



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

Product Model No.:

RP-T8C-G2-30W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-30W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-35W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-35W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-40W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-40W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850,
RP-T8C-G2-45W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830,
RP-T8C-G2-45W-4FT-2L-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 -- 2-Lamp External Driver (UL Type C) Lamps
Test Model Number	RP-T8C-G2-30W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-30W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-35W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-35W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-40W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-40W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850, RP-T8C-G2-45W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830, RP-T8C-G2-45W-4FT-2L-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-2L-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
120.06	60	0.127	15.16	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1923.78	126.94	2997

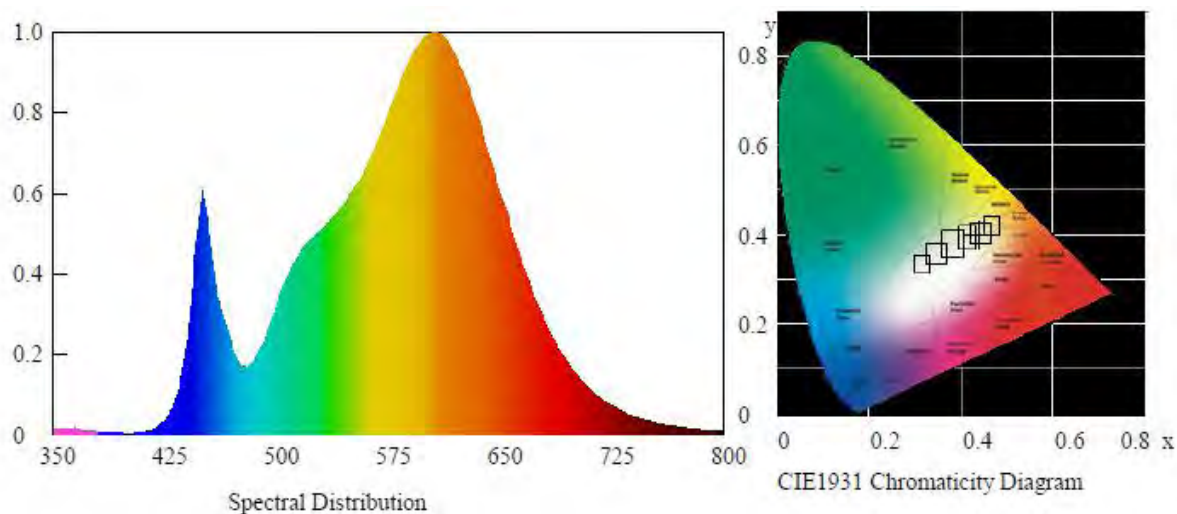
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00123	0.4353	0.4005	0.2511	0.5197

Color Rendering

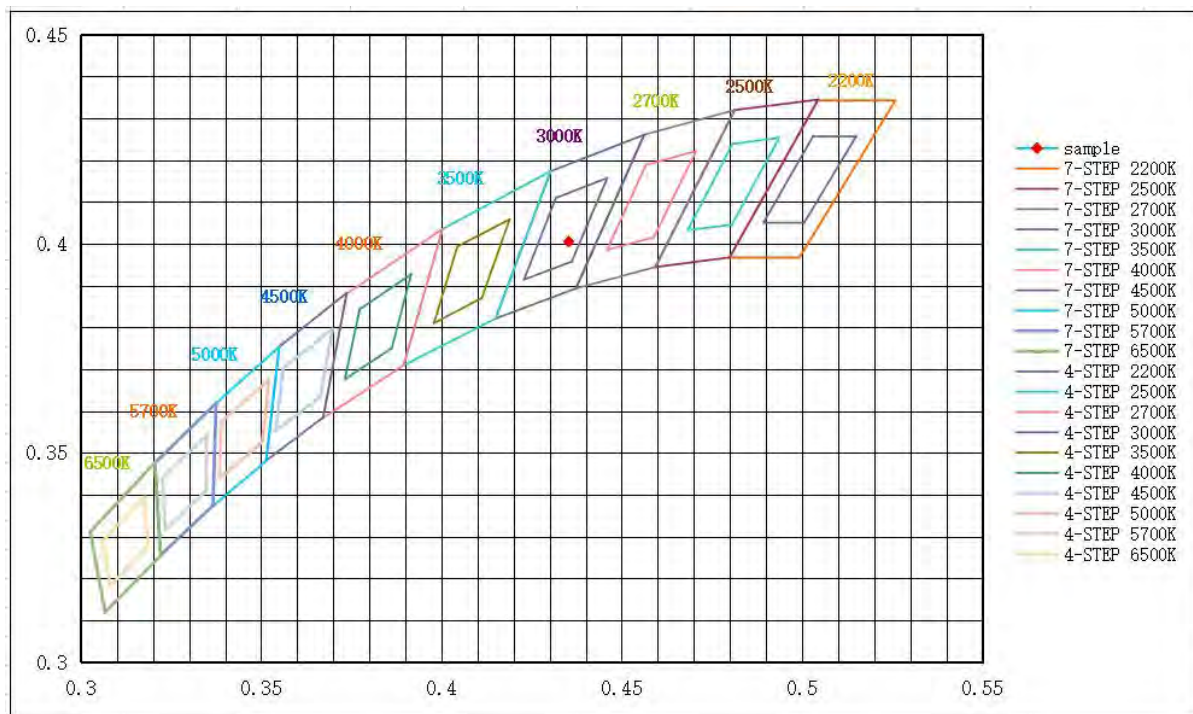
CRI	R9	Rf	Rg	Rcs,h1(%)
84.3	14	86	98	-10

Spectral Distribution





7/4 Step Quadrangle





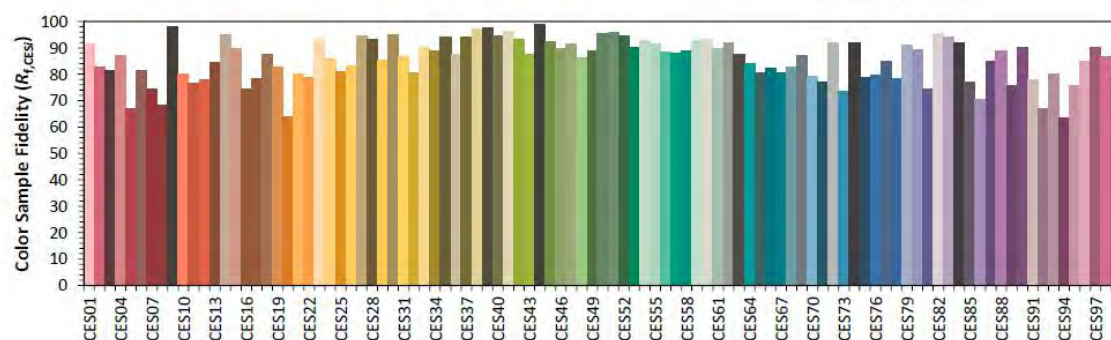
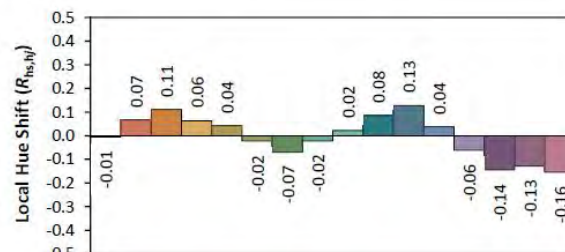
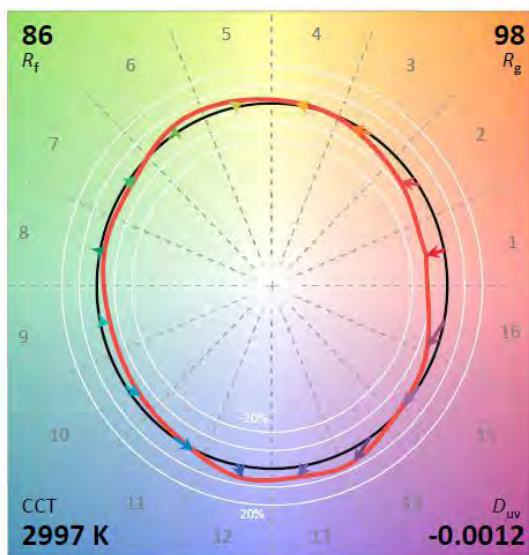
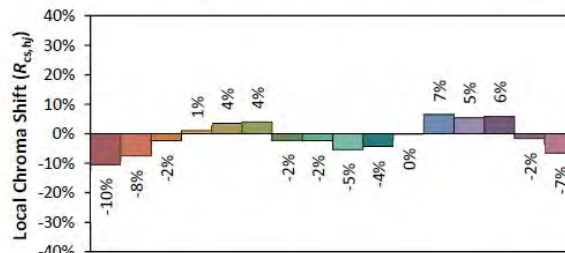
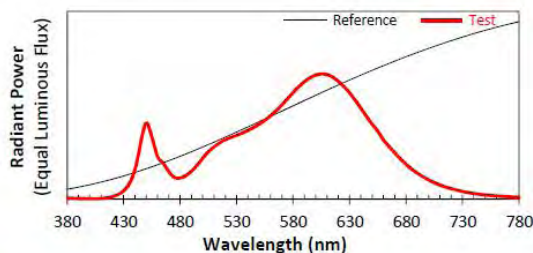
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-30W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4353
 y 0.4005
 u' 0.2511
 v' 0.5197

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-G2-30W-4FT-2L-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
120.05	60	0.127	15.18	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1964.89	129.48	4992

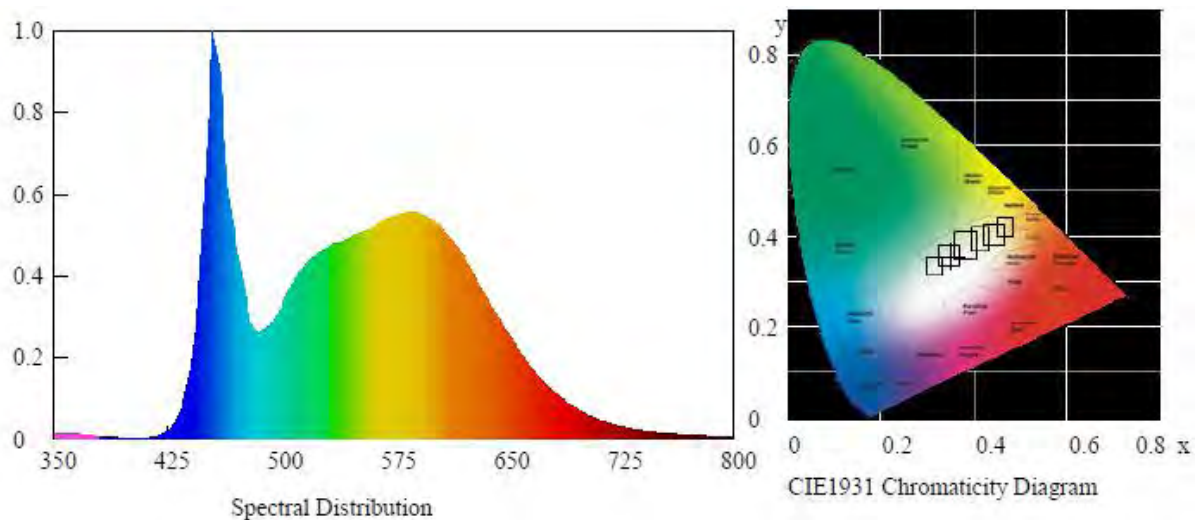
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00263	0.3459	0.3575	0.2097	0.4876

