

## LM-79-19 TEST REPORT

for

### GREEN CREATIVE LTD

Room 3603, Level 36, Tower 1, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, KL,  
Hong Kong

### LED Tube

**Model: 8T8/2F/8CCTS/UEB/C**

### Laboratory: Leading Testing Laboratories

**NVLAP CODE: 200960-0**

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Report No.: HZ25080001a

The laboratory that conducted the testing detailed in this report has been accredited for SSL by NVLAP.

Review by:

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Engineer: Wei Fei  
Sep. 17, 2025

Approved by:



*April Zou*

Manager: April Zou  
Sep. 17, 2025

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

## TEST SUMMARY

Tested Model	8T8/2F/8CCTS/UEB/C 3000K Setting	8T8/2F/8CCTS/UEB/C 3500K Setting	8T8/2F/8CCTS/UEB/C 4000K Setting
Luminous Efficacy (Lumens /Watt)	144.9	151.9	156.3
Total Luminous Flux (Lumens)	1137.7	1180.2	1203.2
Power (Watts)	7.85	7.77	7.70
Power Factor	0.9799	0.9800	0.9801
CCT (K)	3065	3577	4164
CRI	82.6	84.8	85.8
Stabilization Time (Light & Power)	50 mins	50 mins	50 mins
Note	3000K	3500K	4000K

Tested Model	8T8/2F/8CCTS/UEB/C 5000K Setting	8T8/2F/8CCTS/UEB/C 6500K Setting
Luminous Efficacy (Lumens /Watt)	156.8	152.6
Total Luminous Flux (Lumens)	1208.6	1190.3
Power (Watts)	7.71	7.80
Power Factor	0.9802	0.9800
CCT (K)	5074	6337
CRI	85.7	84.4
Stabilization Time (Light & Power)	50 mins	50 mins
Note	5000K	6500K

Table 1: Executive Data Summary

### Test specifications:

Date of Receipt	: Aug. 01, 2025
Date of Test	: Sep. 11, 2025
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	: IESNA LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products ANSI/IES TM-30-18 IES Method for Evaluating Light Source Color Rendition

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## SAMPLE PHOTO



Figure 1- Overview of the sample

### Equipment Under Test(EUT)

<b>Name</b>	: LED Tube
<b>Model</b>	: 8T8/2F/8CCTS/UEB/C
<b>Electrical Ratings</b>	: 120-277V, 50/60Hz, 8W
<b>Product Description</b>	: Color- Tunable 3000K/3500K/4000K/5000K/6500K
<b>Manufacturer</b>	: GREEN CREATIVE LTD
<b>Address</b>	: Room 3603, Level 36, Tower 1, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, KL, Hong Kong

## TEST RESULTS (3000K Setting)

Test ambient temperature was 26.0 °C.

Base orientation was base up Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

## Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.067	0.033
Power Factor	0.9799	0.9081
Test Power (W)	7.85	8.21
THD A%	15.59	19.48
Luminous Efficacy (lm/W)	144.9	139.7
Total Luminous Flux (lm)	1137.7	1146.6
Color Rendering Index (CRI)	82.6	
R9	6.7	
Correlated Color Temperature (CCT)(K)	3065	
Chromaticity Chroma x	0.4319	
Chromaticity Chroma y	0.4017	
Chromaticity Chroma u	0.2484	
Chromaticity Chroma v	0.3464	
Duv	-0.0003	
Chromaticity Chroma u'	0.2484	
Chromaticity Chroma v'	0.5197	

Special Color Rendering Indices	
R1	80.8
R2	90.3
R3	96.6
R4	81
R5	81.1
R6	88.1
R7	83.1
R8	59.4
R9	6.7
R10	78.1
R11	80.6
R12	70.5
R13	83
R14	98.6

Table 2: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 ( $u', v'$ ) diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .

### Spectral Power Distribution - Sphere Spectroradiometer Method

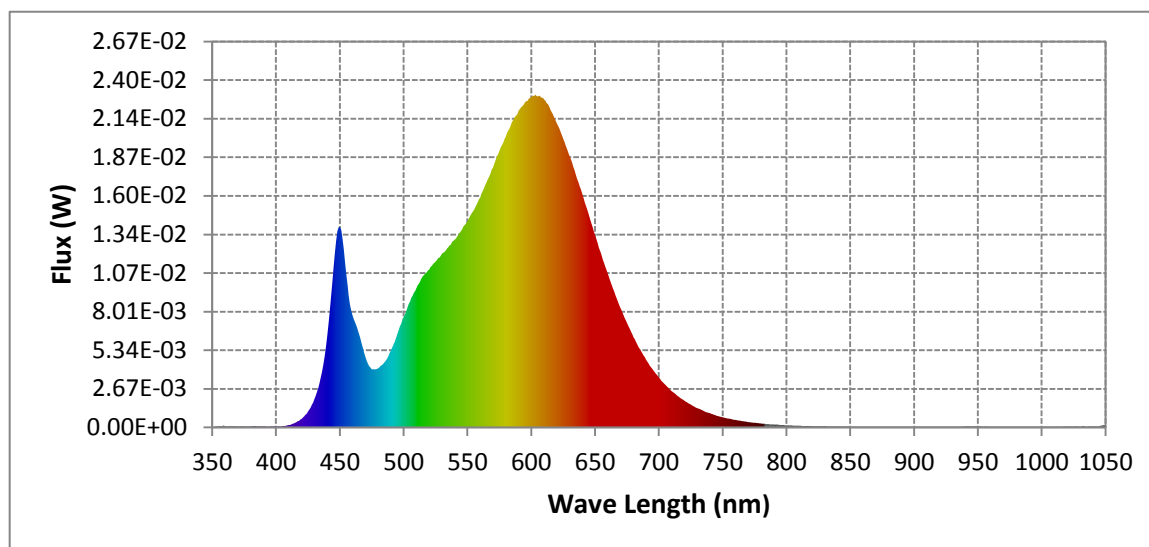


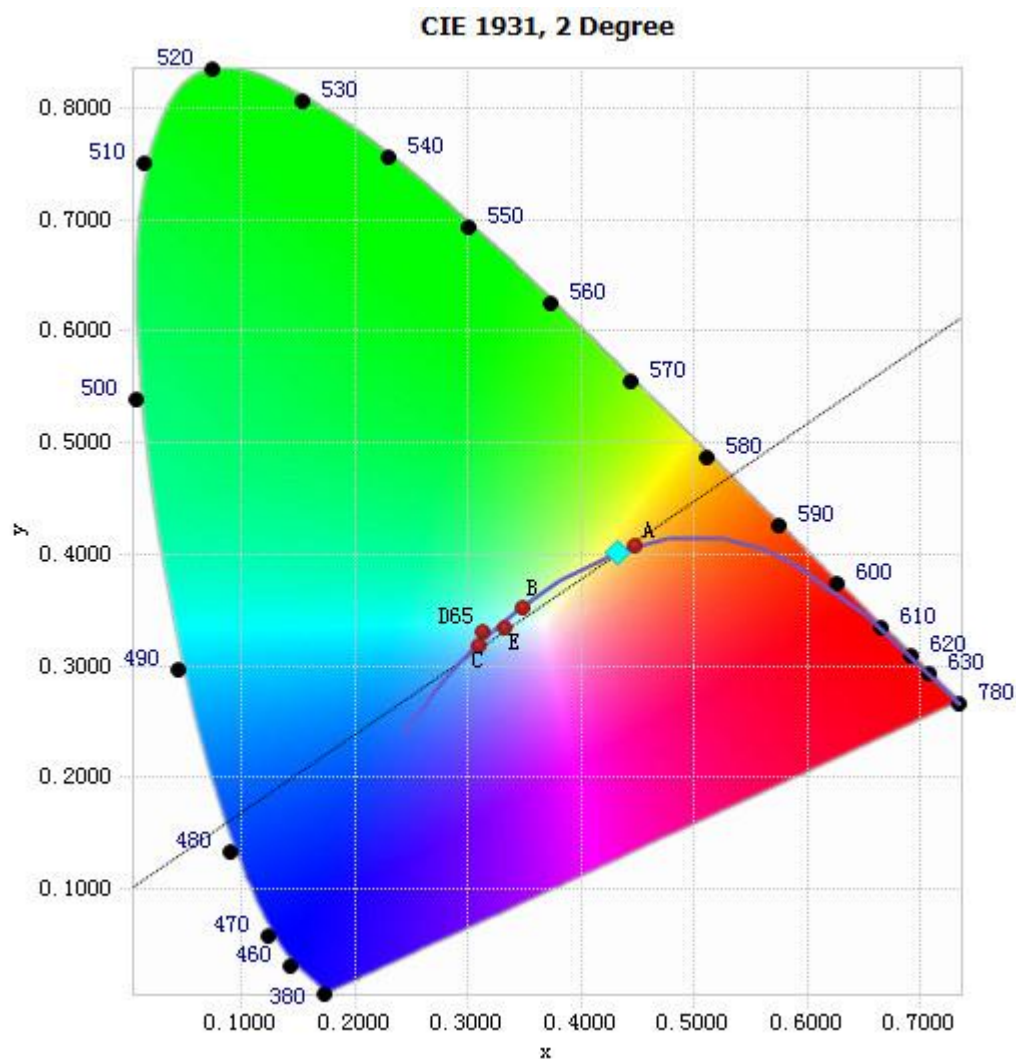
Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	7.36E-05	485	4.51E-03	590	2.19E-02	695	4.04E-03
385	6.61E-05	490	5.31E-03	595	2.25E-02	700	3.46E-03
390	5.72E-05	495	6.45E-03	600	2.29E-02	705	2.95E-03
395	5.10E-05	500	7.66E-03	605	2.29E-02	710	2.52E-03
400	5.42E-05	505	8.72E-03	610	2.27E-02	715	2.16E-03
405	8.65E-05	510	9.64E-03	615	2.20E-02	720	1.84E-03
410	1.57E-04	515	1.05E-02	620	2.10E-02	725	1.57E-03
415	3.17E-04	520	1.09E-02	625	2.00E-02	730	1.34E-03
420	5.88E-04	525	1.15E-02	630	1.88E-02	735	1.14E-03
425	1.09E-03	530	1.20E-02	635	1.75E-02	740	9.78E-04
430	1.95E-03	535	1.25E-02	640	1.61E-02	745	8.16E-04
435	3.46E-03	540	1.30E-02	645	1.47E-02	750	7.03E-04
440	6.29E-03	545	1.36E-02	650	1.33E-02	755	6.05E-04
445	1.11E-02	550	1.42E-02	655	1.19E-02	760	5.23E-04
450	1.39E-02	555	1.50E-02	660	1.06E-02	765	4.39E-04
455	1.05E-02	560	1.59E-02	665	9.38E-03	770	3.75E-04
460	7.75E-03	565	1.70E-02	670	8.21E-03	775	3.23E-04
465	6.49E-03	570	1.80E-02	675	7.20E-03	780	2.73E-04
470	4.91E-03	575	1.91E-02	680	6.23E-03		
475	4.02E-03	580	2.01E-02	685	5.42E-03		
480	4.09E-03	585	2.12E-02	690	4.68E-03		

Table 3: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method



## Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4319, 0.4017)

Chart 2: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.



