



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

Product Model No.:

RP-T5C-G2-15W-4FT-2L-830-[OCN, Blank]-10V,
RP-T5C-G2-15W-4FT-2L-850-[OCN, Blank]-10V,
RP-T5C-G2-18W-4FT-2L-830-[OCN, Blank]-10V,
RP-T5C-G2-18W-4FT-2L-850-[OCN, Blank]-10V,
RP-T5C-G2-20W-4FT-2L-830-[OCN, Blank]-10V,
RP-T5C-G2-20W-4FT-2L-850-[OCN, Blank]-10V,
RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V,
RP-T5C-G2-25W-4FT-2L-850-[OCN, Blank]-10V

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

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--2-Lamp External Driver (UL Type C) Lamps
Test Model Number	RP-T5C-G2-15W-4FT-2L-830-[OCN, Blank]-10V, RP-T5C-G2-15W-4FT-2L-850-[OCN, Blank]-10V, RP-T5C-G2-18W-4FT-2L-830-[OCN, Blank]-10V, RP-T5C-G2-18W-4FT-2L-850-[OCN, Blank]-10V, RP-T5C-G2-20W-4FT-2L-830-[OCN, Blank]-10V, RP-T5C-G2-20W-4FT-2L-850-[OCN, Blank]-10V, RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V, RP-T5C-G2-25W-4FT-2L-850-[OCN, Blank]-10V
Rated Inputs	AC 100-277V 50/60Hz
Field-Adjustable Product	Yes, Wattage setting: 15W, 18W, 20W, 25W
Nominal CCT	3000K, 5000K
Dimming Capability	Continuous
Integral Control Sensors	Optional
Date of Receipt Samples	2020-12-21
Date of test	2020-12-22 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-G2-15W-4FT-2L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.12	60	0.061	7.26	0.993

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1019.30	140.4	2986

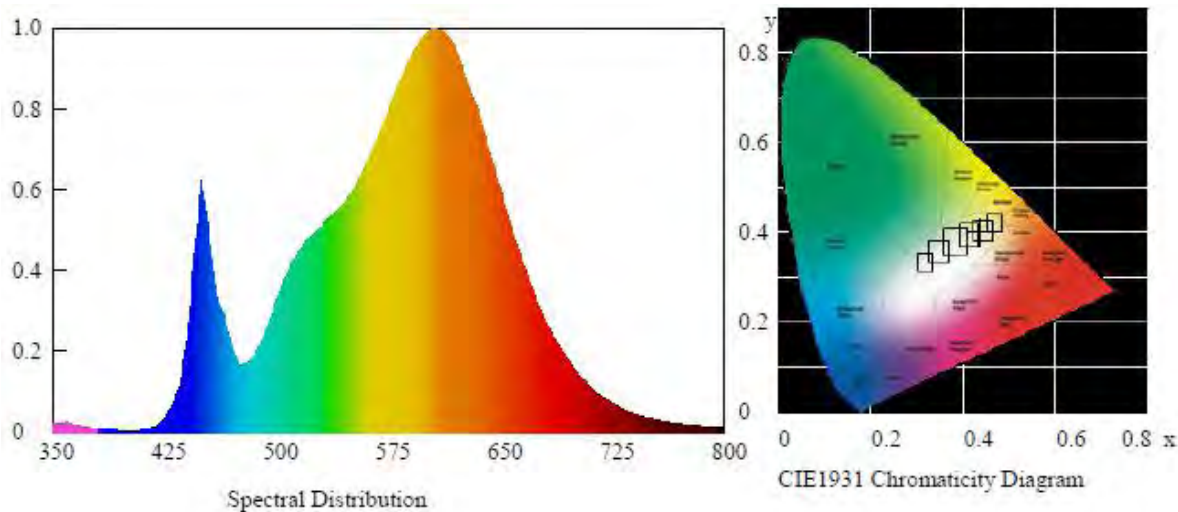
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00131	0.4360	0.4005	0.2515	0.5198

Color Rendering

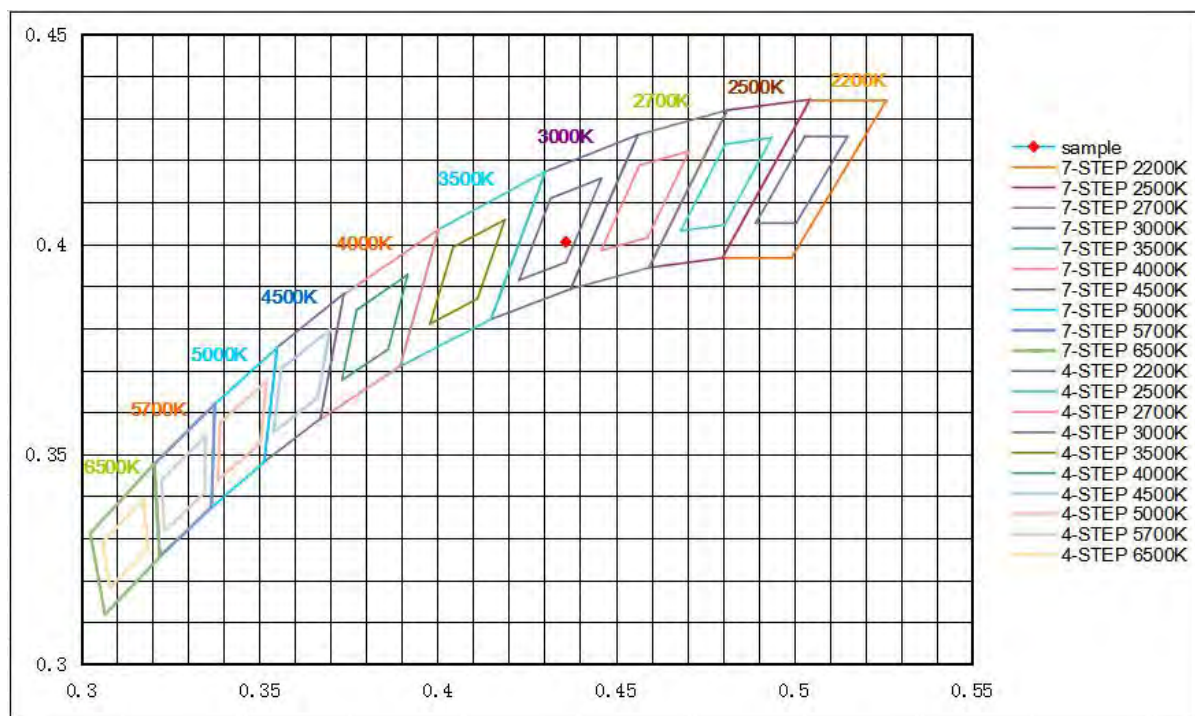
CRI	R9	Rf	Rg	Rcs,h1(%)
84.5	15	86	97	-10

Spectral Distribution





7/4 Step Quadrangle





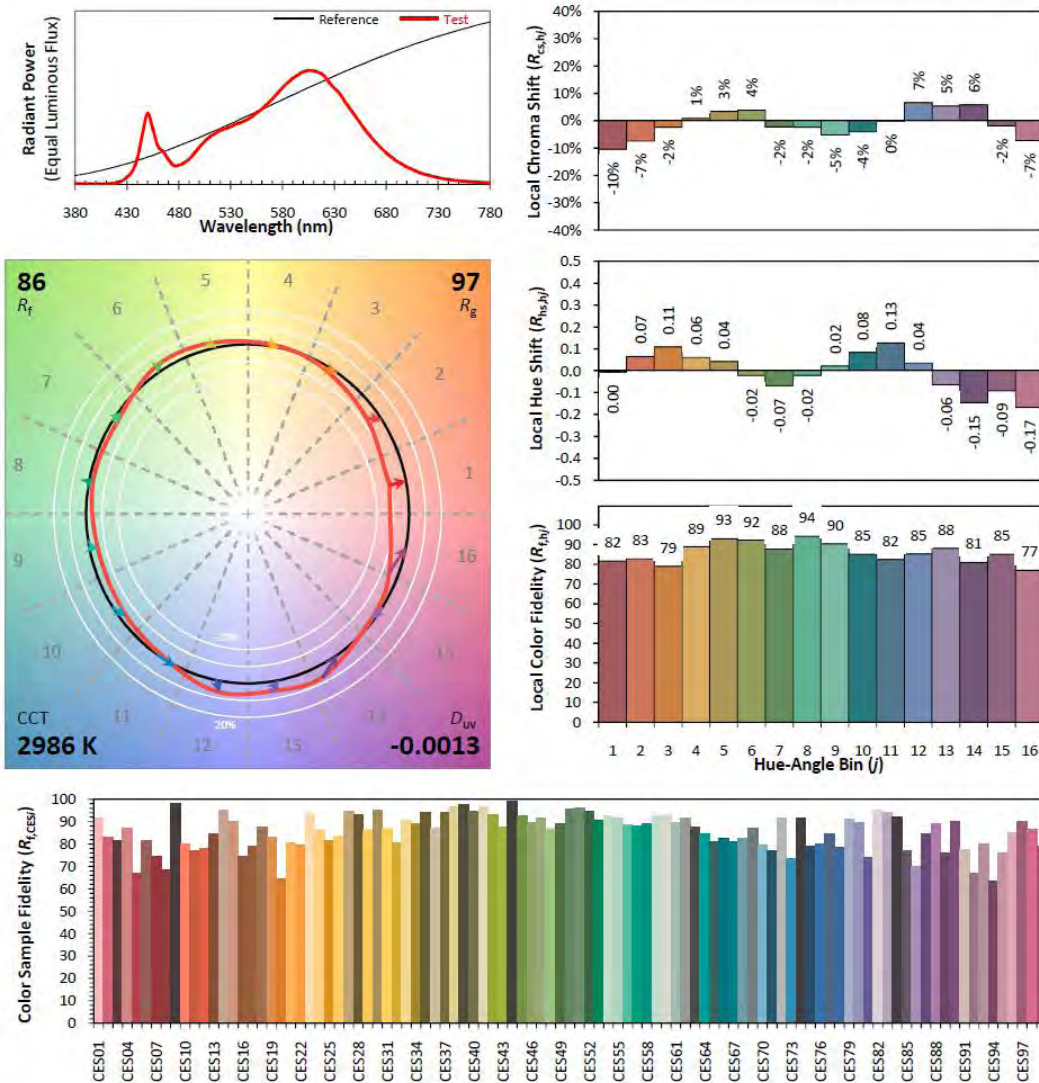
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-15W-4FT-2L-830-[OCN, Blank]-10V



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

x 0.4360
 y 0.4005
 u' 0.2515
 v' 0.5198

CIE 13.3-1995
(CRI)

R_a 85
 R_g 15

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-G2-15W-4FT-2L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.13	60	0.061	7.24	0.992

Photometric data

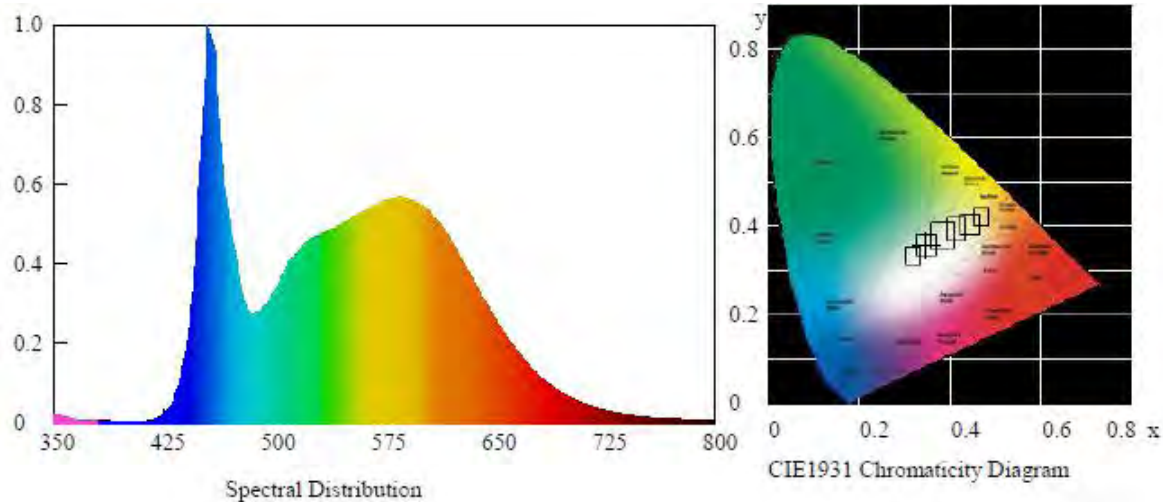
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1042.56	144.0	5020