Color Rendering

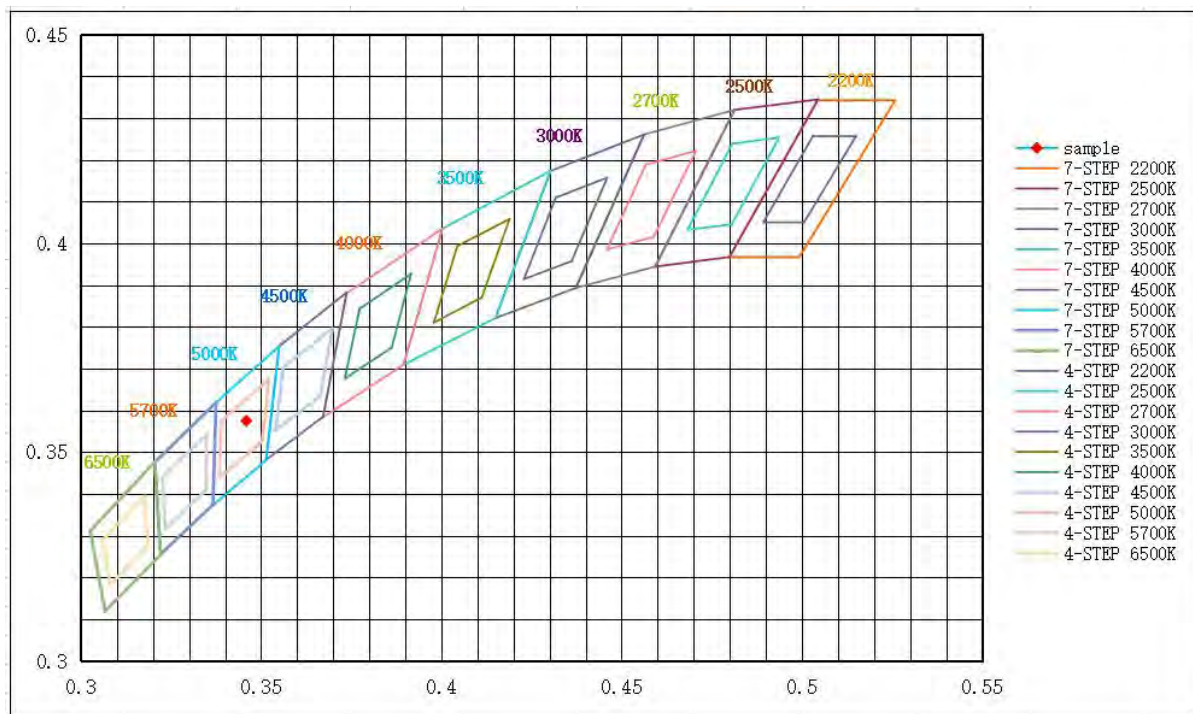
CRI	R9	Rf	Rg	Rcs,h1(%)
84.0	15	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





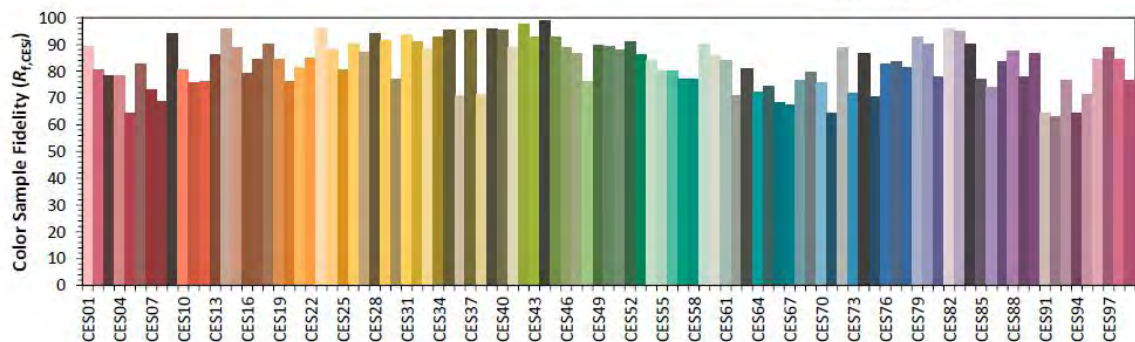
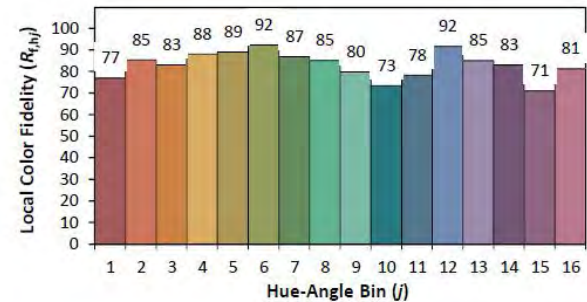
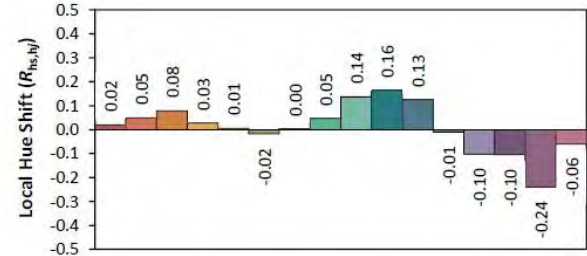
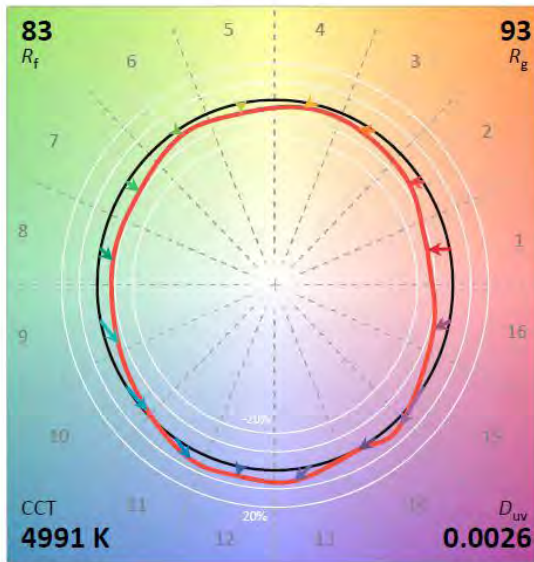
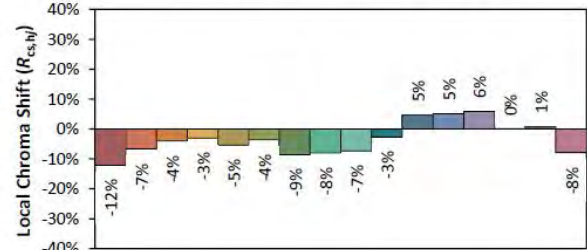
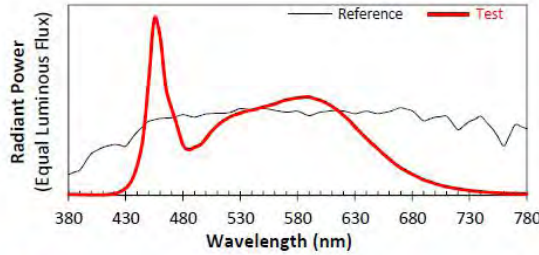
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-30W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850



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

x 0.3459
 y 0.3575
 u' 0.2097
 v' 0.4876

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-2L-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
120.03	60	0.145	17.30	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2165.71	125.22	2998

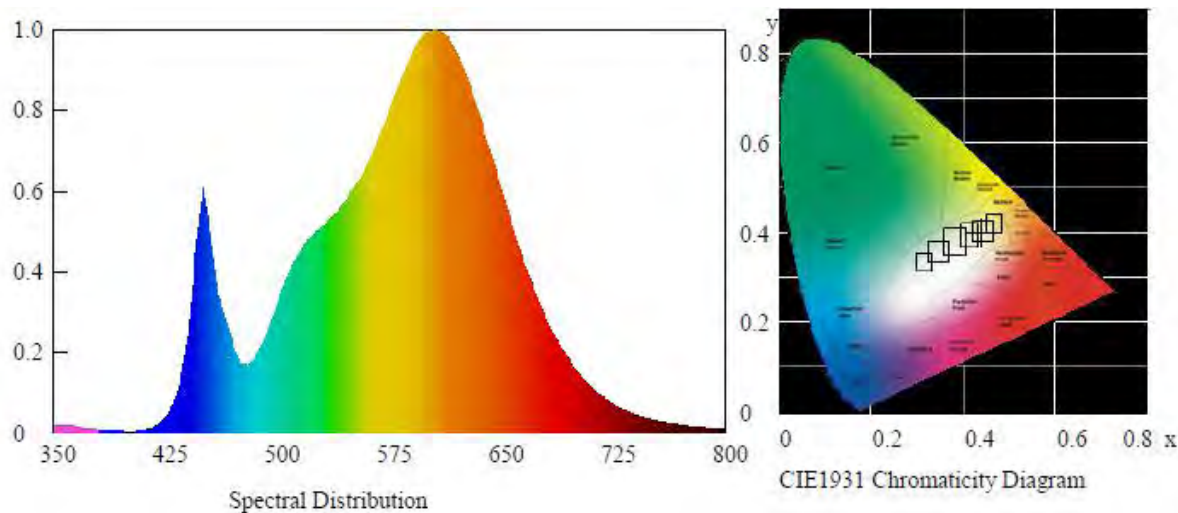
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00125	0.4353	0.4004	0.2511	0.5197

Color Rendering

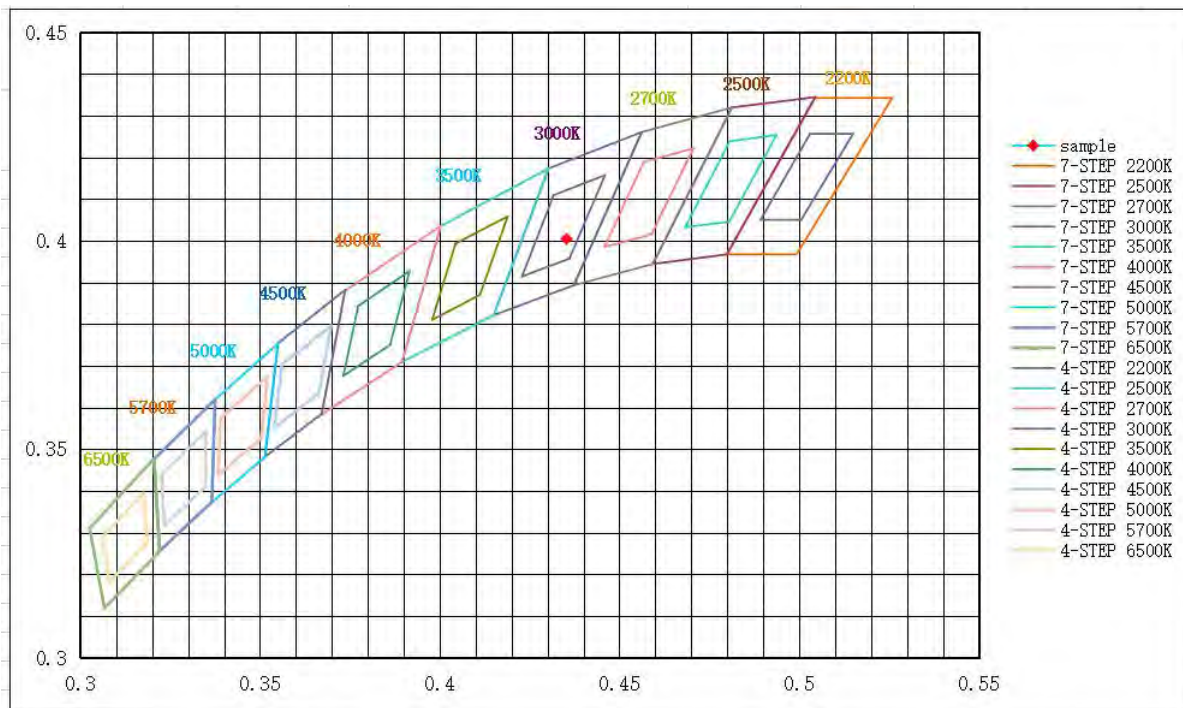
CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	14	85	98	-10

