



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:

4'T8 Lamps -- 3-Lamp External Driver (UL Type C) Lamps

Product Model No.:

RP-T8C-G2-30W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-30W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-35W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-35W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-40W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-40W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-45W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850

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	4'T8 Lamps -- 3-Lamp External Driver (UL Type C) Lamps
Test Model Number	RP-T8C-G2-30W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-30W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-35W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-35W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-40W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-40W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-45W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850
Rated Inputs	AC 100-277V 50/60Hz
Field-Adjustable Product	Yes, Wattage setting: 30W, 35W, 40W, 45W
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-G2-30W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.04	60	0.084	10.10	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1263.69	125.16	2995

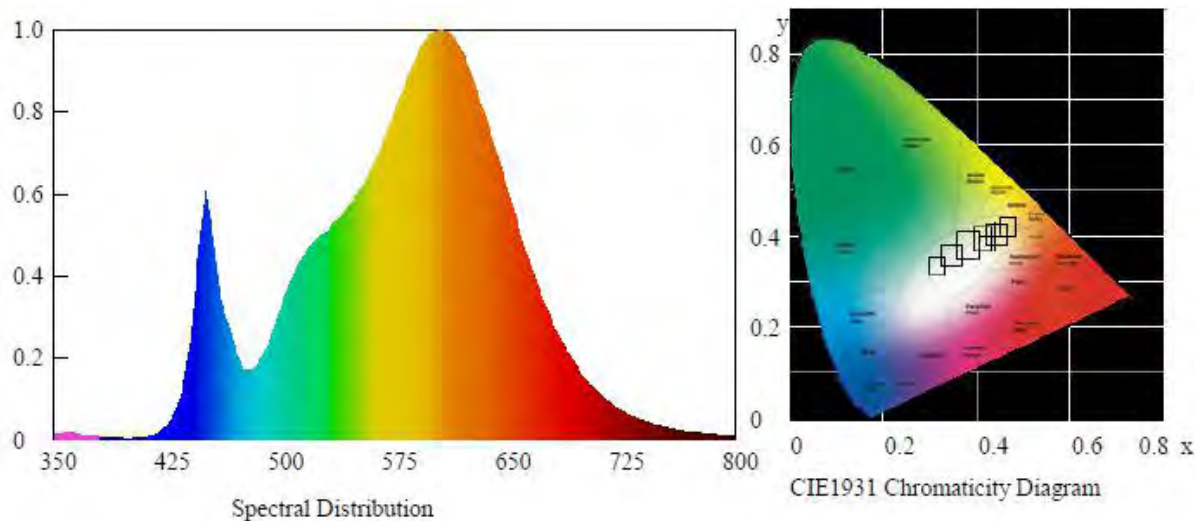
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00122	0.4355	0.4005	0.2512	0.5198

Color Rendering

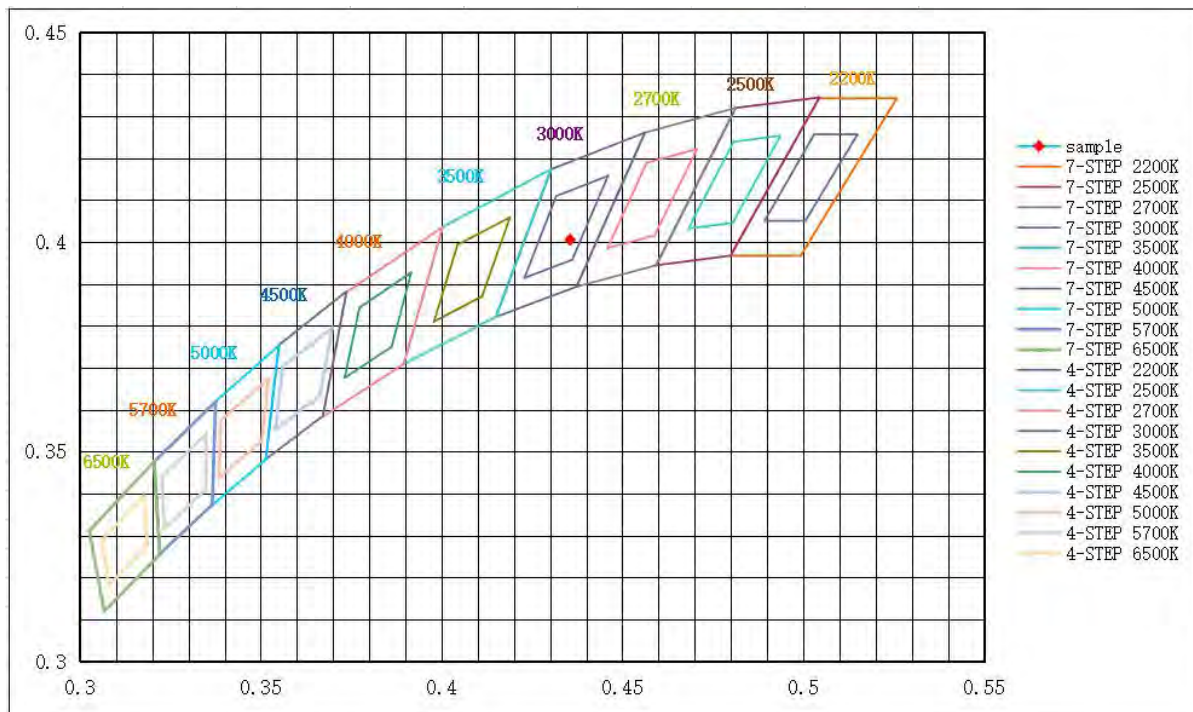
CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	13	85	97	-10

Spectral Distribution





7/4 Step Quadrangle





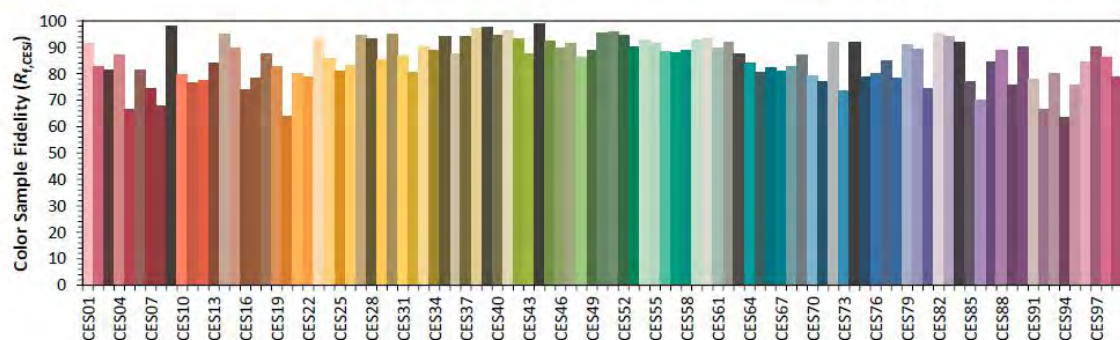
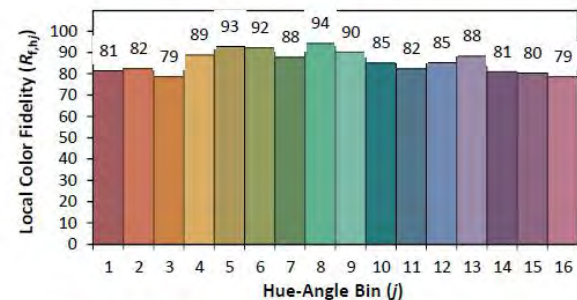
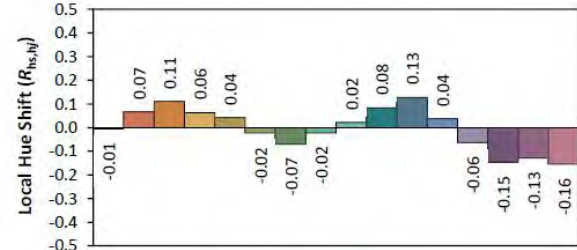
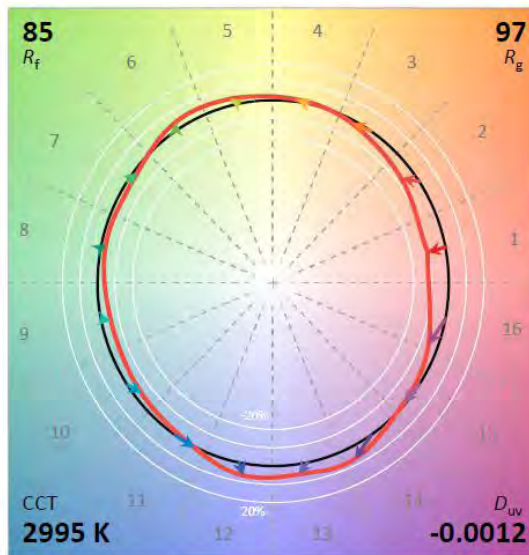
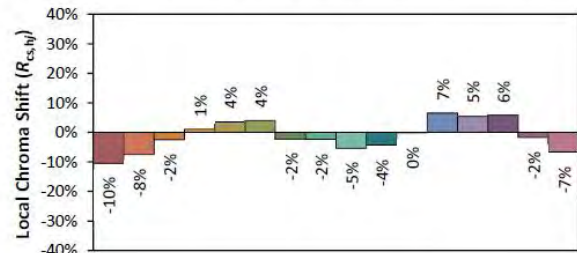
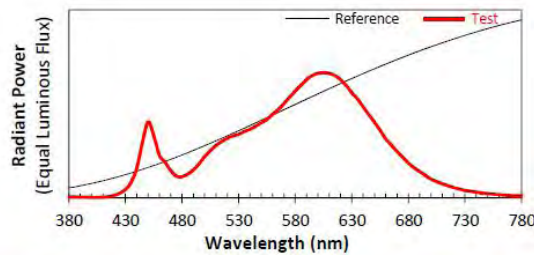
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-30W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4355
 y 0.4005
 u' 0.2512
 v' 0.5198

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.



3.1.2 Model Number: RP-T8C-G2-30W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.06	60	0.084	10.10	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1285.74	127.26	4997

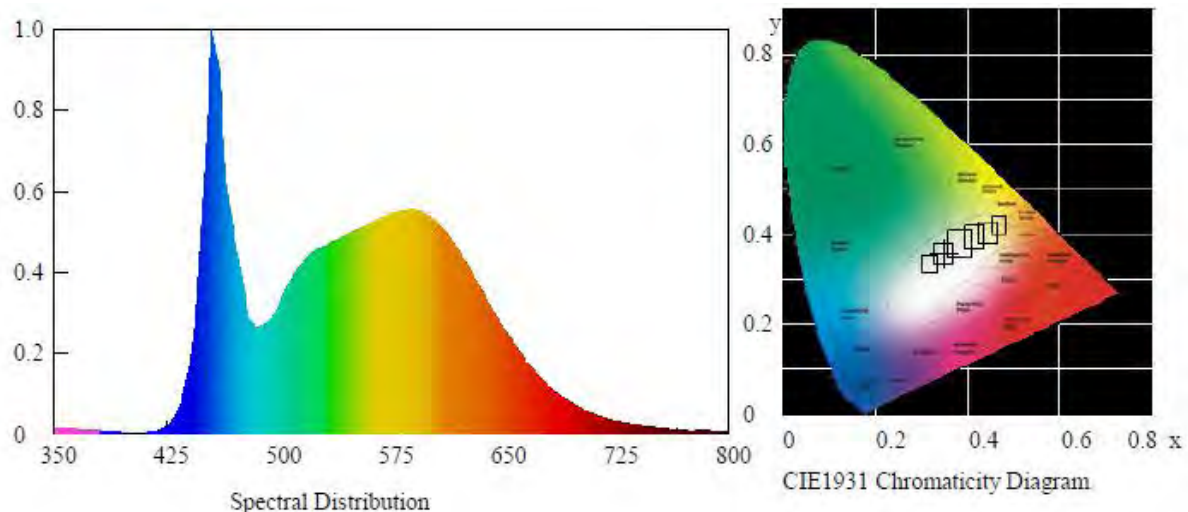
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00257	0.3457	0.3573	0.2097	0.4875