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00211	0.3450	0.3557	0.2097	0.4867

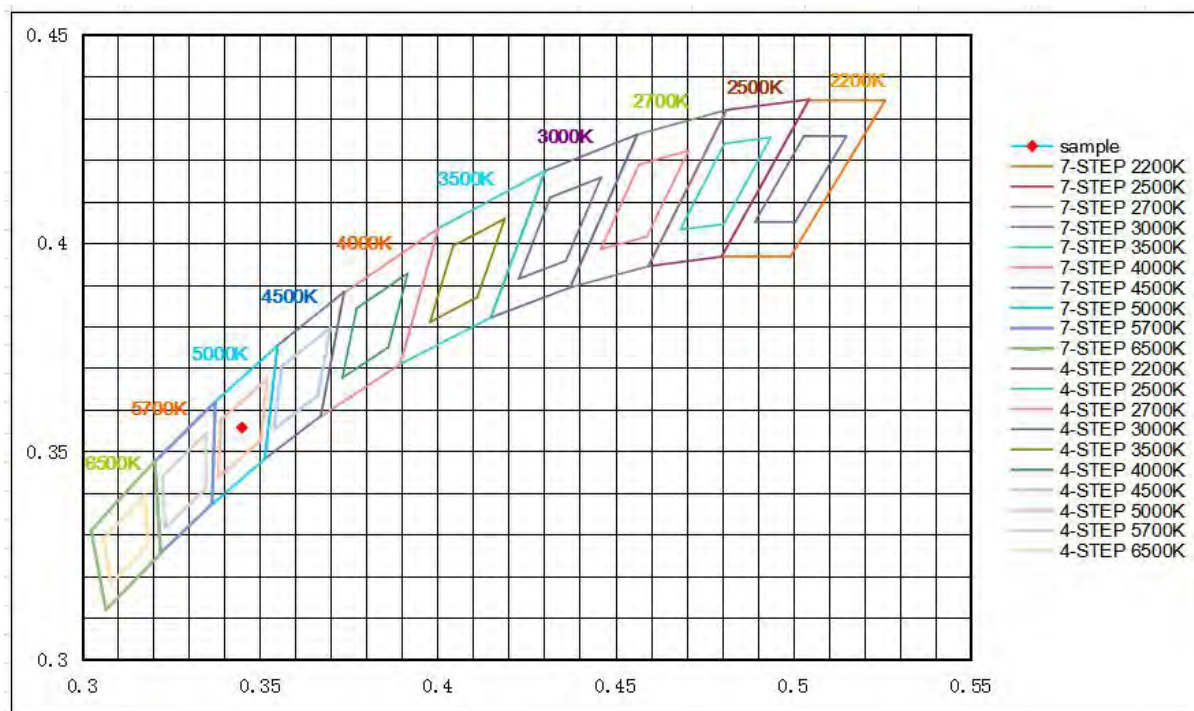
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.5	14	83	93	-12

Spectral Distribution



7/4 Step Quadrangle





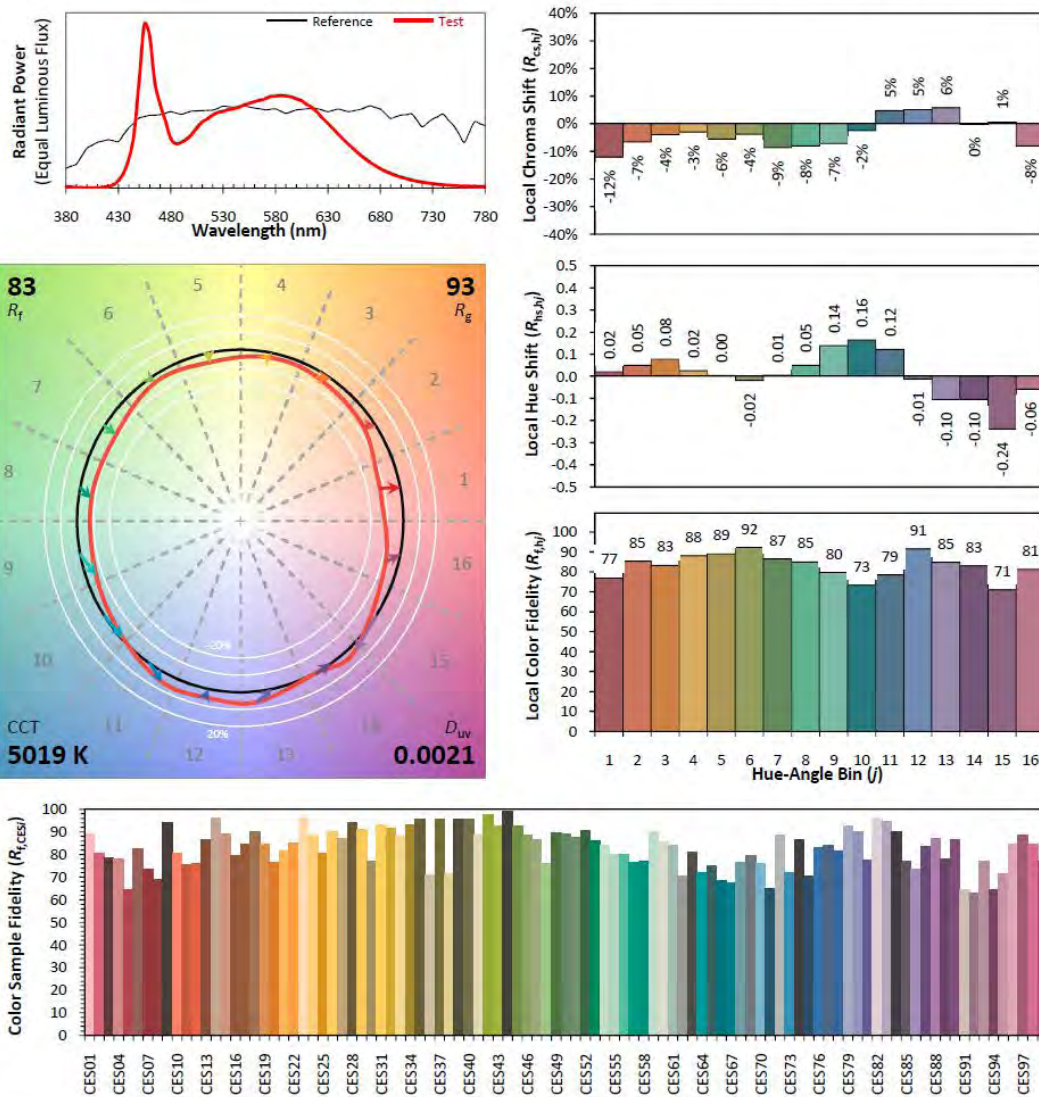
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-15W-4FT-2L-850-[OCN, Blank]-10V



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

x 0.3450
 y 0.3557
 u' 0.2097
 v' 0.4866

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-G2-18W-4FT-2L-830-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.07	60	0.073	8.66	0.994

Photometric data

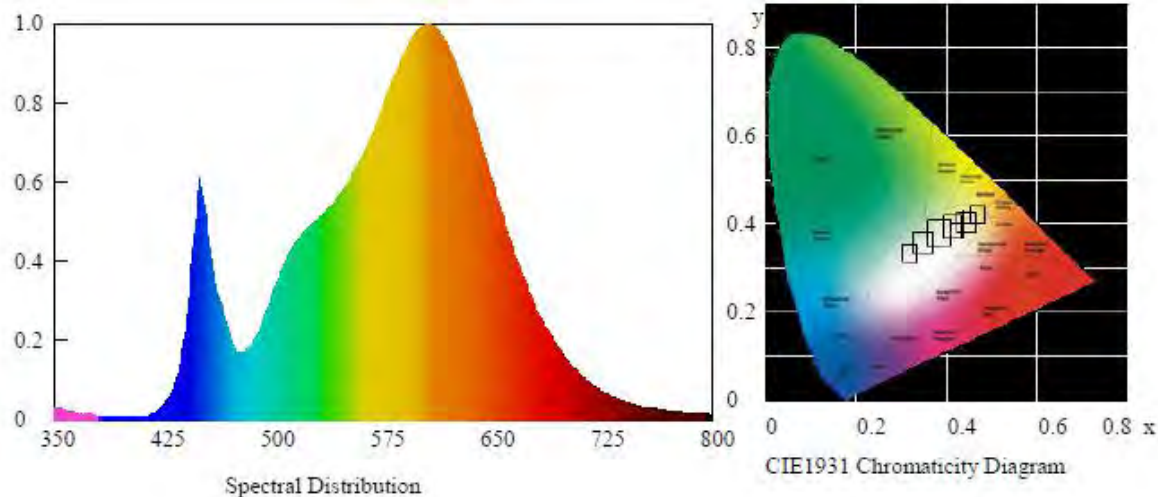
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1200.28	138.6	2989

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00127	0.4359	0.4005	0.2514	0.5198

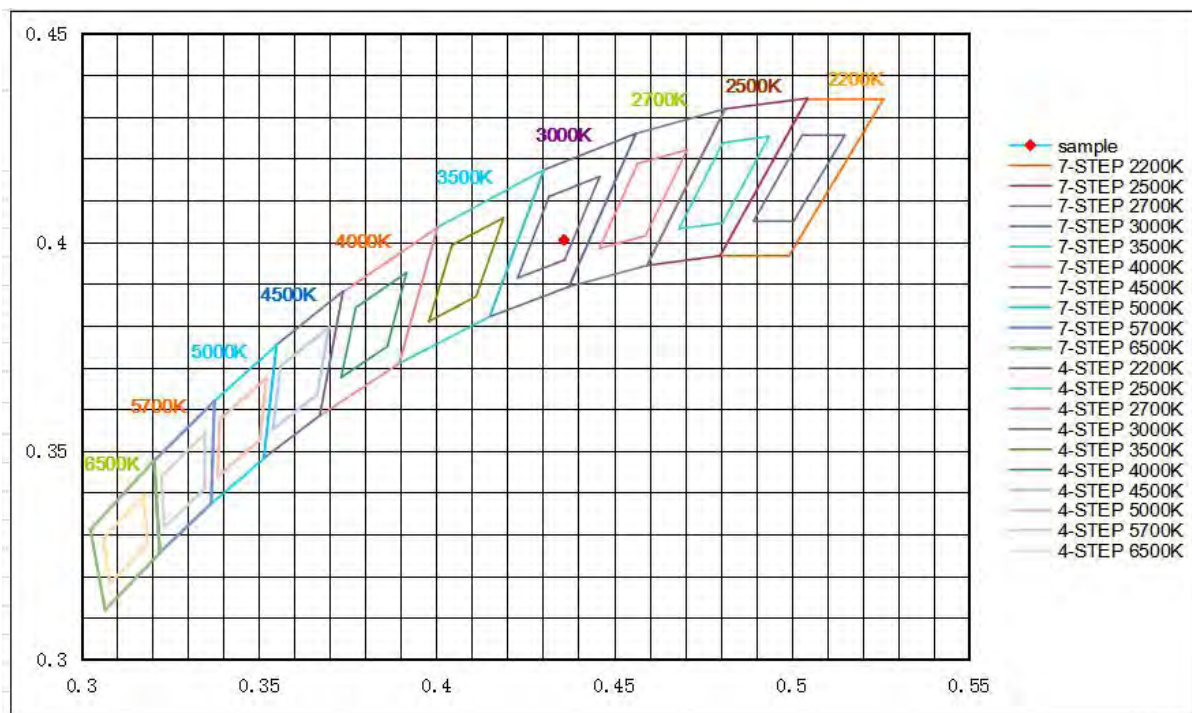
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.3	14	86	97	-10