Spectral Distribution





7/4 Step Quadrangle





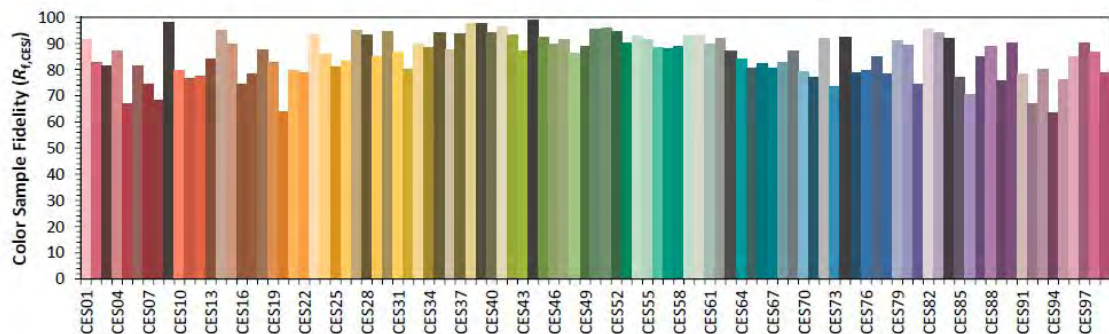
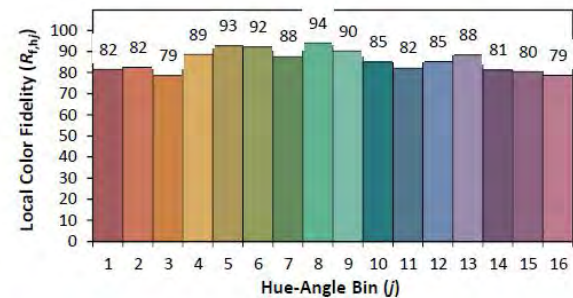
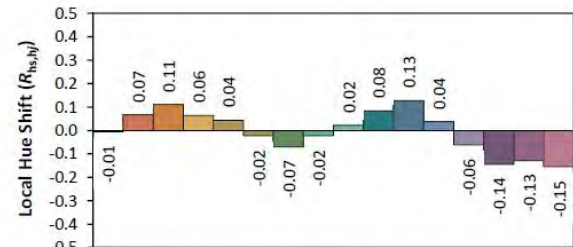
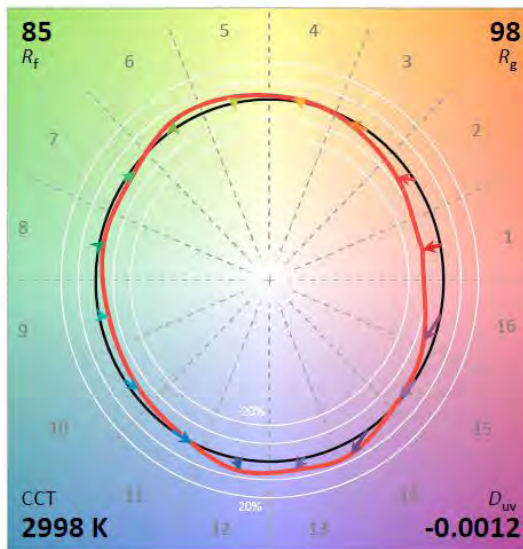
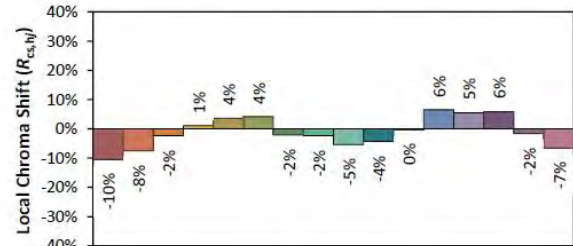
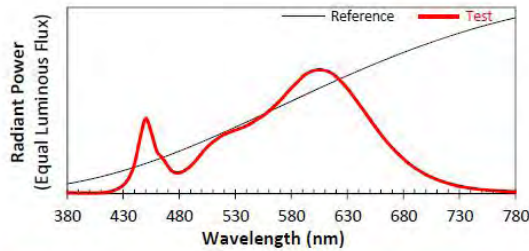
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-35W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830



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

x 0.4353
 y 0.4004
 u' 0.2511
 v' 0.5197

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-2L-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
120.02	60	0.145	17.31	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2203.64	127.27	4999

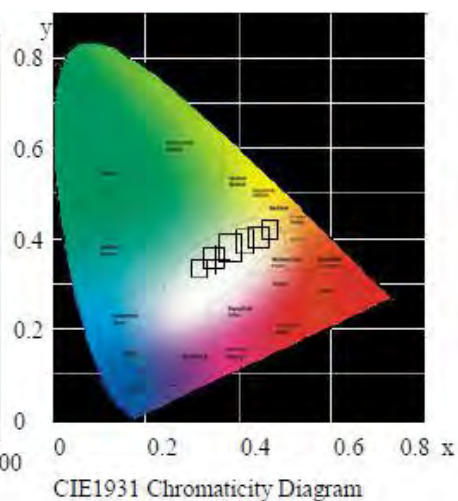
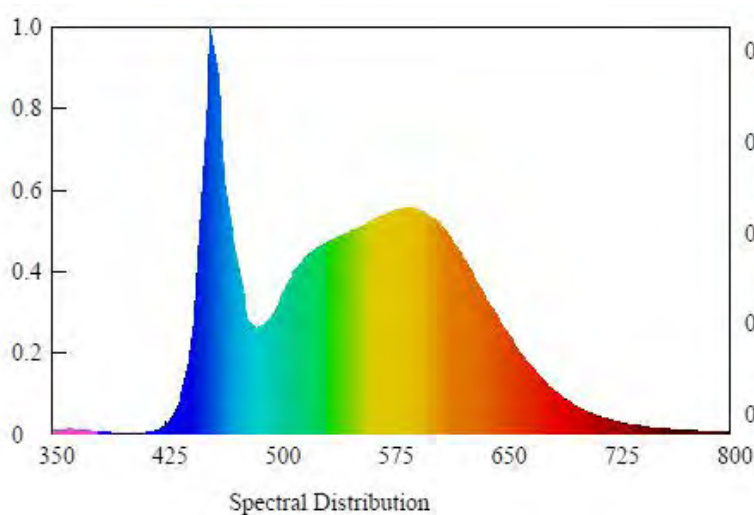
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00263	0.3457	0.3573	0.2096	0.4875

Color Rendering

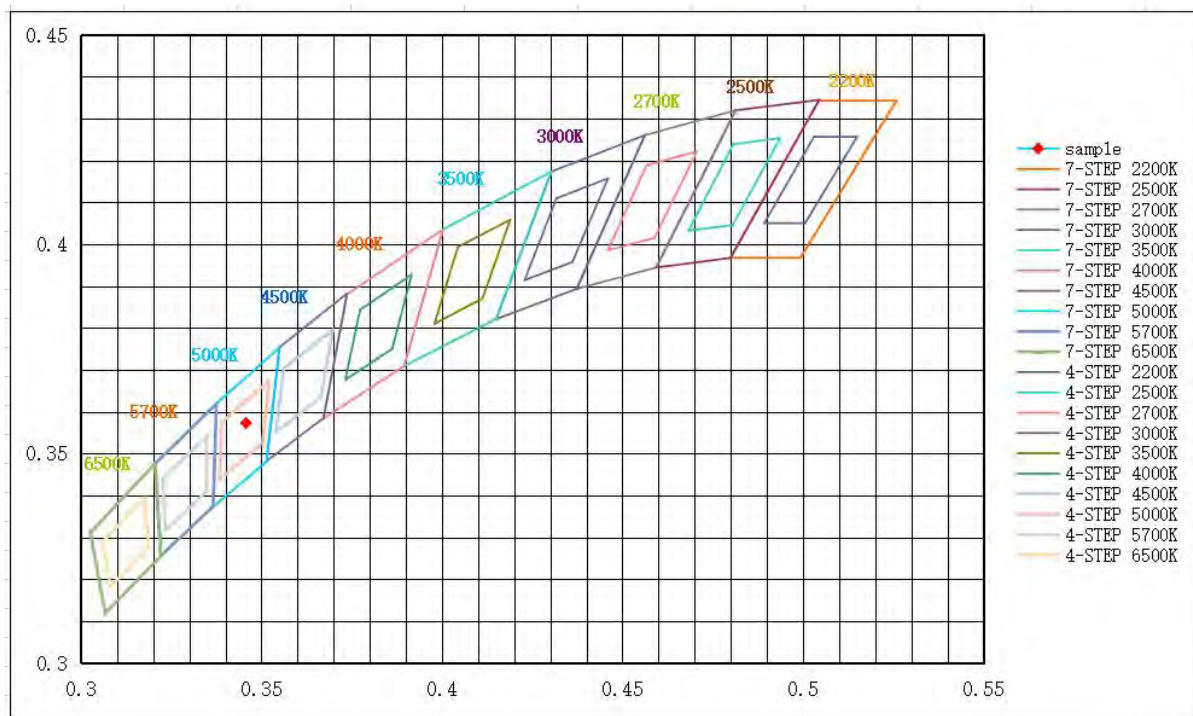
CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	14	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





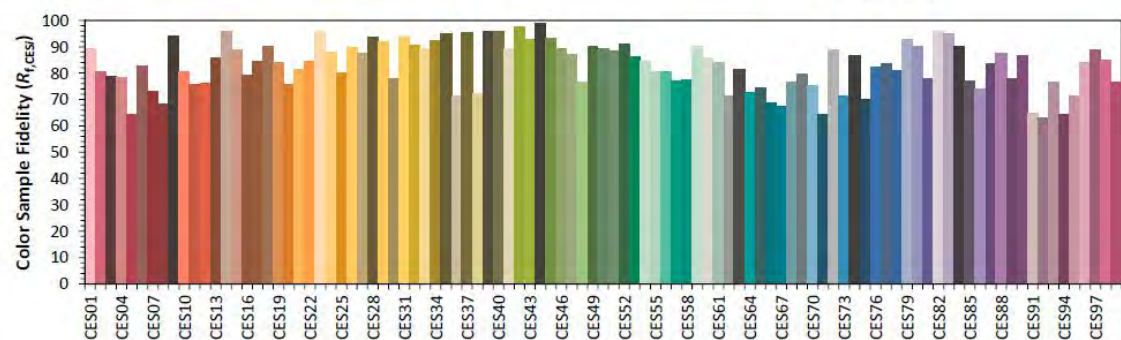
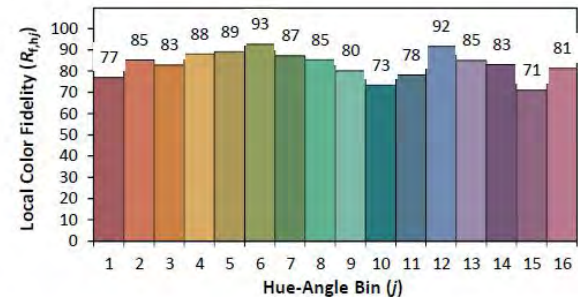
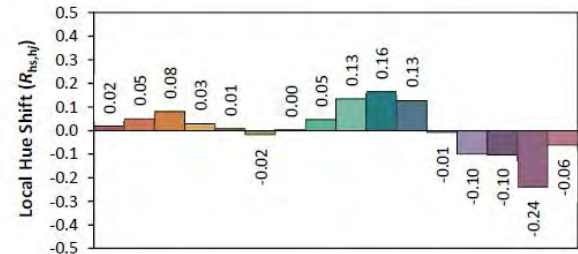
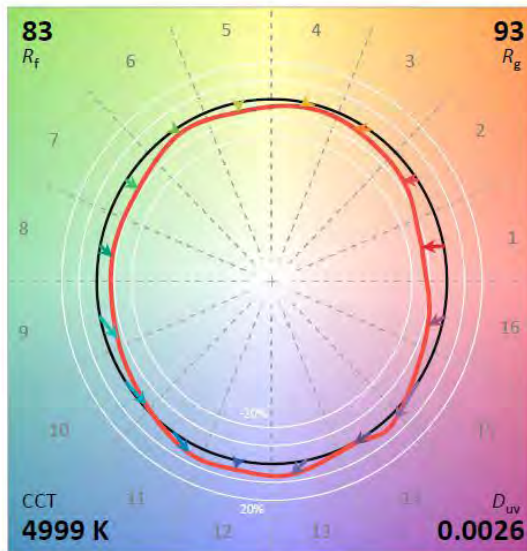
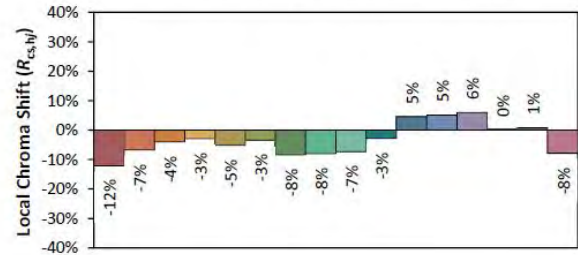
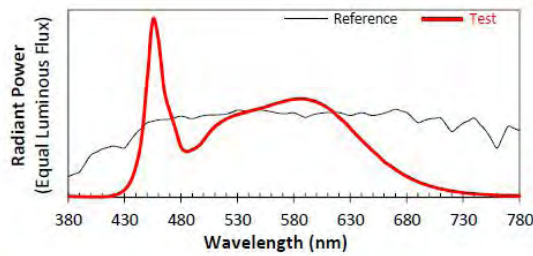
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-35W-4FT-2L-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.

