



Date of issue 2021-02-01

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:

Linear Replacement Lamps -- 4' T5 Lamps--4-lamp External Driver (UL Type C)
Lamps

Product Model No.:

RP-T5C-G2-50W-4FT-4L-830-[OCN, Blank]-10V,
RP-T5C-G2-50W-4FT-4L-850-[OCN, Blank]-10V,
RP-T5C-G2-60W-4FT-4L-830-[OCN, Blank]-10V,
RP-T5C-G2-60W-4FT-4L-850-[OCN, Blank]-10V,
RP-T5C-G2-70W-4FT-4L-830-[OCN, Blank]-10V,
RP-T5C-G2-70W-4FT-4L-850-[OCN, Blank]-10V,
RP-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V,
RP-T5C-G2-80W-4FT-4L-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.

Jarvis zhang

Jason zhou

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	Linear Replacement Lamps -- 4' T5 Lamps--4-lamp External Driver (UL Type C) Lamps
Test Model Number	RP-T5C-G2-50W-4FT-4L-830-[OCN, Blank]-10V, RP-T5C-G2-50W-4FT-4L-850-[OCN, Blank]-10V, RP-T5C-G2-60W-4FT-4L-830-[OCN, Blank]-10V, RP-T5C-G2-60W-4FT-4L-850-[OCN, Blank]-10V, RP-T5C-G2-70W-4FT-4L-830-[OCN, Blank]-10V, RP-T5C-G2-70W-4FT-4L-850-[OCN, Blank]-10V, RP-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V, RP-T5C-G2-80W-4FT-4L-850-[OCN, Blank]-10V
Rated Inputs	AC 100-277V 50/60Hz
Field-Adjustable Product	Yes, Wattage setting: 50W, 60W, 70W, 80W
Nominal CCT	3000K, 5000K
Dimming Capability	Continuous
Integral Control Sensors	Optional
Date of Receipt Samples	2020-12-21
Date of test	2020-12-22 to 2021-01-21
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-T5C-G2-50W-4FT-4L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.94	60	0.108	12.89	0.997

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1649.60	128.0	3001

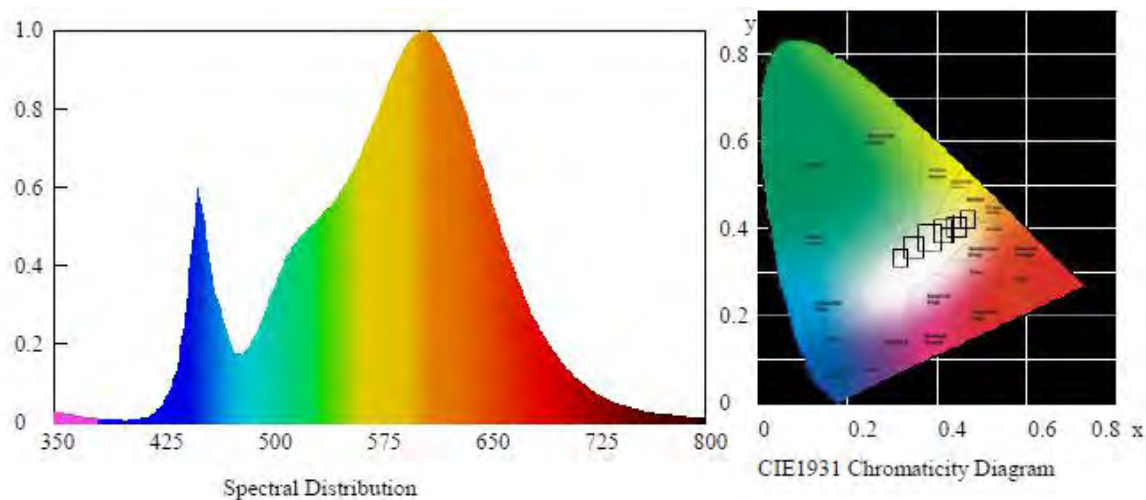
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.0013	0.4350	0.4002	0.251	0.5195

Color Rendering

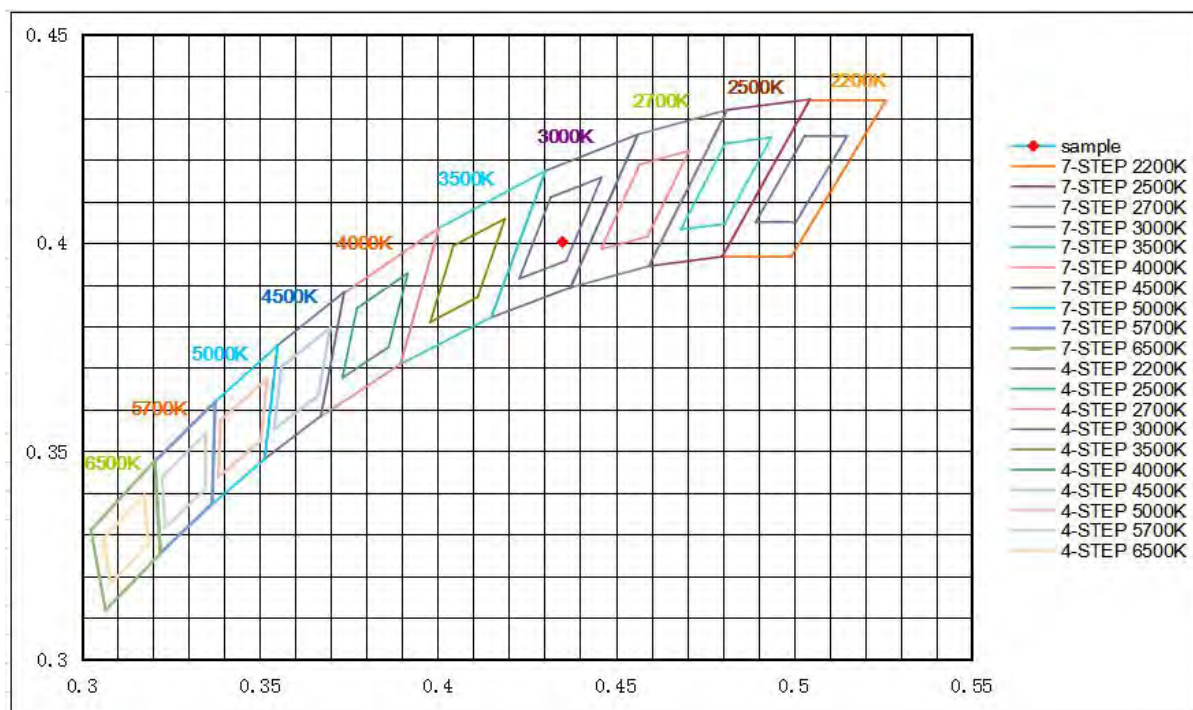
CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	12	85	97	-11

Spectral Distribution





7/4 Step Quadrangle





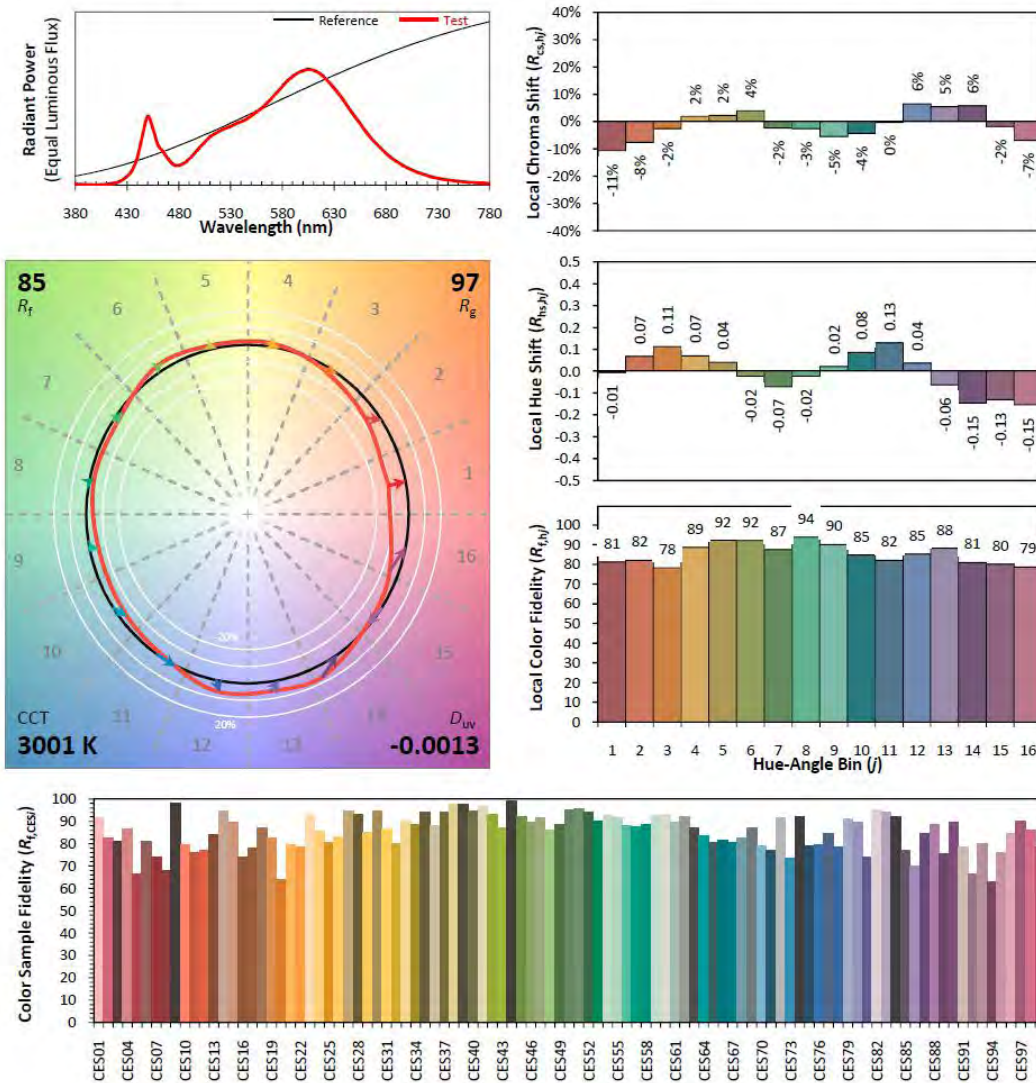
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-50W-4FT-4L-830-[OCN, Blank]-10V



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

x 0.4350
 y 0.4002
 u' 0.2510
 v' 0.5195

CIE 13.3-1995
(CRI)

R_a 84
 R_g 12

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-T5C-G2-50W-4FT-4L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.01	60	0.108	12.95	0.997

