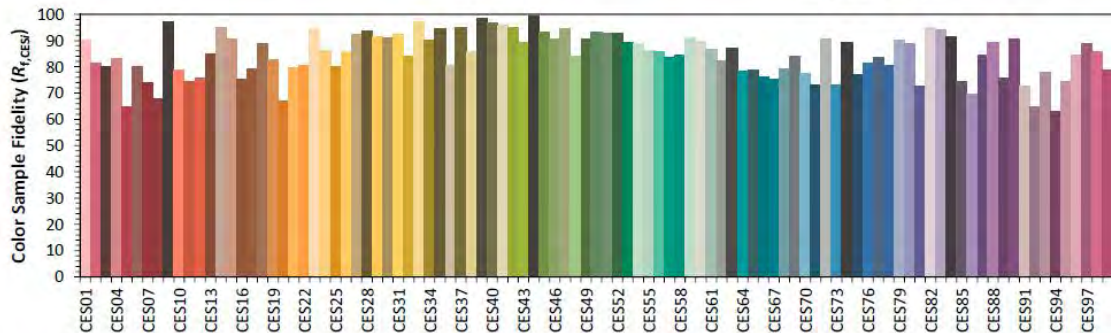
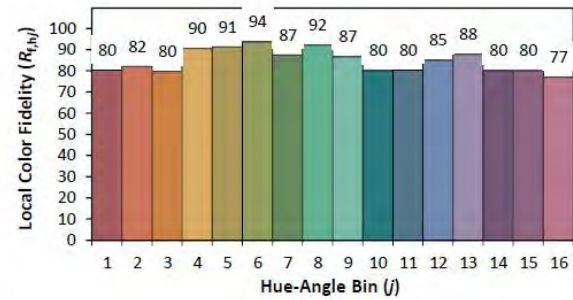
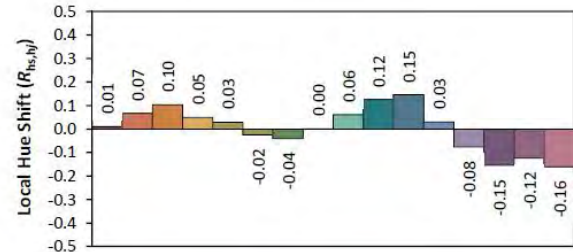
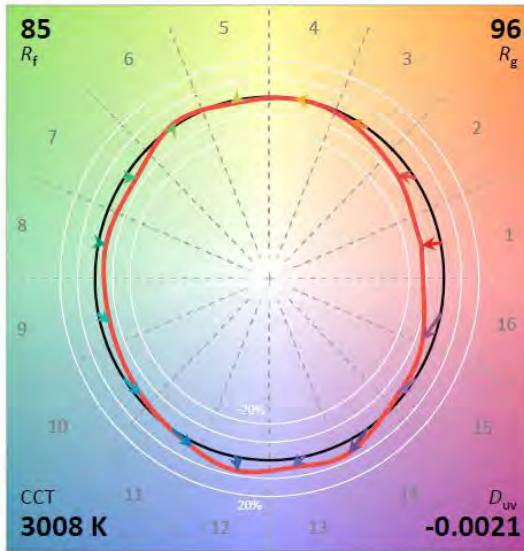
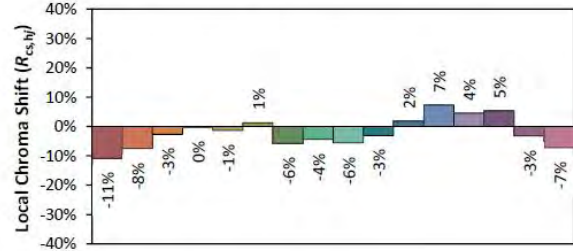
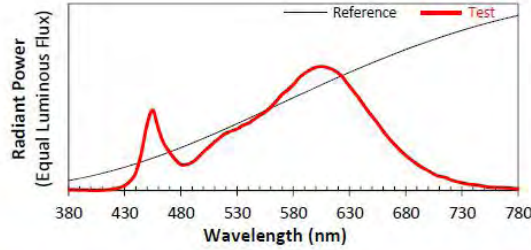
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-15W-2FT-2L-830-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4333
 y 0.3976
 u' 0.2510
 v' 0.5183

CIE 13.3-1995
(CRI)

R_a 84

R_g 14

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.2 Model Number: RP-T8C-G2-15W-2FT-2L-850-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.061	7.32	0.993

Photometric data

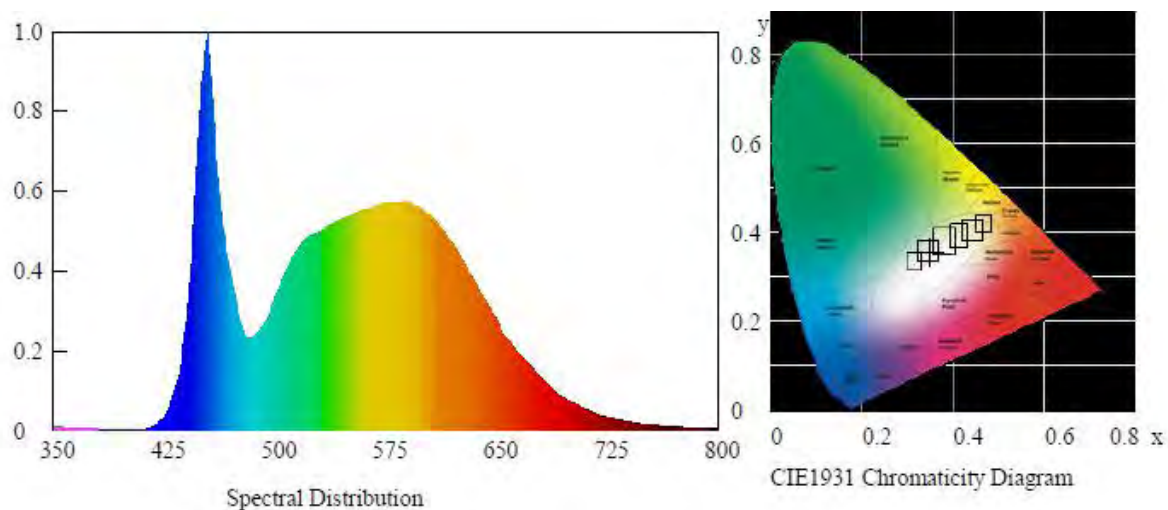
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
922.19	125.90	4975

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00267	0.3464	0.3580	0.2098	0.4879

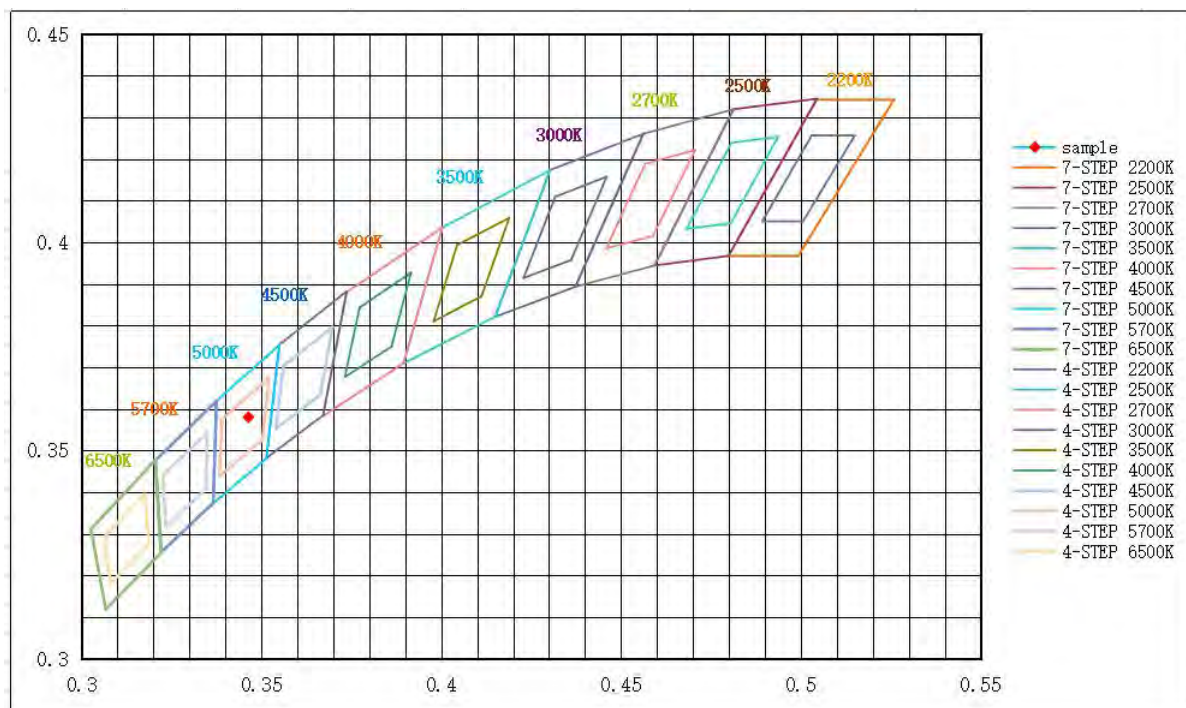
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.7	14	84	95	-12

Spectral Distribution



7/4 Step Quadrangle





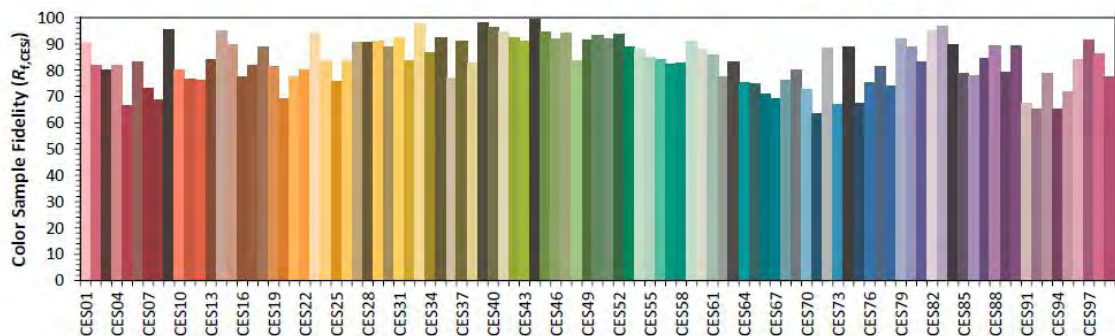
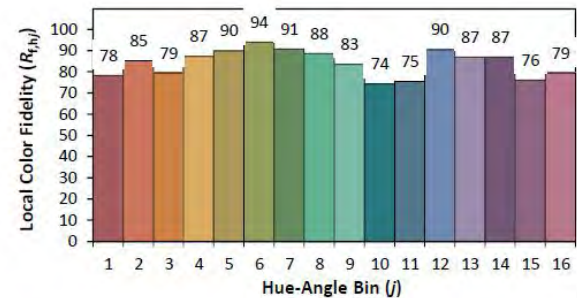
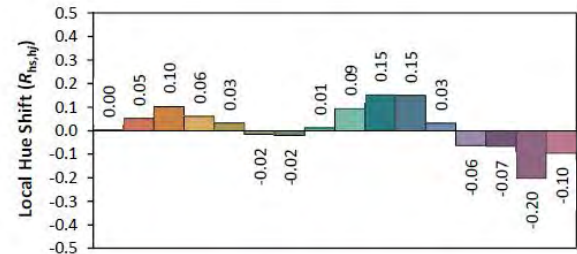
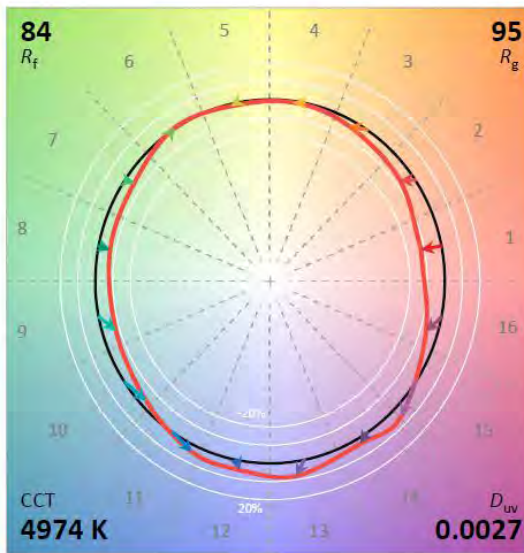
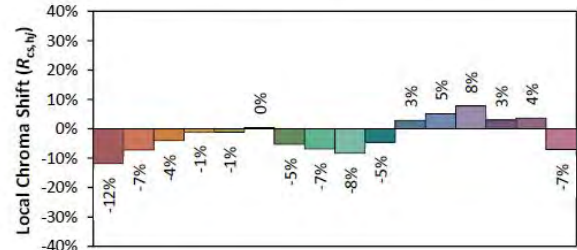
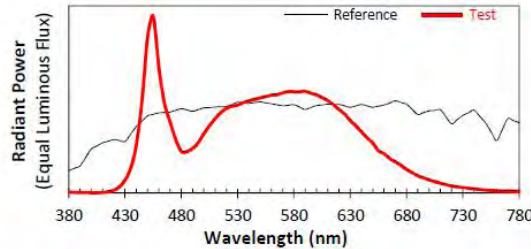
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-15W-2FT-2L-850-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