**3.1.5 Model Number: RP-T8C-G2-40W-4FT-2L-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
120.00	60	0.162	19.40	0.996

Photometric data

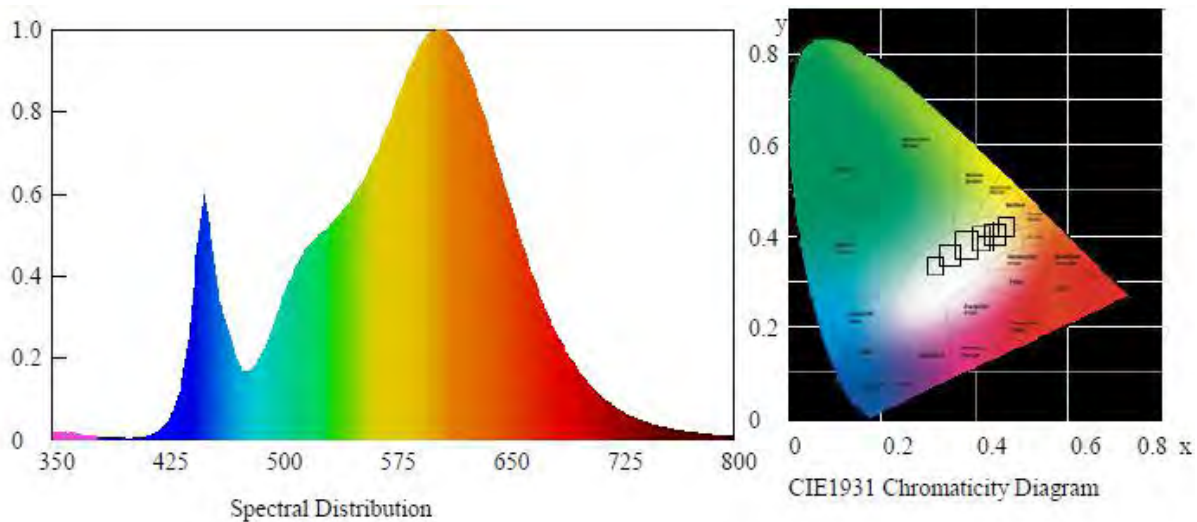
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2392.76	123.34	2998

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.0011	0.4355	0.4008	0.2510	0.5199

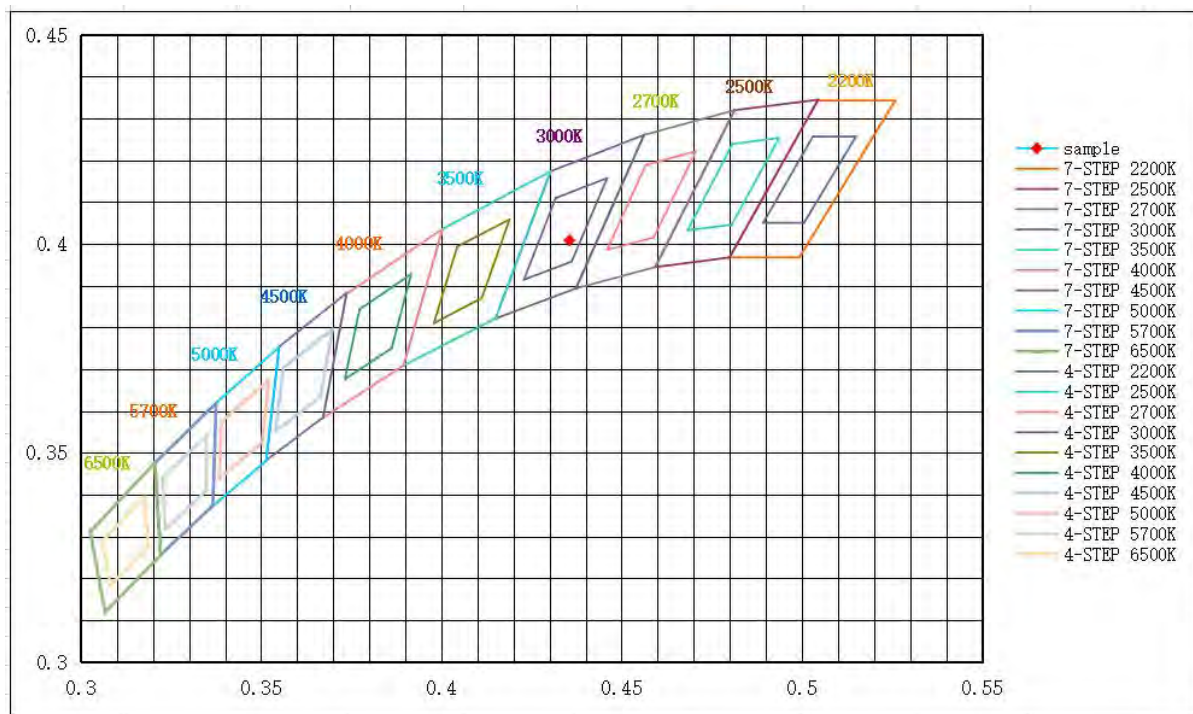
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.1	13	85	98	-10

Spectral Distribution



7/4 Step Quadrangle





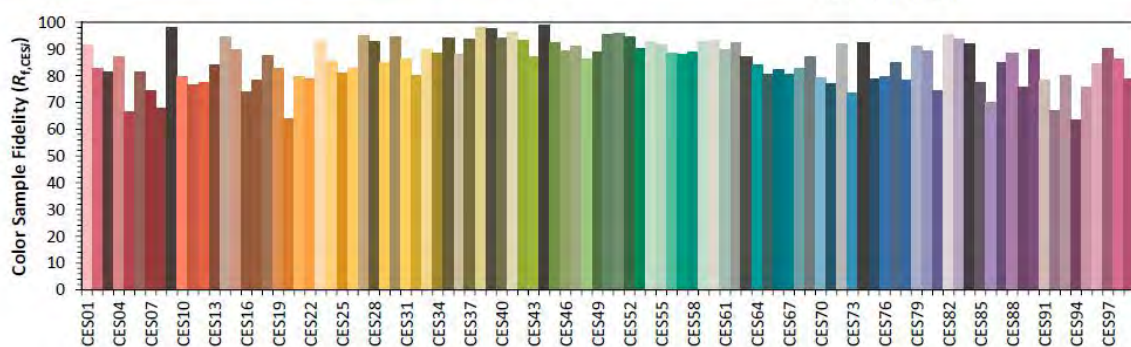
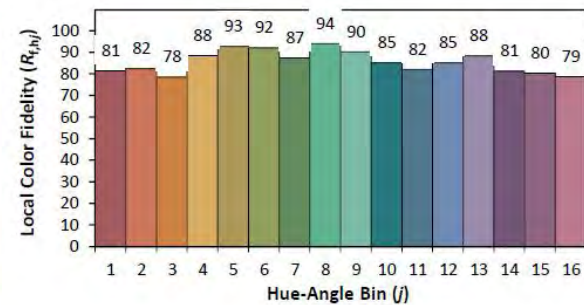
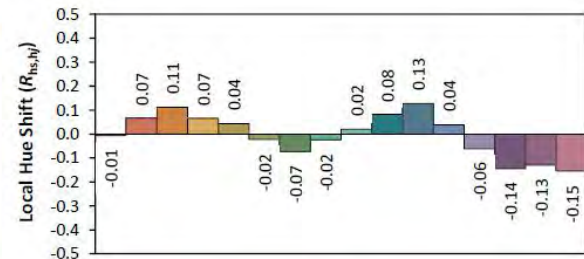
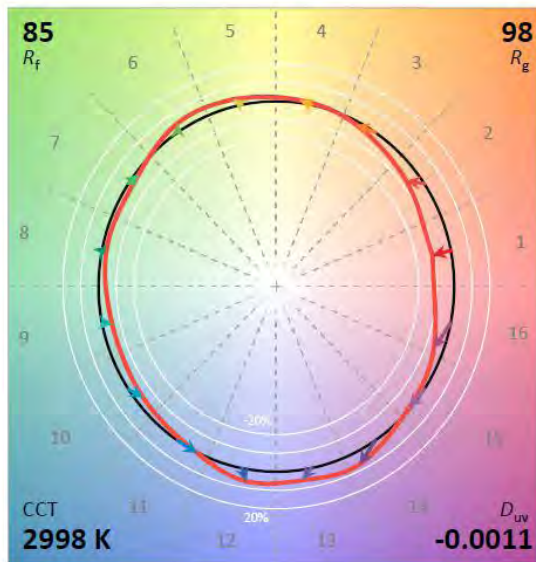
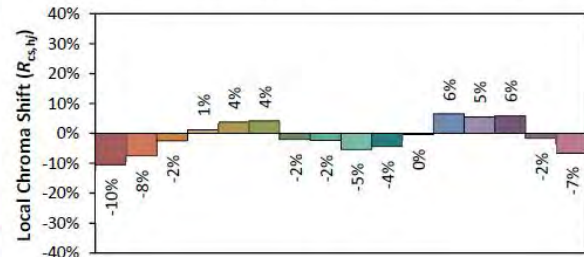
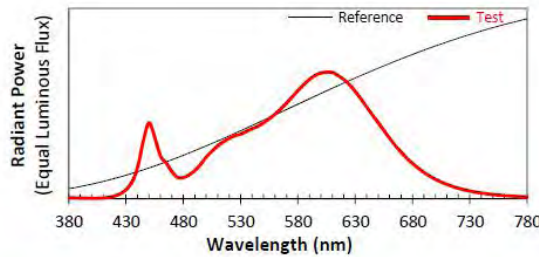
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-40W-4FT-2L-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 0.4008
 u' 0.2510
 v' 0.5199

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-2L-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
120.00	60	0.162	19.41	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2436.13	125.51	4986

