TEST REPORT

For

P.Q.L., Inc.

2285 WARD AVE.SIMI VALLEY，CA 93065 United States

Model Number:	55800 55801 55800-AI 55801-AI	
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	Sherry Gu
Report Number:	RKSB230927002-10	
Sample Size:	Three samples were received on 2023-09-27 and used for testing.	
Test Date:	2023-09-27 to 2023-10-23	
Report Date:	2023-10-25	
Reviewed By:	Seven Xia / EE Engineer	Seven.Xia
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:	High-Bay Luminaires for Commercial and Industrial Buildings
Voltage and Frequency:	120-277VAC, 50/60Hz
LED Source Manufacturer:	Lumileds Holding B.V.
LED Source Model:	L128-xx80RA35000Q1
Driver Model:	SDU180CS200X2V45DL7A
Auxiliary Ballast Model:	NA
Auxiliary Housing Model:	NA
White Tunable:	NA
Field-Adjustable Light Output:	Yes

2. Product Rated Values#

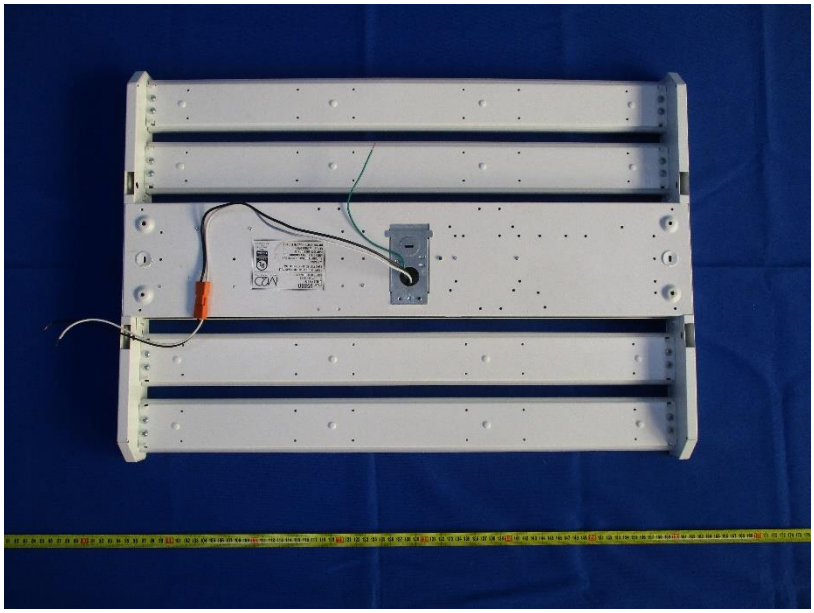
Test Model	CCT(K)	Light Output (lm)	Power(W)	Luminous Efficacy (lm/W)
55800	4000	19600	140	140
		22240	160	139
		24150	175	138
55801	5000	19880	140	142
		22560	160	141
		24500	175	140
55800-AI	4000	21280	140	152
		24160	160	151
		26250	175	150
55801-AI	5000	21560	140	154
		24480	160	153
		26600	175	152

3. Test List

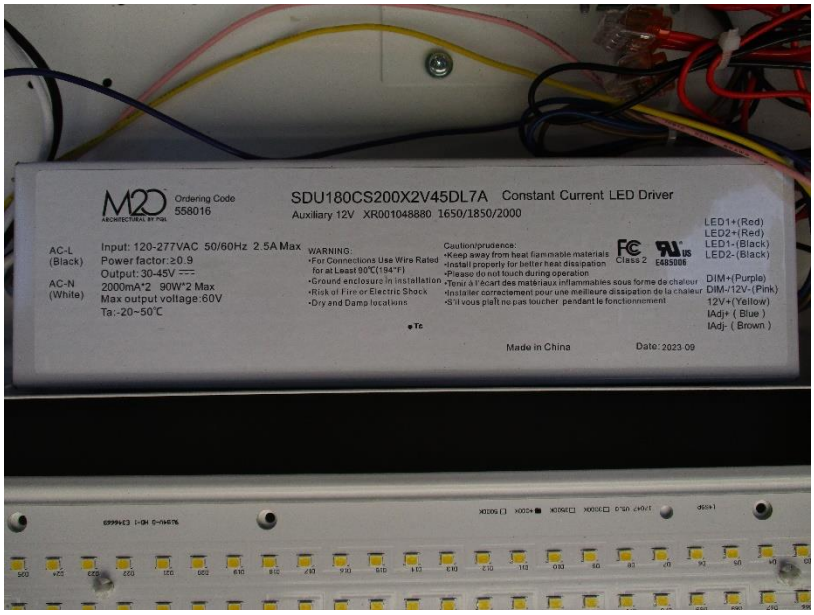
Test Model	Power(W)	Test Item			
		Goniophotometer Test	Integrating Sphere Test	THDi and PF Test	In-Situ Temperature Measurement Test
55800	175	Yes	Yes	Yes	Yes
55800-AI	175	Yes	NA	NA	NA
55801	175	NA	Yes	Yes	NA

4. Product Photo

Product Photo for model 55800:



LED Driver Photo



5. Test Result

Test Model: 55800
Control Setting: 175W

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

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	23810.3	≥10000	≥9000	Pass
Power(W)	171.59	None.	None.	N/A
Total Efficacy(lm/W)	138.76	≥135	≥130.95	Pass
CCT(K)	3913	3710~4260	No tolerances	N/A
Duv	0.00123	-0.005~0.007	No tolerances	N/A
IES R_f	83	70	69	Pass
IES R_g	95	89	88	
IES Rcs,h1	-12%	-18%~23%	-19%~24%	
R_a	81.9	≥70	≥69	
R_9	7	≥-40	≥-41	

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

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	23810.9	≥10000	≥9000	Pass
Power(W)	171.62	None.	None.	N/A
Total Efficacy(lm/W)	138.79	≥135	≥130.95	Pass
Zonal Lumen Distribution(20-50º)	47.23%	20-50º≥30%	20-50º≥20%	Pass
UGR crosswise view	26.4	<28	No tolerances	Pass
UGR endwise view	27.9	<28	No tolerances	Pass

