

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: 11T8/3F/8CCTS/UEB/C

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ25080001d

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

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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	11T8/3F/8CCTS/UEB/C 3000K Setting	11T8/3F/8CCTS/UEB/C 3500K Setting	11T8/3F/8CCTS/UEB/C 4000K Setting
Luminous Efficacy (Lumens /Watt)	142.3	148.5	153.1
Total Luminous Flux (Lumens)	1603.9	1659.0	1694.5
Power (Watts)	11.27	11.17	11.07
Power Factor	0.9789	0.9793	0.9795
CCT (K)	3070	3557	4119
CRI	82.8	85.1	86.1
Stabilization Time (Light & Power)	50 mins	50 mins	50 mins
Note	3000K	3500K	4000K

Tested Model	11T8/3F/8CCTS/UEB/C 5000K Setting	11T8/3F/8CCTS/UEB/C 6500K Setting
Luminous Efficacy (Lumens /Watt)	153.7	150.1
Total Luminous Flux (Lumens)	1705.7	1687.1
Power (Watts)	11.10	11.24
Power Factor	0.9794	0.9792
CCT (K)	5175	6342
CRI	86.1	84.6
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. 15, 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)

Name	: LED Tube
Model	: 11T8/3F/8CCTS/UEB/C
Electrical Ratings	: 120-277V, 50/60Hz, 11W
Product Description	: Color- Tunable 3000K/3500K/4000K/5000K/6500K
Manufacturer	: GREEN CREATIVE LTD
Address	: 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)	0.096	0.046
Power Factor	0.9789	0.9046
Test Power (W)	11.27	11.59
THD A%	16.28	18.96
Luminous Efficacy (lm/W)	142.3	138.8
Total Luminous Flux (lm)	1603.9	1608.9
Color Rendering Index (CRI)	82.8	
R9	8.3	
Correlated Color Temperature (CCT)(K)	3070	
Chromaticity Chroma x	0.4306	
Chromaticity Chroma y	0.3994	
Chromaticity Chroma u	0.2485	
Chromaticity Chroma v	0.3457	
Duv	-0.0010	
Chromaticity Chroma u'	0.2485	
Chromaticity Chroma v'	0.5186	

Special Color Rendering Indices	
R1	81.1
R2	90.5
R3	96.5
R4	81.2
R5	81.5
R6	88.3
R7	83.1
R8	60
R9	8.3
R10	78.5
R11	80.9
R12	71.3
R13	83.3
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

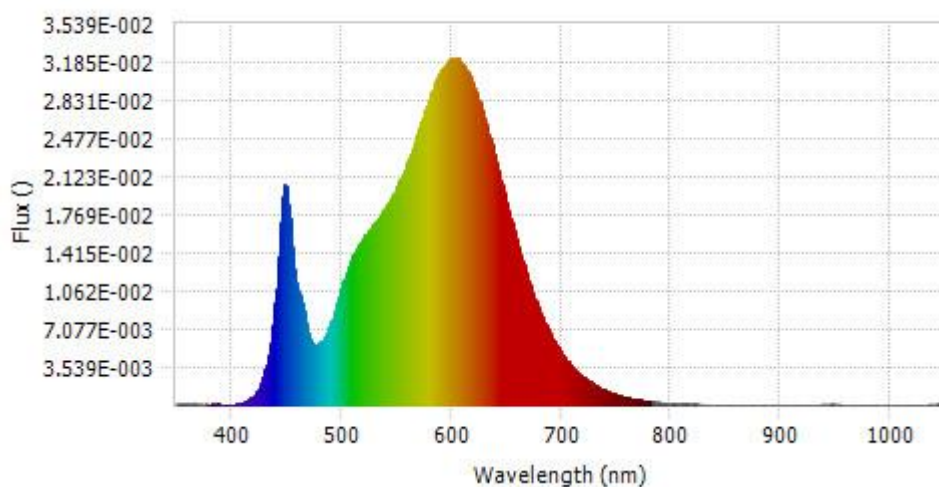
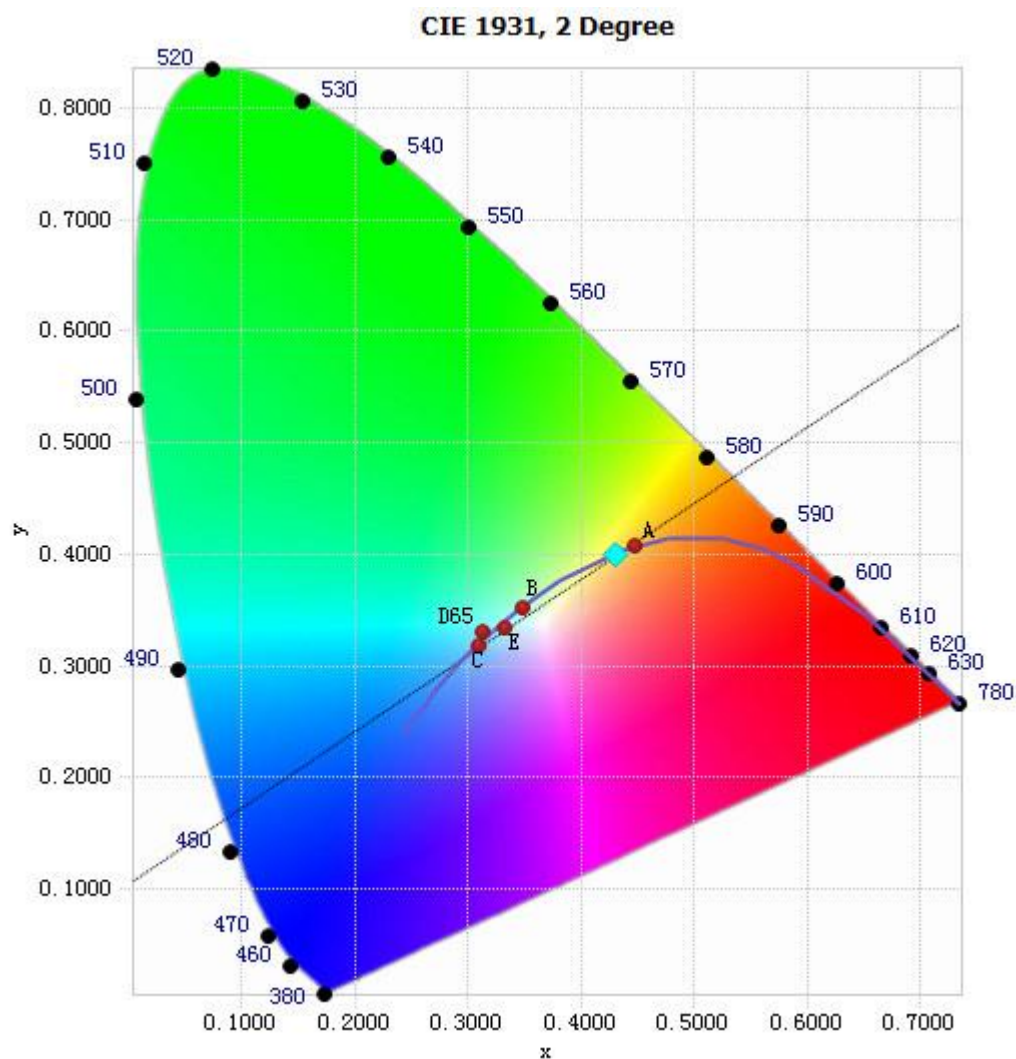


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.03E-04	485	6.33E-03	590	3.10E-02	695	5.71E-03
385	1.07E-04	490	7.50E-03	595	3.17E-02	700	4.89E-03
390	6.38E-05	495	9.12E-03	600	3.22E-02	705	4.17E-03
395	8.58E-05	500	1.09E-02	605	3.21E-02	710	3.56E-03
400	7.35E-05	505	1.23E-02	610	3.17E-02	715	3.06E-03
405	1.16E-04	510	1.36E-02	615	3.09E-02	720	2.61E-03
410	2.30E-04	515	1.48E-02	620	2.98E-02	725	2.22E-03
415	4.55E-04	520	1.55E-02	625	2.84E-02	730	1.87E-03
420	8.51E-04	525	1.61E-02	630	2.66E-02	735	1.60E-03
425	1.58E-03	530	1.69E-02	635	2.49E-02	740	1.38E-03
430	2.91E-03	535	1.75E-02	640	2.30E-02	745	1.16E-03
435	5.18E-03	540	1.83E-02	645	2.09E-02	750	1.00E-03
440	9.60E-03	545	1.91E-02	650	1.89E-02	755	8.51E-04
445	1.69E-02	550	2.00E-02	655	1.70E-02	760	7.20E-04
450	2.03E-02	555	2.11E-02	660	1.51E-02	765	6.17E-04
455	1.47E-02	560	2.25E-02	665	1.34E-02	770	5.33E-04
460	1.10E-02	565	2.39E-02	670	1.17E-02	775	4.53E-04
465	9.15E-03	570	2.54E-02	675	1.02E-02	780	3.93E-04
470	6.76E-03	575	2.69E-02	680	8.88E-03		
475	5.63E-03	580	2.84E-02	685	7.69E-03		
480	5.75E-03	585	2.99E-02	690	6.65E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.4306, 0.3994)