Spectral Distribution



7/4 Step Quadrangle





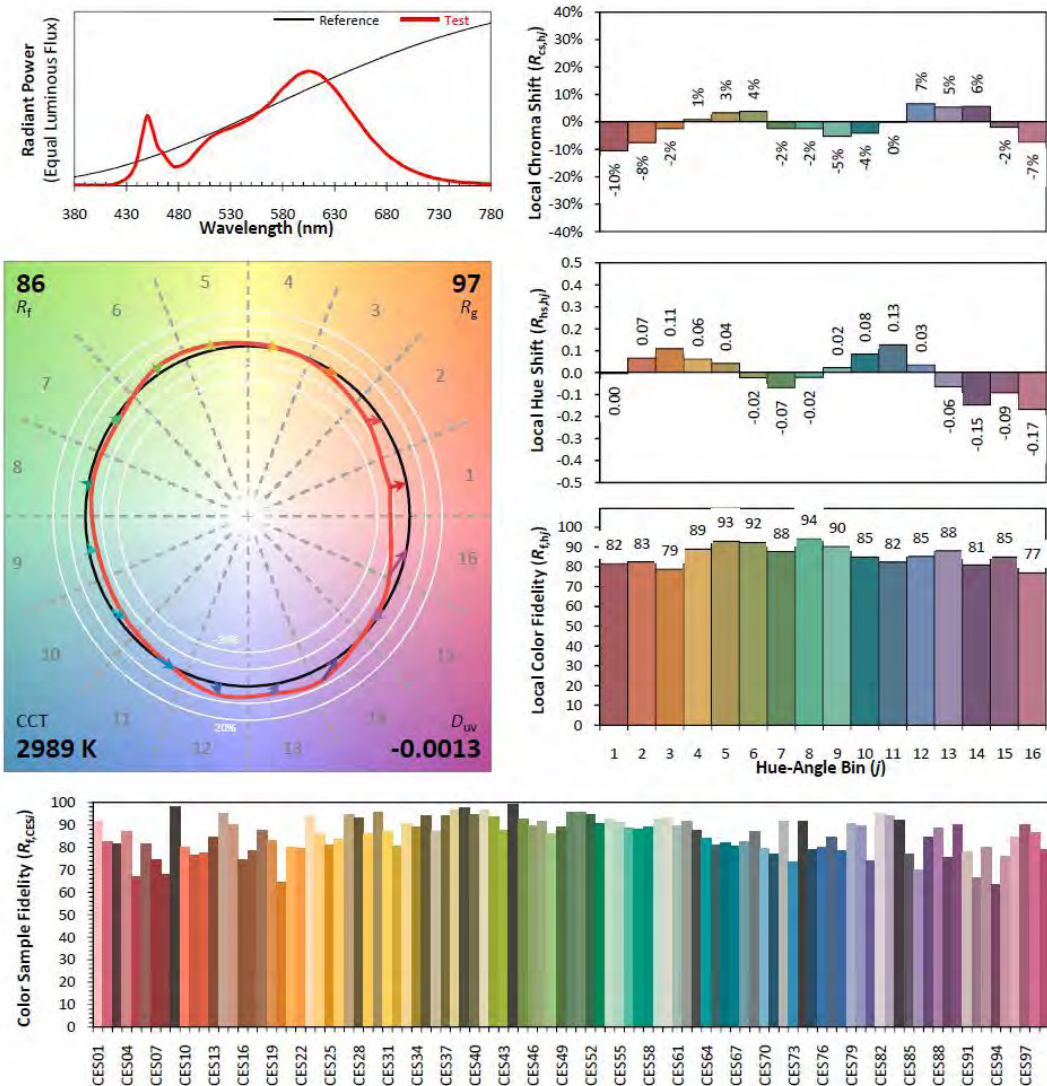
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-18W-4FT-2L-830-[OCN, Blank]-10V



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

 x 0.4359 y 0.4005 u' 0.2514 v' 0.5198CIE 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.

**3.1.4 Model Number: RP-T5C-G2-18W-4FT-2L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.072	8.64	0.994

Photometric data

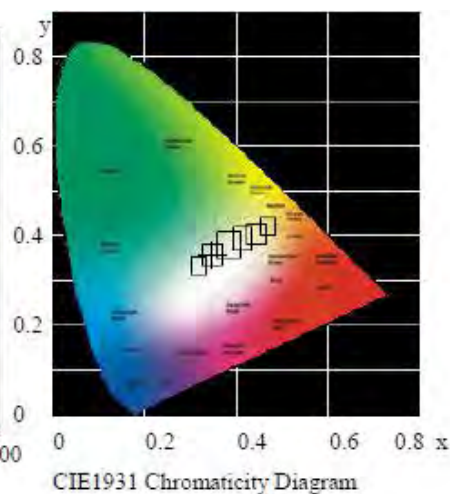
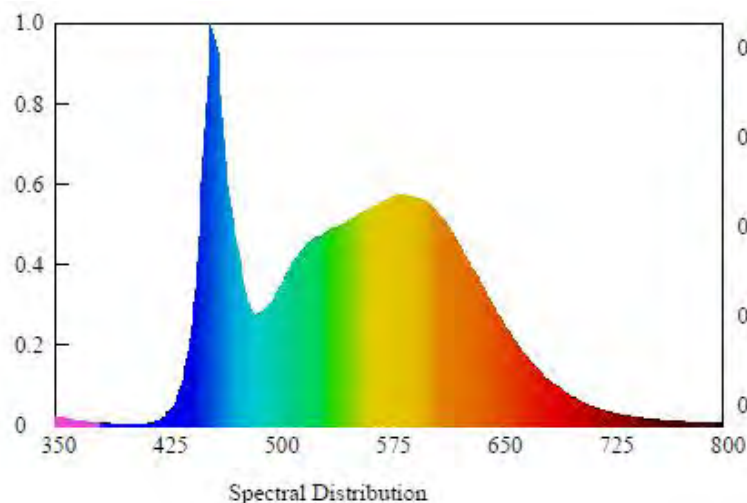
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1227.90	142.2	5014

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00209	0.3451	0.3558	0.2098	0.4867

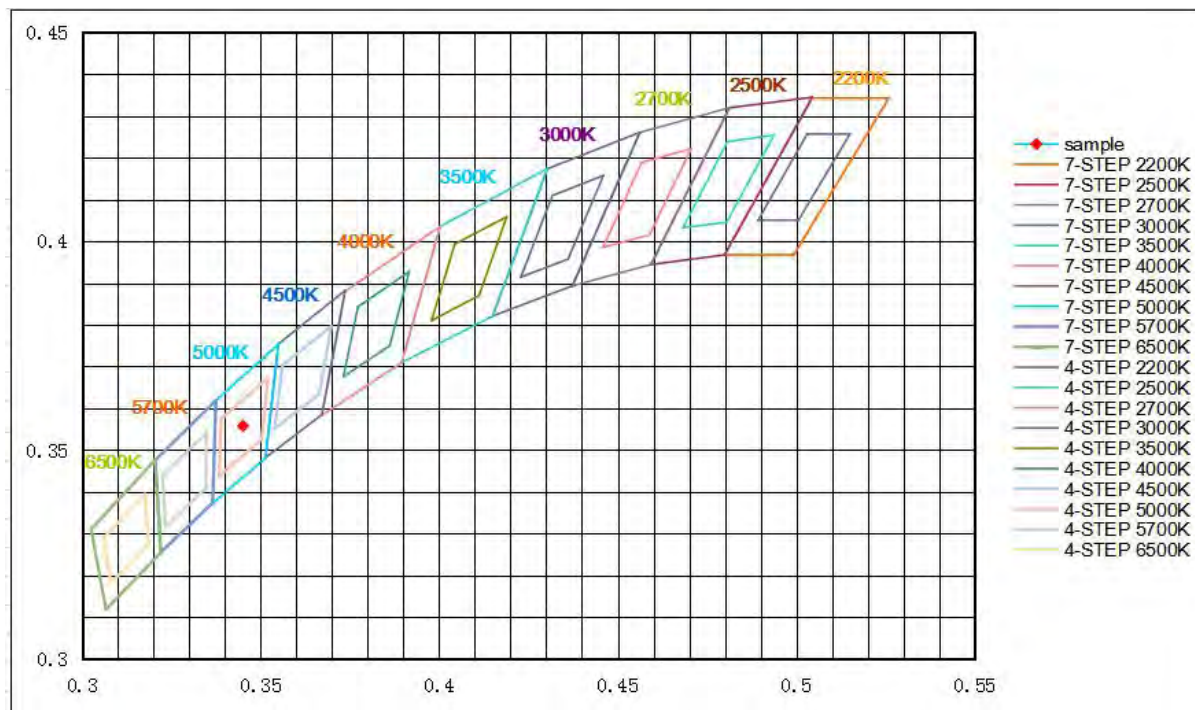
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.4	14	83	93	-12

Spectral Distribution



7/4 Step Quadrangle





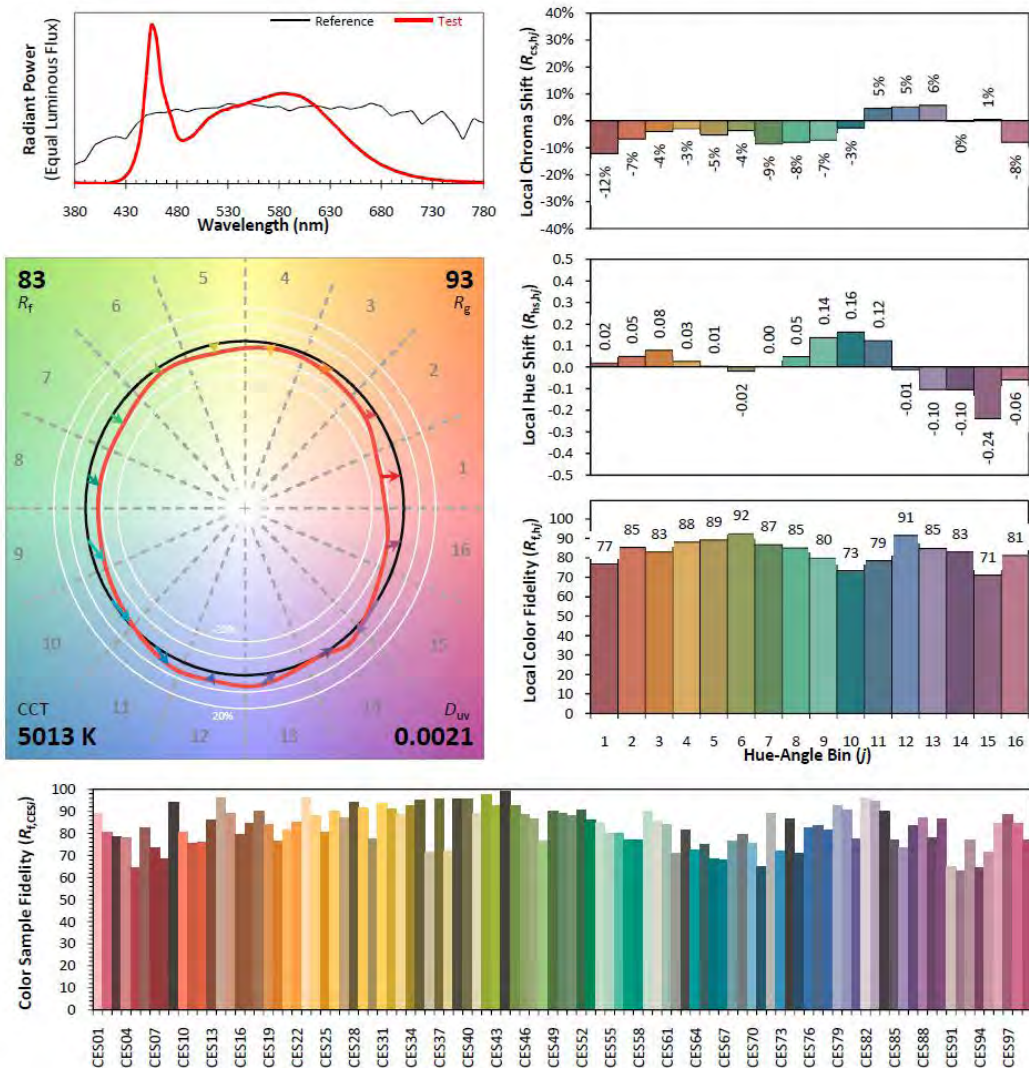
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-18W-4FT-2L-850-[OCN, Blank]-10V



