



TEST REPORT

For

BEYOND LED TECHNOLOGY

1939 Parker Court, Stone Mountain, GA 30087

Model Number:	BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL	
Report Type:	Electrical, Photometric and ISTMT tests according to the following standards and show the compliance to DLC Program SSL Technical Requirements V5.1	
Standards:	ANSI/IES LM-79-19: Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting ANSI/UL 1598-2008: Standard for Safety of Luminaires CIE 190:2010 Calculation and presentation of unified glare rating tables for indoor lighting luminaires IES TM-30-18*: IES Method for Evaluating Light Source Color Rendition	
Project Engineer:	Sherry Gu	
Report Number:	RKS230914001-10	
Sample Size:	One sample was received on 2023-09-14 and used for testing.	
Test Date:	2023-09-18 to 2023-09-28	
Report Date:	2023-09-28	
Reviewed By:	Seven Xia / EE Engineer	
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan). No. 248 Chenghu Road, Kunshan, Jiangsu, People's Republic of China Tel: +86-0512-86175000 Fax: +86-0512-88934268	

1. Product Information and Description[#]

Product Primary Use:	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
Voltage and Frequency:	120-277VAC, 50/60Hz
LED Source Manufacturer:	Lumileds Holding B.V.
LED Source Model:	L128-xx80RC35000Z1
Driver Model:	SDU42CS102V42DN3C
Auxiliary Ballast Model:	NA
Auxiliary Housing Model:	NA
White Tunable:	Yes
Field-Adjustable Light Output:	Yes

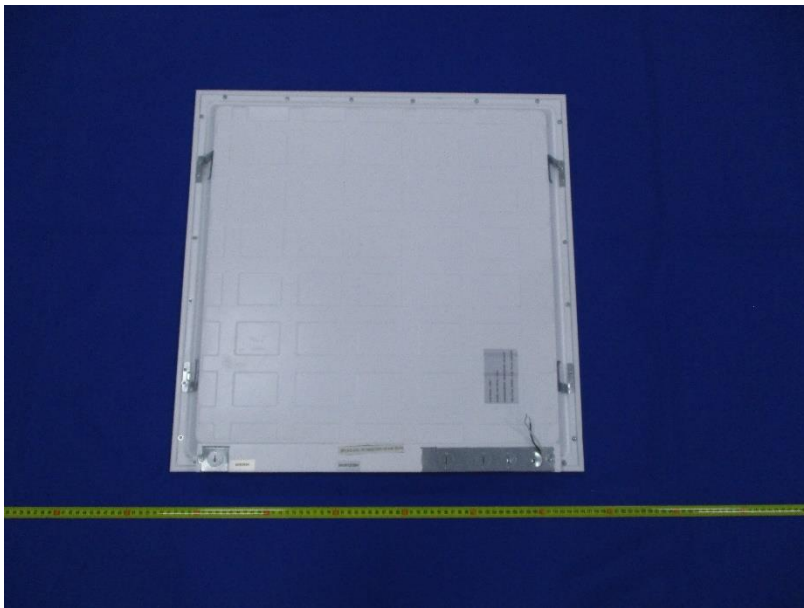
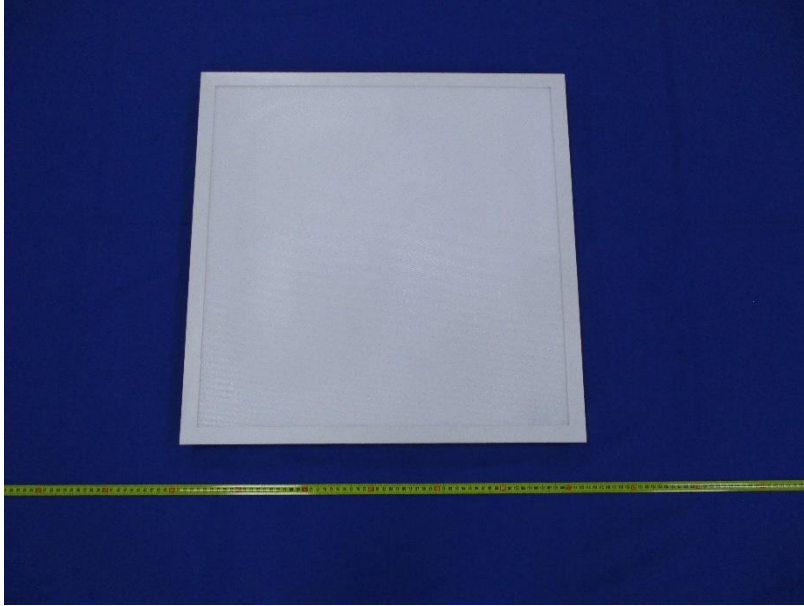
2. Product Rated Values[#]

Test Model	CCT(K)	Light Output (lm)	Power(W)	Luminous Efficacy (lm/W)
BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL	4000	3096	24	129
		3712	29	128
		4064	32	127
		4906.2	39	125.8
	5000	3216	24	134
		3857	29	133
		4224	32	132
		5109	39	131
	6500	3144	24	131
		3770	29	130
		4128	32	129
		4992	39	128

3. Test List

Test Model	CCT(K)	Power(W)	Test Item			
			Goniophotometer Test	Integrating Sphere Test	THDi and PF Test	In-Situ Temperature Measurement Test
BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL	4000	39	Yes	Yes	Yes	Yes
	5000		NA	Yes	Yes	NA
	6500		NA	Yes	Yes	NA

4. Product Photo



LED Driver Photo



5. Test Result

Test Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL

Control Setting: 4000K/ 39W

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	4979.9	≥2000	≥1800	Pass
Power(W)	39.66	None.	None.	N/A
Total Efficacy(lm/W)	125.56	≥125	≥121.25	Pass
CCT(K)	4149	None ⁱ	None.	N/A
Duv	0.000123	None ⁱ	None.	N/A
IES R _f	85	-0.0023~0.0043	No tolerances	Pass
IES R _g	96	70	69	
IES Rcs,h1	-12%	89	88	
R _a	84.3	-12%~23%	-13%~24%	
R ₉	12	≥80	≥79	

Note:

- i. White-tunable products are not required to meet the chromaticity requirements in DLC V5.1.