 x 0.3464 y 0.3580 u' 0.2098 v' 0.4879CIE 13.3-1995
(CRI) R_a 84 R_g 14

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.3 Model Number: RP-T8C-G2-18W-2FT-2L-830-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.05	60	0.073	8.76	0.994

Photometric data

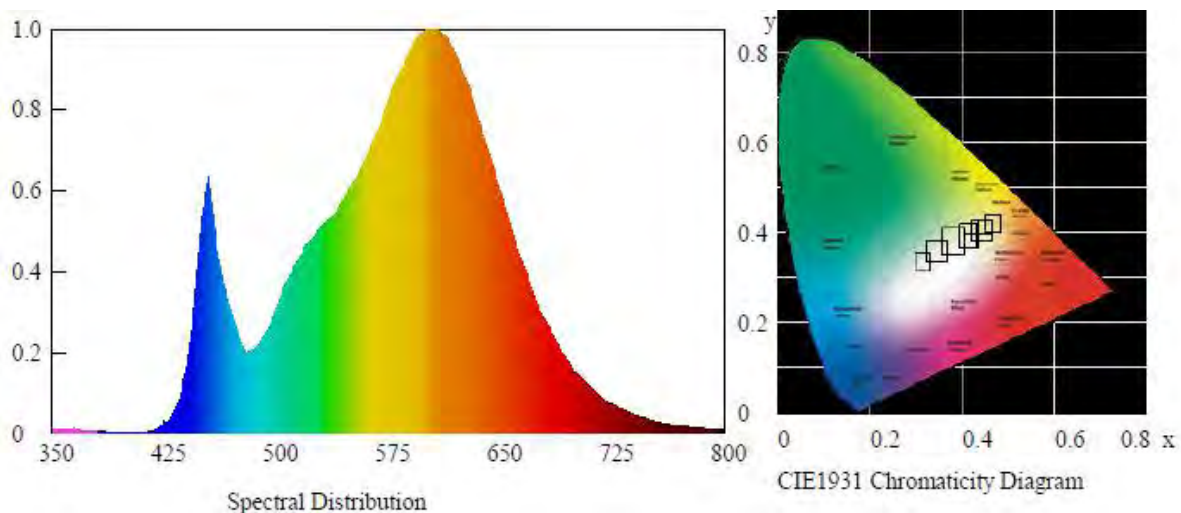
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1054.30	120.42	3012

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00166	0.4337	0.3988	0.2507	0.5188

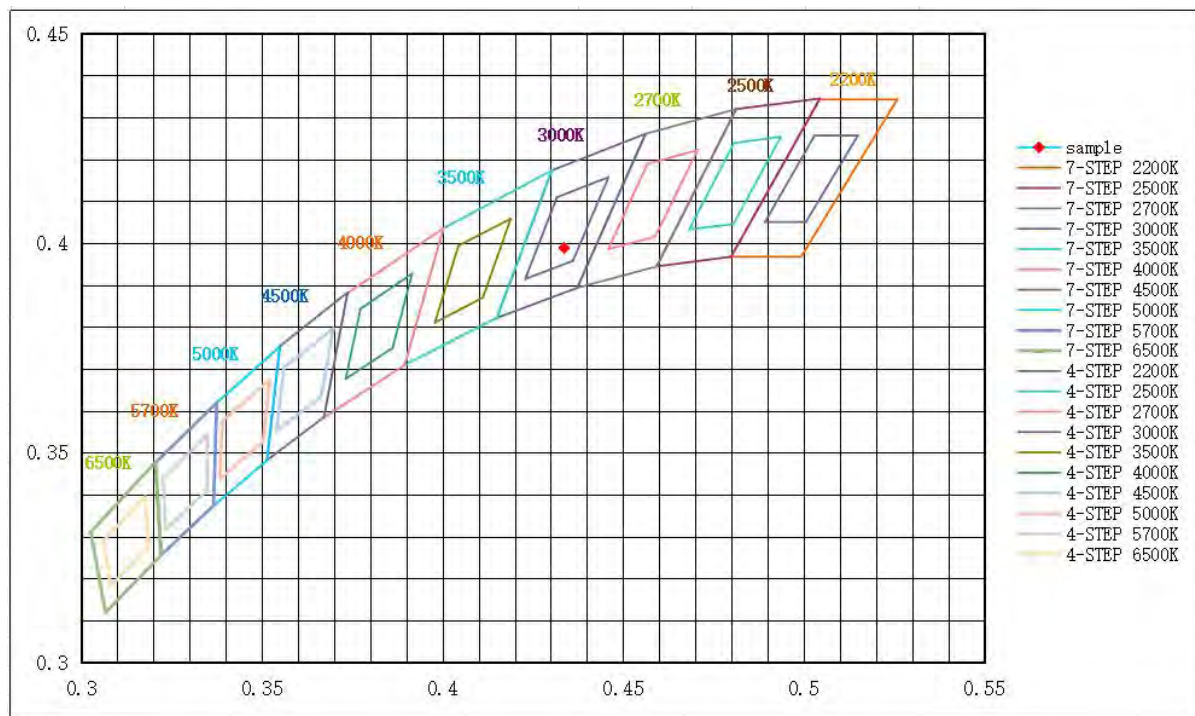
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.5	13	85	96	-11

Spectral Distribution



7/4 Step Quadrangle





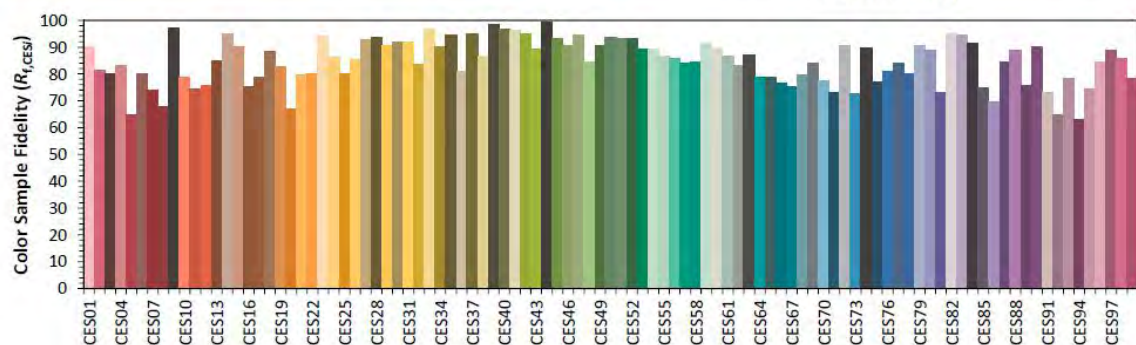
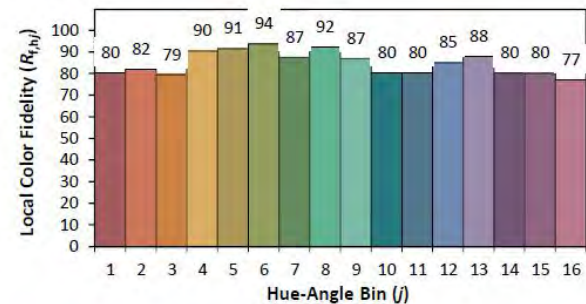
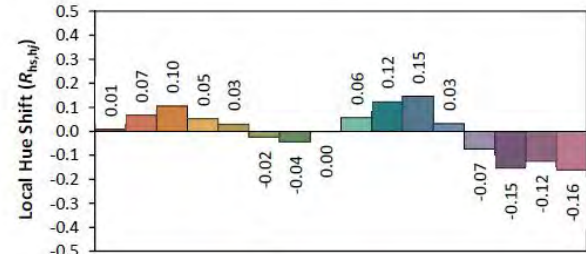
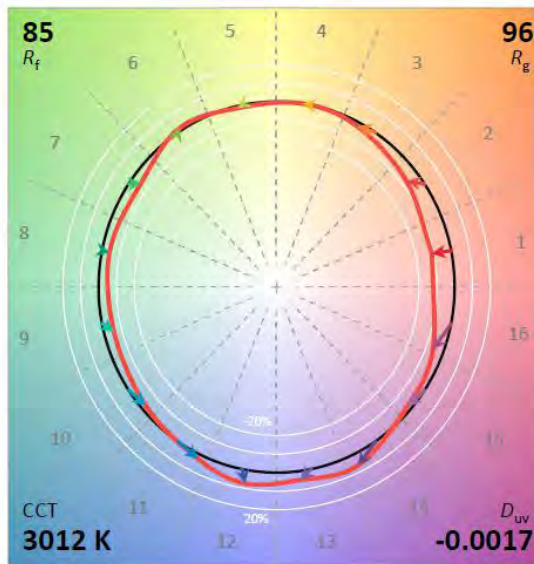
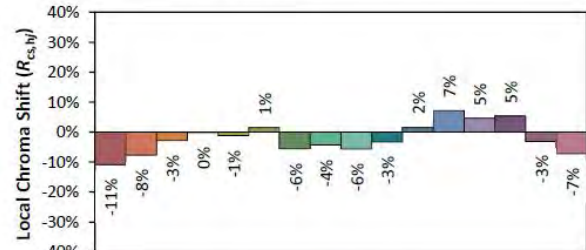
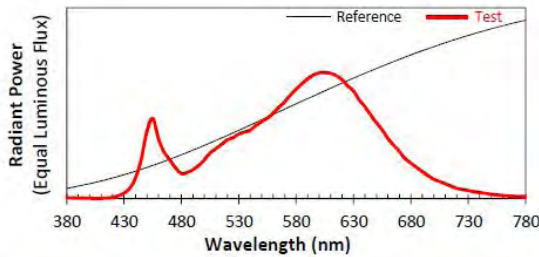
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-18W-2FT-2L-830-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4337
 y 0.3988
 u' 0.2507
 v' 0.5188

CIE 13.3-1995
(CRI)

R_a 84
 R_g 13

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.4 Model Number: RP-T8C-G2-18W-2FT-2L-850-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.05	60	0.073	8.76	0.994

