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Total pages 31

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:

Indoor Retrofit Kit -- Retrofit Kits for Direct Linear Ambient Luminaires

Product Model No.:

RP-LBE-G2-15W-4FT-1L-835-[OCN, Blank]-10V,
RP-LBE-G2-15W-4FT-1L-850-[OCN, Blank]-10V,
RP-LBE-G2-18W-4FT-1L-835-[OCN, Blank]-10V,
RP-LBE-G2-18W-4FT-1L-850-[OCN, Blank]-10V,
RP-LBE-G2-20W-4FT-1L-835-[OCN, Blank]-10V,
RP-LBE-G2-20W-4FT-1L-850-[OCN, Blank]-10V,
RP-LBE-G2-25W-4FT-1L-835-[OCN, Blank]-10V,
RP-LBE-G2-25W-4FT-1L-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	Indoor Retrofit Kit -- Retrofit Kits for Direct Linear Ambient Luminaires
Test in fixture	A.L.P. SEP240
Test Model Number	RP-LBE-G2-15W-4FT-1L-835-[OCN, Blank]-10V, RP-LBE-G2-15W-4FT-1L-850-[OCN, Blank]-10V, RP-LBE-G2-18W-4FT-1L-835-[OCN, Blank]-10V, RP-LBE-G2-18W-4FT-1L-850-[OCN, Blank]-10V, RP-LBE-G2-20W-4FT-1L-835-[OCN, Blank]-10V, RP-LBE-G2-20W-4FT-1L-850-[OCN, Blank]-10V, RP-LBE-G2-25W-4FT-1L-835-[OCN, Blank]-10V, RP-LBE-G2-25W-4FT-1L-850-[OCN, Blank]-10V
Rated Inputs	AC 100-277V 50/60Hz
Field-Adjustable Product	Yes, Wattage setting: 15W, 18W, 20W, 25W
Nominal CCT	3500K, 5000K
Dimming Capability	Continuous
Integral Control Sensors	Optional
Date of Receipt Samples	2020-10-12
Date of test	2020-10-20 to 2020-11-23
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-LBE-G2-15W-4FT-1L-835-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.07	60	0.125	14.95	0.994

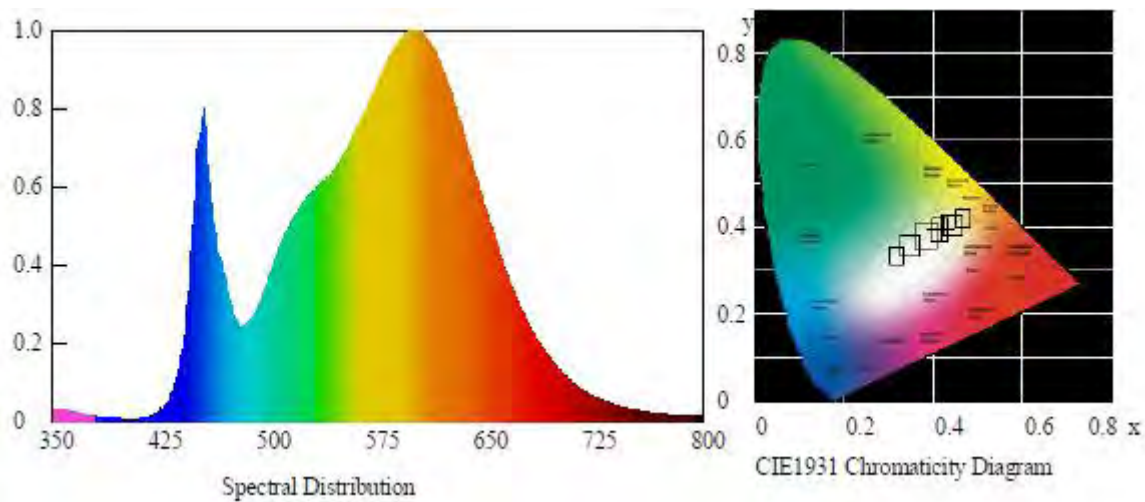
Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
2432.37	162.7	3360	83.0	7

Chromaticity Coordinate

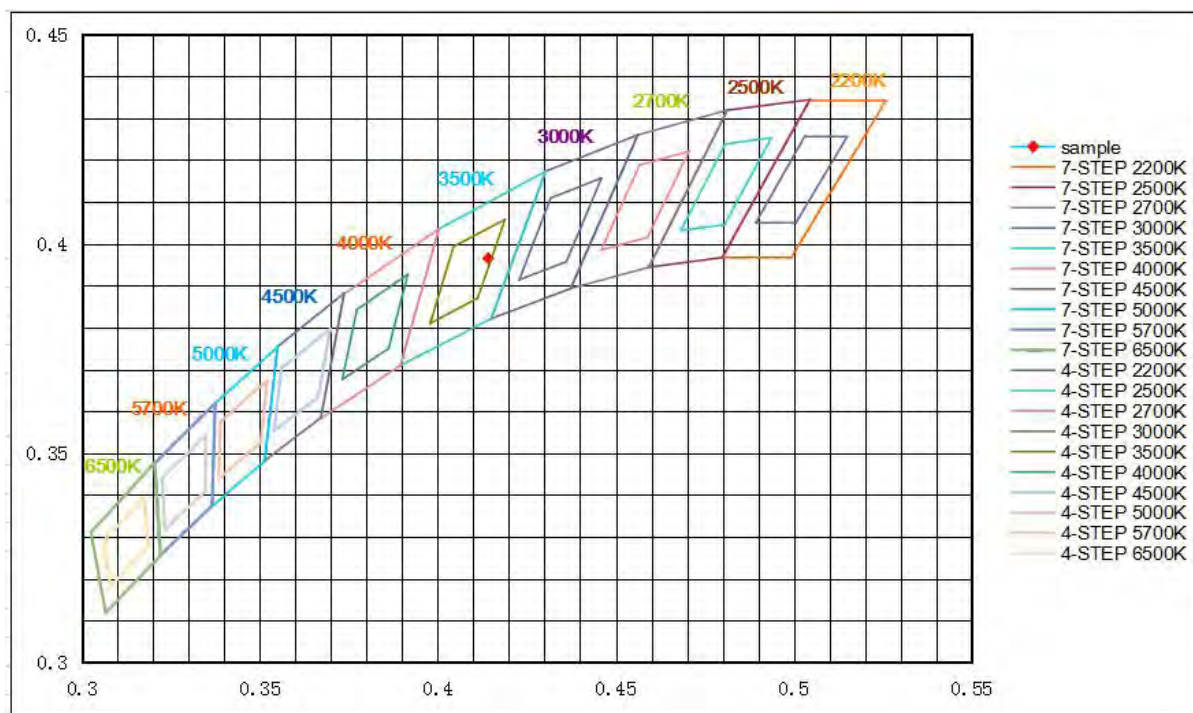
Duv	x	y	u'	v'
+0.00067	0.4142	0.3965	0.2391	0.515

Spectral Distribution





7/4 Step Quadrangle



**3.1.2 Model Number: RP-LBE-G2-15W-4FT-1L-850-[OCN, Blank]-10V****Electrical data**

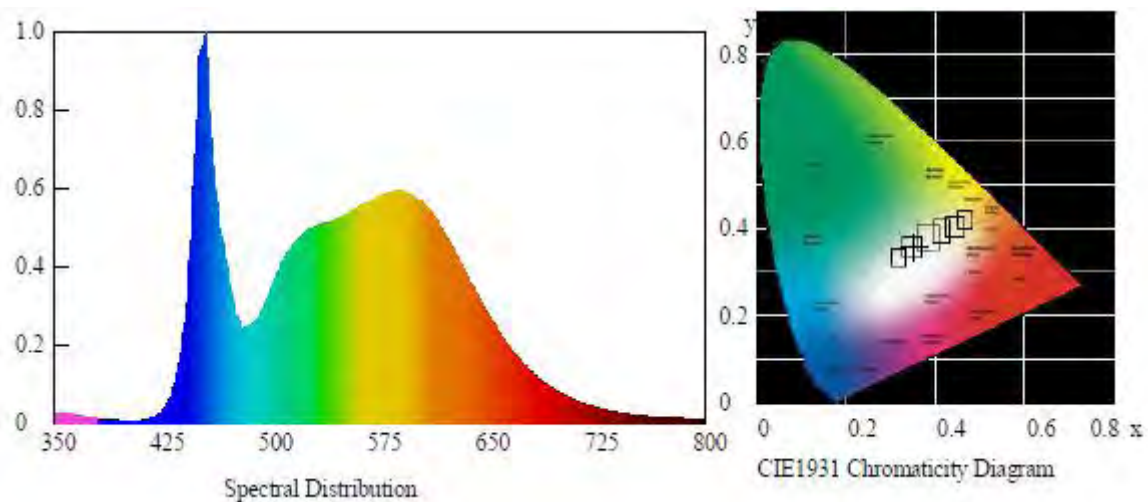
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.03	60	0.126	15.00	0.994