Goniophotometer Test; Orientation: Downward; Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	4984.9	≥2000	≥1800	Pass
Power(W)	39.61	None.	None.	N/A
Total Efficacy(lm/W)	125.9	≥125	≥121.25	Pass
Zonal Lumen Distribution(0-60°)	90.17%	0-60°≥75%	0-60°≥72%	Pass
SC:0-180°	1.22	1.0≤SC≤2.0	0.9≤SC≤2.1	Pass
SC:90-270°	1.22	1.0≤SC≤2.0	0.9≤SC≤2.1	Pass
UGR crosswise view	17.1	<22	No tolerances	Pass
UGR endwise view	16.9	<22	No tolerances	Pass

Integrating Sphere THDi、PF Test; Orientation: Downward;

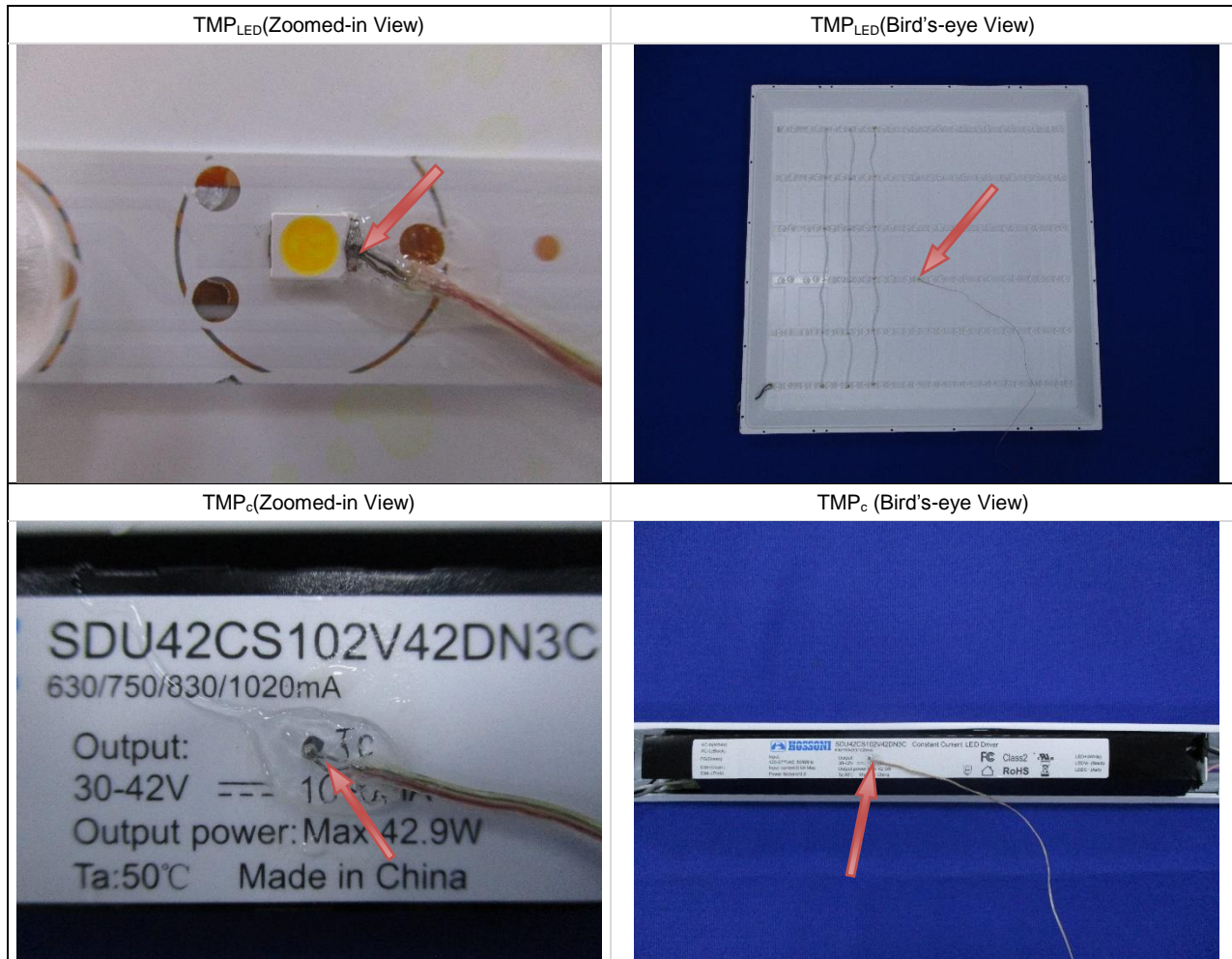
Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.975	≥0.9	≥0.87	Pass
120	THDi	10.12%	≤20%	≤25%	Pass
277	Power Factor	0.9523	≥0.9	≥0.87	Pass
277	THDi	9.76%	≤20%	≤25%	Pass

In-Situ Temperature Measurement Test: Test Voltage: 120V 60Hz;

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
TMP _{LED} (°C)	36	≤98.4	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP _c (°C)	56.4	≤85	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	57.6	≤100	With +5% tolerance	Pass
L ₉₀ Lumen Maintenance Life (Hours)	44000	≥36000	None.	Pass
Color Maintenance	0.0021	≤0.004	≤0.0044	Pass

Note:

1. The test results were measured directly from the test equipment.
2. The DLC requirements were listed according to DLC Technical Requirements V5.1.
3. The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.



Test Data

[Integrating Sphere System]

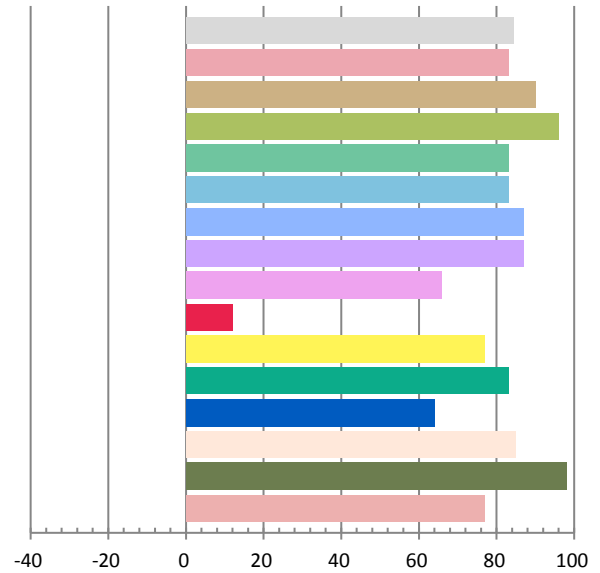
Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.339	39.66	0.975	4979.9	125.56

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
15.227	4149	0.000123	0.3742	0.3730	0.2225	0.4990