Photometric data

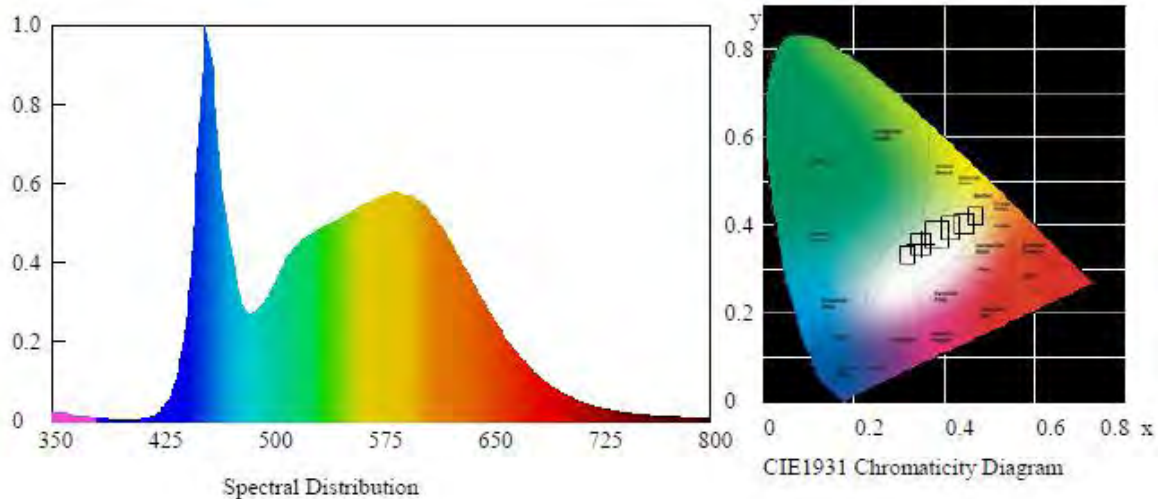
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1698.38	131.2	4988

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00219	0.3459	0.3566	0.21	0.4872

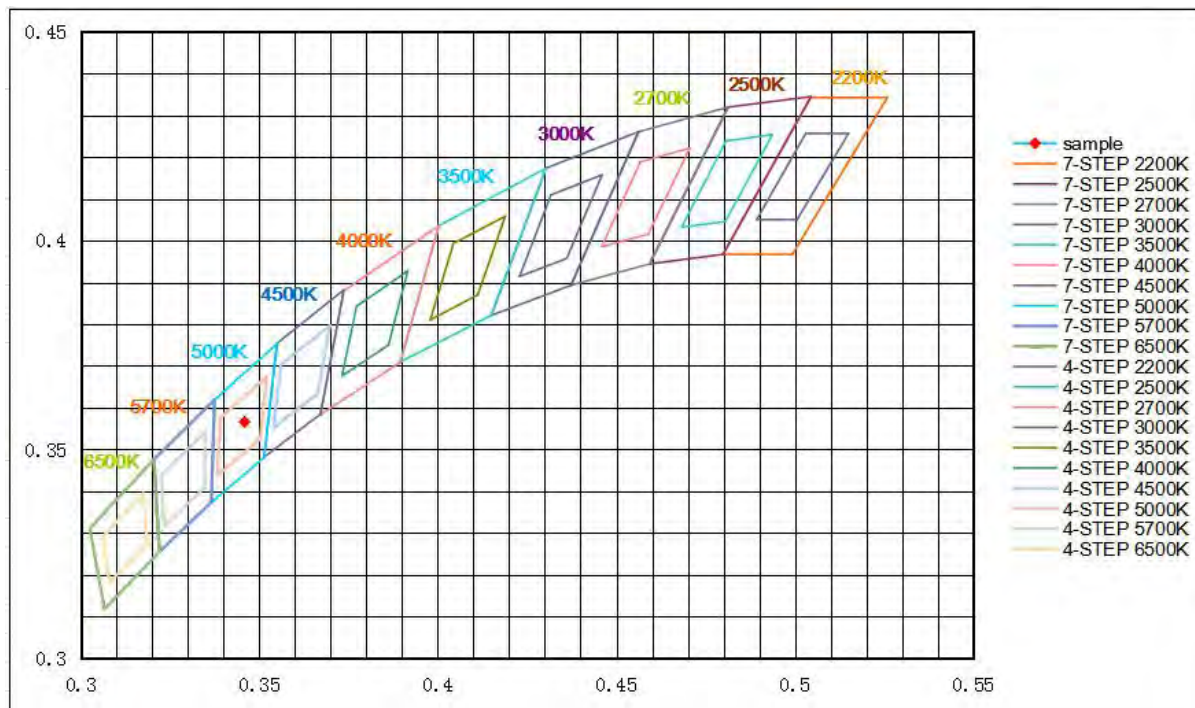
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





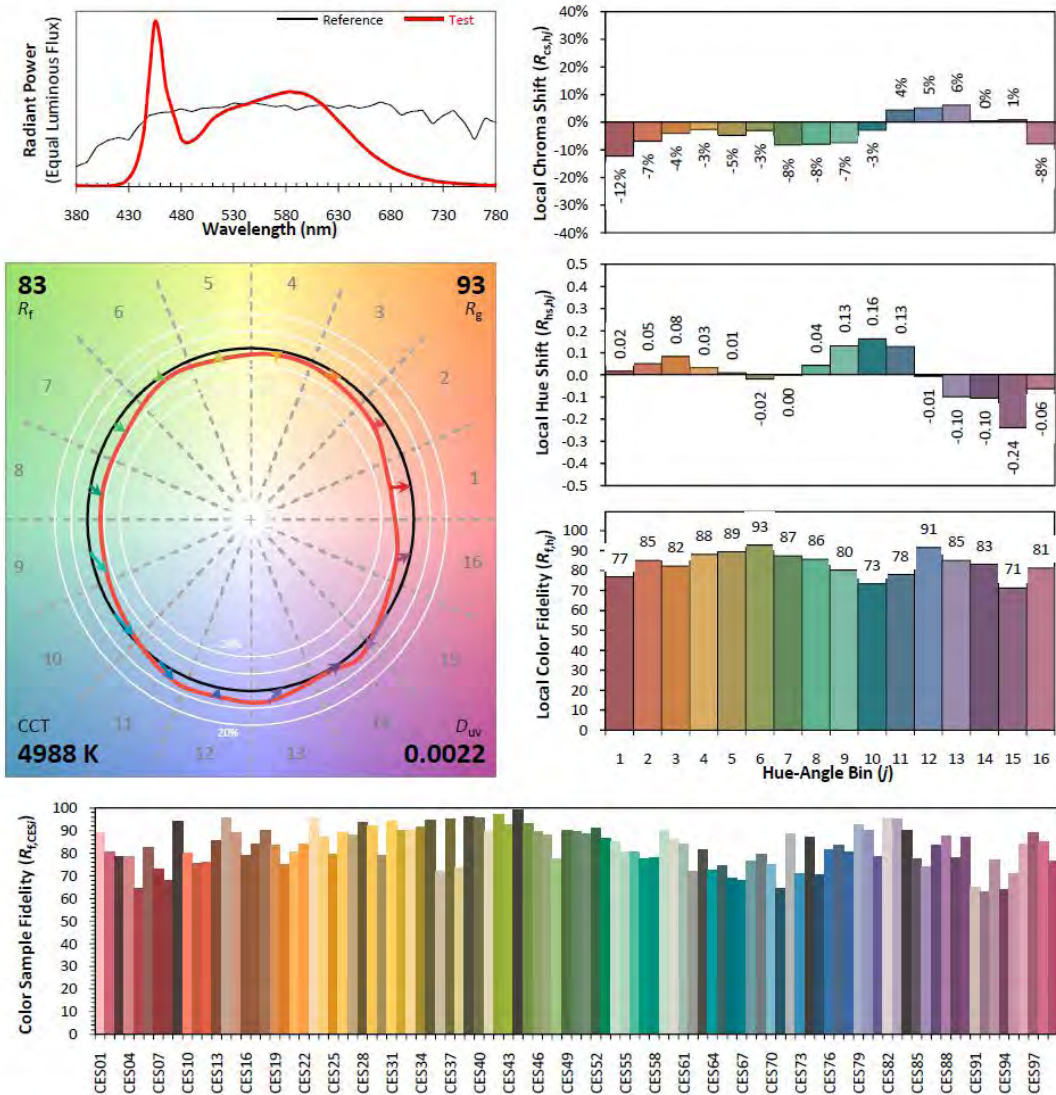
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-50W-4FT-4L-850-[OCN, Blank]-10V



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

x 0.3459
 y 0.3566
 u' 0.2100
 v' 0.4872

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.



3.1.3 Model Number: RP-T5C-G2-60W-4FT-4L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.127	15.18	0.997

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1919.07	126.4	2999

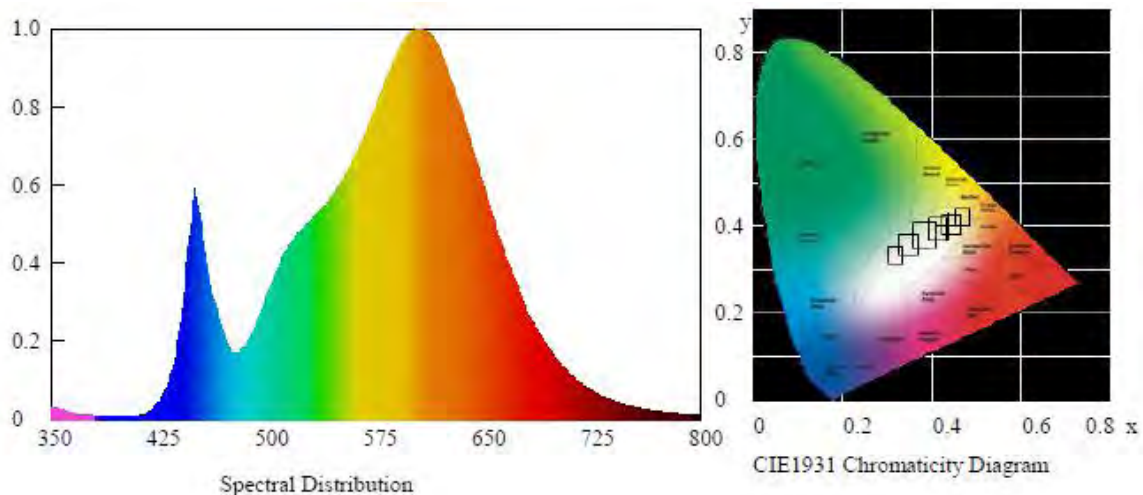
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00121	0.4353	0.4005	0.251	0.5197

Color Rendering

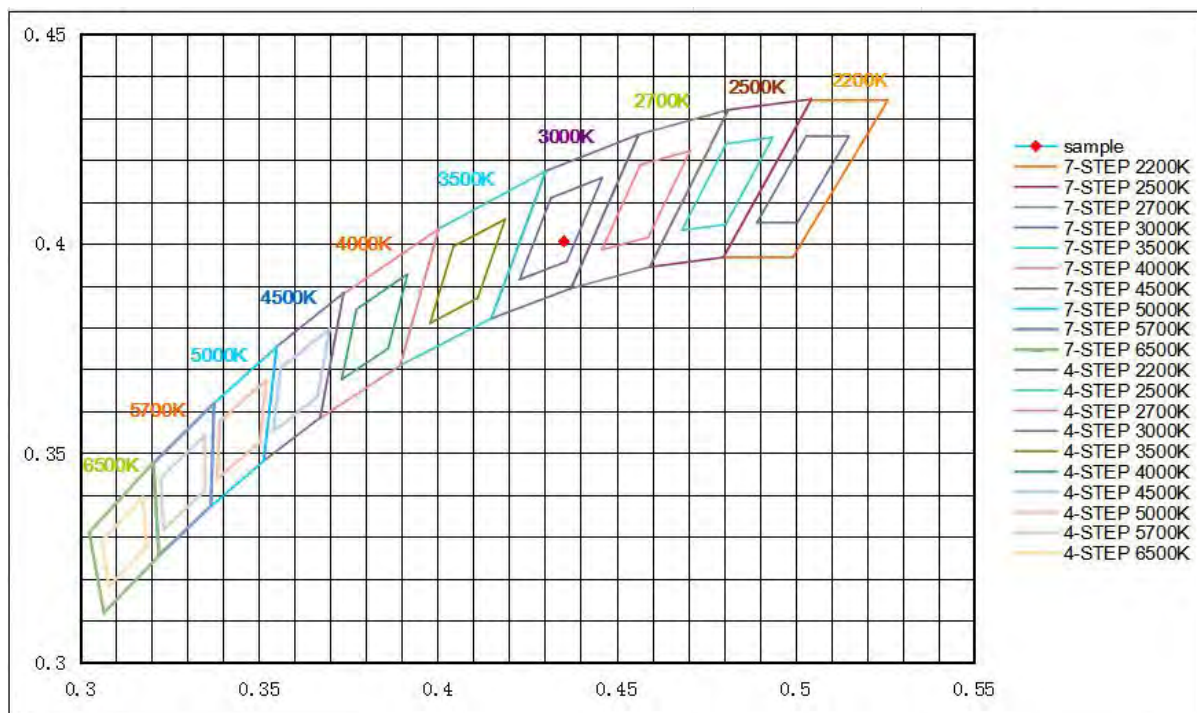
CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	12	85	97	-11