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

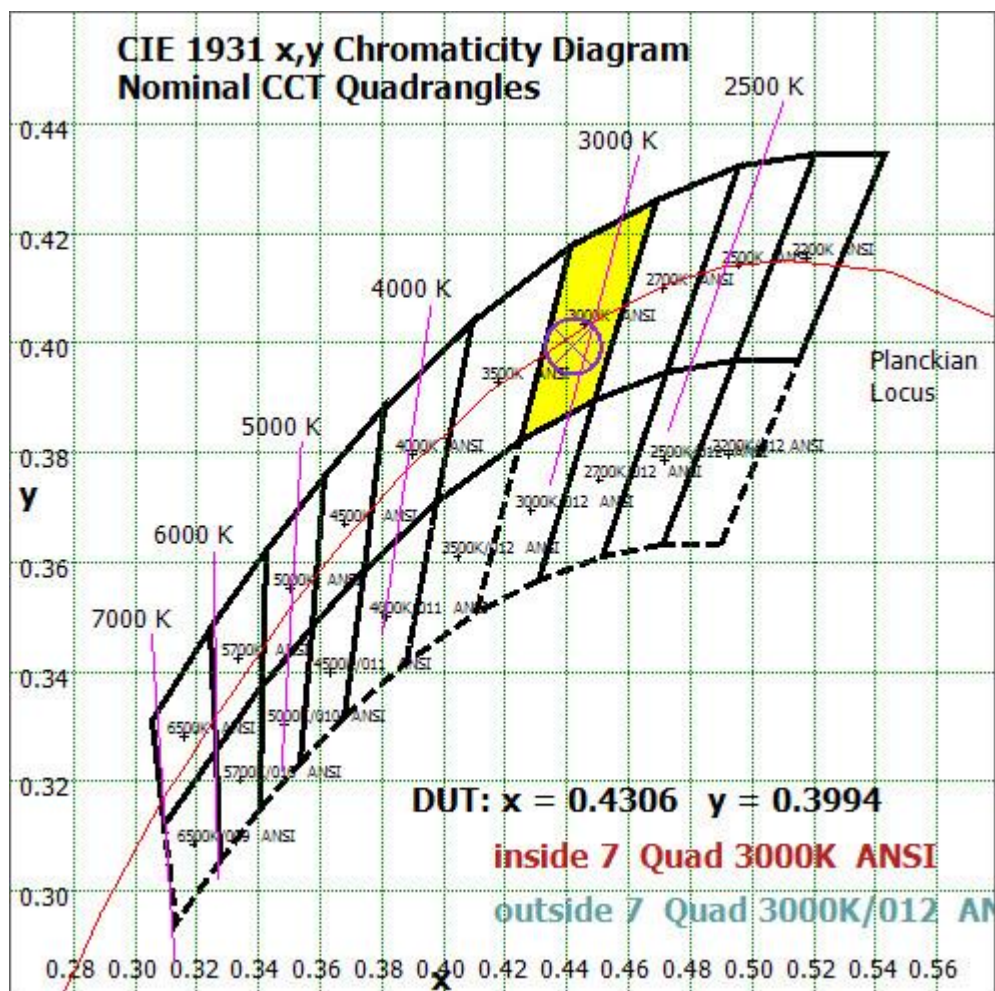


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

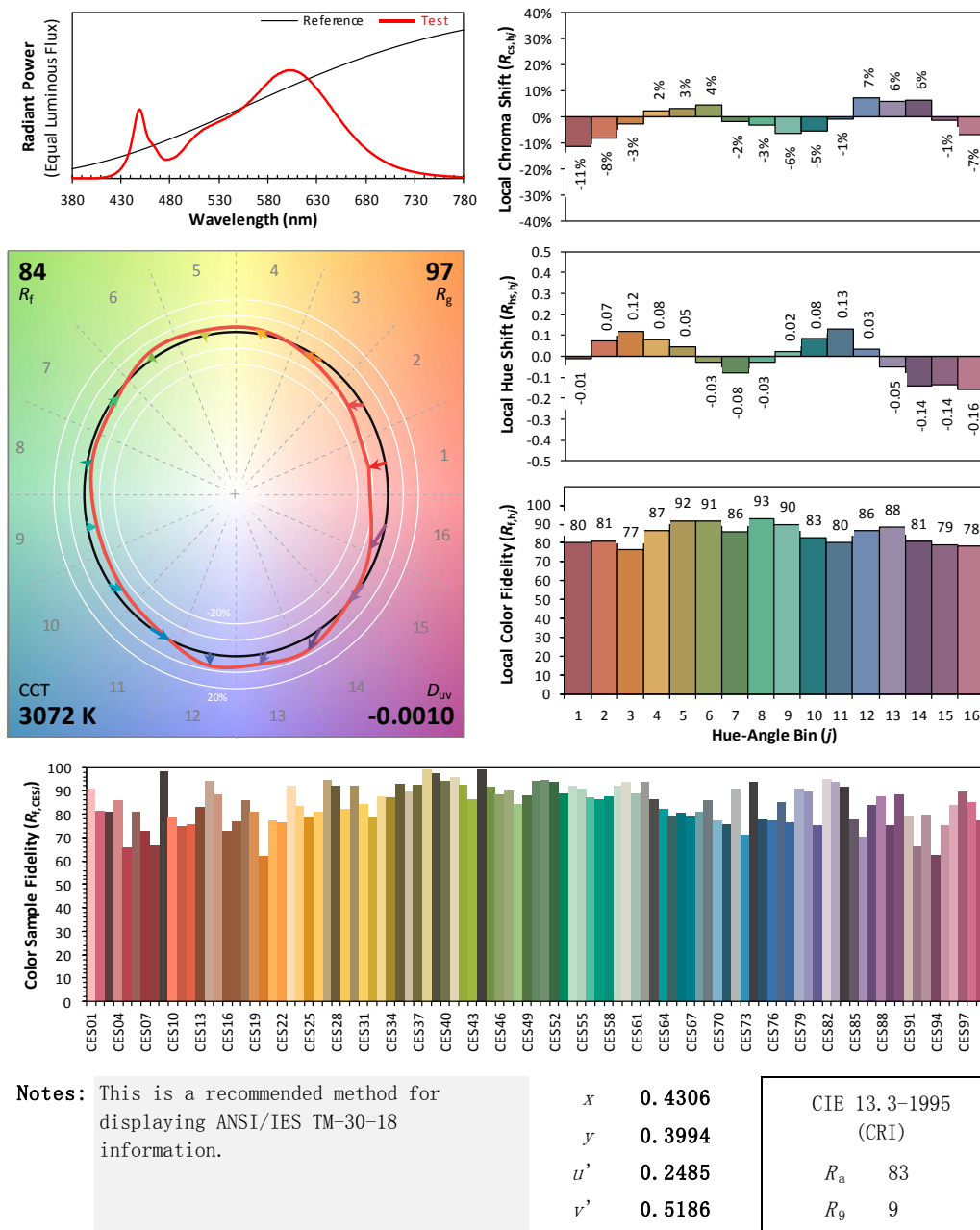
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/15

Model: 11T8/3F/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)	0.096
Power Factor	0.9805
Power (W)	11.31
Luminous Efficacy (lm/W)	143.0
Total Luminous Flux (lm)	1617.5
Beam Angle (°)	113.2 (0°-180°) / 225.5 (90°-270°)
Center Beam Candle Power (cd)	267
Maximum Beam Candle Power (cd)	267.1 (At: C=30.0, Gamma=2.0)
Spacing Criteria	1.27 (0°-180°) / 1.45 (90°-270°)
Zonal Lumens in the 0 °-60 °Zone	42.97%
Zonal Lumens in the 60 °-90 °Zone	27.53%
Zonal Lumens in the 90 °-120 °Zone	17.69%
Zonal Lumens in the 120 °-180 °Zone	11.82%

Table 4: Test data per Goniophotometer Method

Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	25.316	1.57%
10- 20	73.573	4.55%
20- 30	114.975	7.11%
30- 40	146.033	9.03%
40- 50	164.65	10.18%
50- 60	170.476	10.54%
60- 70	164.608	10.18%
70- 80	149.856	9.26%
80- 90	130.746	8.08%
90-100	112.608	6.96%
100-110	95.188	5.88%
110-120	78.26	4.84%
120-130	62.874	3.89%
130-140	49.242	3.04%
140-150	36.875	2.28%
150-160	25.276	1.56%
160-170	13.476	0.83%
170-180	3.438	0.21%
Total	1617.5	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	695.023	42.97%
60- 90	445.21	27.53%
0-90	1140.233	70.49%
90- 180	477.237	29.51%
0- 180	1617.5	100%

Table 5: Zonal Lumen

Illuminance Plots- Goniophotometer Method

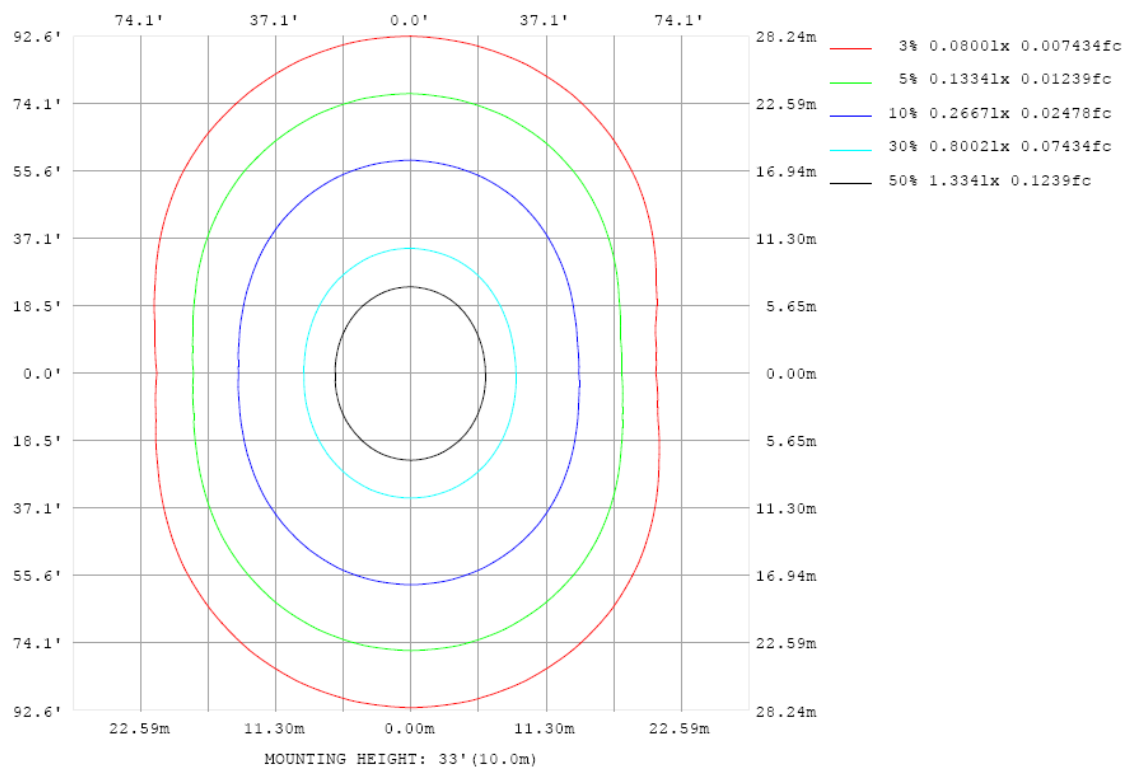


Chart 5: Illuminance Plot (Footcandles)