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

 x 0.3451 y 0.3558 u' 0.2098 v' 0.4867CIE 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-G2-20W-4FT-2L-830-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.07	60	0.081	9.66	0.995

Photometric data

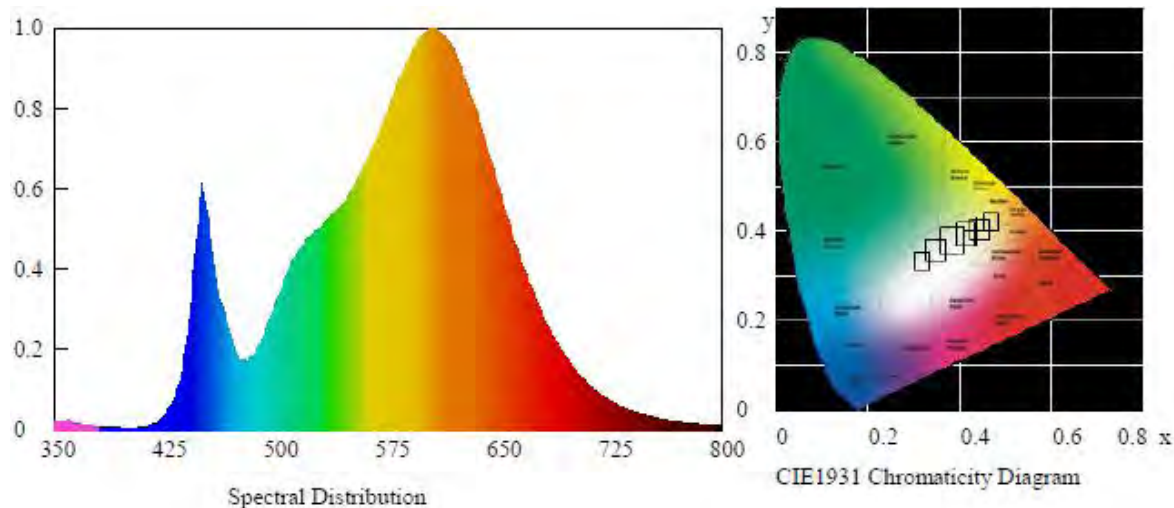
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1330.46	137.8	2998

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00149	0.4349	0.3997	0.2512	0.5193

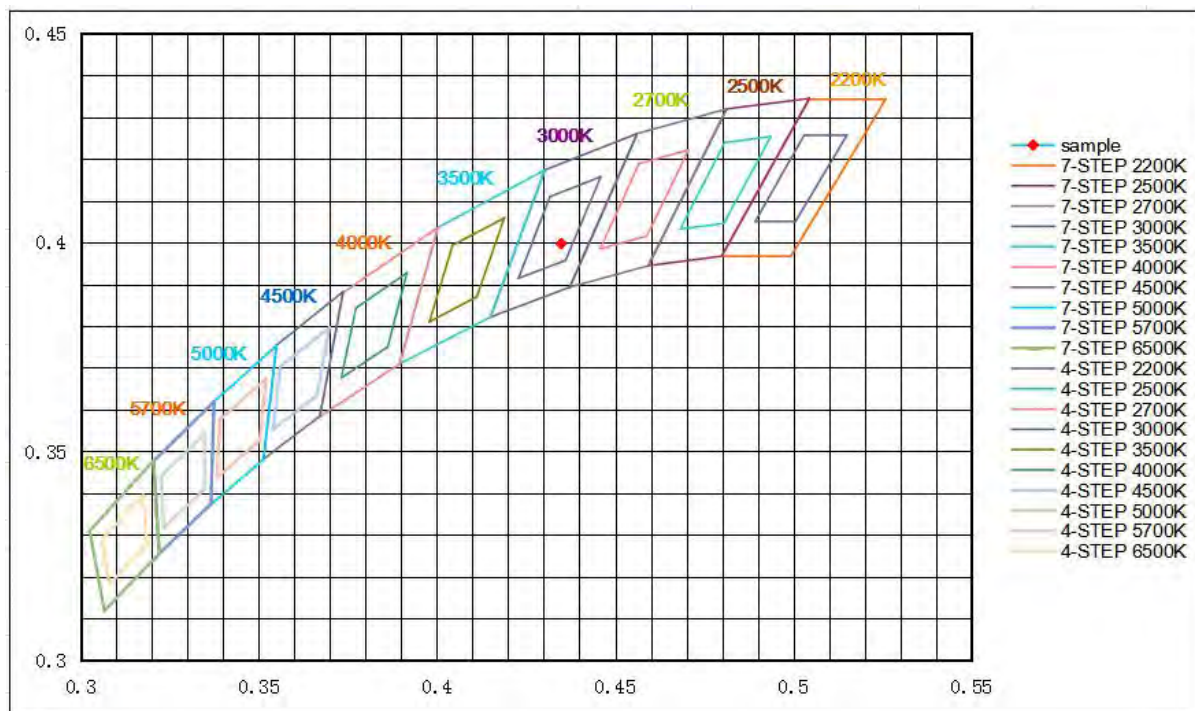
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.2	14	85	97	-10

Spectral Distribution



7/4 Step Quadrangle





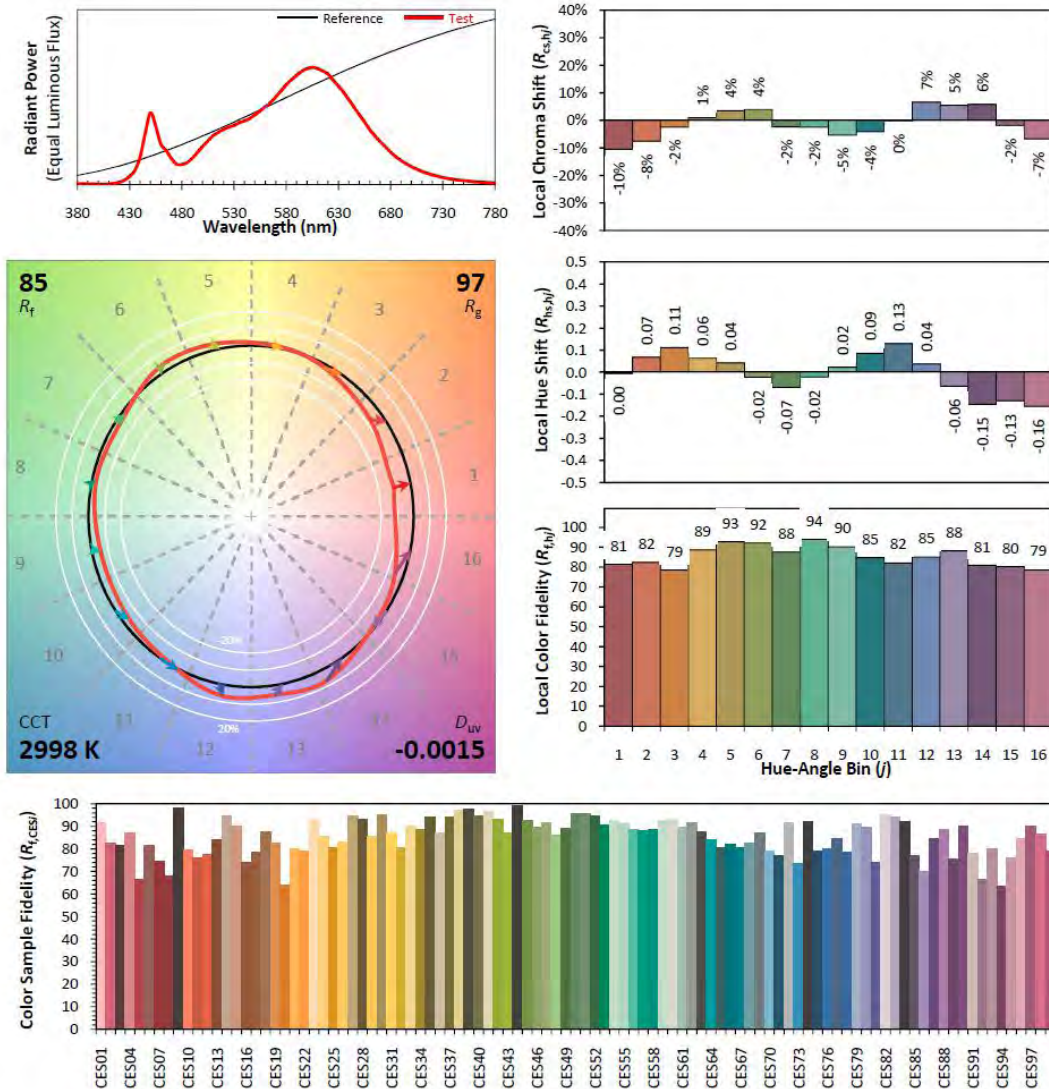
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-20W-4FT-2L-830-[OCN, Blank]-10V



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

x 0.4349
 y 0.3997
 u' 0.2512
 v' 0.5193

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-T5C-G2-20W-4FT-2L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.06	60	0.081	9.66	0.995

Photometric data

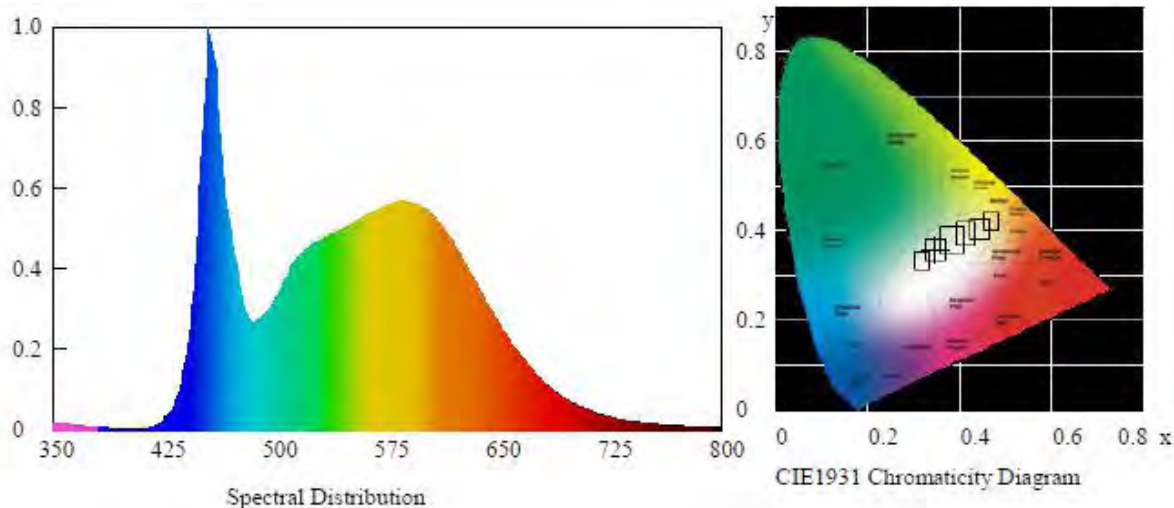
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1362.39	141.4	4990