Color Rendering

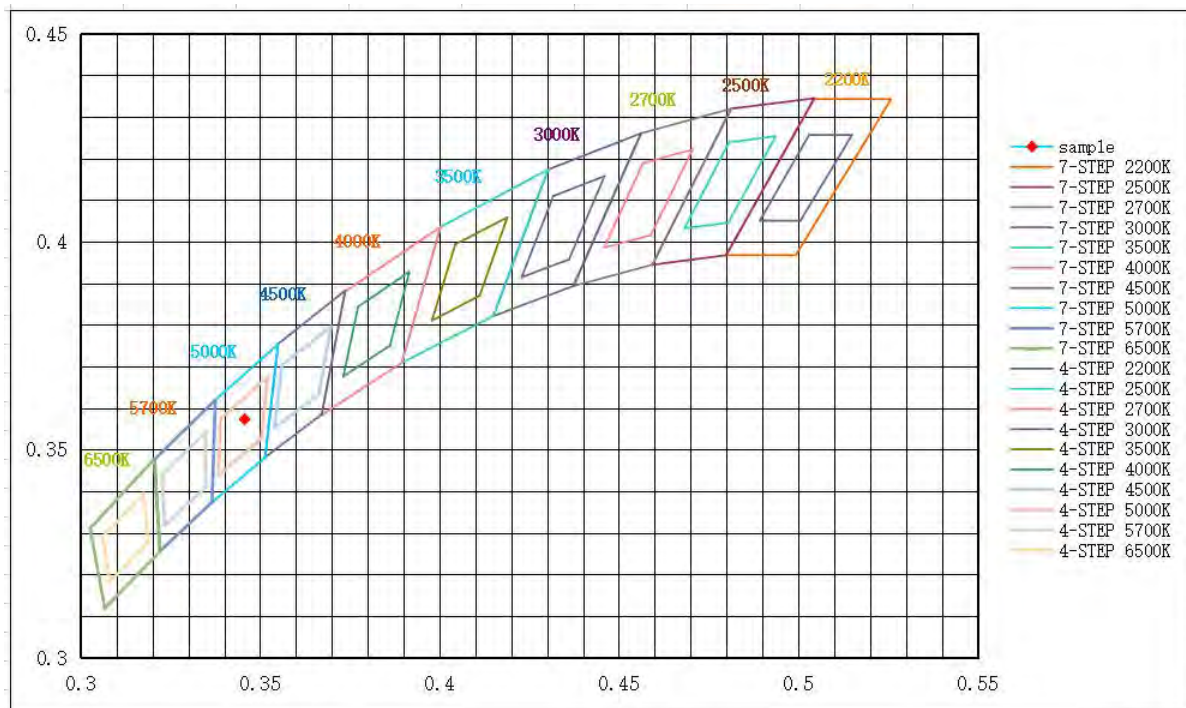
CRI	R9	Rf	Rg	Rcs,h1(%)
84.1	15	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





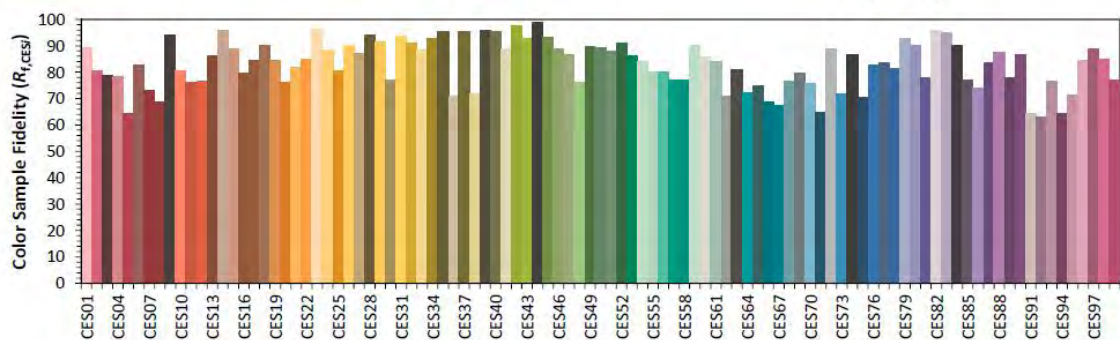
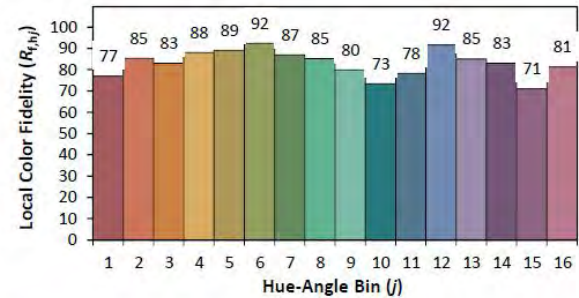
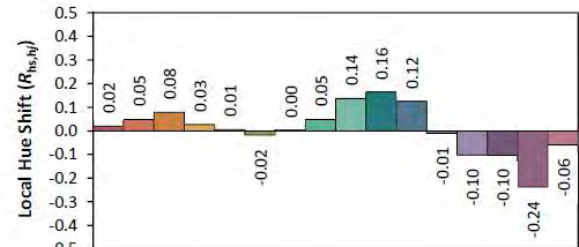
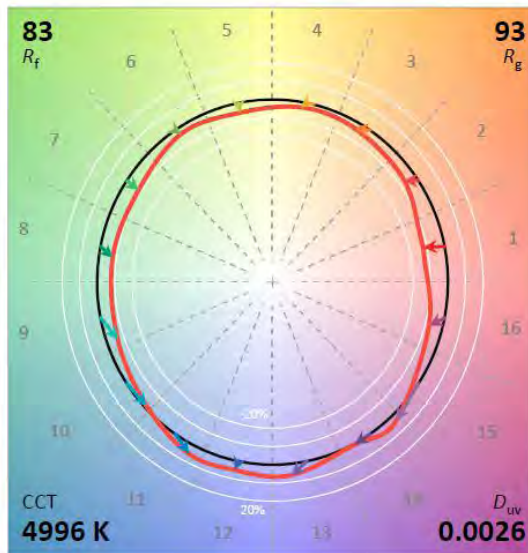
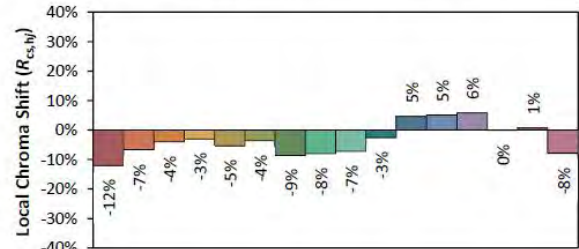
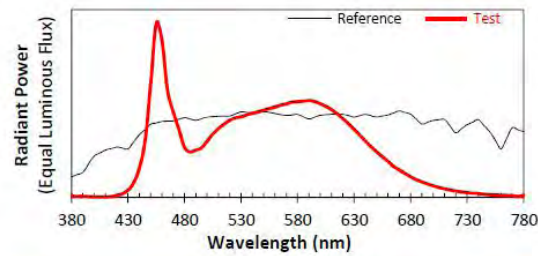
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-30W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850



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

x 0.3457
 y 0.3573
 u' 0.2097
 v' 0.4875

CIE 13.3-1995
(CRI)

R_a 84
 R_g 15

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-G2-35W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.02	60	0.096	11.53	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1417.08	122.87	2998

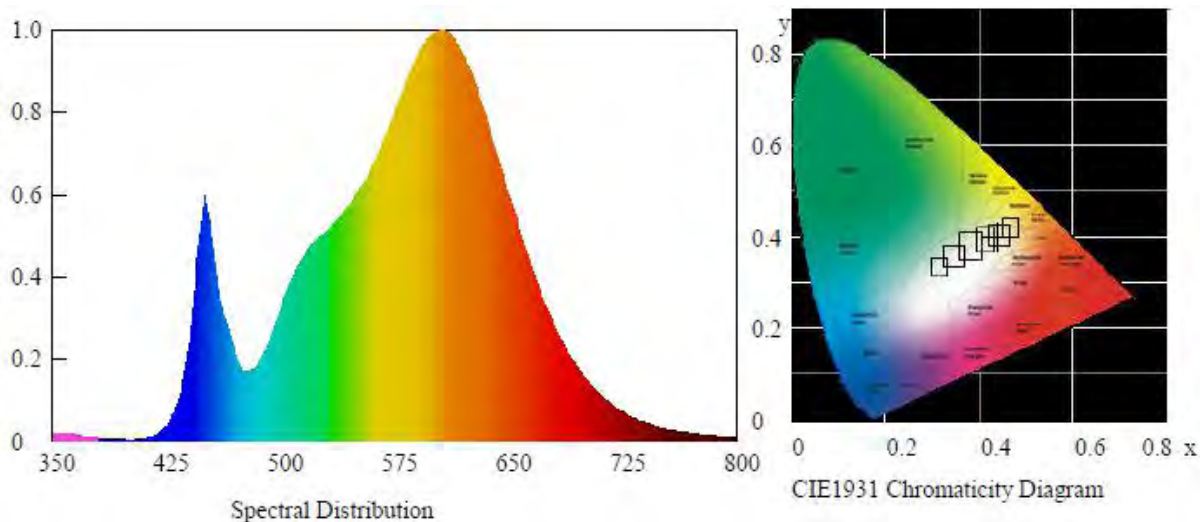
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00117	0.4354	0.4006	0.2511	0.5198

Color Rendering

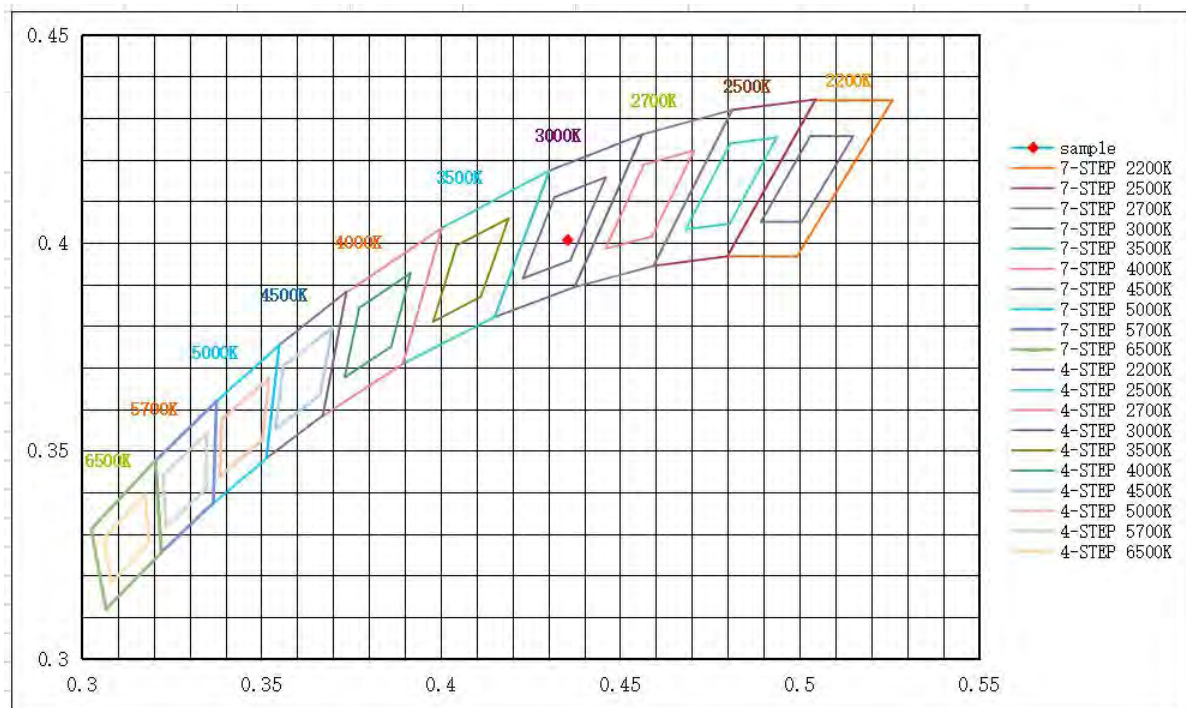
CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	14	85	98	-10