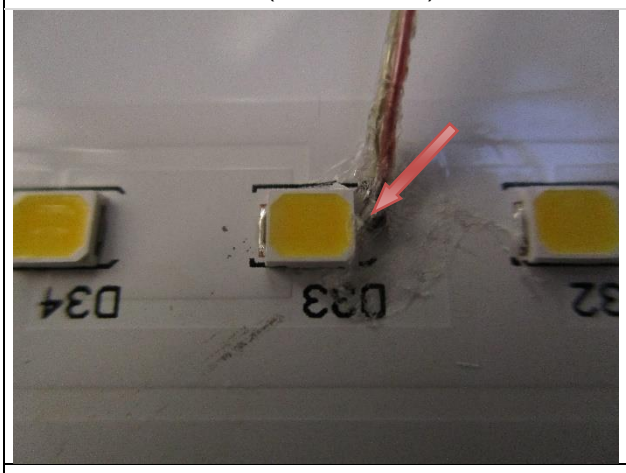
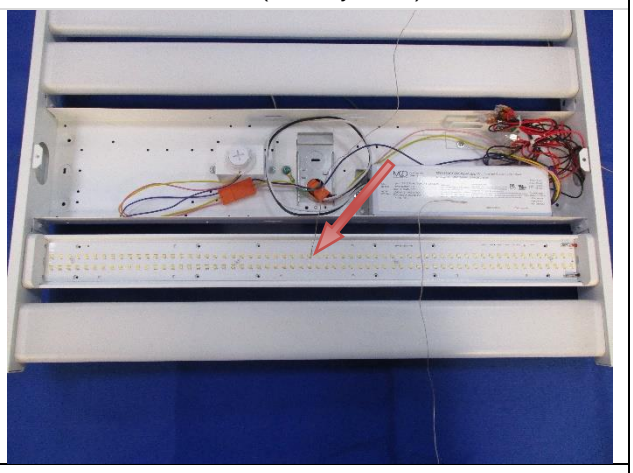
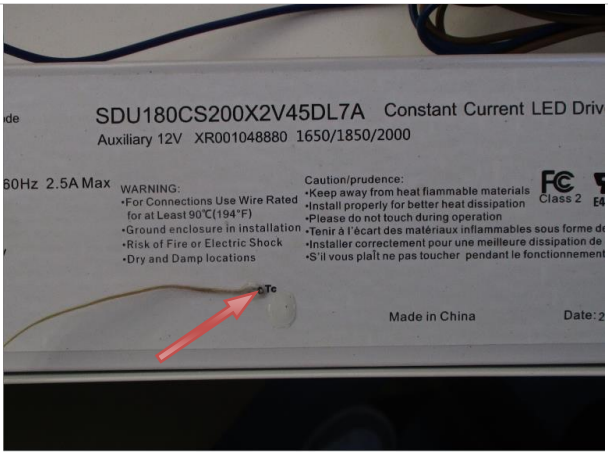
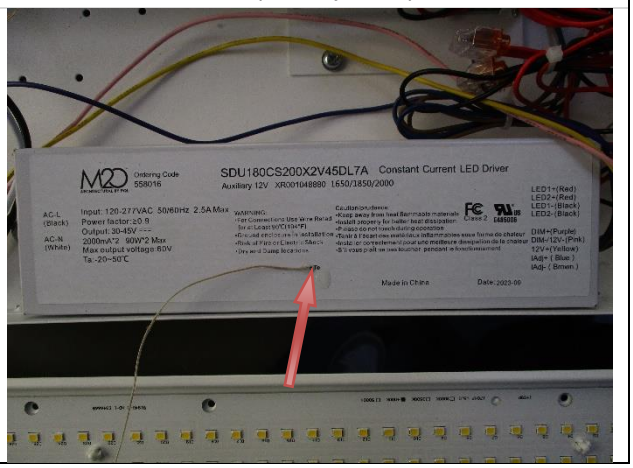
Integrating Sphere THDi、PF Test; Orientation: Downward;

Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9776	≥0.9	≥0.87	Pass
120	THDi	10.42%	≤20%	≤25%	Pass
277	277	0.898	≥0.9	≥0.87	Pass
277	277	12.98%	≤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)	55.5	≤105	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
TMP_c(°C)	67.9	≤90	With tolerance of ≤ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance	Pass
Drive Current/Individual LED source(mA)	109.4	≤150	With +5% tolerance	Pass
L_{90} Lumen Maintenance Life (Hours)	51000	≥36000	None.	Pass
Color Maintenance	0.002	≤0.007	≤0.0074	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.

TMP_{LED}(Zoomed-in View)	TMP_{LED}(Bird's-eye View)
	
TMP_c(Zoomed-in View)	TMP_c (Bird's-eye View)
	

Test Data

[Integrating Sphere System]

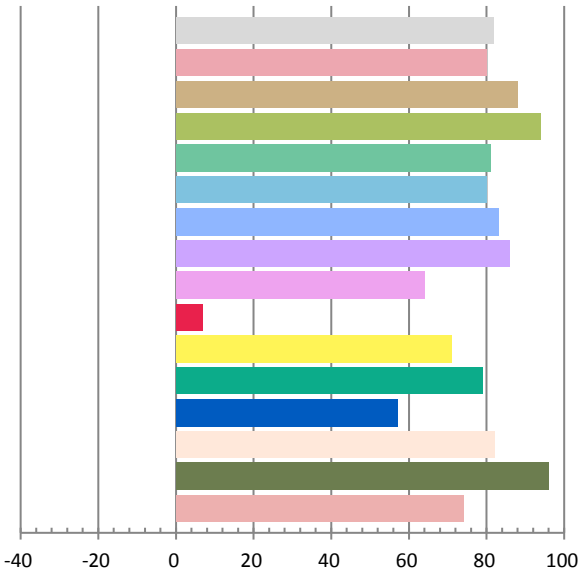
Photometric and Electrical Measurement Result

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
120.0	60	1.4526	171.59	0.9842	23810.3	138.76

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
71.183	3913	0.00123	0.3853	0.3824	0.2260	0.5048

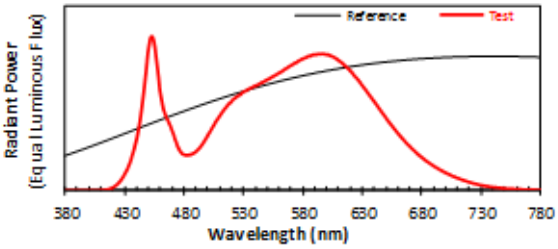
Color Rendering Index

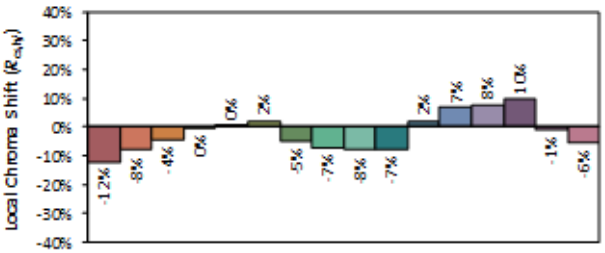
Ra			
81.9			
R1	R2	R3	R4
80	88	94	81
R5	R6	R7	R8
80	83	86	64
R9	R10	R11	R12
7	71	79	57
R13	R14	R15	
82	96	74	