Color Rendering Index

Ra			
84.3			
R1	R2	R3	R4
83	90	96	83
R5	R6	R7	R8
83	87	87	66
R9	R10	R11	R12
12	77	83	64
R13	R14	R15	
85	98	77	



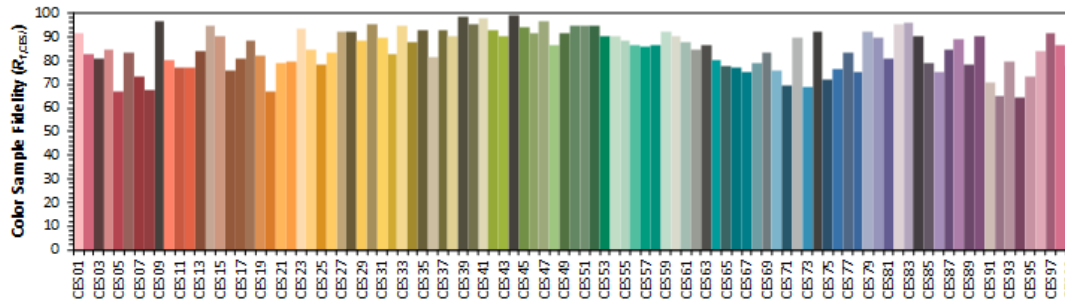
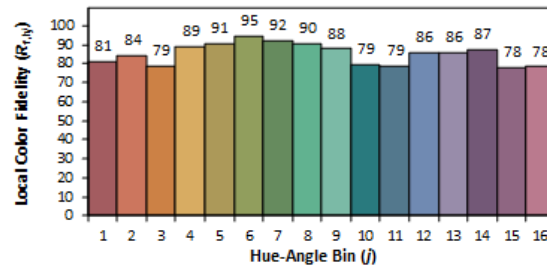
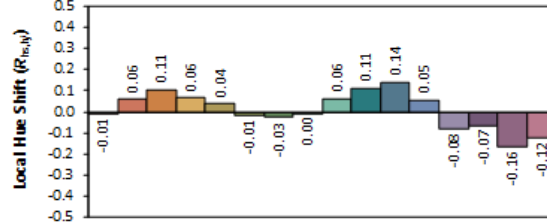
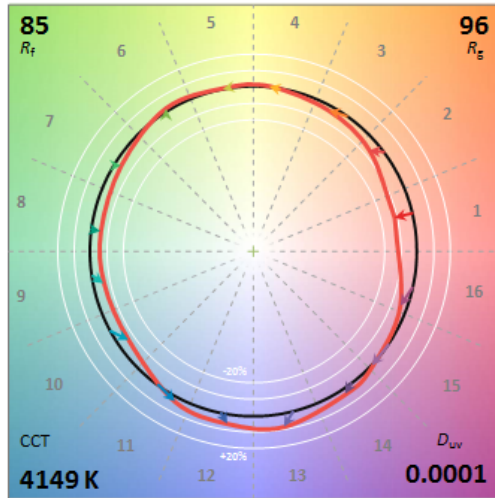
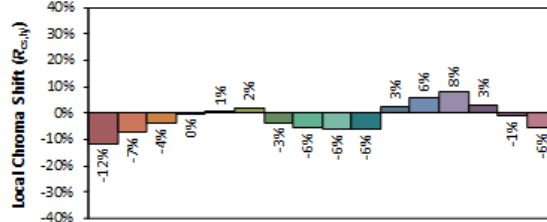
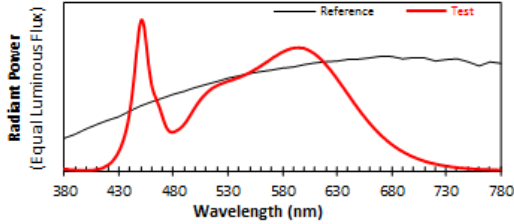
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: BEYOND SIGNS INC DBA BEYOND LED TECHNOLOGY

Date: 2023/9/27

Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL



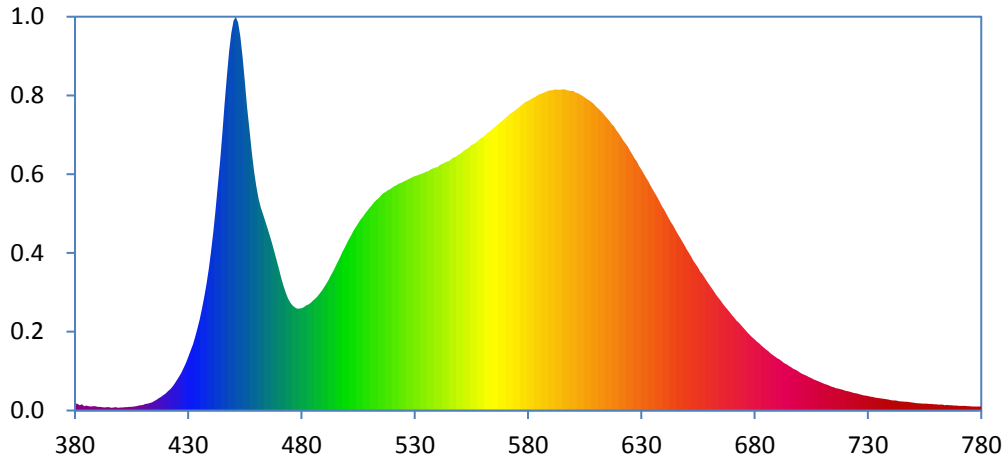
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3741
 y 0.3729
 u' 0.2225
 v' 0.4989

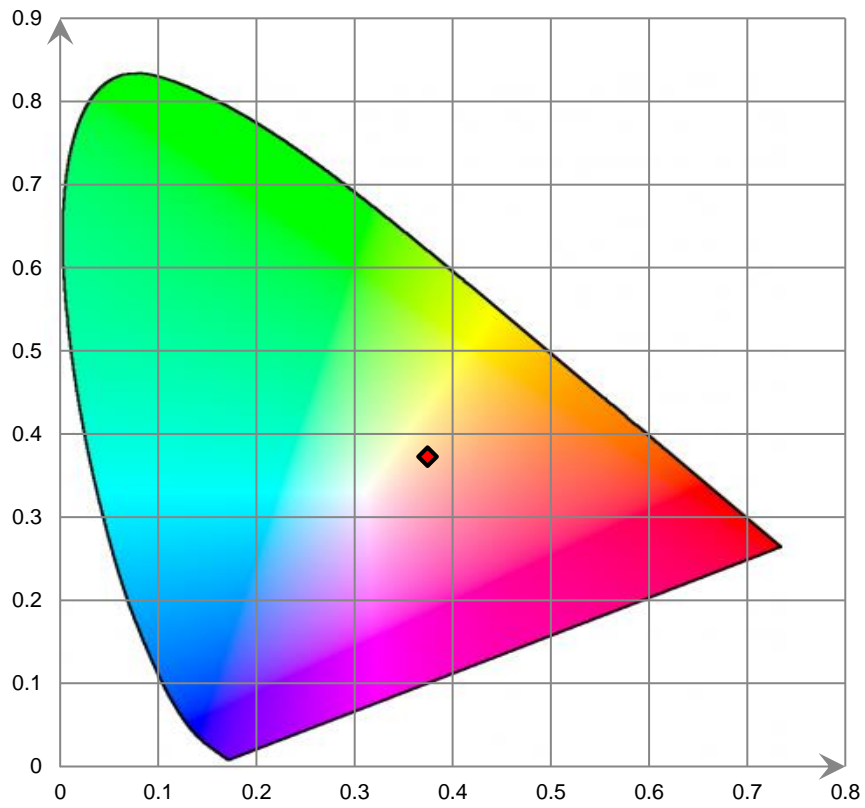
CIE 13.3-1995 (CRI)	
R_a	84
R_9	11

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

Relative Spectral Power Distribution



CIE 1931 x y Chromaticity Diagram



[Goniophotometer System]