Spectral Distribution





7/4 Step Quadrangle





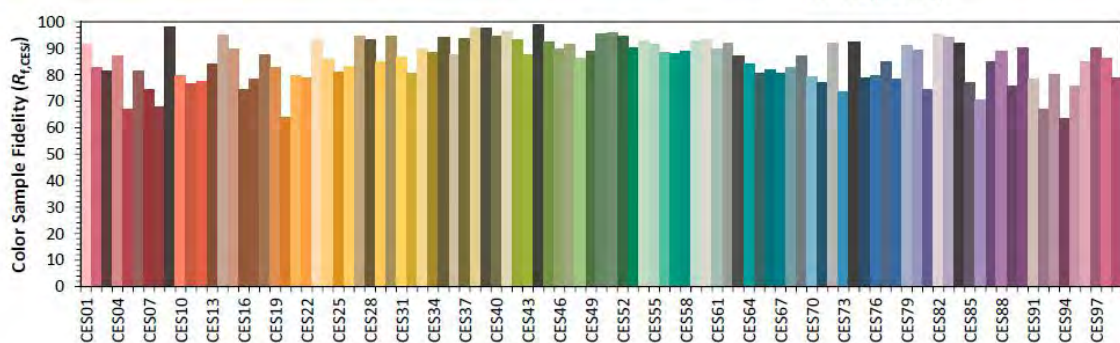
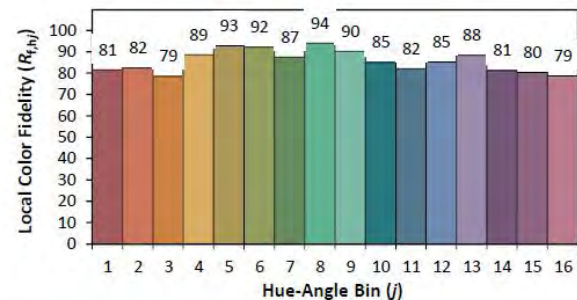
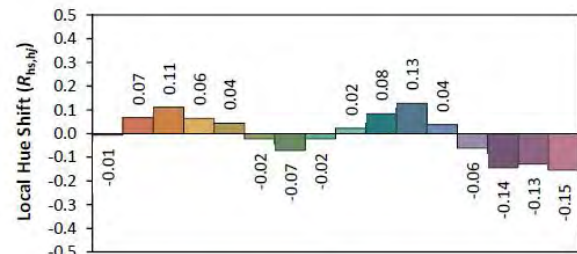
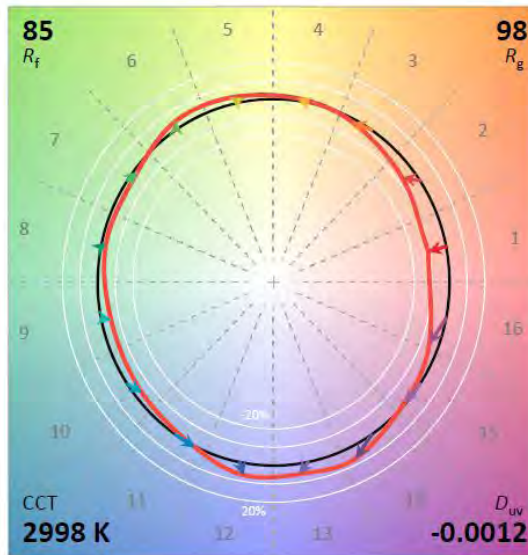
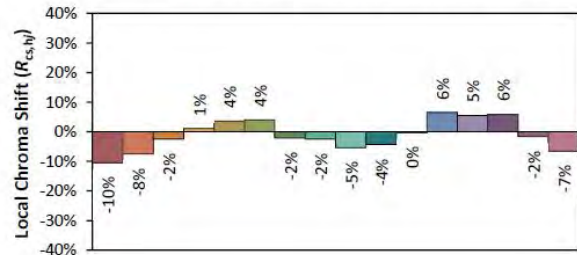
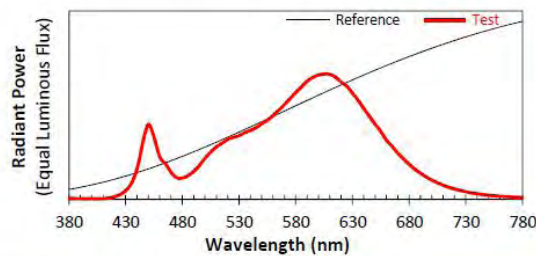
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-35W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4354
 y 0.4006
 u' 0.2511
 v' 0.5198

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-G2-35W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.03	60	0.097	11.54	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1445.98	125.27	5000

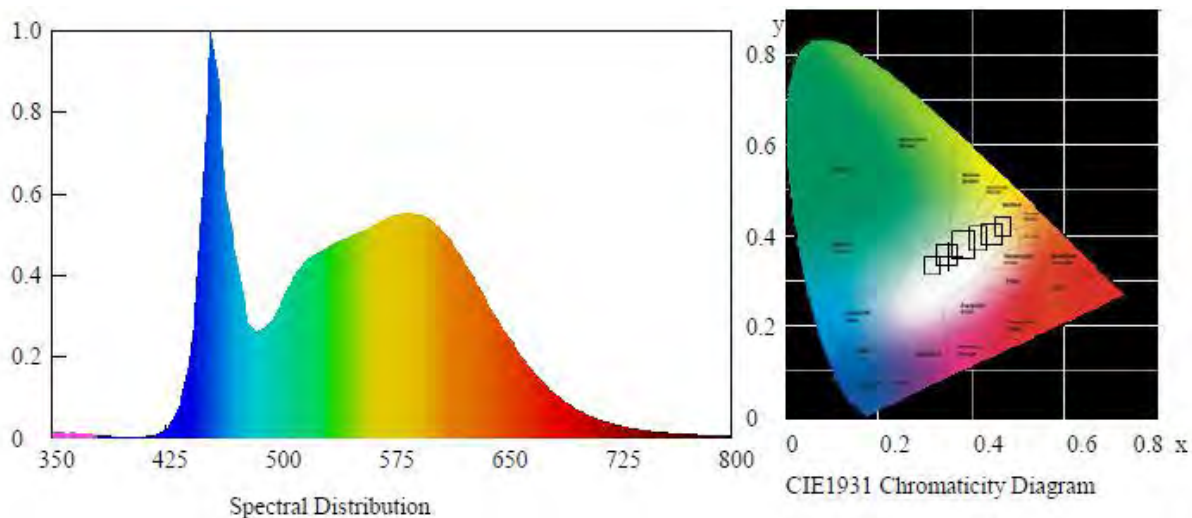
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00258	0.3456	0.3572	0.2096	0.4875

Color Rendering

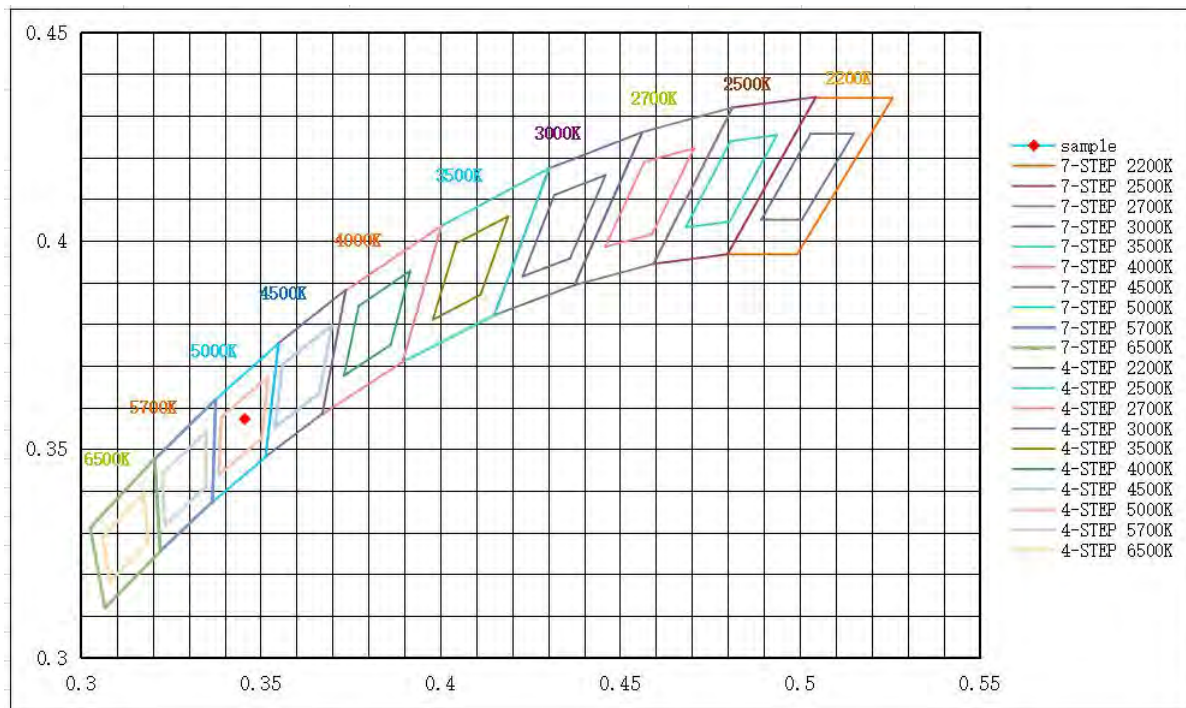
CRI	R9	Rf	Rg	Rcs,h1(%)
84.0	15	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





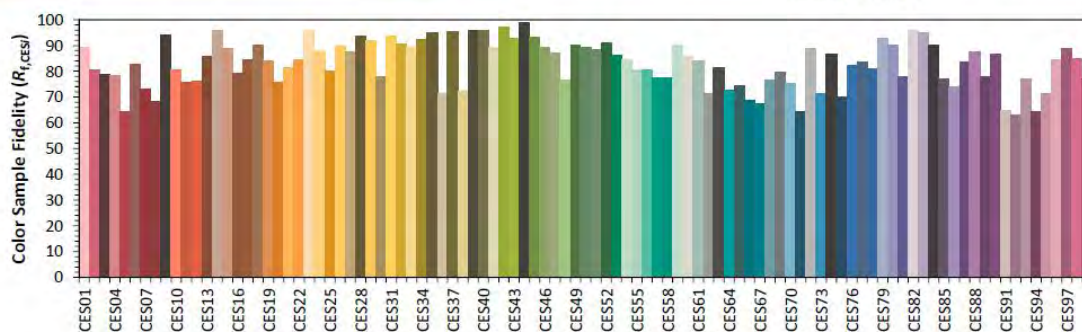
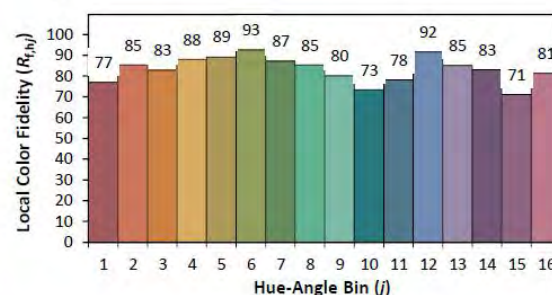
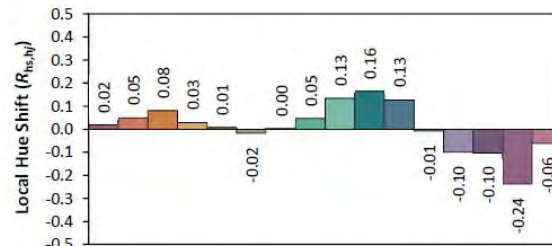
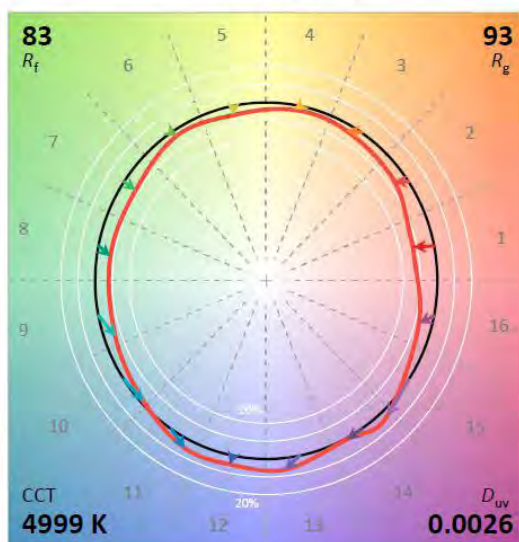
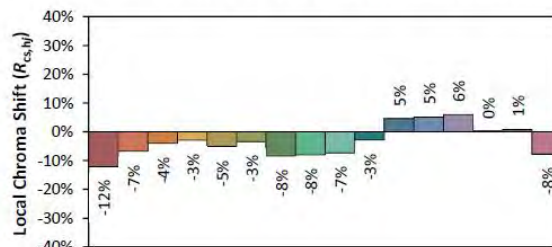
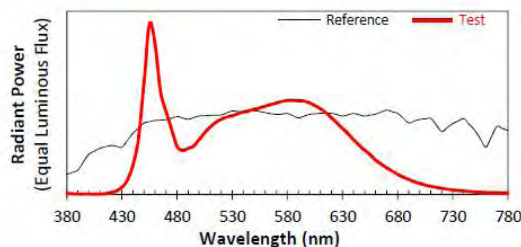
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-35W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850