# Nominal CCT Quadrangles – Sphere Spectroradiometer Method

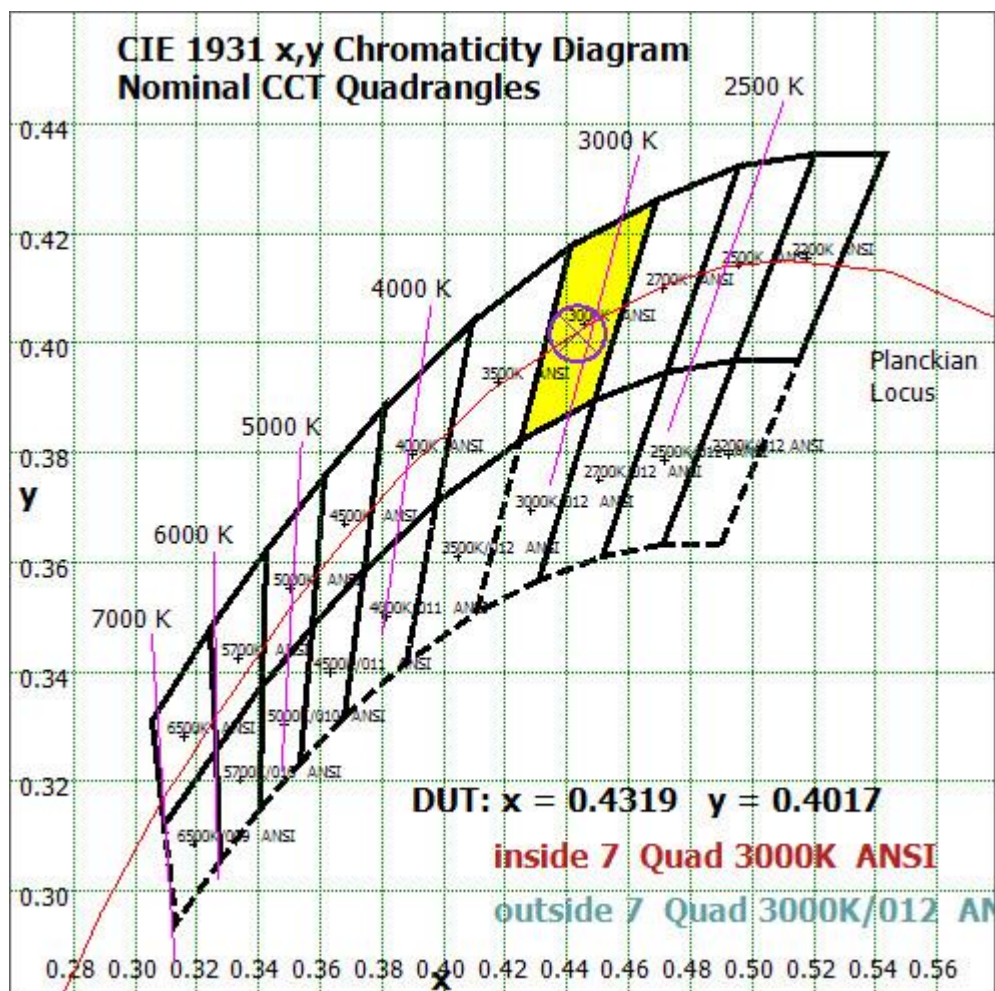


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

# Color Rendition Report – Sphere Spectroradiometer Method

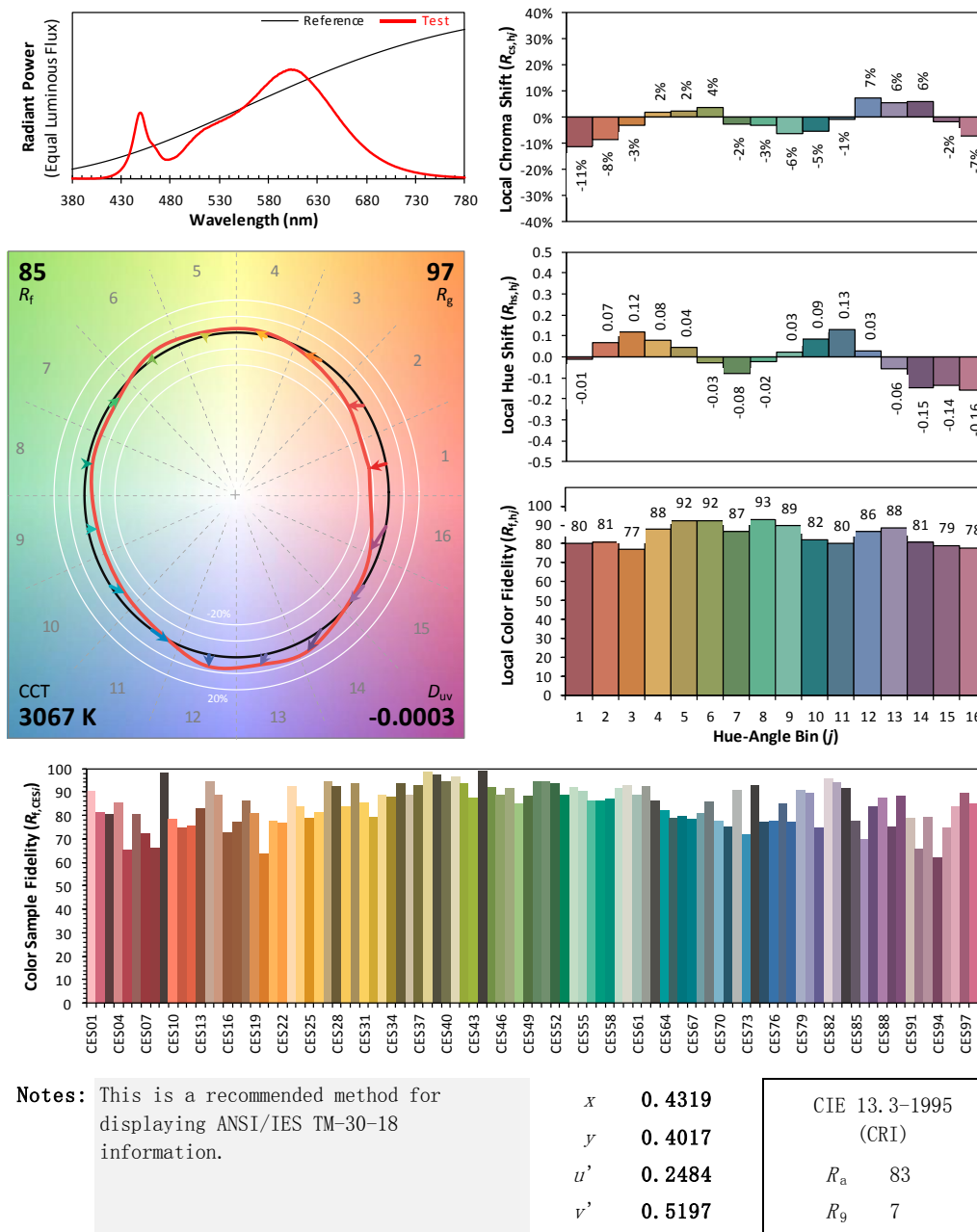
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/11

Model: 8T8/2F/8CCTS/UEB/C



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Chart 4: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 2 due to rounding.

### Goniophotometer Method

Test ambient temperature was 25.1 °C.

The photometric distance is 30 m.

Luminous data was taken at 0.5 ° vertical intervals and 10 ° horizontal intervals.

Parameter	Result
Test Voltage (V)	120.0
Voltage frequency (Hz)	60
Test Current (A)	0.067
Power Factor	0.9830
Power (W)	7.87
Luminous Efficacy (lm/W)	145.8
Total Luminous Flux (lm)	1147.0
Beam Angle (°)	109.5 (0°-180°) / 221.9 (90°-270°)
Center Beam Candle Power (cd)	198
Maximum Beam Candle Power (cd)	198.4 (At: C=200.0, Gamma=0.5)
Spacing Criteria	1.24 (0°-180°) / 1.47 (90°-270°)
Zonal Lumens in the 0 °-60 °Zone	44.35%
Zonal Lumens in the 60 °-90 °Zone	27.70%
Zonal Lumens in the 90 °-120 °Zone	17.69%
Zonal Lumens in the 120 °-180 °Zone	10.26%

Table 4: Test data per Goniophotometer Method

**Zonal Lumen Tabulation- Goniophotometer Method**

$\gamma(^{\circ})$	Lumens	% Total
0- 10	18.786	1.64%
10- 20	54.456	4.75%
20- 30	84.758	7.39%
30- 40	107.212	9.35%
40- 50	120.162	10.48%
50- 60	123.388	10.76%
60- 70	118.195	10.30%
70- 80	106.857	9.32%
80- 90	92.704	8.08%
90-100	79.738	6.95%
100-110	67.597	5.89%
110-120	55.528	4.84%
120-130	44.06	3.84%
130-140	33.501	2.92%
140-150	22.791	1.99%
150-160	12.592	1.10%
160-170	4.312	0.38%
170-180	0.396	0.03%
Total	1147.0	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	508.762	44.35%
60- 90	317.756	27.70%
0-90	826.518	72.06%
90- 180	320.515	27.94%
0- 180	1147.0	100%

Table 5: Zonal Lumen

## Illuminance Plots- Goniophotometer Method

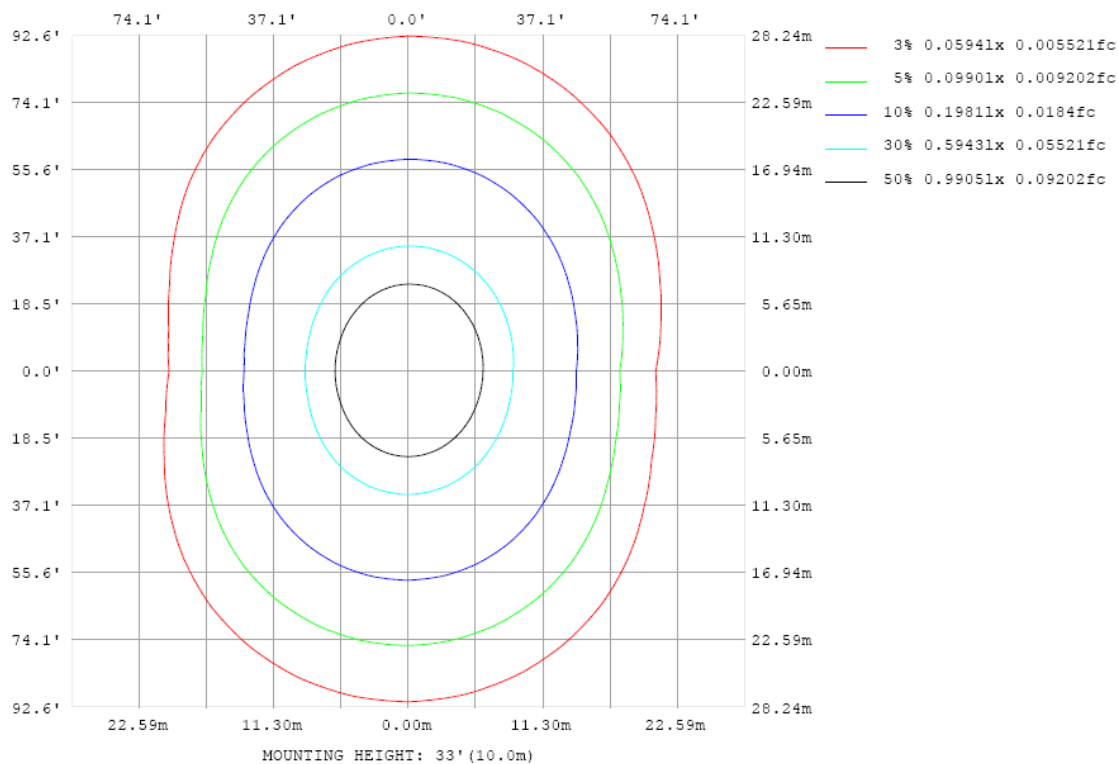


Chart 5: Illuminance Plot (Footcandles)