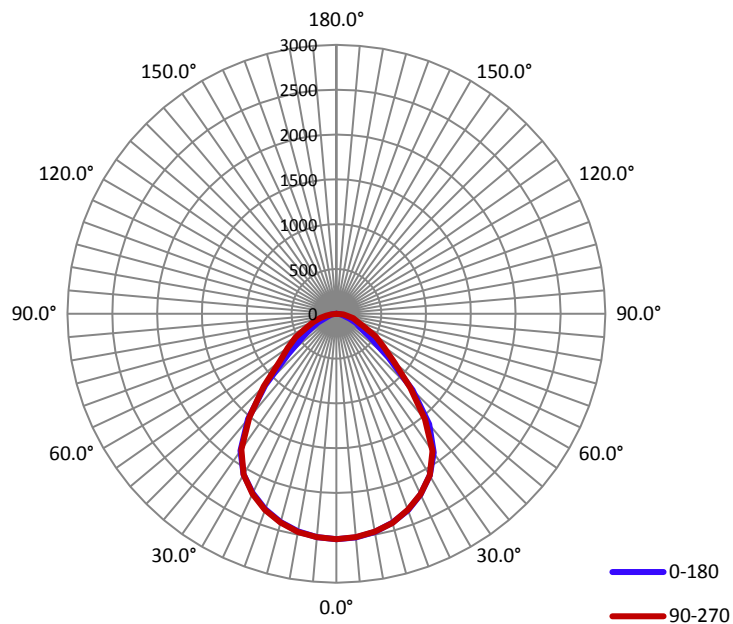
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	0.341	39.61	0.993

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I _{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
4984.9	125.9	2517.8	1.22	1.22

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I _{max}):	87.8	88.0	87.2	88.3	87.8
Field Angle (10% I _{max}):	127.9	132.7	141.0	138.3	135.0

Luminous Intensity (cd) Distribution Data

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1
5.0°	2504.6	2501.8	2506.9	2502.3	2499.7	2502.6	2502.8	2505.3
10.0°	2471.4	2468.4	2474.3	2467.5	2468.1	2469.9	2473.0	2473.5
15.0°	2413.0	2414.0	2416.2	2411.1	2414.6	2413.6	2414.8	2415.3
20.0°	2331.4	2330.4	2333.3	2330.1	2329.2	2335.4	2334.2	2332.6
25.0°	2223.5	2226.8	2225.9	2217.6	2221.0	2223.6	2224.0	2225.3
30.0°	2082.3	2081.9	2085.9	2079.9	2080.0	2086.6	2084.5	2084.1
35.0°	1892.7	1880.9	1885.2	1878.4	1868.5	1888.3	1888.0	1879.1
40.0°	1607.2	1563.0	1577.5	1544.9	1535.7	1564.9	1570.5	1553.6
45.0°	1199.9	1202.3	1201.4	1144.5	1167.4	1151.2	1195.5	1165.1
50.0°	757.8	861.3	812.4	756.6	849.3	732.5	853.9	846.2
55.0°	455.2	617.0	554.4	498.5	650.7	478.3	608.0	649.1
60.0°	303.9	444.7	385.8	354.1	507.6	338.2	425.0	455.0
65.0°	243.2	308.5	257.7	230.6	343.1	224.9	309.6	281.1
70.0°	157.1	207.0	177.4	144.2	246.2	131.8	261.4	199.5
75.0°	93.0	162.3	125.2	91.6	194.1	78.3	184.7	163.3
80.0°	62.7	113.3	106.5	77.4	118.2	61.3	120.6	111.9
85.0°	34.0	74.8	75.0	61.8	78.3	45.7	59.1	65.8
90.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1	2514.1
5.0°	2500.8	2500.6	2505.6	2502.7	2501.3	2505.5	2503.8	2503.6
10.0°	2464.8	2463.7	2468.5	2468.7	2469.6	2469.7	2468.5	2467.1
15.0°	2405.1	2406.8	2411.1	2412.1	2410.1	2411.3	2412.6	2408.6
20.0°	2319.8	2320.9	2328.1	2329.9	2326.1	2327.7	2326.1	2329.3
25.0°	2208.6	2208.6	2215.6	2217.5	2216.8	2218.5	2215.6	2212.6
30.0°	2069.3	2061.9	2070.0	2074.9	2069.0	2071.4	2068.3	2066.2
35.0°	1865.5	1841.3	1852.2	1860.6	1847.8	1866.0	1855.1	1851.1
40.0°	1534.4	1493.7	1538.9	1539.2	1508.9	1545.6	1548.5	1532.4
45.0°	1122.7	1105.4	1157.8	1126.4	1144.9	1136.0	1190.4	1169.0
50.0°	703.9	785.6	779.7	720.1	824.4	732.9	820.1	812.7
55.0°	460.4	602.1	564.5	513.3	662.1	497.3	575.6	550.6
60.0°	324.7	455.6	418.9	362.5	523.5	372.0	414.3	409.4
65.0°	224.2	312.4	298.7	226.7	371.7	250.0	293.3	302.6
70.0°	130.8	249.2	201.7	136.4	275.1	148.8	221.9	244.0
75.0°	80.9	176.2	133.0	82.0	183.5	85.6	168.2	185.5
80.0°	62.8	97.8	106.1	70.4	118.2	67.3	117.9	112.7
85.0°	32.2	60.1	60.6	52.1	59.3	48.6	69.1	63.3
90.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Test Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL
Control Setting: 5000K/ 39W

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz:

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	5016.1	≥2000	≥1800	Pass
Power(W)	39.71	None.	None.	N/A
Total Efficacy(lm/W)	126.32	≥125	≥121.25	Pass
CCT(K)	5119	None ⁱ	None.	N/A
Duv	0.000302	None ⁱ	None.	N/A
IES R _f	83	70	69	Pass
IES R _g	97	89	88	
IES Rcs,h1	-12%	-12%~23%	-13%~24%	
R _a	83.3	≥80	≥79	
R ₉	10	≥0	≥-1	

Note:

- i. White-tunable products are not required to meet the chromaticity requirements in DLC V5.1.

THDi、PF Test; Orientation: Downward:

Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9734	≥0.9	≥0.87	Pass
120	THDi	10.24%	≤20%	≤25%	Pass
277	Power Factor	0.952	≥0.9	≥0.87	Pass
277	THDi	9.82%	≤20%	≤25%	Pass

Note:

- The test results were measured directly from the test equipment.
- The DLC requirements were listed according to DLC Technical Requirements V5.1.
- The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.