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

 x 0.3456 y 0.3572 u' 0.2096 v' 0.4875CIE 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.

**3.1.5 Model Number: RP-T8C-G2-40W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.98	60	0.108	12.93	0.996

Photometric data

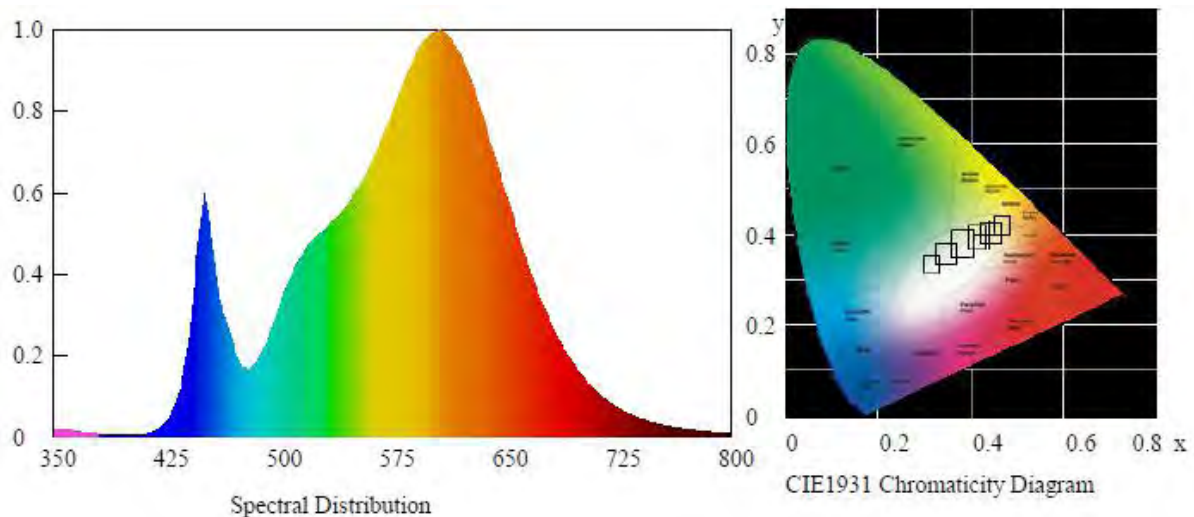
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1562.57	120.88	2997

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00118	0.4354	0.4006	0.2511	0.5198

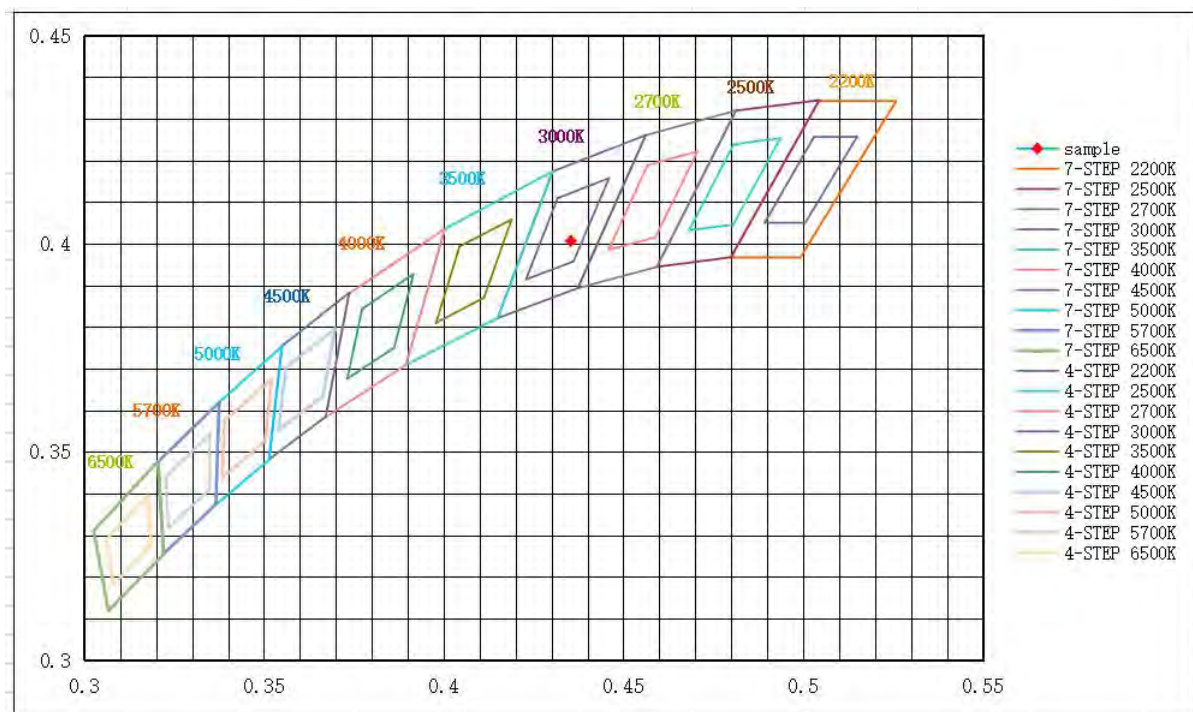
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	14	85	98	-10

Spectral Distribution



7/4 Step Quadrangle





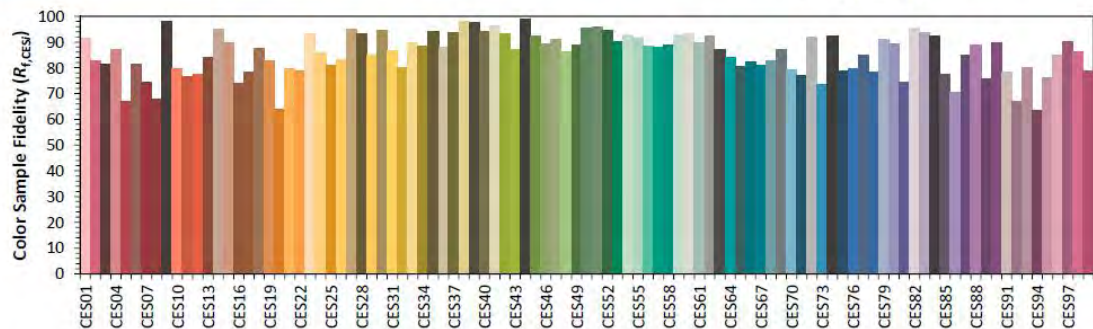
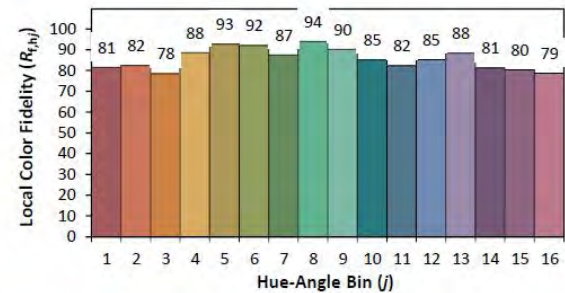
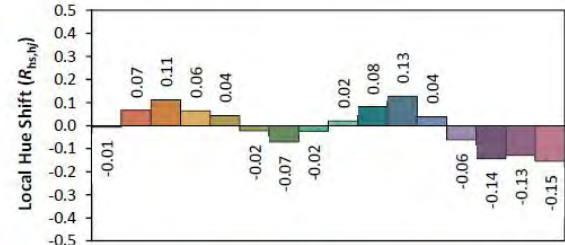
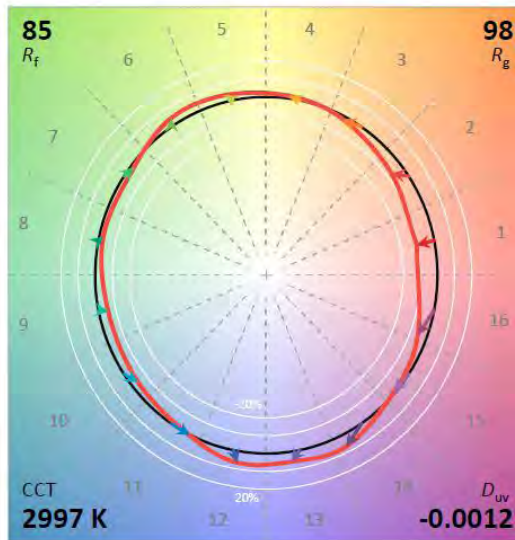
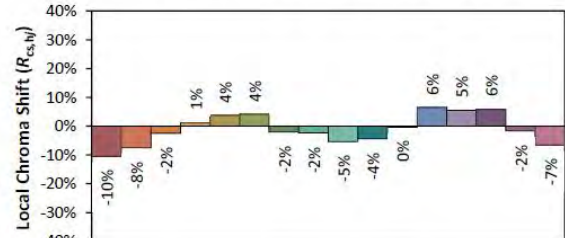
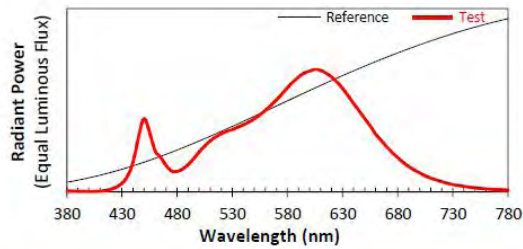
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-40W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4354
 y 0.4006
 u' 0.2511
 v' 0.5198

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.