## Luminous Intensity Distribution Plots- Goniophotometer Method

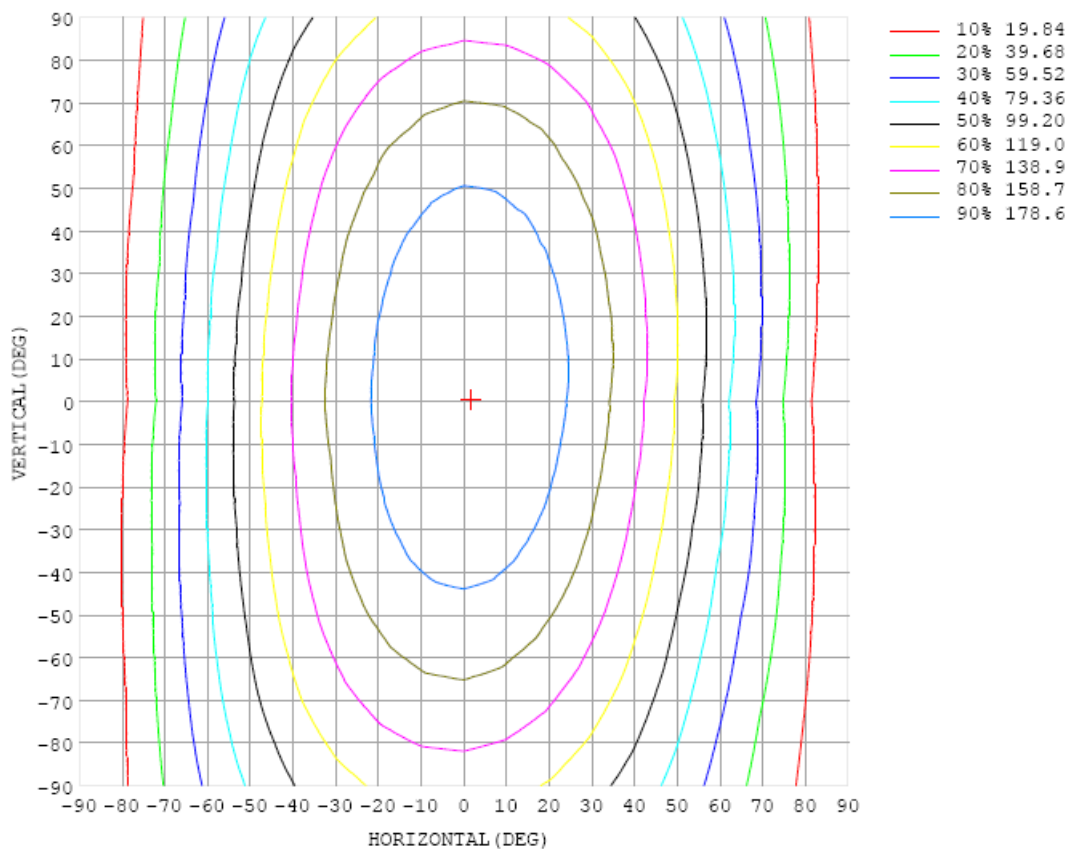


Chart 6: Isocandela Plot

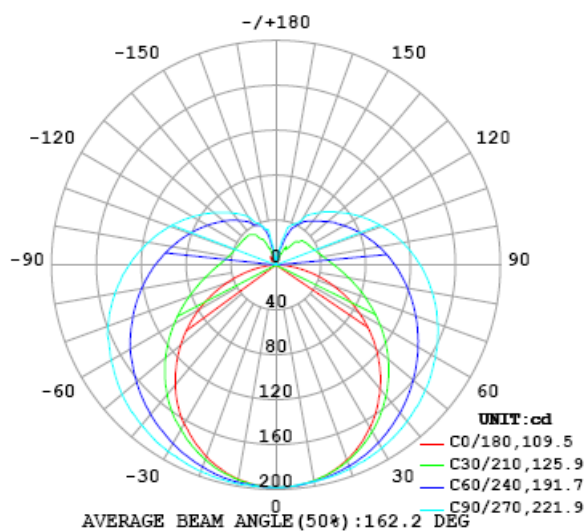


Chart 7: Polar Candela Distribution

## Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
5	198	198	198	198	198	198	198	197	197	197	197	197	197	197	197	197	197	197	197
10	195	195	195	195	196	196	196	196	196	196	196	196	195	195	194	194	193	193	194
15	191	191	191	191	192	193	194	194	195	195	194	194	193	192	191	189	188	188	188
20	185	185	185	186	188	189	191	192	193	193	193	192	190	188	186	184	182	182	181
25	177	177	177	179	182	185	187	189	191	191	190	189	186	183	180	177	174	173	173
30	167	167	169	171	175	179	183	186	188	189	188	186	182	178	174	169	166	164	163
35	157	157	159	162	167	173	178	182	184	185	184	182	178	172	166	160	156	153	153
40	144	145	148	153	159	166	172	177	180	182	181	178	173	166	158	151	145	141	140
45	131	132	135	142	150	158	166	172	176	178	177	173	167	159	150	141	133	128	125
50	117	118	123	131	141	151	160	167	172	174	172	168	161	152	142	130	121	114	111
55	102	104	110	119	131	143	153	161	167	169	168	163	156	145	133	120	108	99.5	95.2
60	86.0	89.2	96.0	107	121	135	146	155	161	164	163	158	149	138	124	109	95.4	84.7	78.9
65	71.1	74.7	82.5	95.6	111	127	139	150	156	159	158	152	143	131	116	99.2	83.1	70.0	62.6
70	54.8	60.4	69.9	84.8	102	119	133	143	150	153	152	147	137	124	108	89.7	71.6	55.6	46.3
75	38.9	46.6	58.1	74.8	93.8	111	126	137	144	148	146	141	131	118	101	81.6	61.6	42.4	30.7
80	23.9	34.0	47.5	65.7	85.8	104	119	131	138	142	140	135	125	111	94.1	74.3	52.8	30.5	16.4
85	10.9	23.5	38.8	58.1	78.8	97.4	112	124	132	135	134	128	118	105	87.7	68.1	45.7	21.1	5.26
90	2.48	16.3	32.3	51.8	72.4	90.9	106	118	125	129	127	122	112	98.6	81.8	62.4	40.5	16.6	1.27
95	1.80	13.6	28.2	46.9	67.1	85.2	99.7	111	118	122	121	115	106	92.7	76.3	57.6	36.8	14.9	0.92
100	2.28	12.4	25.5	42.9	62.0	79.3	93.4	104	112	115	114	109	99.7	87.4	71.7	53.8	34.2	13.9	1.11
105	2.35	11.7	23.8	39.9	57.6	73.8	87.1	97.6	104	108	107	102	93.4	81.7	67.1	50.4	32.3	13.3	1.36
110	2.28	11.1	22.5	37.6	54.1	69.1	81.4	91.0	97.5	101	99.7	95.3	87.3	76.3	62.9	47.6	30.8	12.8	1.56
115	0.92	10.4	21.7	35.7	50.7	64.3	75.6	84.5	90.6	93.7	92.8	88.6	81.4	71.4	59.3	45.5	29.9	12.6	1.73
120	0.53	10.7	21.8	34.5	47.5	59.7	70.1	78.4	83.9	86.6	85.8	82.0	75.5	66.6	55.9	43.7	29.1	11.9	0.91
125	0.59	11.3	22.2	33.5	44.7	55.6	65.6	73.3	77.8	79.7	79.0	75.9	70.0	62.0	52.6	42.1	28.9	12.3	1.44
130	2.26	12.3	22.2	32.3	42.1	51.5	60.1	66.8	70.9	72.8	72.6	70.1	64.9	57.7	49.6	40.8	29.0	13.3	2.86
135	2.19	10.3	19.1	29.0	39.1	48.0	55.3	61.1	65.1	67.2	66.8	64.4	59.8	53.7	47.0	39.6	29.2	14.6	4.91
140	1.96	9.19	17.3	26.8	36.6	44.9	51.1	55.9	59.3	61.0	60.7	58.6	54.4	48.6	42.9	37.0	28.4	15.4	6.76
145	2.75	2.42	6.87	18.2	32.3	42.5	47.6	50.9	53.8	55.3	55.4	53.7	49.4	43.4	36.7	29.9	22.2	13.5	8.66
150	1.62	3.18	8.23	18.6	30.7	39.1	42.7	44.7	46.1	46.5	45.8	44.2	42.8	40.1	32.6	21.4	11.9	7.91	7.67
155	1.23	0.00	0.26	10.7	24.4	33.6	37.0	38.5	39.8	40.3	40.6	40.2	40.1	38.3	30.1	16.8	6.58	4.58	6.17
160	0.82	2.06	4.31	7.33	11.6	18.7	27.8	34.7	36.7	37.0	37.8	37.3	34.3	29.1	20.9	11.1	4.37	3.94	5.41
165	0.82	0.99	1.78	3.05	5.07	8.54	13.2	17.9	21.8	24.5	25.4	23.9	16.9	8.04	3.40	3.67	4.72	4.60	4.48
170	1.44	1.92	2.10	1.35	0.90	3.54	8.59	11.1	8.01	4.53	5.56	7.28	7.27	6.39	6.37	7.09	6.59	3.75	1.35
175	0.66	1.03	1.27	1.20	1.16	1.76	2.94	3.87	4.07	4.16	4.52	5.11	6.53	7.82	6.95	4.25	2.91	4.79	6.59
180	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48

Table 6: Luminous Intensity Data



Table--2

UNIT: cd

C (DEG) y (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198		
5	197	197	197	197	198	197	197	198	198	198	198	198	198	198	198	198	198		
10	194	194	194	195	196	196	197	197	198	198	198	198	197	197	196	196	195		
15	188	189	190	192	193	194	196	196	197	197	197	196	195	194	193	193	192		
20	182	183	184	187	189	191	193	195	196	196	195	194	192	190	189	187	186		
25	174	175	178	181	185	188	191	193	194	194	193	191	188	185	183	180	178		
30	164	166	169	174	179	184	188	190	192	192	190	188	184	180	176	172	169		
35	154	156	161	167	173	179	184	188	189	189	187	184	178	173	168	163	159		
40	141	145	151	159	166	174	180	184	186	186	183	179	173	166	159	153	148		
45	127	132	140	150	160	168	175	180	183	183	179	174	166	158	150	142	136		
50	113	119	128	140	152	162	171	176	179	178	174	168	160	150	139	130	122		
55	97.8	105	117	131	144	156	165	171	174	174	170	163	153	141	128	117	108		
60	82.2	91.1	105	121	136	150	161	167	169	169	164	156	145	132	117	104	93.8		
65	66.8	77.5	93.1	111	128	143	154	161	164	164	159	150	138	122	106	91.2	79.9		
70	51.7	64.6	82.3	102	120	136	148	156	159	158	153	143	130	113	95.4	78.7	65.6		
75	37.4	52.7	72.3	93.4	113	129	141	149	153	151	146	136	122	105	85.4	67.0	51.9		
80	24.8	42.7	63.8	85.8	106	122	134	142	146	144	139	128	114	96.5	76.4	56.7	39.6		
85	14.9	34.8	56.8	78.7	98.5	115	127	135	138	137	131	121	107	88.8	68.4	47.9	29.0		
90	10.5	29.6	50.9	72.5	91.9	108	120	127	131	129	124	113	99.5	81.8	61.6	40.9	21.5		
95	9.11	26.5	46.5	67.0	85.6	101	113	120	123	122	116	106	92.5	75.2	55.6	36.1	18.4		
100	8.66	24.8	43.3	62.3	79.8	94.2	105	112	115	114	109	99.1	86.0	69.5	50.8	32.6	16.7		
105	8.67	23.9	40.9	58.2	74.3	87.9	98.5	105	108	107	101	92.2	79.7	64.3	47.1	30.3	15.7		
110	8.93	23.6	39.3	54.8	69.3	81.8	91.6	97.7	100	99.1	94.2	85.6	73.9	59.8	44.2	28.9	15.1		
115	9.33	23.8	38.1	51.8	64.7	76.0	84.9	90.6	93.1	91.9	87.3	79.2	68.5	55.8	42.0	27.9	14.3		
120	9.21	24.0	37.3	49.2	60.4	70.6	78.6	83.7	85.9	84.7	80.5	73.2	63.5	52.4	40.2	27.3	14.2		
125	10.0	24.8	36.9	47.1	56.7	65.5	72.5	77.0	79.0	77.8	74.0	67.5	59.0	49.3	38.7	27.0	14.3		
130	11.4	25.5	36.4	45.0	53.2	60.9	66.9	70.8	72.4	71.3	68.0	62.3	54.8	46.4	37.4	27.0	15.3		
135	13.2	26.5	36.1	43.2	50.0	56.4	61.5	64.8	66.2	65.2	62.3	57.4	51.0	43.9	36.2	26.9	15.5		
140	15.0	27.5	35.2	40.1	45.5	51.7	56.7	59.4	60.4	59.6	57.0	53.0	47.6	41.3	34.0	25.1	14.4		
145	16.1	26.6	32.9	36.9	41.7	47.5	52.1	54.4	55.0	54.3	52.2	48.8	44.5	39.9	34.8	27.4	16.5		
150	12.6	19.8	26.9	33.6	38.8	42.4	45.4	48.2	49.7	49.0	47.0	44.1	40.6	37.2	33.3	26.6	15.8		
155	9.20	14.3	22.4	31.1	36.8	39.0	40.0	40.9	41.1	40.9	40.0	38.4	35.8	31.6	25.8	18.7	10.6		
160	4.15	5.30	15.1	28.2	35.8	36.7	36.3	37.0	37.2	36.5	35.3	34.3	32.4	27.7	20.2	12.6	6.39		
165	3.88	4.38	7.90	13.6	20.8	28.4	33.4	33.9	32.8	32.9	32.4	30.7	27.4	20.7	11.5	4.01	0.91		
170	2.79	4.72	4.00	2.62	4.12	8.66	13.5	17.3	19.7	19.7	17.9	14.1	9.30	5.33	2.74	1.20	0.78		
175	4.72	2.64	3.35	5.23	5.53	3.96	2.32	1.47	1.05	1.22	1.78	2.95	4.07	3.93	2.57	1.27	0.76		
180	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48	3.48		

Table 7: Luminous Intensity Data

## TEST RESULTS (3500K Setting)

Test ambient temperature was 26.0 °C.

Base orientation was base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

## Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.066	0.032
Power Factor	0.9800	0.9058
Test Power (W)	7.77	8.12
THD A%	15.45	19.68
Luminous Efficacy (lm/W)	151.9	146.6
Total Luminous Flux (lm)	1180.2	1190.3
Color Rendering Index (CRI)	84.8	
R9	16.8	
Correlated Color Temperature (CCT)(K)	3577	
Chromaticity Chroma x	0.3986	
Chromaticity Chroma y	0.3820	
Chromaticity Chroma u	0.2349	
Chromaticity Chroma v	0.3377	
Duv	-0.0024	
Chromaticity Chroma u'	0.2349	
Chromaticity Chroma v'	0.5066	

Special Color Rendering Indices	
R1	84
R2	92.5
R3	96
R4	83
R5	84.1
R6	89.3
R7	84.8
R8	65
R9	16.8
R10	81.9
R11	82.5
R12	68.3
R13	86.4
R14	98.6

Table 8: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 ( $u', v'$ ) diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .

### Spectral Power Distribution - Sphere Spectroradiometer Method

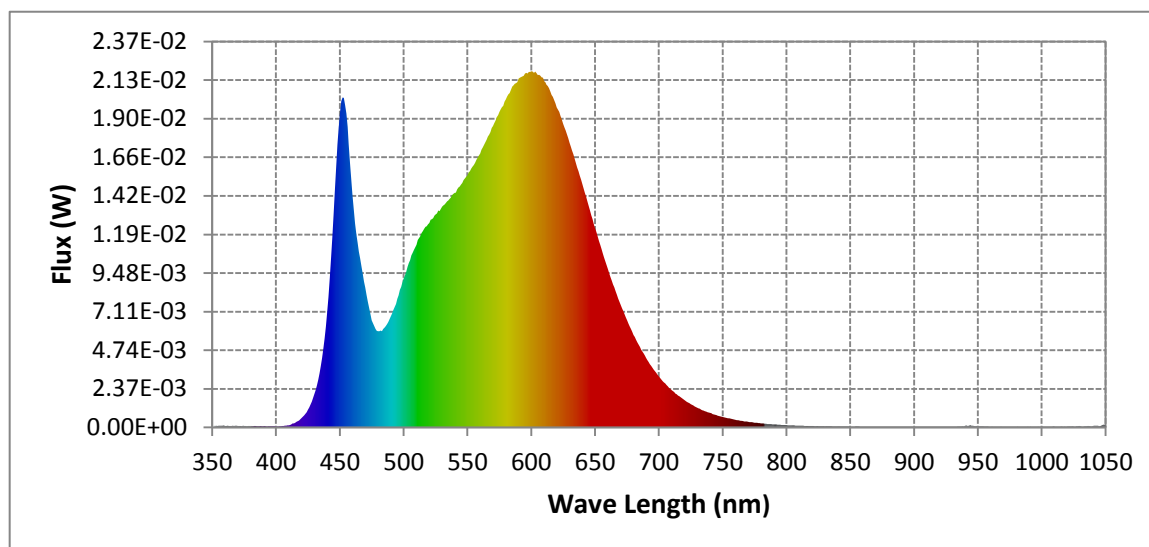
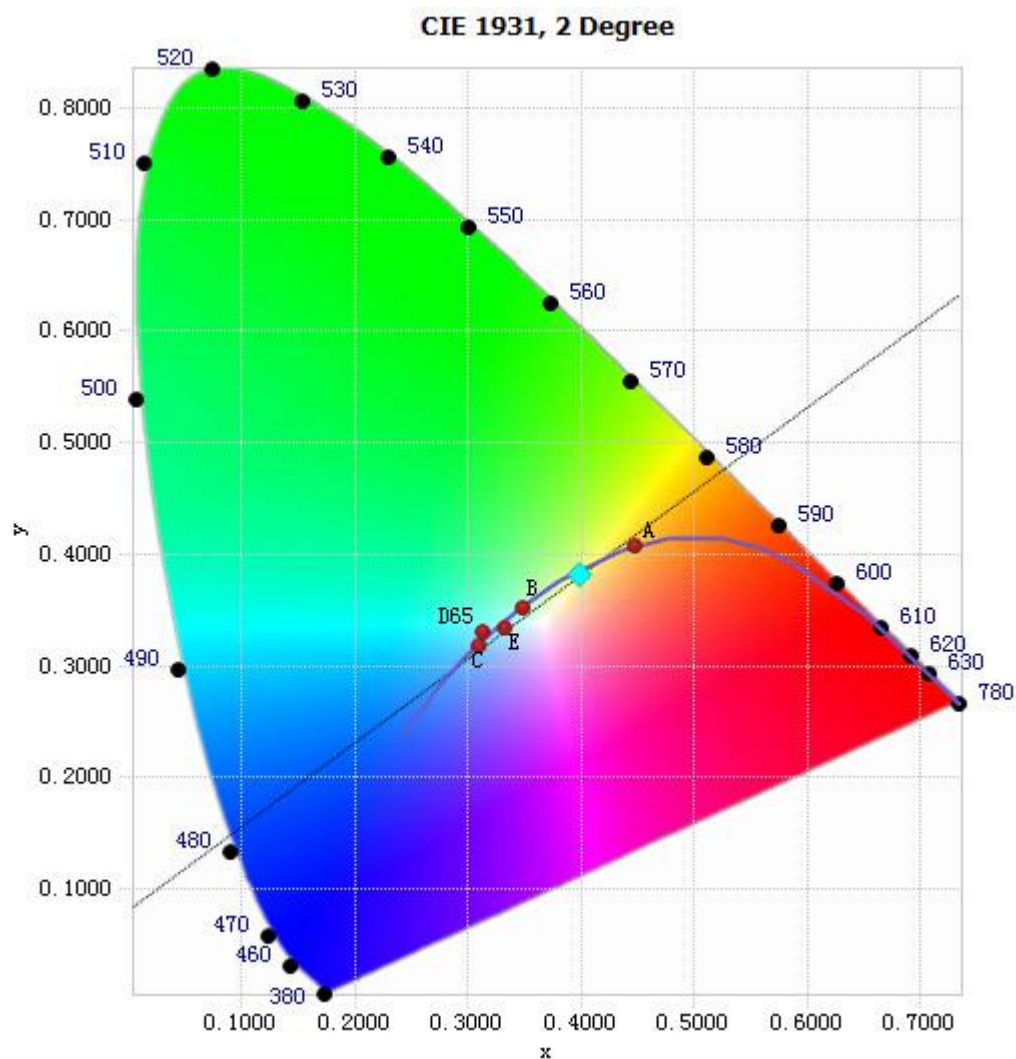


Chart 8: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	8.89E-05	485	6.13E-03	590	2.14E-02	695	3.67E-03
385	7.00E-05	490	6.83E-03	595	2.17E-02	700	3.14E-03
390	7.15E-05	495	7.89E-03	600	2.19E-02	705	2.71E-03
395	7.27E-05	500	9.14E-03	605	2.16E-02	710	2.30E-03
400	5.77E-05	505	1.03E-02	610	2.13E-02	715	1.96E-03
405	7.88E-05	510	1.12E-02	615	2.06E-02	720	1.68E-03
410	1.30E-04	515	1.21E-02	620	1.97E-02	725	1.43E-03
415	2.84E-04	520	1.26E-02	625	1.86E-02	730	1.21E-03
420	5.75E-04	525	1.31E-02	630	1.75E-02	735	1.03E-03
425	1.09E-03	530	1.35E-02	635	1.62E-02	740	8.88E-04
430	2.06E-03	535	1.39E-02	640	1.49E-02	745	7.53E-04
435	3.77E-03	540	1.44E-02	645	1.36E-02	750	6.39E-04
440	7.09E-03	545	1.49E-02	650	1.22E-02	755	5.53E-04
445	1.31E-02	550	1.55E-02	655	1.10E-02	760	4.64E-04
450	1.93E-02	555	1.61E-02	660	9.73E-03	765	4.04E-04
455	1.93E-02	560	1.68E-02	665	8.59E-03	770	3.44E-04
460	1.42E-02	565	1.77E-02	670	7.52E-03	775	2.94E-04
465	1.08E-02	570	1.85E-02	675	6.57E-03	780	2.55E-04
470	8.58E-03	575	1.94E-02	680	5.68E-03		
475	6.57E-03	580	2.01E-02	685	4.94E-03		
480	5.91E-03	585	2.09E-02	690	4.27E-03		

Table 9: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method

# Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3986, 0.3820)

Chart 9: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.

# Nominal CCT Quadrangles – Sphere Spectroradiometer Method

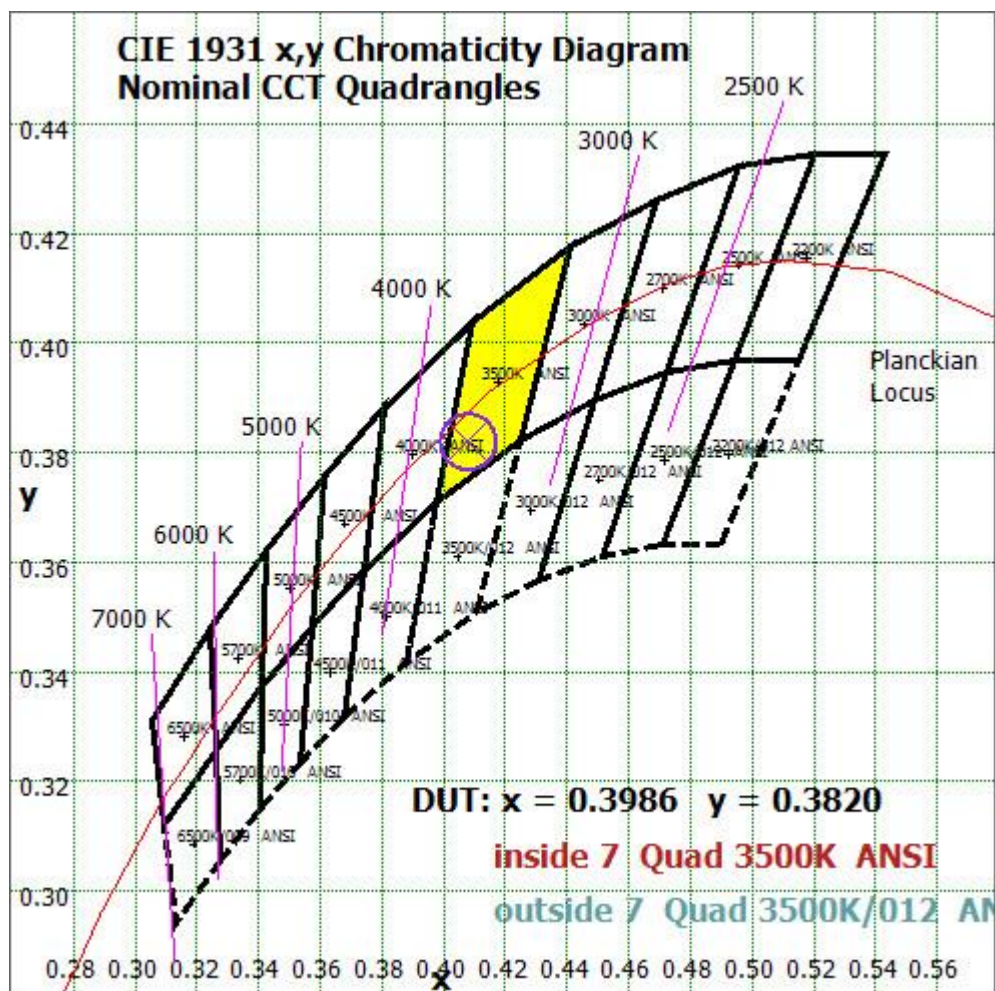


Chart 10: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram



# Color Rendition Report – Sphere Spectroradiometer Method

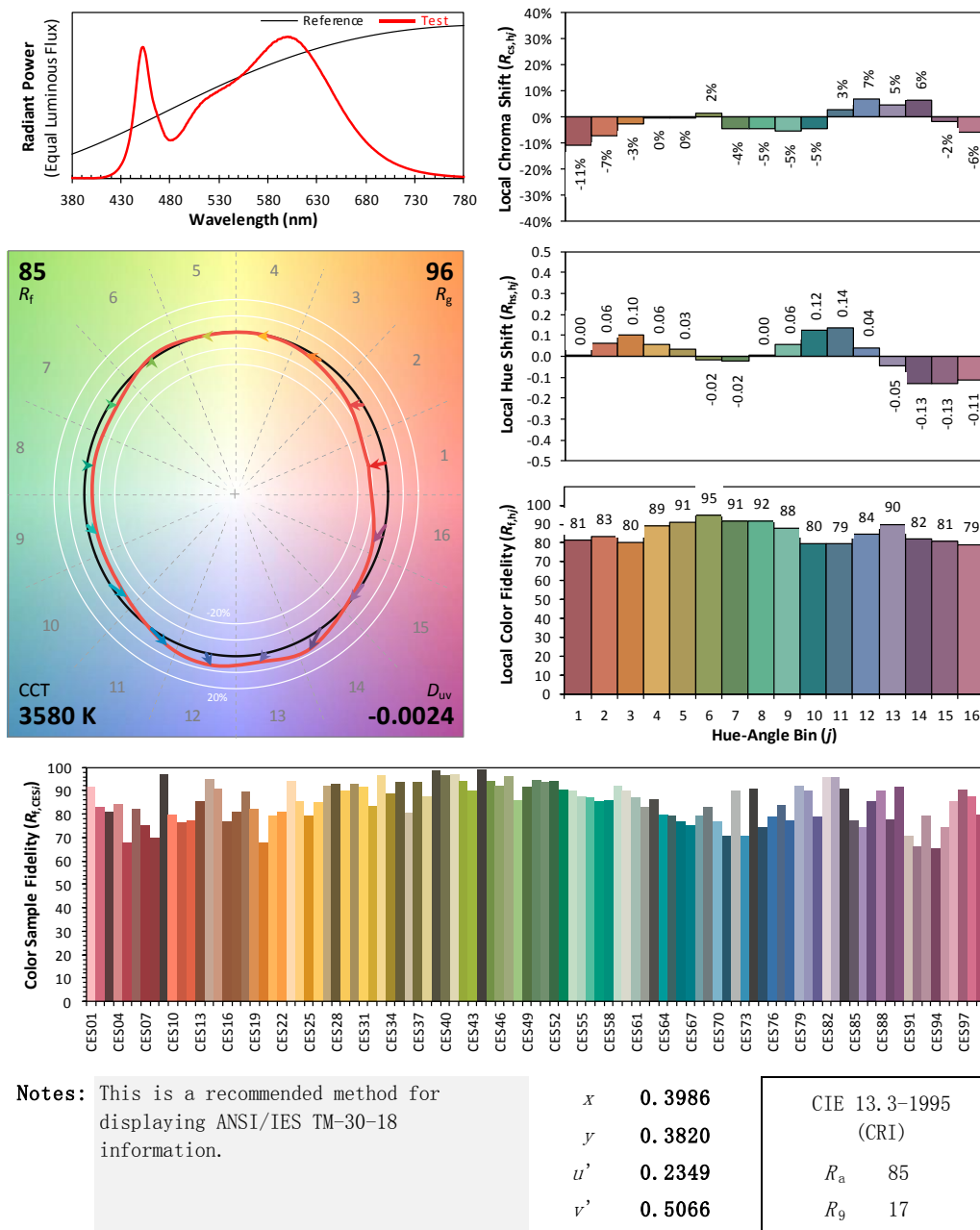
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/11

Model: 8T8/2F/8CCTS/UEB/C



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Chart 11: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 8 due to rounding.