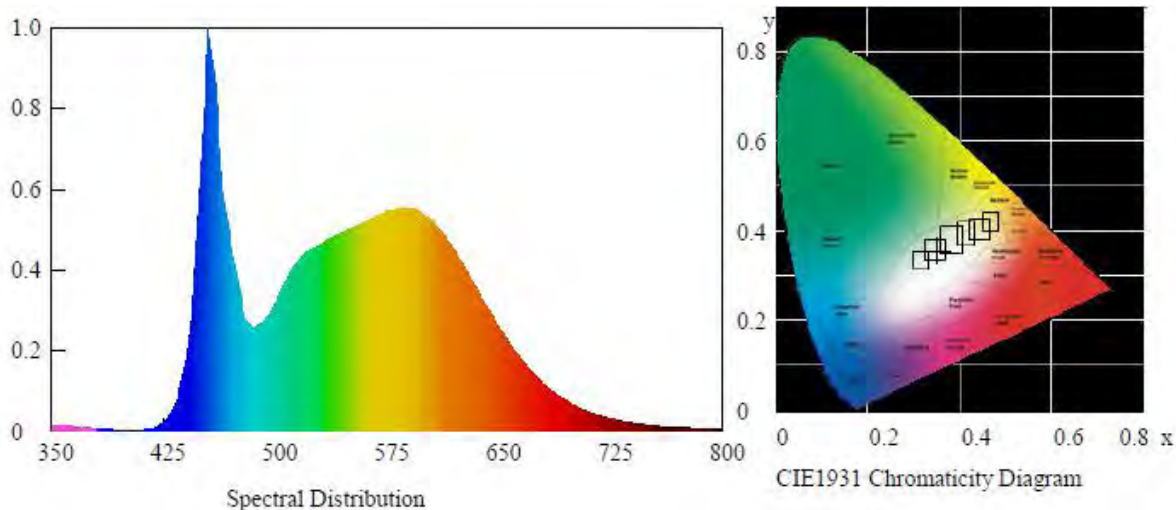
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00269	0.3461	0.3578	0.2097	0.4878

Color Rendering

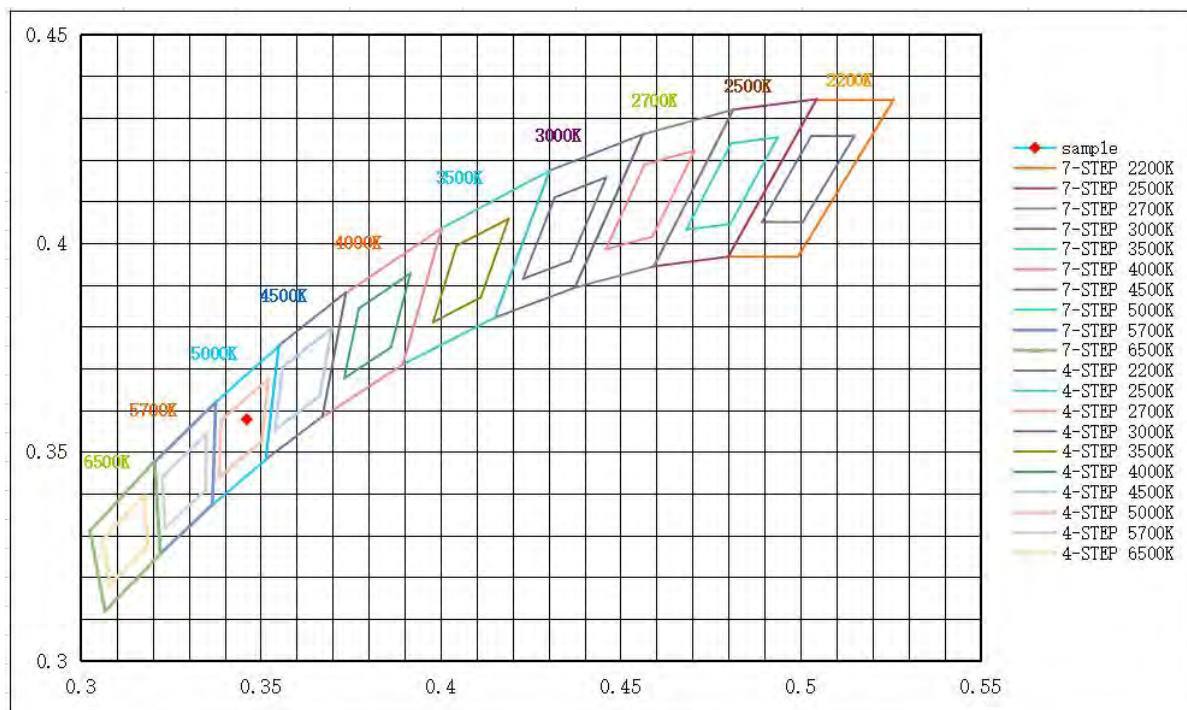
CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	14	83	93	-12

Spectral Distribution





7/4 Step Quadrangle





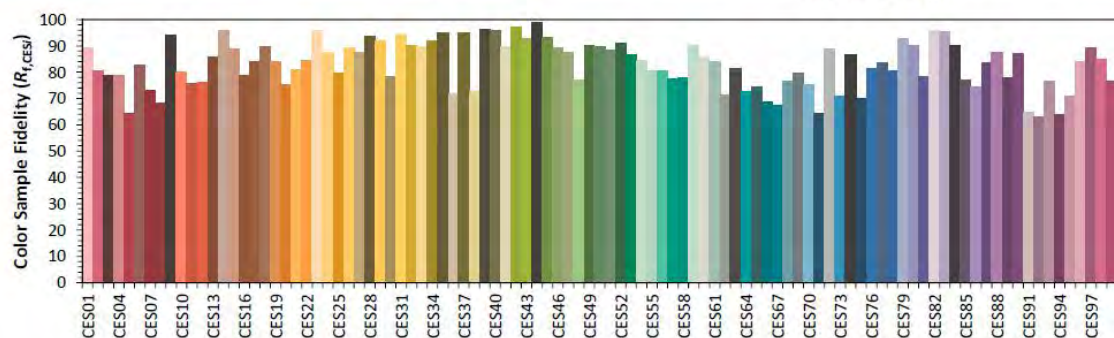
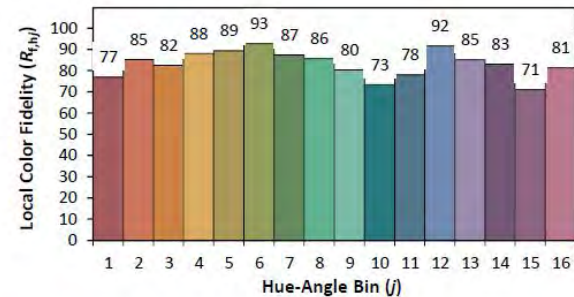
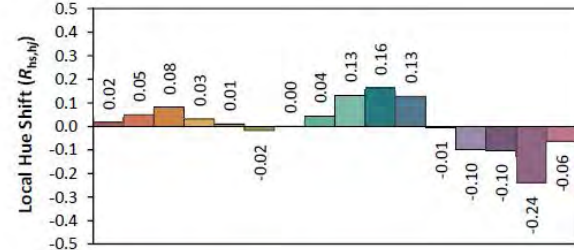
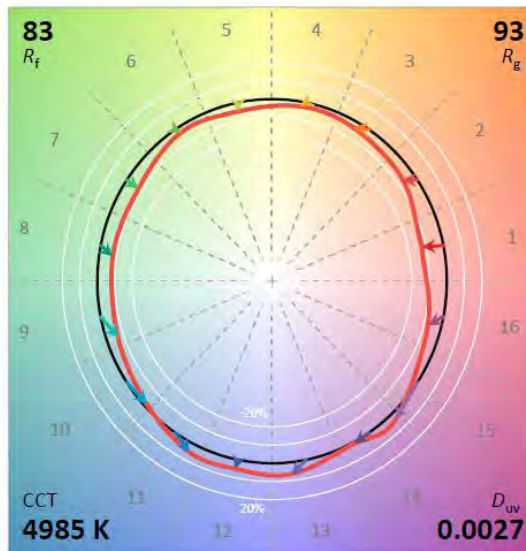
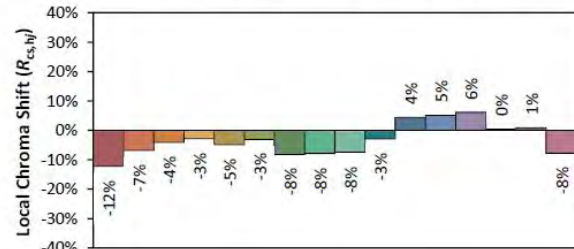
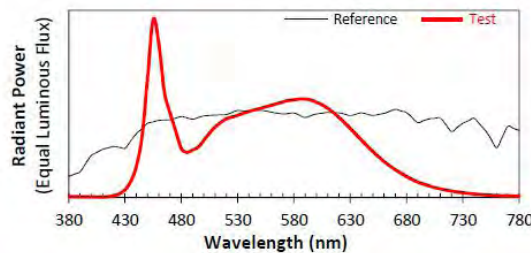
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-40W-4FT-2L-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 14

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-2L-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
119.97	60	0.179	21.36	0.996

Photometric data

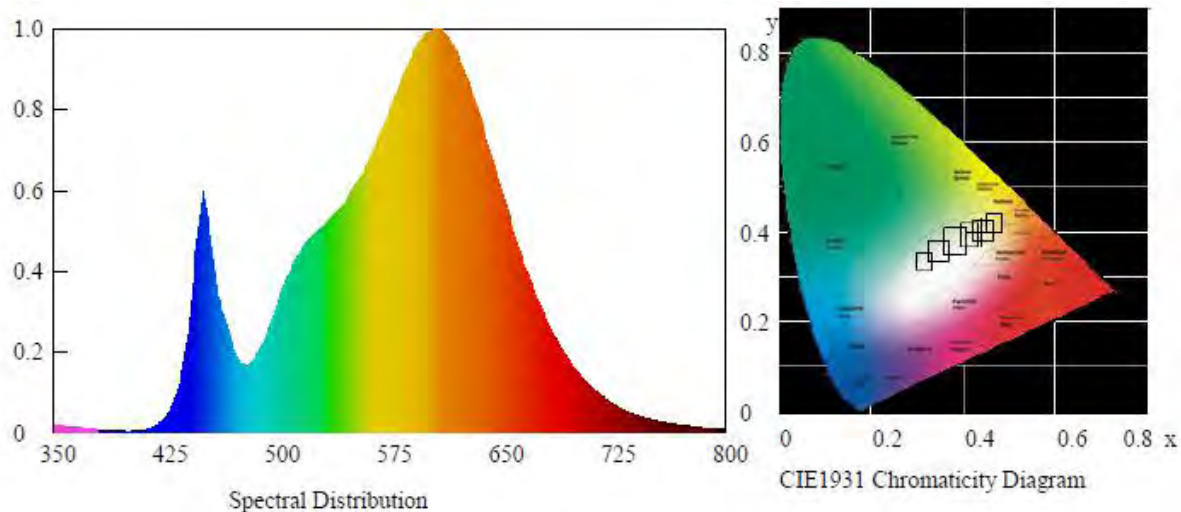
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2575.92	120.62	2997

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00121	0.4354	0.4005	0.2511	0.5198

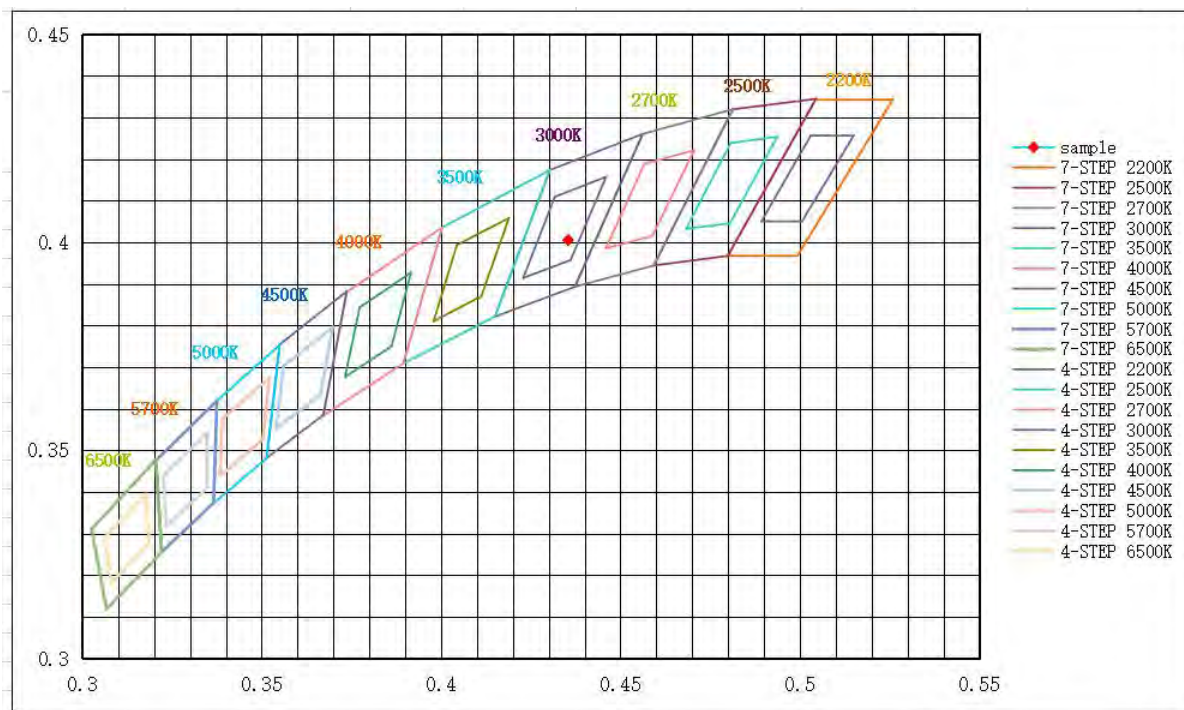
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