Luminous Intensity Distribution Plots- Goniophotometer Method

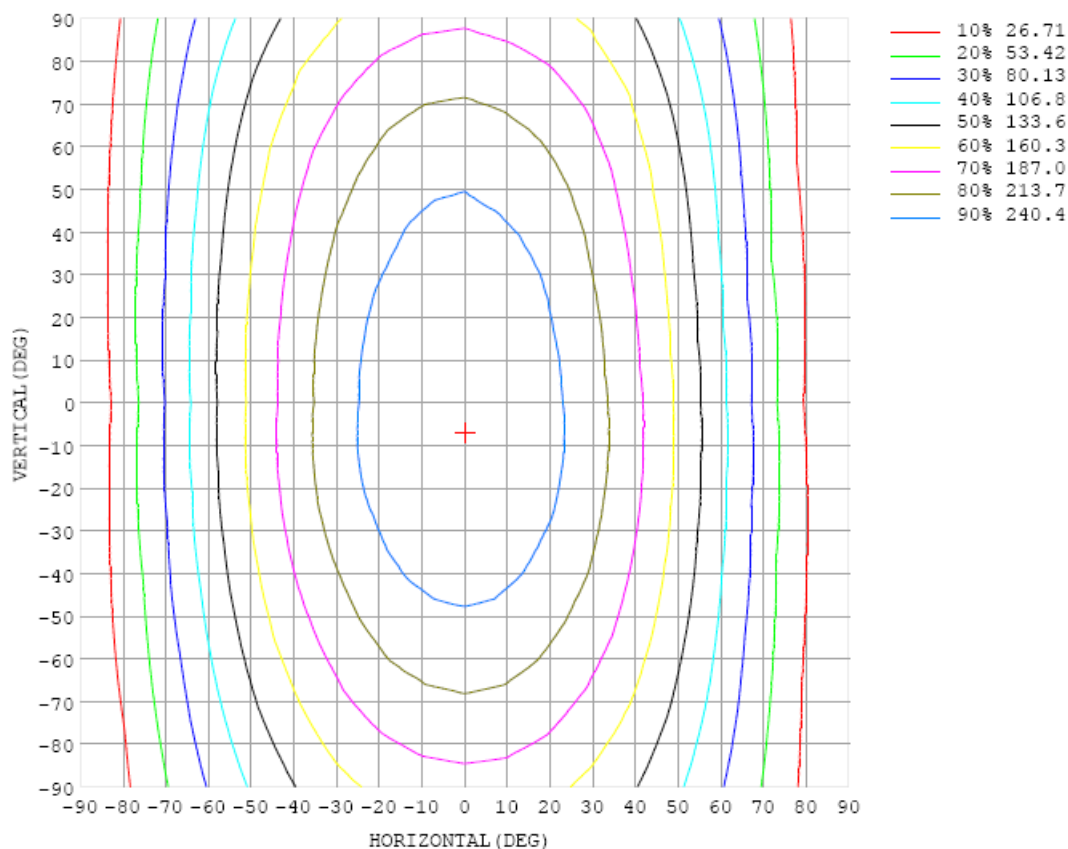


Chart 6: Isocandela Plot

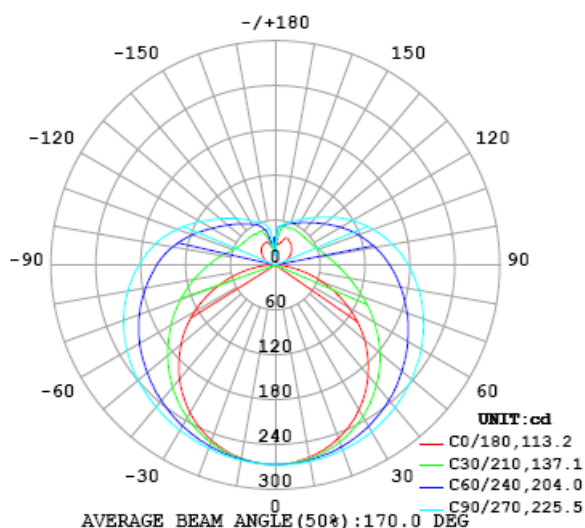


Chart 7: Polar Candela Distribution

Luminous Intensity Data- Goniophotometer Method

Table--1

UNIT: cd

C (DEG) y (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267
5	265	265	265	266	266	266	267	266	267	267	267	267	267	267	266	266	266	266	266
10	261	262	262	263	264	265	265	265	266	267	266	266	266	265	265	264	264	263	262
15	255	256	257	258	260	261	262	264	265	265	265	264	264	263	262	260	259	257	257
20	246	248	250	252	254	257	259	261	263	263	263	262	261	259	257	255	253	251	250
25	236	238	240	244	247	252	254	258	260	261	260	259	257	253	250	247	244	241	240
30	223	226	229	234	239	245	249	254	256	258	256	255	251	246	242	238	234	230	228
35	209	212	216	223	230	238	243	248	252	253	252	250	245	239	233	228	222	218	214
40	193	196	202	210	220	229	236	243	247	249	248	244	238	230	223	215	208	203	199
45	175	178	186	197	208	220	229	237	242	244	242	238	231	222	212	202	193	186	182
50	156	160	170	183	196	210	221	231	236	238	236	231	223	212	200	188	177	169	164
55	135	140	152	168	184	200	213	224	229	232	229	224	214	201	188	173	160	150	146
60	113	119	134	153	172	190	204	216	223	225	223	217	205	191	176	158	142	130	125
65	90.2	97.9	116	138	160	180	196	209	216	218	216	208	197	181	163	143	124	110	103
70	67.6	77.3	98.6	124	149	171	188	200	208	211	208	201	188	170	151	128	106	88.9	81.2
75	45.5	58.2	83.0	111	138	161	179	193	201	203	200	193	179	161	139	115	89.5	69.5	59.3
80	24.2	40.7	69.6	100	128	152	170	184	193	195	192	184	170	151	129	102	74.2	50.3	38.1
85	6.69	27.7	59.4	90.5	119	143	161	176	184	186	184	175	161	141	119	91.0	61.8	33.5	18.7
90	0.74	20.8	51.8	82.4	111	135	153	167	176	177	175	166	152	133	109	81.6	51.8	21.7	3.83
95	3.16	18.0	46.3	75.5	103	126	145	158	166	169	166	158	144	124	101	73.9	44.9	16.1	1.63
100	6.47	18.1	42.7	70.1	95.6	118	136	149	157	159	157	148	135	116	93.7	68.2	40.0	14.3	3.93
105	9.96	19.9	40.4	65.6	89.0	110	127	140	147	149	147	139	126	108	86.8	62.7	37.1	15.5	7.04
110	13.6	22.6	39.7	61.4	82.9	103	118	130	137	139	137	129	117	100	80.4	58.4	35.7	17.9	10.6
115	17.5	26.2	39.9	58.3	77.2	95.2	110	121	127	129	127	120	109	92.9	74.7	54.9	35.8	21.1	14.4
120	21.1	29.8	40.7	56.3	72.3	88.1	101	111	117	119	117	111	100	85.9	70.2	52.8	36.6	24.8	17.7
125	24.7	33.1	42.0	55.0	69.0	81.7	93.0	102	108	109	108	102	92.2	79.4	66.3	51.5	38.0	28.4	20.4
130	27.9	35.4	43.7	54.1	65.7	76.4	85.8	93.4	98.1	99.3	97.9	92.9	84.8	74.2	63.1	50.8	39.7	31.9	23.5
135	30.7	38.1	45.6	53.5	63.1	71.6	79.6	86.0	89.8	90.9	89.7	85.4	78.6	70.4	60.7	50.5	41.5	34.8	26.4
140	33.4	41.0	47.5	53.5	61.0	68.4	74.1	79.3	82.5	83.3	82.3	78.8	73.2	66.5	58.7	50.5	43.5	36.8	29.0
145	35.4	43.5	48.5	53.6	59.2	65.0	69.7	73.4	75.8	76.5	75.6	72.8	69.0	63.3	57.0	50.7	45.5	39.3	30.7
150	36.9	44.7	49.1	53.9	57.8	62.1	65.6	68.7	70.3	70.5	70.1	68.4	65.0	60.5	55.8	51.1	46.8	41.5	32.1
155	39.3	46.3	48.6	53.9	56.8	59.6	62.0	64.3	65.6	65.9	65.4	63.9	61.3	58.2	54.8	51.8	47.0	42.1	32.5
160	38.2	46.8	50.8	53.3	55.7	57.6	59.1	60.6	61.3	61.6	61.2	60.3	58.6	56.4	54.2	51.0	46.6	42.0	32.4
165	32.4	40.4	49.9	53.4	54.2	55.5	56.7	57.6	58.0	58.0	57.8	57.3	56.3	54.5	51.3	45.3	39.5	35.3	28.5
170	29.1	33.7	41.7	51.1	53.6	53.3	53.5	54.0	54.2	54.3	54.4	54.2	52.8	47.5	40.5	35.9	32.2	28.9	23.8
175	28.9	29.6	32.3	35.2	42.0	48.4	51.3	51.9	51.7	51.6	52.0	47.3	37.9	29.8	27.3	28.5	29.0	27.6	26.2
180	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8

Table 6: Luminous Intensity Data

Table--2

UNIT: cd

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267		
5	266	266	266	266	265	266	266	266	266	266	266	266	266	266	265	265	266		
10	263	263	263	264	263	264	265	265	265	264	264	264	263	262	261	262	261		
15	258	258	259	260	261	261	263	263	264	262	261	261	260	258	256	256	255		
20	250	251	253	255	257	258	260	261	261	259	259	257	255	252	249	248	246		
25	241	243	245	248	251	253	256	258	258	257	255	252	249	244	241	238	236		
30	229	232	236	240	245	248	253	255	255	253	251	247	242	236	231	226	223		
35	216	220	225	232	238	243	248	251	252	249	246	241	234	226	219	213	209		
40	201	207	214	222	230	237	244	247	248	245	241	235	226	215	206	198	193		
45	185	192	201	212	222	230	239	243	244	241	236	228	217	205	193	182	175		
50	168	176	188	201	214	224	233	238	240	236	230	221	208	193	178	165	157		
55	151	161	174	190	205	217	227	233	234	231	224	213	199	181	164	148	137		
60	131	144	162	179	196	210	221	227	229	225	218	206	190	170	150	130	116		
65	111	128	148	168	187	202	214	221	223	219	211	198	180	159	136	112	94.4		
70	91.1	111	135	158	178	193	206	214	216	211	203	190	171	148	122	94.9	73.1		
75	71.8	95.4	122	147	168	185	199	206	208	204	195	181	162	137	109	79.2	53.1		
80	54.1	81.5	110	137	160	176	190	198	200	195	187	172	153	127	97.5	65.7	35.5		
85	39.2	69.2	99.2	127	150	167	181	189	192	186	178	163	143	117	87.3	54.7	22.7		
90	28.4	59.2	89.4	117	141	159	172	180	182	177	169	155	134	108	78.8	46.7	15.7		
95	21.7	51.4	81.1	108	132	150	163	171	173	168	160	146	125	99.4	70.6	39.9	13.0		
100	18.5	44.8	73.0	99.2	122	140	153	161	163	158	149	135	115	90.4	63.4	35.8	14.5		
105	18.2	40.2	65.7	90.4	112	129	142	150	152	147	138	125	106	82.4	57.9	34.4	17.7		
110	20.1	38.3	60.0	82.2	102	118	131	138	140	135	127	114	96.6	75.5	54.3	34.3	21.1		
115	23.0	37.8	56.3	75.4	93.3	108	120	126	128	123	116	104	88.6	70.4	52.0	35.8	24.5		
120	25.8	38.4	53.9	70.2	85.7	98.1	108	114	116	112	106	95.4	82.1	66.4	50.8	37.9	27.8		
125	28.5	39.4	52.2	66.0	79.4	90.3	99.2	104	106	102	97.0	88.3	76.8	63.4	50.7	40.1	30.9		
130	31.1	40.7	51.2	62.9	74.1	83.3	91.0	95.5	96.8	93.9	89.4	82.0	72.2	61.1	50.9	42.1	33.9		
135	33.6	42.1	50.7	60.2	69.5	77.2	83.7	87.5	88.6	86.3	82.6	76.3	68.3	59.5	51.3	43.8	35.9		
140	35.1	43.4	50.4	58.0	65.6	71.9	77.2	80.4	81.4	79.5	76.4	71.3	65.0	58.0	51.7	45.3	37.1		
145	37.1	44.6	50.1	56.2	62.3	67.2	71.4	74.1	75.0	73.2	71.0	67.2	62.2	57.0	52.2	46.3	37.5		
150	37.6	45.8	49.3	54.5	59.3	63.1	66.4	68.5	69.3	68.0	66.4	63.6	59.9	56.1	52.6	46.8	37.9		
155	36.3	46.1	49.8	50.0	55.6	59.7	62.0	63.7	64.3	63.4	62.5	60.6	58.1	55.6	52.9	45.4	35.5		
160	30.5	39.7	45.3	49.9	51.0	54.0	58.2	59.7	60.2	59.7	59.3	58.3	56.8	54.9	52.1	41.4	31.7		
165	25.0	29.2	34.8	37.5	41.7	47.4	49.1	54.4	56.9	56.7	56.5	55.9	54.9	53.4	43.6	32.4	29.4		
170	23.3	23.2	24.4	26.8	28.8	29.7	33.1	44.1	50.0	50.5	52.6	52.2	45.4	34.7	27.1	29.5	28.7		
175	26.7	29.1	30.4	30.0	30.6	32.5	31.1	25.7	17.7	26.6	28.2	33.6	33.7	34.9	35.1	32.5	29.9		
180	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8		

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)	0.095	0.046
Power Factor	0.9793	0.9025
Test Power (W)	11.17	11.48
THD A%	16.11	19.34
Luminous Efficacy (lm/W)	148.5	145.1
Total Luminous Flux (lm)	1659.0	1666.1
Color Rendering Index (CRI)	85.1	
R9	18	
Correlated Color Temperature (CCT)(K)	3557	
Chromaticity Chroma x	0.3989	
Chromaticity Chroma y	0.3805	
Chromaticity Chroma u	0.2358	
Chromaticity Chroma v	0.3373	
Duv	-0.0031	
Chromaticity Chroma u'	0.2358	
Chromaticity Chroma v'	0.5060	