3.1.6 Model Number: RP-T8C-G2-40W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.99	60	0.108	12.94	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1592.21	123.05	4986

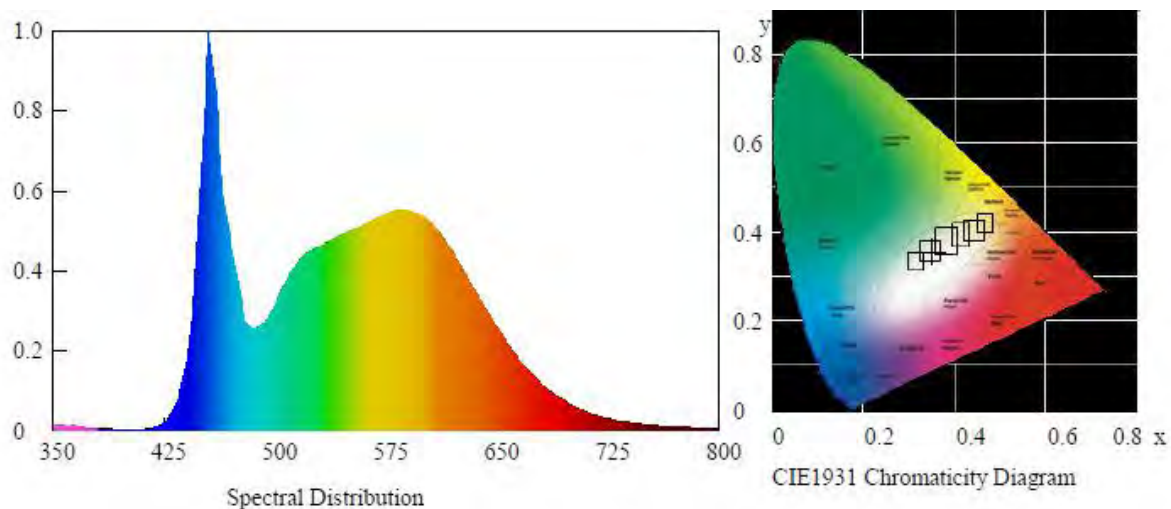
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00271	0.3461	0.3578	0.2097	0.4878

Color Rendering

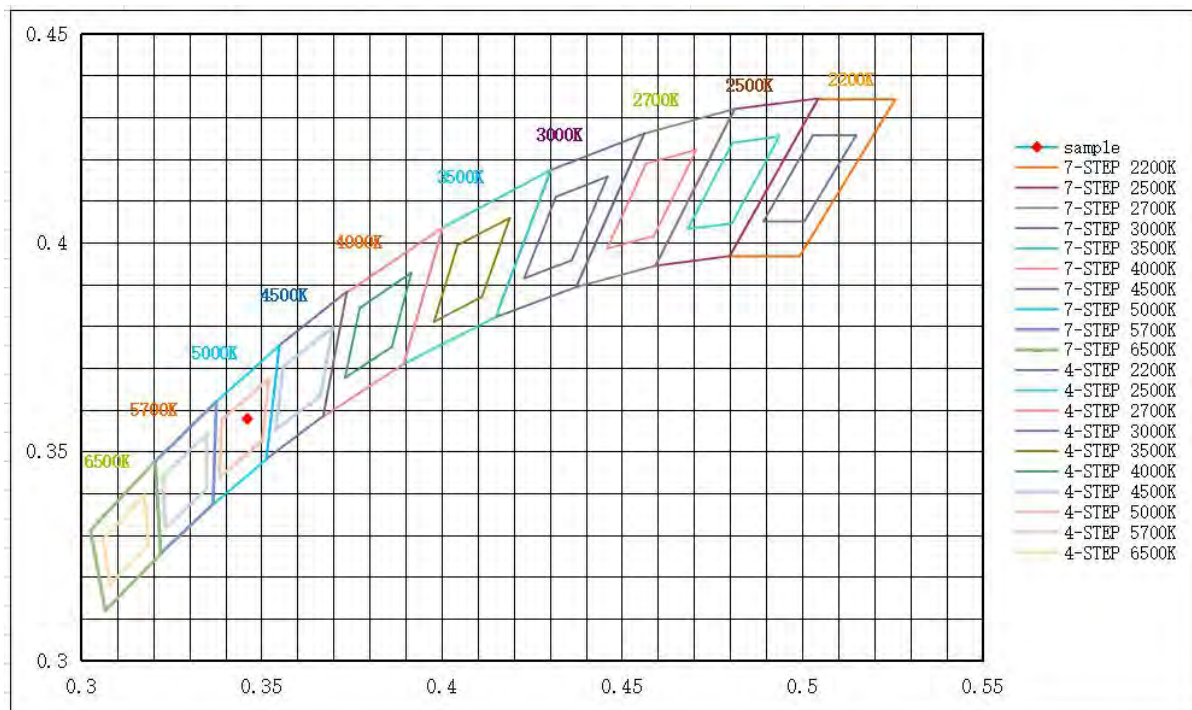
CRI	R9	Rf	Rg	Rcs,h1(%)
83.8	13	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





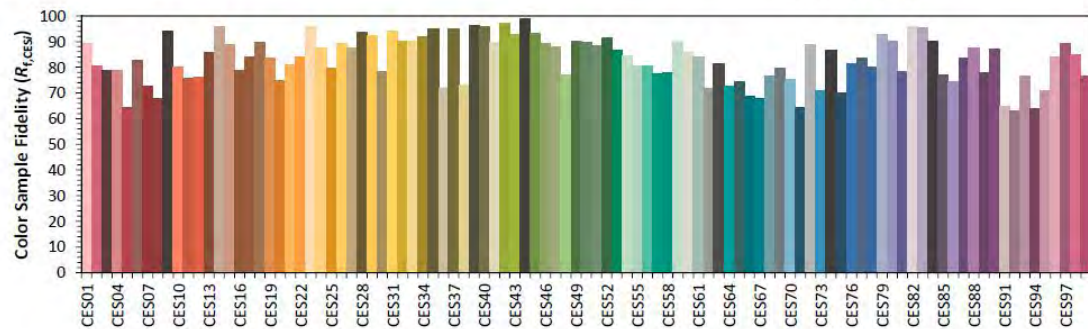
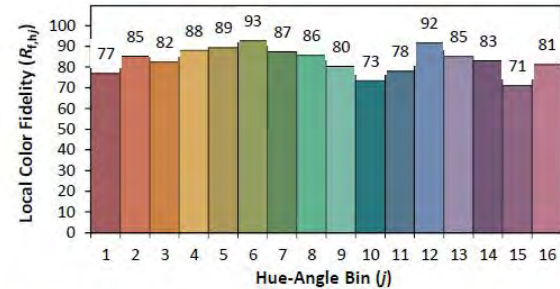
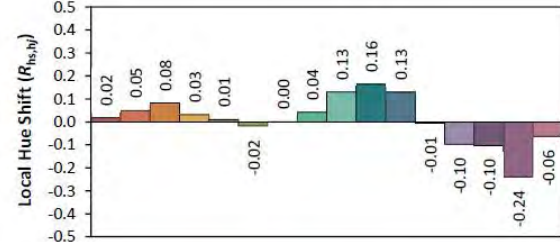
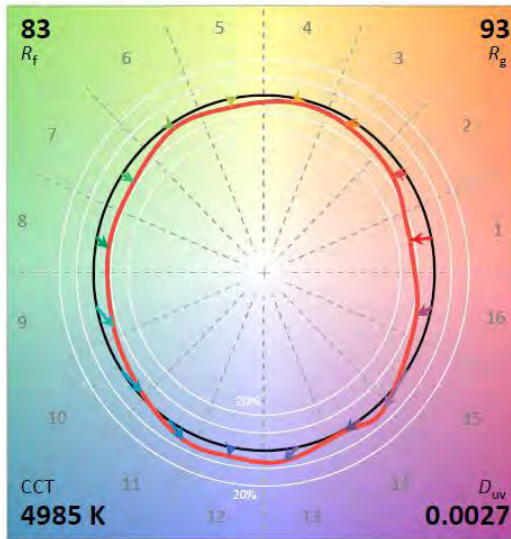
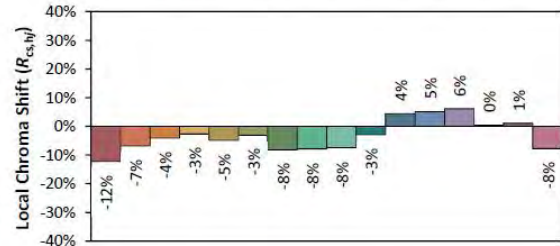
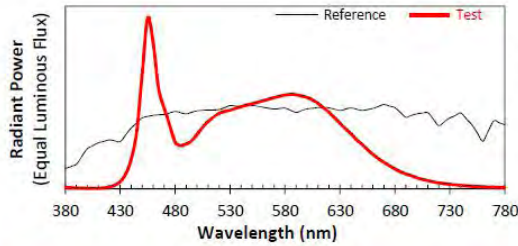
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-40W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850



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

 x 0.3461 y 0.3578 u' 0.2097 v' 0.4878CIE 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.

**3.1.7 Model Number: RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830(Bare lamp)****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.96	60	0.118	14.12	0.996

Photometric data

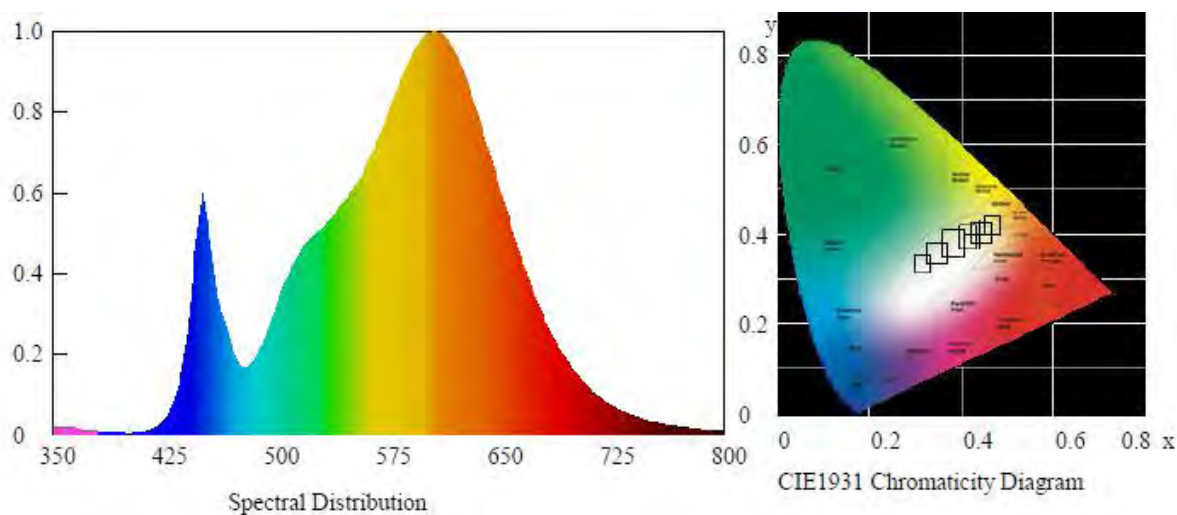
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1678.35	118.89	2998

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00116	0.4354	0.4007	0.2511	0.5198

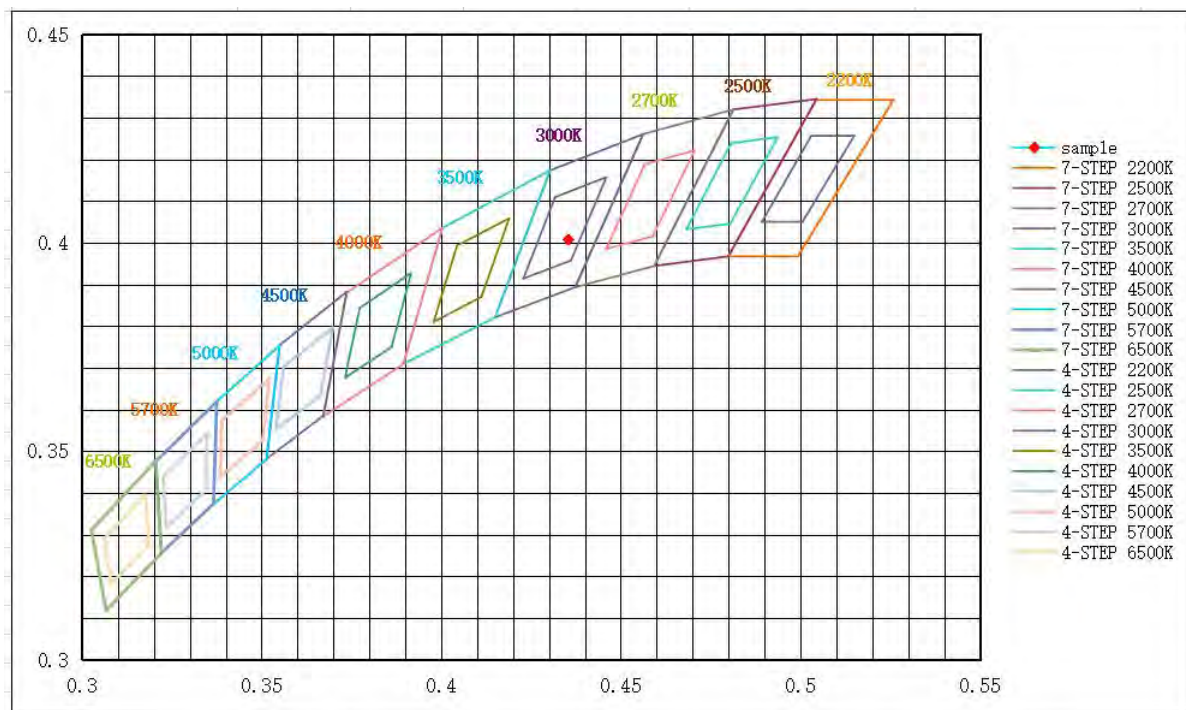
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	14	85	98	-10