Spectral Distribution





7/4 Step Quadrangle





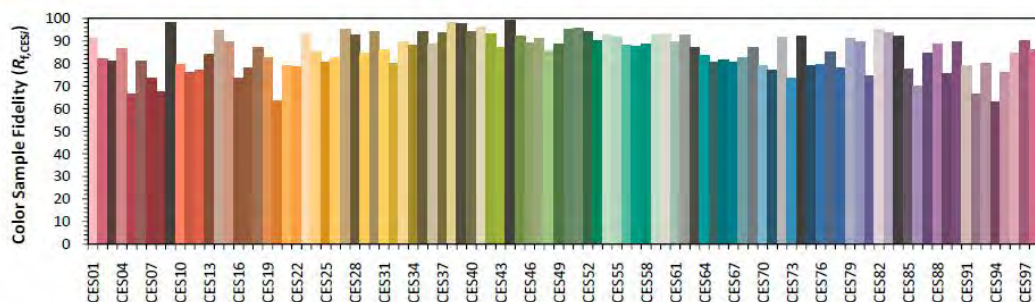
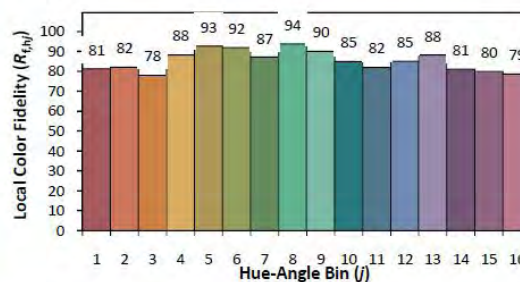
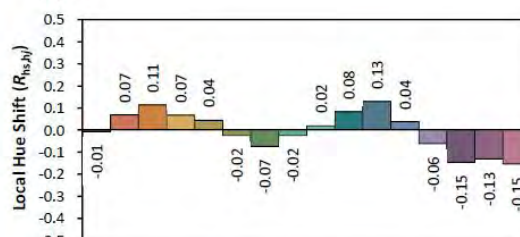
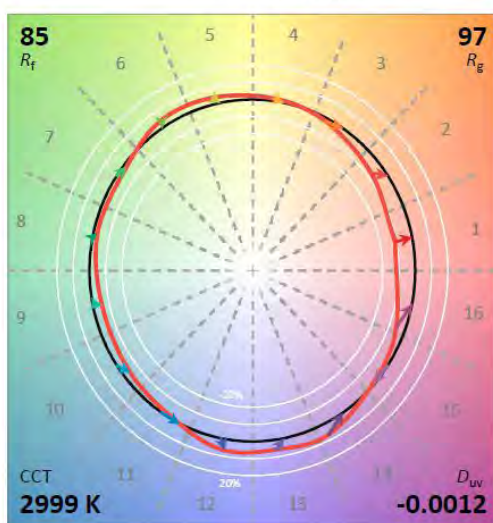
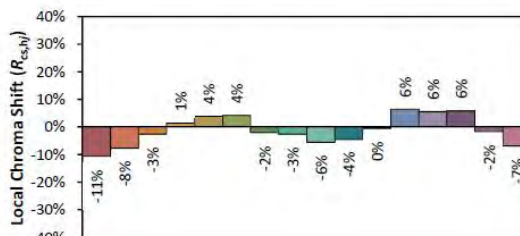
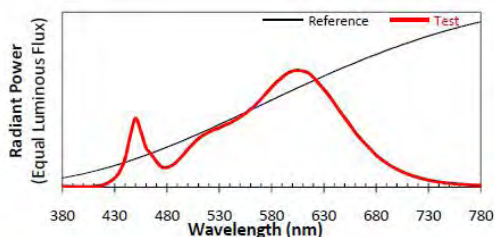
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-60W-4FT-4L-S30-[OCN, Blank]-10V



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

x 0.4353
 y 0.4005
 u' 0.2510
 v' 0.5197

CIE 13.3-1995
(CRI)

R_a 84
 R_g 12

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-T5C-G2-60W-4FT-4L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.127	15.15	0.997

Photometric data

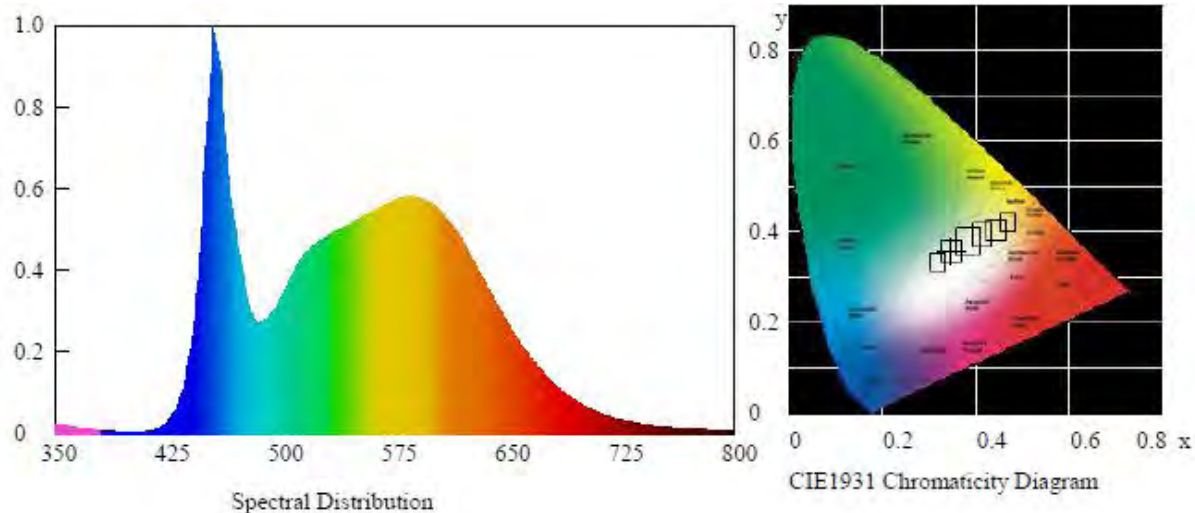
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1962.79	129.6	4994

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00208	0.3457	0.3563	0.21	0.487

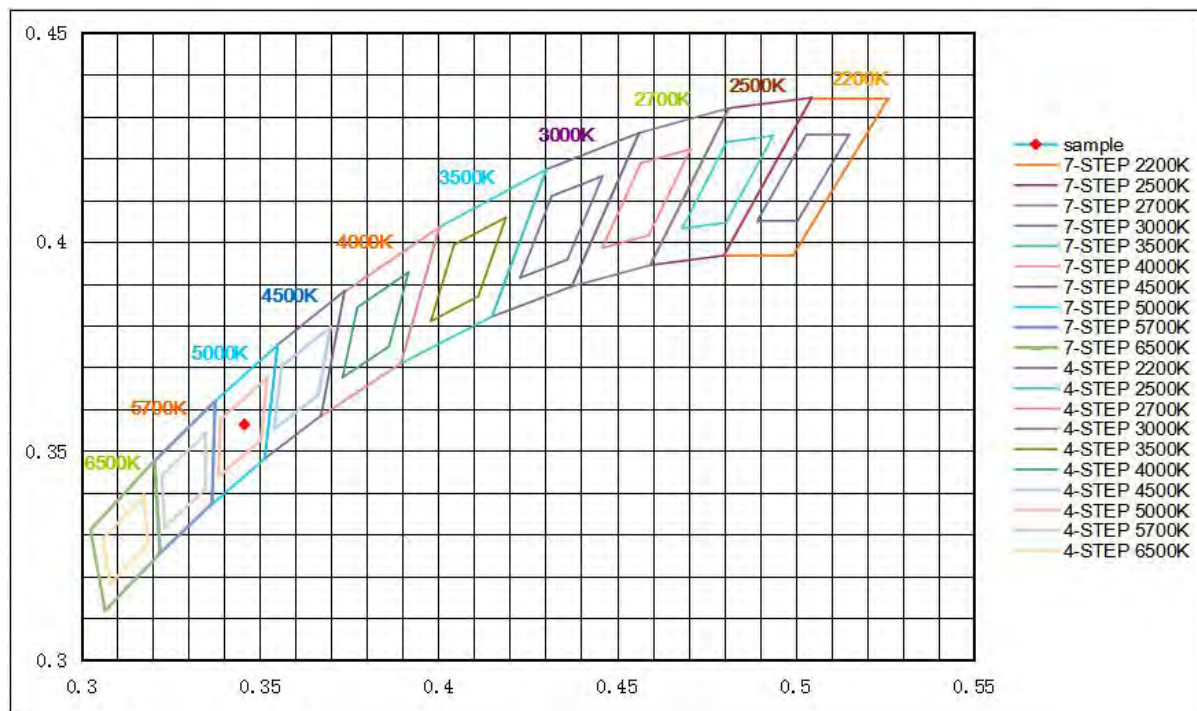
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





