

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P977046

Luminaire Tested: 24SR-LD2-C-59-UNV-L940-CD1-ST-U

Issue Date: 03/18/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P977046  
Test Lab: INNOVATION CENTER(P3)  
Issue Date: 03/18/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 24SR-LD2-C-59-UNV-L940-CD1-ST-U  
Description: METALUX SKYRIDGE 2x4 5900LM PACKAGE 90CRI 4000K TROFFER with Straw SKYTRIM  
Light Source: 4000K CCT, 90+ CRI LEDS  
Ballast/Driver: -

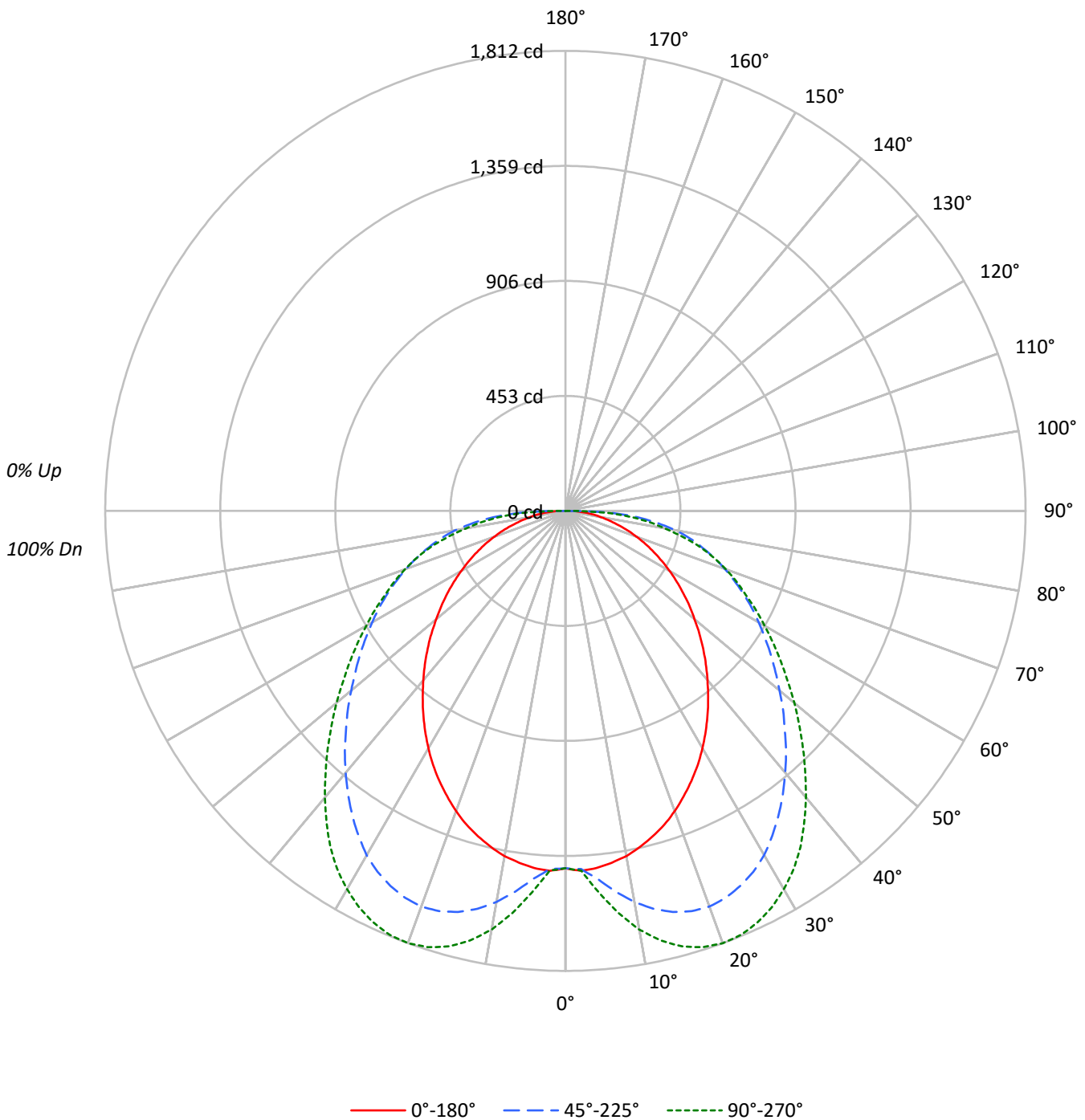
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5344.0 lumens  
Efficiency: N/A  
Efficacy: 122.0 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.62 / 1.56  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