Spectral Distribution



7/4 Step Quadrangle





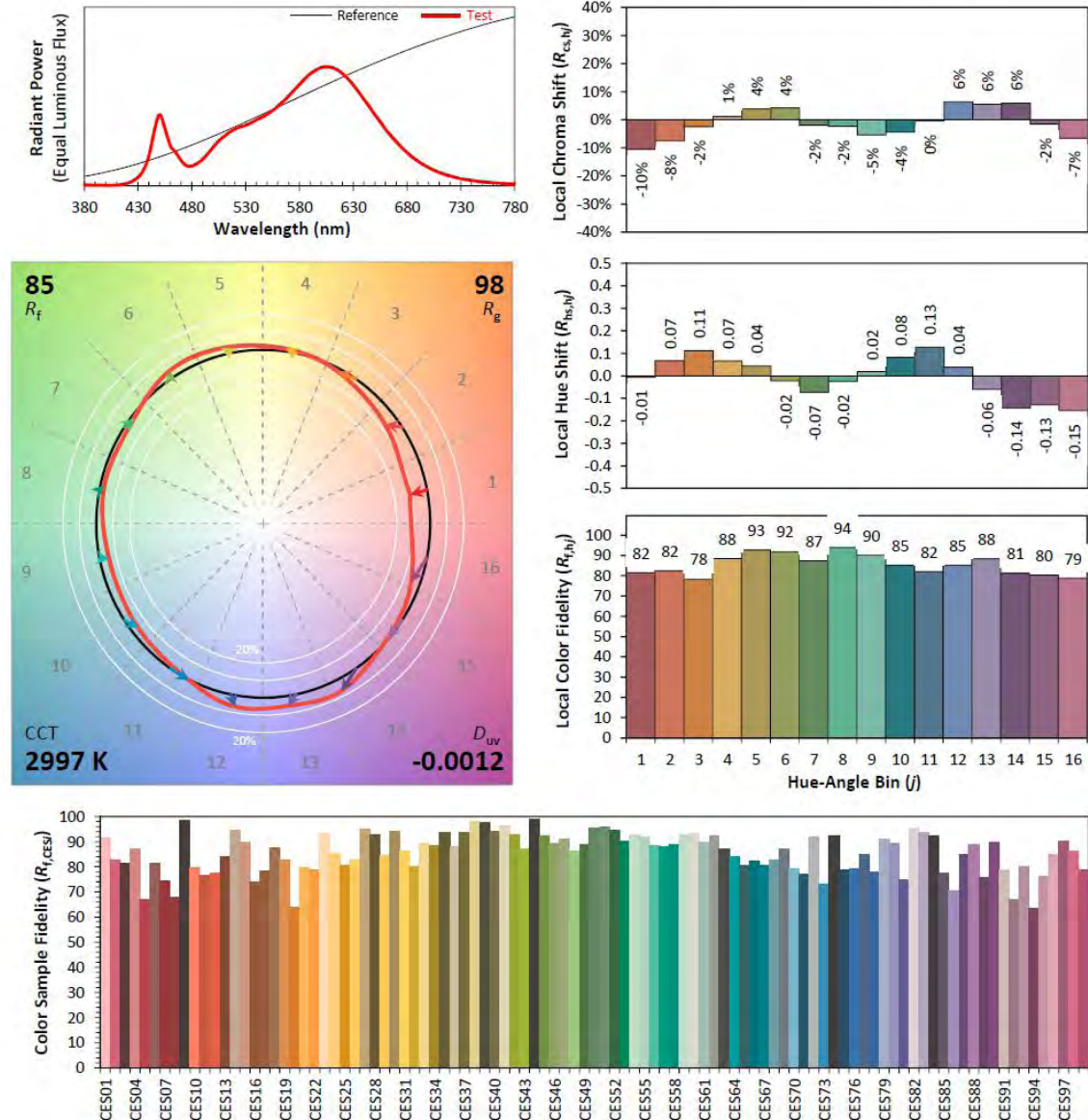
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4354
 y 0.4007
 u' 0.2511
 v' 0.5198

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.



3.1.8 Model Number: RP-T8C-G2-45W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.97	60	0.118	14.15	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1713.91	121.10	4998

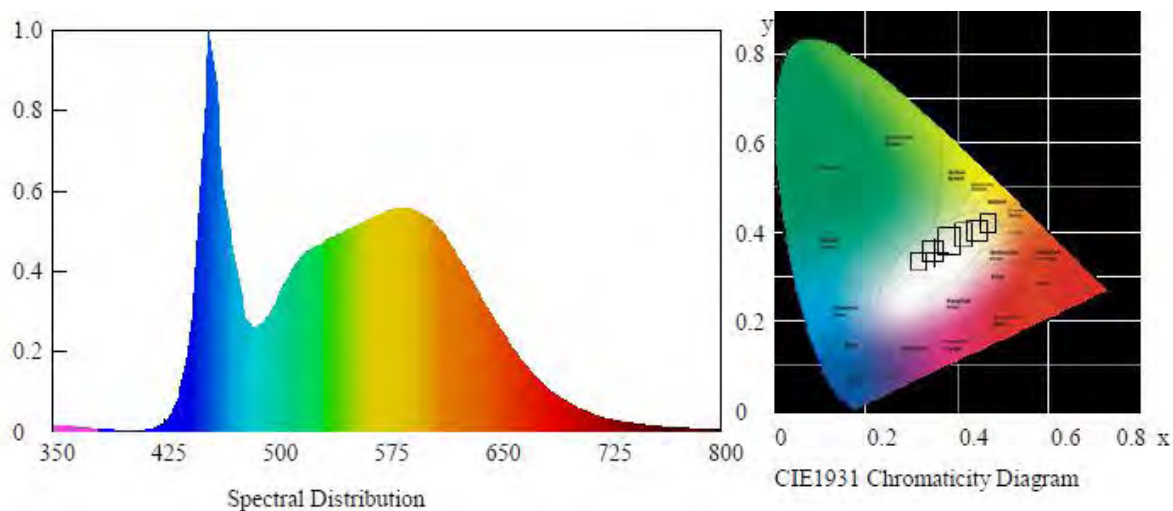
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00258	0.3457	0.3573	0.2096	0.4875

Color Rendering

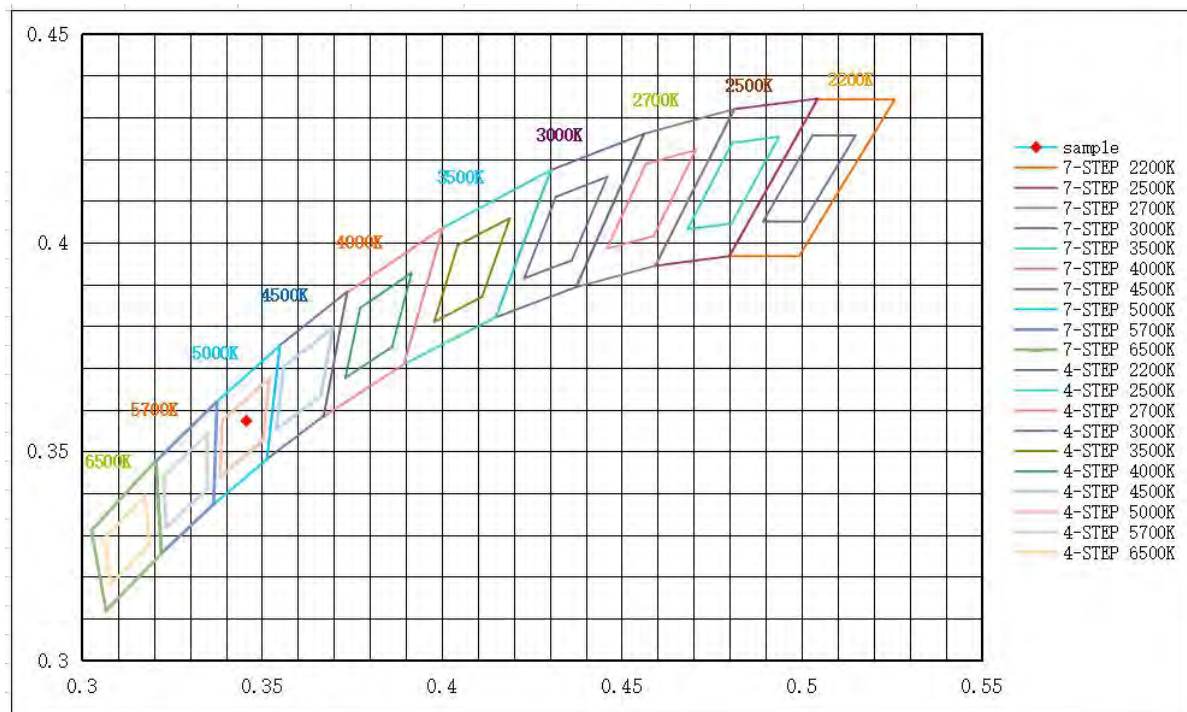
CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	14	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