Special Color Rendering Indices	
R1	84.4
R2	92.7
R3	95.9
R4	83.3
R5	84.6
R6	89.6
R7	84.7
R8	65.3
R9	18
R10	82.5
R11	83
R12	69.4
R13	86.8
R14	98.5

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

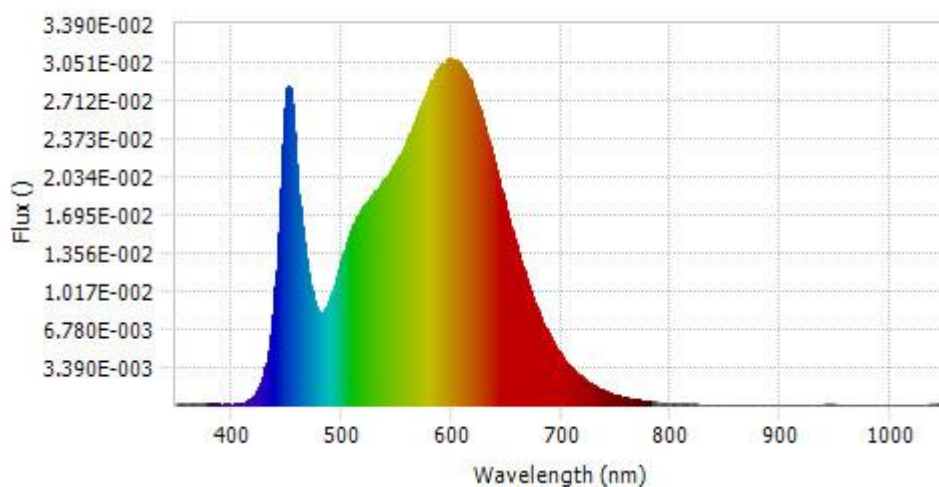
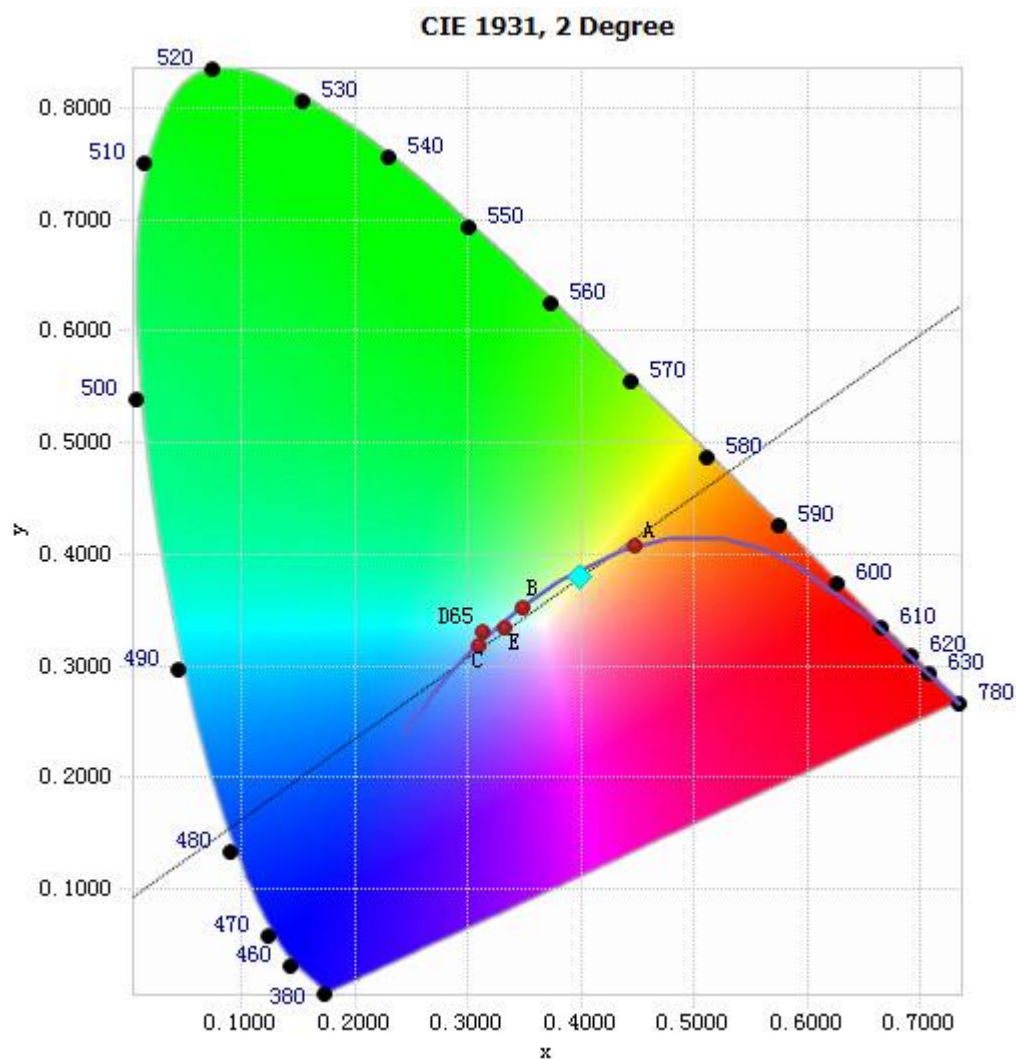


Chart 8: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.23E-04	485	8.56E-03	590	3.02E-02	695	5.19E-03
385	1.20E-04	490	9.57E-03	595	3.07E-02	700	4.45E-03
390	9.34E-05	495	1.11E-02	600	3.08E-02	705	3.79E-03
395	1.09E-04	500	1.28E-02	605	3.06E-02	710	3.24E-03
400	7.92E-05	505	1.44E-02	610	3.00E-02	715	2.76E-03
405	1.16E-04	510	1.57E-02	615	2.92E-02	720	2.37E-03
410	2.00E-04	515	1.69E-02	620	2.80E-02	725	2.04E-03
415	4.19E-04	520	1.76E-02	625	2.65E-02	730	1.72E-03
420	8.09E-04	525	1.83E-02	630	2.48E-02	735	1.45E-03
425	1.57E-03	530	1.89E-02	635	2.30E-02	740	1.25E-03
430	2.96E-03	535	1.94E-02	640	2.13E-02	745	1.06E-03
435	5.52E-03	540	2.01E-02	645	1.93E-02	750	9.03E-04
440	1.05E-02	545	2.09E-02	650	1.74E-02	755	7.67E-04
445	1.93E-02	550	2.16E-02	655	1.55E-02	760	6.63E-04
450	2.75E-02	555	2.25E-02	660	1.39E-02	765	5.66E-04
455	2.68E-02	560	2.35E-02	665	1.23E-02	770	4.85E-04
460	2.01E-02	565	2.47E-02	670	1.07E-02	775	4.09E-04
465	1.51E-02	570	2.60E-02	675	9.32E-03	780	3.50E-04
470	1.18E-02	575	2.72E-02	680	8.12E-03		
475	9.22E-03	580	2.83E-02	685	7.02E-03		
480	8.25E-03	585	2.95E-02	690	6.05E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3989, 0.3805)