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
2469.00	164.6	4881	84.0	12

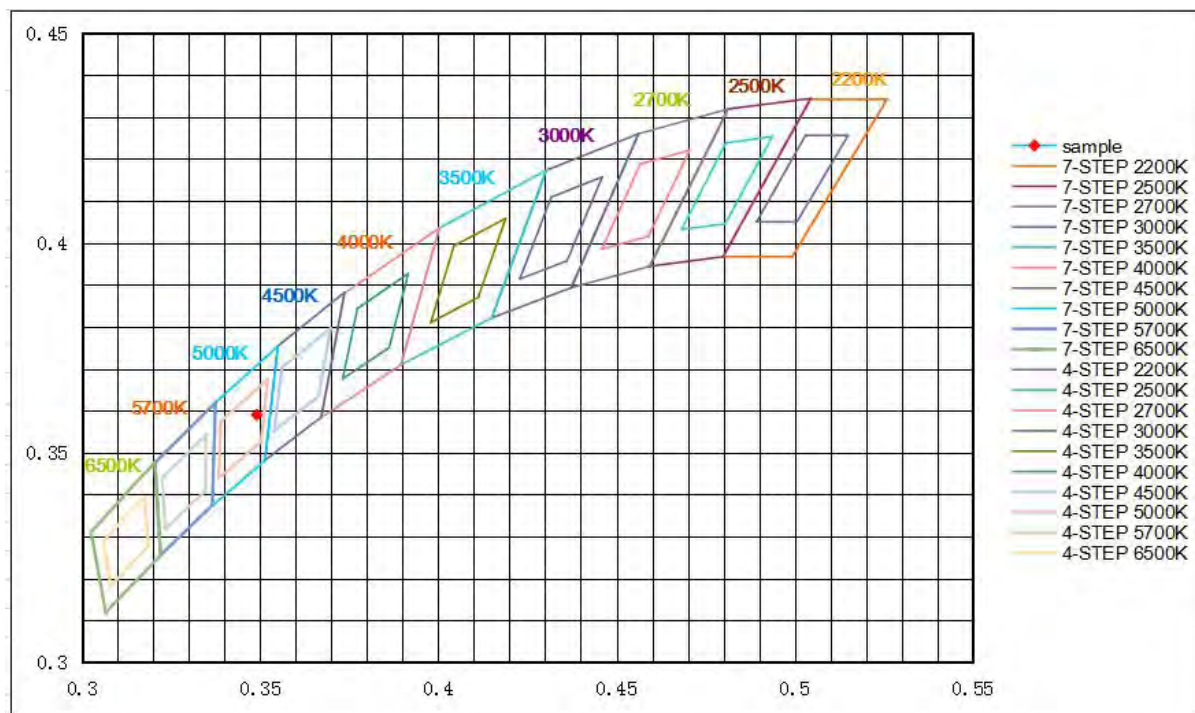
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00208	0.3491	0.3590	0.2113	0.4888

Spectral Distribution



7/4 Step Quadrangle



**3.1.3 Model Number: RP-LBE-G2-18W-4FT-1L-835-[OCN, Blank]-10V****Electrical data**

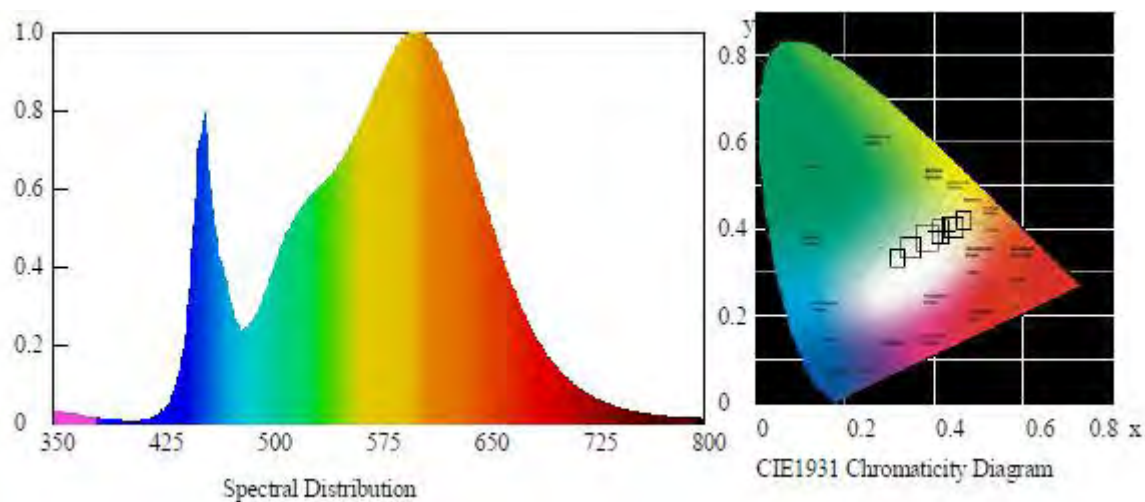
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.04	60	0.149	17.81	0.995

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
2888.78	162.2	3360	82.9	7

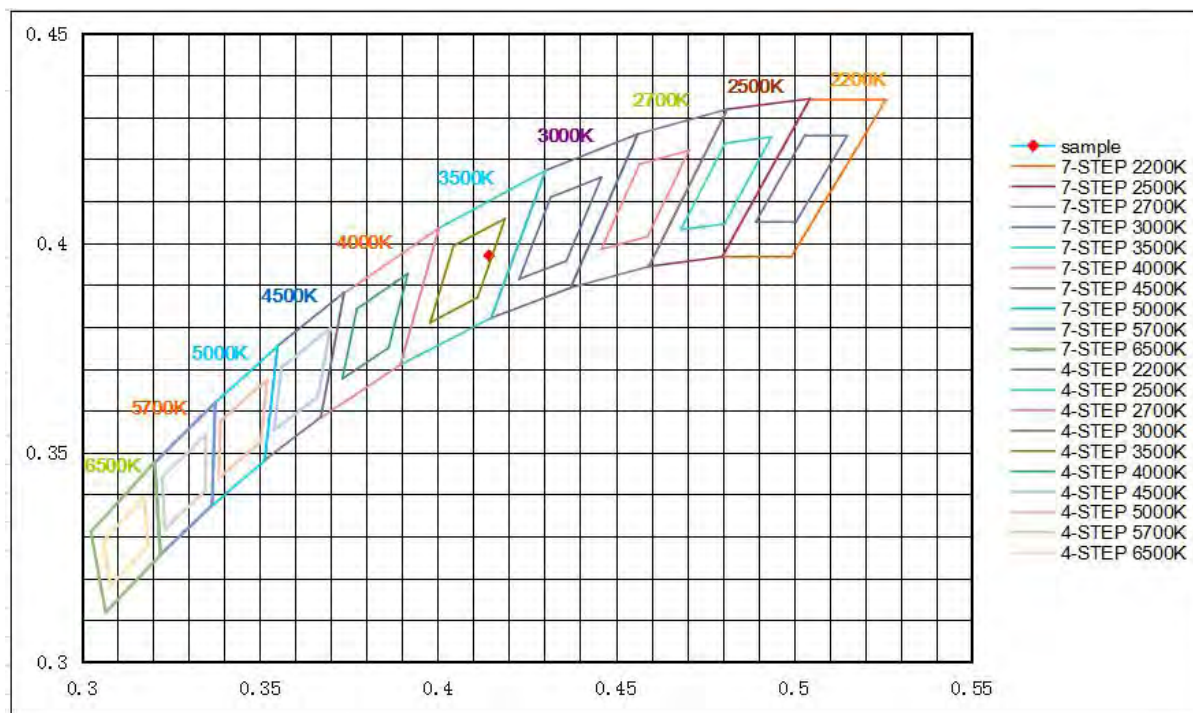
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00081	0.4144	0.3970	0.239	0.5152