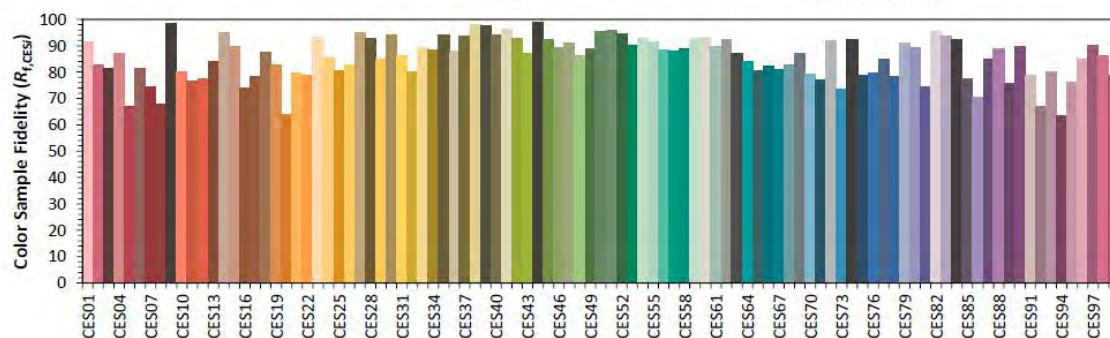
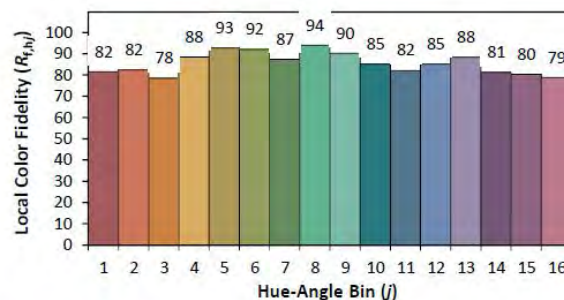
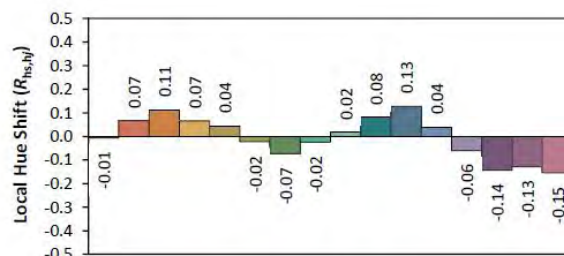
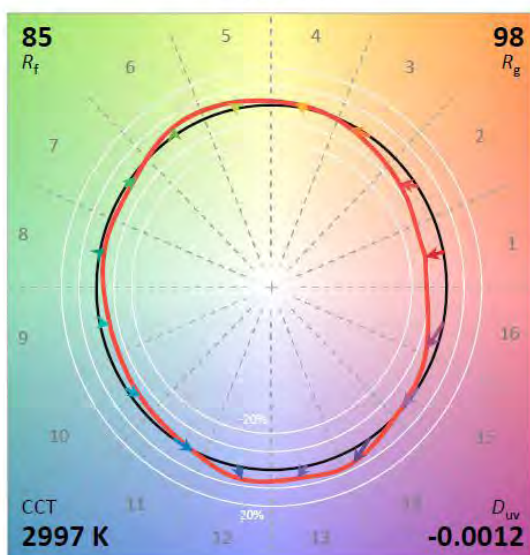
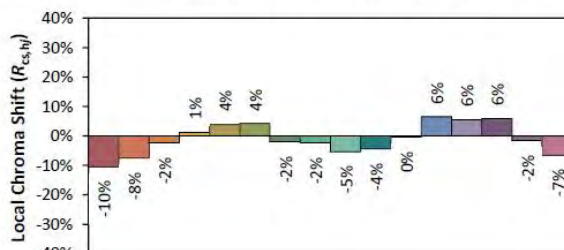
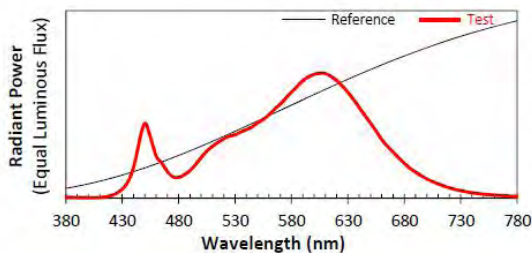
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-45W-4FT-2L-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 0.4005
 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-2L-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	0.177	21.20	0.996

Photometric data

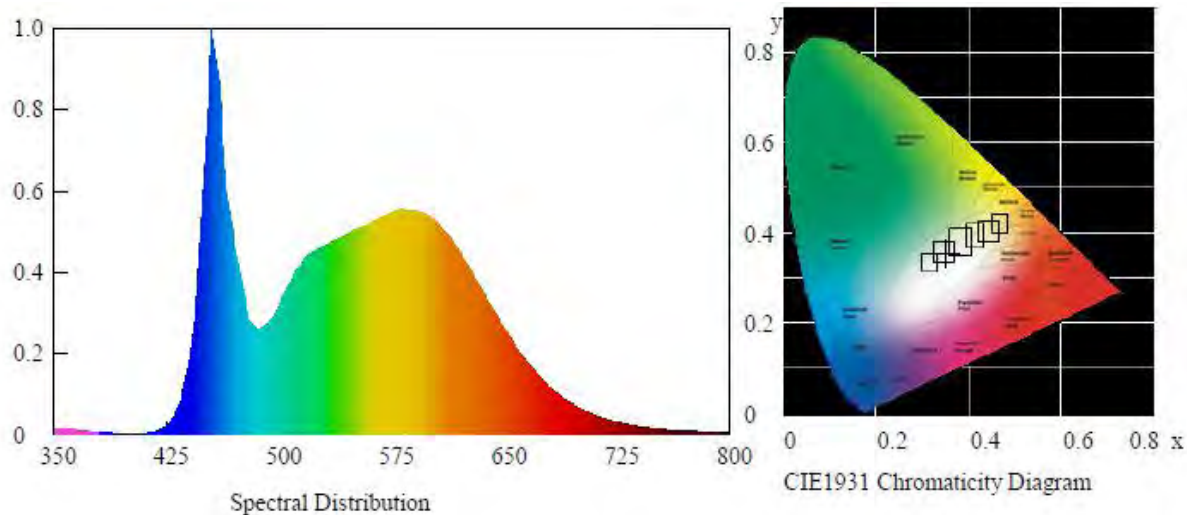
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2621.20	123.64	5000

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00259	0.3456	0.3572	0.2096	0.4875

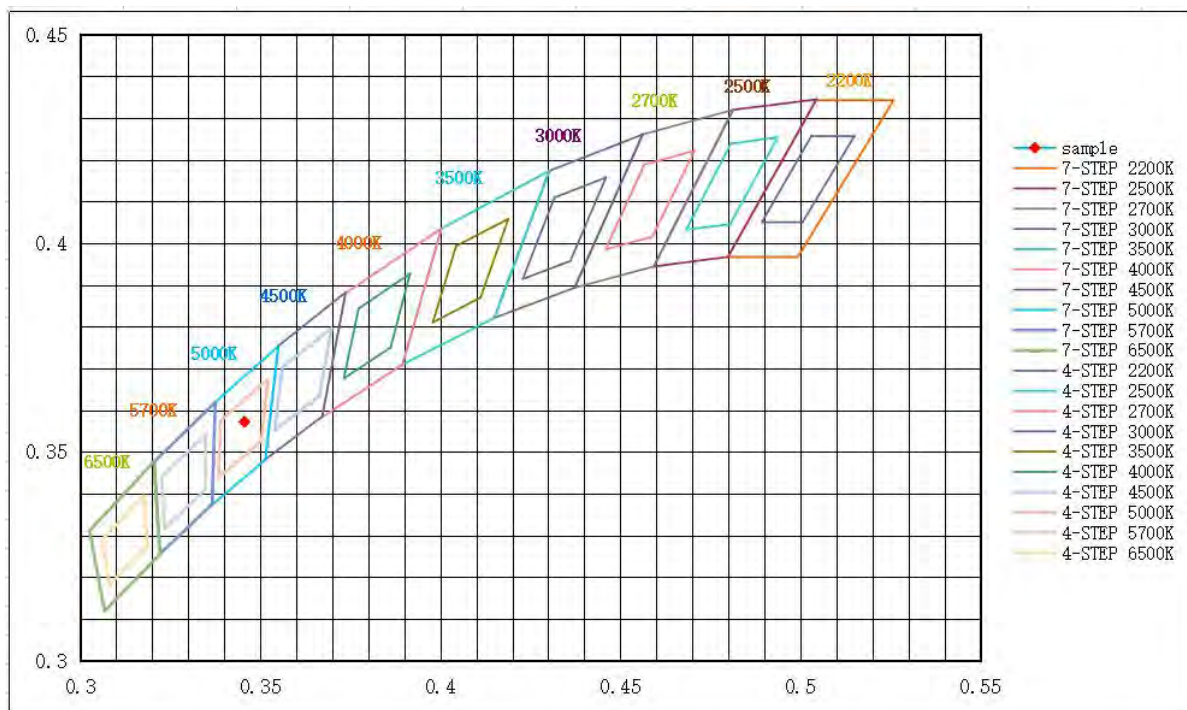
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