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

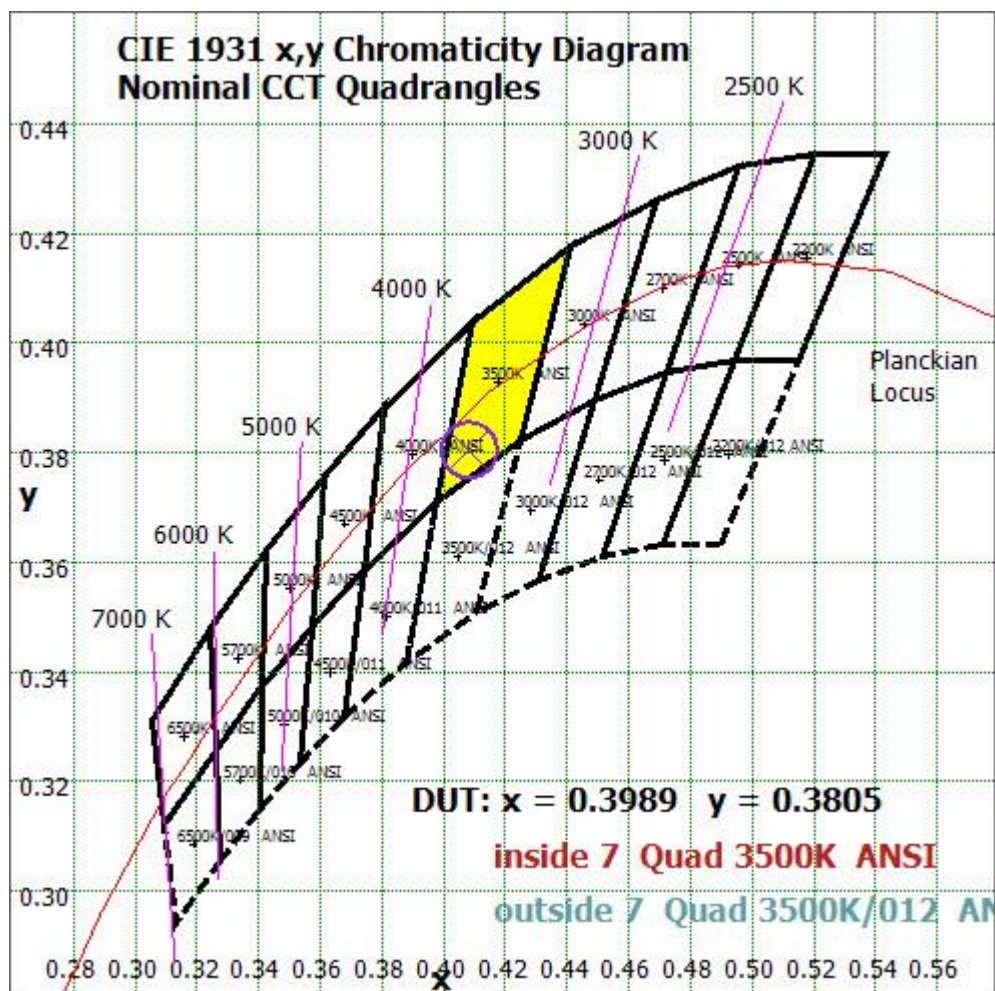


Chart 10: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

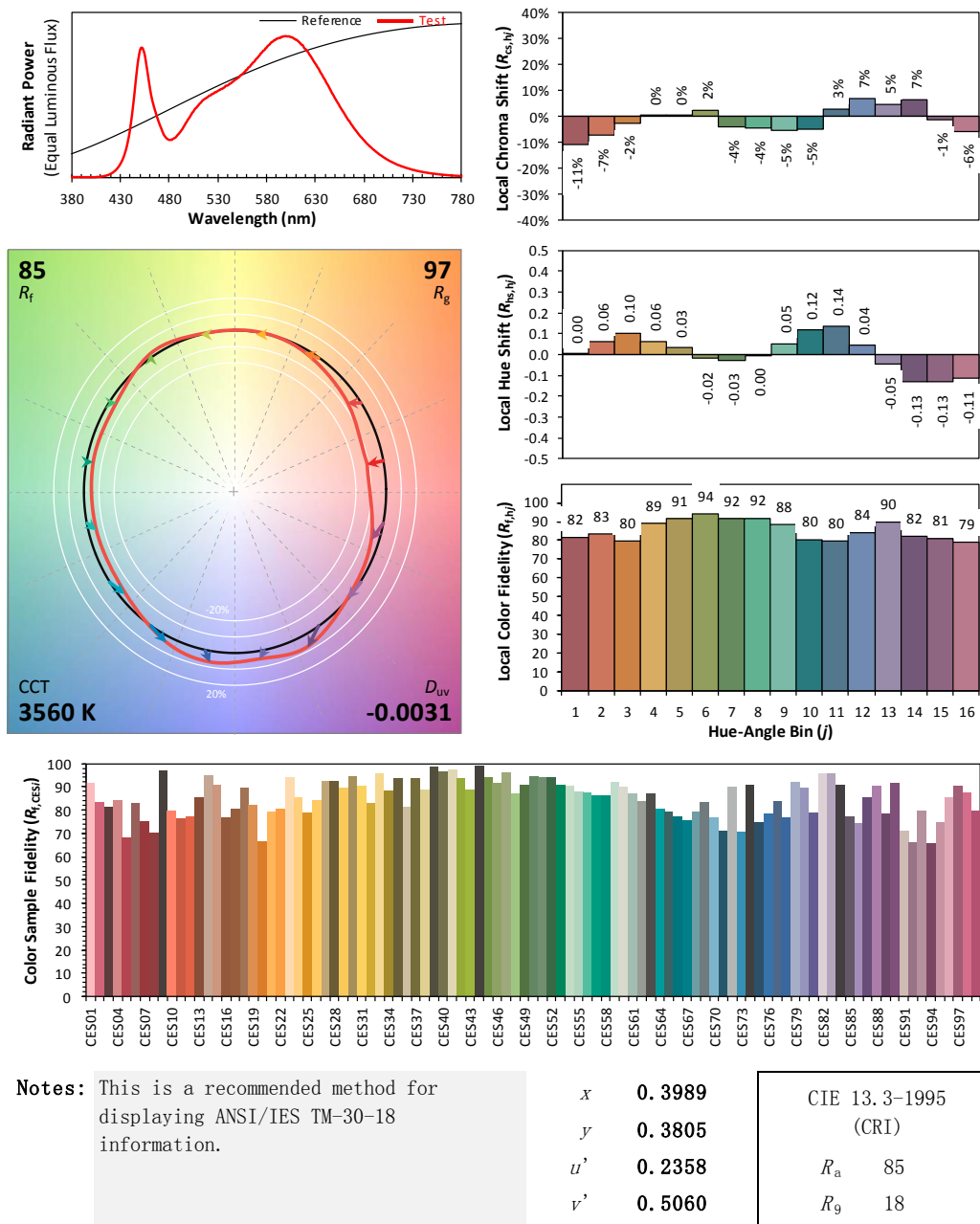
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/15

Model: 11T8/3F/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)	0.094	0.045
Power Factor	0.9795	0.9007
Test Power (W)	11.07	11.33
THD A%	15.96	19.42
Luminous Efficacy (lm/W)	153.1	150.1
Total Luminous Flux (lm)	1694.5	1701.0
Color Rendering Index (CRI)	86.1	
R9	23.5	
Correlated Color Temperature (CCT)(K)	4119	
Chromaticity Chroma x	0.3732	
Chromaticity Chroma y	0.3652	
Chromaticity Chroma u	0.2249	
Chromaticity Chroma v	0.3302	
Duv	-0.0033	
Chromaticity Chroma u'	0.2249	
Chromaticity Chroma v'	0.4953	

Special Color Rendering Indices	
R1	85.9
R2	93.5
R3	95.8
R4	84.2
R5	85.6
R6	89.1
R7	86.2
R8	69
R9	23.5
R10	83.4
R11	83.8
R12	65
R13	88.3
R14	98.5

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

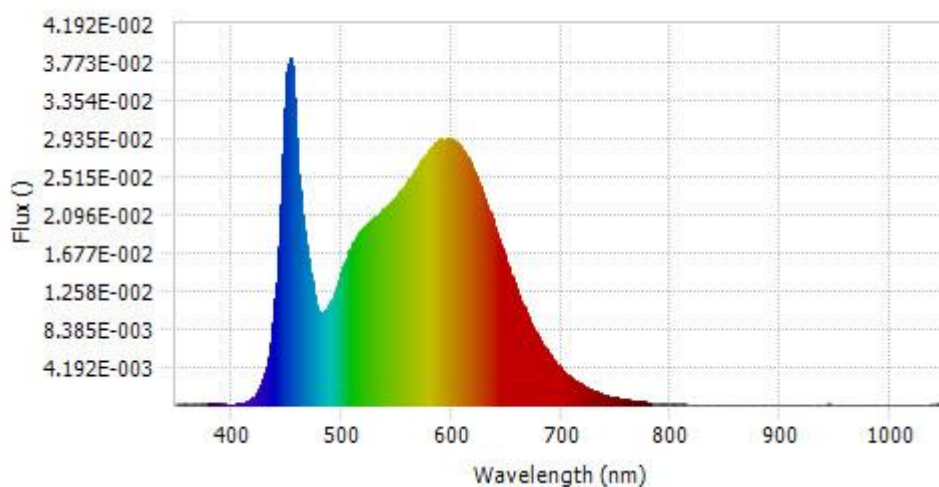
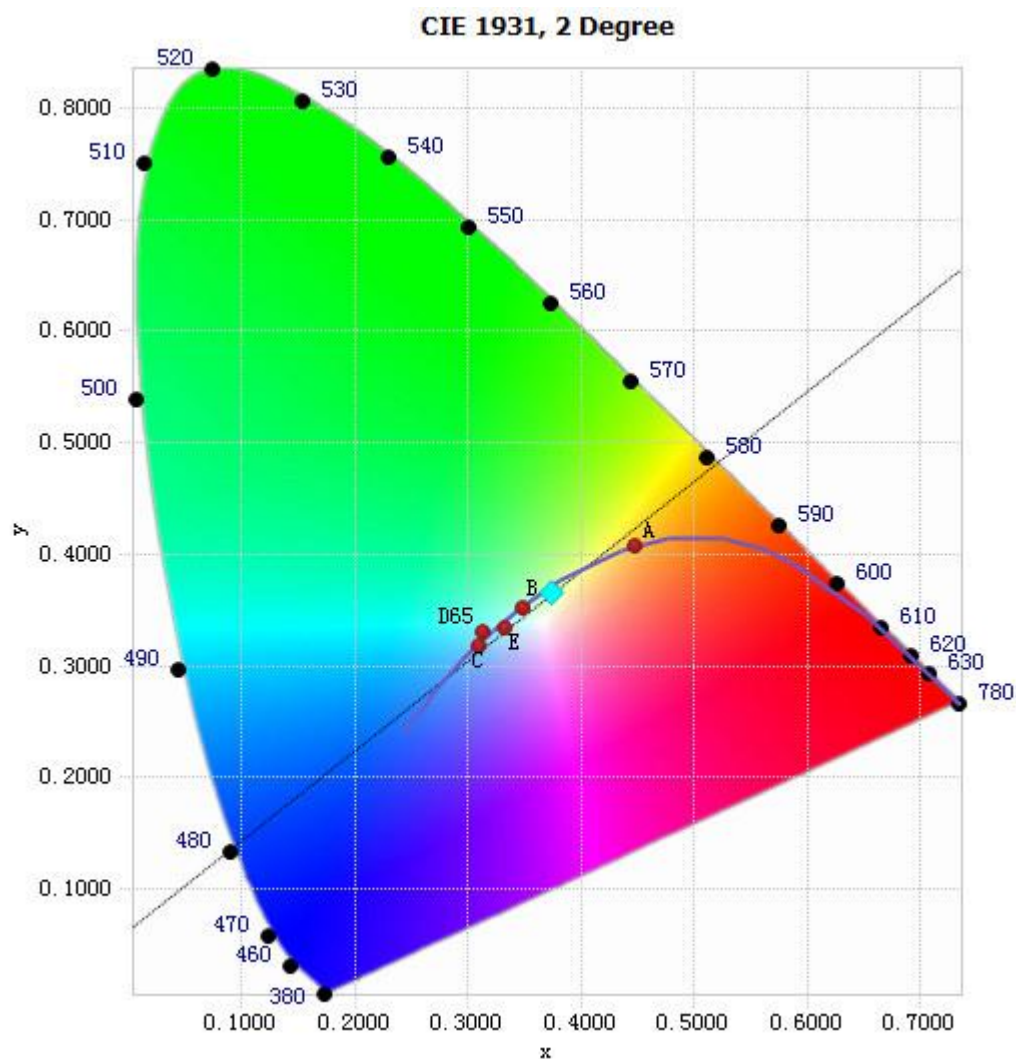


Chart 12: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.53E-04	485	1.04E-02	590	2.93E-02	695	4.69E-03
385	1.41E-04	490	1.13E-02	595	2.94E-02	700	3.99E-03
390	1.42E-04	495	1.28E-02	600	2.93E-02	705	3.40E-03
395	1.29E-04	500	1.46E-02	605	2.89E-02	710	2.92E-03
400	1.04E-04	505	1.62E-02	610	2.80E-02	715	2.49E-03
405	1.34E-04	510	1.76E-02	615	2.72E-02	720	2.13E-03
410	2.39E-04	515	1.88E-02	620	2.59E-02	725	1.82E-03
415	4.34E-04	520	1.94E-02	625	2.44E-02	730	1.56E-03
420	8.71E-04	525	2.01E-02	630	2.28E-02	735	1.33E-03
425	1.69E-03	530	2.06E-02	635	2.11E-02	740	1.13E-03
430	3.23E-03	535	2.11E-02	640	1.94E-02	745	9.64E-04
435	6.09E-03	540	2.16E-02	645	1.76E-02	750	8.20E-04
440	1.17E-02	545	2.23E-02	650	1.58E-02	755	6.92E-04
445	2.21E-02	550	2.29E-02	655	1.41E-02	760	5.96E-04
450	3.50E-02	555	2.37E-02	660	1.25E-02	765	5.14E-04
455	3.73E-02	560	2.45E-02	665	1.10E-02	770	4.47E-04
460	2.73E-02	565	2.54E-02	670	9.66E-03	775	3.77E-04
465	2.01E-02	570	2.63E-02	675	8.42E-03	780	3.24E-04
470	1.60E-02	575	2.72E-02	680	7.33E-03		
475	1.21E-02	580	2.80E-02	685	6.32E-03		
480	1.03E-02	585	2.88E-02	690	5.45E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3732, 0.3652)