Spectral Distribution



7/4 Step Quadrangle



**3.1.4 Model Number: RP-LBE-G2-18W-4FT-1L-850-[OCN, Blank]-10V****Electrical data**

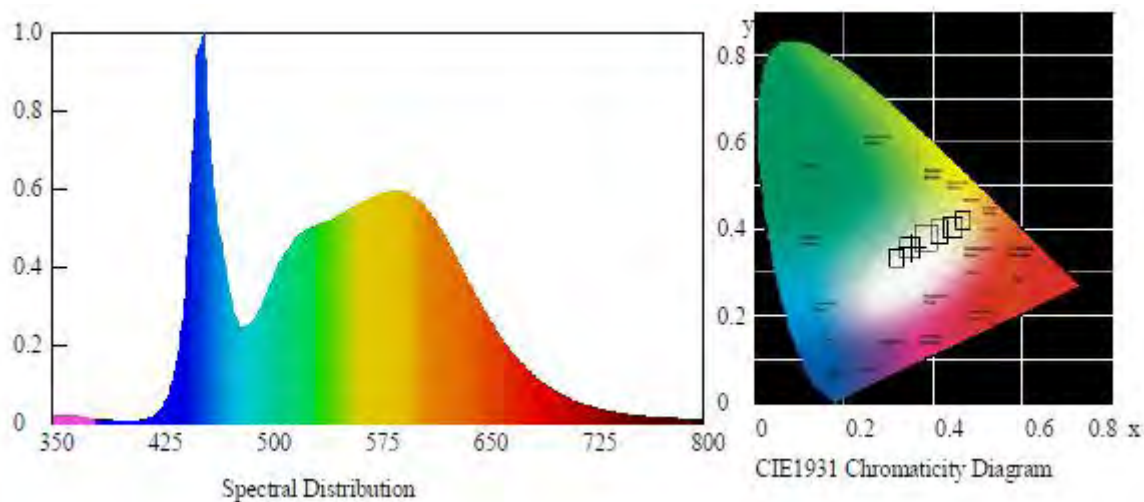
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.02	60	0.149	17.84	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
2932.90	164.4	4898	83.8	11

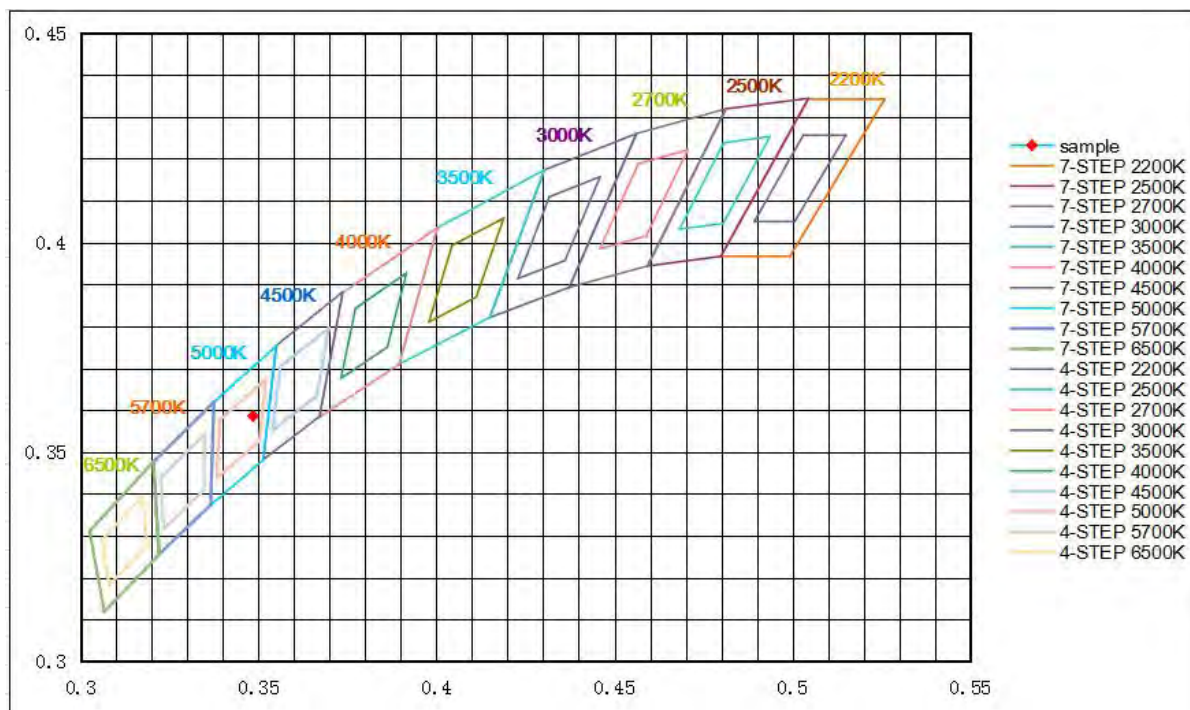
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00211	0.3485	0.3586	0.211	0.4885

Spectral Distribution



7/4 Step Quadrangle



**3.1.5 Model Number: RP-LBE-G2-20W-4FT-1L-835-[OCN, Blank]-10V****Electrical data**

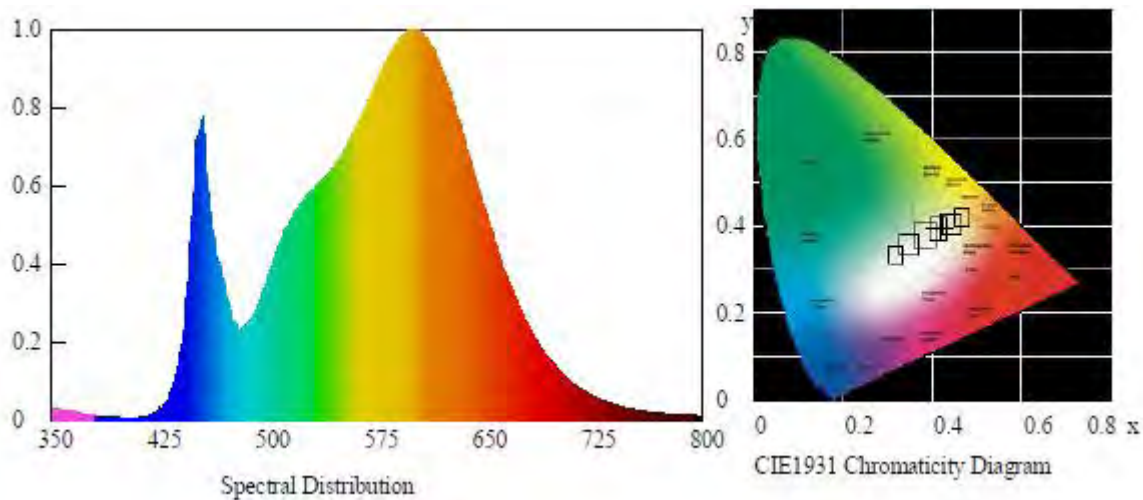
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.01	60	0.167	19.94	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
3216.32	161.3	3357	82.9	6