Photometric data

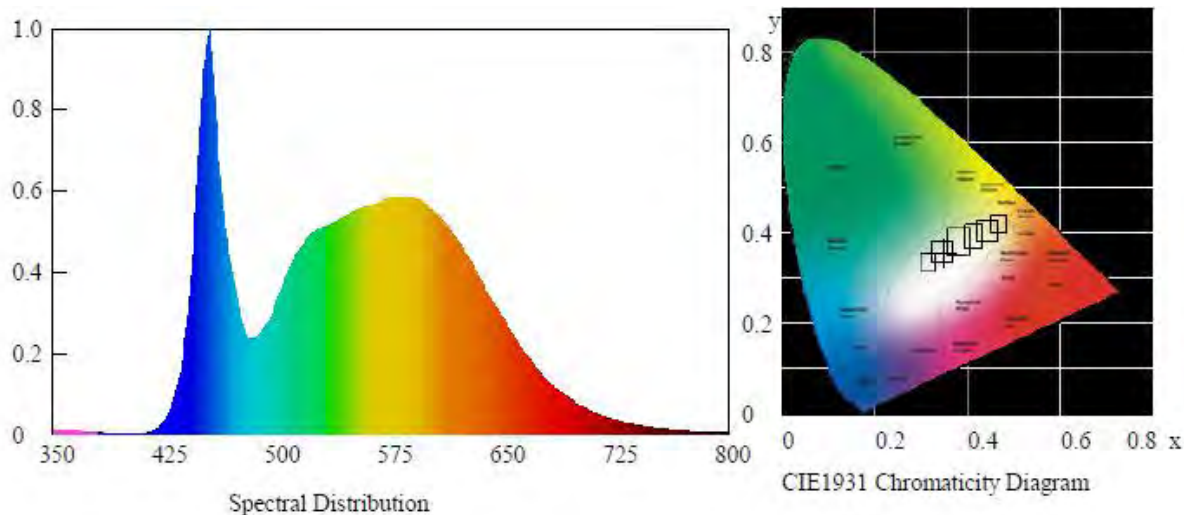
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1077.06	123.02	4983

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00275	0.3462	0.3580	0.2097	0.4879

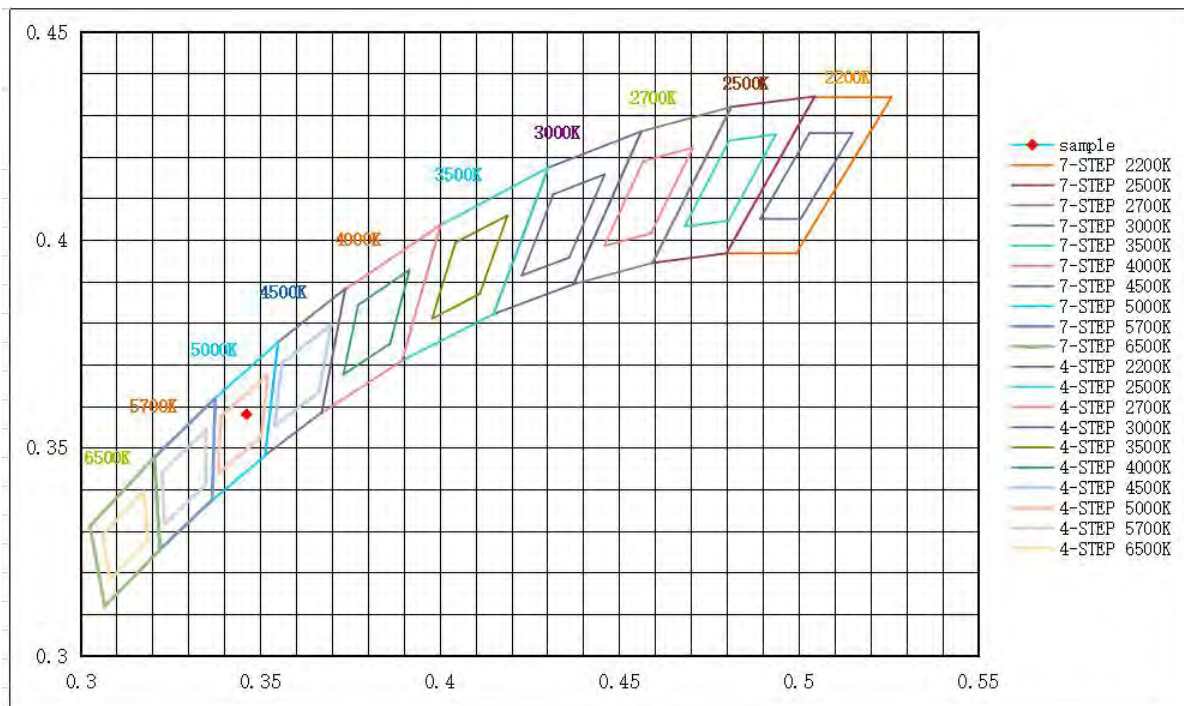
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.5	13	84	95	-12

Spectral Distribution



7/4 Step Quadrangle





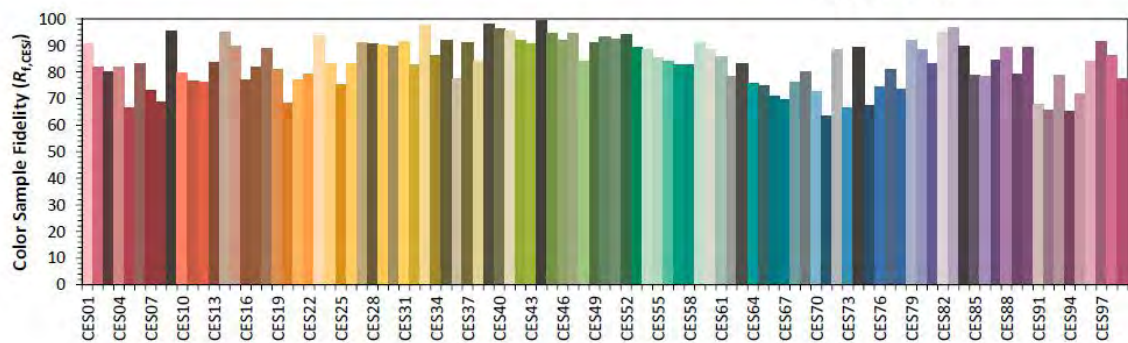
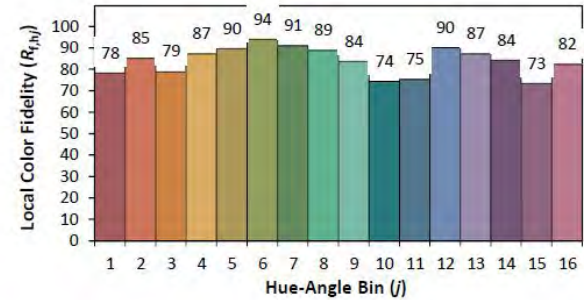
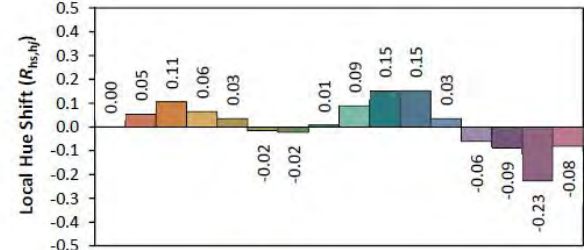
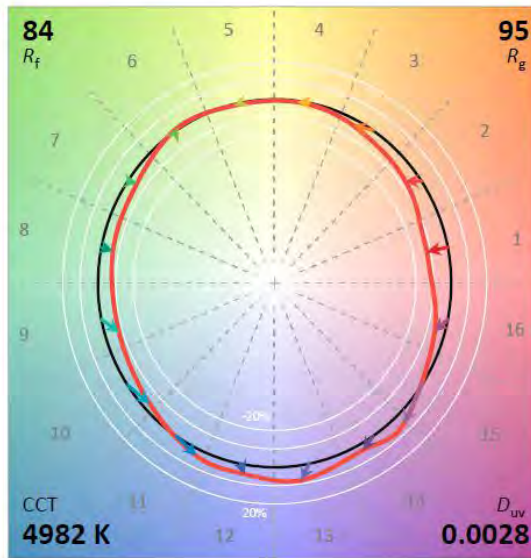
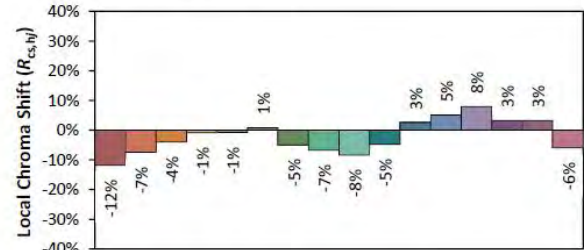
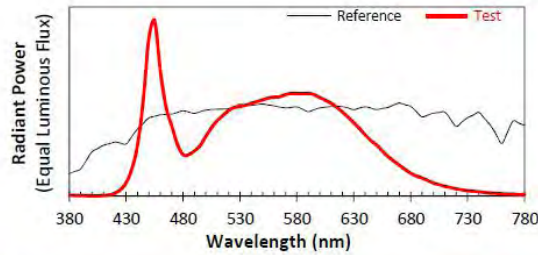
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-18W-2FT-2L-850-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3462
 y 0.3580
 u' 0.2097
 v' 0.4879

CIE 13.3-1995
(CRI)

R_a 84
 R_g 13

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.5 Model Number: RP-T8C-G2-20W-2FT-2L-830-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.01	60	0.082	9.78	0.995

Photometric data

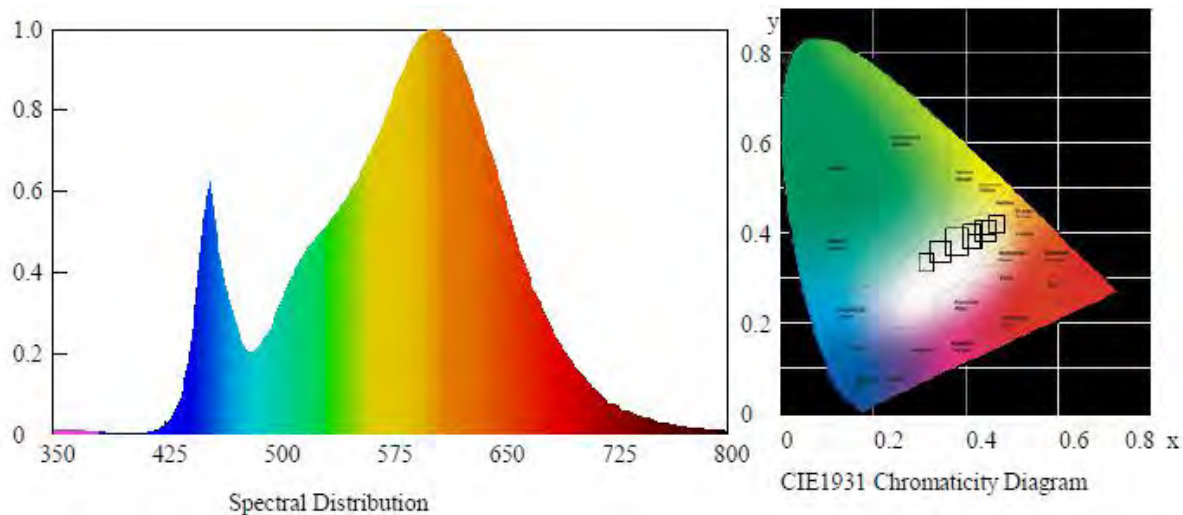
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1160.65	118.62	3006

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00178	0.4340	0.3986	0.2510	0.5188