## TEST RESULTS (4000K Setting)

Test ambient temperature was 26.0 °C.

Base orientation was base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

### Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.065	0.032
Power Factor	0.9801	0.9038
Test Power (W)	7.70	8.05
THD A%	15.28	19.48
Luminous Efficacy (lm/W)	156.3	150.4
Total Luminous Flux (lm)	1203.2	1211.0
Color Rendering Index (CRI)	85.8	
R9	21.9	
Correlated Color Temperature (CCT)(K)	4164	
Chromaticity Chroma x	0.3719	
Chromaticity Chroma y	0.3662	
Chromaticity Chroma u	0.2237	
Chromaticity Chroma v	0.3304	
Duv	-0.0024	
Chromaticity Chroma u'	0.2237	
Chromaticity Chroma v'	0.4956	

Special Color Rendering Indices	
R1	85.3
R2	93.1
R3	95.8
R4	83.8
R5	85
R6	88.7
R7	86.3
R8	68.7
R9	21.9
R10	82.5
R11	83.3
R12	63.9
R13	87.8
R14	98.4

Table 10: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 ( $u', v'$ ) diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .



### Spectral Power Distribution - Sphere Spectroradiometer Method

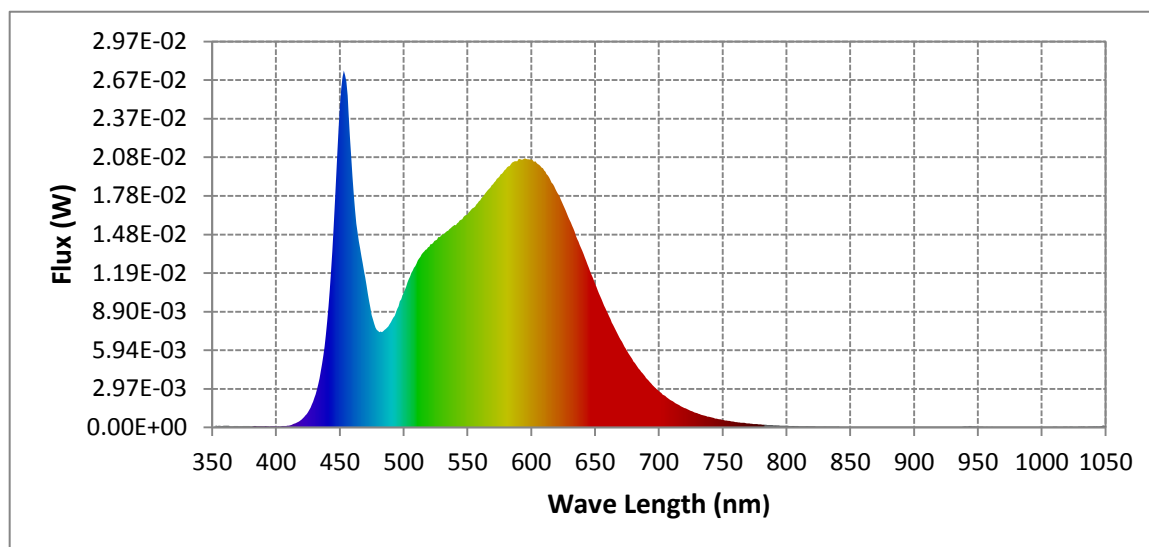
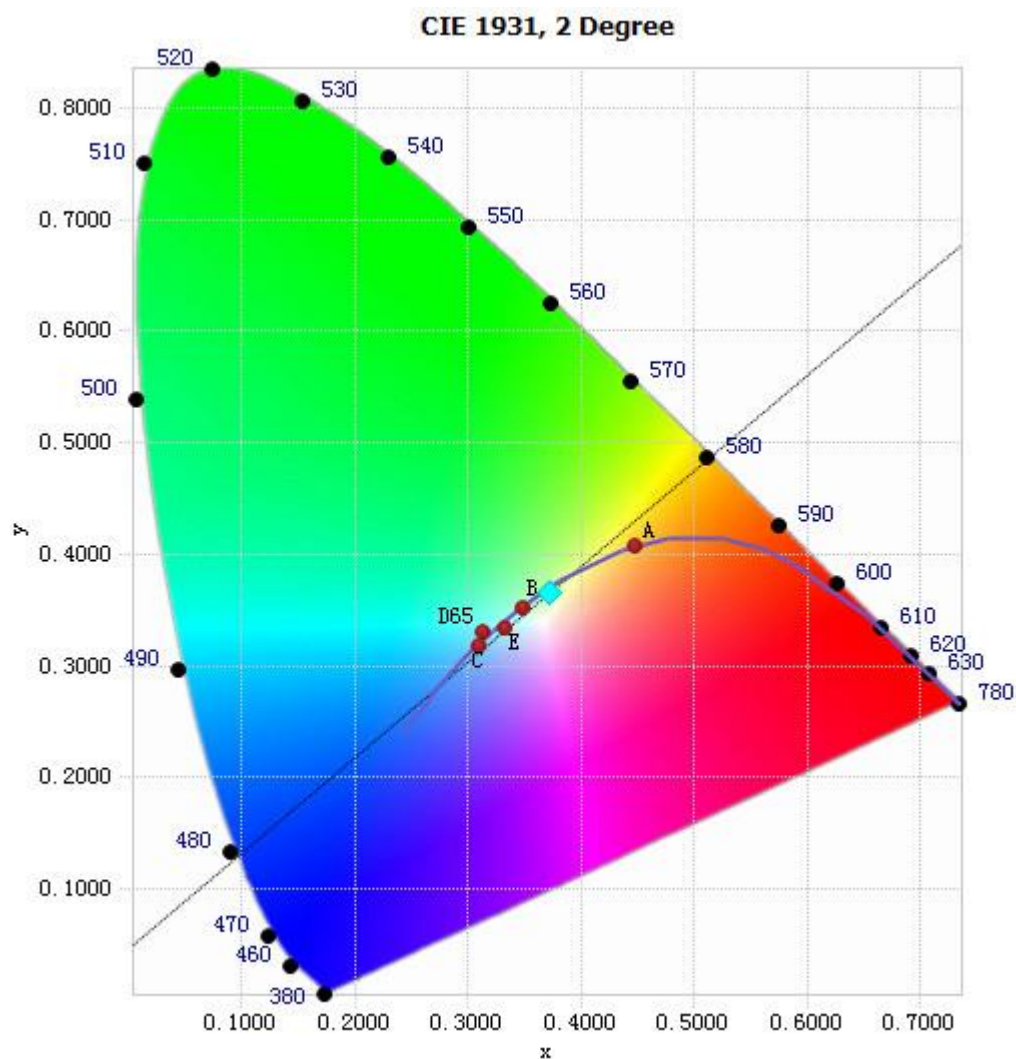


Chart 12: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	9.30E-05	485	7.49E-03	590	2.06E-02	695	3.27E-03
385	8.51E-05	490	8.09E-03	595	2.07E-02	700	2.80E-03
390	8.47E-05	495	9.11E-03	600	2.06E-02	705	2.41E-03
395	6.47E-05	500	1.04E-02	605	2.02E-02	710	2.06E-03
400	7.46E-05	505	1.16E-02	610	1.98E-02	715	1.75E-03
405	9.82E-05	510	1.26E-02	615	1.90E-02	720	1.50E-03
410	1.44E-04	515	1.34E-02	620	1.81E-02	725	1.27E-03
415	3.20E-04	520	1.39E-02	625	1.71E-02	730	1.09E-03
420	6.05E-04	525	1.44E-02	630	1.60E-02	735	9.28E-04
425	1.16E-03	530	1.49E-02	635	1.47E-02	740	7.89E-04
430	2.28E-03	535	1.51E-02	640	1.36E-02	745	6.76E-04
435	4.31E-03	540	1.56E-02	645	1.23E-02	750	5.72E-04
440	8.15E-03	545	1.60E-02	650	1.10E-02	755	4.92E-04
445	1.53E-02	550	1.63E-02	655	9.86E-03	760	4.16E-04
450	2.48E-02	555	1.69E-02	660	8.74E-03	765	3.59E-04
455	2.66E-02	560	1.75E-02	665	7.70E-03	770	3.14E-04
460	1.93E-02	565	1.81E-02	670	6.72E-03	775	2.69E-04
465	1.43E-02	570	1.87E-02	675	5.86E-03	780	2.34E-04
470	1.15E-02	575	1.93E-02	680	5.06E-03		
475	8.63E-03	580	1.98E-02	685	4.41E-03		
480	7.41E-03	585	2.04E-02	690	3.81E-03		

Table 11: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method

# Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3719, 0.3662)

Chart 13: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.