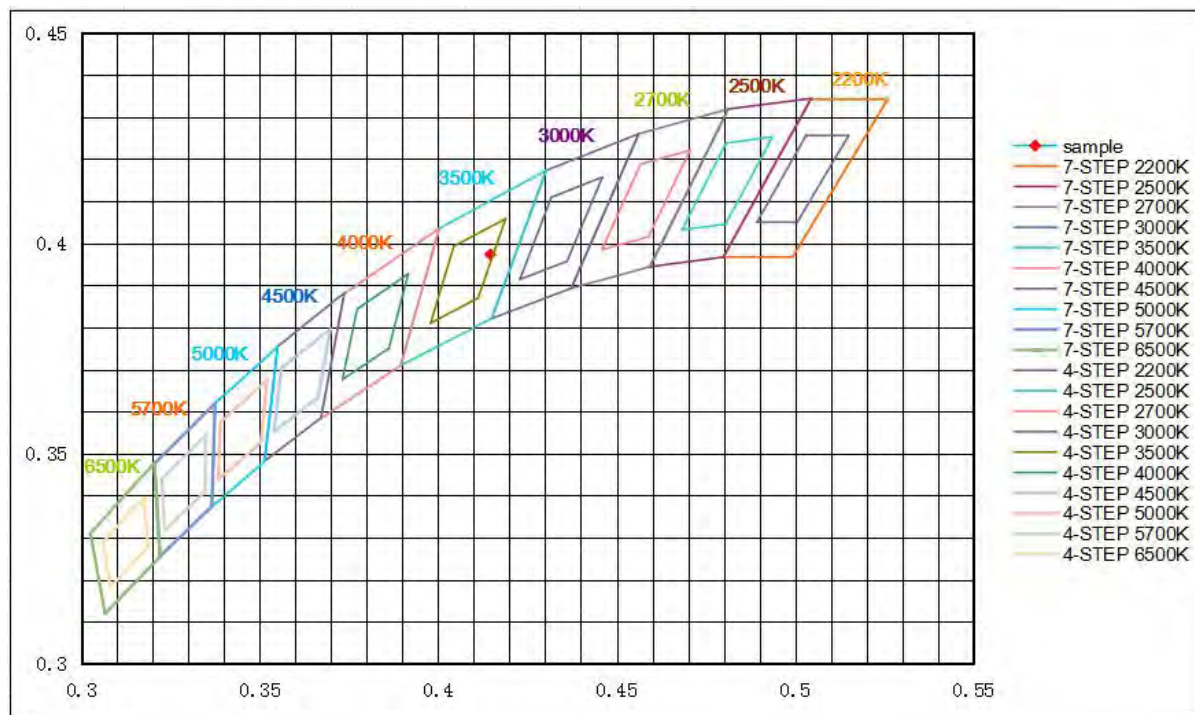
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00092	0.4146	0.3973	0.239	0.5154

Spectral Distribution



7/4 Step Quadrangle



**3.1.6 Model Number: RP-LBE-G2-20W-4FT-1L-850-[OCN, Blank]-10V****Electrical data**

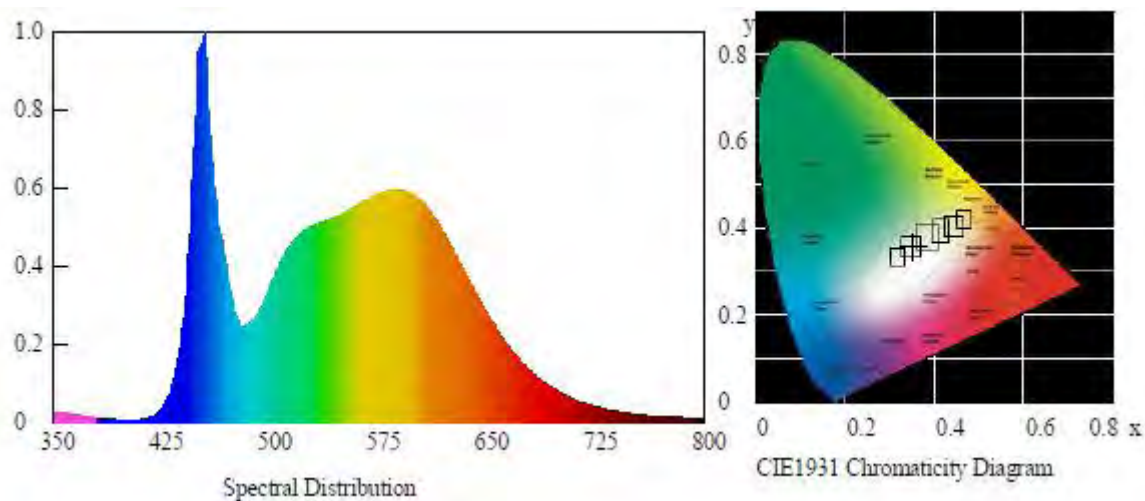
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.99	60	0.166	19.84	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
3247.81	163.7	4909	83.9	12

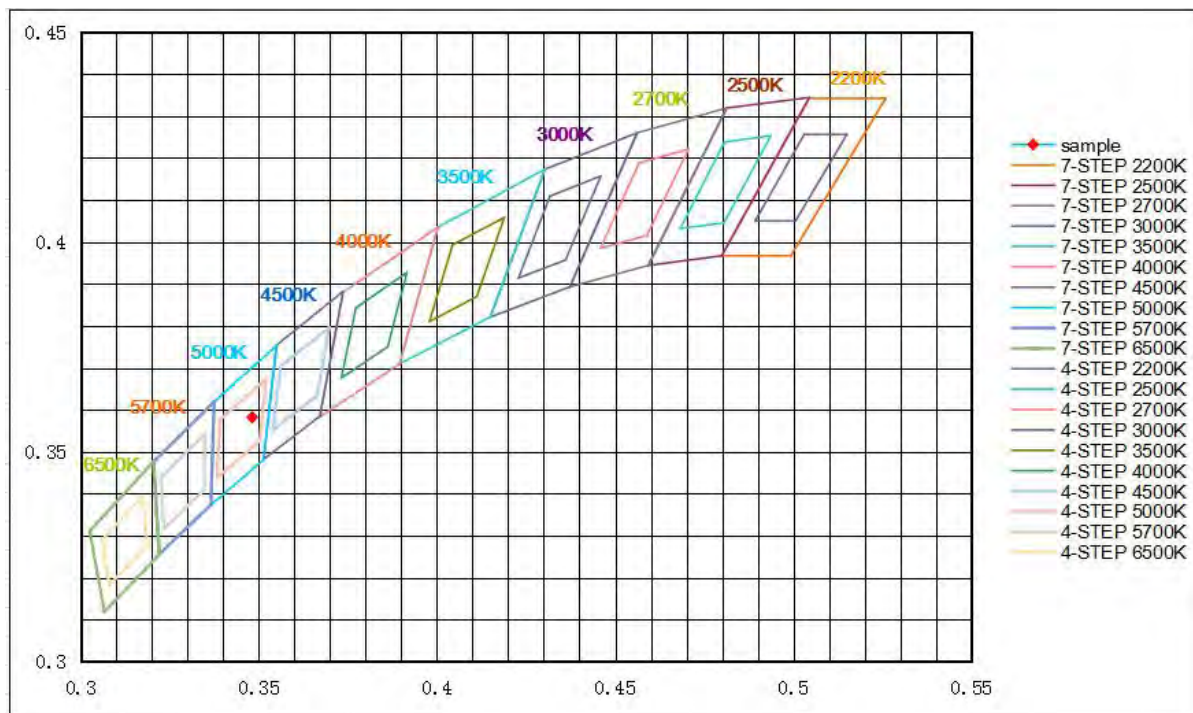
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00204	0.3482	0.3582	0.211	0.4883