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00213	0.3458	0.3565	0.21	0.4871

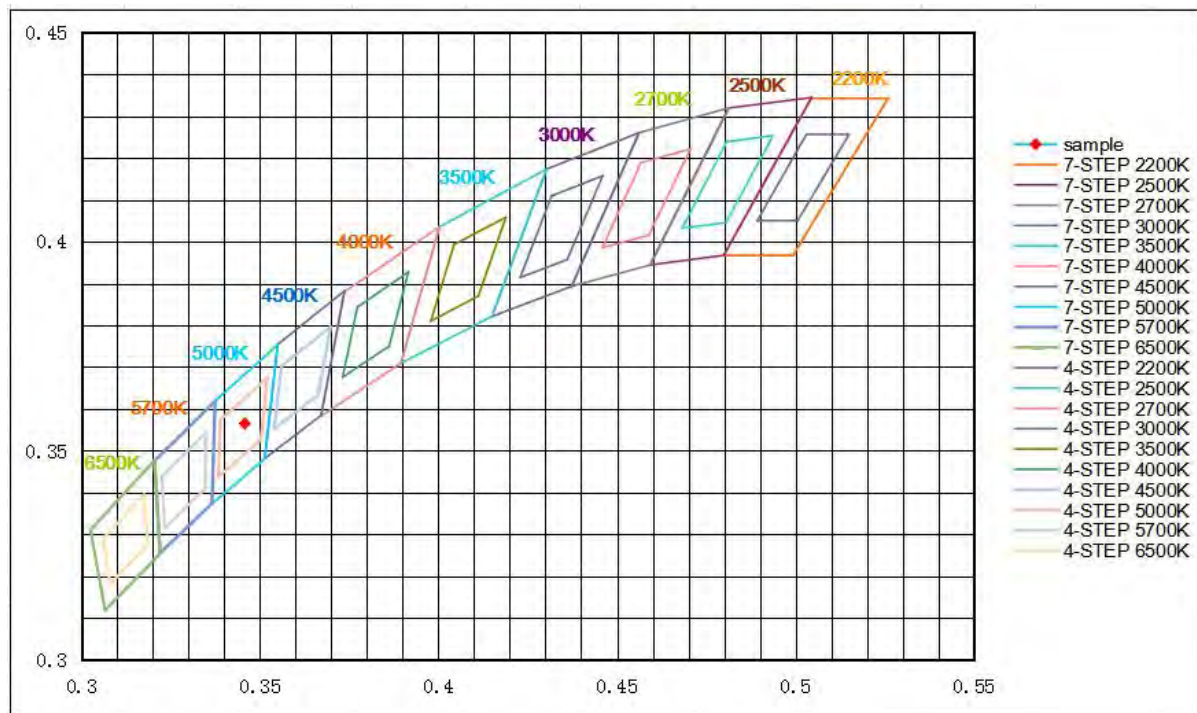
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





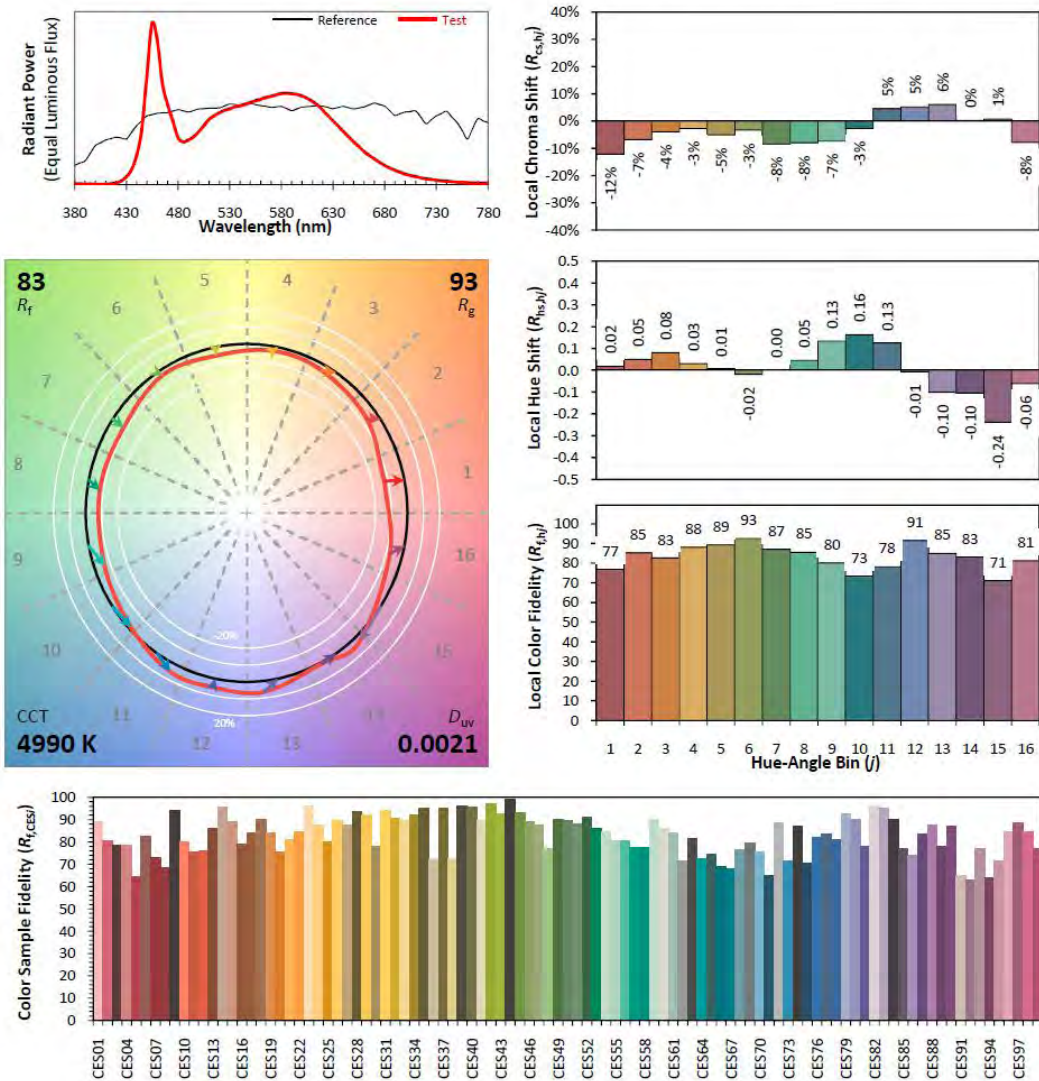
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-20W-4FT-2L-850-[OCN, Blank]-10V



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

 x 0.3458 y 0.3565 u' 0.2100 v' 0.4871CIE 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.

**3.1.7 Model Number: RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.97	60	0.101	12.02	0.996

Photometric data

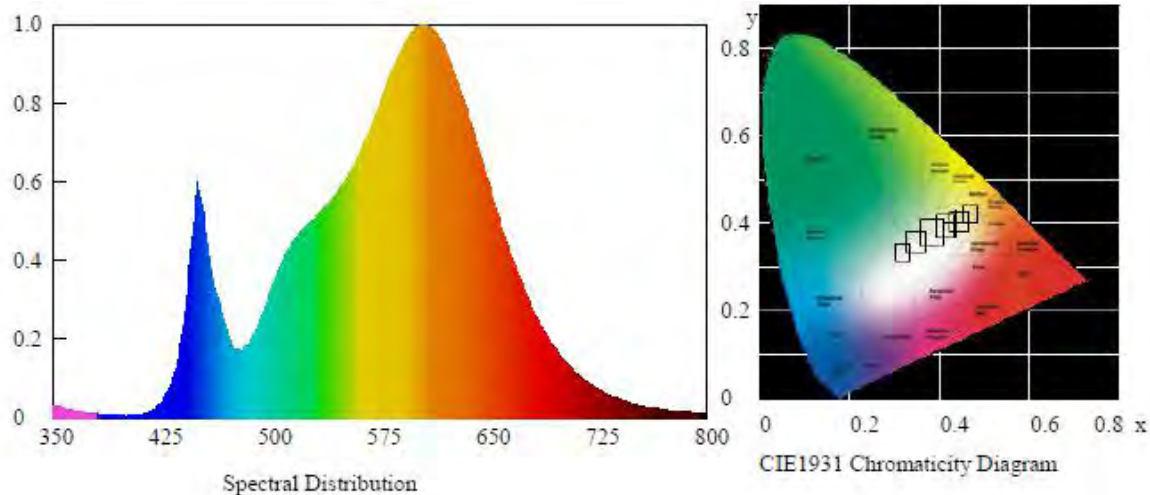
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1577.45	131.2	2995

Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00138	0.4353	0.4001	0.2512	0.5196

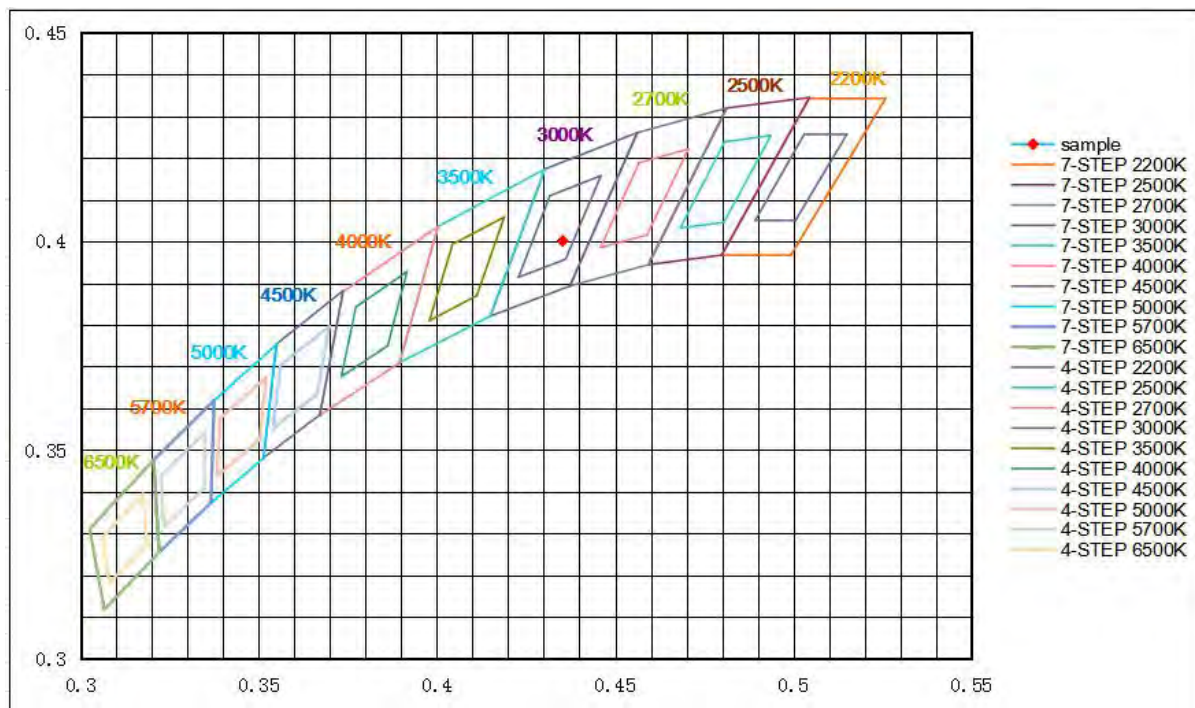
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
84.0	13	85	97	-11