Test Data

[Integrating Sphere System]

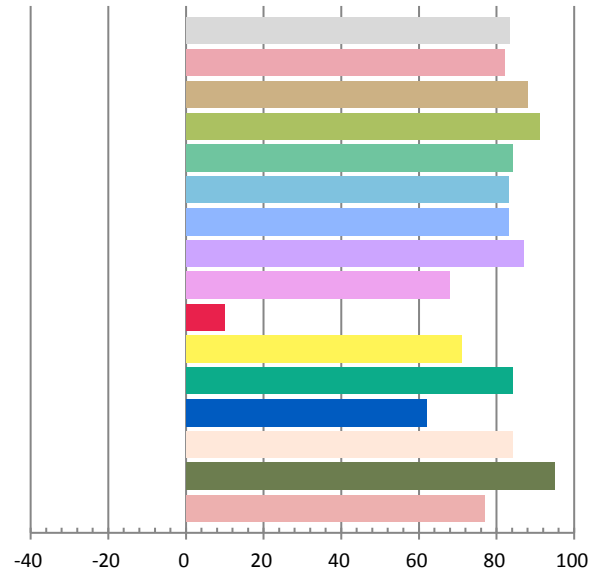
Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.34	39.71	0.9734	5016.1	126.32

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
15.709	5119	0.000302	0.3418	0.3496	0.2100	0.4832

Color Rendering Index

Ra			
83.3			
R1	R2	R3	R4
82	88	91	84
R5	R6	R7	R8
83	83	87	68
R9	R10	R11	R12
10	71	84	62
R13	R14	R15	
84	95	77	



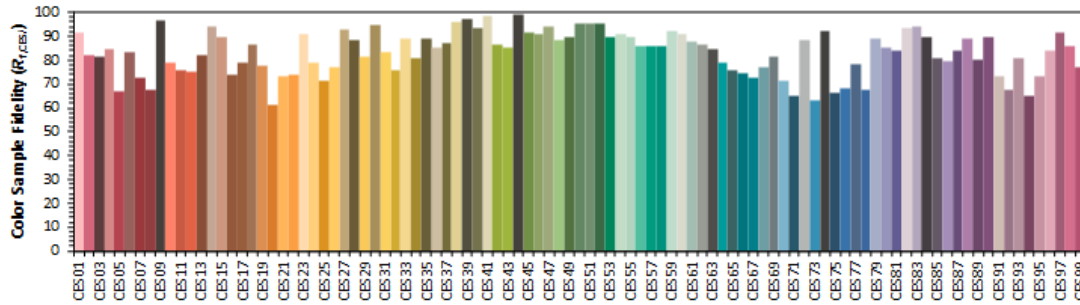
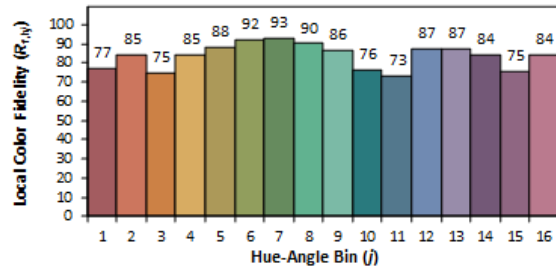
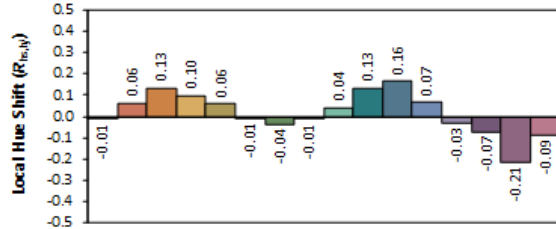
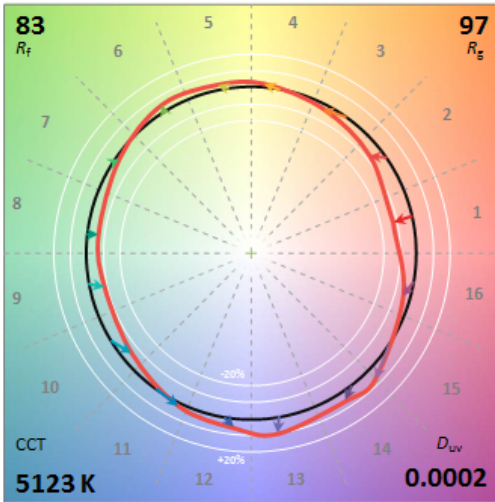
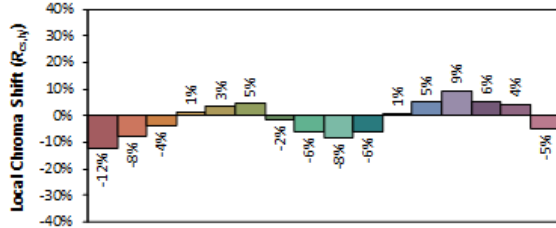
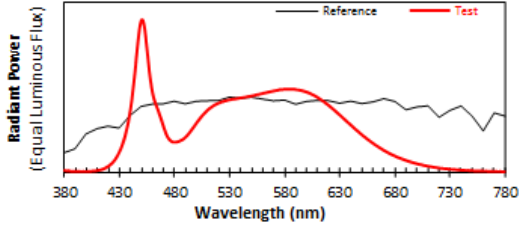
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: BEYOND SIGNS INC DBA BEYOND LED TECHNOLOGY

Date: 2023/9/27

Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL



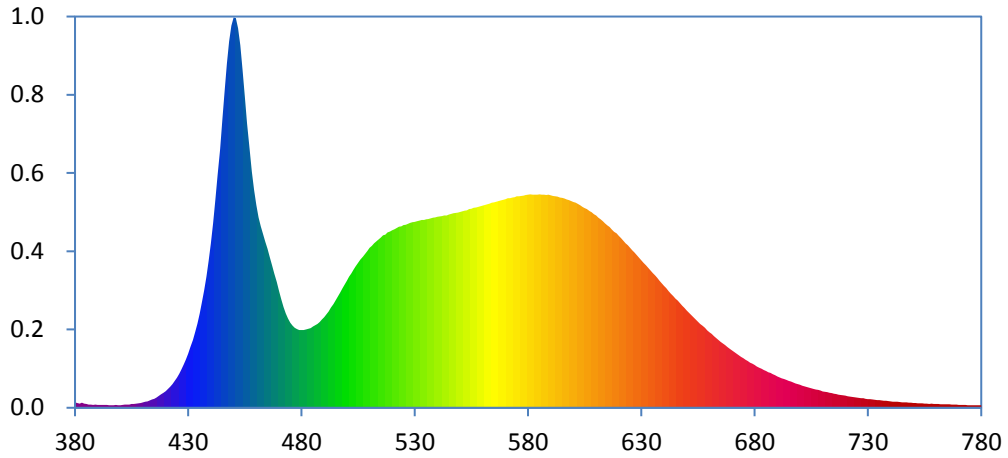
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3418
 y 0.3494
 u' 0.2100
 v' 0.4831