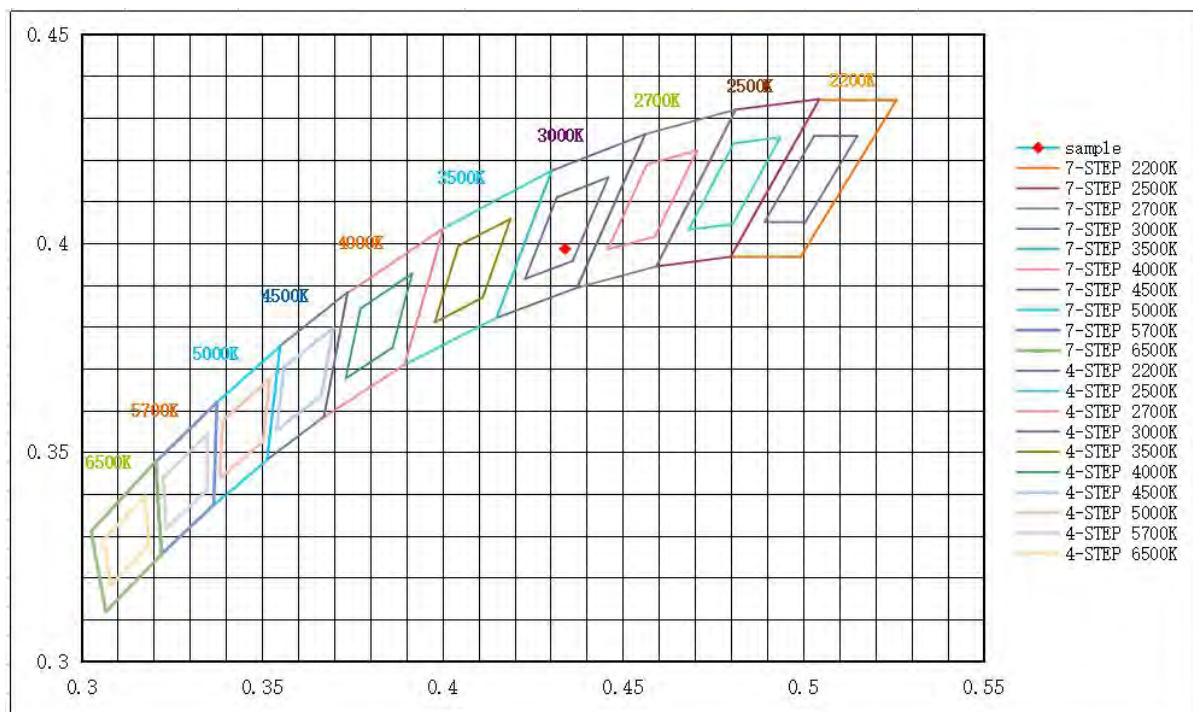
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.4	12	85	96	-11

Spectral Distribution



7/4 Step Quadrangle





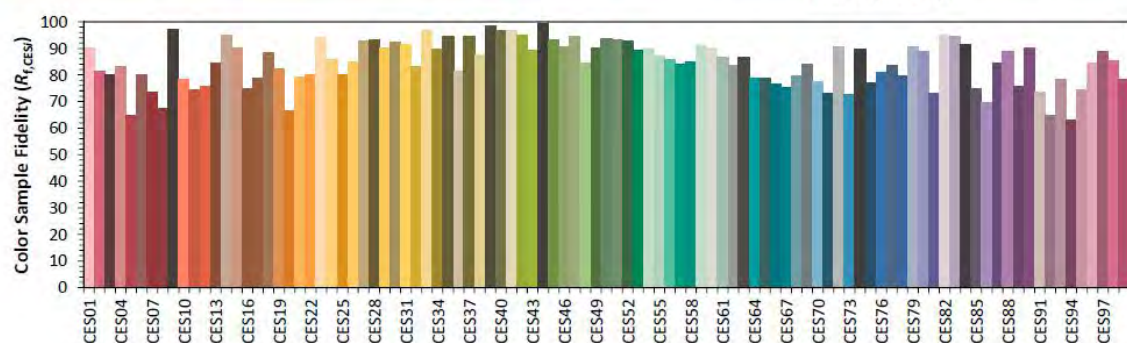
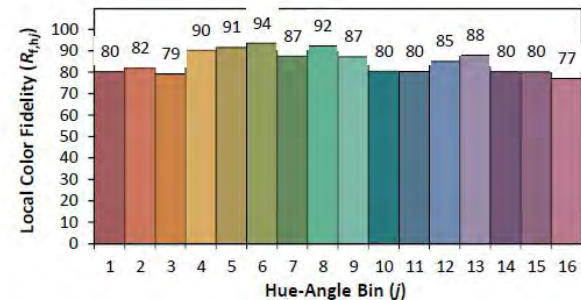
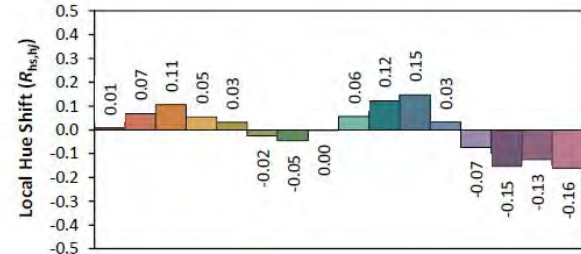
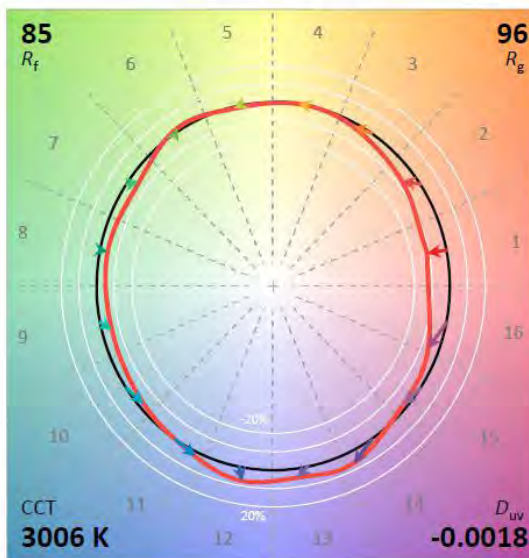
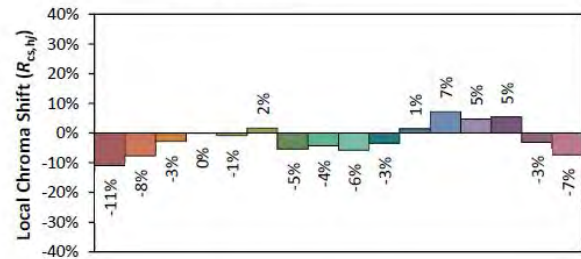
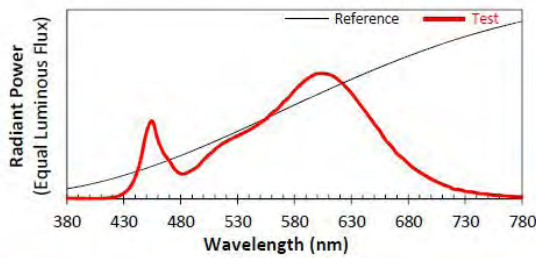
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-20W-2FT-2L-830-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4340
 y 0.3986
 u' 0.2510
 v' 0.5188

CIE 13.3-1995
(CRI)

R_a 83
 R_g 12

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.6 Model Number: RP-T8C-G2-20W-2FT-2L-850-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.00	60	0.082	9.80	0.995

Photometric data

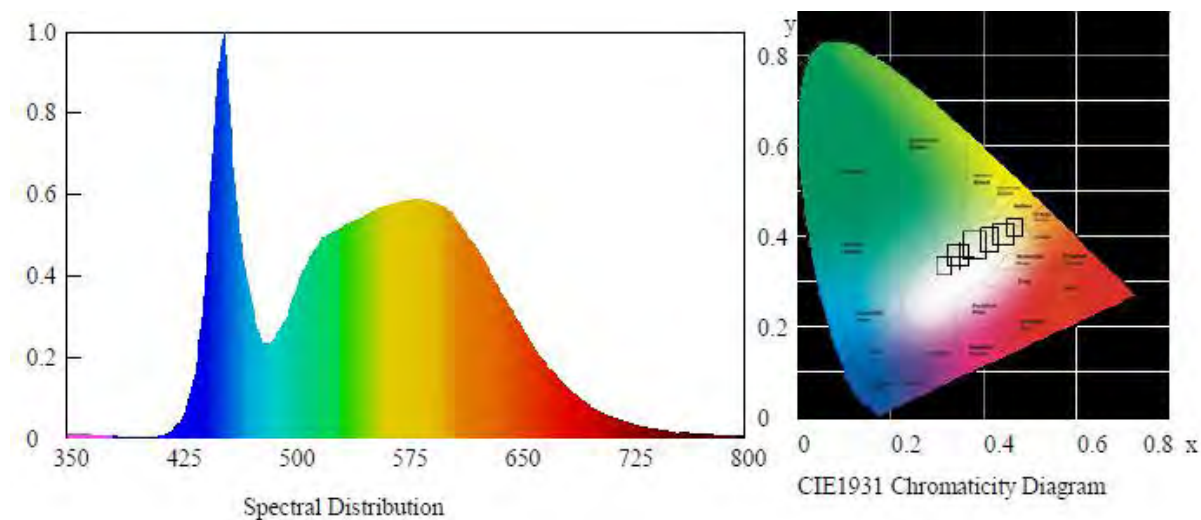
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1181.76	120.59	4973

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00283	0.3465	0.3584	0.2097	0.4881

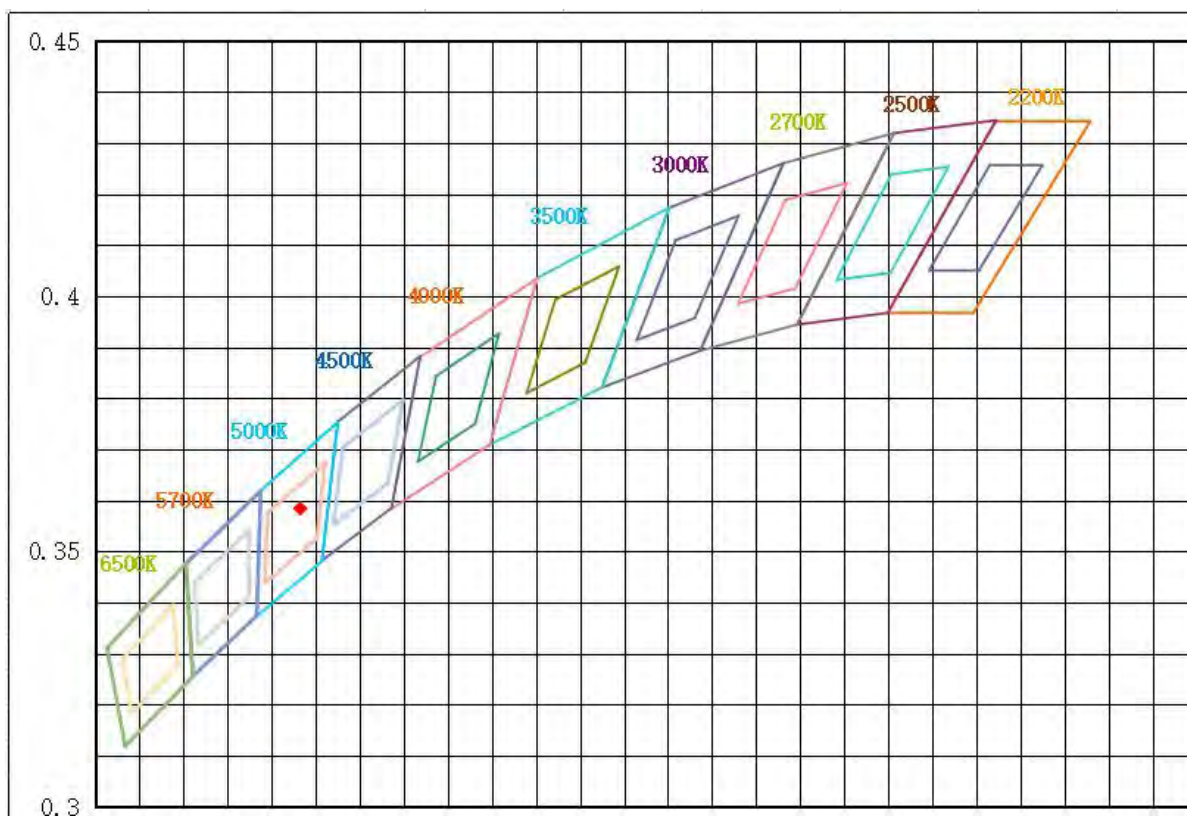
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.5	13	84	95	-12