Spectral Distribution



7/4 Step Quadrangle





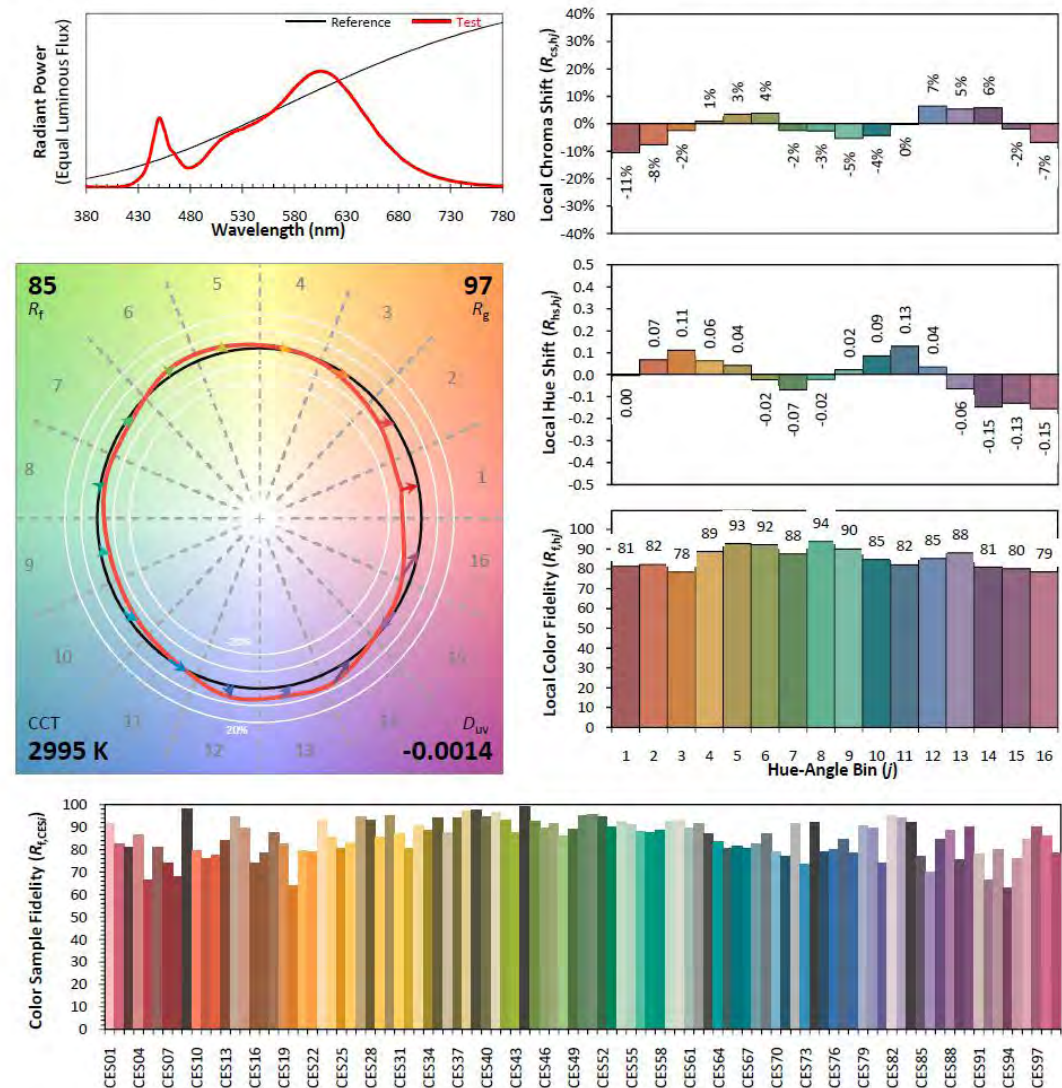
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V



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

 x 0.4353 y 0.4001 u' 0.2512 v' 0.5196CIE 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-T5C-G2-25W-4FT-2L-850-[OCN, Blank]-10V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.98	60	0.101	12.07	0.996

Photometric data

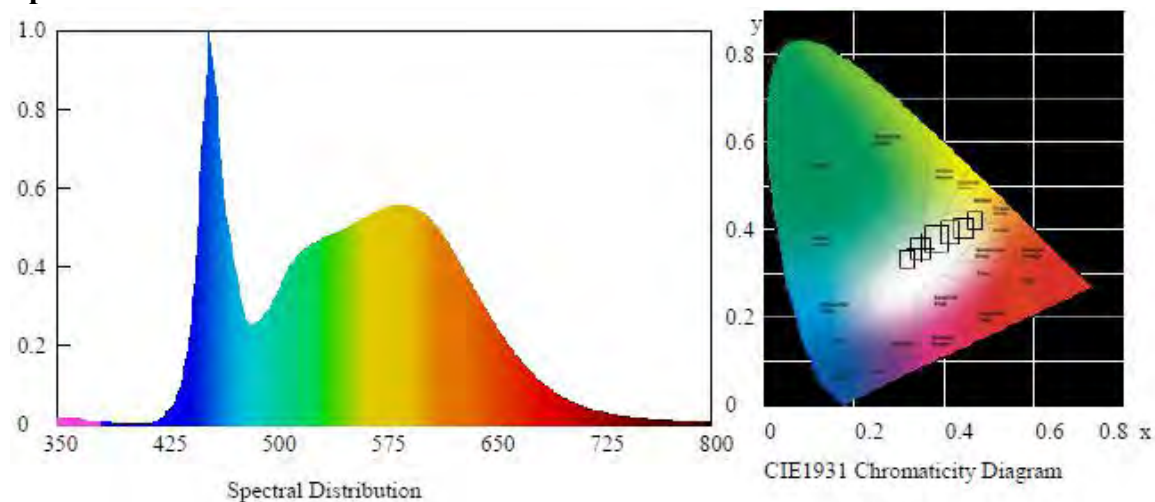
Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
1638.43	135.8	4960

Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00252	0.3468	0.3580	0.2101	0.488

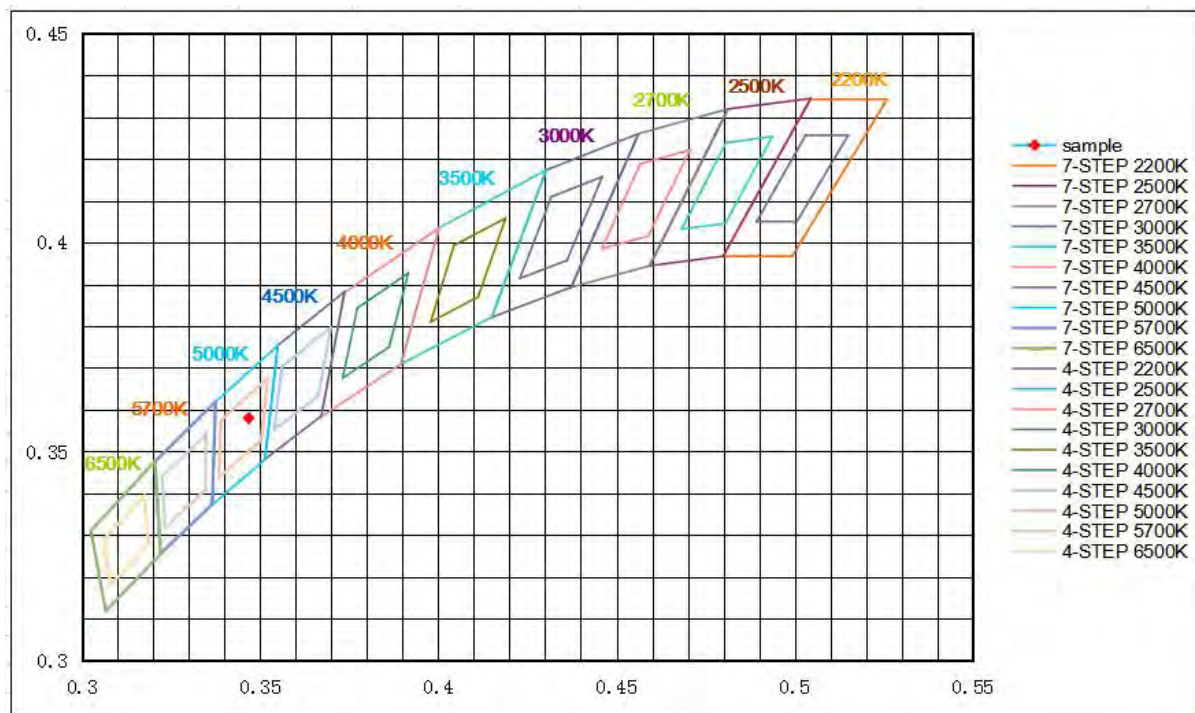
Color Rendering

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

Spectral Distribution



7/4 Step Quadrangle





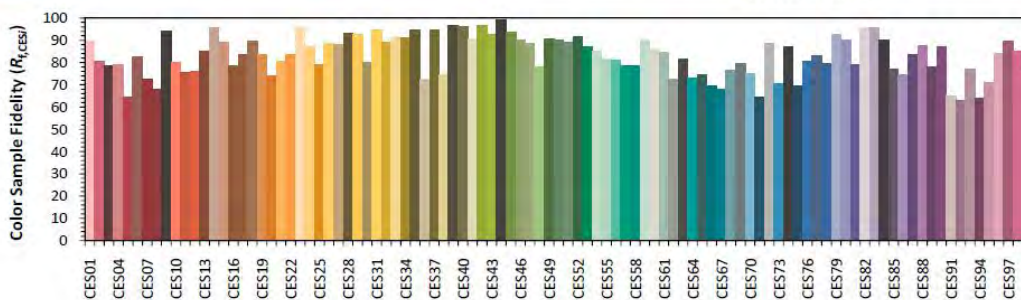
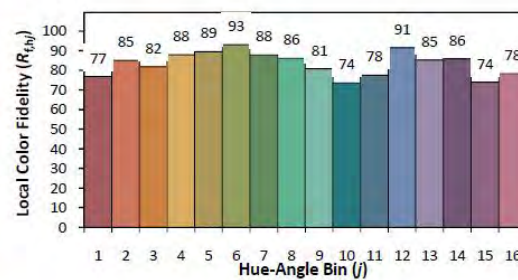
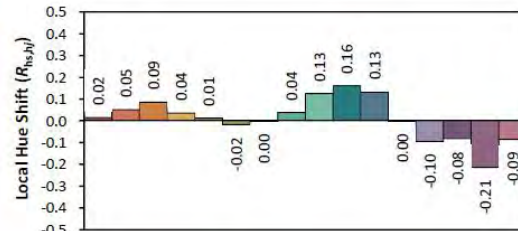
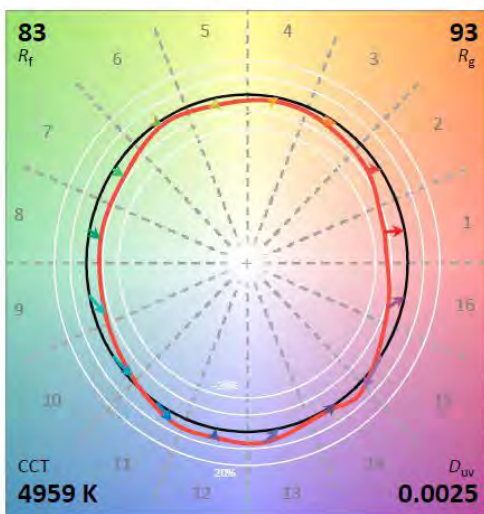
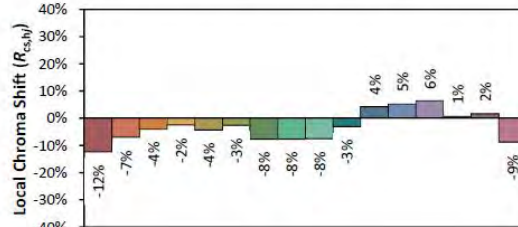
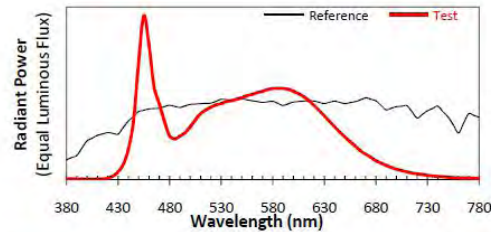
ANSI/IES TM-30-18 Color Rendition Report

Source: BL210201004-9

Manufacturer: LIGHT EFFICIENT DESIGN

Date: 2021/2/1

Model: RP-T5C-G2-25W-4FT-2L-850-[OCN, Blank]-10V



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

x 0.3468
 y 0.3580
 u' 0.2101
 v' 0.4880

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.