Spectral Distribution



7/4 Step Quadrangle



**3.1.7 Model Number: RP-LBE-G2-25W-4FT-1L-835-[OCN, Blank]-10V****Electrical data**

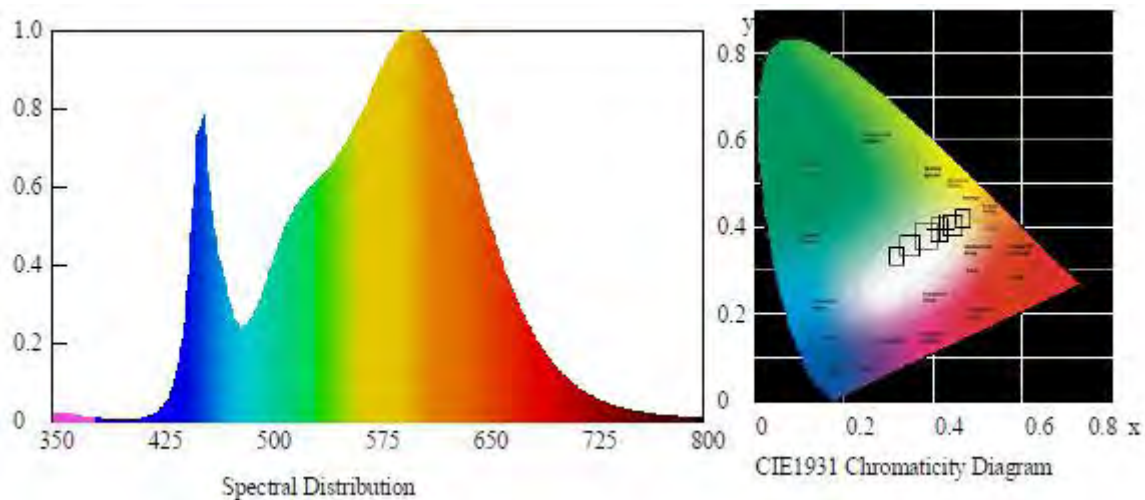
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.06	60	0.202	24.21	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
3844.55	158.8	3411	82.6	5

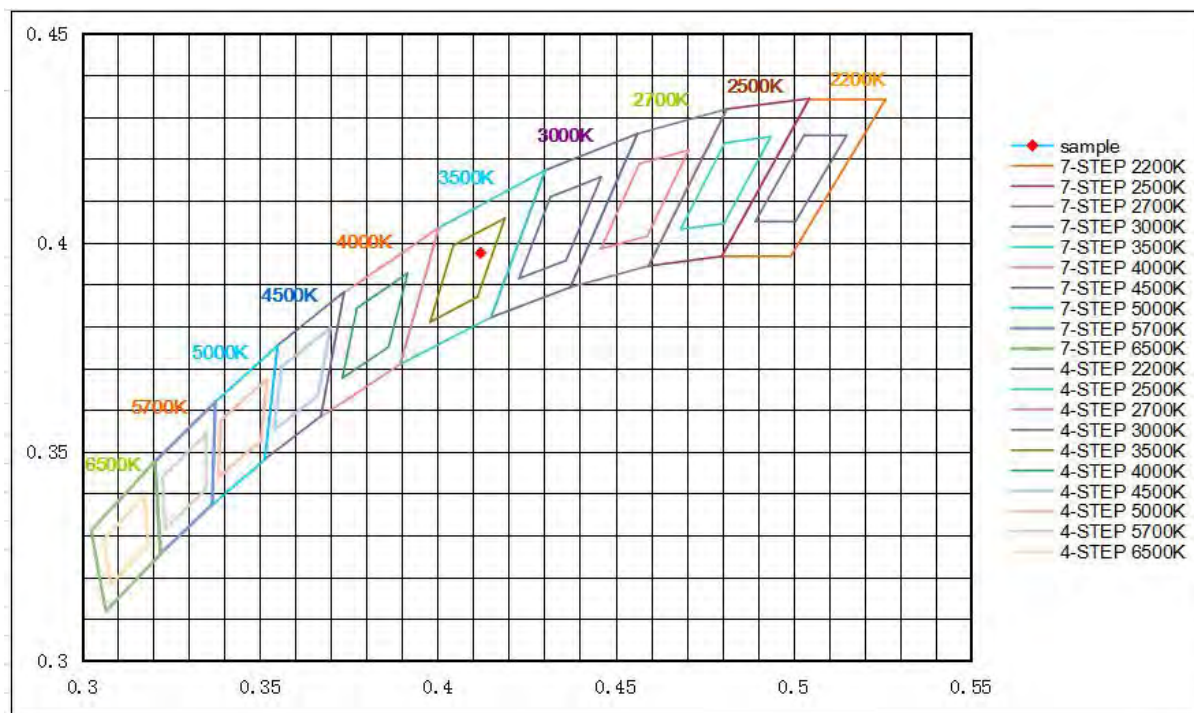
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00151	0.4121	0.3975	0.2373	0.5151

Spectral Distribution



7/4 Step Quadrangle



**3.1.8 Model Number: RP-LBE-G2-25W-4FT-1L-850-[OCN, Blank]-10V****Electrical data**

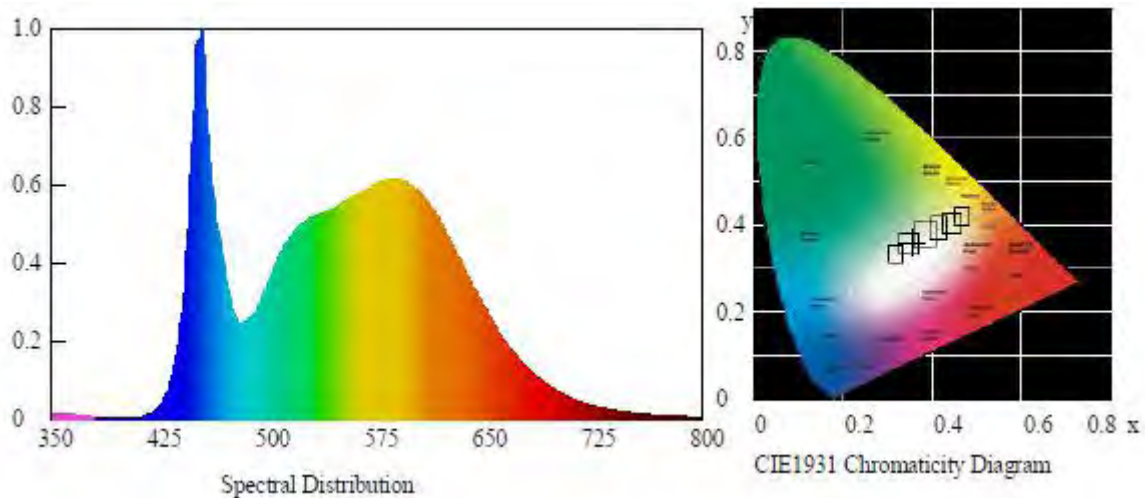
Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.06	60	0.202	24.12	0.996

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
3885.73	161.1	4836	83.3	9

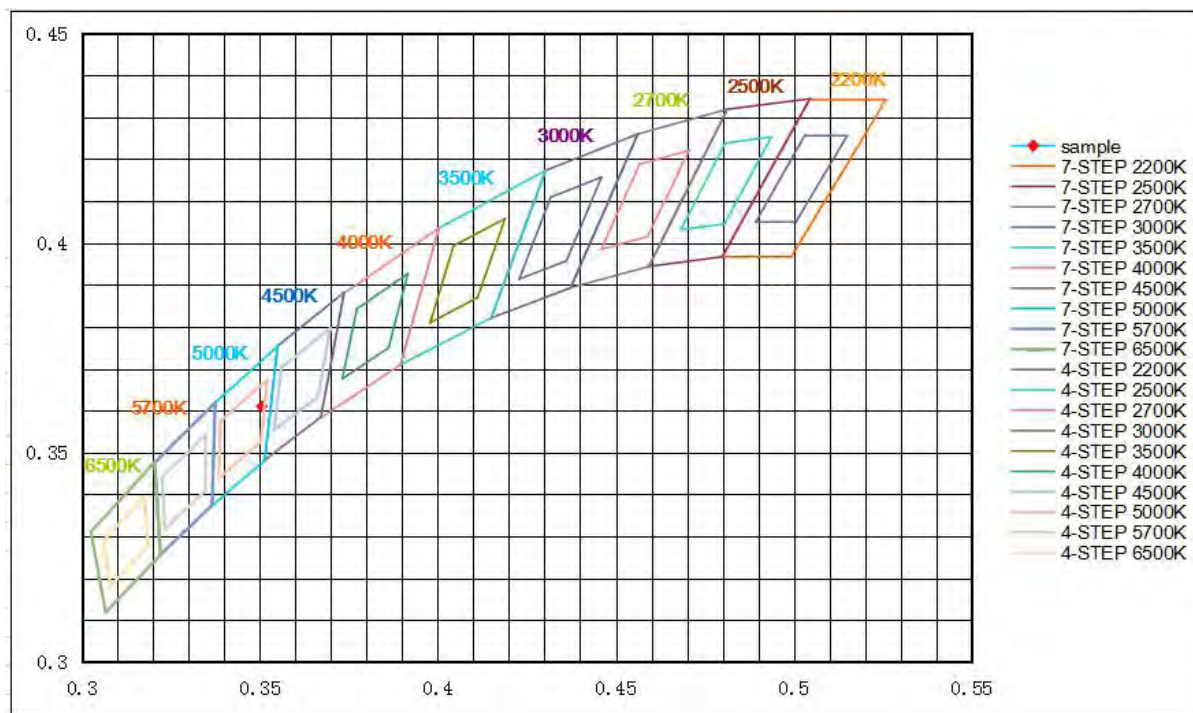
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00253	0.3506	0.3610	0.2115	0.49