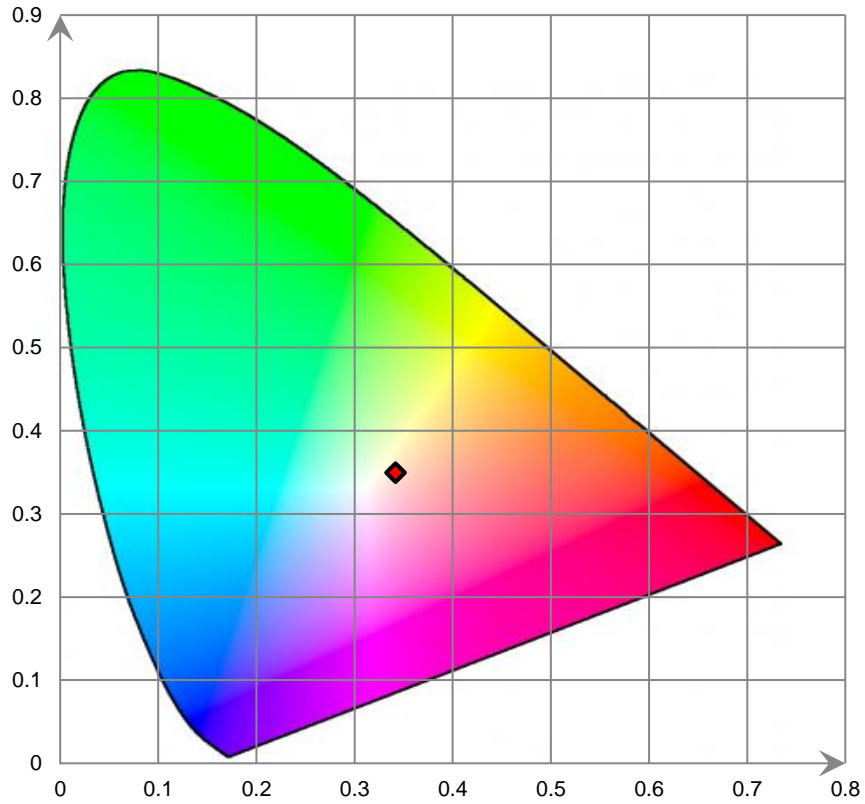
CIE 13.3-1995 (CRI)	
R_a	83
R_g	10

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

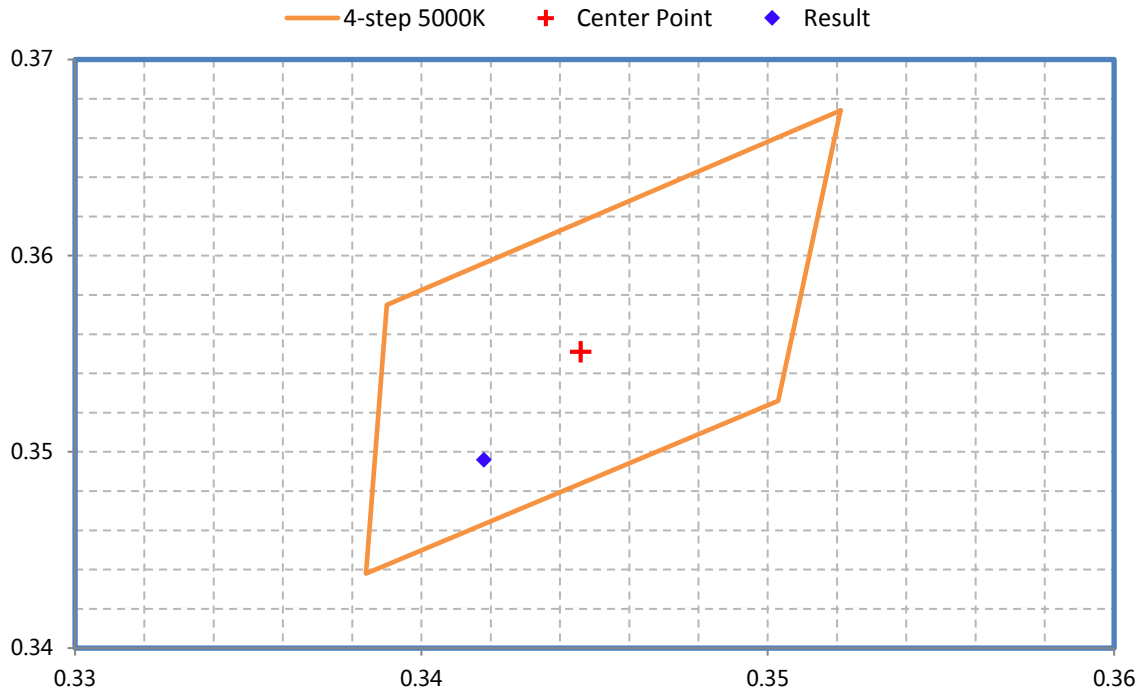
Relative Spectral Power Distribution



CIE 1931 x y Chromaticity Diagram



ANSI C78.377-2017 Chromaticity Quadrangles



Test Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL
Control Setting: 6500K/ 39W

Integrating Sphere Test; Orientation: Downward; Test Voltage: 120V 60Hz:

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	5040	≥2000	≥1800	Pass
Power(W)	39.77	None.	None.	N/A
Total Efficacy(lm/W)	126.74	≥125	≥121.25	Pass
CCT(K)	6757	None ⁱ	None.	N/A
Duv	0.00332	None ⁱ	None.	N/A
IES R _f	81	70	69	Pass
IES R _g	96	70	69	
IES Rcs,h1	-14%	89	88	
R _a	80.9	-12%~23%	-13%~24%	
R ₉	1	≥80	≥79	

Note:

- i. White-tunable products are not required to meet the chromaticity requirements in DLC V5.1.

THDi、 PF Test; Orientation: Downward:

Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9733	≥0.9	≥0.87	Pass
120	THDi	10.37%	≤20%	≤25%	Pass
277	Power Factor	0.9521	≥0.9	≥0.87	Pass
277	THDi	9.74%	≤20%	≤25%	Pass

Note:

1. The test results were measured directly from the test equipment.
2. The DLC requirements were listed according to DLC Technical Requirements V5.1.
3. The conclusion is for reference only. Test report that indicate product performance meets DLC Technical Requirements do not represent official DLC product qualification. All decisions regarding product qualification are made by the DLC.

Test Data

[Integrating Sphere System]

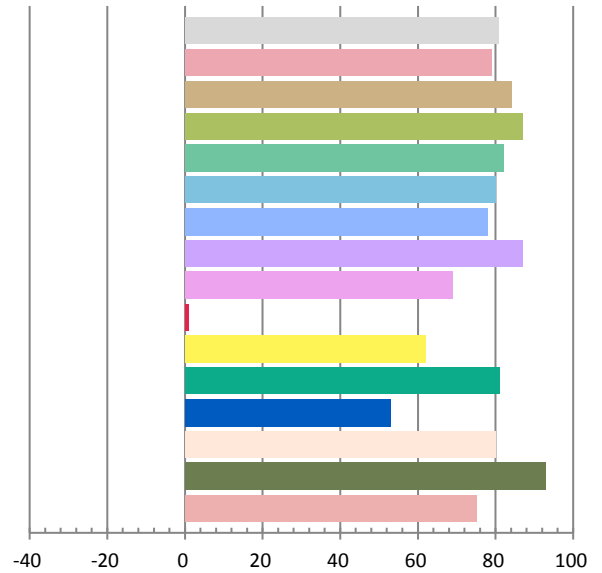
Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	0.3405	39.77	0.9732	5040	126.74