# Nominal CCT Quadrangles – Sphere Spectroradiometer Method

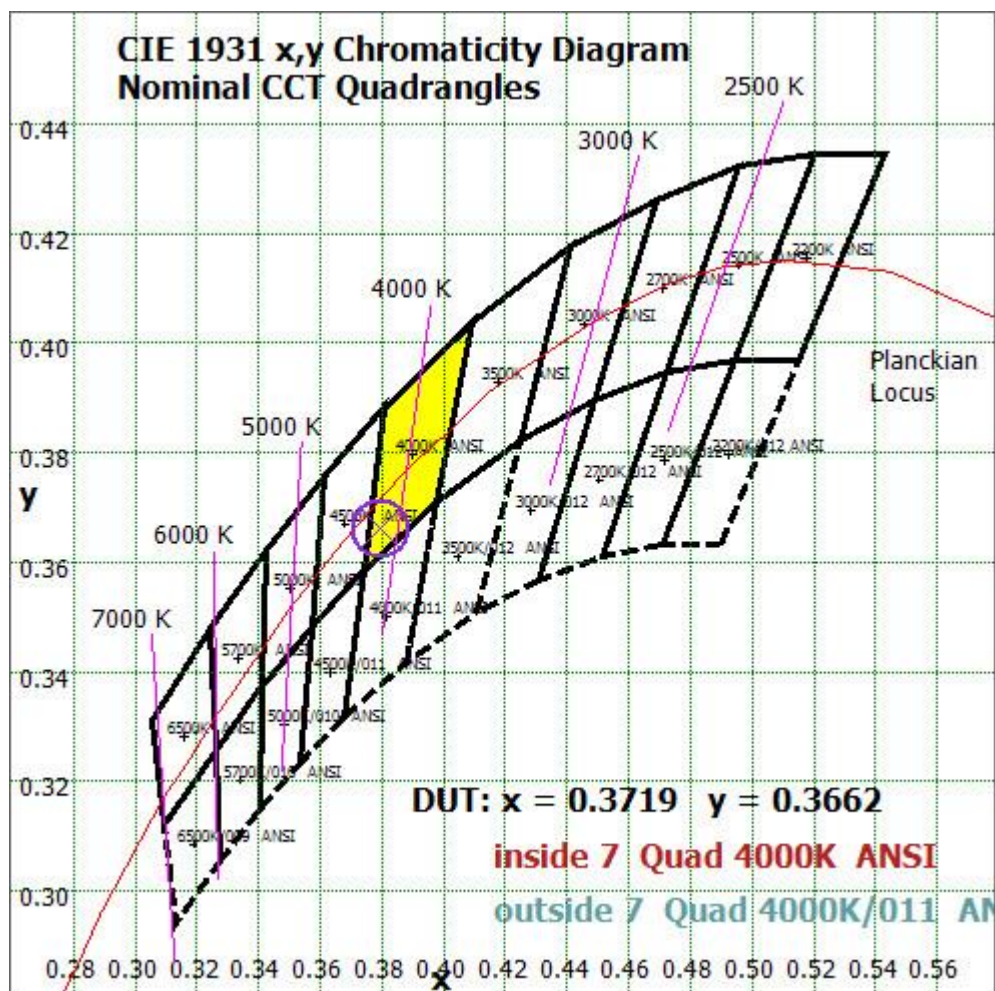


Chart14: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

# Color Rendition Report – Sphere Spectroradiometer Method

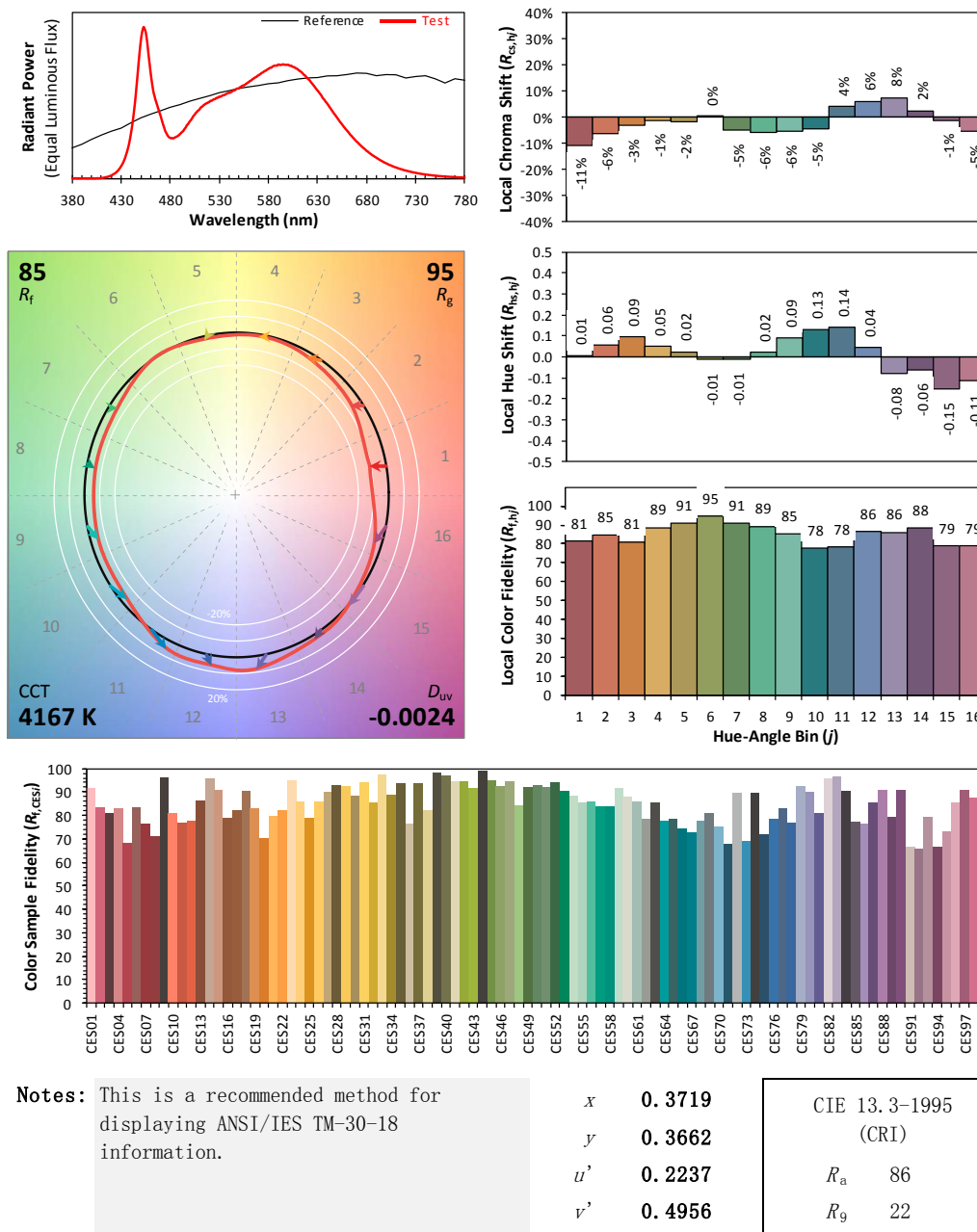
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/11

Model: 8T8/2F/8CCTS/UEB/C



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Chart 15: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 10 due to rounding.

## TEST RESULTS (5000K Setting)

Test ambient temperature was 26.0 °C.

Base orientation was base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

## Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.066	0.032
Power Factor	0.9802	0.9042
Test Power (W)	7.71	8.06
THD A%	15.28	19.92
Luminous Efficacy (lm/W)	156.8	151.0
Total Luminous Flux (lm)	1208.6	1217.1
Color Rendering Index (CRI)	85.7	
R9	19.6	
Correlated Color Temperature (CCT)(K)	5074	
Chromaticity Chroma x	0.3429	
Chromaticity Chroma y	0.3488	
Chromaticity Chroma u	0.2110	
Chromaticity Chroma v	0.3220	
Duv	-0.0005	
Chromaticity Chroma u'	0.2110	
Chromaticity Chroma v'	0.4830	

Special Color Rendering Indices	
R1	85.1
R2	92.5
R3	94.8
R4	84.2
R5	85.1
R6	87.3
R7	86.8
R8	69.9
R9	19.6
R10	80.9
R11	83.9
R12	63.4
R13	87.7
R14	97.8

Table 12: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 ( $u', v'$ ) diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .

### Spectral Power Distribution - Sphere Spectroradiometer Method

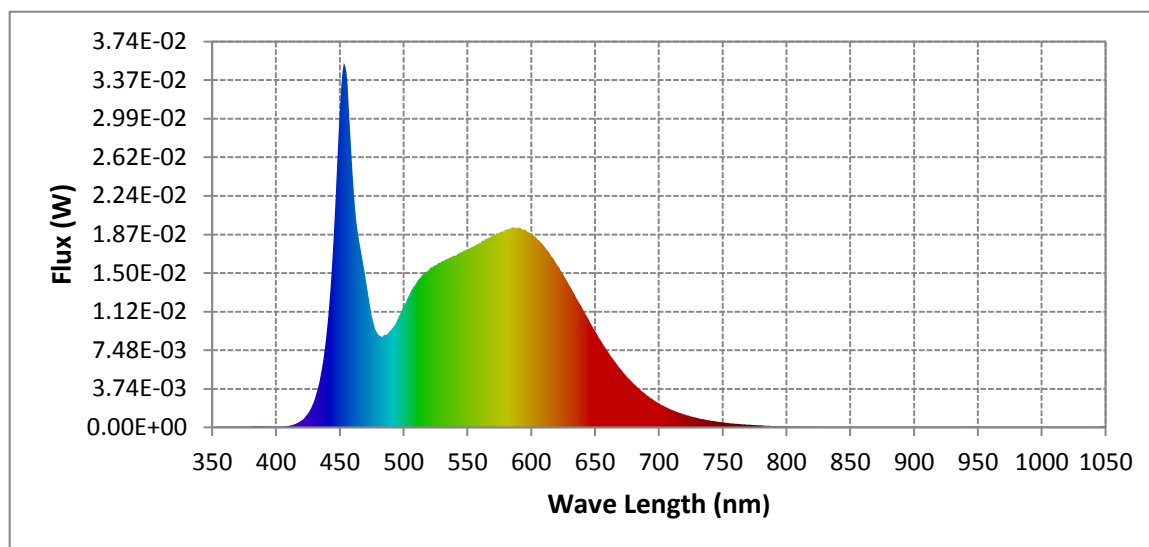


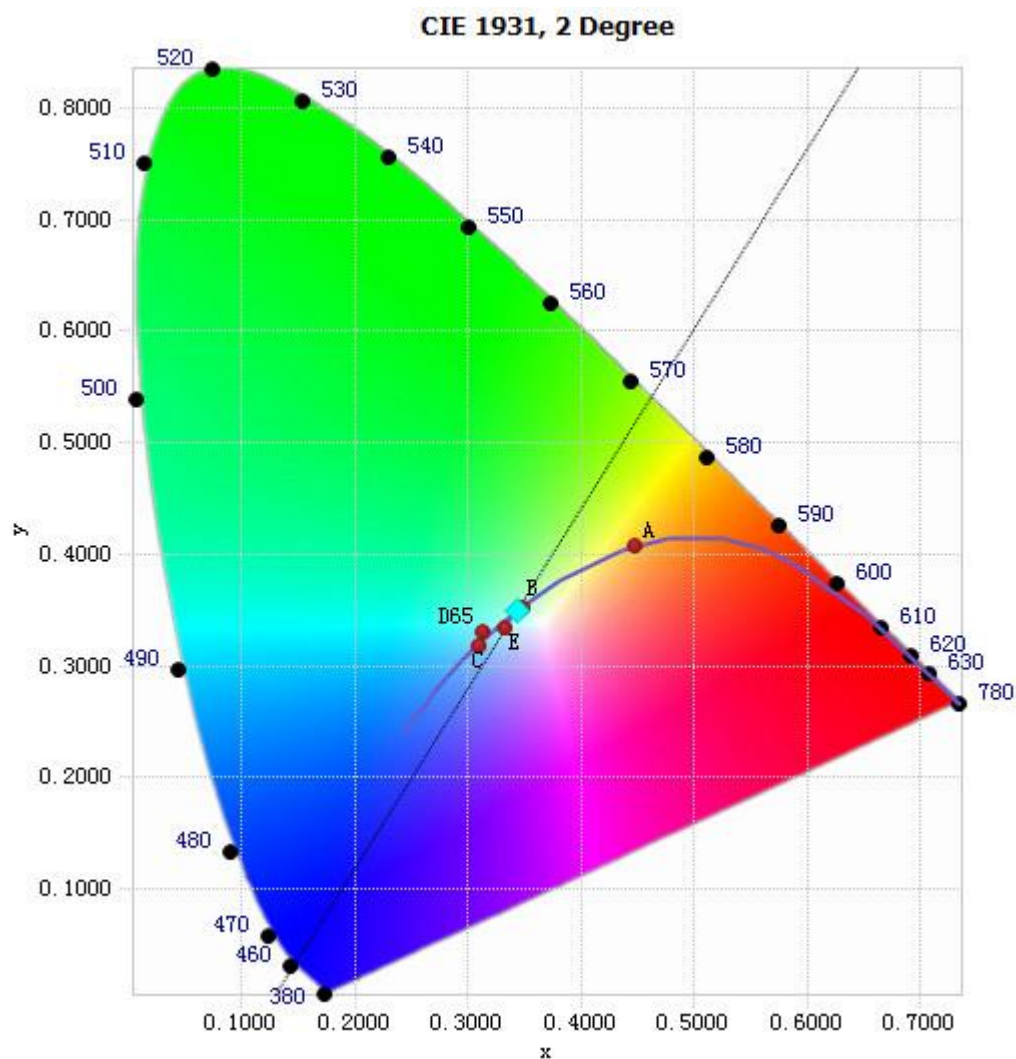
Chart16: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.31E-04	485	8.95E-03	590	1.94E-02	695	2.73E-03
385	9.51E-05	490	9.41E-03	595	1.92E-02	700	2.33E-03
390	9.58E-05	495	1.04E-02	600	1.88E-02	705	2.00E-03
395	9.50E-05	500	1.17E-02	605	1.82E-02	710	1.71E-03
400	8.42E-05	505	1.30E-02	610	1.75E-02	715	1.46E-03
405	9.33E-05	510	1.40E-02	615	1.67E-02	720	1.25E-03
410	1.53E-04	515	1.48E-02	620	1.58E-02	725	1.07E-03
415	3.29E-04	520	1.53E-02	625	1.48E-02	730	9.10E-04
420	6.81E-04	525	1.57E-02	630	1.37E-02	735	7.75E-04
425	1.35E-03	530	1.61E-02	635	1.26E-02	740	6.57E-04
430	2.63E-03	535	1.63E-02	640	1.15E-02	745	5.65E-04
435	5.10E-03	540	1.67E-02	645	1.04E-02	750	4.86E-04
440	9.67E-03	545	1.69E-02	650	9.30E-03	755	4.16E-04
445	1.83E-02	550	1.72E-02	655	8.29E-03	760	3.56E-04
450	3.10E-02	555	1.75E-02	660	7.33E-03	765	3.07E-04
455	3.45E-02	560	1.78E-02	665	6.45E-03	770	2.70E-04
460	2.47E-02	565	1.83E-02	670	5.62E-03	775	2.25E-04
465	1.82E-02	570	1.86E-02	675	4.90E-03	780	1.98E-04
470	1.47E-02	575	1.89E-02	680	4.23E-03		
475	1.08E-02	580	1.91E-02	685	3.68E-03		
480	9.01E-03	585	1.94E-02	690	3.17E-03		

Table 13: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method



# Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3429, 0.3488)

Chart 17: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.