TEST NUMBER: P977046  
CATALOG NUMBER: 24SR-LD2-C-59-UNV-L940-CD1-ST-U

### Luminous Intensity Polar Plot





TEST NUMBER: P977046

CATALOG NUMBER: 24SR-LD2-C-59-UNV-L940-CD1-ST-U

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	107	102	97	92	104	99	95	91	95	91	88	91	88	85	87	85	83	83	83	83	80
2	97	88	80	74	94	86	79	73	82	76	71	79	74	69	76	71	68	68	68	68	66
3	88	76	68	61	85	75	67	60	72	65	59	69	63	58	66	61	57	57	57	57	54
4	80	67	58	51	78	66	57	50	63	56	50	61	54	49	59	53	48	48	48	48	46
5	74	60	50	43	71	59	50	43	57	49	43	55	48	42	53	47	42	42	42	42	40
6	68	54	44	38	66	53	44	38	51	43	37	49	42	37	48	41	37	37	37	37	34
7	63	49	40	33	61	48	39	33	46	39	33	45	38	33	43	37	32	32	32	32	30
8	58	44	36	30	57	44	35	29	42	35	29	41	34	29	40	34	29	29	29	29	27
9	55	41	32	26	53	40	32	26	39	31	26	38	31	26	37	31	26	26	26	26	24
10	51	37	29	24	50	37	29	24	36	29	24	35	28	24	34	28	24	24	24	24	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1894	1894	1894
5°	1907	1965	2037
10°	1886	2137	2288
15°	1849	2278	2474
20°	1802	2375	2594
25°	1743	2420	2656
30°	1677	2432	2672
35°	1603	2404	2651
40°	1528	2364	2588
45°	1459	2324	2518
50°	1389	2304	2463
55°	1331	2317	2431
60°	1277	2365	2438
65°	1223	2464	2496
70°	1173	2628	2645
75°	1118	2899	2855
80°	1110	3422	3088
85°	1218	4404	3852