Spectral Distribution



7/4 Step Quadrangle





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

3.2.1 Model Number: RP-LBE-G2-25W-4FT-1L-835-[OCN, Blank]-10V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.01	60	0.201	24.04	0.9962

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)
3810.22	158.49	73.95

**Zonal Flux Diagram**

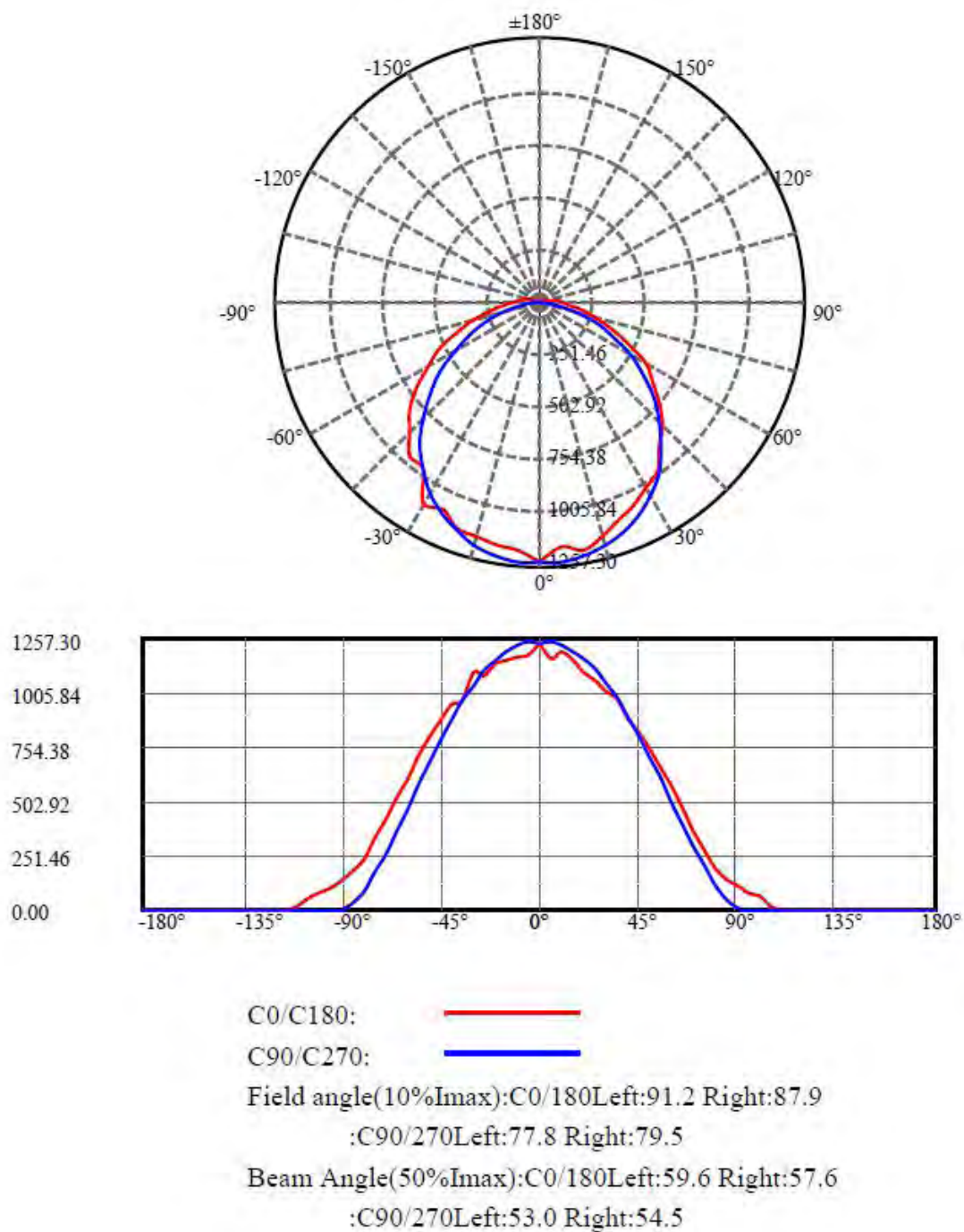
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1230.643	0.000	0	0.00%	0.00%
5.0	1227.952	29.392	29.392	0.00%	0.77%
10.0	1217.834	87.493	116.885	0.00%	3.07%
15.0	1192.617	142.986	259.872	0.00%	6.82%
20.0	1156.625	193.611	453.482	0.00%	11.90%
25.0	1110.159	237.744	691.226	0.00%	18.14%
30.0	1059.108	274.523	965.748	0.00%	25.35%
35.0	990.738	301.854	1267.603	0.00%	33.27%
40.0	918.477	318.538	1586.141	0.00%	41.63%
45.0	836.572	324.962	1911.102	0.00%	50.16%
50.0	748.924	320.373	2231.475	0.00%	58.57%
55.0	655.612	305.393	2536.867	0.00%	66.58%
60.0	558.411	280.618	2817.485	0.00%	73.95%
65.0	459.357	247.421	3064.907	0.00%	80.44%
70.0	363.417	208.332	3273.238	0.00%	85.91%
75.0	275.165	166.915	3440.153	0.00%	90.29%
80.0	194.875	125.770	3565.923	0.00%	93.59%
85.0	133.298	89.173	3655.096	0.00%	95.93%
90.0	90.986	61.411	3716.506	0.00%	97.54%
95.0	64.534	42.582	3759.089	0.00%	98.66%
100.0	39.002	28.133	3787.222	0.00%	99.40%
105.0	14.376	14.282	3801.504	0.00%	99.77%
110.0	2.260	4.348	3805.852	0.00%	99.89%
115.0	0.644	0.735	3806.588	0.00%	99.90%
120.0	0.775	0.345	3806.933	0.00%	99.91%
125.0	0.894	0.386	3807.319	0.00%	99.92%
130.0	0.907	0.391	3807.71	0.00%	99.93%
135.0	0.999	0.385	3808.095	0.00%	99.94%
140.0	1.065	0.382	3808.477	0.00%	99.95%
145.0	1.143	0.368	3808.846	0.00%	99.96%
150.0	1.170	0.341	3809.186	0.00%	99.97%
155.0	1.222	0.303	3809.489	0.00%	99.98%
160.0	1.262	0.261	3809.749	0.00%	99.99%
165.0	1.249	0.207	3809.956	0.00%	99.99%
170.0	1.235	0.147	3810.104	0.00%	100.00%
175.0	1.183	0.087	3810.19	0.00%	100.00%
180.0	1.262	0.029	3810.219	0.00%	100.00%