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
16.256	6757	0.00332	0.3088	0.3253	0.1965	0.4658

Color Rendering Index

Ra			
80.9			
R1	R2	R3	R4
79	84	87	82
R5	R6	R7	R8
80	78	87	69
R9	R10	R11	R12
1	62	81	53
R13	R14	R15	
80	93	75	



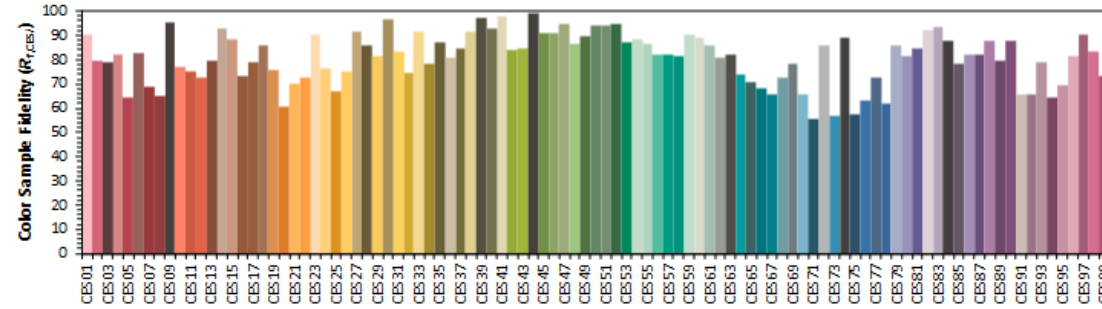
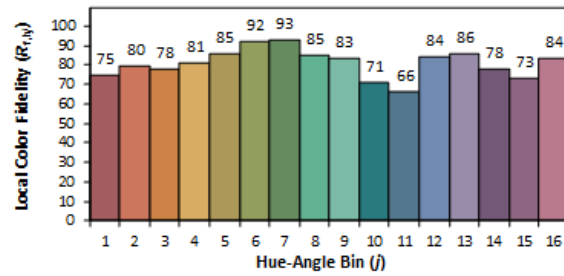
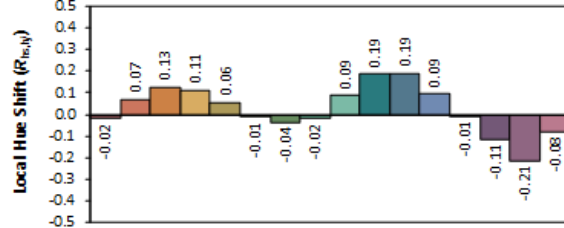
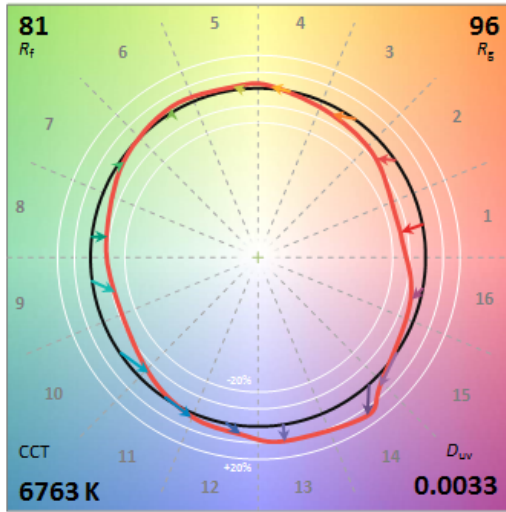
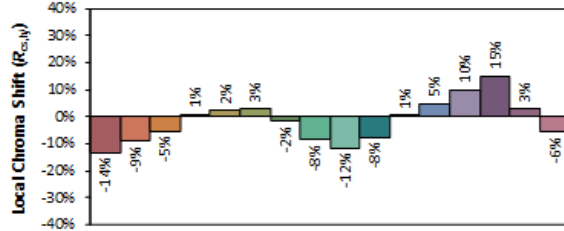
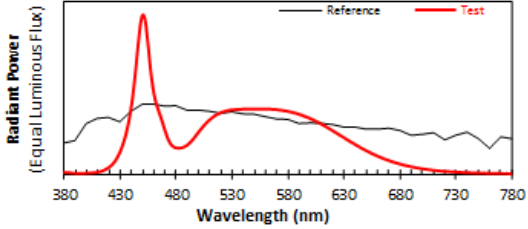
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: BEYOND SIGNS INC DBA BEYOND LED TECHNOLOGY

Date: 2023/9/27

Model: BLT-BPLED-2x2-24/29/32/39/D10/U/40-50-65/HL



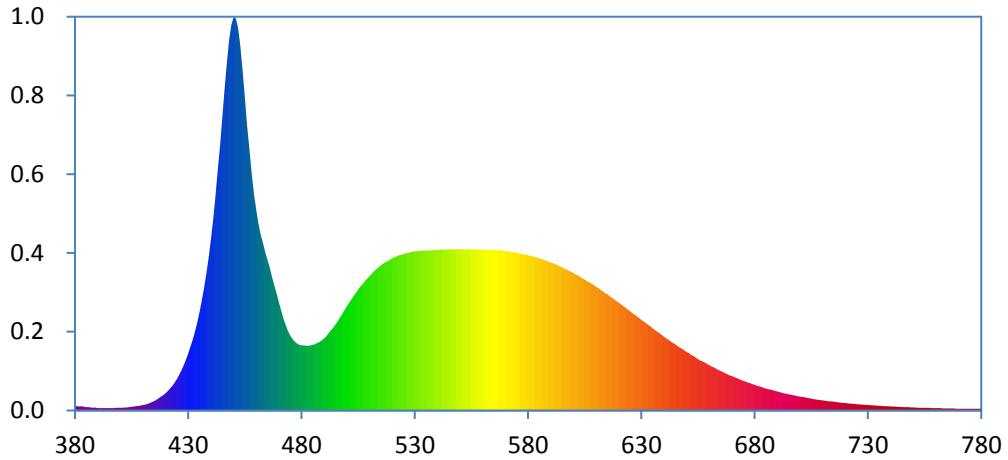
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3087
 y 0.3251
 u' 0.1965
 v' 0.4656