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 40°  
 Vertical Angle: 87.5°  
 Luminance: 5839 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.5	2.6
10°-20°	449.2	8.4
20°-30°	718.2	13.4
30°-40°	869.5	16.3
40°-50°	887.9	16.6
50°-60°	818.2	15.3
60°-70°	696.0	13.0
70°-80°	520.4	9.7
80°-90°	243.1	4.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1308.9	24.5
0°-40°	2178.3	40.8
0°-60°	3884.5	72.7
0°-90°	5344.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5344.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1408	1408	1408	1408	1408	
5°	1412	1404	1455	1492	1508	134
15°	1327	1446	1636	1738	1776	374
25°	1174	1396	1630	1746	1789	540
35°	976	1233	1464	1575	1614	610
45°	767	1021	1221	1300	1323	592
55°	568	825	988	1026	1036	508
65°	384	653	774	779	784	381
75°	215	472	558	549	549	230
85°	79	249	285	253	250	83
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8
2.5°	1419.2	1416.3	1412.0	1406.2	1404.9	1404.9	1403.3	1403.3	1406.2	1412.0	1420.5
5°	1412.0	1409.1	1404.9	1400.4	1402.0	1406.2	1414.9	1424.9	1439.2	1455.0	1472.2
7.5°	1397.7	1396.2	1393.3	1393.3	1404.9	1424.9	1445.0	1465.1	1488.0	1512.3	1538.2
10°	1380.4	1379.0	1377.5	1389.1	1414.9	1445.0	1473.6	1500.8	1532.4	1563.8	1593.9
12.5°	1356.1	1356.1	1360.3	1386.2	1422.0	1459.3	1495.2	1531.0	1568.3	1605.5	1638.5
15°	1327.3	1327.3	1341.8	1379.0	1424.9	1468.0	1511.0	1551.1	1593.9	1635.6	1670.0
17.5°	1295.9	1294.5	1321.7	1367.4	1419.2	1469.3	1518.1	1562.5	1606.9	1652.8	1688.7
20°	1258.6	1261.5	1297.2	1350.3	1407.8	1463.5	1515.2	1562.5	1609.8	1658.6	1692.9
22.5°	1217.0	1222.8	1267.1	1326.0	1390.4	1447.9	1502.3	1552.5	1601.3	1649.9	1684.4
25°	1173.9	1181.3	1235.7	1297.2	1366.1	1424.9	1479.3	1532.4	1581.2	1629.8	1664.4
27.5°	1128.2	1138.3	1199.8	1264.4	1333.1	1394.8	1449.2	1503.7	1552.5	1602.6	1634.3
30°	1079.4	1092.3	1158.3	1224.1	1295.9	1356.1	1410.5	1466.4	1516.6	1565.4	1595.5
32.5°	1027.9	1043.5	1110.9	1182.6	1252.8	1311.7	1366.1	1423.4	1470.7	1516.6	1546.7
35°	976.2	994.9	1063.6	1135.4	1204.0	1262.9	1315.9	1373.2	1420.5	1463.5	1492.3
37.5°	923.1	946.1	1015.0	1085.2	1152.5	1211.4	1265.8	1318.8	1366.1	1406.2	1435.0
40°	870.1	895.9	964.8	1033.5	1100.8	1156.8	1209.8	1262.9	1310.1	1346.0	1373.2
42.5°	818.6	844.2	914.7	983.3	1045.1	1102.4	1155.4	1206.9	1250.0	1285.8	1310.1
45°	766.9	794.1	862.9	930.3	992.0	1049.3	1102.4	1149.6	1191.3	1221.4	1245.7
47.5°	715.4	743.9	812.8	880.1	939.0	994.9	1049.3	1092.3	1132.5	1162.6	1182.6
50°	663.7	695.3	762.6	831.5	888.8	944.7	996.3	1036.4	1073.6	1100.8	1119.5
52.5°	616.4	646.5	715.4	784.0	841.5	897.3	946.1	984.9	1017.7	1042.2	1060.7
55°	567.6	600.6	672.3	738.3	797.0	852.9	897.3	933.2	963.3	987.6	1002.0
57.5°	520.3	557.6	627.8	693.8	753.9	807.0	850.0	884.4	911.8	931.8	944.7
60°	474.4	513.2	586.3	652.3	712.5	764.0	805.7	837.1	861.6	878.8	890.2
62.5°	428.7	473.1	544.8	613.5	670.8	721.0	759.7	788.5	811.4	827.1	834.2
65°	384.1	430.0	504.5	572.0	629.3	676.6	713.8	739.7	761.1	774.0	776.9
67.5°	341.1	389.9	464.4	531.9	587.6	632.2	668.1	692.4	710.9	719.6	722.5
70°	298.1	348.4	424.2	491.8	544.8	587.6	620.6	643.6	659.4	668.1	668.1
72.5°	257.9	308.3	384.1	450.1	498.9	541.9	572.0	593.4	607.7	613.5	612.1
75°	215.1	266.6	341.1	404.2	451.6	491.8	521.9	543.3	553.3	557.6	556.2
77.5°	177.7	226.5	298.1	356.9	407.1	440.1	470.2	490.2	500.3	503.1	501.8
80°	143.3	189.3	252.3	308.3	351.1	387.0	414.2	435.8	444.3	441.6	428.7
82.5°	110.4	152.0	207.8	256.6	296.7	329.7	358.5	371.2	372.7	365.6	354.0