# Nominal CCT Quadrangles – Sphere Spectroradiometer Method

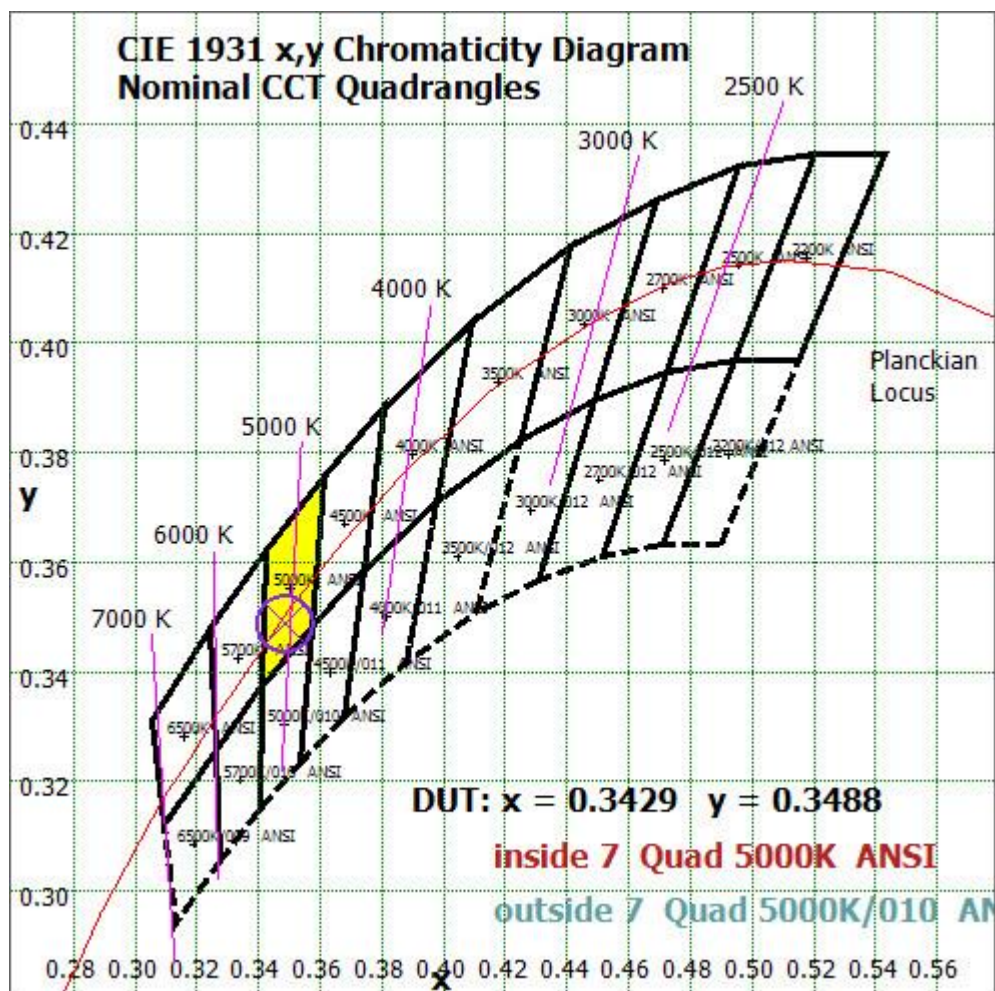


Chart 18: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

# Color Rendition Report – Sphere Spectroradiometer Method

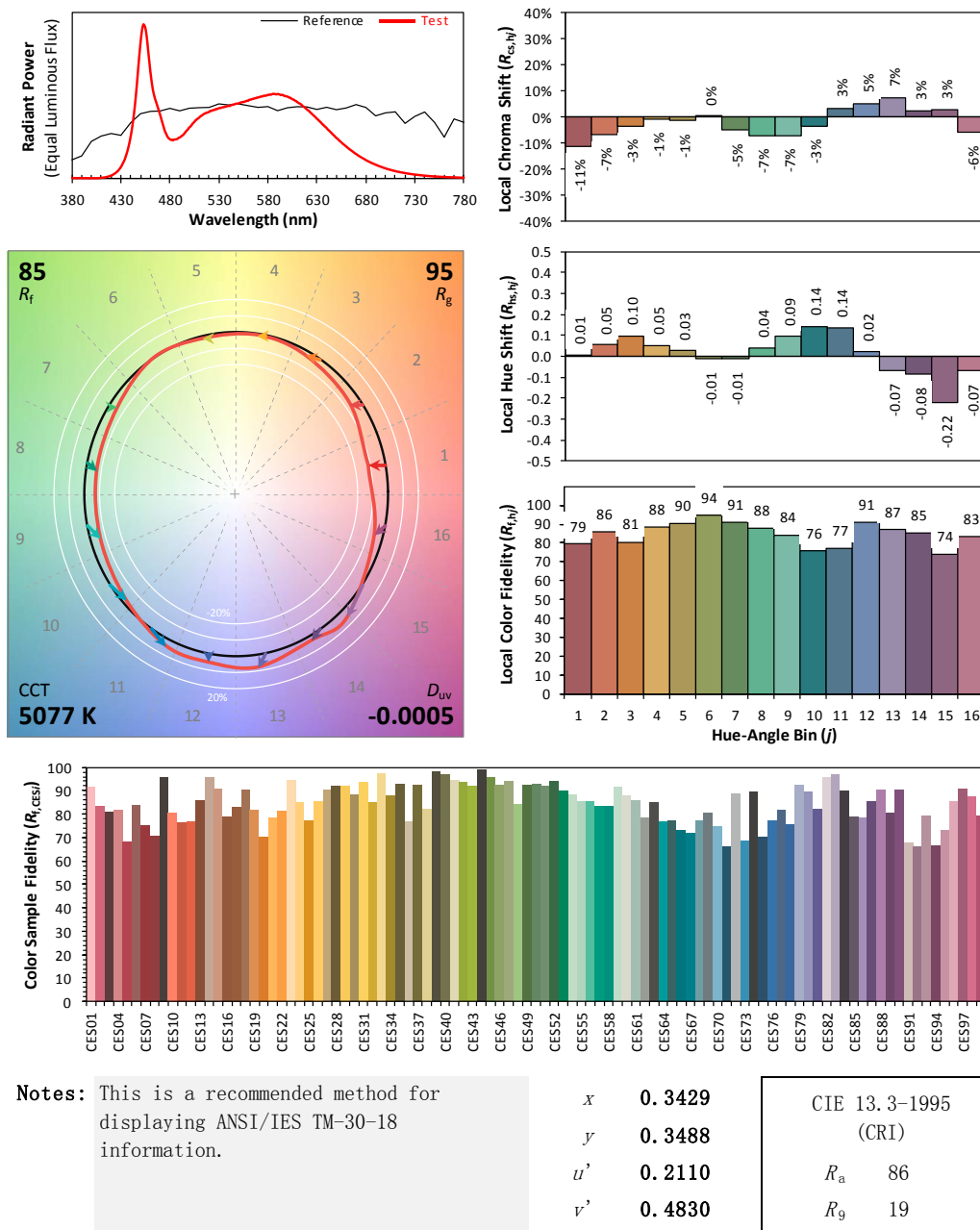
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/11

Model: 8T8/2F/8CCTS/UEB/C



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Chart 19: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 12 due to rounding.

## TEST RESULTS (6500K Setting)

Test ambient temperature was 26.0 °C.

Base orientation was base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 50 minutes, and the total operating time including stabilization was 55 minutes.

### Sphere-Spectroradiometer Method

Parameter	Result	
Test Voltage (V)	120.0	277.0
Voltage frequency (Hz)	60	60
Test Current (A)	0.066	0.033
Power Factor	0.9800	0.9064
Test Power (W)	7.80	8.16
THD A%	15.53	19.57
Luminous Efficacy (lm/W)	152.6	147.2
Total Luminous Flux (lm)	1190.3	1200.8
Color Rendering Index (CRI)	84.4	
R9	12.7	
Correlated Color Temperature (CCT)(K)	6337	
Chromaticity Chroma x	0.3154	
Chromaticity Chroma y	0.3320	
Chromaticity Chroma u	0.1986	
Chromaticity Chroma v	0.3135	
Duv	0.0034	
Chromaticity Chroma u'	0.1986	
Chromaticity Chroma v'	0.4703	

Special Color Rendering Indices	
R1	83
R2	91.1
R3	93.8
R4	81.7
R5	82.7
R6	85.2
R7	87.7
R8	70
R9	12.7
R10	77.4
R11	81.2
R12	56.8
R13	86
R14	97.2

Table 14: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 ( $u', v'$ ) diagram,  $u' = u = 4x/(-2x+12y+3)$ ,  $v' = 3v/2 = 9y/(-2x+12y+3)$ .

### Spectral Power Distribution - Sphere Spectroradiometer Method

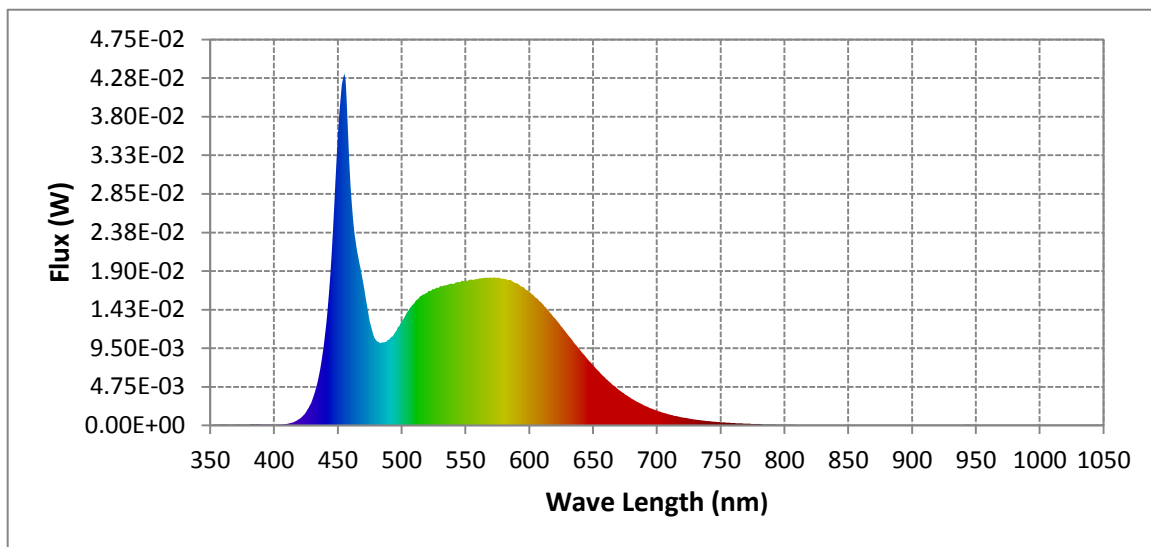
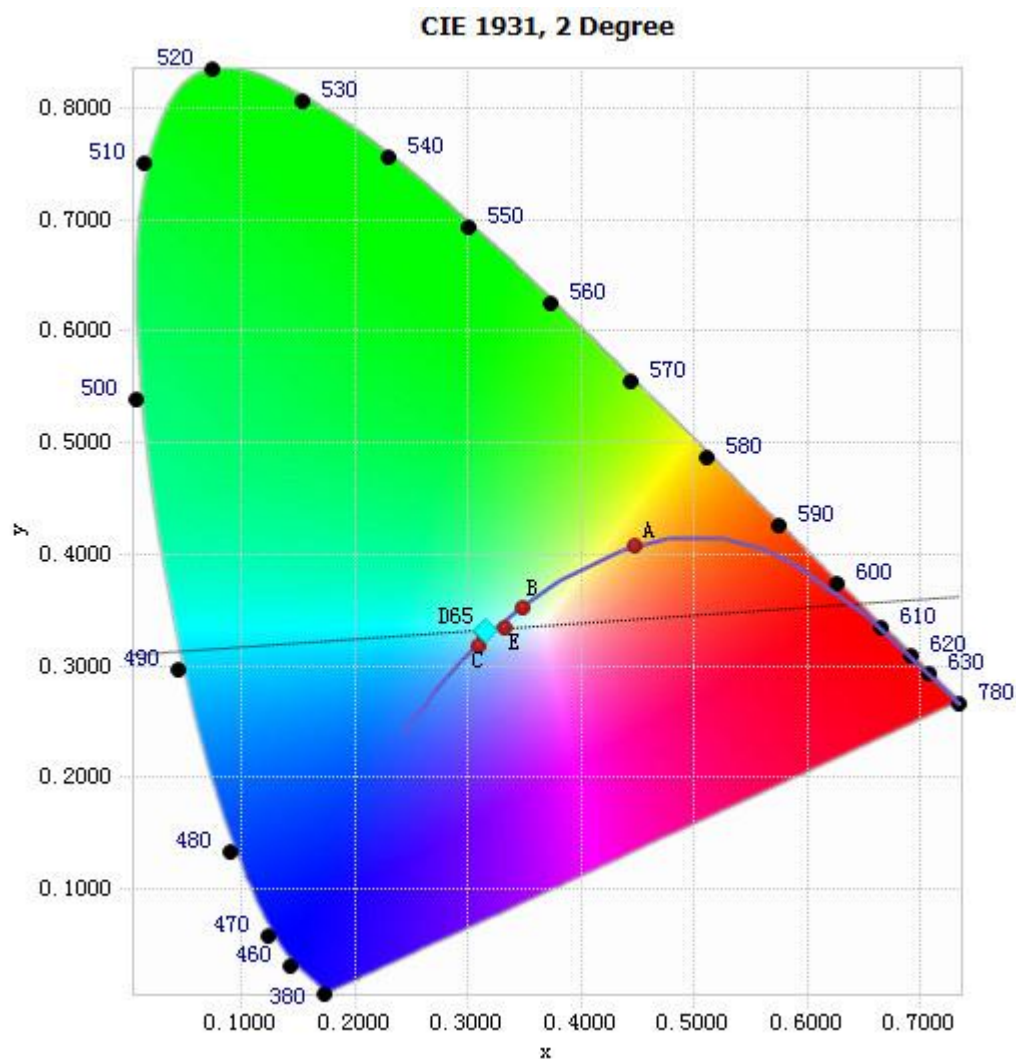


Chart 20: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.17E-04	485	1.02E-02	590	1.75E-02	695	2.12E-03
385	1.09E-04	490	1.05E-02	595	1.70E-02	700	1.82E-03
390	1.16E-04	495	1.15E-02	600	1.64E-02	705	1.57E-03
395	1.13E-04	500	1.28E-02	605	1.57E-02	710	1.34E-03
400	7.89E-05	505	1.41E-02	610	1.50E-02	715	1.14E-03
405	1.03E-04	510	1.51E-02	615	1.41E-02	720	9.84E-04
410	1.86E-04	515	1.59E-02	620	1.32E-02	725	8.45E-04
415	3.78E-04	520	1.63E-02	625	1.22E-02	730	7.23E-04
420	7.96E-04	525	1.67E-02	630	1.12E-02	735	6.19E-04
425	1.64E-03	530	1.71E-02	635	1.02E-02	740	5.31E-04
430	3.16E-03	535	1.72E-02	640	9.25E-03	745	4.52E-04
435	6.05E-03	540	1.74E-02	645	8.30E-03	750	3.91E-04
440	1.13E-02	545	1.76E-02	650	7.39E-03	755	3.36E-04
445	2.09E-02	550	1.78E-02	655	6.55E-03	760	2.94E-04
450	3.59E-02	555	1.79E-02	660	5.75E-03	765	2.51E-04
455	4.33E-02	560	1.80E-02	665	5.04E-03	770	2.18E-04
460	2.96E-02	565	1.81E-02	670	4.39E-03	775	1.90E-04
465	2.16E-02	570	1.81E-02	675	3.82E-03	780	1.64E-04
470	1.75E-02	575	1.82E-02	680	3.29E-03		
475	1.28E-02	580	1.80E-02	685	2.87E-03		
480	1.05E-02	585	1.79E-02	690	2.47E-03		

Table 15: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method

# Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3154, 0.3320)

Chart 21: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.