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

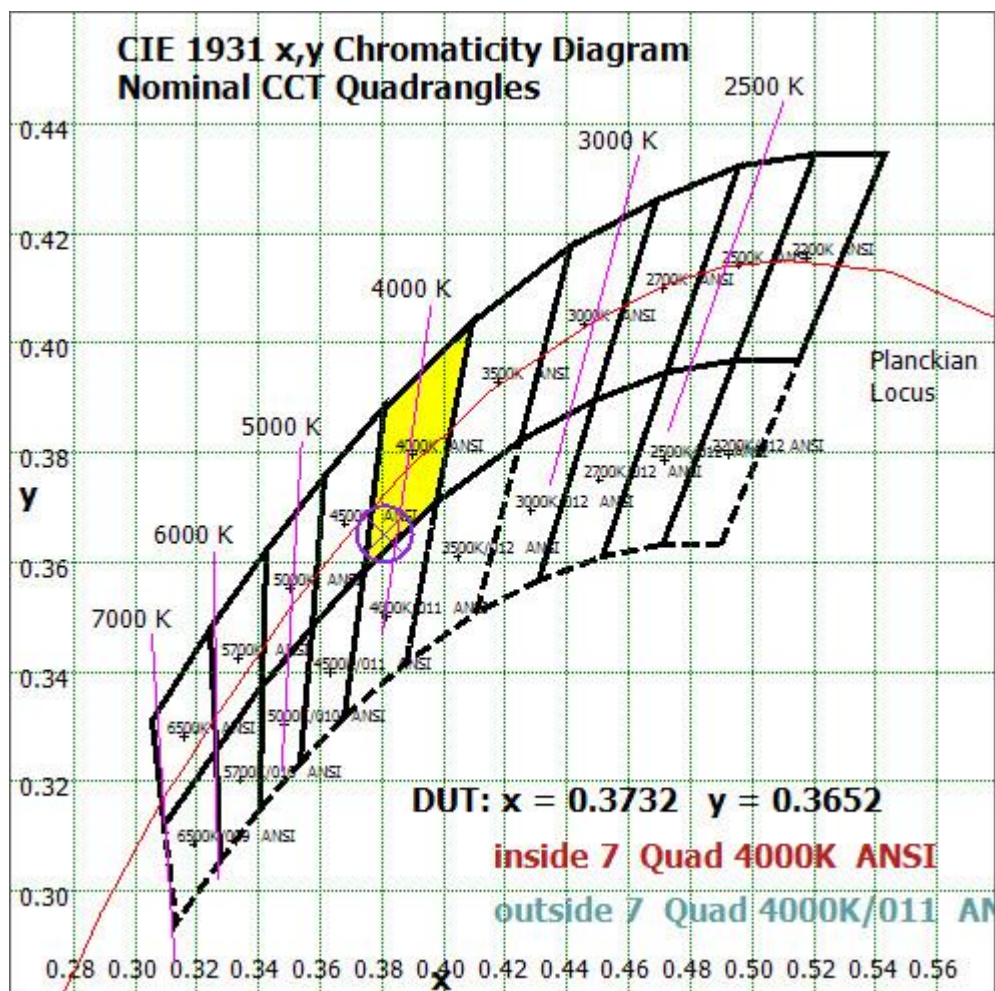


Chart14: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

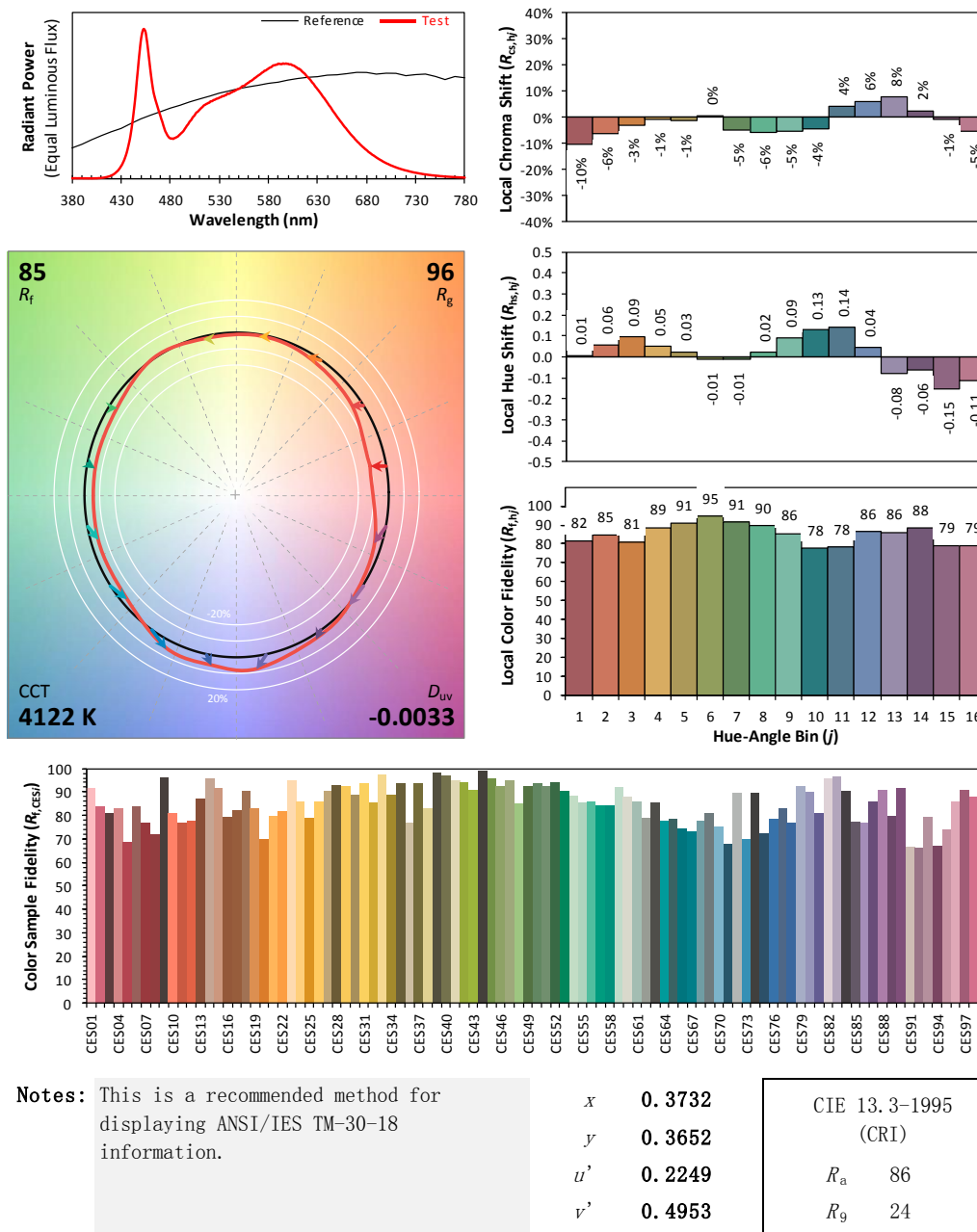
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/15

Model: 11T8/3F/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)	0.094	0.046
Power Factor	0.9794	0.9014
Test Power (W)	11.10	11.41
THD A%	15.95	19.36
Luminous Efficacy (lm/W)	153.7	150.1
Total Luminous Flux (lm)	1705.7	1713.0
Color Rendering Index (CRI)	86.1	
R9	22	
Correlated Color Temperature (CCT)(K)	5175	
Chromaticity Chroma x	0.3402	
Chromaticity Chroma y	0.3456	
Chromaticity Chroma u	0.2104	
Chromaticity Chroma v	0.3206	
Duv	-0.0010	
Chromaticity Chroma u'	0.2104	
Chromaticity Chroma v'	0.4810	

Special Color Rendering Indices	
R1	85.8
R2	92.9
R3	94.8
R4	84.6
R5	85.6
R6	87.4
R7	87.1
R8	70.8
R9	22
R10	81.6
R11	84.3
R12	63.4
R13	88.3
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

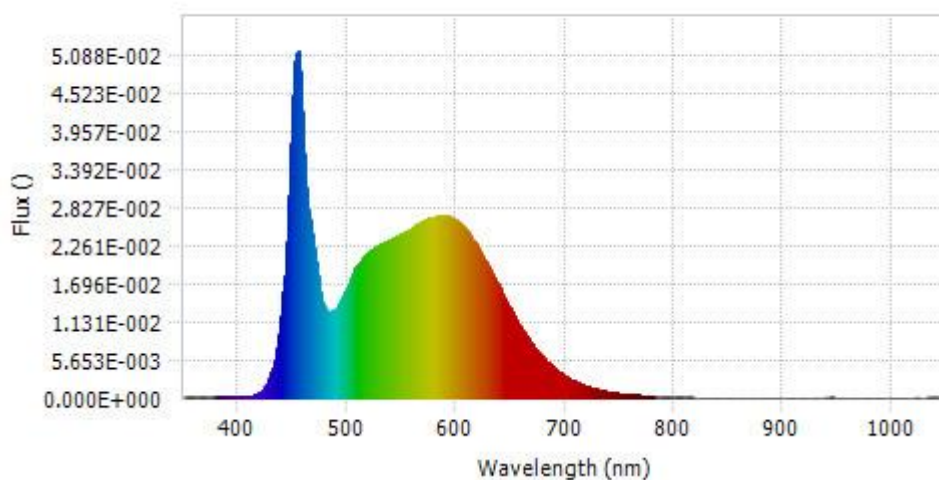
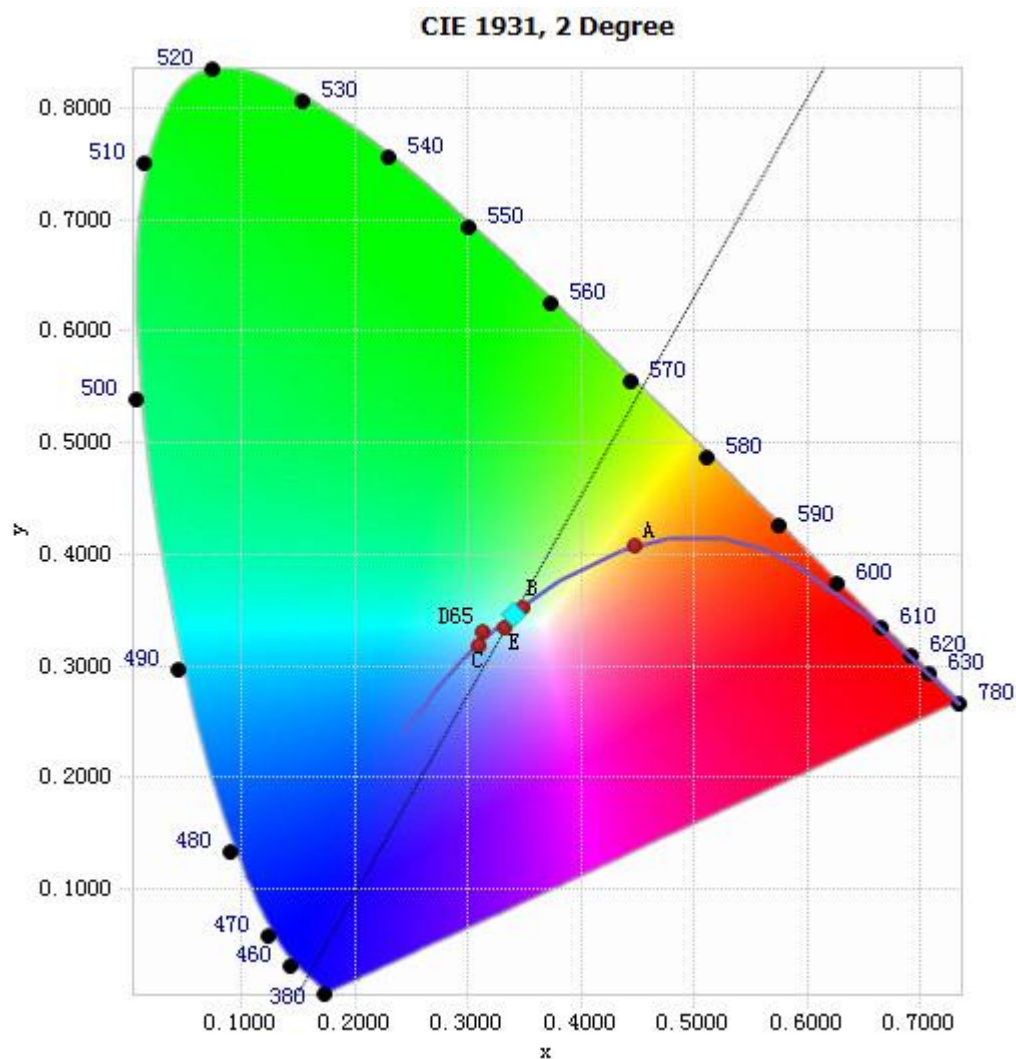