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

3.2.1 Model Number: RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.03	60	0.101	12.04	0.9948

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Beam Angle (°)
1577.84	131.05	185.3

**Zonal Flux Diagram**

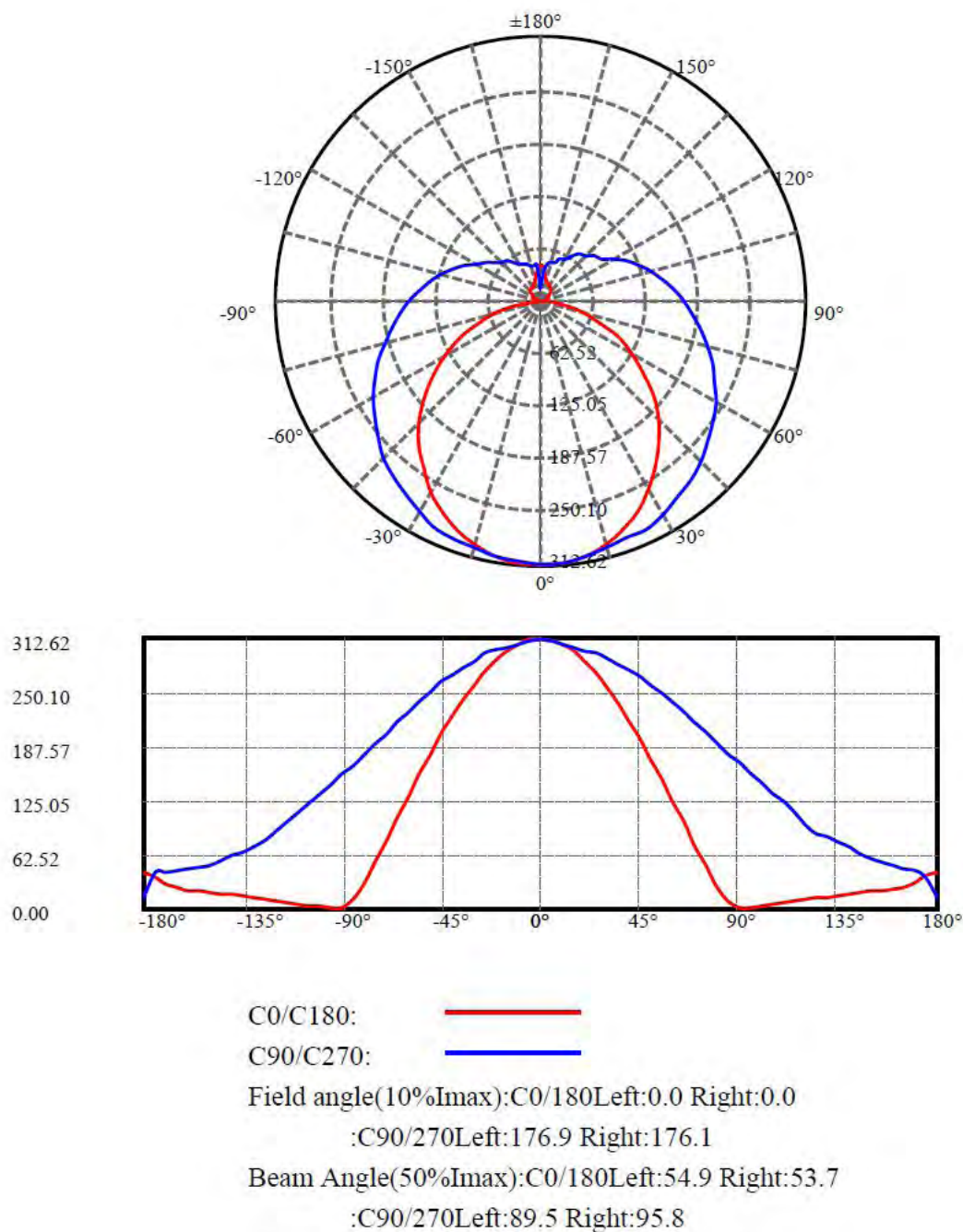
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	311.175	0.000	0	0.00%	0.00%
5.0	310.068	7.427	7.427	0.00%	0.47%
10.0	306.831	22.070	29.497	0.00%	1.87%
15.0	301.468	36.089	65.587	0.00%	4.16%
20.0	294.511	49.127	114.714	0.00%	7.27%
25.0	285.437	60.843	175.557	0.00%	11.13%
30.0	274.231	70.850	246.408	0.00%	15.62%
35.0	261.386	78.906	325.313	0.00%	20.62%
40.0	247.778	84.996	410.31	0.00%	26.00%
45.0	232.794	89.046	499.356	0.00%	31.65%
50.0	216.651	90.889	590.245	0.00%	37.41%
55.0	200.757	90.833	681.078	0.00%	43.17%
60.0	184.413	89.114	770.192	0.00%	48.81%
65.0	168.294	85.825	856.017	0.00%	54.25%
70.0	151.897	81.154	937.171	0.00%	59.40%
75.0	136.626	75.501	1012.672	0.00%	64.18%
80.0	121.683	69.204	1081.876	0.00%	68.57%
85.0	108.434	62.597	1144.472	0.00%	72.53%
90.0	97.515	56.415	1200.887	0.00%	76.11%
95.0	88.930	51.042	1251.928	0.00%	79.34%
100.0	80.946	46.144	1298.072	0.00%	82.27%
105.0	73.888	41.416	1339.488	0.00%	84.89%
110.0	67.466	36.933	1376.421	0.00%	87.23%
115.0	61.379	32.612	1409.033	0.00%	89.30%
120.0	54.937	28.264	1437.297	0.00%	91.09%
125.0	51.032	24.484	1461.781	0.00%	92.64%
130.0	48.079	21.542	1483.323	0.00%	94.01%
135.0	45.962	18.992	1502.315	0.00%	95.21%
140.0	44.287	16.702	1519.017	0.00%	96.27%
145.0	42.817	14.525	1533.543	0.00%	97.19%
150.0	41.107	12.350	1545.893	0.00%	97.98%
155.0	39.183	10.154	1556.046	0.00%	98.62%
160.0	37.798	8.067	1564.114	0.00%	99.13%
165.0	36.478	6.119	1570.232	0.00%	99.52%
170.0	34.891	4.231	1574.464	0.00%	99.79%
175.0	35.657	2.519	1576.982	0.00%	99.95%
180.0	36.405	0.860	1577.843	0.00%	100.00%



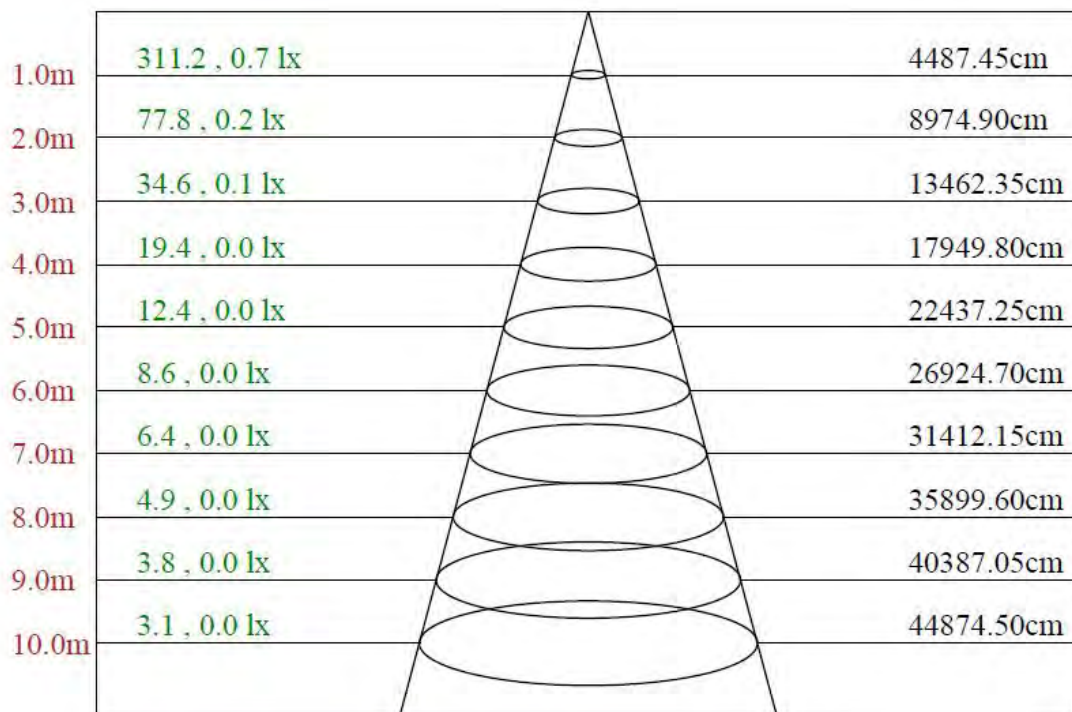
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C67.5 plane 174.90