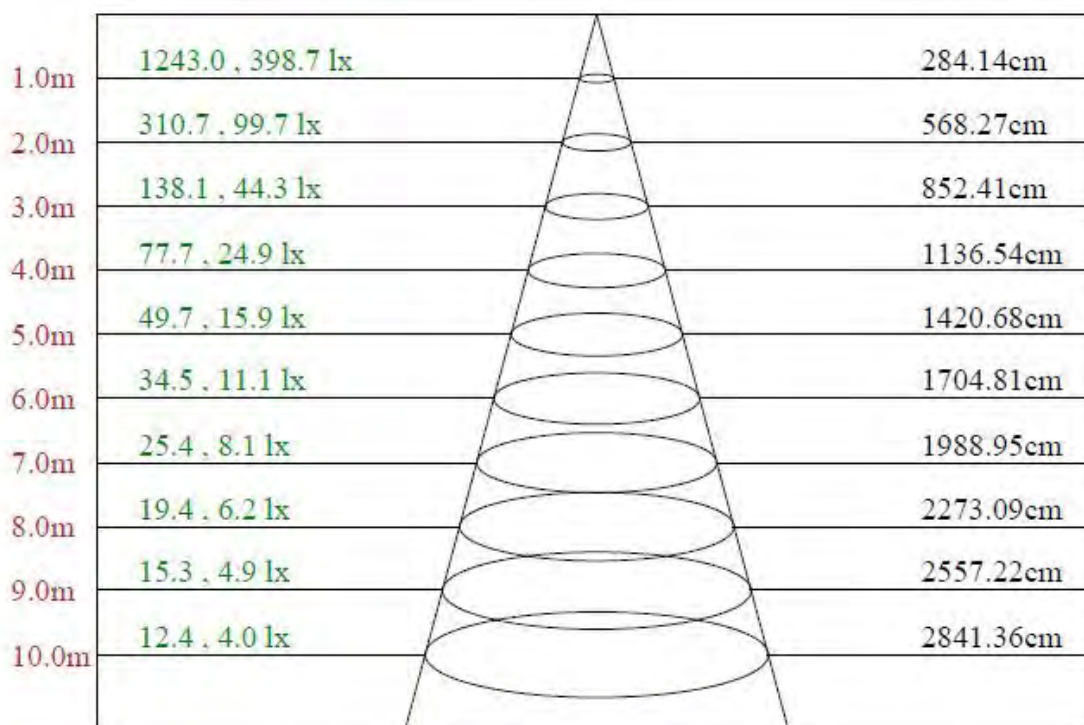
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave Beam angle of C112.5 plane 109.72

**Luminous Intensity Distribution Data**

C/ $\gamma(^{\circ})$	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1230.64	1165.63	1192.96	1151.96	1103.39	1064.08	1014.04	975.77	888.10
22.5	1230.64	1218.82	1196.11	1168.99	1134.09	1082.37	1025.81	964.63	900.92
45.0	1230.64	1234.17	1220.08	1195.06	1163.52	1115.80	1061.34	993.01	914.17
67.5	1230.64	1234.80	1219.24	1190.02	1150.28	1100.66	1040.53	969.04	888.52
90.0	1230.64	1239.42	1223.23	1197.37	1161.63	1116.22	1054.19	984.39	900.08
112.5	1230.64	1257.30	1243.00	1214.40	1173.20	1129.04	1076.69	1008.36	928.46
135.0	1230.64	1248.68	1235.85	1215.04	1180.76	1136.19	1079.42	1015.30	947.60
157.5	1230.64	1227.02	1212.09	1191.07	1155.74	1114.75	1066.81	1013.62	948.86
180.0	1230.64	1178.87	1172.78	1154.69	1143.76	1083.84	1098.35	967.57	954.54
202.5	1230.64	1226.18	1232.91	1212.51	1175.51	1138.71	1093.51	1030.86	965.47
225.0	1230.64	1237.95	1222.60	1197.16	1165.42	1120.84	1071.43	1009.20	938.35
247.5	1230.64	1235.43	1222.39	1193.80	1149.44	1102.13	1047.68	977.87	895.24
270.0	1230.64	1239.21	1222.60	1193.38	1153.85	1105.71	1041.79	966.10	879.27
292.5	1230.64	1250.57	1234.38	1206.63	1168.15	1120.63	1063.23	989.86	902.81
315.0	1230.64	1236.06	1228.07	1207.68	1174.88	1127.36	1061.34	994.48	918.37
337.5	1230.64	1217.14	1207.05	1192.12	1152.38	1104.23	1049.57	991.75	924.89
360.0	1230.64	1165.63	1192.96	1151.96	1103.39	1064.08	1014.04	975.77	888.10
C/ $\gamma(^{\circ})$	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	821.87	746.60	653.88	580.08	470.96	367.94	270.59	194.27	144.02
22.5	823.55	746.18	665.44	574.40	478.53	379.08	283.00	202.68	148.23
45.0	833.85	746.39	655.14	559.90	465.28	374.46	288.25	205.62	143.39
67.5	801.05	702.45	603.84	500.82	397.58	308.65	230.86	163.15	103.44
90.0	808.20	711.28	608.67	499.76	392.75	296.03	201.42	116.06	47.94
112.5	841.42	746.60	638.11	530.67	433.96	338.92	255.24	183.76	127.83
135.0	869.38	779.61	687.94	598.16	503.13	410.83	328.62	246.83	173.04
157.5	875.48	799.79	715.27	625.07	529.20	431.43	341.03	249.36	182.50
180.0	875.69	801.47	714.43	607.83	517.64	420.71	327.99	237.16	176.19
202.5	895.24	815.77	730.41	636.85	537.40	437.74	343.76	248.94	183.55
225.0	853.20	768.25	686.47	593.54	498.08	404.73	322.94	238.00	167.57
247.5	811.57	718.42	618.98	519.95	419.24	326.31	245.99	176.61	116.27
270.0	784.44	684.36	575.66	464.86	359.53	260.71	168.83	88.52	28.59
292.5	807.15	712.96	606.57	498.92	395.90	305.70	224.76	159.16	96.93
315.0	831.75	740.50	650.93	556.11	462.55	366.05	281.74	202.26	142.55
337.5	851.30	762.16	678.06	587.65	487.99	385.39	287.62	205.62	150.75
360.0	821.87	746.60	653.88	580.08	470.96	367.94	270.59	194.27	144.02
C/ $\gamma(^{\circ})$	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	108.49	82.00	62.02	19.13	0.63	0.84	1.05	1.05	1.05
22.5	111.22	85.36	62.02	14.93	0.84	0.84	1.05	1.05	1.05
45.0	103.65	77.37	38.69	0.84	0.84	0.84	1.05	1.05	1.05
67.5	60.34	34.48	1.26	0.63	0.84	0.84	1.05	1.05	1.05
90.0	7.57	1.26	1.26	0.42	0.42	0.42	0.84	0.63	0.84
112.5	74.43	43.73	3.57	0.21	0.42	0.63	0.42	0.84	0.63
135.0	124.26	89.36	64.76	17.45	0.63	0.42	0.63	0.84	0.63
157.5	136.45	101.76	77.58	50.46	8.41	0.42	0.42	0.63	0.63
180.0	130.78	98.82	76.53	54.46	13.67	0.63	0.42	0.63	0.84
202.5	132.67	101.34	78.00	47.94	5.47	0.42	0.42	0.63	0.63
225.0	119.00	88.73	62.66	10.09	0.42	0.21	0.42	0.63	0.63
247.5	68.33	39.53	0.42	0.21	0.21	0.21	0.63	0.63	0.63
270.0	1.05	0.84	0.84	0.84	0.84	1.05	1.26	1.26	1.47
292.5	60.13	25.23	0.84	0.63	1.05	1.05	0.84	1.26	1.26
315.0	103.65	77.16	31.54	1.05	0.84	0.84	0.84	1.05	1.26
337.5	113.75	85.57	62.02	10.72	0.63	0.63	1.05	1.05	0.84
360.0	108.49	82.00	62.02	19.13	0.63	0.84	1.05	1.05	1.05