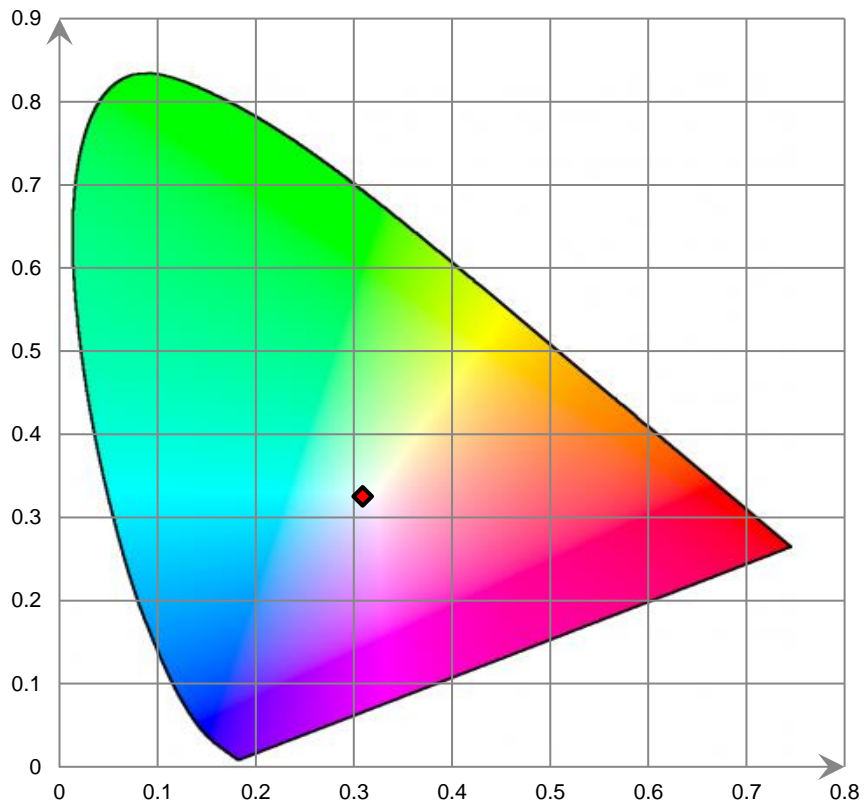
CIE 13.3-1995
(CRI)
 R_a 81
 R_g 1

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

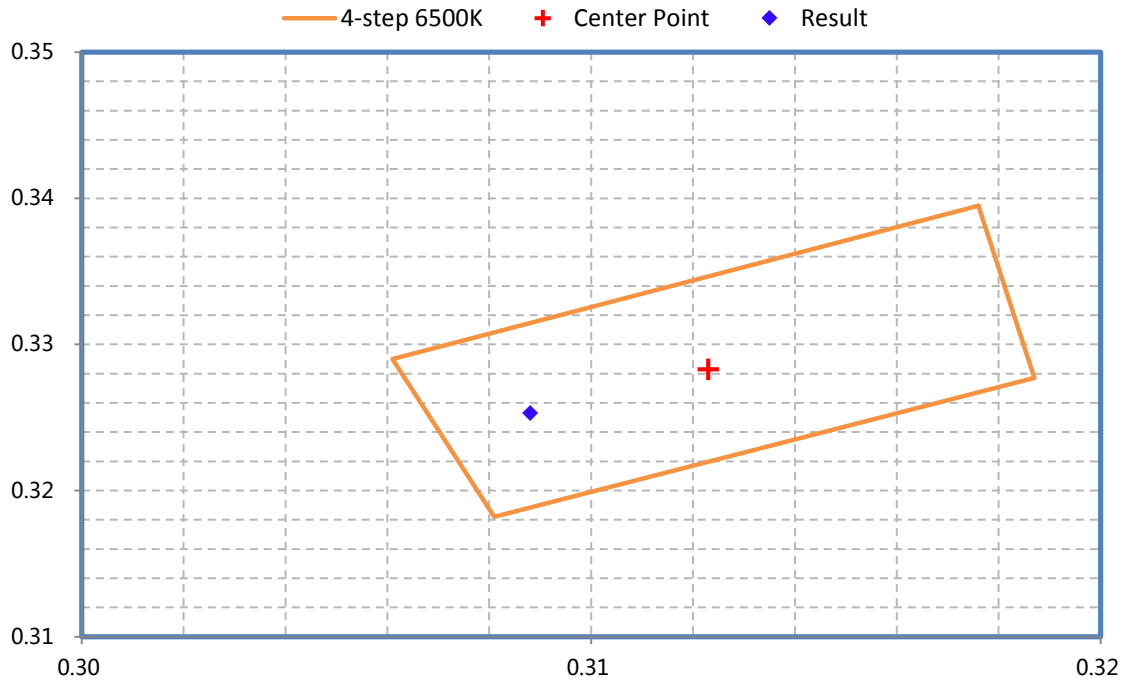
Relative Spectral Power Distribution



CIE 1931 x y Chromaticity Diagram



ANSI C78.377-2017 Chromaticity Quadrangles



6. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
2.0m integrating sphere	EVERFINE	R98	G121960CS1361154D	2023-05-19	2024-05-18
spectroradiometer	EVERFINE	HAAS-2000	M12048CS1361148	2023-05-19	2024-05-18
Digital CC&CV DC Power Supply	EVERFINE	WY305	G115986CN1361134	2023-05-19	2024-05-18
Thermal Meter	ANYMETRE	TH-20E	N/A	2022-11-11	2023-11-10
Standard Light Source	EVERFINE	D215S	G119786CS1361115	2023-08-10	2025-08-09
Digital Power Meter	YOKOGAWA	WT210	91KB35700	2022-11-03	2023-11-02
Intelligence ac power supply	EVERFINE	DPS1005	G119890CS1361121	2023-05-19	2024-05-18
AC Power Supply	INVENTFINE	CHP-5KVA	900511765	2023-05-22	2024-05-21
DC Power Supply	INVENTFINE	WL3010	JWDMP030001	2023-05-22	2024-05-21
Power Meter	INVENTFINE	WT500	GSDSQ200007	2022-11-03	2023-11-02
Goniophotometer	INVENTFINE	GPM-1900	YWGCF120001	2022-11-14	2023-11-13
Wireless Weather Station	ZHONGXING	KG218	N/A	2023-05-22	2024-05-21
Standard Light Source	INVENTFINE	N/A	JWBYR040008	2021-12-23	2023-12-22
Digital Multimeter	FLUKE	115C	37840512WS	2023-05-22	2024-05-21
Hybrid Recorder	YOKOGAWA	DR230	47JH0903	2023-05-22	2024-05-21
Power Supply	SC	SC/BP-11003	1608110030553	2023-05-19	2024-05-18

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

7. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with IES LM-79-19. The ambient temperature of the sample was maintained at 25°C±1°C during measurement. And relative humidity is less than 65%. The product was operated in its intended orientation in application during all testing.

Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement. 4π geometry was used during measurement.

Goniophotometer System

Type C goniophotometer was used for measuring luminous intensity distribution. The vertical angle (γ) test intervals were set no more than 1 degree while data for 5 degree intervals is reported. The horizontal angle (C plane) test intervals were set no more than 22.5 degree.

ISTMT Test

The LED which has the highest temperature was measured at the location of LED case which is specified by LED source manufacturer and detailed by LM-80 report. The drive current of LED package/module/ array was calculated as the total output current of the driver measured by multimeter, divided by the number of branches in parallel of LEDs.

Directions

1. The information marked "superscript #" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk "★"
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.
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*****END OF REPORT*****