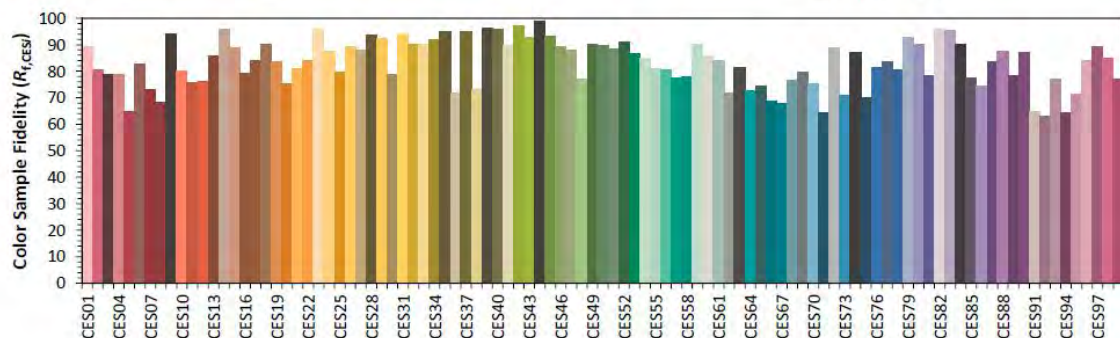
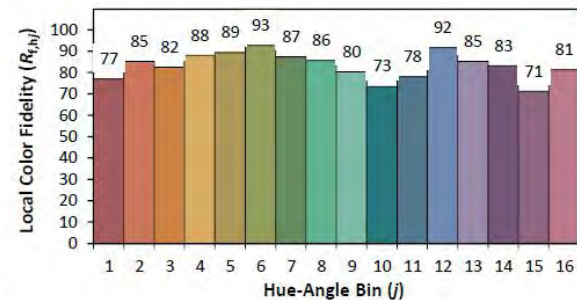
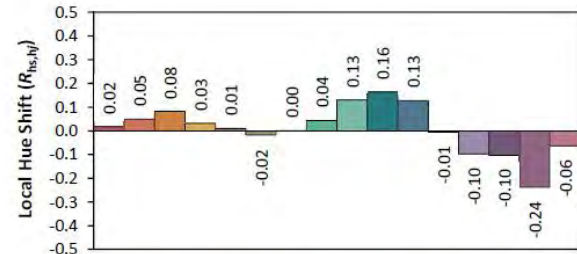
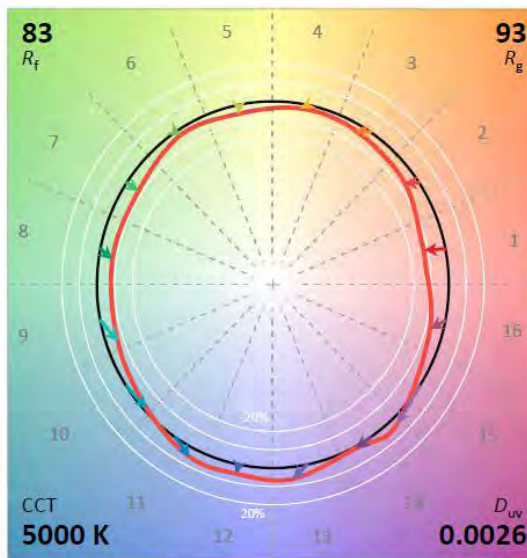
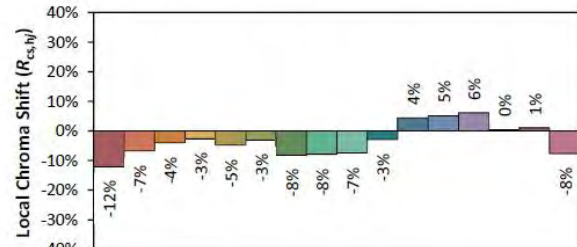
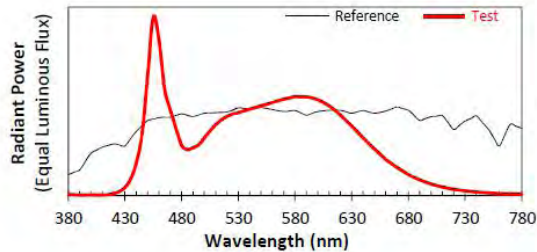
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210126012-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2020/1/27

Model: RP-T8C-G2-45W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CH0-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' 0.4875

CIE 13.3-1995
(CRI)

R_a 84
 R_9 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-2L-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
120.060	60	0.179	21.345	0.995

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Beam Angle(°)
2574.04	120.59	189.0

**Zonal Flux Diagram**

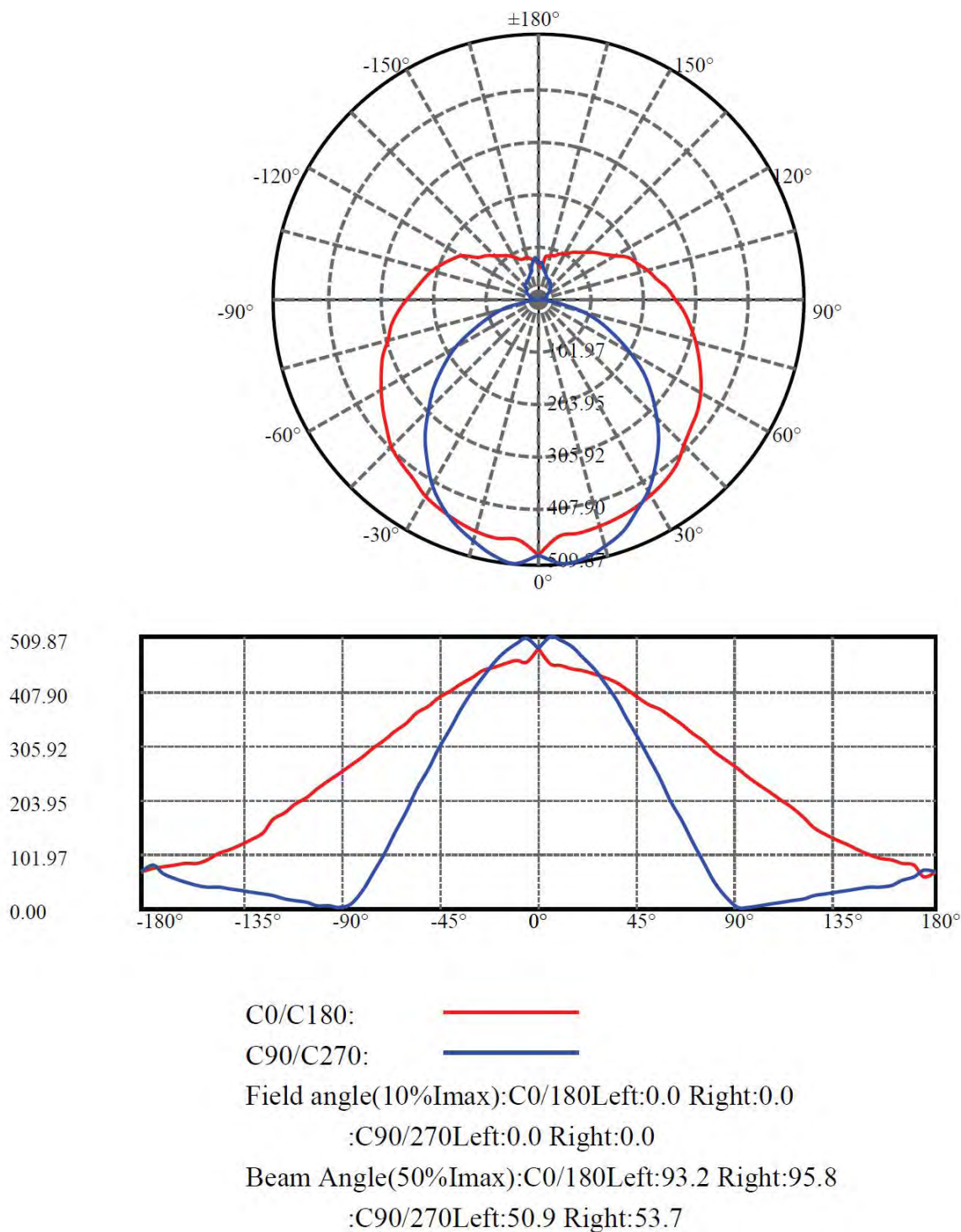
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	488.883	0.000	0	0.00%	0.00%
5.0	489.059	11.691	11.691	0.00%	0.45%
10.0	484.097	34.813	46.504	0.00%	1.81%
15.0	475.154	56.902	103.406	0.00%	4.02%
20.0	462.700	77.292	180.698	0.00%	7.02%
25.0	447.021	95.413	276.111	0.00%	10.73%
30.0	428.463	110.793	386.904	0.00%	15.03%
35.0	407.549	123.109	510.013	0.00%	19.81%
40.0	384.663	132.175	642.188	0.00%	24.95%
45.0	360.487	137.971	780.158	0.00%	30.31%
50.0	335.765	140.688	920.846	0.00%	35.77%
55.0	311.415	140.718	1061.564	0.00%	41.24%
60.0	286.730	138.259	1199.824	0.00%	46.61%
65.0	262.628	133.550	1333.374	0.00%	51.80%
70.0	239.171	127.059	1460.432	0.00%	56.74%
75.0	216.719	119.162	1579.595	0.00%	61.37%
80.0	196.102	110.459	1690.054	0.00%	65.66%
85.0	178.203	101.708	1791.762	0.00%	69.61%
90.0	163.516	93.565	1885.327	0.00%	73.24%
95.0	151.756	86.324	1971.651	0.00%	76.60%
100.0	141.275	79.624	2051.274	0.00%	79.69%
105.0	132.554	73.269	2124.543	0.00%	82.54%
110.0	124.132	67.094	2191.637	0.00%	85.14%
115.0	115.920	60.783	2252.42	0.00%	87.51%
120.0	105.277	53.773	2306.193	0.00%	89.59%
125.0	95.539	46.418	2352.611	0.00%	91.40%
130.0	90.925	40.544	2393.155	0.00%	92.97%
135.0	87.253	36.003	2429.158	0.00%	94.37%
140.0	83.842	31.680	2460.838	0.00%	95.60%
145.0	81.510	27.588	2488.426	0.00%	96.67%
150.0	78.570	23.573	2511.998	0.00%	97.59%
155.0	75.804	19.536	2531.535	0.00%	98.35%
160.0	73.968	15.708	2547.243	0.00%	98.96%
165.0	71.078	11.954	2559.197	0.00%	99.42%
170.0	68.361	8.271	2567.468	0.00%	99.74%
175.0	69.304	4.925	2572.393	0.00%	99.94%
180.0	68.356	1.646	2574.038	0.00%	100.00%



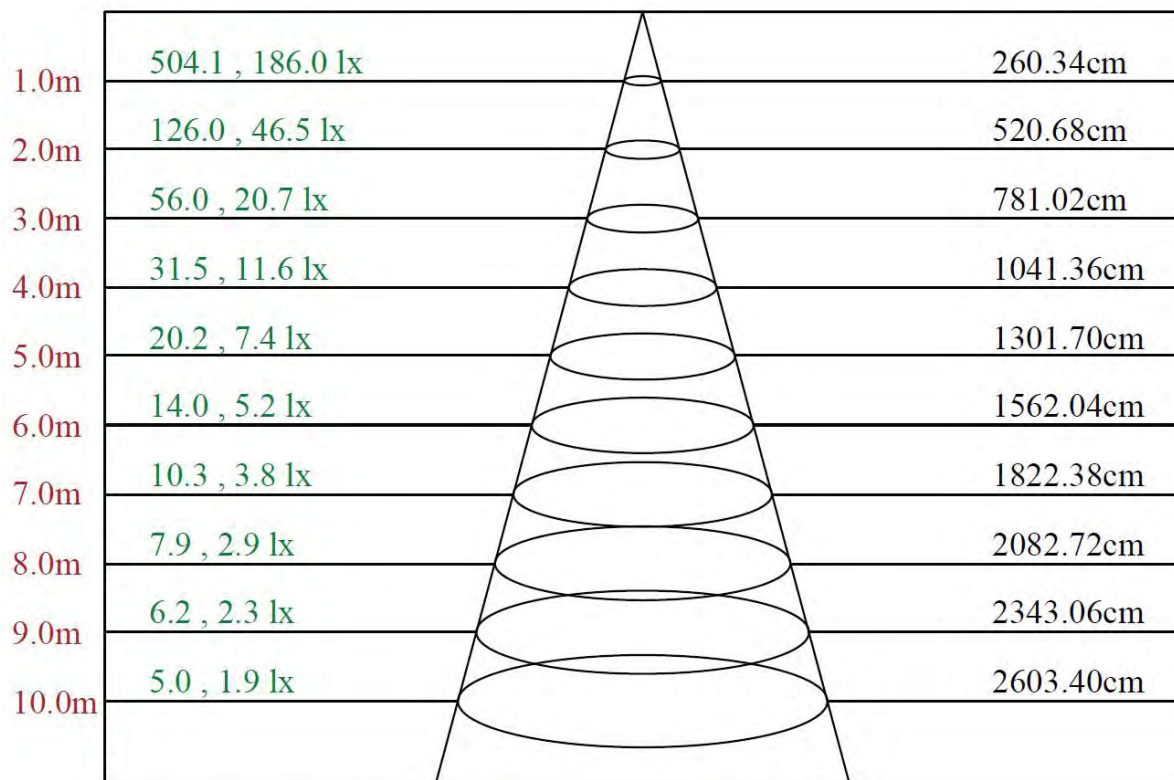
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C90 plane 104.94