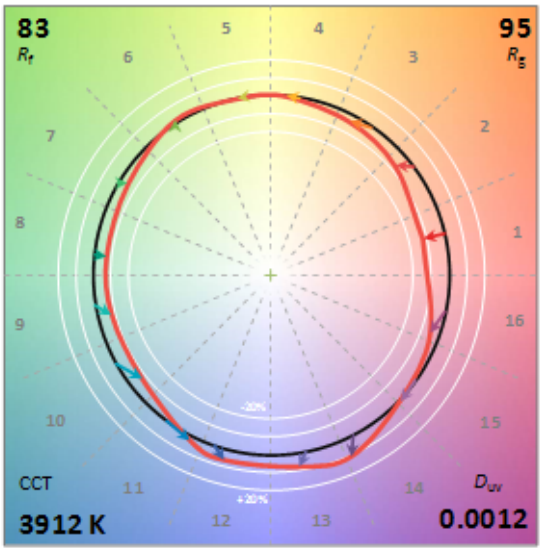


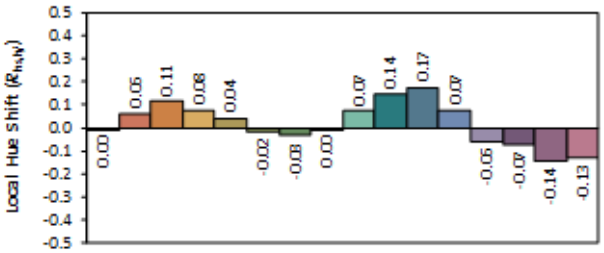
ANSI/IES TM-30-18 Color Rendition Report

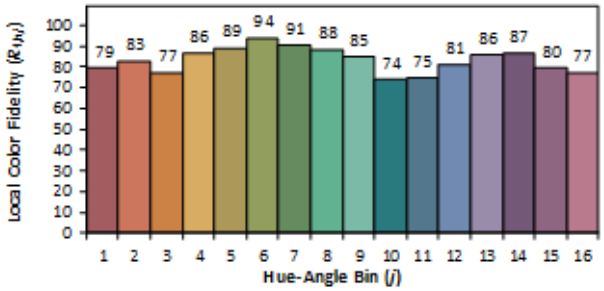
Source: User SPD
Manufacturer: P.Q.L., Inc.
Date: 2023/10/8
Model: 55800

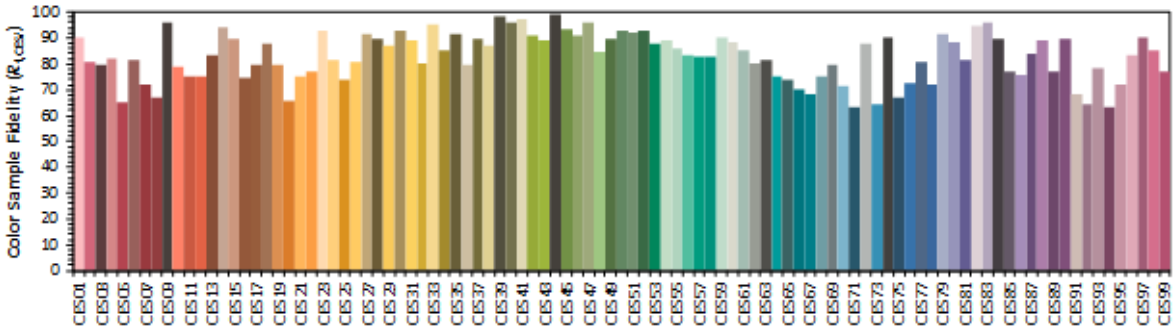












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

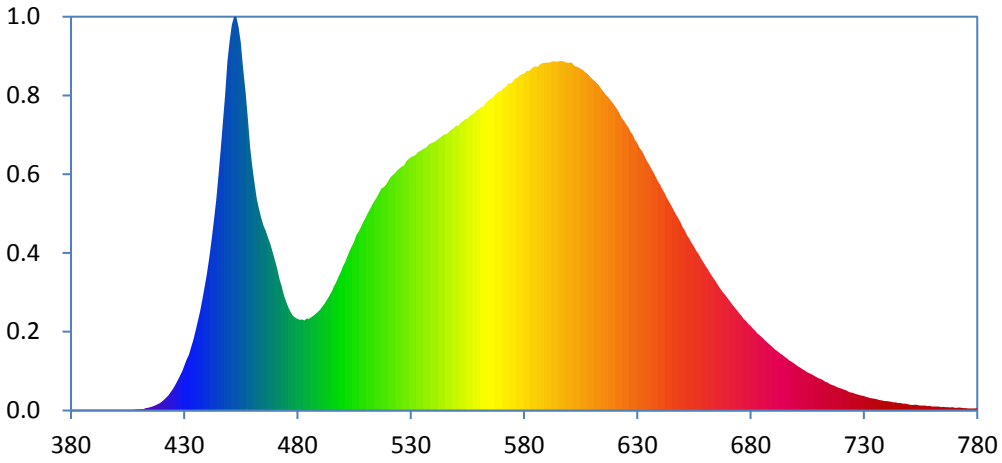
x	0.3853
y	0.3824
u'	0.2261
v'	0.5048

CIE 13.3-1995 (CRI)