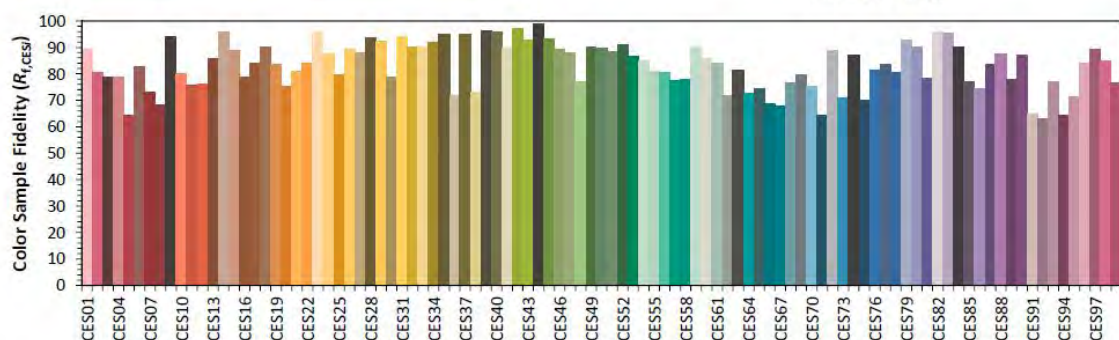
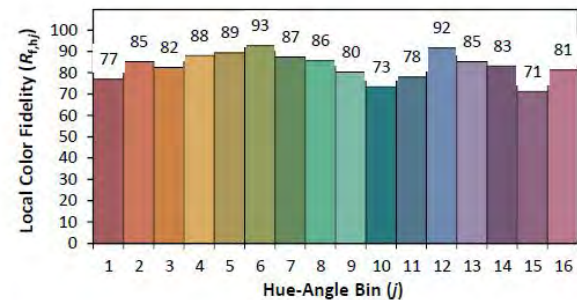
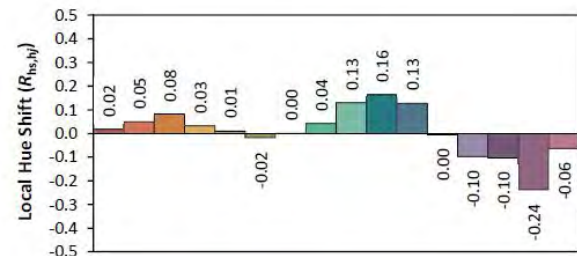
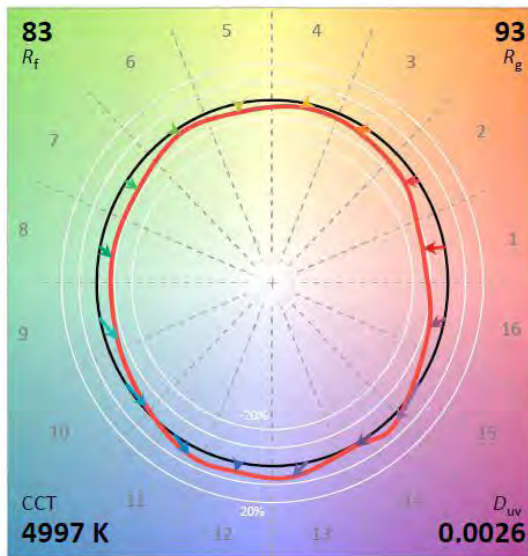
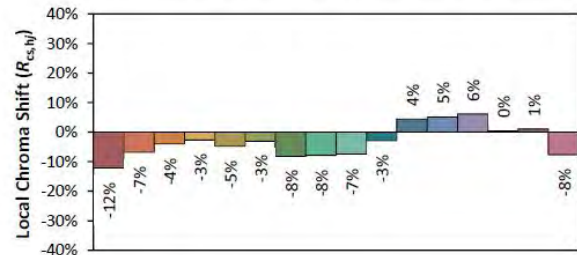
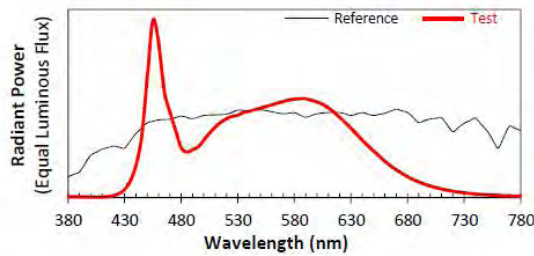
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126014-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-45W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850



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

x 0.3457
 y 0.3573
 u' 0.2096
 v' 0.4875

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.



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

3.2.1 Model Number: RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830(Bare lamp)

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.090	60	0.119	14.193	0.995

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Beam Angle(°)
1684.48	118.68	188.1

**Zonal Flux Diagram**

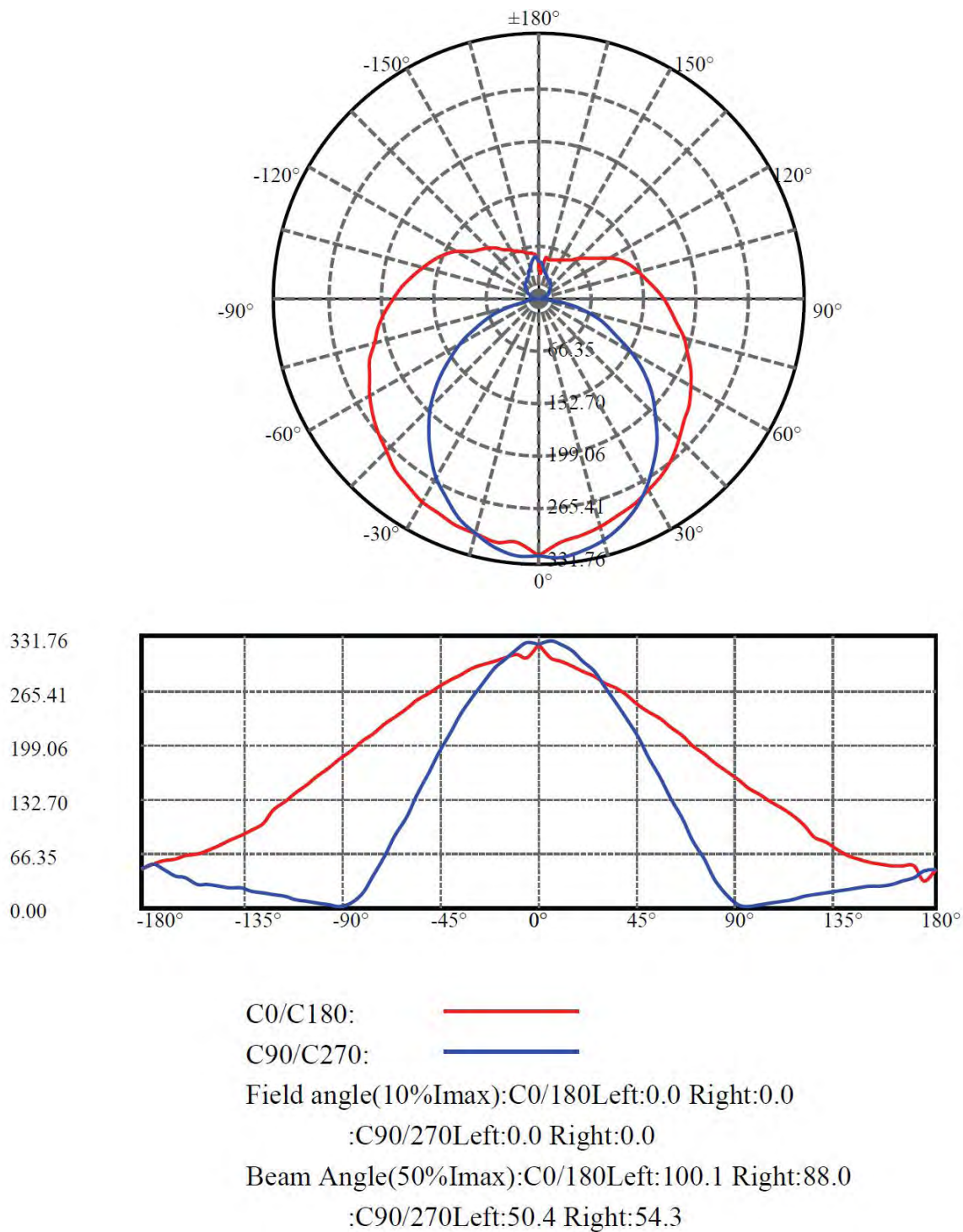
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	320.881	0.000	0	0.00%	0.00%
5.0	320.884	7.672	7.672	0.00%	0.46%
10.0	317.360	22.832	30.504	0.00%	1.81%
15.0	311.269	37.290	67.794	0.00%	4.02%
20.0	302.868	50.614	118.407	0.00%	7.03%
25.0	292.387	62.431	180.839	0.00%	10.74%
30.0	280.143	72.454	253.293	0.00%	15.04%
35.0	266.123	80.441	333.734	0.00%	19.81%
40.0	251.297	86.327	420.062	0.00%	24.94%
45.0	235.514	90.137	510.199	0.00%	30.29%
50.0	219.260	91.894	602.092	0.00%	35.74%
55.0	203.234	91.864	693.956	0.00%	41.20%
60.0	187.193	90.246	784.202	0.00%	46.55%
65.0	171.486	87.195	871.398	0.00%	51.73%
70.0	156.022	82.927	954.325	0.00%	56.65%
75.0	141.560	77.783	1032.108	0.00%	61.27%
80.0	128.360	72.223	1104.331	0.00%	65.56%
85.0	116.906	66.645	1170.976	0.00%	69.52%
90.0	107.275	61.383	1232.358	0.00%	73.16%
95.0	99.467	56.608	1288.966	0.00%	76.52%
100.0	92.996	52.297	1341.263	0.00%	79.62%
105.0	87.224	48.222	1389.485	0.00%	82.49%
110.0	81.831	44.188	1433.673	0.00%	85.11%
115.0	75.816	39.917	1473.591	0.00%	87.48%
120.0	69.633	35.359	1508.95	0.00%	89.58%
125.0	62.448	30.530	1539.48	0.00%	91.39%
130.0	58.803	26.364	1565.844	0.00%	92.96%
135.0	56.342	23.267	1589.11	0.00%	94.34%
140.0	54.367	20.499	1609.609	0.00%	95.56%
145.0	52.985	17.911	1627.52	0.00%	96.62%
150.0	51.617	15.403	1642.923	0.00%	97.53%
155.0	50.402	12.911	1655.834	0.00%	98.30%
160.0	49.688	10.498	1666.331	0.00%	98.92%
165.0	48.169	8.065	1674.396	0.00%	99.40%
170.0	46.650	5.625	1680.021	0.00%	99.74%
175.0	46.711	3.340	1683.36	0.00%	99.93%
180.0	46.579	1.115	1684.476	0.00%	100.00%



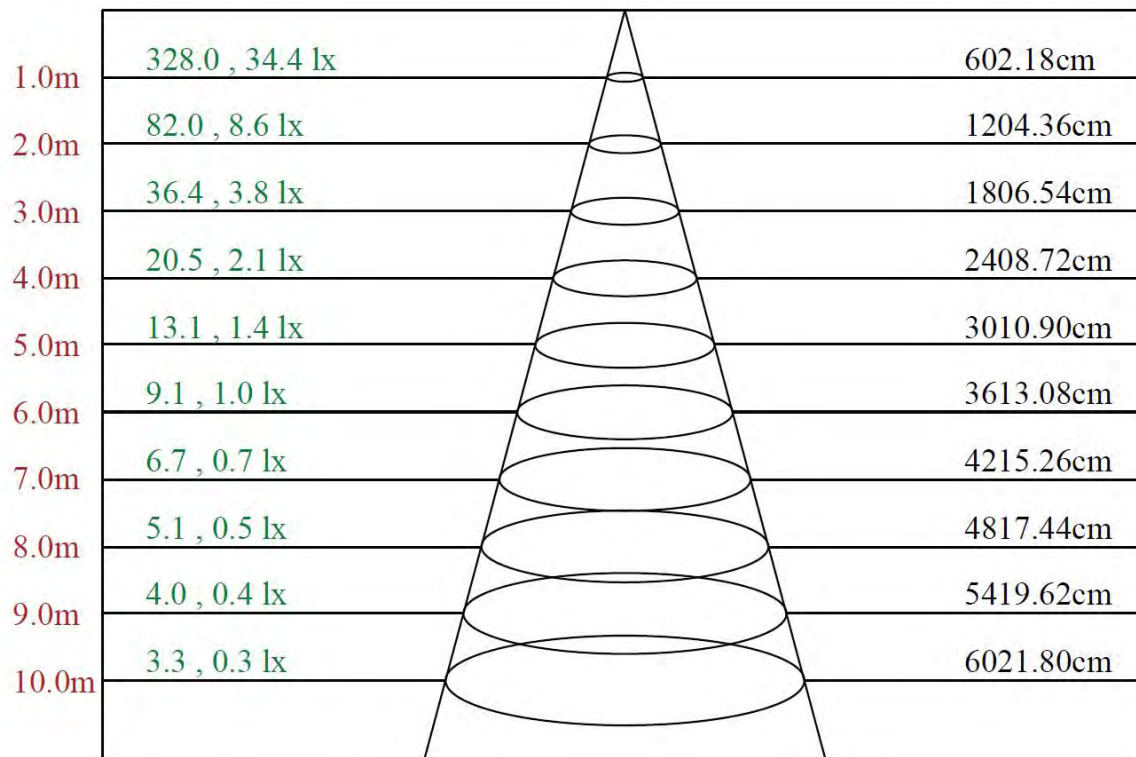
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C225 plane 143.25