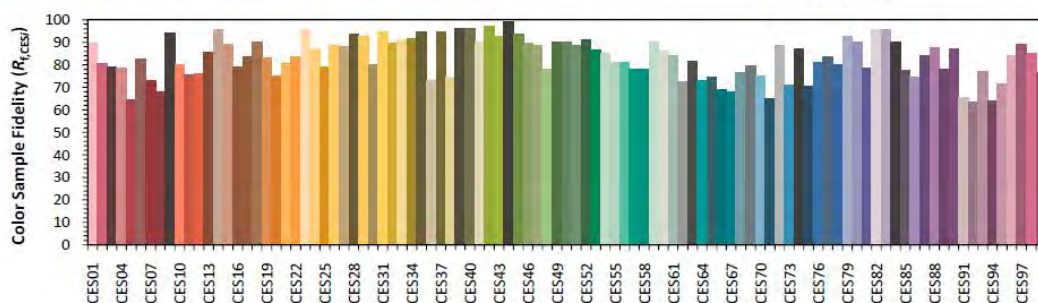
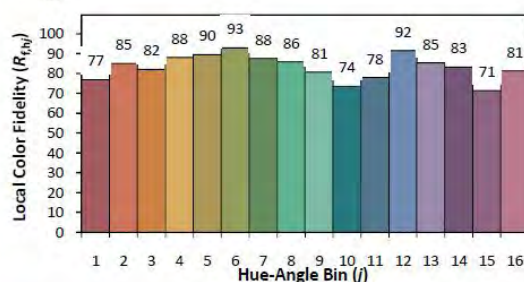
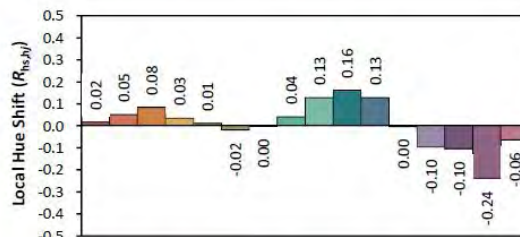
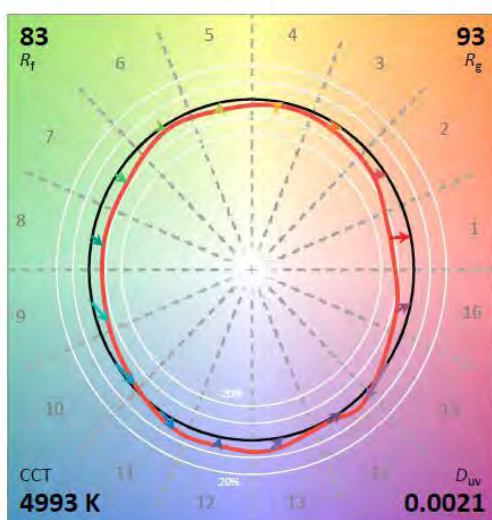
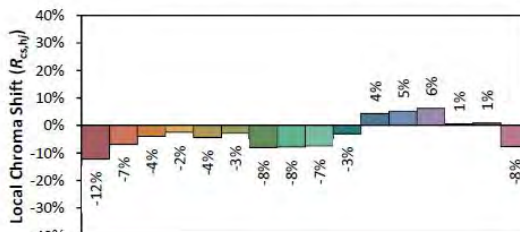
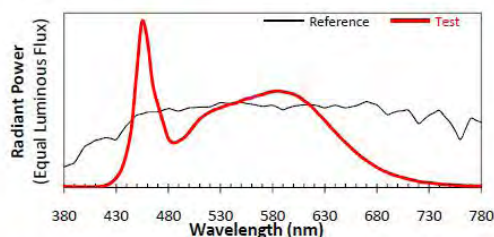
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-60W-4FT-4L-850-[OCN, Blank]-10V



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

x 0.3457
 y 0.3563
 u' 0.2100
 v' 0.4870

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-T5C-G2-70W-4FT-4L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.03	60	0.151	18.10	0.997

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2279.97	126.0	3000

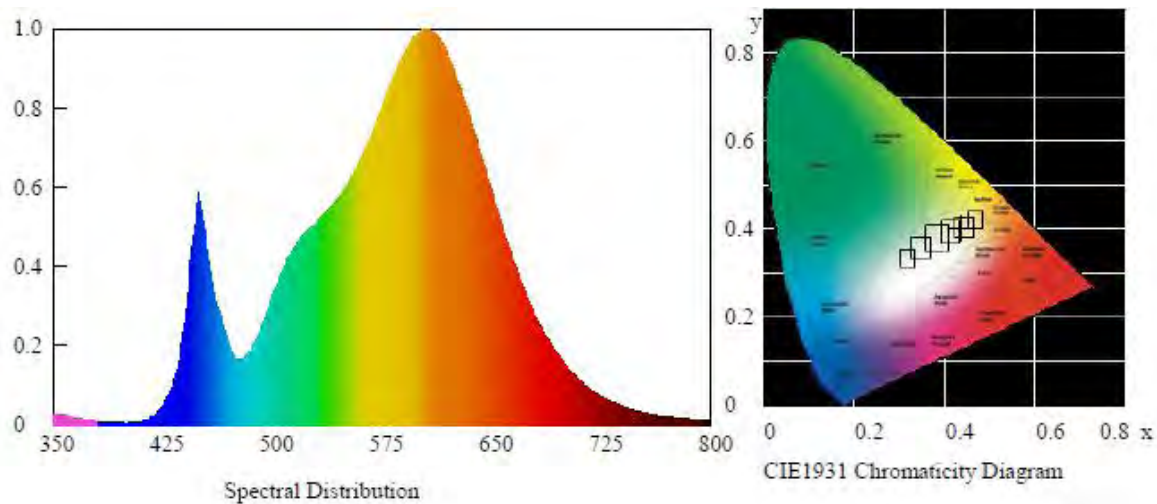
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00105	0.4354	0.4009	0.2509	0.5199

Color Rendering

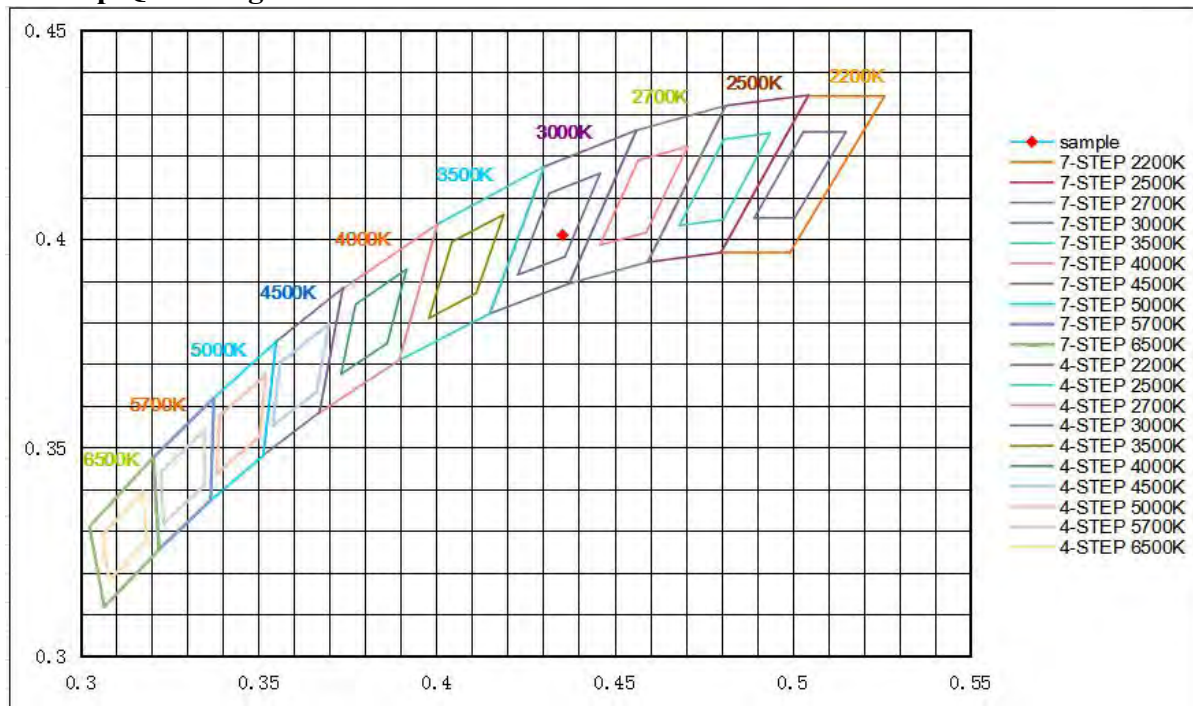
CRI	R9	Rf	Rg	Rcs,h1(%)
83.8	12	85	98	-11

Spectral Distribution





7/4 Step Quadrangle





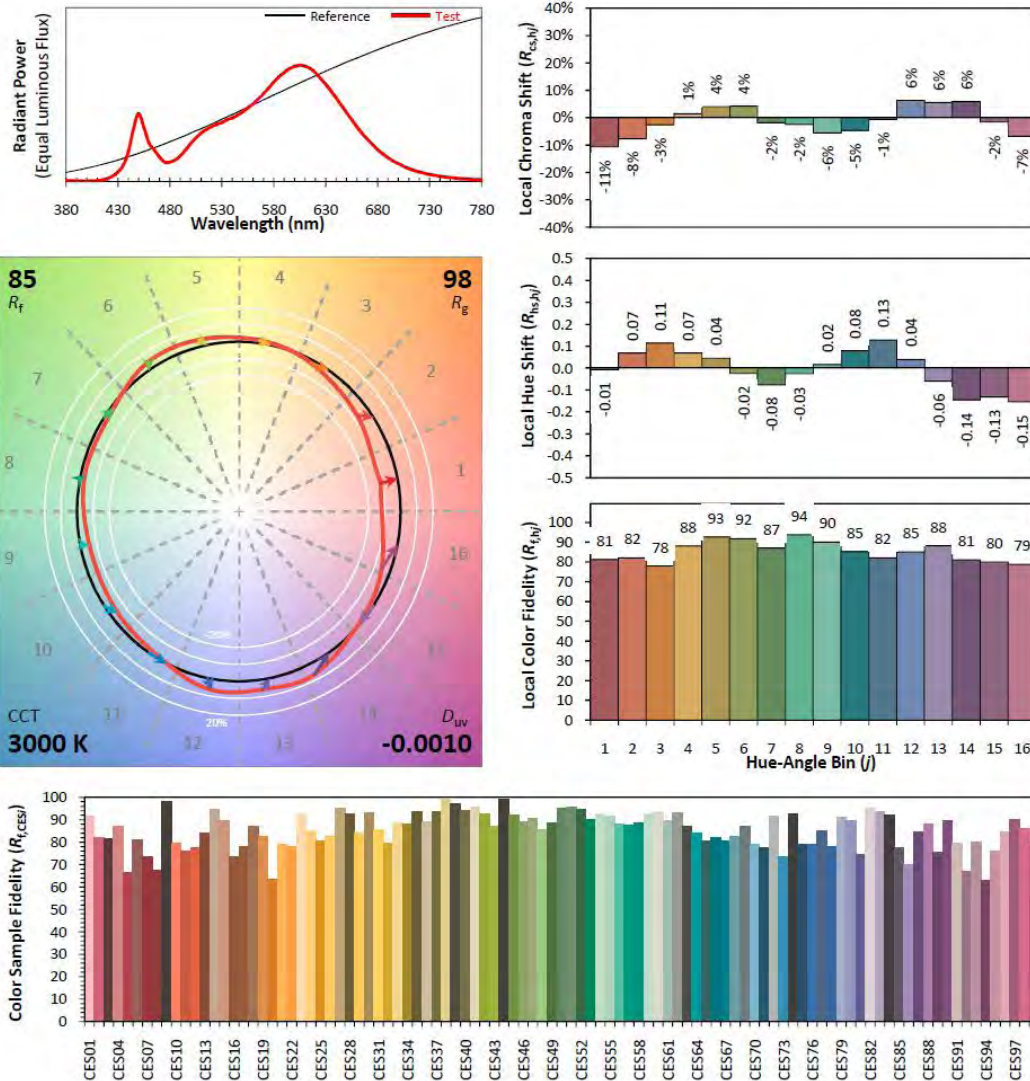
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-70W-4FT-4L-830-[OCN, Blank]-10V



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

x 0.4354
 y 0.4009
 u' 0.2509
 v' 0.5199

CIE 13.3-1995
(CRI)

R_a 84
 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-T5C-G2-70W-4FT-4L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.03	60	0.152	18.24	0.997