**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	488.88	457.68	455.49	450.13	445.57	440.81	432.87	424.13	412.23
22.5	488.88	477.13	471.57	463.83	455.49	442.59	429.49	415.80	400.52
45.0	488.88	489.63	483.28	473.36	460.06	443.39	424.73	403.69	380.07
67.5	488.88	486.85	477.92	464.23	445.97	423.14	396.35	368.17	337.80
90.0	488.88	509.87	502.93	490.23	472.16	449.54	422.94	392.38	357.85
112.5	488.88	509.28	502.73	491.02	473.95	452.91	427.71	398.53	367.37
135.0	488.88	502.73	497.77	489.43	477.72	462.44	443.78	422.35	399.33
157.5	488.88	480.50	476.13	470.97	464.23	454.70	440.21	427.71	412.23
180.0	488.88	461.45	464.03	459.46	453.51	445.17	433.86	420.17	410.04
202.5	488.88	475.14	475.74	474.15	465.81	458.07	447.55	433.46	418.38
225.0	488.88	491.22	487.25	478.91	467.20	451.72	434.65	414.61	392.38
247.5	488.88	490.23	484.67	473.95	458.67	438.62	415.80	388.81	359.63
270.0	488.88	507.29	497.77	481.49	461.25	435.45	407.07	373.92	338.20
292.5	488.88	507.49	498.16	484.07	465.62	442.79	416.39	388.61	356.46
315.0	488.88	500.74	494.59	484.87	472.76	457.87	440.01	419.97	398.93
337.5	488.88	477.72	475.54	472.36	463.23	453.11	442.00	428.50	413.22
360.0	488.88	457.68	455.49	450.13	445.57	440.81	432.87	424.13	412.23
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	397.14	382.85	372.53	360.03	345.14	328.47	313.39	295.52	278.85
22.5	384.04	368.96	354.87	339.78	323.71	308.03	292.15	276.27	262.38
45.0	357.65	335.02	312.00	290.17	268.93	248.88	230.03	213.36	199.86
67.5	305.05	272.90	242.73	212.17	182.00	153.62	129.60	109.16	94.67
90.0	320.73	283.82	244.52	203.43	165.33	125.63	86.34	50.61	21.44
112.5	336.61	303.66	269.92	237.97	206.21	175.05	147.47	123.45	103.60
135.0	374.52	349.91	324.70	301.68	279.25	258.61	238.17	219.11	200.66
157.5	396.35	378.09	361.02	341.57	325.69	309.22	290.56	274.49	257.02
180.0	397.34	381.07	365.98	349.11	332.84	317.75	300.88	286.59	269.13
202.5	401.91	386.23	367.97	351.89	332.64	314.98	297.11	280.04	261.98
225.0	369.75	347.72	325.49	302.27	279.65	259.01	238.17	219.51	201.85
247.5	330.46	299.10	265.95	232.41	202.44	173.46	147.86	125.63	106.98
270.0	300.49	262.18	223.28	182.40	142.50	105.39	67.48	33.74	9.53
292.5	323.91	290.56	258.41	225.66	196.69	167.71	143.30	121.27	104.00
315.0	373.52	349.51	327.48	304.85	283.22	261.98	242.33	224.27	209.79
337.5	398.33	380.67	365.78	352.29	335.81	318.94	302.67	284.61	269.53
360.0	397.14	382.85	372.53	360.03	345.14	328.47	313.39	295.52	278.85
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	263.57	246.70	232.01	217.33	203.24	188.95	170.49	150.44	139.53
22.5	247.49	231.42	214.95	201.05	187.95	174.26	149.65	137.14	127.22
45.0	186.76	172.27	159.97	149.25	136.75	124.44	107.57	103.21	99.43
67.5	84.55	76.61	71.65	68.08	66.49	65.69	59.34	54.78	57.56
90.0	4.37	3.57	5.16	8.73	12.50	16.87	20.24	25.21	28.38
112.5	88.52	78.60	70.66	65.50	62.12	58.95	53.19	46.44	51.60
135.0	184.98	171.88	159.97	147.86	137.14	121.47	104.00	97.45	93.28
157.5	240.55	226.46	211.57	198.67	185.17	171.48	159.57	135.16	128.01
180.0	253.45	239.16	224.27	210.58	195.89	181.40	169.10	144.09	131.39
202.5	244.91	231.02	215.54	201.85	187.16	174.06	161.36	134.56	125.24
225.0	185.17	172.08	159.17	147.86	137.54	128.21	119.68	109.36	92.09
247.5	90.50	79.19	71.25	65.50	62.52	60.14	60.53	59.94	58.35
270.0	2.98	4.96	7.74	11.91	15.88	20.05	24.41	28.18	31.76
292.5	90.90	80.38	73.44	69.66	66.49	67.68	67.08	61.73	63.11
315.0	194.11	177.04	163.94	153.02	138.73	125.04	109.36	104.00	100.03
337.5	253.45	236.78	219.11	204.03	190.53	176.04	148.85	136.95	127.82
360.0	263.57	246.70	232.01	217.33	203.24	188.95	170.49	150.44	139.53



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	129.21	119.88	112.14	102.21	95.86	90.90	86.73	81.37	60.93
22.5	119.48	113.33	106.78	102.21	99.24	86.34	72.64	51.80	61.13
45.0	95.27	89.31	86.73	83.56	75.02	69.47	59.54	61.33	74.03
67.5	60.34	63.51	63.91	60.34	57.95	61.53	61.53	67.68	78.20
90.0	31.95	34.93	37.91	40.49	42.67	45.85	52.60	60.14	71.65
112.5	54.58	57.56	62.52	61.33	58.75	59.74	55.18	61.13	69.27
135.0	88.32	81.77	79.59	82.76	78.79	71.05	67.08	59.34	61.73
157.5	119.28	113.92	106.98	98.05	93.48	86.93	75.22	59.74	44.66
180.0	121.66	111.34	103.80	93.08	86.14	84.35	82.96	80.38	76.61
202.5	115.91	105.39	100.03	92.09	87.33	83.36	80.78	78.20	78.00
225.0	87.13	84.95	82.17	80.18	77.40	76.61	77.40	77.21	68.27
247.5	56.56	56.76	60.14	63.91	67.48	69.66	71.45	66.49	67.28
270.0	35.53	38.11	40.29	42.27	43.47	51.60	56.17	66.09	81.97
292.5	66.09	68.27	70.26	72.44	73.24	74.63	72.05	70.85	78.20
315.0	94.87	91.10	87.92	86.93	84.95	83.16	80.98	70.85	73.63
337.5	119.88	111.34	103.01	95.27	91.10	88.32	84.95	81.18	63.31
360.0	129.21	119.88	112.14	102.21	95.86	90.90	86.73	81.37	60.93
C/ γ (°)	180.0								
0.0	68.36								
22.5	68.36								
45.0	68.36								
67.5	68.36								
90.0	68.36								
112.5	68.36								
135.0	68.36								
157.5	68.36								
180.0	68.36								
202.5	68.36								
225.0	68.36								
247.5	68.36								
270.0	68.36								
292.5	68.36								
315.0	68.36								
337.5	68.36								
360.0	68.36								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-T8C-G2-45W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	Power Factor	277	60	0.972
	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-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	1923.78	15.16	126.94
RP-T8C-G2-30W-4FT-2L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	1934.06 * ¹	15.17 * ²	127.49 * ³
RP-T8C-G2-30W-4FT-2L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	1944.34 * ¹	15.17 * ²	128.17 * ³
RP-T8C-G2-30W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	1964.89	15.18	129.48

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

$$1934.06 = (1964.89 - 1923.78) / 4 + 1923.78$$

$$1944.34 = (1964.89 - 1923.78) / 4 + 1934.06$$

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

$$15.17 = (15.16 + 15.18) / 2$$

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

$$127.49 = 1934.06 / 15.17$$

$$128.17 = 1944.34 / 15.17$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-35W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	2165.71	17.30	125.22
RP-T8C-G2-35W-4FT-2L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	2175.19 * ¹	17.31 * ²	125.70 * ³
RP-T8C-G2-35W-4FT-2L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	2184.68 * ¹	17.31 * ²	126.25 * ³
RP-T8C-G2-35W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	2203.64	17.31	127.27

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

$$2175.19 = (2203.64 - 2165.71) / 4 + 2165.71$$

$$2184.68 = (2203.64 - 2165.71) / 4 + 2175.19$$

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

$$17.31 = (17.30 + 17.31) / 2$$

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

$$125.70 = 2175.19 / 17.31$$

$$126.25 = 2184.68 / 17.31$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-40W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	2392.76	19.40	123.34
RP-T8C-G2-40W-4FT-2L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	2403.60 * ¹	19.41 * ²	123.87 * ³
RP-T8C-G2-40W-4FT-2L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	2414.45 * ¹	19.41 * ²	124.42 * ³
RP-T8C-G2-40W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	2436.13	19.41	125.51

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

$$2403.60 = (2436.13 - 2392.76) / 4 + 2392.76$$

$$2414.45 = (2436.13 - 2392.76) / 4 + 2403.60$$

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

$$19.41 = (19.40 + 19.41) / 2$$

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

$$123.87 = 2403.60 / 19.41$$

$$124.42 = 2414.45 / 19.41$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T8C-G2-45W-4FT-2L-830-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-830	3000	2575.92	21.36	120.62
RP-T8C-G2-45W-4FT-2L-835-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-835	3500	2587.24 * ¹	21.28 * ²	121.58 * ³
RP-T8C-G2-45W-4FT-2L-840-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-840	4000	2598.56 * ¹	21.28 * ²	122.11 * ³
RP-T8C-G2-45W-4FT-2L-850-[OCN, Blank]-10V/RP-T8CHO-G2-4FT-850	5000	2621.20	21.20	123.64

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

$$2587.24 = (2621.20 - 2575.92) / 4 + 2575.92$$

$$2598.56 = (2621.20 - 2575.92) / 4 + 2587.24$$

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

$$21.28 = (21.36 + 21.20) / 2$$

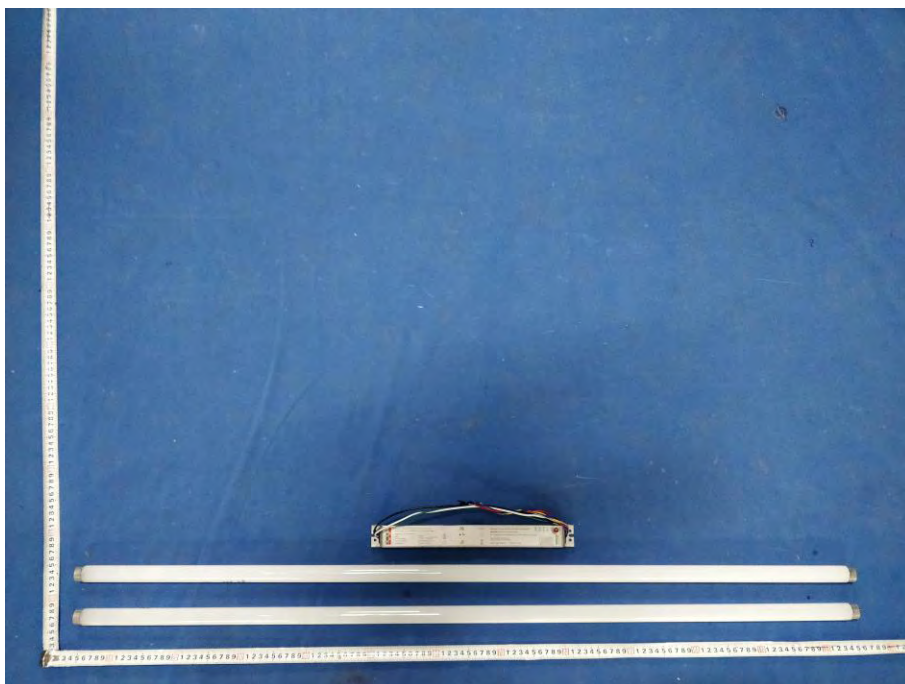
*3: This value is calculated and the calculation formula is as below:

$$121.58 = 2587.24 / 21.28$$

$$122.11 = 2598.56 / 21.28$$



Photo Document



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