**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	320.88	304.78	300.89	294.57	288.50	282.91	274.64	267.35	259.58
22.5	320.88	313.29	309.16	302.84	296.76	286.80	277.08	266.62	255.69
45.0	320.88	329.09	324.23	316.94	307.46	296.28	282.67	267.11	251.56
67.5	320.88	329.09	323.01	314.02	301.38	286.80	269.05	249.37	228.22
90.0	320.88	325.20	320.58	313.05	300.41	287.53	269.78	250.10	230.65
112.5	320.88	326.41	321.80	316.45	307.70	295.30	280.96	262.49	243.78
135.0	320.88	327.63	325.20	320.82	314.75	305.27	294.57	281.45	266.87
157.5	320.88	314.99	313.53	311.10	307.70	302.60	294.57	287.04	278.05
180.0	320.88	305.51	308.19	305.03	301.14	297.25	292.87	285.34	278.29
202.5	320.88	313.05	315.23	314.50	309.16	304.78	298.71	289.71	280.23
225.0	320.88	331.76	328.36	323.01	315.72	305.51	290.20	276.10	262.01
247.5	320.88	331.03	327.14	319.85	308.91	295.30	279.51	261.28	241.59
270.0	320.88	323.01	315.23	303.81	291.90	273.67	257.15	236.00	213.88
292.5	320.88	323.74	317.91	308.19	294.57	278.53	261.76	242.81	221.90
315.0	320.88	324.71	319.61	312.32	302.35	290.44	278.53	265.41	249.85
337.5	320.88	310.86	307.70	303.81	297.49	289.23	280.23	269.78	258.60
360.0	320.88	304.78	300.89	294.57	288.50	282.91	274.64	267.35	259.58
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	247.67	238.19	230.41	220.69	209.26	198.33	187.63	176.45	166.25
22.5	243.29	232.11	222.15	211.94	200.27	189.33	178.40	168.19	158.71
45.0	234.78	218.50	202.46	187.88	173.05	158.71	145.34	133.68	123.71
67.5	206.83	184.96	163.09	141.94	122.01	102.57	85.07	70.48	60.03
90.0	207.56	183.50	159.20	133.19	108.40	83.12	59.30	35.97	15.80
112.5	222.88	201.00	180.83	160.66	140.24	119.34	101.59	85.55	74.13
135.0	252.77	237.22	221.66	206.59	192.49	180.59	166.97	154.82	143.40
157.5	268.57	258.36	247.67	236.73	227.25	215.34	204.16	193.71	182.04
180.0	270.27	260.79	252.77	242.81	232.84	223.85	212.91	203.43	192.01
202.5	270.76	262.01	251.07	240.13	228.22	217.29	205.38	195.17	183.50
225.0	249.61	235.03	220.93	205.86	191.52	177.43	165.27	152.63	141.45
247.5	221.66	200.03	177.91	155.55	134.41	115.21	98.68	84.10	71.94
270.0	189.82	164.79	138.78	111.80	88.47	63.19	39.86	18.72	5.59
292.5	201.49	180.34	156.28	137.32	119.34	101.84	87.25	73.64	63.19
315.0	232.60	216.31	201.97	186.42	172.08	158.22	145.83	134.16	125.66
337.5	247.67	235.03	224.58	215.58	203.92	192.01	181.31	173.05	163.09
360.0	247.67	238.19	230.41	220.69	209.26	198.33	187.63	176.45	166.25
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	156.52	147.04	137.57	129.06	121.04	113.02	101.84	86.77	79.48
22.5	149.48	140.00	129.55	120.55	111.80	104.51	89.20	79.96	74.13
45.0	114.72	105.48	97.95	90.17	84.58	79.23	74.13	63.44	56.14
67.5	52.98	46.42	42.29	40.10	37.43	36.94	37.19	36.21	34.27
90.0	3.65	1.70	3.40	5.83	8.26	10.94	13.61	15.80	18.23
112.5	63.92	56.87	52.26	48.37	44.72	42.29	41.32	40.35	38.89
135.0	132.95	122.50	114.96	107.18	99.89	88.96	80.21	71.70	67.08
157.5	171.35	161.14	152.15	143.40	133.68	124.20	113.75	95.52	89.69
180.0	180.83	170.86	160.66	150.45	140.24	130.27	119.82	103.54	95.28
202.5	172.08	162.84	152.15	142.91	133.19	123.71	113.99	97.46	90.17
225.0	130.52	121.77	113.75	105.97	99.65	91.39	79.72	71.70	68.54
247.5	61.73	54.93	50.55	47.39	45.69	44.96	45.21	40.10	38.40
270.0	2.43	3.89	6.08	8.26	11.18	13.61	16.53	19.20	21.39
292.5	54.93	48.37	44.24	41.56	38.89	34.51	32.81	34.27	35.49
315.0	115.21	105.97	98.43	91.39	84.58	68.05	65.14	59.30	55.90
337.5	153.12	141.70	131.98	122.98	114.48	106.46	89.69	83.85	77.78
360.0	156.52	147.04	137.57	129.06	121.04	113.02	101.84	86.77	79.48



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	71.21	64.17	60.03	55.17	52.74	52.01	50.80	50.80	32.33
22.5	66.35	61.25	58.09	54.69	52.26	47.64	40.59	29.41	41.56
45.0	55.17	51.53	49.34	47.39	43.51	39.62	35.24	40.35	50.55
67.5	36.46	40.59	40.83	38.16	35.24	37.19	38.89	43.75	52.98
90.0	20.66	23.09	24.79	26.49	27.22	28.44	33.30	37.43	45.45
112.5	39.86	43.26	44.72	44.48	40.35	37.67	38.16	41.56	45.21
135.0	62.71	58.58	56.63	56.39	53.96	47.15	42.29	36.94	43.02
157.5	82.64	76.07	70.48	64.89	61.49	59.79	52.74	42.53	30.38
180.0	88.71	82.15	75.59	70.97	66.11	62.95	59.79	57.12	54.20
202.5	84.10	77.29	72.91	69.51	66.84	65.38	62.71	59.55	56.63
225.0	66.35	63.68	59.55	58.82	60.76	61.25	61.73	60.03	51.04
247.5	39.86	42.78	45.45	47.88	52.01	54.69	57.12	50.80	50.07
270.0	23.82	25.52	27.22	28.68	29.65	36.21	38.89	46.67	53.71
292.5	38.16	40.59	43.51	46.18	49.58	52.26	47.88	46.67	50.80
315.0	53.71	52.98	54.44	55.66	56.63	56.63	56.39	48.61	48.61
337.5	71.70	66.35	64.17	60.52	58.09	56.14	54.20	54.20	40.83
360.0	71.21	64.17	60.03	55.17	52.74	52.01	50.80	50.80	32.33
C/ γ (°)	180.0								
0.0	46.58								
22.5	46.58								
45.0	46.58								
67.5	46.58								
90.0	46.58								
112.5	46.58								
135.0	46.58								
157.5	46.58								
180.0	46.58								
202.5	46.58								
225.0	46.58								
247.5	46.58								
270.0	46.58								
292.5	46.58								
315.0	46.58								
337.5	46.58								
360.0	46.58								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	Power Factor	277	60	0.971
	THD	277	60	6.1%

5 Performance Assessment

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-30W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	1263.69	10.10	125.16
RP-T8C-G2-30W-4FT-3L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	1269.20 * ¹	10.10 * ²	125.66 * ³
RP-T8C-G2-30W-4FT-3L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	1274.72 * ¹	10.10 * ²	126.21 * ³
RP-T8C-G2-30W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	1285.74	10.10	127.26

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

$$1269.20 = (1285.74 - 1263.69) / 4 + 1263.69$$

$$1274.72 = (1285.74 - 1263.69) / 4 + 1269.20$$

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

$$10.10 = (10.10 + 10.10) / 2$$

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

$$125.66 = 1269.20 / 10.10$$

$$126.21 = 1274.72 / 10.10$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-35W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	1417.08	11.53	122.87
RP-T8C-G2-35W-4FT-3L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	1424.31 * ¹	11.54 * ²	123.48 * ³
RP-T8C-G2-35W-4FT-3L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	1431.53 * ¹	11.54 * ²	124.10 * ³
RP-T8C-G2-35W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	1445.98	11.54	125.27

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

$$1424.31 = (1445.98 - 1417.08) / 4 + 1417.08$$

$$1431.53 = (1445.98 - 1417.08) / 4 + 1424.31$$

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

$$11.54 = (11.53 + 11.54) / 2$$

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

$$123.48 = 1424.31 / 11.54$$

$$124.10 = 1431.53 / 11.54$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-40W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	1562.57	12.93	120.88
RP-T8C-G2-40W-4FT-3L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	1569.98 * ¹	12.94 * ²	121.37 * ³
RP-T8C-G2-40W-4FT-3L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	1577.39 * ¹	12.94 * ²	121.95 * ³
RP-T8C-G2-40W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	1592.21	12.94	123.05

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

$$1569.98 = (1592.21 - 1562.57) / 4 + 1562.57$$

$$1577.39 = (1592.21 - 1562.57) / 4 + 1569.98$$

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

$$12.94 = (12.93 + 12.94) / 2$$

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

$$121.37 = 1569.98 / 12.94$$

$$121.95 = 1577.39 / 12.94$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-45W-4FT-3L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	1678.35	14.12	118.89
RP-T8C-G2-45W-4FT-3L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	1687.24 * ¹	14.14 * ²	119.37 * ³
RP-T8C-G2-45W-4FT-3L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	1696.13 * ¹	14.14 * ²	120.00 * ³
RP-T8C-G2-45W-4FT-3L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	1713.91	14.15	121.10

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

$$1687.24 = (1713.91 - 1678.35) / 4 + 1678.35$$

$$1696.13 = (1713.91 - 1678.35) / 4 + 1687.24$$

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

$$14.14 = (14.12 + 14.15) / 2$$

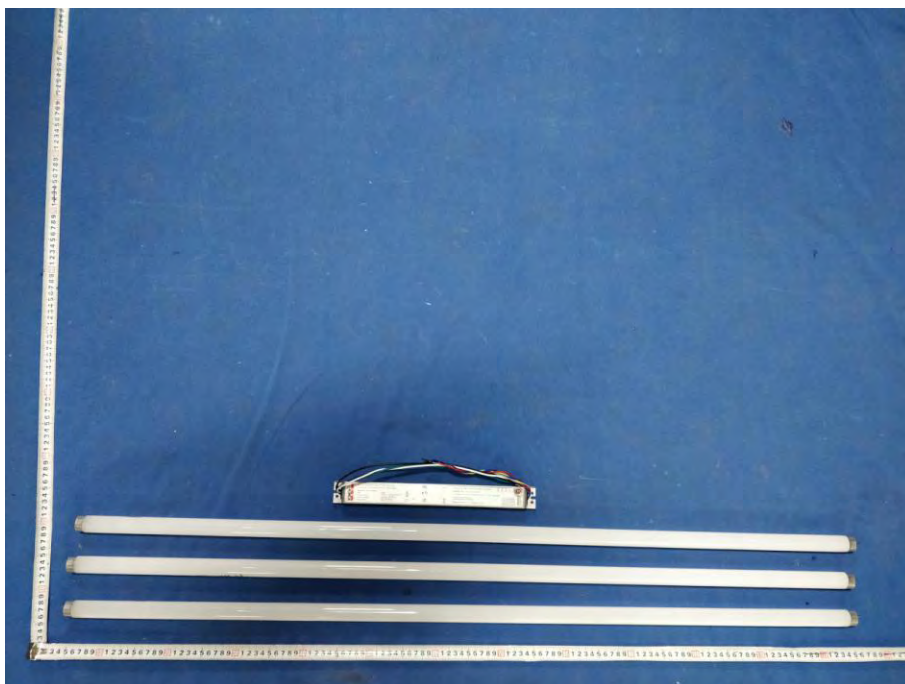
*3: This value is calculated and the calculation formula is as below:

$$119.37 = 1687.24 / 14.14$$

$$120.00 = 1696.13 / 14.14$$



Photo Document



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