Spectral Distribution



7/4 Step Quadrangle





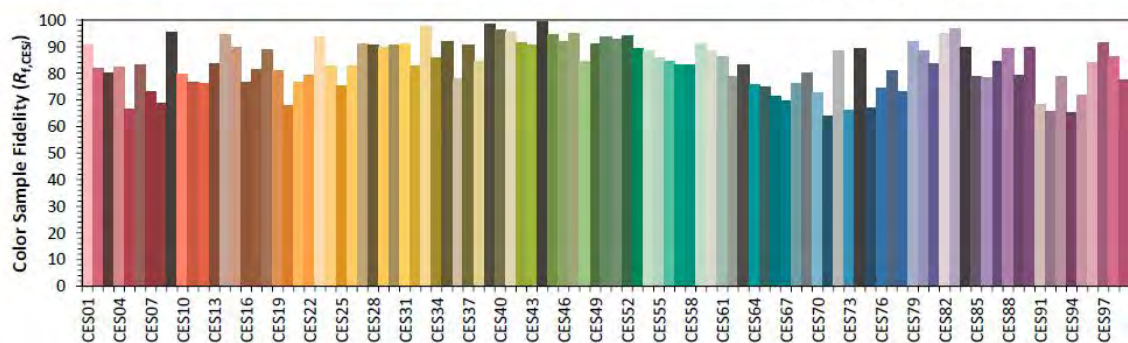
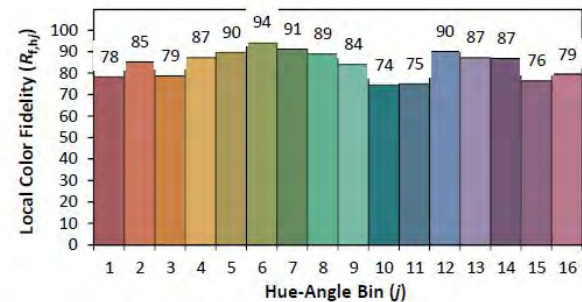
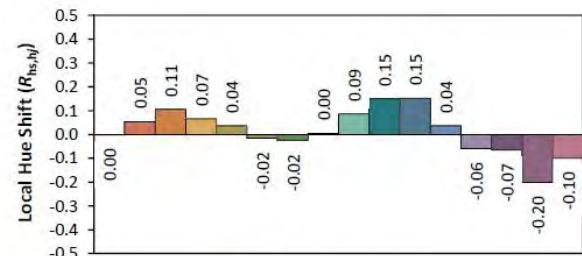
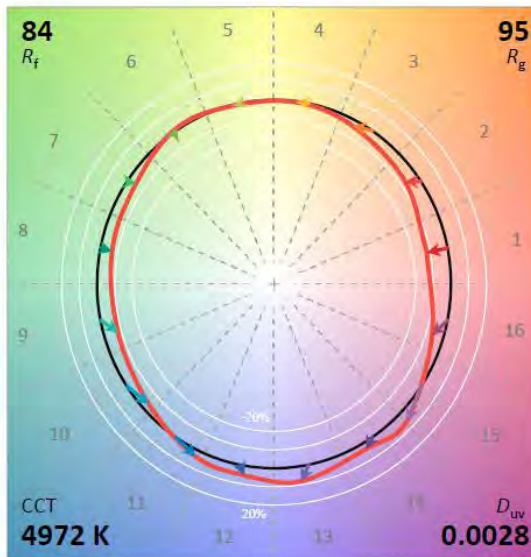
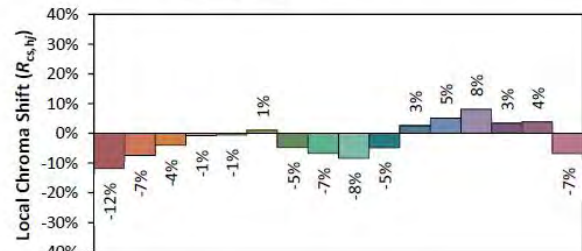
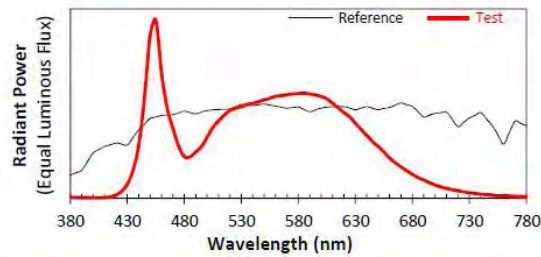
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-20W-2FT-2L-850-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3465
 y 0.3584
 u' 0.2097
 v' 0.4881

CIE 13.3-1995
(CRI)

R_a 83
 R_g 13

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.7 Model Number: RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.06	60	0.102	12.18	0.996

Photometric data

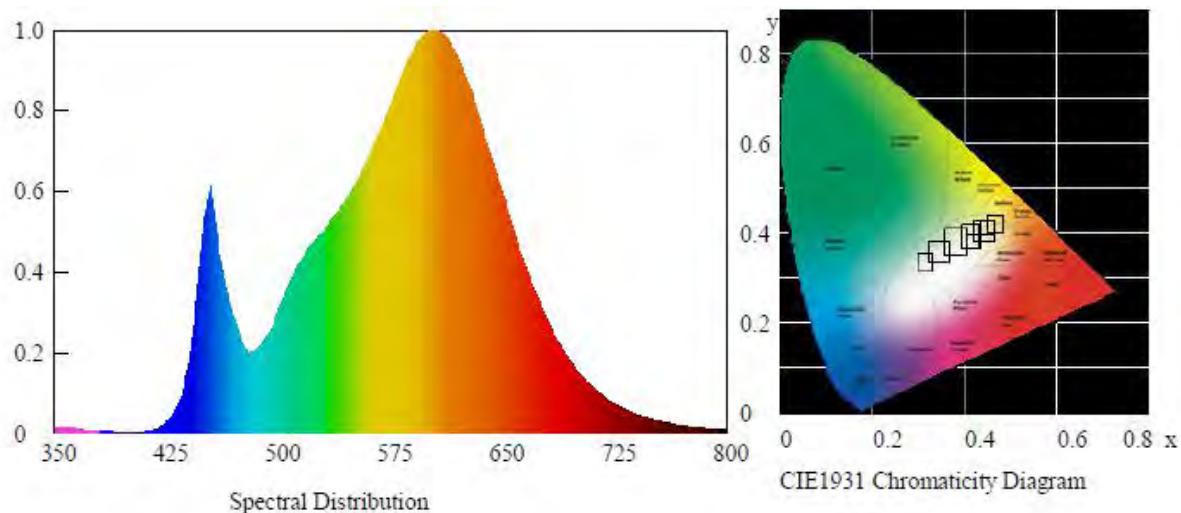
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1421.95	116.74	3009

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00173	0.4338	0.3987	0.2509	0.5188

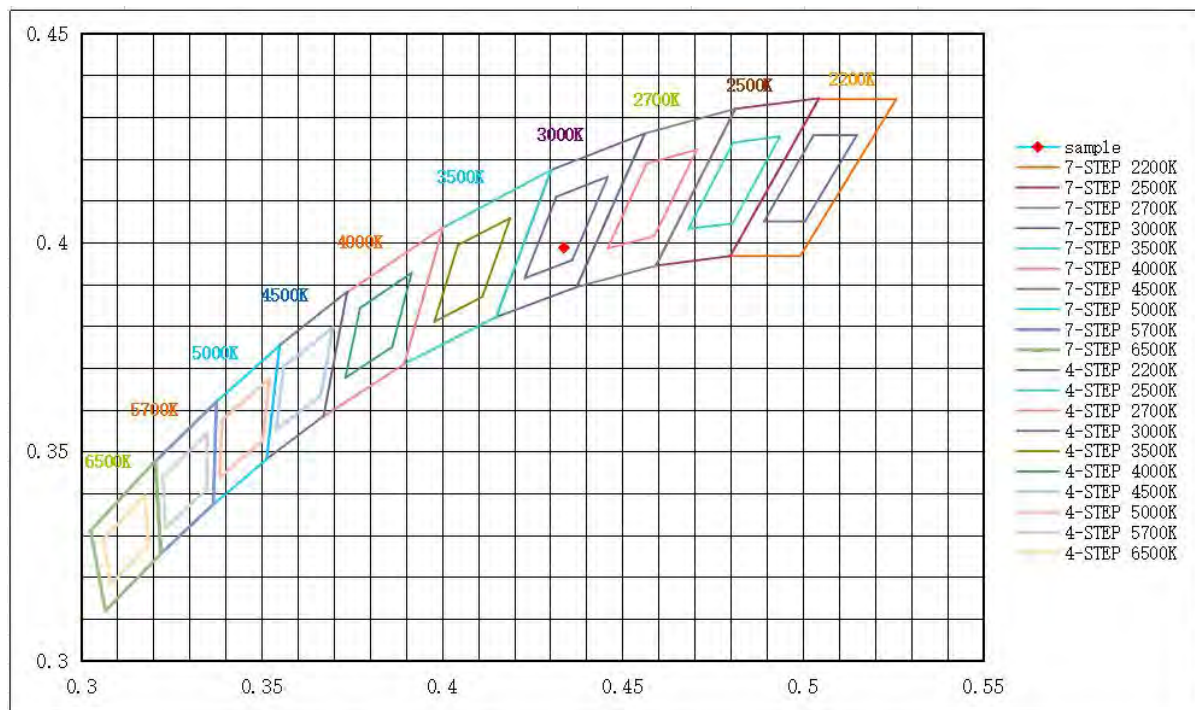
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.3	12	85	96	-11