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.26	1.26	1.26	1.05	1.05	1.05	1.05	1.26	1.05
22.5	1.26	1.26	1.26	1.05	1.47	1.26	1.26	1.26	1.26
45.0	1.05	1.26	1.05	1.47	1.47	1.26	1.26	1.47	1.26
67.5	1.05	1.26	1.05	1.26	1.26	1.26	1.26	1.26	1.26
90.0	1.05	1.05	1.26	1.26	1.26	1.26	1.47	1.05	1.26
112.5	0.84	0.84	1.26	1.05	1.05	1.26	1.26	1.47	1.26
135.0	0.63	0.84	1.26	1.05	1.26	1.47	1.26	1.05	1.05
157.5	0.42	0.84	0.84	1.05	1.05	1.05	1.47	1.05	1.26
180.0	1.05	0.63	0.84	1.05	0.84	1.05	1.05	1.26	1.05
202.5	0.84	1.05	1.05	0.84	1.05	1.26	0.84	1.05	1.05
225.0	1.05	1.05	0.84	1.05	1.05	1.05	1.26	1.05	1.05
247.5	0.84	0.84	0.84	1.26	1.05	1.05	1.05	1.26	1.26
270.0	1.26	1.47	1.68	1.68	1.68	1.68	1.68	1.68	1.47
292.5	1.05	1.05	1.47	1.26	1.26	1.47	1.26	1.26	1.05
315.0	1.05	1.26	1.05	1.05	1.47	1.47	1.26	1.05	1.26
337.5	1.26	1.05	1.26	1.26	1.26	1.26	1.26	1.26	1.05
360.0	1.26	1.26	1.26	1.05	1.05	1.05	1.05	1.26	1.05
C/ γ (°)	180.0								
0.0	1.26								
22.5	1.26								
45.0	1.26								
67.5	1.26								
90.0	1.26								
112.5	1.26								
135.0	1.26								
157.5	1.26								
180.0	1.26								
202.5	1.26								
225.0	1.26								
247.5	1.26								
270.0	1.26								
292.5	1.26								
315.0	1.26								
337.5	1.26								
360.0	1.26								



4 Additional Test

Electrical data at 277V

Model Number	Test Item	Test Voltage (V)	Frequency (Hz)	Test Result
RP-LBE-G2-25W-4FT-1L -835-[OCN, Blank]-10V	Power Factor	277	60	0.955
	THD	277	60	10.4%

5 Performance Assessment

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-LBE-G2-15W-4FT-1L -835-[OCN, Blank]-10V	3500	2432.37	14.95	162.7
RP-LBE-G2-15W-4FT-1L -840-[OCN, Blank]-10V	4000	2444.58 * ¹	14.98 * ²	163.2 * ³
RP-LBE-G2-15W-4FT-1L -850-[OCN, Blank]-10V	5000	2469.00	15.00	164.6

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

$$2444.58 = (2469.00 - 2432.37) / 3 + 2432.37$$

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

$$14.98 = (14.95 + 15.00) / 2$$

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

$$163.2 = 2444.58 / 14.98$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-LBE-G2-18W-4FT-1L -835-[OCN, Blank]-10V	3500	2888.78	17.81	162.2
RP-LBE-G2-18W-4FT-1L -840-[OCN, Blank]-10V	4000	2903.49 * ¹	17.83 * ²	162.9 * ³
RP-LBE-G2-18W-4FT-1L -850-[OCN, Blank]-10V	5000	2932.90	17.84	164.4

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

$$2903.49 = (2932.90 - 2888.78) / 3 + 2888.78$$

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

$$17.83 = (17.81 + 17.84) / 2$$

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

$$162.9 = 2903.49 / 17.83$$



Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-LBE-G2-20W-4FT-1L -835-[OCN, Blank]-10V	3500	3216.32	19.94	161.3
RP-LBE-G2-20W-4FT-1L -840-[OCN, Blank]-10V	4000	3226.82 * ¹	19.89 * ²	162.2 * ³
RP-LBE-G2-20W-4FT-1L -850-[OCN, Blank]-10V	5000	3247.81	19.84	163.7

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

$$3226.82 = (3247.81 - 3216.32) / 3 + 3216.32$$

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

$$19.89 = (19.94 + 19.84) / 2$$

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

$$162.2 = 3226.82 / 19.89$$

Model name	CCT(K)	Total Luminous(lm)	Power(W)	Luminous Efficacy(lm/W)
RP-LBE-G2-25W-4FT-1L -835-[OCN, Blank]-10V	3500	3844.55	24.21	158.8
RP-LBE-G2-25W-4FT-1L -840-[OCN, Blank]-10V	4000	3858.28 * ¹	24.17 * ²	159.7 * ³
RP-LBE-G2-25W-4FT-1L -850-[OCN, Blank]-10V	5000	3885.73	24.12	161.1

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

$$3858.28 = (3885.73 - 3844.55) / 3 + 3844.55$$

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

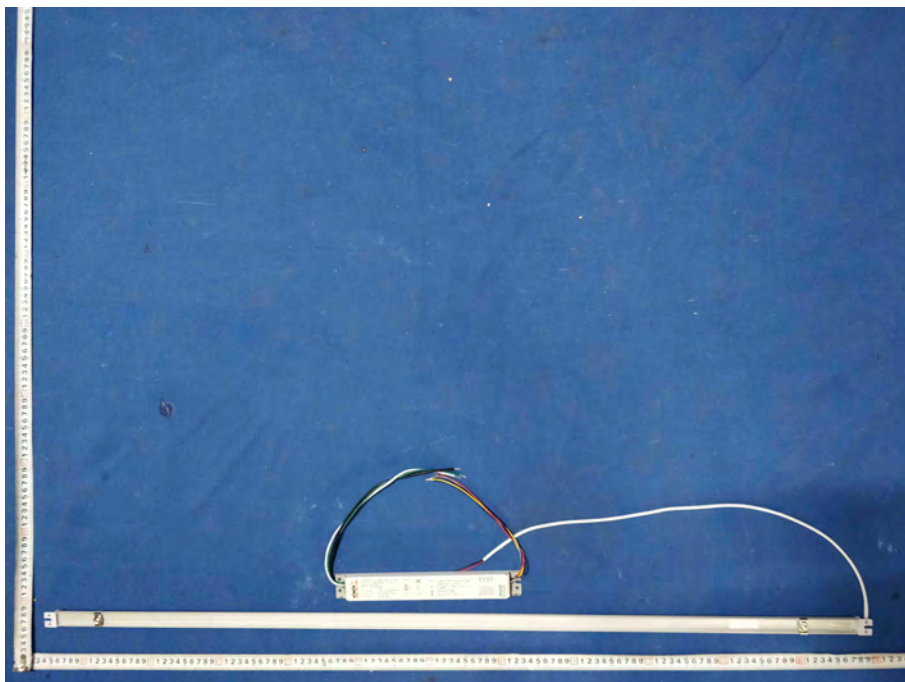
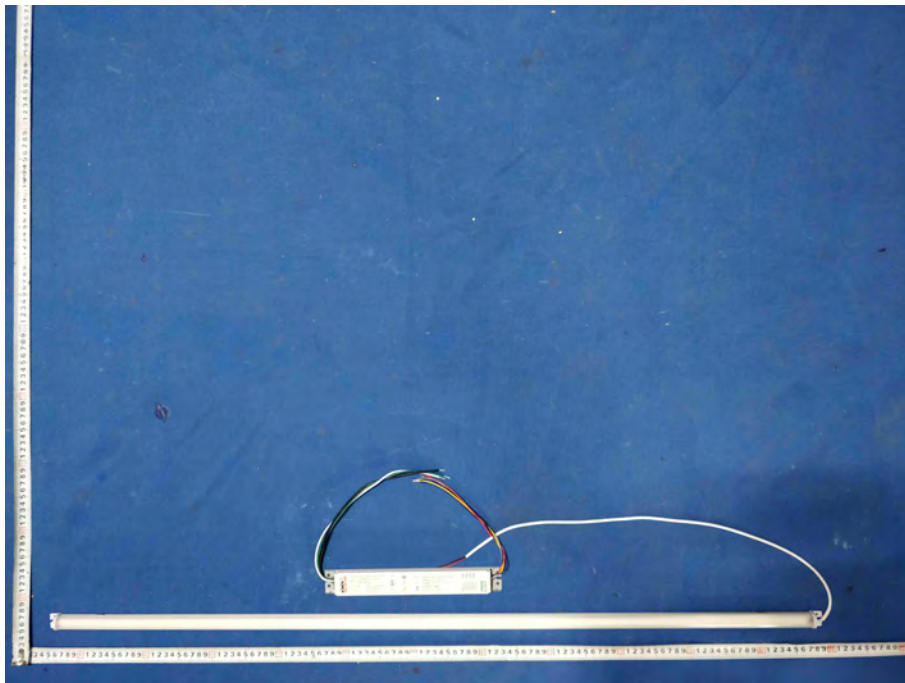
$$24.17 = (24.21 + 24.12) / 2$$

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

$$159.7 = 3858.28 / 24.17$$



Photo Document





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