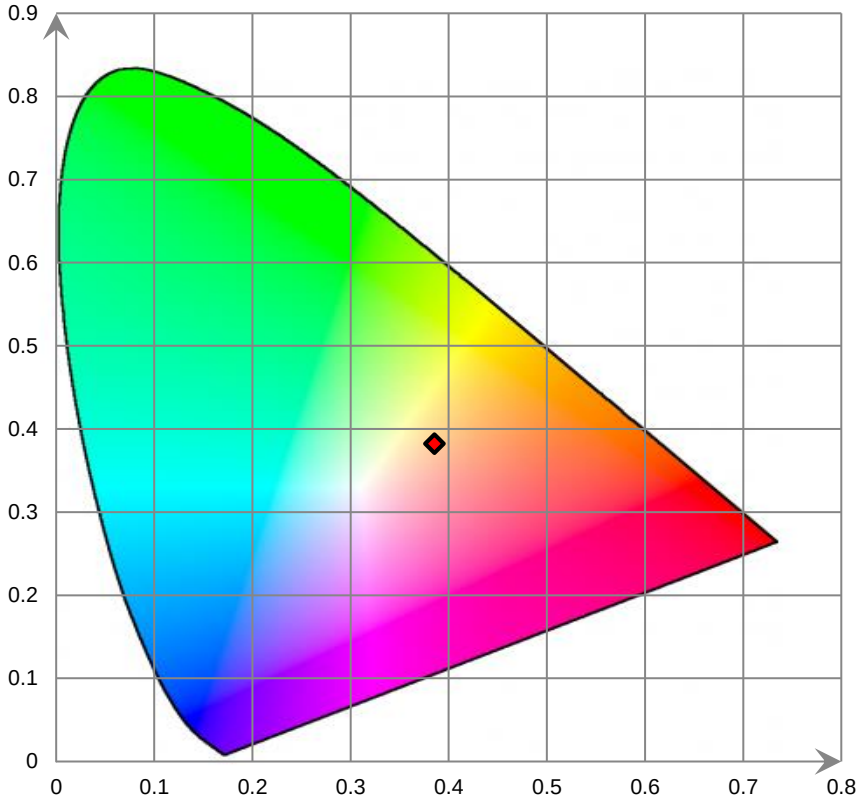
R_a	82
R_9	7

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

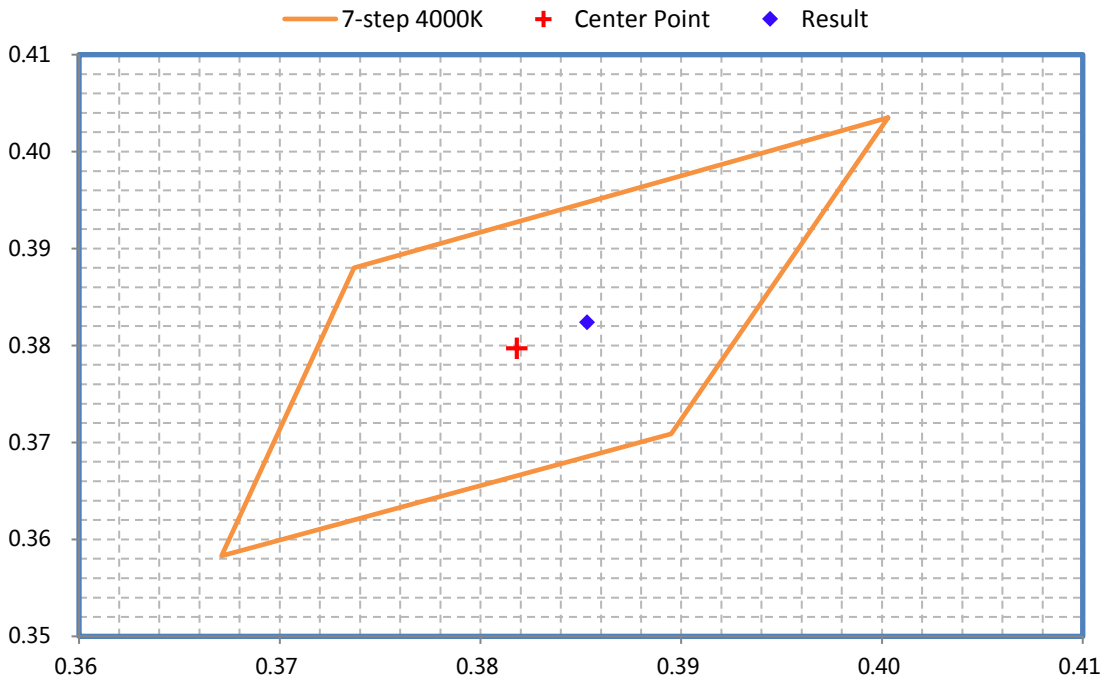
Relative Spectral Power Distribution



CIE 1931 x y Chromaticity Diagram



ANSI C78.377-2017 Chromaticity Quadrangles



[Goniophotometer System]

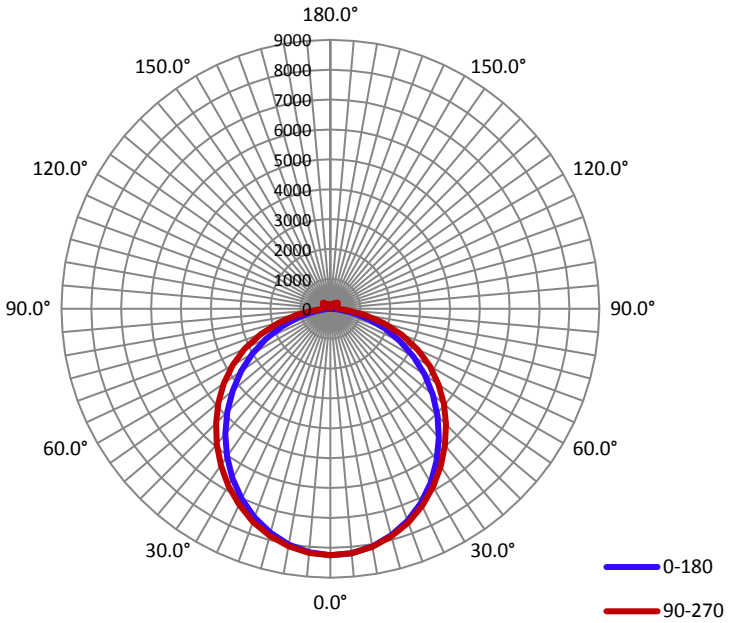
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	1.457	171.62	0.982

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
23810.9	138.79	8248.4	1.20	1.24

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	103.9	109.7	114.5	109.4	109.4
Field Angle (10% I_{max}):	156.7	163.0	165.3	163.0	162.0