Spectral Distribution



7/4 Step Quadrangle





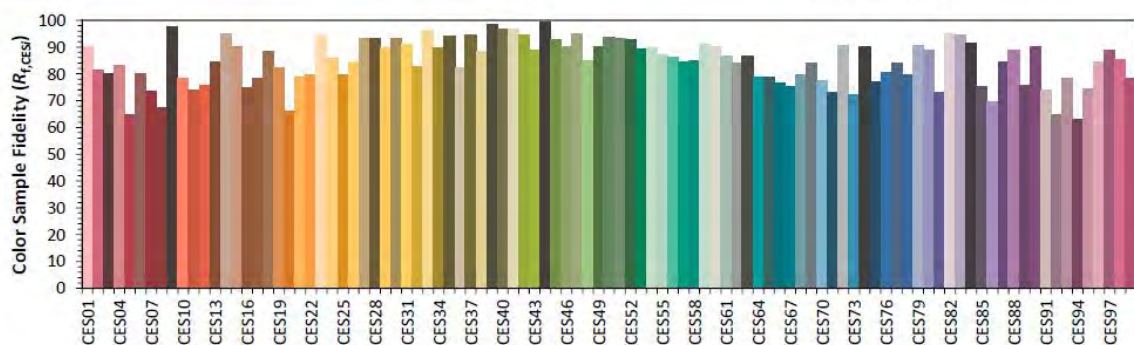
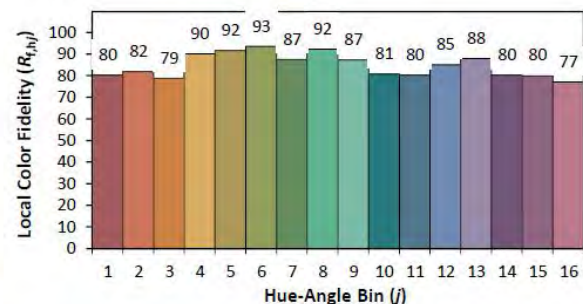
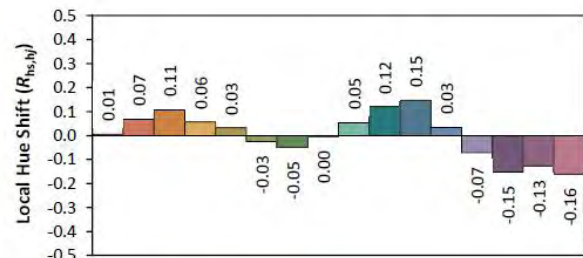
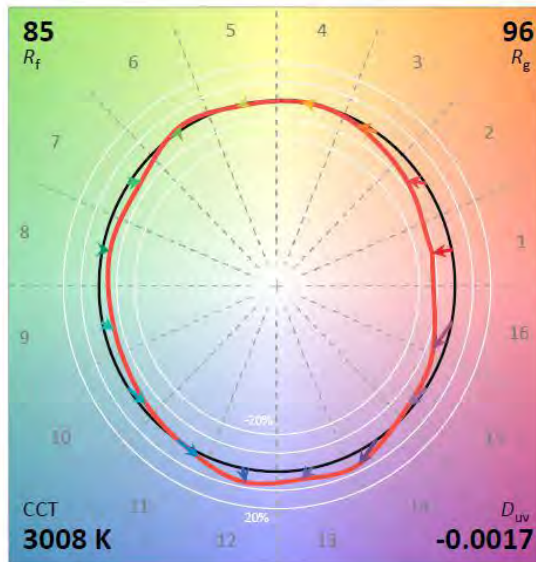
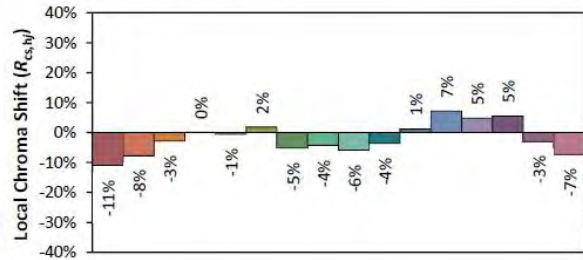
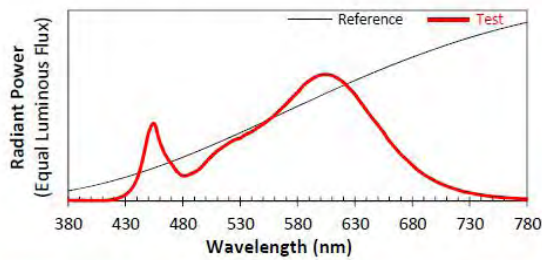
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4338
 y 0.3987
 u' 0.2509
 v' 0.5188

CIE 13.3-1995
(CRI)

R_a 83
 R_g 12

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

**3.1.8 Model Number: RP-T8C-G2-25W-2FT-2L-850-[OCN, Blank]-10V(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.93	60	0.102	12.18	0.996

Photometric data

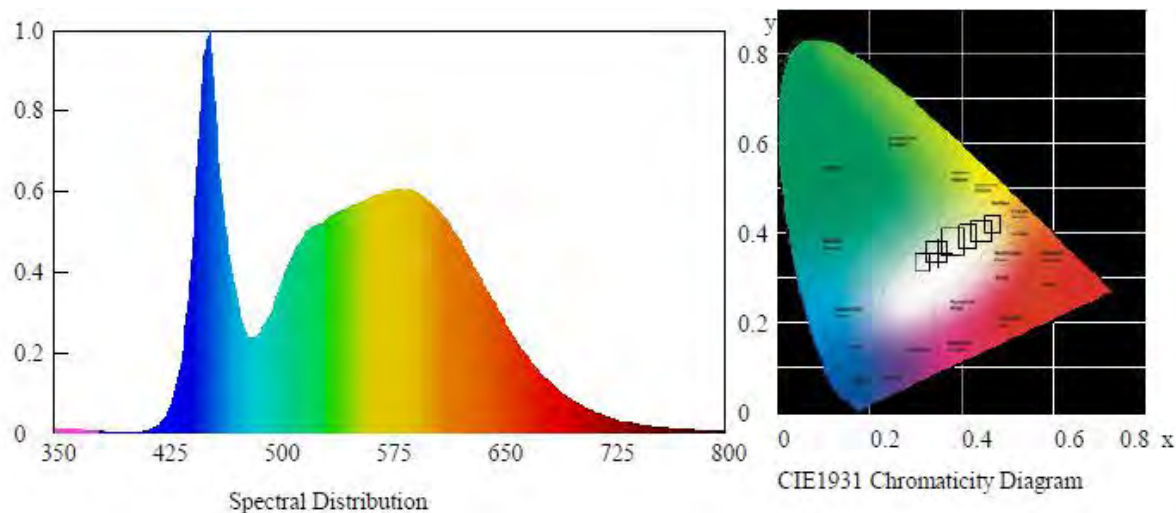
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1448.76	118.85	4969

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00258	0.3465	0.3579	0.2099	0.4879

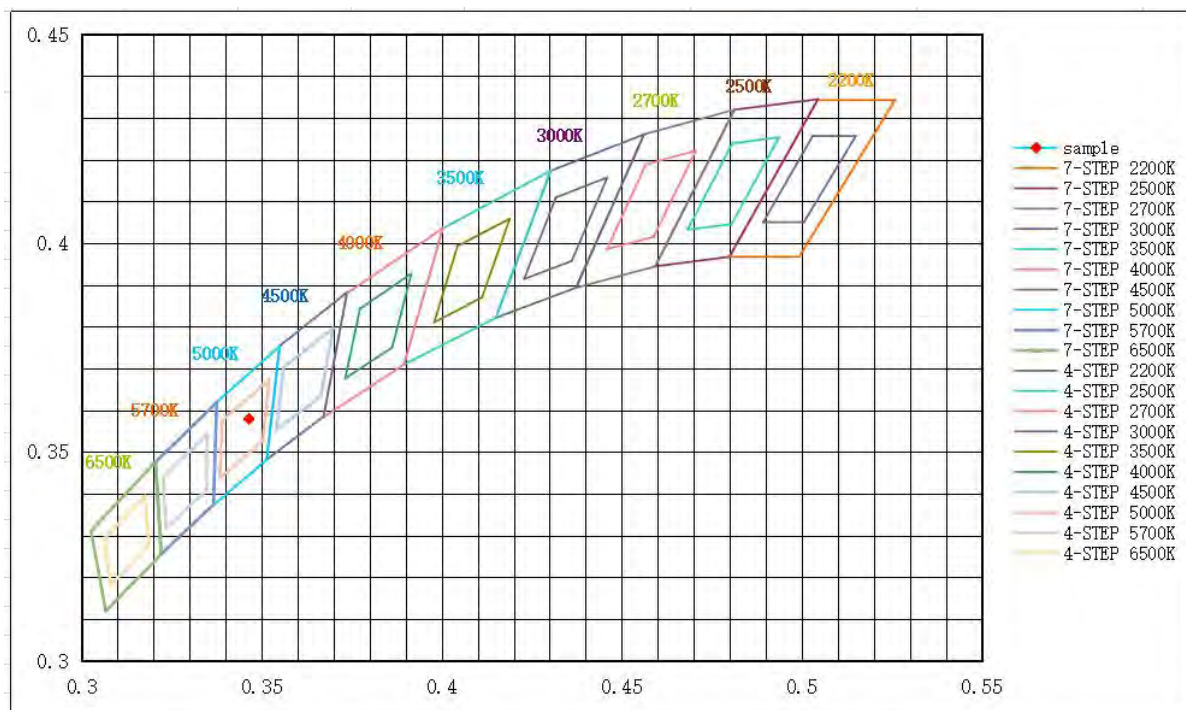
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.3	12	84	95	-12

Spectral Distribution



7/4 Step Quadrangle





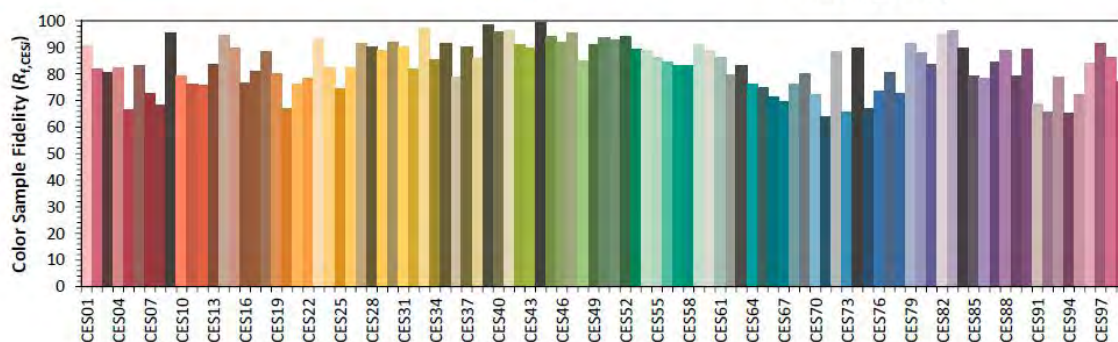
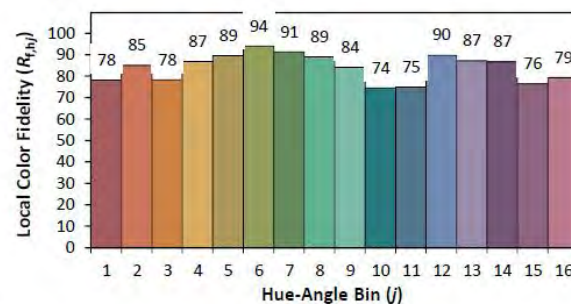
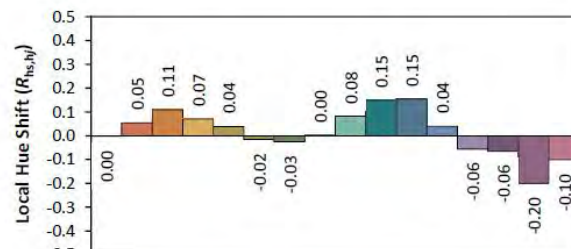
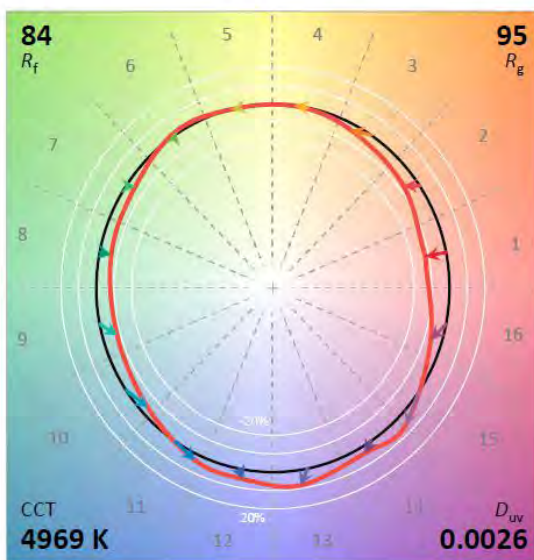
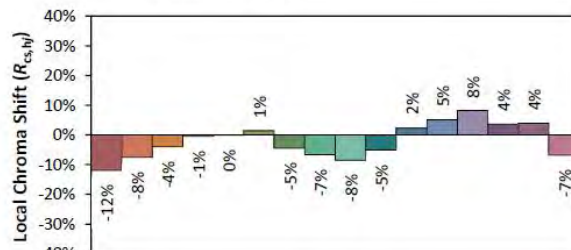
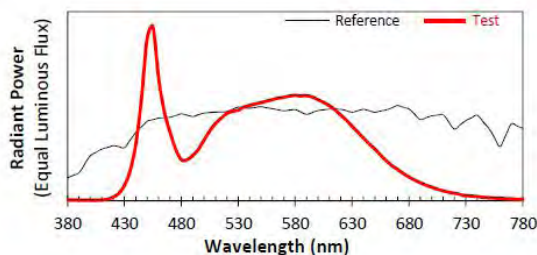
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126005-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-25W-2FT-2L-850-[OCN, Blank]-10V