85°	78.9	110.4	157.6	199.3	236.5	260.8	278.0	288.0	290.9	285.3	272.4
87.5°	44.4	64.4	93.2	123.3	152.0	169.2	179.2	185.0	189.3	183.5	174.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8	1407.8
2.5°	1412.0	1416.3	1414.9	1417.8	1419.2	1419.2	1414.9	1417.8
5°	1473.6	1482.2	1488.0	1496.5	1502.3	1502.3	1503.7	1508.1
7.5°	1541.1	1555.4	1568.3	1578.3	1585.5	1588.3	1592.6	1596.8
10°	1604.0	1621.3	1635.6	1648.5	1657.0	1662.8	1667.1	1674.4
12.5°	1652.8	1672.8	1688.7	1702.9	1714.5	1723.0	1727.3	1733.0
15°	1688.7	1711.6	1730.1	1746.0	1756.0	1766.0	1770.3	1776.1
17.5°	1710.1	1733.0	1753.1	1768.9	1780.3	1790.3	1796.1	1801.9
20°	1715.9	1738.8	1760.2	1776.1	1787.6	1800.4	1806.2	1811.9
22.5°	1707.2	1730.1	1753.1	1770.3	1783.2	1796.1	1801.9	1807.7
25°	1690.0	1714.5	1737.3	1754.6	1766.0	1779.0	1786.1	1789.0
27.5°	1662.8	1687.1	1710.1	1725.9	1738.8	1751.8	1758.9	1760.2
30°	1624.2	1648.5	1671.5	1687.1	1701.6	1713.0	1720.1	1720.1
32.5°	1576.8	1599.7	1624.2	1638.5	1651.4	1662.8	1670.0	1672.8
35°	1522.4	1545.3	1568.3	1581.2	1595.5	1604.0	1609.8	1614.0
37.5°	1463.5	1486.5	1505.2	1516.6	1532.4	1538.2	1546.7	1545.3
40°	1400.4	1419.2	1436.3	1446.4	1459.3	1466.4	1475.1	1473.6
42.5°	1334.6	1353.2	1367.4	1379.0	1386.2	1393.3	1399.1	1397.7
45°	1267.1	1284.5	1297.2	1303.0	1314.6	1317.3	1323.1	1323.1
47.5°	1199.8	1214.1	1225.6	1234.1	1239.9	1242.8	1248.6	1248.6
50°	1135.4	1148.3	1155.4	1162.6	1168.3	1172.6	1175.5	1176.8
52.5°	1072.3	1082.3	1088.1	1093.7	1099.5	1102.4	1105.3	1103.7
55°	1012.1	1019.2	1023.5	1027.9	1032.1	1036.4	1036.4	1036.4
57.5°	951.9	956.1	960.4	963.3	967.5	970.4	970.4	970.4
60°	893.0	897.3	898.8	901.7	906.0	907.3	908.9	906.0
62.5°	835.7	837.1	838.6	840.0	844.2	847.1	847.1	845.8
65°	776.9	776.9	778.4	779.8	782.7	785.6	786.9	784.0
67.5°	719.6	719.6	721.0	721.0	725.4	728.3	729.6	729.6
70°	663.7	662.3	665.2	666.6	669.4	669.4	672.3	672.3
72.5°	607.7	606.4	609.3	609.3	612.1	613.5	613.5	613.5
75°	553.3	549.1	550.4	547.5	550.4	550.4	549.1	549.1
77.5°	494.5	484.4	481.7	475.9	475.9	475.9	473.1	473.1
80°	420.0	410.0	405.7	401.3	401.3	399.9	398.6	398.6
82.5°	345.5	336.8	332.6	328.4	331.1	326.8	328.4	329.7
85°	265.3	257.9	255.2	250.8	249.5	249.5	250.8	249.5
87.5°	172.1	164.8	164.8	160.5	163.4	159.2	154.7	157.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P977046  
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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room Dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	13.6	15.3	13.9	15.6	15.9	15.5	17.2	15.8	17.5	17.8
	3H	15.4	17.0	15.8	17.3	17.7	17.8	19.3	18.2	19.7	20.0
	4H	16.2	17.6	16.6	18.0	18.4	18.9	20.3	19.3	20.7	21.1
	6H	16.7	18.1	17.1	18.4	18.8	19.8	21.2	20.2	21.6	22.0
	8H	16.9	18.2	17.3	18.6	19.0	20.3	21.6	20.7	22.0	22.4
	12H	17.0	18.3	17.5	18.7	19.1	20.6	21.9	21.1	22.3	22.7
4H	2H	14.9	16.3	15.3	16.7	17.1	16.2	17.7	16.6	18.0	18.4
	3H	17.2	18.5	17.6	18.8	19.2	18.8	20.0	19.2	20.4	20.8
	4H	18.2	19.4	18.6	19.8	20.2	20.0	21.2	20.5	21.6	22.0
	6H	19.1	20.1	19.5	20.5	21.0	21.2	22.2	21.6	22.6	23.1
	8H	19.4	20.3	19.8	20.8	21.2	21.7	22.6	22.1	23.1	23.5
	12H	19.6	20.5	20.1	20.9	21.4	22.2	23.0	22.6	23.5	24.0
8H	4H	19.1	20.1	19.6	20.5	21.0	20.6	21.5	21.0	22.0	22.4
	6H	20.4	21.2	20.9	21.7	22.1	21.9	22.7	22.4	23.2	23.7
	8H	20.9	21.6	21.4	22.1	22.6	22.5	23.3	23.0	23.8	24.3
	12H	21.4	22.0	21.9	22.5	23.1	23.2	23.8	23.7	24.3	24.9
12H	4H	19.3	20.2	19.8	20.6	21.1	20.7	21.5	21.2	22.0	22.5
	6H	20.7	21.4	21.2	21.9	22.4	22.1	22.8	22.6	23.3	23.8
	8H	21.4	22.0	21.9	22.5	23.1	22.8	23.5	23.3	24.0	24.5