Luminous Intensity (cd) Distribution Data

C / γ	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3
5.0°	8213.6	8213.6	8213.7	8213.5	8210.3	8207.6	8202.1	8194.3
10.0°	8080.9	8084.7	8087.6	8093.1	8088.5	8078.6	8063.4	8050.0
15.0°	7849.6	7862.1	7869.5	7884.2	7879.2	7862.8	7834.7	7800.6
20.0°	7549.9	7569.3	7597.0	7610.6	7617.8	7591.9	7545.9	7499.2
25.0°	7168.5	7184.6	7233.1	7258.4	7274.0	7237.6	7167.7	7111.0
30.0°	6711.4	6737.9	6811.2	6865.5	6874.6	6827.2	6737.4	6652.1
35.0°	6201.2	6240.2	6336.3	6408.0	6435.9	6370.6	6261.2	6143.8
40.0°	5642.4	5708.3	5828.2	5927.7	5958.8	5891.5	5743.9	5602.1
45.0°	5068.2	5137.9	5297.6	5427.5	5469.1	5384.6	5211.7	5036.3
50.0°	4467.0	4558.7	4738.3	4893.3	4955.1	4862.4	4650.0	4439.3
55.0°	3852.5	3965.7	4176.5	4349.1	4415.7	4314.4	4084.1	3842.7
60.0°	3209.5	3358.4	3593.8	3777.3	3840.0	3742.8	3501.0	3232.2
65.0°	2579.4	2738.9	2999.8	3175.3	3228.6	3138.4	2908.1	2621.2
70.0°	1947.7	2127.6	2373.3	2511.8	2543.7	2463.2	2272.0	1998.2
75.0°	1323.1	1521.8	1721.9	1826.0	1850.9	1778.5	1620.0	1398.5
80.0°	728.7	930.4	1078.2	1158.2	1166.3	1120.8	981.8	811.9
85.0°	249.3	383.8	490.0	566.0	579.3	529.9	411.0	290.1
90.0°	0.0	52.8	164.2	251.3	278.2	241.5	141.8	27.5
95.0°	0.0	33.9	119.0	192.6	222.7	188.5	117.9	33.9
100.0°	0.0	50.1	118.1	185.9	209.3	187.3	117.9	52.6
105.0°	0.0	70.8	137.5	185.0	208.1	190.0	144.2	76.7
110.0°	11.6	95.3	165.4	205.8	233.7	213.6	167.5	94.1
115.0°	18.0	68.4	187.2	232.4	258.7	236.3	191.7	70.9
120.0°	24.4	71.1	201.3	260.8	280.7	262.0	201.2	79.5
125.0°	31.7	95.3	195.1	275.5	309.3	278.3	186.5	98.4
130.0°	43.0	94.4	141.8	281.9	320.9	280.7	141.5	96.3
135.0°	55.5	101.7	136.8	202.7	283.1	200.1	136.9	96.9
140.0°	64.1	99.8	160.5	182.2	200.4	178.7	159.6	107.3
145.0°	71.4	121.2	165.7	170.3	186.1	180.5	155.0	116.8
150.0°	85.1	123.4	159.9	199.7	205.3	187.9	130.5	116.5
155.0°	90.6	117.2	147.6	185.3	186.1	156.3	136.3	109.7
160.0°	88.5	114.8	145.7	158.7	155.9	133.3	120.7	103.6
165.0°	90.9	107.5	139.3	142.8	135.8	123.5	106.9	95.4
170.0°	93.4	102.3	108.0	109.8	112.0	107.3	91.0	91.4
175.0°	94.6	103.5	99.7	96.9	110.1	101.4	98.9	94.5
180.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Luminous Intensity (cd) Distribution Data (cont.)

C / γ	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3	8246.3
5.0°	8179.4	8185.2	8191.0	8197.3	8201.1	8202.1	8204.6	8203.8
10.0°	8016.2	8028.8	8044.0	8057.6	8070.8	8071.9	8070.5	8061.0
15.0°	7760.8	7758.9	7790.6	7829.8	7855.8	7850.6	7836.5	7825.0
20.0°	7431.5	7462.4	7510.5	7550.4	7584.2	7576.9	7551.4	7527.0
25.0°	7019.9	7061.5	7123.3	7188.6	7231.9	7210.0	7176.8	7138.2
30.0°	6546.6	6599.9	6686.0	6776.5	6832.8	6808.2	6745.0	6685.2
35.0°	6028.8	6085.7	6207.7	6323.7	6386.8	6351.6	6272.5	6185.7
40.0°	5470.6	5538.5	5692.8	5842.1	5912.1	5871.9	5758.3	5648.0
45.0°	4872.3	4969.4	5157.7	5326.6	5408.1	5366.5	5216.0	5070.6
50.0°	4264.1	4383.4	4603.0	4796.1	4894.1	4843.1	4665.0	4487.6
55.0°	3645.0	3782.2	4020.6	4245.1	4350.7	4296.3	4097.9	3888.2
60.0°	3019.7	3163.3	3440.1	3669.1	3774.4	3713.1	3521.2	3285.4
65.0°	2381.7	2553.8	2840.0	3059.7	3164.3	3105.6	2923.4	2672.5
70.0°	1736.9	1939.8	2221.4	2398.7	2486.1	2457.4	2306.9	2052.9
75.0°	1122.0	1337.4	1576.2	1730.6	1802.1	1783.7	1653.1	1446.8
80.0°	560.6	756.3	936.7	1075.7	1147.7	1123.0	1021.6	866.0
85.0°	141.6	259.2	375.6	494.7	552.5	532.7	443.8	342.7
90.0°	0.0	37.2	133.2	219.5	252.3	226.5	137.5	46.5
95.0°	0.0	30.5	117.5	192.0	223.6	189.7	119.7	32.4
100.0°	0.0	48.9	115.7	182.5	210.5	183.6	110.3	49.5
105.0°	0.0	83.1	147.6	181.9	200.7	176.8	140.6	69.7
110.0°	12.5	92.5	171.2	219.8	231.2	216.7	160.8	92.9
115.0°	20.8	63.8	199.1	241.5	260.5	235.4	190.2	70.6
120.0°	27.8	62.6	200.4	267.2	283.4	260.2	198.4	65.4
125.0°	33.0	83.1	187.8	283.4	310.6	282.3	189.9	87.1
130.0°	33.0	85.8	133.2	281.0	319.4	279.5	133.5	88.0
135.0°	53.7	90.7	121.2	197.5	285.9	210.9	127.4	91.7
140.0°	60.7	92.5	144.5	166.0	187.0	170.4	142.7	96.6
145.0°	72.6	108.7	145.1	154.4	173.3	153.2	152.8	105.2
150.0°	78.1	108.1	138.4	178.9	187.0	183.6	143.3	108.2
155.0°	80.9	102.3	120.0	162.1	181.5	169.8	128.0	105.2
160.0°	82.1	99.5	123.0	126.6	155.3	149.6	131.1	102.7
165.0°	85.4	99.2	113.5	126.0	123.6	139.8	124.9	96.9
170.0°	87.9	93.4	103.7	114.0	115.3	118.3	107.5	98.7
175.0°	88.2	85.2	94.8	107.0	84.2	83.1	100.4	94.5
180.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Test Model: 55800-AI
Control Setting: 175W

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

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	25985.2	≥10000	≥9000	Pass
Power(W)	172.77	None.	None.	N/A
Total Efficacy(lm/W)	150.45	≥135	≥130.95	Pass
Zonal Lumen Distribution(20-50º)	51.55%	20-50º≥30%	20-50º≥20%	Pass
UGR crosswise view	13.5	<28	No tolerances	Pass
UGR endwise view	16.3	<28	No tolerances	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.