Photometric data

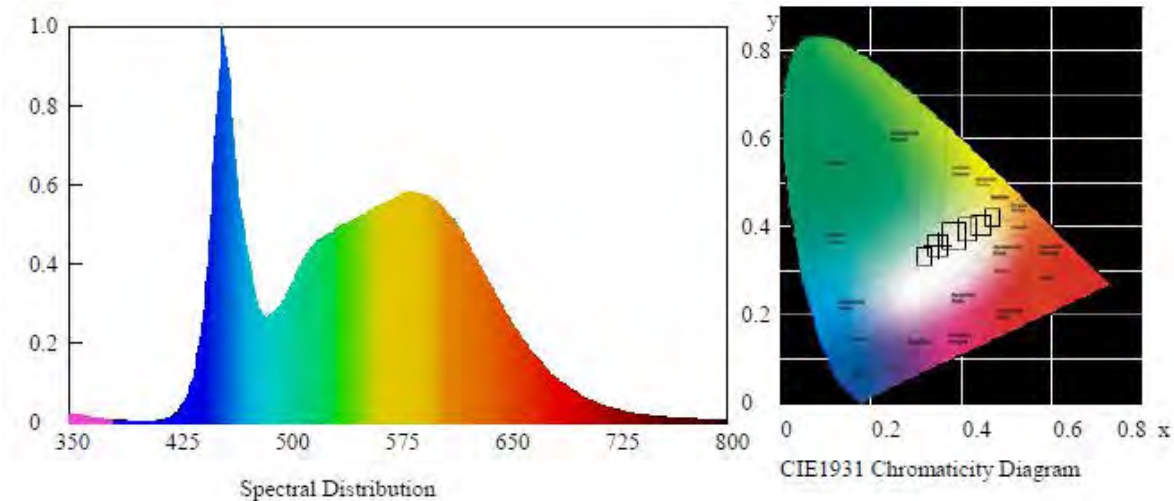
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2348.99	128.8	4987

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00209	0.3459	0.3564	0.2101	0.4871

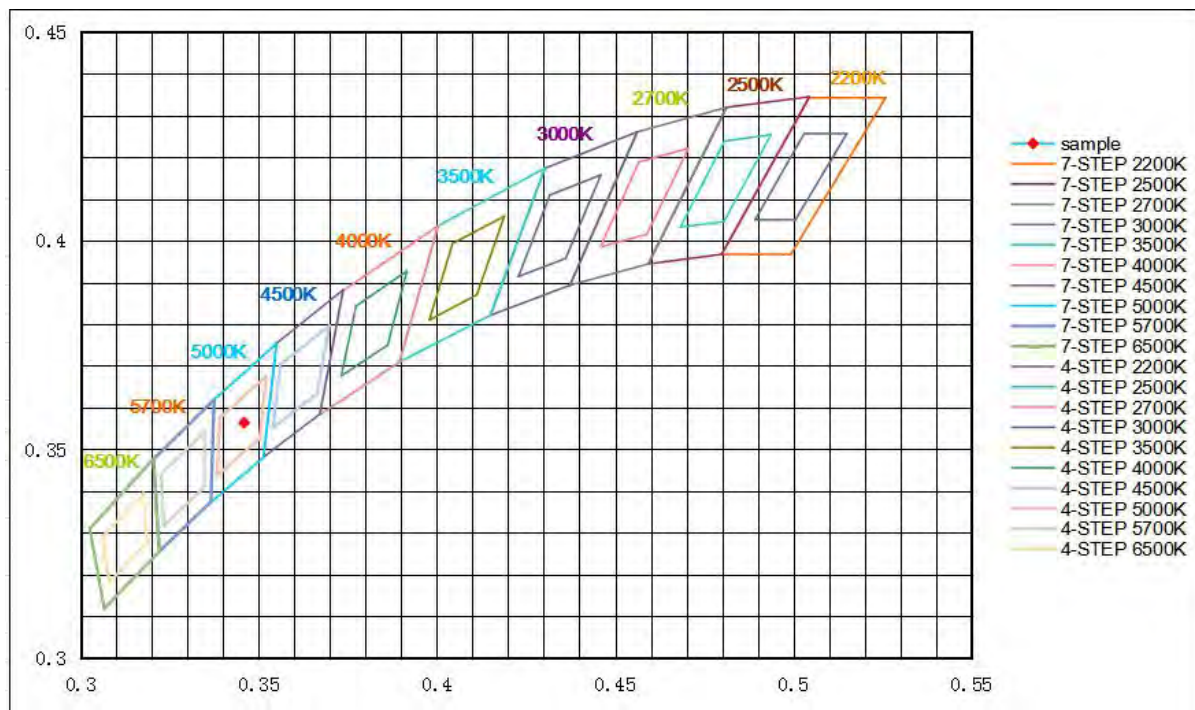
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.9	13	83	93	-12

Spectral Distribution



7/4 Step Quadrangle





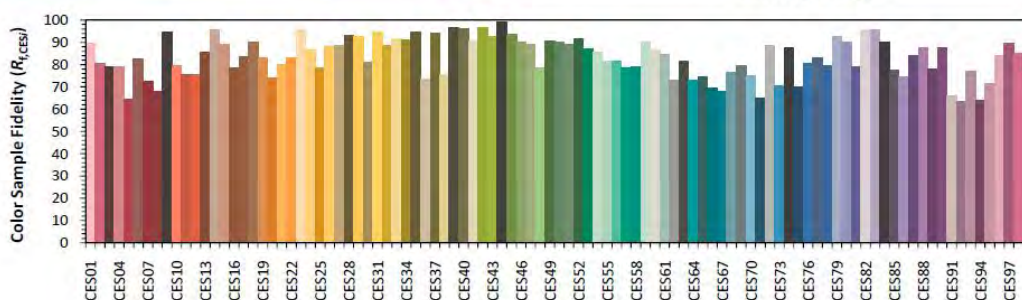
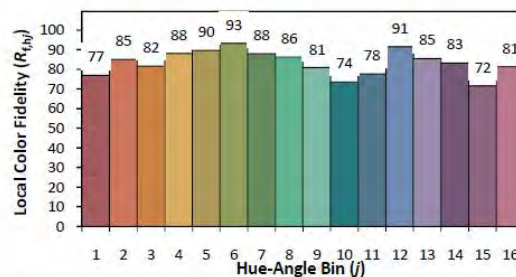
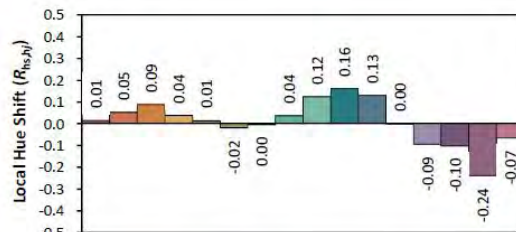
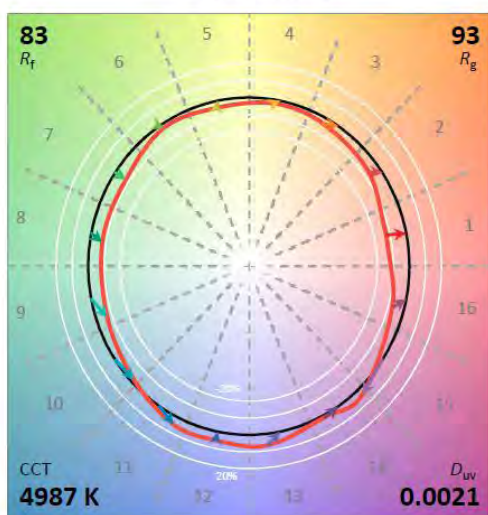
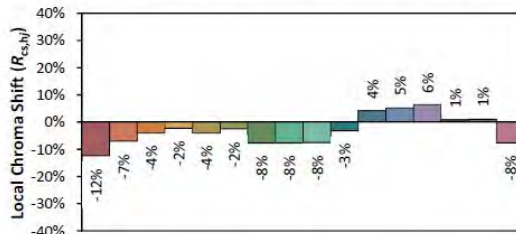
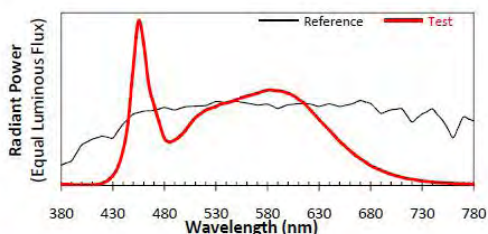
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-70W-4FT-4L-850-[OCN, Blank]-10V



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

x 0.3459
 y 0.3564
 u' 0.2101
 v' 0.4871

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.

**3.1.7 Model Number: RP-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.97	60	0.169	20.15	0.995

Photometric data

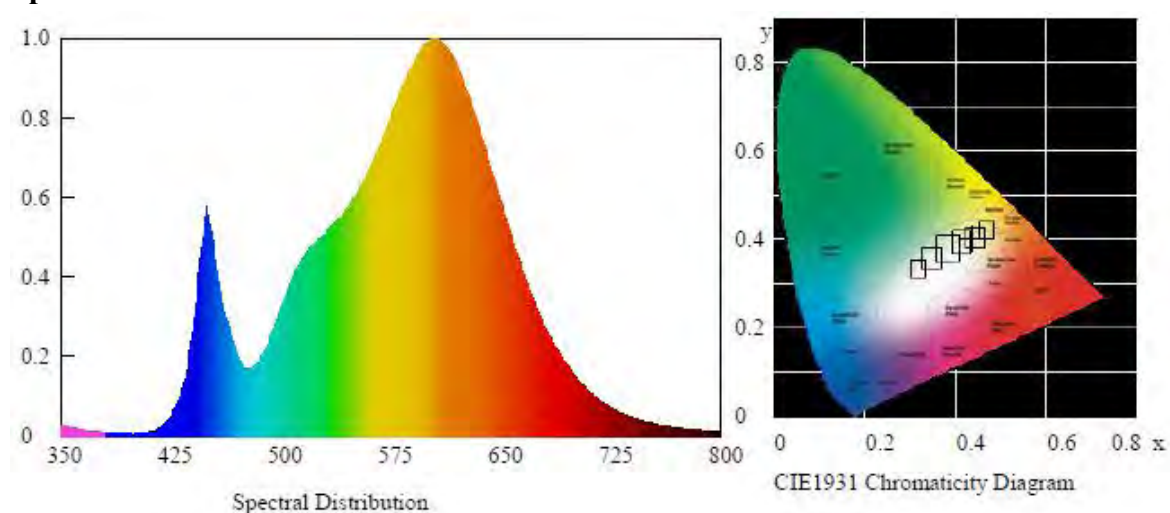
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2524.42	125.3	3002

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00107	0.4353	0.4008	0.2509	0.5199