# Nominal CCT Quadrangles – Sphere Spectroradiometer Method

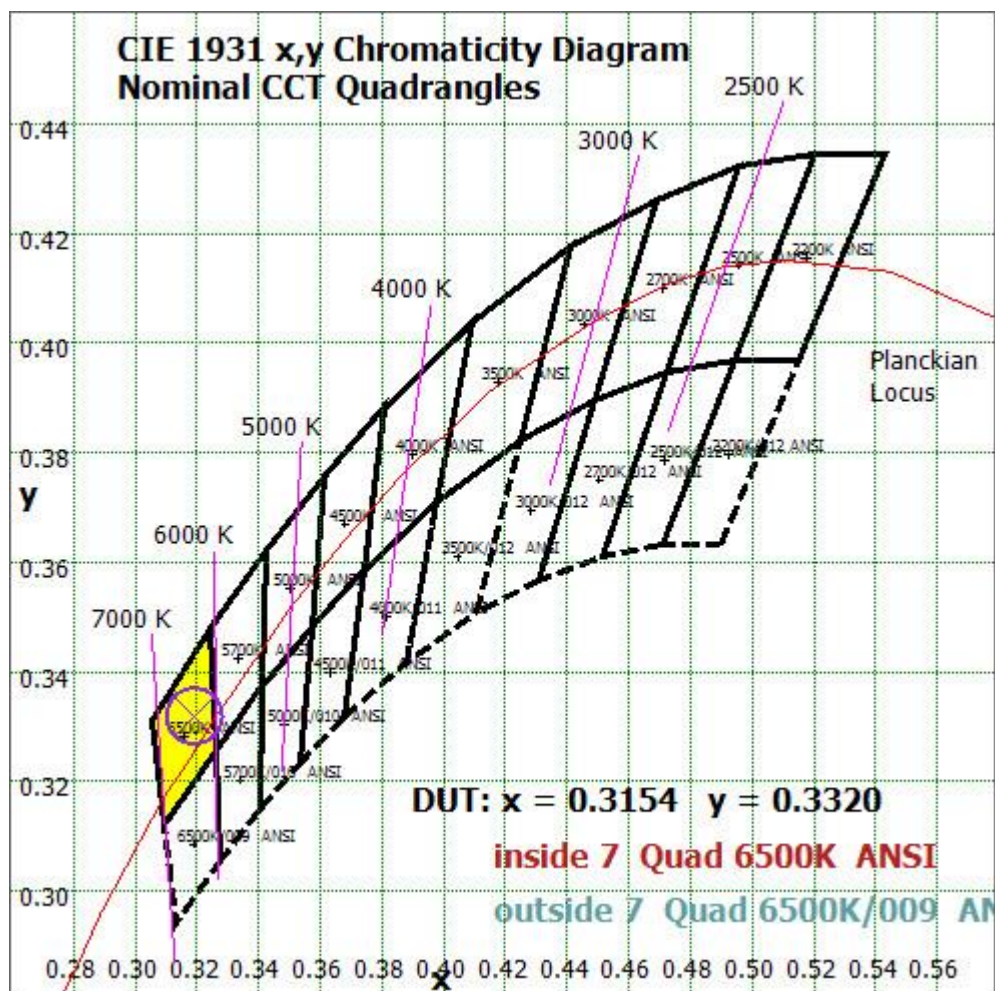


Chart 22: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

# Color Rendition Report – Sphere Spectroradiometer Method

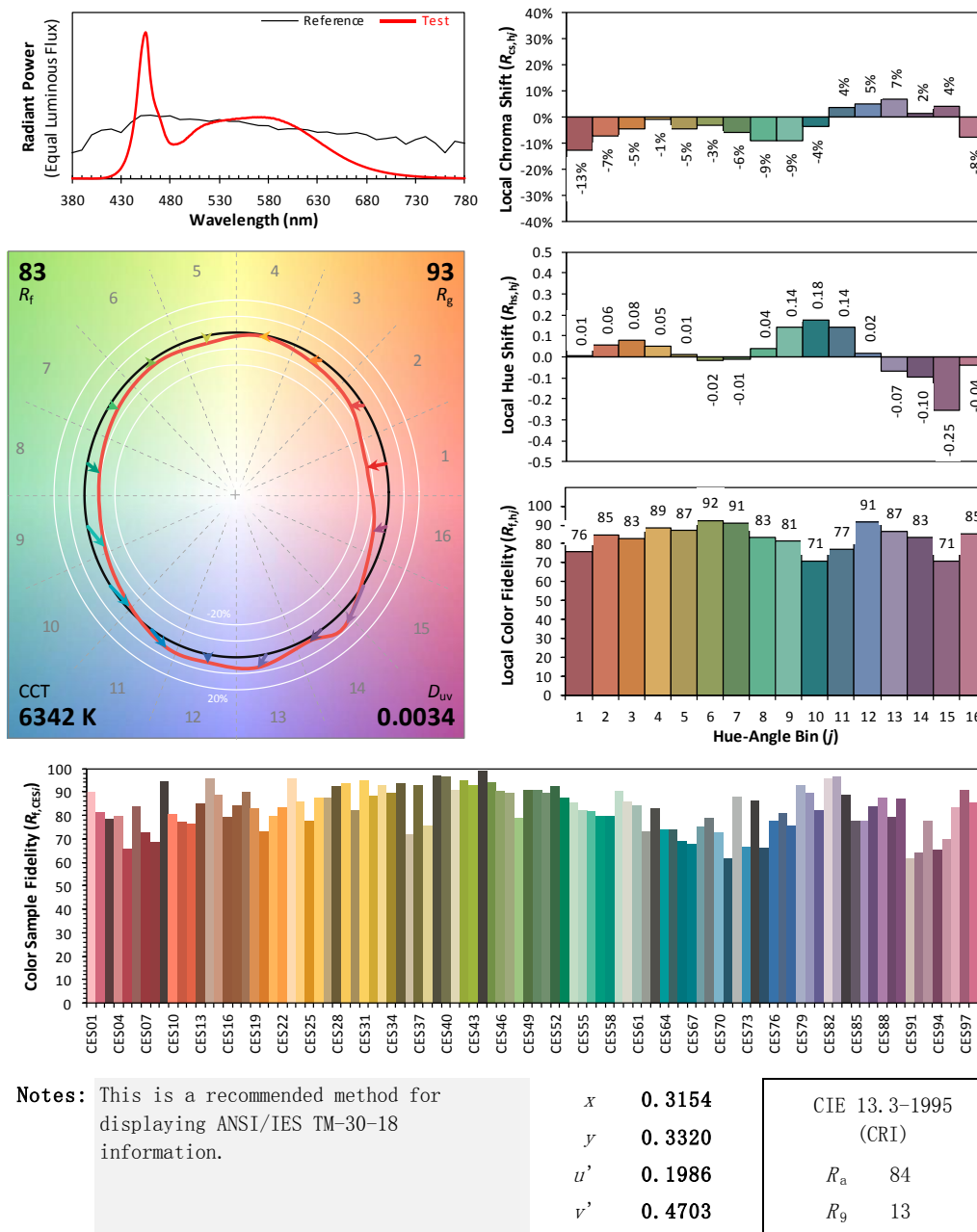
## ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/11

Model: 8T8/2F/8CCTS/UEB/C



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Chart 23: Full Report Created with the IES TM-30 Calculator

Note: The values in this diagram might be a little different from the values in Table 14 due to rounding.



## EQUIPMENT LIST

Test Equipment	Model	Equipment No.	Calibration Date	Calibration Due date
Goniophotometer system	GO-R5000	HZTE011-01	Aug.15, 2025	-
Digital Power Meter	PF2010A	HZTE028-01	Aug. 07, 2025	Aug. 06, 2026
AC Power Supply	DPS1060	HZTE001-06	Aug. 07, 2025	Aug. 06, 2026
DC Power Supply	WY12010	HZTE004-03	Aug. 07, 2025	Aug. 06, 2026
Temperature recorder	JM624U	HZTE018-08	Aug. 07, 2025	Aug. 06, 2026
Temperature and humidity recorder	JR900	HZTE018-01	Aug. 07, 2025	Aug. 06, 2026
Standard source	D908	HZTE012-01	Aug. 14, 2018	-
Integrate Sphere system	3M	HZTE015-04	Aug. 07, 2025	-
Digital Power Meter	WT210	HZTE008-01	Aug. 07, 2025	Aug. 06, 2026
AC Power Supply	PCR 500L	HZTE001-07	Aug. 07, 2025	Aug. 06, 2026
DC Power Supply	IT6154	HZTE004-04	Aug. 07, 2025	Aug. 06, 2026
Standard source	SCL-1400	HZTE012-06	Nov. 04, 2021	-
Temperature and humidity recorder	JR900	HZTE018-02	Aug. 07, 2025	Aug. 06, 2026
Temperature Meter	TES1310	HZTE017-01	Aug. 07, 2025	Aug. 06, 2026

Table 16: Test Equipment List

## TEST METHODS

### Seasoning of SSL Product

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning. Therefore, no seasoning was performed.

### Sphere-Spectroradiometer Method- Photometric and Electrical Measurements

A Labsphere Model CDS 2100 Spectroradiometer and 3 Meter Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit. The coating reflectance of each sphere is 98%. The measure geometry is  $4\pi$ . Self-absorption correction is conducted in testing. Bandwidth of spectroradiometer is 350nm-1050nm.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation.

The stabilization time typically ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaires). It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 20 min, taken 10 minutes apart, is less than 0.5 %.

Electrical measurements including voltage, current, and power were measured using the Yokogawa Power Analyzer.

The standard reference of the integrated sphere system is halogen incandescent lamp, the intensity distribution type is omni-directional, and is traceable to the National Institute of Standards and Technology.

The uncertainty of integrating sphere system reported in this document is expanded uncertainty is 2.1% with a

coverage factor  $k=2$ .

## Goniophotometer Method

### Photometric and Electrical Measurements

An EVERFINE Type C Model GO-R5000 Goniophotometer was used to measure the intensity at each angle of distribution for each sample. The photometric distance is 2.475m for near-field measurement or 30m for far-field measurement. Bandwidth of spectroradiometer is 380nm-780nm.

Ambient temperature was measured at the same height of the sample mounted on the Goniophotometer equipment. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation.

The stabilization time typically ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaires). It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 20 min, taken 10 minutes apart, is less than 0.5 %.

Electrical measurements including voltage, current, and power were measured using the Everfine Digital Power Meter.

Some graphics were created with Photometric Plus software.

The standard reference of the Goniophotometer system is halogen incandescent lamp, the intensity distribution type is omni-directional, and is traceable to the National Institute of Metrology P.R. China.

The uncertainty of goniophotometer system reported in this document is expanded uncertainty is 2.3% with a coverage factor  $k=2$ .

### Color Characteristics Measurements

The color characteristics of SSL products include chromaticity coordinates, correlated color temperature, and color rendering index. These characteristics of SSL products may be spatially non-uniform, and thus, in order that they can be specified accurately, the color quantities shall be measured as values that are spatially average, weighted to intensity, over the angular range where light is intentionally emitted from the SSL product. The color characteristics measurements are using gonio-spectroradiometer.

\*\*\* End of Report \*\*\*

This report is considered invalidated without the Special Seal for Inspection of the LTL. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of LTL, this test report shall not be copied except in full and published as advertisement.