[Goniophotometer System]

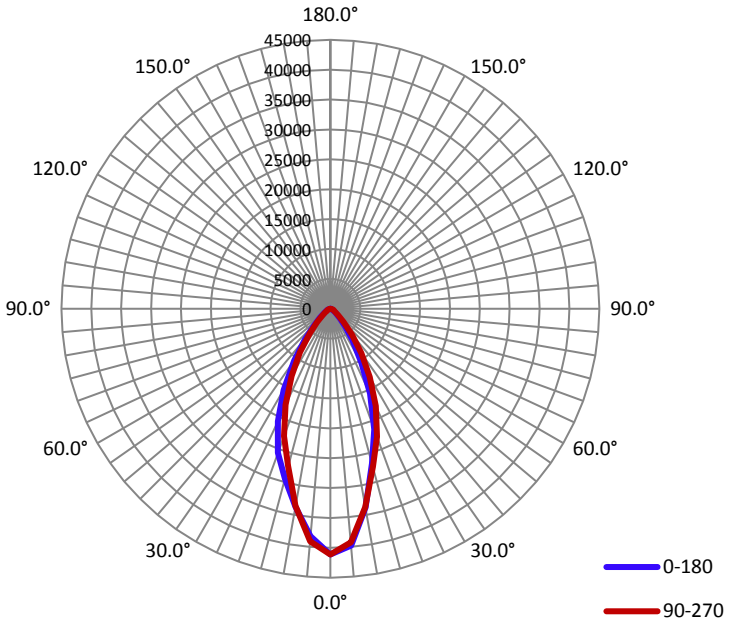
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.0	60	1.466	172.77	0.982

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
25985.2	150.45	41237.9	0.69	0.67

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	46.0	35.0	44.6	35.0	40.2
Field Angle (10% I_{max}):	83.4	79.6	85.2	79.4	81.9

Luminous Intensity (cd) Distribution Data

C / γ	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0.0°	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8
5.0°	39761.4	39696.2	39625.6	39485.9	39213.4	38872.2	38608.6	38577.1
10.0°	33774.6	33782.6	34001.2	34031.7	33689.9	33150.2	33028.3	33501.8
15.0°	26802.4	25938.3	25061.3	26813.4	27391.5	25258.0	24858.6	27868.6
20.0°	21453.6	19148.3	16999.8	21047.9	22796.7	19312.6	17654.8	22678.6
25.0°	15640.5	12891.1	11559.0	15656.6	17924.2	14484.4	13005.9	17252.9
30.0°	10416.5	7896.4	8064.7	10636.4	13189.8	10290.5	9846.8	12113.2
35.0°	6413.2	4802.4	5477.2	6592.5	9045.3	6921.2	7307.6	7964.9
40.0°	3815.4	2978.9	3374.0	3966.8	5597.2	4448.9	4880.1	5116.2
45.0°	2190.4	1881.9	2103.2	2474.7	3129.6	2738.3	3082.0	3293.5
50.0°	1266.5	1207.3	1308.8	1566.0	1739.7	1622.5	1875.3	2162.1
55.0°	810.1	784.9	784.9	1048.7	1033.8	1062.3	1124.9	1403.2
60.0°	488.0	529.6	506.4	709.1	742.0	703.4	610.4	964.8
65.0°	396.4	446.0	341.8	632.0	622.8	552.4	432.6	749.5
70.0°	246.4	362.5	207.3	509.4	478.5	487.9	300.5	617.5
75.0°	82.1	231.7	164.6	386.8	378.1	346.2	149.5	414.8
80.0°	0.0	0.0	0.0	121.1	152.2	154.2	102.3	209.0
85.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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.)

C / γ	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0.0°	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8	41106.8
5.0°	38205.9	38317.1	38413.3	38668.3	39053.4	39341.2	39440.8	39380.0
10.0°	33626.1	33115.9	32423.4	32726.7	33497.0	33737.2	33385.5	33119.9
15.0°	29401.7	27320.5	24317.5	25105.9	27278.5	26348.6	24514.0	25400.1
20.0°	25652.7	22070.4	17164.4	19414.3	22685.3	20324.5	16375.7	18945.2
25.0°	20785.6	16588.7	12760.1	14581.2	17696.8	14860.5	11214.0	12655.3
30.0°	15668.9	11431.6	9783.4	10392.7	13000.0	9947.4	7803.2	7770.1
35.0°	10582.3	7497.6	7207.0	6941.5	8857.0	6214.6	5314.4	4698.2
40.0°	6621.6	4901.7	4790.4	4413.3	5459.2	3830.4	3234.6	2911.6
45.0°	3829.6	3150.7	3040.1	2688.6	3109.2	2357.4	2057.8	1871.4
50.0°	2245.6	1974.9	1848.4	1622.6	1691.1	1452.5	1261.7	1260.2
55.0°	1343.9	1297.1	1027.1	929.2	1043.2	1015.0	780.3	873.6
60.0°	855.9	895.2	572.9	698.1	694.9	727.1	536.5	650.5
65.0°	656.9	663.6	291.2	462.2	605.5	598.0	382.3	465.1
70.0°	484.8	460.2	234.2	418.2	478.5	508.3	240.7	311.1
75.0°	284.3	274.2	109.2	333.3	349.8	336.8	133.7	265.5
80.0°	0.0	83.5	0.0	116.3	128.6	88.1	0.0	130.4
85.0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: 55801
Control Setting: 175W

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

Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances only)	Conclusion
Light Output(lm)	24312.3	≥10000	≥9000	Pass
Power(W)	172.7	None.	None.	N/A
Total Efficacy(lm/W)	140.78	≥135	≥130.95	Pass
CCT(K)	4916	4746~5312	No tolerances	N/A
Duv	0.00183	-0.004~0.008	No tolerances	N/A
IES R_f	83	70	69	Pass
IES R_g	94	89	88	
IES Rcs,h1	-13%	-18%~23%	-19%~24%	
R_a	82.8	≥70	≥69	
R_9	10	≥-40	≥-41	

THDi、PF Test; Orientation: Downward;

Test Voltage	Test Item	Test Result	DLC Requirements	DLC Requirements(With tolerances and/or allowances)	Conclusion
120	Power Factor	0.9762	≥0.9	≥0.87	Pass
120	THDi	10.68%	≤20%	≤25%	Pass
277	Power Factor	0.9025	≥0.9	≥0.87	Pass
277	THDi	13.02%	≤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	1.4741	172.7	0.9763	24312.3	140.78

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
74.860	4916	0.00183	0.3479	0.3575	0.2110	0.4880