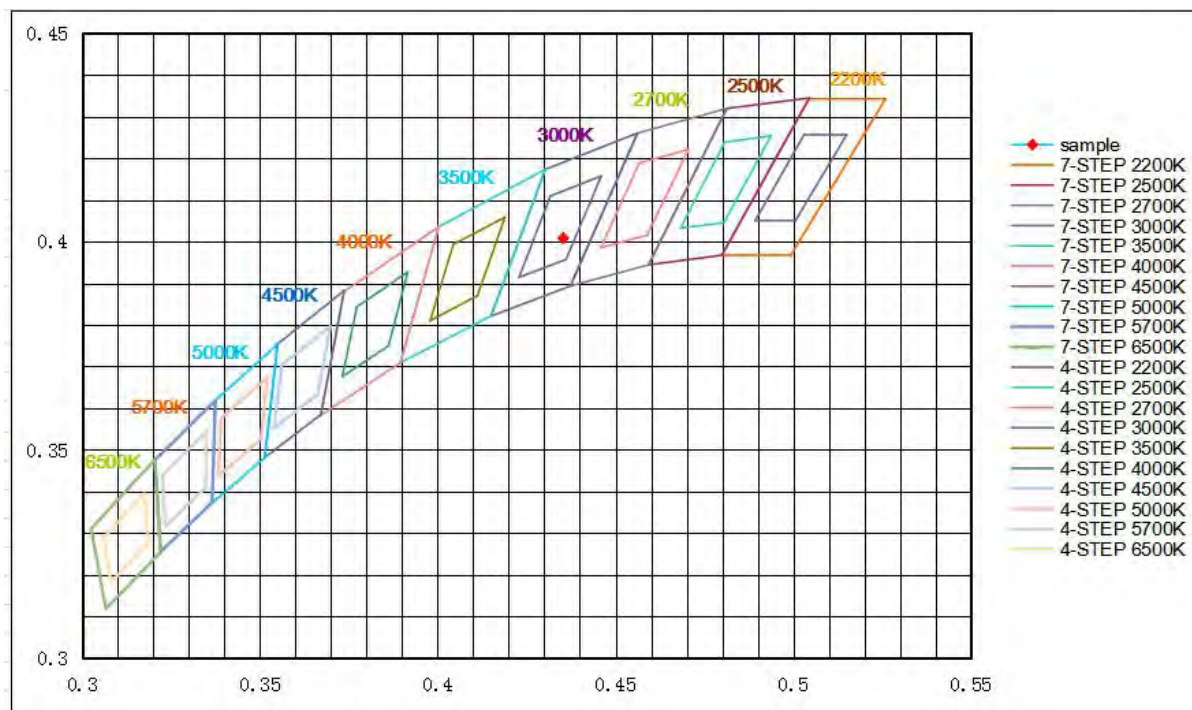
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
83.7	11	85	97	-11

Spectral Distribution



7/4 Step Quadrangle





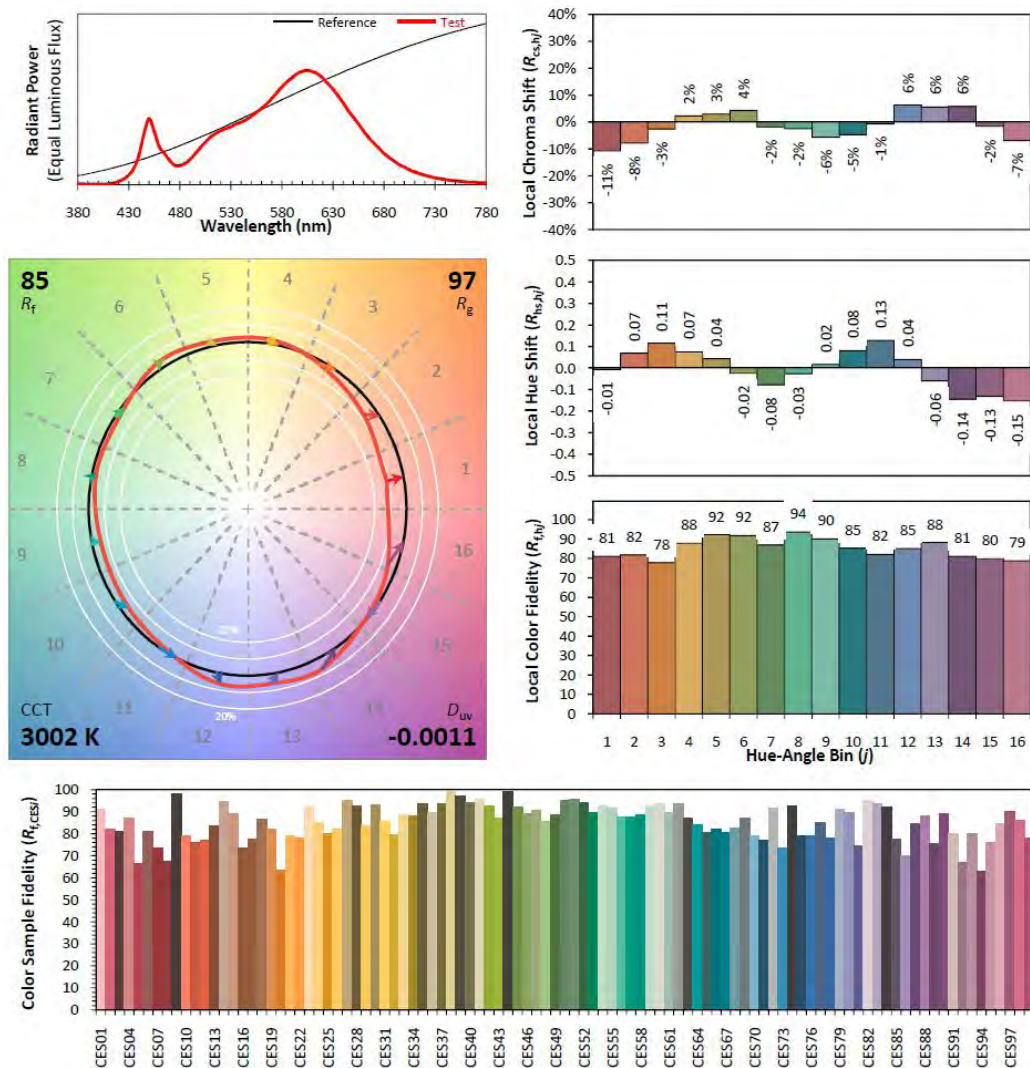
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V



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

 x 0.4353 y 0.4008 u' 0.2509 v' 0.5199CIE 13.3-1995
(CRI) R_a 84 R_g 11

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-T5C-G2-80W-4FT-4L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.10	60	0.169	20.14	0.995

Photometric data

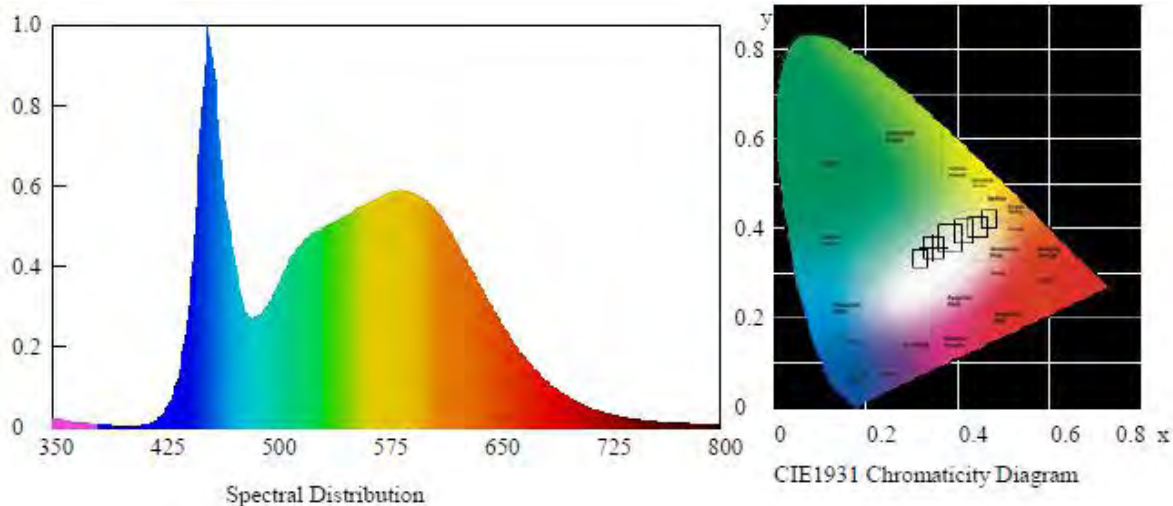
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
2581.9	128.2	4991

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00212	0.3458	0.3564	0.21	0.4871

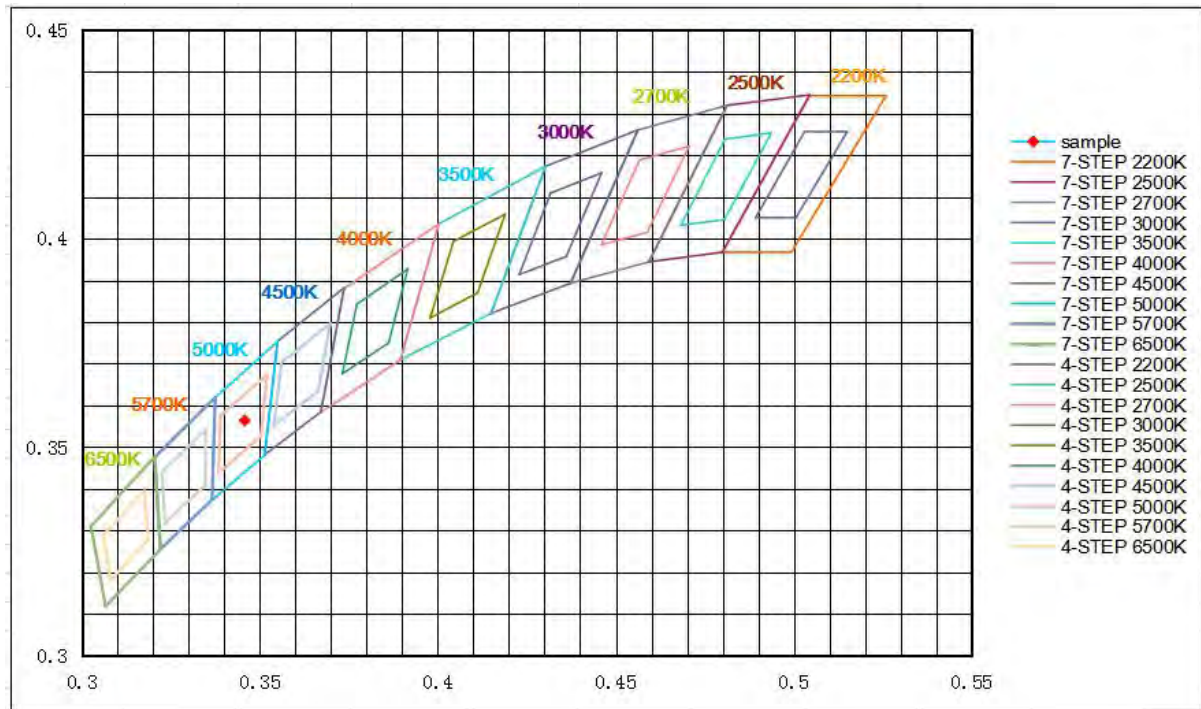
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