Chart16: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.63E-04	485	1.28E-02	590	2.71E-02	695	3.80E-03
385	1.74E-04	490	1.34E-02	595	2.68E-02	700	3.25E-03
390	1.65E-04	495	1.49E-02	600	2.63E-02	705	2.78E-03
395	1.55E-04	500	1.67E-02	605	2.55E-02	710	2.38E-03
400	1.29E-04	505	1.84E-02	610	2.46E-02	715	2.02E-03
405	1.57E-04	510	1.98E-02	615	2.35E-02	720	1.74E-03
410	2.71E-04	515	2.10E-02	620	2.22E-02	725	1.50E-03
415	4.92E-04	520	2.16E-02	625	2.08E-02	730	1.27E-03
420	9.72E-04	525	2.22E-02	630	1.93E-02	735	1.09E-03
425	1.90E-03	530	2.27E-02	635	1.77E-02	740	9.18E-04
430	3.80E-03	535	2.31E-02	640	1.62E-02	745	8.04E-04
435	7.32E-03	540	2.35E-02	645	1.46E-02	750	6.78E-04
440	1.39E-02	545	2.40E-02	650	1.30E-02	755	5.79E-04
445	2.65E-02	550	2.43E-02	655	1.16E-02	760	4.99E-04
450	4.50E-02	555	2.48E-02	660	1.03E-02	765	4.33E-04
455	5.05E-02	560	2.52E-02	665	9.04E-03	770	3.63E-04
460	3.64E-02	565	2.57E-02	670	7.88E-03	775	3.18E-04
465	2.65E-02	570	2.63E-02	675	6.85E-03	780	2.71E-04
470	2.13E-02	575	2.66E-02	680	5.95E-03		
475	1.58E-02	580	2.69E-02	685	5.14E-03		
480	1.30E-02	585	2.72E-02	690	4.43E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3402, 0.3456)

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

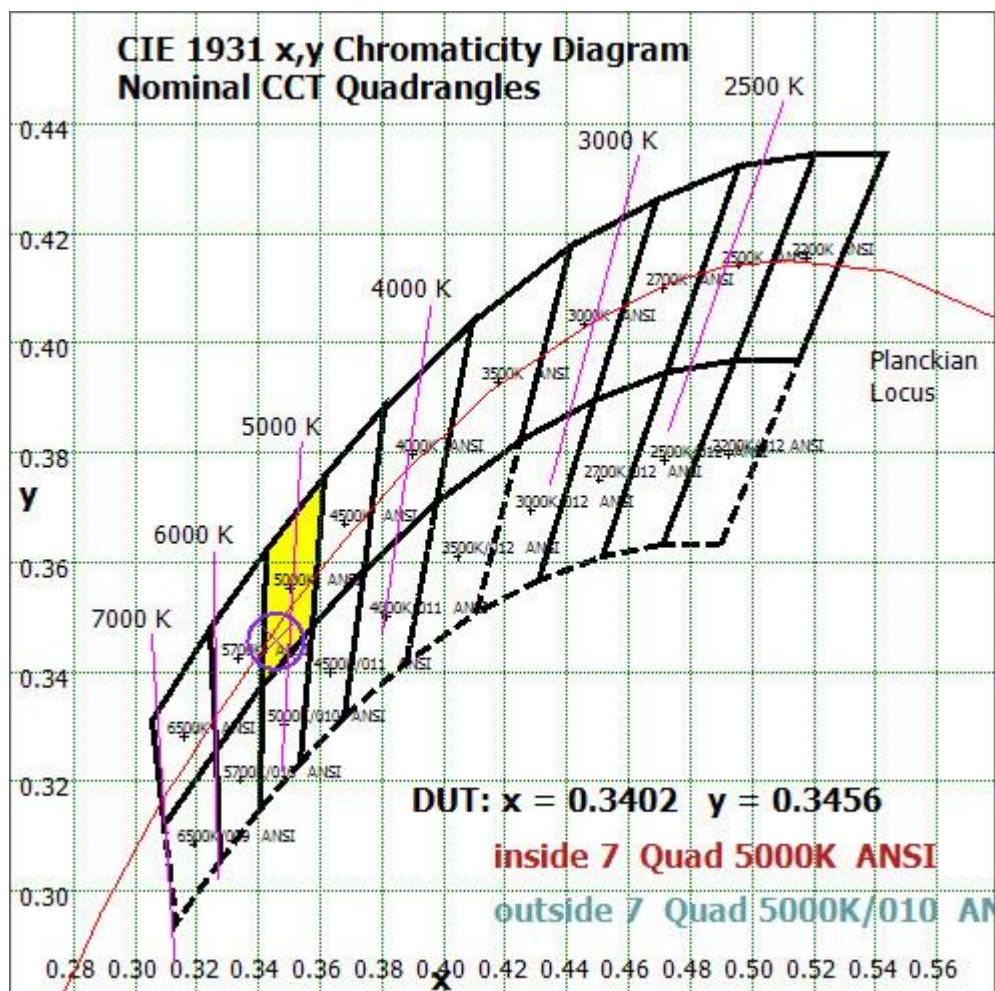


Chart 18: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

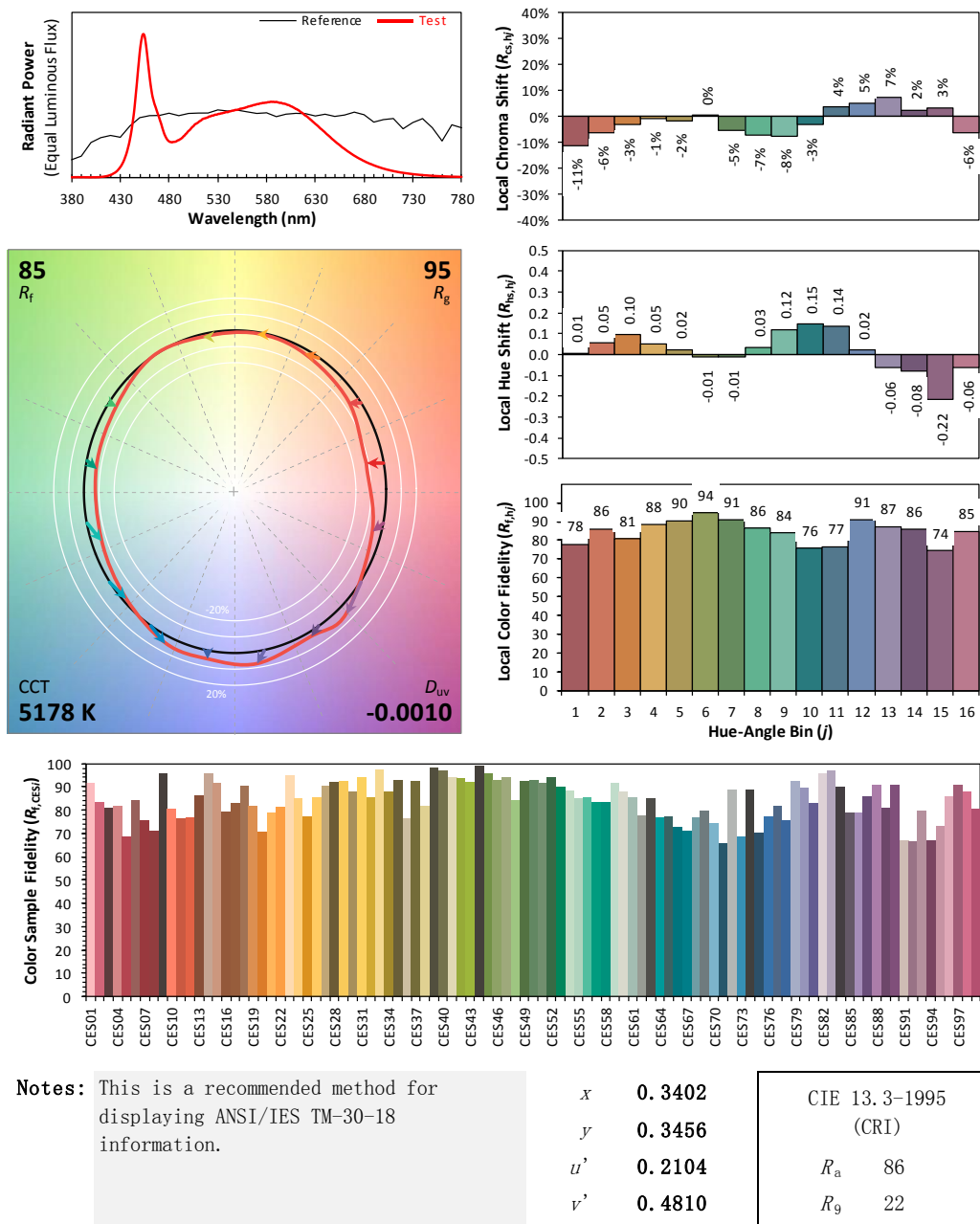
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/15

Model: 11T8/3F/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)	0.096	0.046
Power Factor	0.9792	0.9040
Test Power (W)	11.24	11.54
THD A%	16.23	18.78
Luminous Efficacy (lm/W)	150.1	146.9
Total Luminous Flux (lm)	1687.1	1695.4
Color Rendering Index (CRI)	84.6	
R9	14	
Correlated Color Temperature (CCT)(K)	6342	
Chromaticity Chroma x	0.3154	
Chromaticity Chroma y	0.3311	
Chromaticity Chroma u	0.1989	
Chromaticity Chroma v	0.3132	
Duv	0.0029	
Chromaticity Chroma u'	0.1989	
Chromaticity Chroma v'	0.4698	

Special Color Rendering Indices	
R1	83.4
R2	91.5
R3	93.9
R4	81.9
R5	83
R6	85.4
R7	87.7
R8	70.3
R9	14
R10	78.1
R11	81.5
R12	57.2
R13	86.4
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