Color Rendering Index

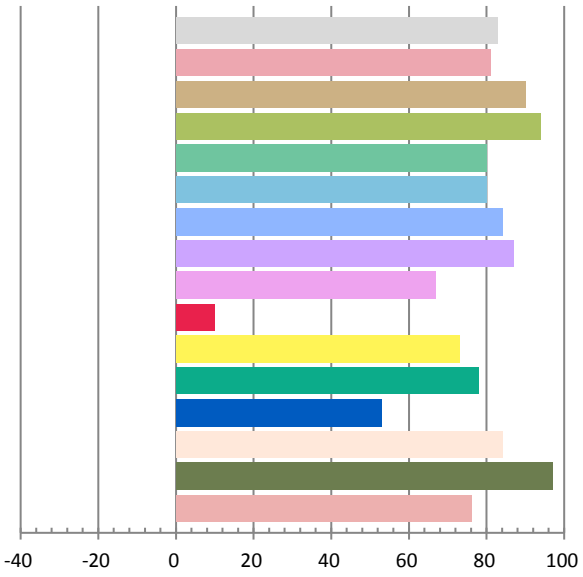
Ra
82.8

R1	R2	R3	R4
81	90	94	80

R5	R6	R7	R8
80	84	87	67

R9	R10	R11	R12
10	73	78	53

R13	R14	R15
84	97	76



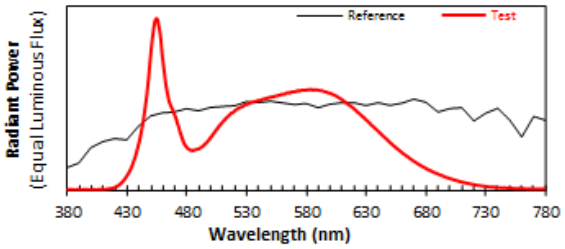
ANSI/IES TM-30-18 Color Rendition Report

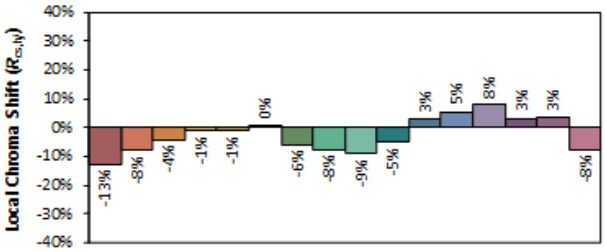
Source: User SPD

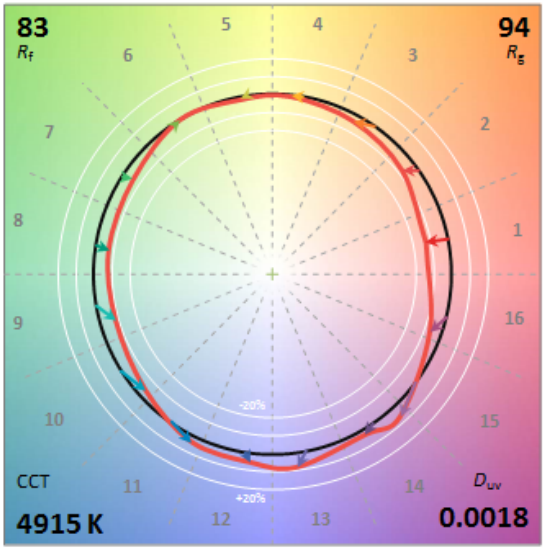
Manufacturer: P.Q.L., Inc.

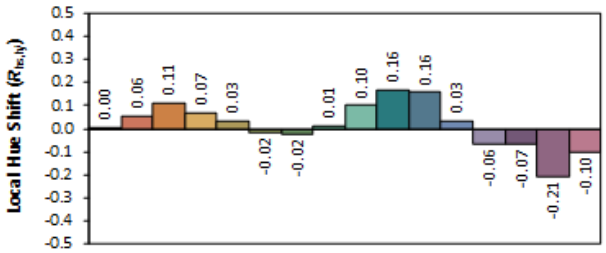
Date: 2023/10/8

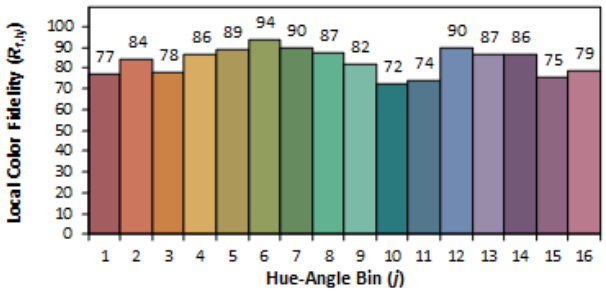
Model: 55801

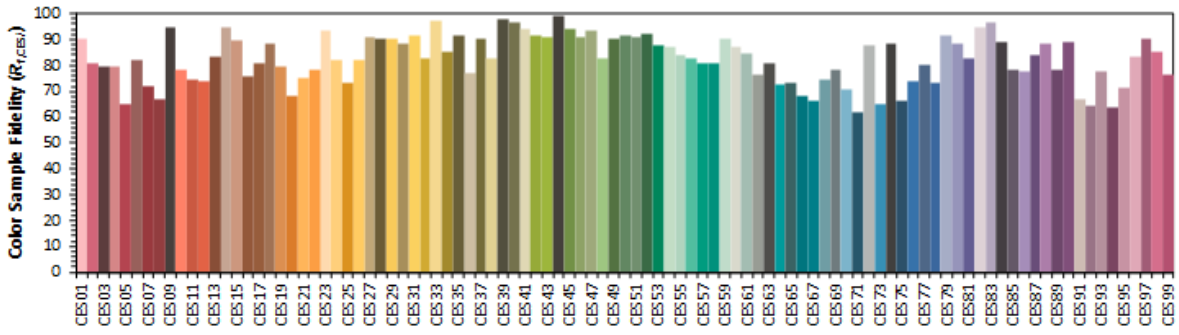












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

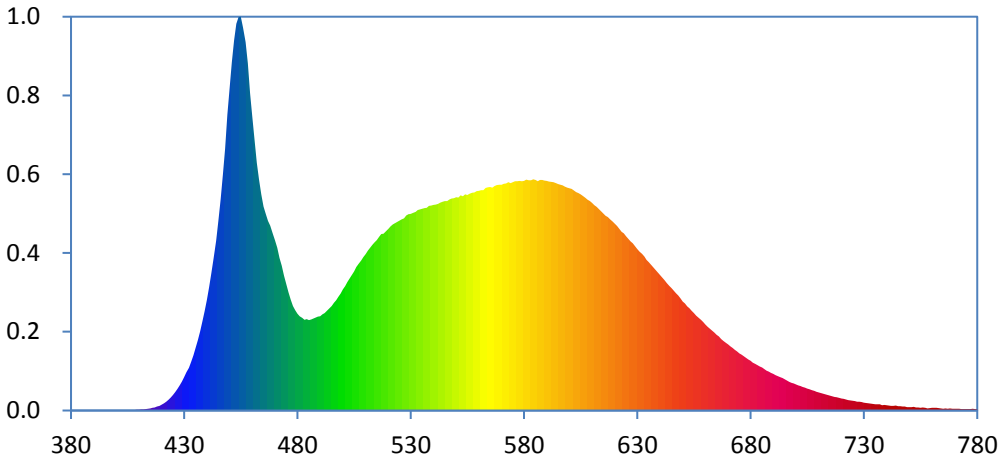
x	0.3479
y	0.3575
u'	0.2110
v'	0.4880

CIE 13.3-1995 (CRI)