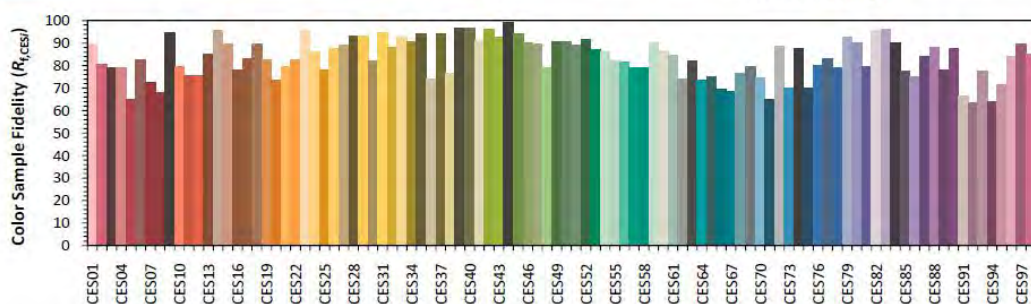
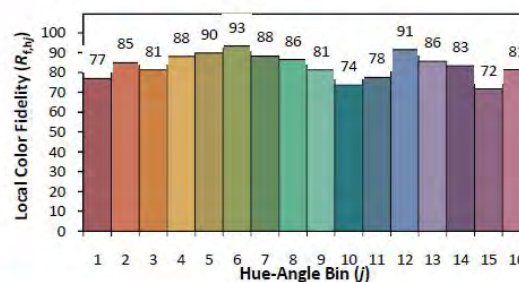
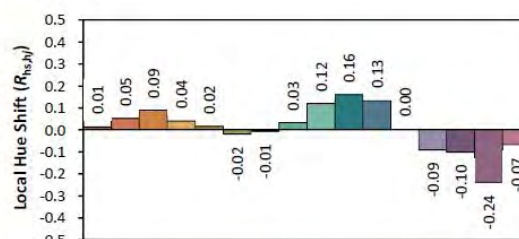
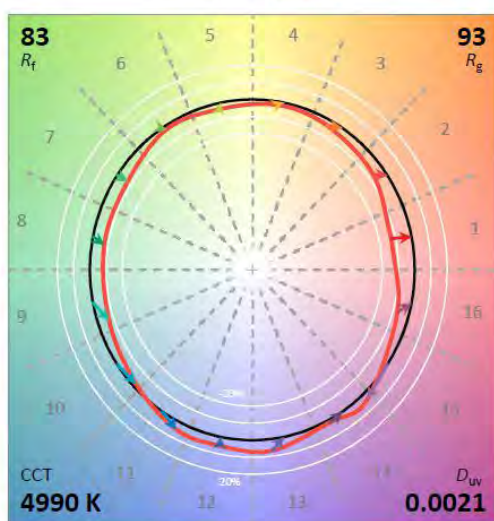
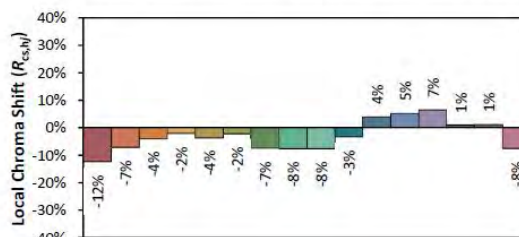
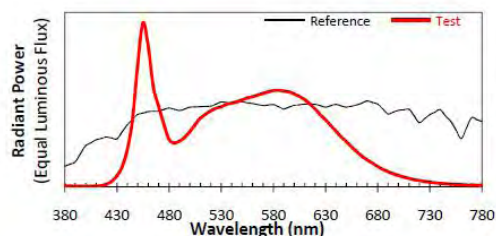
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201009-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-80W-4FT-4L-850-[OCN, Blank]-10V



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

 x 0.3458 y 0.3564 u' 0.2100 v' 0.4871CIE 13.3-1995
(CRI) R_a 84 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-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.07	60	0.169	20.19	0.9927

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Beam Angle (°)
2547.74	126.19	185.3

**Zonal Flux Diagram**

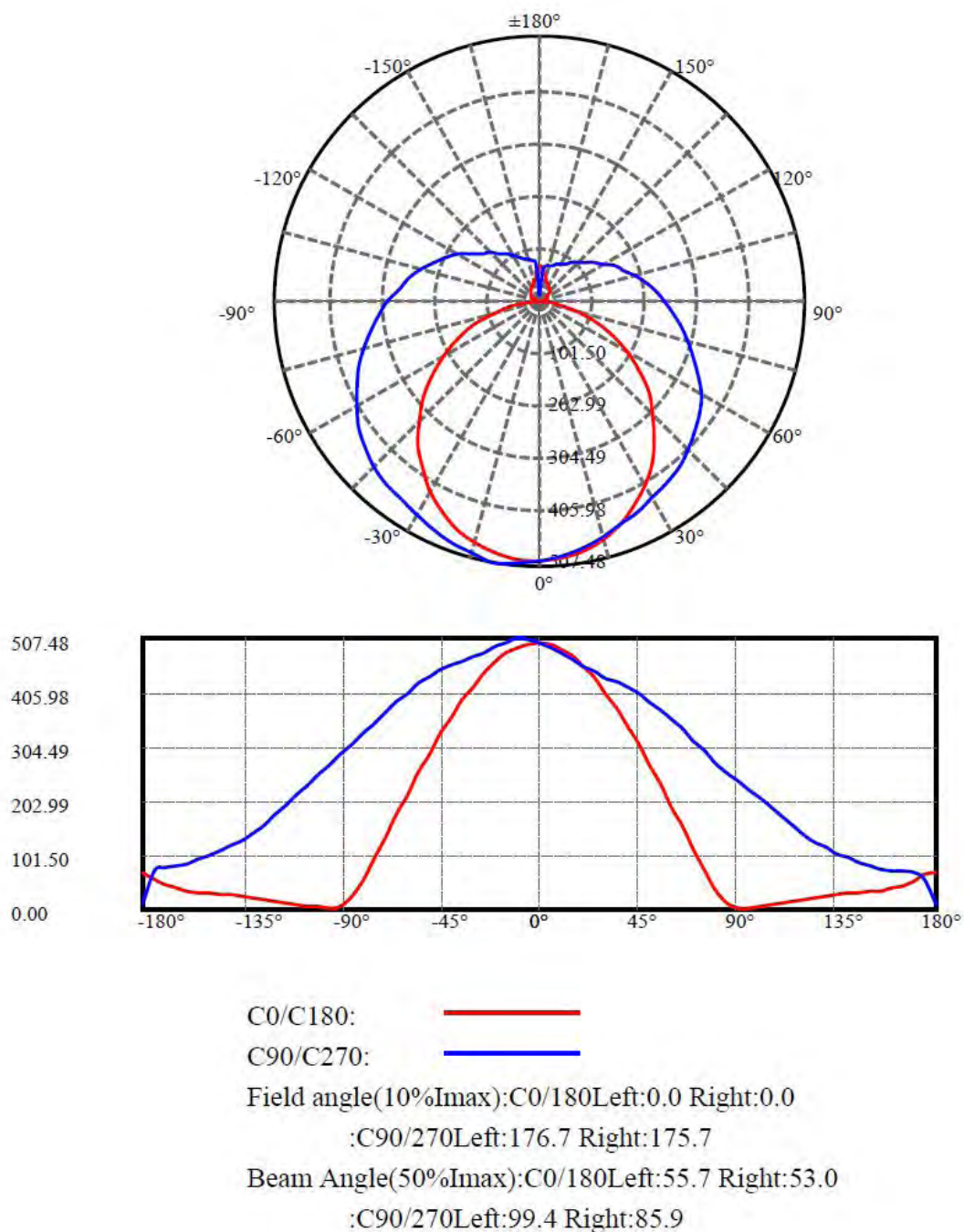
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	497.637	0.000	0	0.00%	0.00%
5.0	496.186	11.882	11.882	0.00%	0.47%
10.0	490.883	35.318	47.2	0.00%	1.85%
15.0	480.988	57.671	104.871	0.00%	4.12%
20.0	467.140	78.181	183.051	0.00%	7.18%
25.0	449.548	96.211	279.262	0.00%	10.96%
30.0	430.114	111.415	390.677	0.00%	15.33%
35.0	410.393	123.904	514.58	0.00%	20.20%
40.0	390.005	133.715	648.296	0.00%	25.45%
45.0	368.015	140.562	788.858	0.00%	30.96%
50.0	344.721	144.253	933.111	0.00%	36.63%
55.0	320.599	144.926	1078.037	0.00%	42.31%
60.0	296.369	142.910	1220.948	0.00%	47.92%
65.0	271.868	138.456	1359.404	0.00%	53.36%
70.0	246.520	131.597	1491.001	0.00%	58.52%
75.0	221.785	122.761	1613.762	0.00%	63.34%
80.0	198.348	112.758	1726.52	0.00%	67.77%
85.0	177.882	102.499	1829.02	0.00%	71.79%
90.0	159.893	92.604	1921.623	0.00%	75.42%
95.0	146.597	83.924	2005.548	0.00%	78.72%
100.0	134.095	76.249	2081.797	0.00%	81.71%
105.0	122.940	68.748	2150.545	0.00%	84.41%
110.0	112.780	61.577	2212.122	0.00%	86.83%
115.0	102.284	54.420	2266.542	0.00%	88.96%
120.0	92.918	47.422	2313.964	0.00%	90.82%
125.0	85.200	41.138	2355.102	0.00%	92.44%
130.0	79.946	35.874	2390.976	0.00%	93.85%
135.0	76.192	31.517	2422.493	0.00%	95.08%
140.0	73.030	27.598	2450.091	0.00%	96.17%
145.0	70.550	23.927	2474.018	0.00%	97.11%
150.0	68.382	20.435	2494.452	0.00%	97.91%
155.0	65.885	16.972	2511.424	0.00%	98.57%
160.0	63.377	13.529	2524.953	0.00%	99.11%
165.0	61.113	10.234	2535.187	0.00%	99.51%
170.0	57.819	7.033	2542.221	0.00%	99.78%
175.0	58.171	4.130	2546.351	0.00%	99.95%
180.0	58.054	1.386	2547.737	0.00%	100.00%



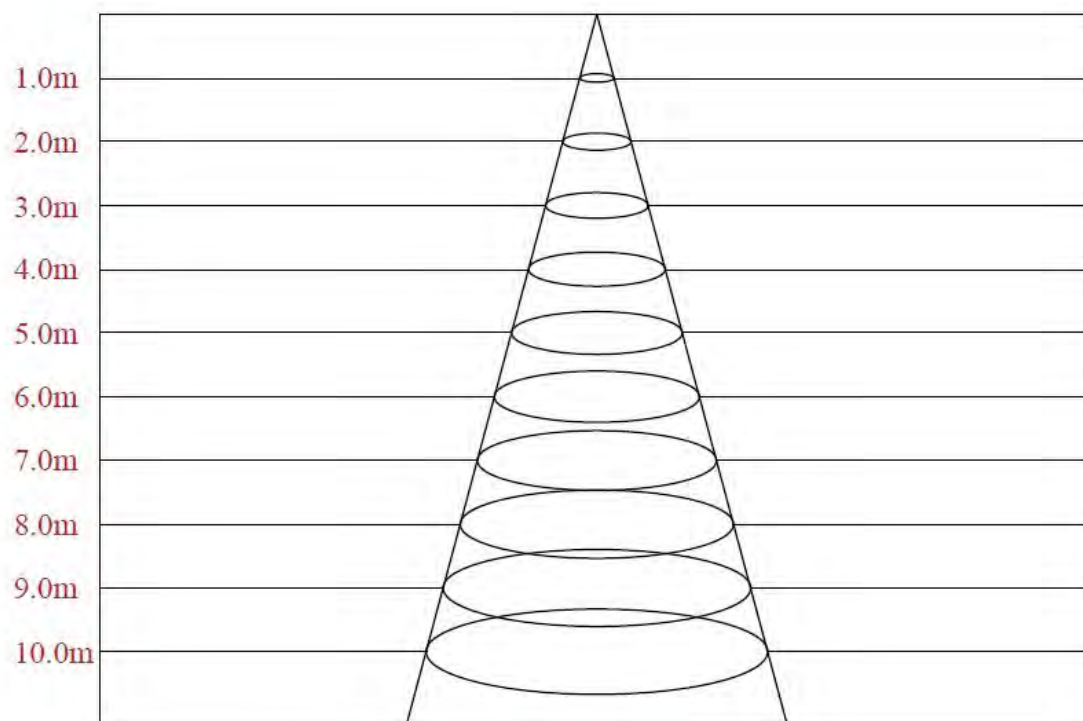
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C270 plane 190.45