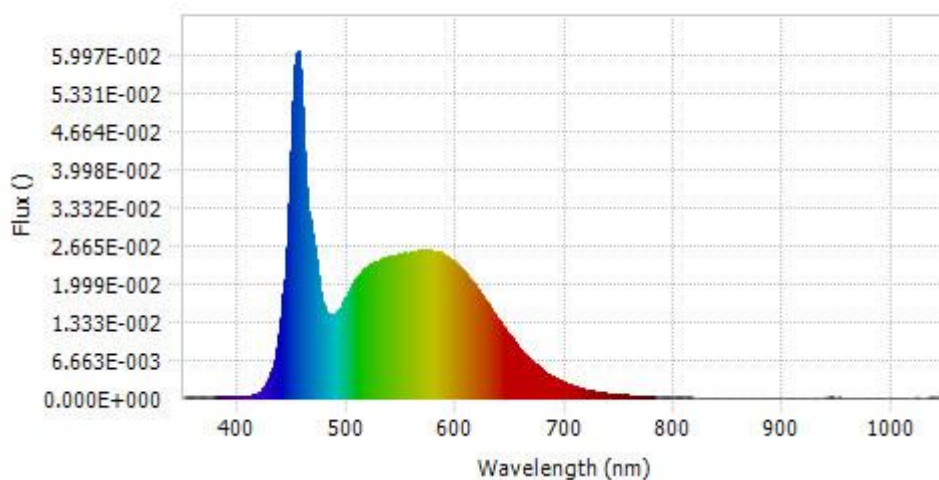
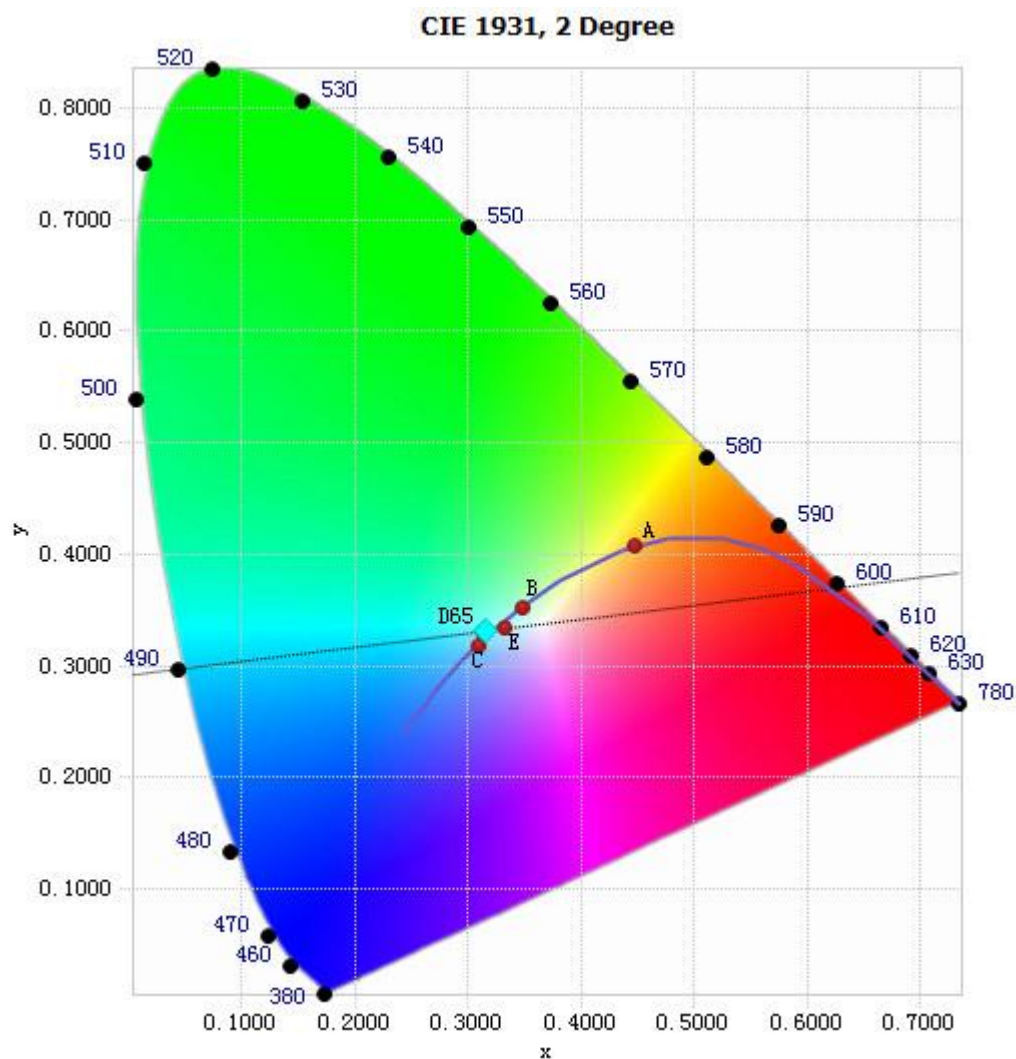


Chart 20: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	1.97E-04	485	1.45E-02	590	2.49E-02	695	3.04E-03
385	1.84E-04	490	1.51E-02	595	2.42E-02	700	2.59E-03
390	1.78E-04	495	1.63E-02	600	2.34E-02	705	2.21E-03
395	1.75E-04	500	1.82E-02	605	2.24E-02	710	1.89E-03
400	1.60E-04	505	1.99E-02	610	2.12E-02	715	1.62E-03
405	1.60E-04	510	2.13E-02	615	2.01E-02	720	1.39E-03
410	2.79E-04	515	2.25E-02	620	1.87E-02	725	1.20E-03
415	5.65E-04	520	2.30E-02	625	1.74E-02	730	1.03E-03
420	1.14E-03	525	2.36E-02	630	1.59E-02	735	8.72E-04
425	2.27E-03	530	2.40E-02	635	1.45E-02	740	7.52E-04
430	4.46E-03	535	2.43E-02	640	1.32E-02	745	6.50E-04
435	8.61E-03	540	2.46E-02	645	1.19E-02	750	5.55E-04
440	1.60E-02	545	2.49E-02	650	1.05E-02	755	4.73E-04
445	2.98E-02	550	2.51E-02	655	9.37E-03	760	4.12E-04
450	5.19E-02	555	2.53E-02	660	8.24E-03	765	3.61E-04
455	5.99E-02	560	2.55E-02	665	7.22E-03	770	3.05E-04
460	4.31E-02	565	2.57E-02	670	6.25E-03	775	2.69E-04
465	3.12E-02	570	2.58E-02	675	5.44E-03	780	2.32E-04
470	2.53E-02	575	2.57E-02	680	4.72E-03		
475	1.85E-02	580	2.56E-02	685	4.08E-03		
480	1.49E-02	585	2.54E-02	690	3.51E-03		

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

Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y): (0.3154, 0.3311)

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

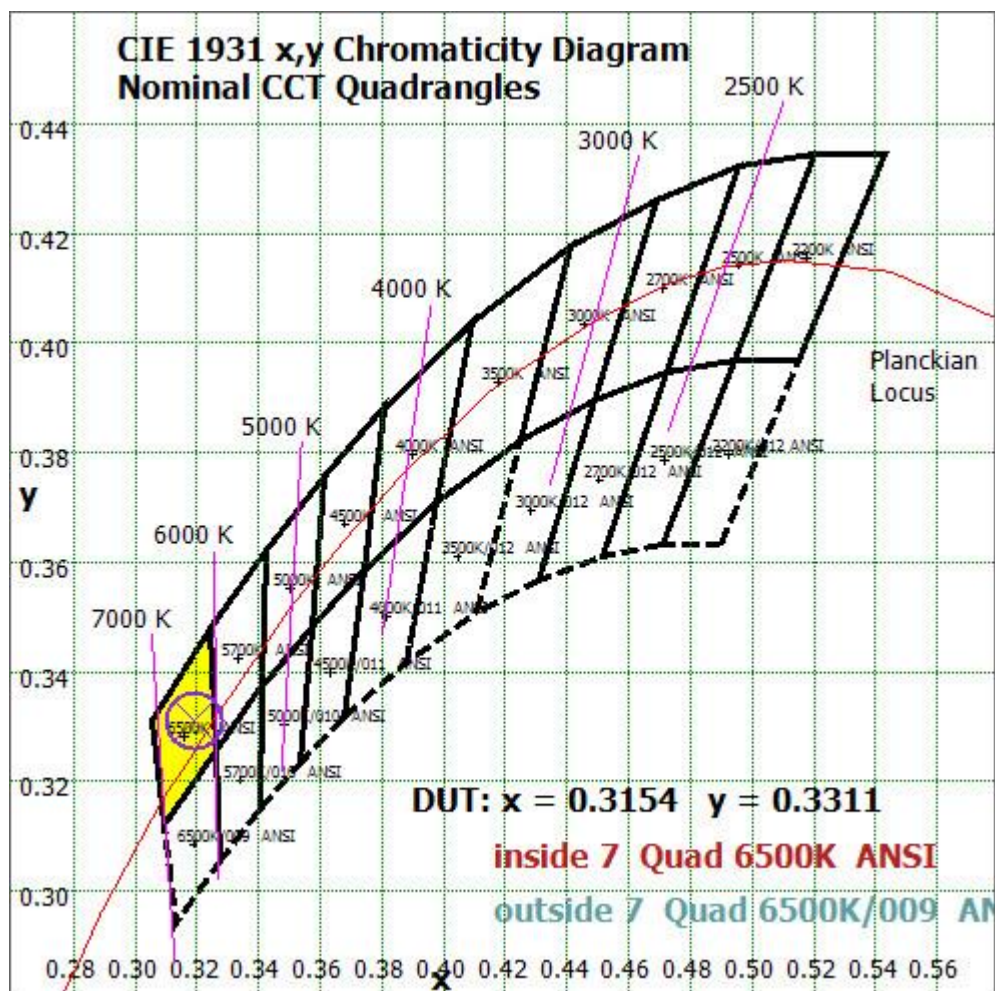


Chart 22: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

Color Rendition Report – Sphere Spectroradiometer Method

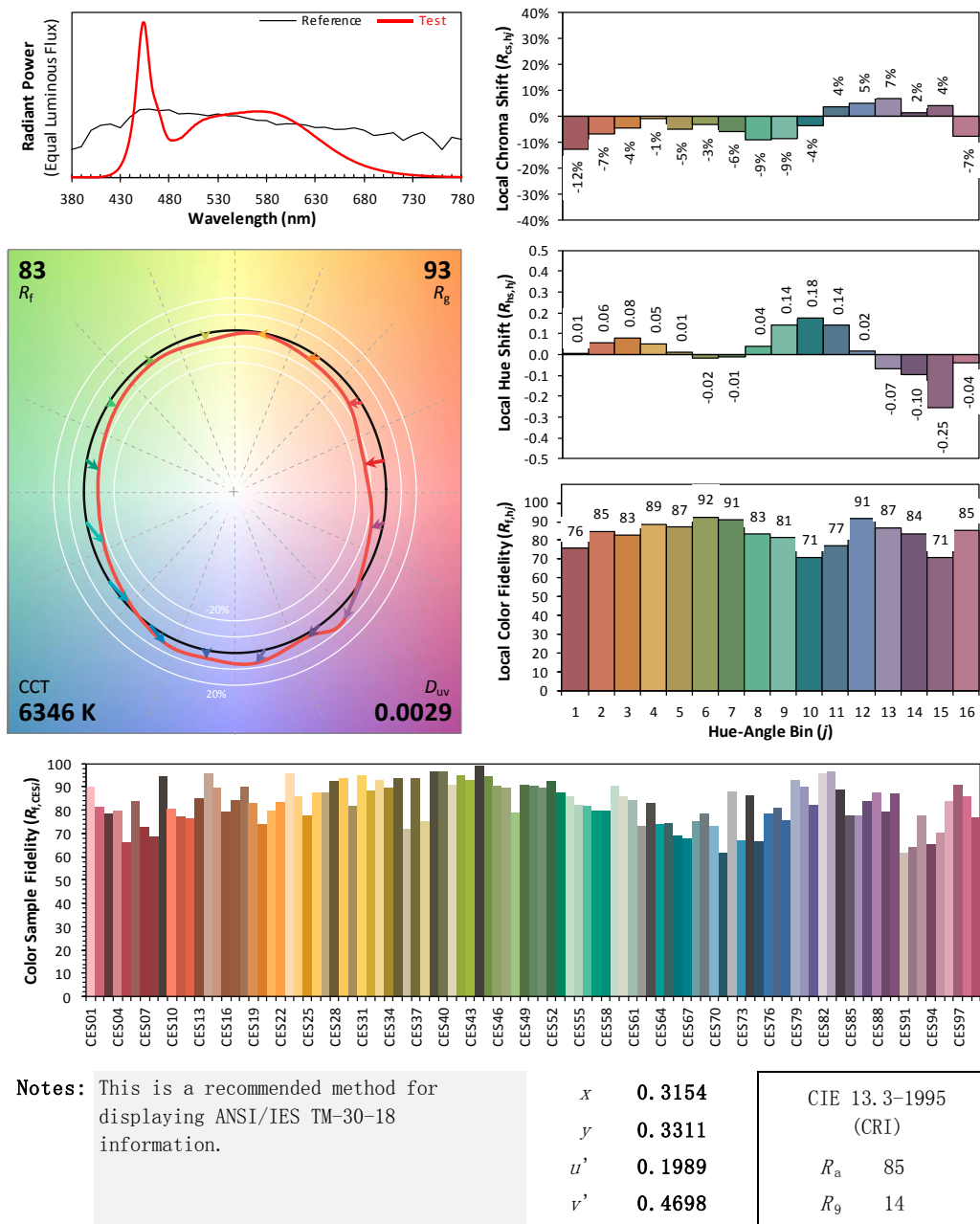
ANSI/IES TM-30-18 Color Rendition Report

Source: LED

Manufacturer: GREEN CREATIVE LTD

Date: 2025/09/15

Model: 11T8/3F/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 4π . 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 ***

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