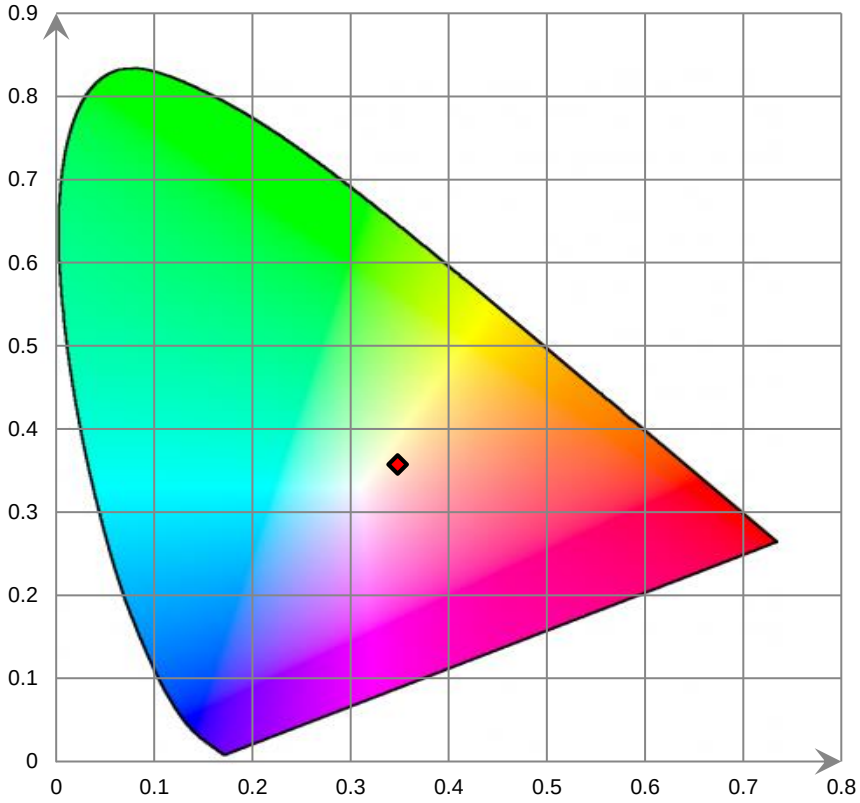
R_a	83
R_9	8

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

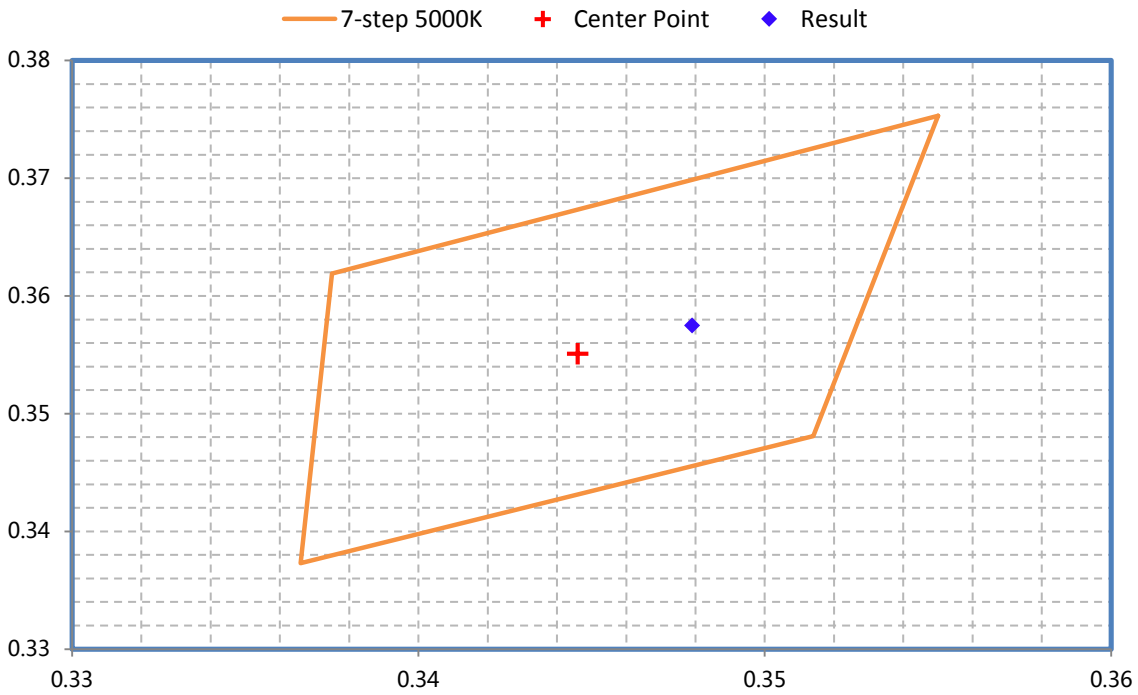
Relative Spectral Power Distribution



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
Integrating Sphere	INVENTFINE	Dia 1.5m	JWWCV090112	2023-05-19	2024-05-18
Power Meter	INVENTFINE	WT500	GSJWQ20009	2022-11-03	2023-11-02
Spectral photometer	INVENTFINE	CMS-3S	GSGSE100017	2023-05-19	2024-05-18
AC Power Supply	INVENTFINE	CHP500	JWJSD010071	2023-05-19	2024-05-18
Standard Light Source	Osram	24V/50W	JWWCR020105	2023-08-10	2025-08-09
Thermal Meter	ANYMETRE	TH-20E	N/A	2022-11-11	2023-11-10
DC Power Supply	INVENTFINE	WL3005	JWWCP020069	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.
6. This report cannot be reproduced except in full, without prior written approval of the Company.
7. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

**********END OF REPORT**********