**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	497.64	493.95	485.41	471.82	453.19	431.26	404.86	375.17	343.15
22.5	497.64	492.73	482.52	469.17	450.92	427.95	402.82	373.38	340.40
45.0	497.64	491.40	482.35	469.28	453.79	433.67	413.36	393.04	374.33
67.5	497.64	495.73	488.32	477.73	460.79	444.49	431.78	420.56	407.22
90.0	497.64	489.33	477.95	467.01	454.33	444.48	433.11	424.36	414.95
112.5	497.64	492.79	482.26	468.35	452.55	432.96	416.74	404.52	391.24
135.0	497.64	493.25	485.52	472.99	456.06	435.38	411.36	388.79	366.44
157.5	497.64	493.48	484.94	472.04	454.97	433.53	408.56	378.59	345.70
180.0	497.64	496.09	489.87	478.42	462.70	442.13	417.48	391.47	360.42
202.5	497.64	497.83	493.32	484.09	470.74	452.29	429.52	404.00	374.75
225.0	497.64	500.25	498.44	492.81	483.36	468.27	447.15	423.82	404.91
247.5	497.64	506.53	506.32	502.08	494.25	480.06	463.54	456.77	449.36
270.0	497.64	503.54	507.48	498.73	491.29	480.14	471.83	463.30	456.08
292.5	497.64	496.80	502.27	500.38	489.84	476.15	463.72	454.24	446.23
315.0	497.64	498.26	495.55	489.49	478.21	461.50	439.14	414.49	395.06
337.5	497.64	497.01	491.60	481.40	467.25	448.52	426.87	399.82	369.85
360.0	497.64	493.95	485.41	471.82	453.19	431.26	404.86	375.17	343.15
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	307.82	272.50	233.49	193.50	154.30	113.15	73.17	36.88	12.03
22.5	308.99	276.99	246.76	219.86	193.56	163.92	138.59	114.45	95.01
45.0	353.21	334.31	313.59	289.25	265.51	243.19	221.46	201.55	185.26
67.5	391.55	373.33	355.97	340.30	322.09	302.82	283.55	263.43	246.49
90.0	402.49	386.74	372.96	356.77	336.21	314.33	295.30	275.18	256.80
112.5	375.23	358.38	343.84	326.56	307.60	288.64	270.10	251.77	234.70
135.0	347.43	326.33	304.81	280.78	258.22	235.24	212.89	192.83	175.07
157.5	310.32	276.40	242.47	212.71	183.99	156.93	127.79	103.23	83.88
180.0	326.65	290.74	254.06	214.47	175.07	135.08	94.52	56.48	24.07
202.5	341.38	308.20	276.40	249.70	223.00	191.79	162.74	136.83	115.43
225.0	388.82	369.31	347.58	326.26	303.53	282.21	260.28	237.76	218.04
247.5	437.29	422.04	405.73	387.10	371.01	351.31	331.62	312.14	289.90
270.0	447.55	435.08	421.73	404.24	386.30	367.92	347.36	329.64	309.52
292.5	434.43	421.16	403.67	388.08	366.59	345.94	325.93	304.86	285.27
315.0	378.97	363.10	341.79	319.64	296.66	273.47	251.74	230.02	210.17
337.5	336.13	300.96	264.74	232.69	206.26	178.37	151.52	126.54	104.48
360.0	307.82	272.50	233.49	193.50	154.30	113.15	73.17	36.88	12.03
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.88	4.66	6.41	9.12	12.03	14.75	18.24	21.16	24.46
22.5	79.31	67.53	59.09	53.59	49.47	44.95	42.60	42.99	45.74
45.0	164.94	150.06	136.18	122.30	111.64	95.14	87.10	78.85	73.22
67.5	224.89	209.64	190.80	175.34	160.09	143.36	127.27	115.41	104.82
90.0	240.18	224.43	207.59	191.84	173.46	159.03	139.78	127.09	116.15
112.5	219.32	203.10	184.98	169.39	153.59	134.21	122.41	111.03	99.87
135.0	160.03	143.53	129.74	118.04	107.17	98.19	87.95	77.30	72.91
157.5	69.93	58.69	50.99	45.37	41.42	39.75	42.46	44.12	44.12
180.0	5.63	3.49	5.05	7.18	9.51	12.81	15.92	18.83	21.74
202.5	96.78	83.23	72.83	62.82	57.91	53.59	51.83	51.63	50.06
225.0	197.33	181.03	166.15	151.26	137.58	121.09	109.42	96.55	89.51
247.5	268.94	251.15	231.88	215.15	197.78	180.00	158.19	140.61	128.33
270.0	289.40	270.80	251.33	232.74	213.05	195.56	177.84	159.03	143.28
292.5	262.72	246.08	228.80	210.90	193.62	176.77	154.01	136.52	126.20
315.0	188.86	174.86	159.40	145.20	132.87	116.16	100.91	94.22	88.79
337.5	86.17	73.26	64.31	56.82	53.28	51.20	50.78	47.87	49.95
360.0	3.88	4.66	6.41	9.12	12.03	14.75	18.24	21.16	24.46



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	27.37	30.08	32.02	33.77	35.13	40.37	45.22	53.96	65.99
22.5	48.68	51.24	54.57	55.95	59.09	61.44	61.25	56.73	61.25
45.0	70.20	68.19	67.38	67.59	67.59	67.38	66.78	60.75	60.14
67.5	97.41	91.48	85.55	80.26	76.45	73.48	71.79	70.31	54.42
90.0	105.43	96.25	88.15	82.03	77.22	73.50	71.53	69.56	57.97
112.5	92.28	85.75	79.85	75.85	72.69	68.68	57.73	43.40	49.09
135.0	70.61	67.90	65.39	65.60	59.54	49.72	45.13	44.92	58.29
157.5	47.04	50.37	52.45	49.74	45.79	46.21	44.54	49.95	61.61
180.0	24.84	27.17	29.50	31.05	32.80	34.16	41.53	46.00	56.67
202.5	52.61	55.16	57.52	57.71	52.41	48.68	47.90	47.90	55.36
225.0	84.08	78.85	74.83	73.42	70.40	59.54	51.90	45.46	51.49
247.5	116.05	106.52	97.62	90.00	85.13	80.47	70.52	55.06	38.12
270.0	130.37	119.43	108.93	99.75	93.18	86.40	82.03	77.44	72.19
292.5	115.67	105.97	99.44	93.54	88.07	83.01	79.01	75.21	67.84
315.0	83.57	79.81	77.72	75.84	75.00	75.00	73.75	71.24	61.00
337.5	52.87	54.32	57.86	62.02	63.69	65.98	67.23	57.24	59.32
360.0	27.37	30.08	32.02	33.77	35.13	40.37	45.22	53.96	65.99
C/γ(°)	180.0								
0.0	69.29								
22.5	65.17								
45.0	63.36								
67.5	61.20								
90.0	9.41								
112.5	60.47								
135.0	66.85								
157.5	68.68								
180.0	69.29								
202.5	65.17								
225.0	63.36								
247.5	61.20								
270.0	9.41								
292.5	60.47								
315.0	66.85								
337.5	68.68								
360.0	69.29								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-T5C-G2-80W-4FT-4L-830-[OCN, Blank]-10V	Power Factor	277	60	0.975
	THD	277	60	7.1%

5 Performance Assessment

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-50W-4FT-4L-830-[OCN, Blank]-10V	3000K	1649.60	12.89	128.0
RP-T5C-G2-50W-4FT-4L-835-[OCN, Blank]-10V	3500K	1661.80 ^{*1}	12.92 ^{*2}	128.6 ^{*3}
RP-T5C-G2-50W-4FT-4L-840-[OCN, Blank]-10V	4000K	1673.99 ^{*1}	12.92 ^{*2}	129.6 ^{*3}
RP-T5C-G2-50W-4FT-4L-850-[OCN, Blank]-10V	5000K	1698.38	12.95	131.2

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

$$1661.80 = (1698.38 - 1649.60) / 4 + 1649.60$$

$$1673.99 = (1698.38 - 1649.60) / 4 + 1661.80$$

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

$$12.92 = (12.89 + 12.95) / 2$$

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

$$128.6 = 1661.80 / 12.92$$

$$129.6 = 1673.99 / 12.92$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-60W-4FT-4L -830-[OCN, Blank]-10V	3000K	1919.07	15.18	126.4
RP-T5C-G2-60W-4FT-4L -835-[OCN, Blank]-10V	3500K	1930.00 ^{*1}	15.17 ^{*2}	127.3 ^{*3}
RP-T5C-G2-60W-4FT-4L -840-[OCN, Blank]-10V	4000K	1940.93 ^{*1}	15.17 ^{*2}	128.0 ^{*3}
RP-T5C-G2-60W-4FT-4L -850-[OCN, Blank]-10V	5000K	1962.79	15.15	129.6

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

$$1930.00 = (1962.79 - 1919.07) / 4 + 1919.07$$

$$1940.93 = (1962.79 - 1919.07) / 4 + 1930.00$$

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

$$15.17 = (15.18 + 15.15) / 2$$

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

$$127.3 = 1930.00 / 15.17$$

$$128.0 = 1940.93 / 15.17$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-70W-4FT-4L -830-[OCN, Blank]-10V	3000K	2279.97	18.10	126.0
RP-T5C-G2-70W-4FT-4L -835-[OCN, Blank]-10V	3500K	2297.23 ^{*1}	18.17 ^{*2}	126.4 ^{*3}
RP-T5C-G2-70W-4FT-4L -840-[OCN, Blank]-10V	4000K	2314.48 ^{*1}	18.17 ^{*2}	127.4 ^{*3}
RP-T5C-G2-70W-4FT-4L -850-[OCN, Blank]-10V	5000K	2348.99	18.24	128.8

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

$$2297.23 = (2348.99 - 2279.97) / 4 + 2279.97$$

$$2314.48 = (2348.99 - 2279.97) / 4 + 2297.23$$

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

$$18.17 = (18.10 + 18.24) / 2$$

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

$$126.4 = 2297.23 / 18.17$$

$$127.4 = 2314.48 / 18.17$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-80W-4FT-4L -830-[OCN, Blank]-10V	3000K	2524.42	20.15	125.3
RP-T5C-G2-80W-4FT-4L -835-[OCN, Blank]-10V	3500K	2538.79 * ¹	20.15 * ²	126.0 * ³
RP-T5C-G2-80W-4FT-4L -840-[OCN, Blank]-10V	4000K	2553.16 * ¹	20.15 * ²	126.7 * ³
RP-T5C-G2-80W-4FT-4L -850-[OCN, Blank]-10V	5000K	2581.90	20.14	128.2

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

$$2538.79 = (2581.90 - 2524.42) / 4 + 2524.42$$

$$2553.16 = (2581.90 - 2524.42) / 4 + 2538.79$$

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

$$20.15 = (20.15 + 20.14) / 2$$

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

$$126.0 = 2538.79 / 20.15$$

$$126.7 = 2553.16 / 20.15$$



Photo Document



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