**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	311.18	309.56	304.33	296.27	285.40	271.70	255.59	237.26	217.52
22.5	311.18	309.57	305.15	298.33	288.49	276.24	262.39	246.53	228.86
45.0	311.18	310.16	307.31	302.21	296.51	288.16	278.59	266.98	253.14
67.5	311.18	312.62	311.59	310.14	306.00	300.00	292.35	282.42	272.28
90.0	311.18	309.28	304.42	300.62	297.66	295.55	288.80	281.83	276.55
112.5	311.18	310.97	308.70	304.98	300.22	293.20	284.31	273.98	263.45
135.0	311.18	310.34	307.62	302.61	295.92	286.93	275.65	262.90	247.44
157.5	311.18	309.51	305.13	297.84	288.04	275.74	260.53	243.44	225.31
180.0	311.18	309.97	305.74	297.88	287.81	274.52	258.81	241.09	222.56
202.5	311.18	309.37	305.15	298.13	287.69	275.24	260.99	244.52	227.26
225.0	311.18	310.16	306.90	301.20	293.87	284.29	273.70	260.67	246.42
247.5	311.18	312.62	309.93	305.38	300.42	294.00	285.73	276.83	267.11
270.0	311.18	308.22	305.05	301.25	299.35	294.50	285.63	276.76	269.80
292.5	311.18	307.87	309.11	305.60	300.22	293.82	286.38	276.88	266.54
315.0	311.18	310.55	307.00	301.77	294.25	284.84	273.98	261.44	248.69
337.5	311.18	310.34	306.17	299.30	290.33	278.24	264.28	248.65	231.56
360.0	311.18	309.56	304.33	296.27	285.40	271.70	255.59	237.26	217.52
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	195.97	173.01	149.44	124.27	100.50	74.52	49.95	26.38	9.06
22.5	209.79	189.52	168.44	146.15	127.28	107.41	90.94	77.29	64.24
45.0	237.05	221.57	206.91	192.24	178.19	164.55	151.31	137.67	126.67
67.5	260.90	248.90	238.55	228.83	217.45	205.86	193.86	180.42	169.86
90.0	267.05	257.34	248.48	238.34	226.31	215.12	203.93	191.69	179.44
112.5	251.05	240.30	231.01	221.29	210.34	198.36	187.61	175.01	162.41
135.0	232.60	216.30	200.21	186.83	173.04	159.66	145.45	133.33	122.26
157.5	206.13	185.29	164.24	142.35	121.30	100.04	84.20	70.24	58.78
180.0	202.01	178.45	155.08	130.11	105.34	79.76	55.19	31.62	11.88
202.5	208.39	188.11	168.44	148.96	128.49	108.41	90.14	73.28	58.82
225.0	232.36	217.09	201.21	185.73	171.27	157.01	142.55	128.50	115.67
247.5	256.14	243.52	231.11	218.69	206.90	193.45	181.04	167.79	154.55
270.0	261.35	249.53	239.19	226.73	214.70	202.67	190.63	178.81	165.93
292.5	256.01	244.64	232.86	220.47	206.83	192.78	180.18	166.75	154.97
315.0	235.11	220.48	205.43	189.97	175.13	159.66	145.45	131.24	118.08
337.5	212.80	192.37	171.53	149.65	129.64	111.09	93.58	76.91	62.32
360.0	195.97	173.01	149.44	124.27	100.50	74.52	49.95	26.38	9.06
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	2.22	2.82	3.83	5.24	7.05	8.86	10.88	12.69	14.50
22.5	54.00	45.97	39.95	35.13	33.33	32.32	31.92	31.12	30.72
45.0	113.84	103.86	94.70	85.94	77.18	69.04	61.10	55.80	52.95
67.5	157.66	145.66	133.45	122.90	112.14	100.97	85.45	79.04	72.41
90.0	169.10	157.49	146.09	134.69	124.13	111.89	97.96	88.24	82.97
112.5	154.76	142.57	130.79	120.26	109.10	98.56	83.06	77.48	71.08
135.0	112.64	101.77	92.58	84.22	75.23	66.04	60.19	56.43	52.66
157.5	50.44	42.94	37.10	32.93	31.89	30.64	30.64	28.97	31.06
180.0	2.22	1.81	3.02	4.43	6.04	8.26	9.87	12.29	13.70
202.5	47.38	40.15	33.33	29.91	27.71	26.30	26.50	25.10	25.70
225.0	102.44	93.48	84.92	74.94	68.22	59.67	53.97	50.51	46.64
247.5	141.73	132.21	121.04	111.73	100.76	90.83	79.04	72.83	66.21
270.0	154.53	143.55	132.37	122.02	109.99	100.28	88.46	78.74	71.99
292.5	141.54	131.00	121.29	111.37	99.59	89.47	76.24	70.67	64.47
315.0	105.95	96.34	86.73	77.74	69.17	62.49	57.05	48.69	45.56
337.5	49.81	41.27	33.97	28.76	27.93	26.47	26.68	27.93	26.68
360.0	2.22	2.82	3.83	5.24	7.05	8.86	10.88	12.69	14.50



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	16.31	17.93	19.13	20.54	21.35	23.36	25.78	31.22	39.07
22.5	31.72	33.53	34.73	35.13	35.94	37.14	36.74	33.33	36.94
45.0	50.10	47.25	45.82	44.19	43.58	42.36	41.34	37.27	36.05
67.5	66.62	61.45	56.69	52.55	49.45	46.35	44.90	43.66	32.48
90.0	77.27	71.57	65.02	58.48	54.04	49.61	47.08	44.76	36.31
112.5	65.91	61.37	57.86	54.34	51.04	44.84	38.23	27.69	32.03
135.0	50.37	47.44	46.60	45.56	38.87	34.06	30.09	29.88	38.04
157.5	31.26	32.93	34.60	32.72	30.01	31.26	30.22	32.72	39.39
180.0	15.51	17.32	18.33	19.54	20.54	22.16	25.98	29.81	36.05
202.5	28.11	29.51	31.72	30.92	28.71	29.31	29.11	30.31	35.13
225.0	43.78	41.54	40.32	40.12	37.27	33.20	31.16	28.71	31.97
247.5	60.83	57.52	53.59	49.45	46.55	44.48	38.69	31.04	24.41
270.0	65.66	61.22	55.94	51.30	48.13	46.02	44.12	43.07	42.01
292.5	59.09	54.96	51.04	47.73	45.04	43.18	41.74	41.33	40.71
315.0	44.10	42.63	41.59	41.38	40.96	40.33	40.13	39.92	35.53
337.5	28.76	30.43	32.10	33.76	35.43	37.10	38.35	33.56	34.39
360.0	16.31	17.93	19.13	20.54	21.35	23.36	25.78	31.22	39.07
C/γ(°)	180.0								
0.0	43.10								
22.5	40.96								
45.0	39.51								
67.5	37.45								
90.0	13.30								
112.5	35.95								
135.0	40.13								
157.5	40.85								
180.0	43.10								
202.5	40.96								
225.0	39.51								
247.5	37.45								
270.0	13.30								
292.5	35.95								
315.0	40.13								
337.5	40.85								
360.0	43.10								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-T5C-G2-25W-4FT-2L-830-[OCN, Blank]-10V	Power Factor	277	60	0.959
	THD	277	60	10.3%

5 Performance Assessment

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-15W-4FT-2L-830-[OCN, Blank]-10V	3000K	1019.30	7.26	140.4
RP-T5C-G2-15W-4FT-2L-835-[OCN, Blank]-10V	3500K	1025.12 ^{*1}	7.25 ^{*2}	141.4 ^{*3}
RP-T5C-G2-15W-4FT-2L-840-[OCN, Blank]-10V	4000K	1030.93 ^{*1}	7.25 ^{*2}	142.2 ^{*3}
RP-T5C-G2-15W-4FT-2L-850-[OCN, Blank]-10V	5000K	1042.56	7.24	144.0

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

$$1025.12 = (1042.56 - 1019.30) / 4 + 1019.30$$

$$1030.93 = (1042.56 - 1019.30) / 4 + 1025.12$$

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

$$7.25 = (7.26 + 7.24) / 2$$

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

$$141.4 = 1025.12 / 7.25$$

$$142.2 = 1030.93 / 7.25$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-18W-4FT-2L -830-[OCN, Blank]-10V	3000K	1200.28	8.66	138.6
RP-T5C-G2-18W-4FT-2L -835-[OCN, Blank]-10V	3500K	1207.19 ^{*1}	8.65 ^{*2}	139.6 ^{*3}
RP-T5C-G2-18W-4FT-2L -840-[OCN, Blank]-10V	4000K	1214.09 ^{*1}	8.65 ^{*2}	140.4 ^{*3}
RP-T5C-G2-18W-4FT-2L -850-[OCN, Blank]-10V	5000K	1227.90	8.64	142.2

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

$$1207.19 = (1227.90 - 1200.28) / 4 + 1200.28$$

$$1214.09 = (1227.90 - 1200.28) / 4 + 1207.19$$

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

$$8.65 = (8.66 + 8.64) / 2$$

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

$$139.6 = 1207.19 / 8.65$$

$$140.4 = 1214.09 / 8.65$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-20W-4FT-2L -830-[OCN, Blank]-10V	3000K	1330.46	9.66	137.8
RP-T5C-G2-20W-4FT-2L -835-[OCN, Blank]-10V	3500K	1338.44 ^{*1}	9.65 ^{*2}	138.7 ^{*3}
RP-T5C-G2-20W-4FT-2L -840-[OCN, Blank]-10V	4000K	1346.43 ^{*1}	9.65 ^{*2}	139.5 ^{*3}
RP-T5C-G2-20W-4FT-2L -850-[OCN, Blank]-10V	5000K	1362.39	9.64	141.4

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

$$1338.44 = (1362.39 - 1330.46) / 4 + 1330.46$$

$$1346.43 = (1362.39 - 1330.46) / 4 + 1338.44$$

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

$$9.65 = (9.66 + 9.64) / 2$$

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

$$138.7 = 1338.44 / 9.65$$

$$139.5 = 1346.43 / 9.65$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-T5C-G2-25W-4FT-2L -830-[OCN, Blank]-10V	3000K	1577.45	12.02	131.2
RP-T5C-G2-25W-4FT-2L -835-[OCN, Blank]-10V	3500K	1592.70 ^{*1}	12.05 ^{*2}	132.2 ^{*3}
RP-T5C-G2-25W-4FT-2L -840-[OCN, Blank]-10V	4000K	1607.94 ^{*1}	12.05 ^{*2}	133.5 ^{*3}
RP-T5C-G2-25W-4FT-2L -850-[OCN, Blank]-10V	5000K	1638.43	12.07	135.8

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

$$1592.70 = (1638.43 - 1577.45) / 4 + 1577.45$$

$$1607.94 = (1638.43 - 1577.45) / 4 + 1592.70$$

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

$$12.05 = (12.02 + 12.07) / 2$$

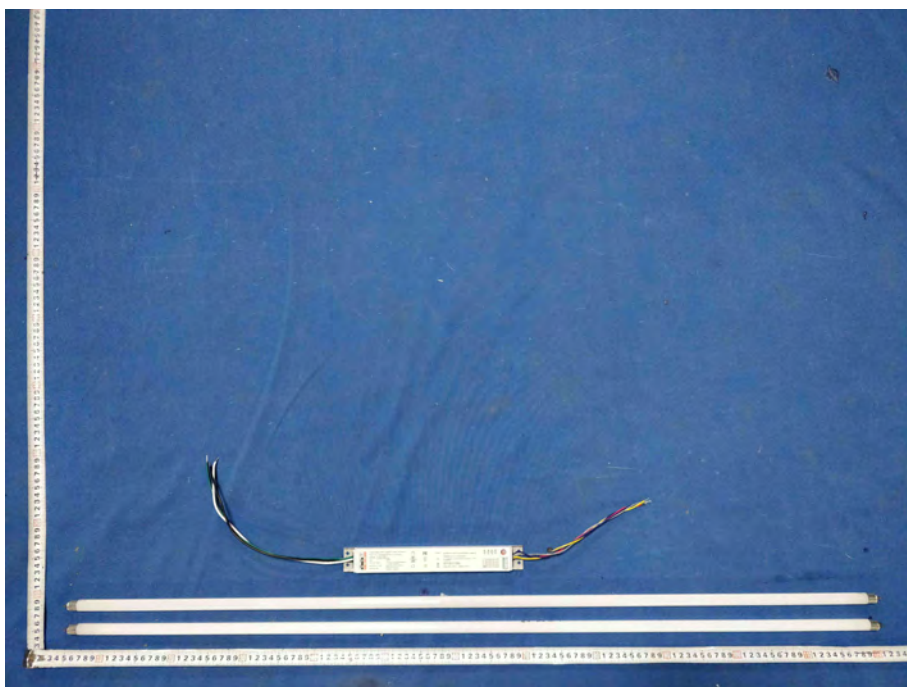
*3: This value is calculated and the calculation formula is as below:

$$132.2 = 1592.70 / 12.05$$

$$133.5 = 1607.94 / 12.05$$



Photo Document



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