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3465
 y 0.3579
 u' 0.2099
 v' 0.4879

CIE 13.3-1995
(CRI)

R_a 83
 R_g 12

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



3.2 Goniophotometer System (Total operating time for luminous intensity distribution: 1.0 hour)

3.2.1 Model Number: RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.000	60	0.102	12.205	0.995

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Beam Angle(°)
1426.20	116.85	185.5

**Zonal Flux Diagram**

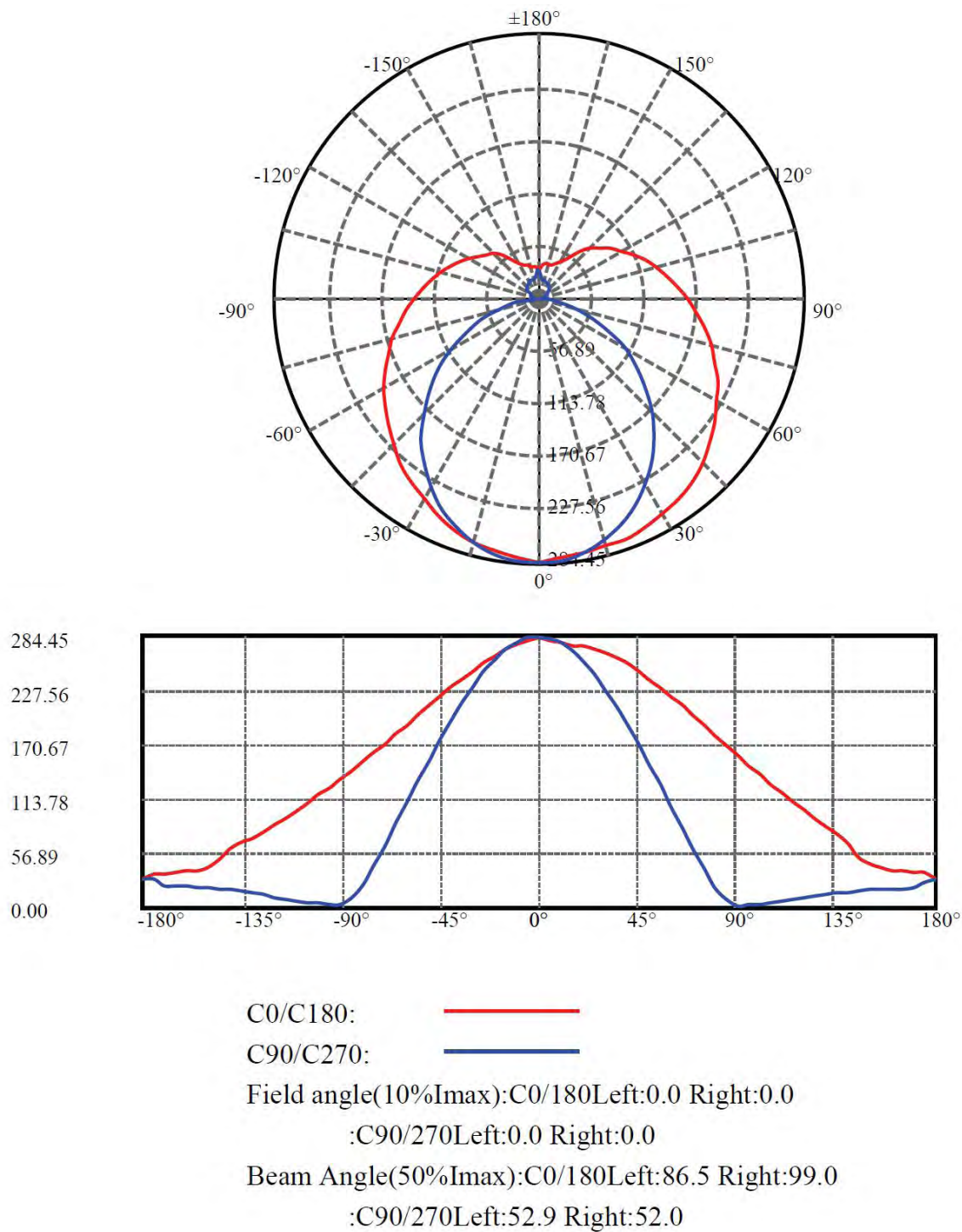
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	282.293	0.000	0	0.00%	0.00%
5.0	281.053	6.735	6.735	0.00%	0.47%
10.0	277.612	19.985	26.72	0.00%	1.87%
15.0	272.017	32.604	59.323	0.00%	4.16%
20.0	264.701	44.233	103.557	0.00%	7.26%
25.0	255.344	54.543	158.1	0.00%	11.09%
30.0	244.475	63.252	221.352	0.00%	15.52%
35.0	232.320	70.211	291.564	0.00%	20.44%
40.0	219.186	75.330	366.894	0.00%	25.73%
45.0	205.086	78.557	445.451	0.00%	31.23%
50.0	190.413	79.916	525.368	0.00%	36.84%
55.0	175.698	79.605	604.973	0.00%	42.42%
60.0	161.305	77.897	682.87	0.00%	47.88%
65.0	147.024	74.955	757.825	0.00%	53.14%
70.0	133.274	70.973	828.798	0.00%	58.11%
75.0	120.573	66.352	895.15	0.00%	62.76%
80.0	108.838	61.384	956.534	0.00%	67.07%
85.0	98.669	56.384	1012.918	0.00%	71.02%
90.0	90.108	51.689	1064.607	0.00%	74.65%
95.0	83.086	47.422	1112.029	0.00%	77.97%
100.0	77.030	43.507	1155.536	0.00%	81.02%
105.0	71.645	39.781	1195.317	0.00%	83.81%
110.0	66.707	36.163	1231.48	0.00%	86.35%
115.0	61.937	32.573	1264.054	0.00%	88.63%
120.0	57.251	28.975	1293.029	0.00%	90.66%
125.0	53.614	25.626	1318.655	0.00%	92.46%
130.0	50.090	22.549	1341.203	0.00%	94.04%
135.0	46.173	19.451	1360.655	0.00%	95.40%
140.0	41.725	16.275	1376.93	0.00%	96.55%
145.0	35.626	12.906	1389.835	0.00%	97.45%
150.0	32.605	10.048	1399.883	0.00%	98.15%
155.0	31.654	8.132	1408.015	0.00%	98.73%
160.0	31.696	6.644	1414.659	0.00%	99.19%
165.0	31.150	5.179	1419.839	0.00%	99.55%
170.0	29.416	3.593	1423.431	0.00%	99.81%
175.0	28.381	2.068	1425.499	0.00%	99.95%
180.0	30.081	0.699	1426.198	0.00%	100.00%



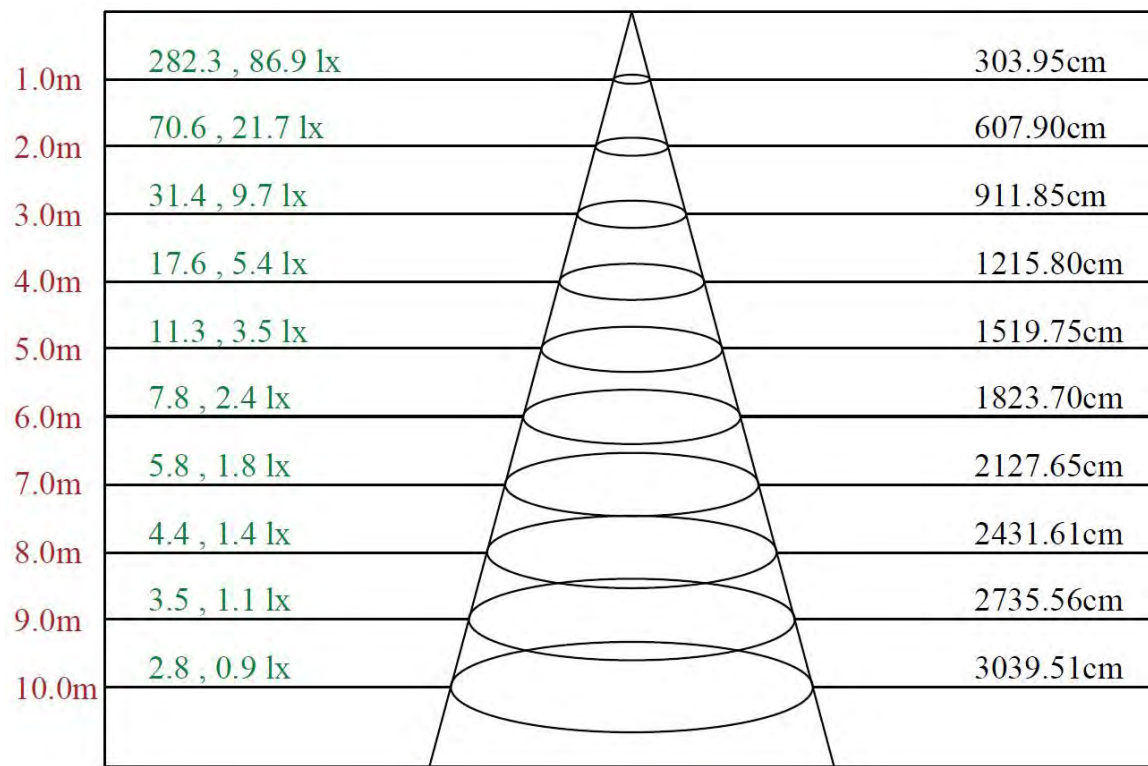
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C292.5 plane 113.31

**Luminous Intensity Distribution Data**

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	282.29	278.41	276.62	274.61	273.04	269.68	266.10	262.07	255.81
22.5	282.29	280.87	279.08	275.50	271.02	264.76	257.60	249.76	240.81
45.0	282.29	278.19	275.28	270.35	263.64	254.46	243.72	231.64	219.33
67.5	282.29	281.99	277.29	269.68	259.39	246.85	232.31	216.42	198.74
90.0	282.29	281.77	276.84	268.11	257.15	243.94	228.05	210.37	192.02
112.5	282.29	282.21	277.29	268.79	258.72	245.73	231.41	214.40	196.50
135.0	282.29	280.42	275.95	269.23	260.73	249.54	237.68	224.25	209.70
157.5	282.29	280.65	276.40	270.35	263.41	254.69	245.29	235.22	224.47
180.0	282.29	278.86	274.83	270.13	263.64	255.81	246.63	238.80	230.96
202.5	282.29	279.08	275.95	271.25	265.43	258.04	249.54	240.36	230.07
225.0	282.29	276.62	272.81	266.77	259.16	249.54	238.80	226.71	214.85
247.5	282.29	283.56	279.98	273.49	264.31	252.45	238.80	222.68	205.67
270.0	282.29	282.66	277.96	270.35	260.06	247.30	232.08	214.40	196.05
292.5	282.29	284.45	280.87	274.61	265.88	255.36	241.93	226.26	209.26
315.0	282.29	282.66	280.65	276.84	270.58	263.41	254.46	243.94	231.41
337.5	282.29	284.45	284.00	282.21	279.08	273.93	267.22	259.83	251.33
360.0	282.29	278.41	276.62	274.61	273.04	269.68	266.10	262.07	255.81
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	248.20	239.24	230.07	220.67	211.72	201.20	191.13	180.16	169.64
22.5	231.64	221.56	211.49	201.42	191.35	182.18	172.78	163.82	153.75
45.0	205.90	192.02	178.37	165.84	153.53	141.44	130.92	121.75	114.59
67.5	181.28	162.03	142.11	123.99	106.31	89.97	76.09	64.01	55.73
90.0	171.66	150.17	128.46	106.75	83.70	61.32	40.73	21.93	8.28
112.5	177.48	158.45	140.10	122.20	103.62	87.73	72.96	60.87	50.80
135.0	194.93	180.83	166.73	153.53	141.22	129.13	117.94	108.10	99.37
157.5	213.51	202.09	190.90	180.38	170.09	160.24	150.84	141.44	131.82
180.0	221.34	211.27	200.97	191.57	181.73	172.10	162.70	152.86	143.68
202.5	219.33	207.91	197.39	186.65	175.68	165.39	155.10	145.25	135.40
225.0	201.87	188.67	175.46	162.93	149.95	137.86	126.90	115.93	105.86
247.5	186.87	168.08	149.72	130.92	113.24	96.46	81.91	69.16	57.74
270.0	175.46	153.75	132.04	110.56	87.95	65.35	43.87	25.51	10.74
292.5	191.80	173.45	154.42	135.85	118.17	100.94	86.16	72.74	62.66
315.0	218.43	205.67	192.25	177.92	165.61	153.08	140.77	130.03	120.41
337.5	241.71	231.41	220.67	209.70	198.51	187.99	178.37	167.85	158.23
360.0	248.20	239.24	230.07	220.67	211.72	201.20	191.13	180.16	169.64
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	159.12	149.05	139.21	129.58	120.85	111.45	102.50	93.55	85.49
22.5	145.02	135.18	126.00	116.60	108.10	100.04	93.10	85.72	78.11
45.0	106.53	98.47	90.86	84.82	79.23	73.63	68.26	62.89	56.85
67.5	49.01	43.87	40.73	38.27	35.81	31.56	27.98	28.87	29.99
90.0	1.79	2.69	4.03	5.15	6.71	8.73	10.30	11.86	13.43
112.5	43.64	38.27	34.47	31.56	29.77	27.53	25.74	24.62	24.84
135.0	91.31	84.37	77.66	72.29	66.47	61.99	57.52	53.71	49.68
157.5	123.09	114.59	107.20	99.82	92.43	85.94	79.00	72.96	67.59
180.0	134.95	126.22	117.50	109.44	101.38	93.55	85.94	79.00	73.18
202.5	126.22	117.50	108.77	101.16	93.55	86.61	79.45	73.41	67.81
225.0	96.46	87.95	80.79	73.86	67.81	63.11	58.86	54.38	50.36
247.5	48.79	41.85	37.15	33.57	31.33	29.77	27.75	26.86	26.19
270.0	2.91	3.13	4.48	6.04	7.83	9.62	11.41	13.65	15.44
292.5	54.16	47.45	43.19	40.28	37.82	34.24	27.30	28.65	29.54
315.0	111.01	101.83	92.88	85.72	79.45	73.41	68.48	63.11	55.73
337.5	147.71	136.97	127.57	118.17	108.77	99.82	92.43	84.60	77.21
360.0	159.12	149.05	139.21	129.58	120.85	111.45	102.50	93.55	85.49



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	77.21	66.69	53.27	46.10	42.52	38.49	38.49	37.82	37.15
22.5	70.72	57.97	42.08	38.05	36.70	36.93	36.70	30.89	19.70
45.0	51.25	43.42	37.82	31.11	29.32	31.56	28.87	20.37	27.08
67.5	30.89	30.89	31.11	28.42	27.30	24.62	22.16	21.93	30.89
90.0	15.22	16.34	17.68	18.58	19.25	19.92	20.14	20.59	26.19
112.5	26.63	28.20	27.53	25.29	25.29	27.08	21.93	22.60	25.74
135.0	40.51	32.45	26.63	27.30	29.99	32.90	30.66	21.49	20.14
157.5	62.22	56.40	44.98	41.40	40.06	39.61	38.72	35.81	20.14
180.0	68.04	61.77	51.03	42.97	39.17	38.49	36.48	35.58	34.91
202.5	62.44	57.07	43.64	36.03	32.68	34.69	36.26	35.14	34.69
225.0	47.22	43.42	35.14	32.45	31.56	30.44	32.68	34.91	32.23
247.5	27.08	27.08	28.42	28.20	29.09	29.54	30.89	29.09	22.16
270.0	17.23	18.58	19.70	21.04	21.71	22.16	22.60	23.05	30.44
292.5	29.09	28.65	28.42	30.21	28.42	28.87	31.11	30.44	27.08
315.0	42.75	39.61	35.58	32.00	32.90	34.69	33.57	34.24	27.75
337.5	70.27	59.08	47.00	42.52	40.51	37.15	37.15	36.70	37.82
360.0	77.21	66.69	53.27	46.10	42.52	38.49	38.49	37.82	37.15
C/ γ (°)	180.0								
0.0	30.08								
22.5	30.08								
45.0	30.08								
67.5	30.08								
90.0	30.08								
112.5	30.08								
135.0	30.08								
157.5	30.08								
180.0	30.08								
202.5	30.08								
225.0	30.08								
247.5	30.08								
270.0	30.08								
292.5	30.08								
315.0	30.08								
337.5	30.08								
360.0	30.08								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-T8C-G2-25W-2FT-2L-830-[OCN, Blank]-10V	Power Factor	277	60	0.959
	THD	277	60	10.3%

5 Performance Assessment

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-15W-2FT-2L-830-[OCN, Blank]-10V	3000	900.68	7.33	122.96
RP-T8C-G2-15W-2FT-2L-835-[OCN, Blank]-10V	3500	906.06 ^{*1}	7.33 ^{*2}	123.69 ^{*3}
RP-T8C-G2-15W-2FT-2L-840-[OCN, Blank]-10V	4000	911.44 ^{*1}	7.33 ^{*2}	124.43 ^{*3}
RP-T8C-G2-15W-2FT-2L-850-[OCN, Blank]-10V	5000	922.19	7.32	125.90

*1: This value is calculated and the calculation formula is as below:

$$906.06 = (922.19 - 900.68) / 4 + 900.68$$

$$911.44 = (922.19 - 900.68) / 4 + 906.06$$

*2: This value is calculated and the calculation formula is as below:

$$7.33 = (7.33 + 7.32) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$123.69 = 906.06 / 7.33$$

$$124.43 = 911.44 / 7.33$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-18W-2FT-2L -830-[OCN, Blank]-10V	3000	1054.30	8.76	120.42
RP-T8C-G2-18W-2FT-2L -835-[OCN, Blank]-10V	3500	1059.99 ^{*1}	8.76 ^{*2}	121.00 ^{*3}
RP-T8C-G2-18W-2FT-2L -840-[OCN, Blank]-10V	4000	1065.68 ^{*1}	8.76 ^{*2}	121.65 ^{*3}
RP-T8C-G2-18W-2FT-2L -850-[OCN, Blank]-10V	5000	1077.06	8.76	123.02

*1: This value is calculated and the calculation formula is as below:

$$1059.99 = (1077.06 - 1054.30) / 4 + 1054.30$$

$$1065.68 = (1077.06 - 1054.30) / 4 + 1059.99$$

*2: This value is calculated and the calculation formula is as below:

$$8.76 = (8.76 + 8.76) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$121.00 = 1059.99 / 8.76$$

$$121.65 = 1065.68 / 8.76$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-20W-2FT-2L -830-[OCN, Blank]-10V	3000	1160.65	9.78	118.62
RP-T8C-G2-20W-2FT-2L -835-[OCN, Blank]-10V	3500	1165.93 ^{*1}	9.79 ^{*2}	119.09 ^{*3}
RP-T8C-G2-20W-2FT-2L -840-[OCN, Blank]-10V	4000	1171.21 ^{*1}	9.79 ^{*2}	119.63 ^{*3}
RP-T8C-G2-20W-2FT-2L -850-[OCN, Blank]-10V	5000	1181.76	9.80	120.59

*1: This value is calculated and the calculation formula is as below:

$$1165.93 = (1181.76 - 1160.65) / 4 + 1160.65$$

$$1171.21 = (1181.76 - 1160.65) / 4 + 1165.93$$

*2: This value is calculated and the calculation formula is as below:

$$9.79 = (9.78 + 9.80) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$119.09 = 1165.93 / 9.79$$

$$119.63 = 1171.21 / 9.79$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-25W-2FT-2L -830-[OCN, Blank]-10V	3000	1421.95	12.18	116.74
RP-T8C-G2-25W-2FT-2L -835-[OCN, Blank]-10V	3500	1428.37 ^{*1}	12.18 ^{*2}	117.27 ^{*3}
RP-T8C-G2-25W-2FT-2L -840-[OCN, Blank]-10V	4000	1434.79 ^{*1}	12.18 ^{*2}	117.80 ^{*3}
RP-T8C-G2-25W-2FT-2L -850-[OCN, Blank]-10V	5000	1447.62	12.18	118.85

*1: This value is calculated and the calculation formula is as below:

$$1428.37 = (1447.62 - 1421.95) / 4 + 1421.95$$

$$1434.79 = (1447.62 - 1421.95) / 4 + 1428.37$$

*2: This value is calculated and the calculation formula is as below:

$$12.18 = (12.18 + 12.18) / 2$$

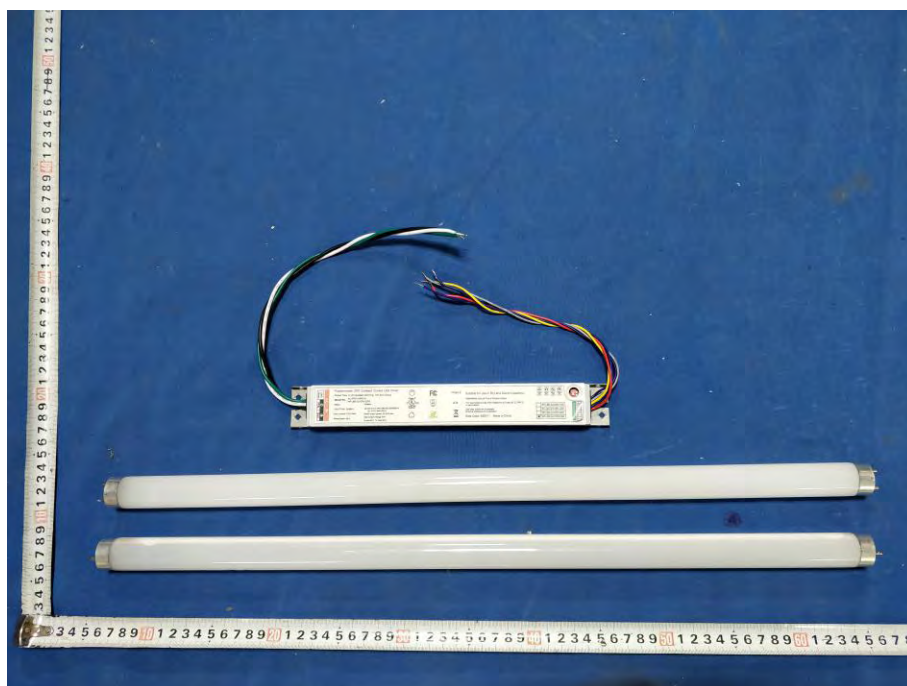
*3: This value is calculated and the calculation formula is as below:

$$117.27 = 1428.37 / 12.18$$

$$117.80 = 1434.79 / 12.18$$



Photo Document



****End of test report****