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-7

Test Date: 07/02/2025

Luminaire Tested: 24SR-LD2-64-C-UNV-L940-CD1-U

Data in this report applies to families of products including 24SR-LD2-64-C-UNV-L940-CD1-U

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2506-457-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 07/02/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Metalux  
 Catalog Number: **24SR-LD2-64-C-UNV-L940-CD1-U**  
 Description: 2X4 SKYRIDGE 6400LM Fixture with new LTN chip

**Spectral Parameters**

CCT (K): 3850  
 CIE u': 0.2283  
 CIE v': 0.5037  
 Duv: -0.0006  
 CIE x: 0.3868  
 CIE y: 0.3794  
 CIE z: 0.2338  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 579  
 Purity: 29.94798  
 Rf: 91.3  
 Rg: 99.8

CRI (Ra): 94.0  
 R1: 95.3  
 R2: 96.3  
 R3: 95.7  
 R4: 95.2  
 R5: 94.4  
 R6: 94.3  
 R7: 94.1  
 R8: 86.7  
 R9: 65.3  
 R10: 89.6  
 R11: 95.5  
 R12: 76.1  
 R13: 95.5  
 R14: 96.8  
 R15: 92.3



**Test Conditions**

Stabilization Time: 38M  
 Operation Time: 1H 38M  
 Sphere Temperature (°C): 24.4

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Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

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CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

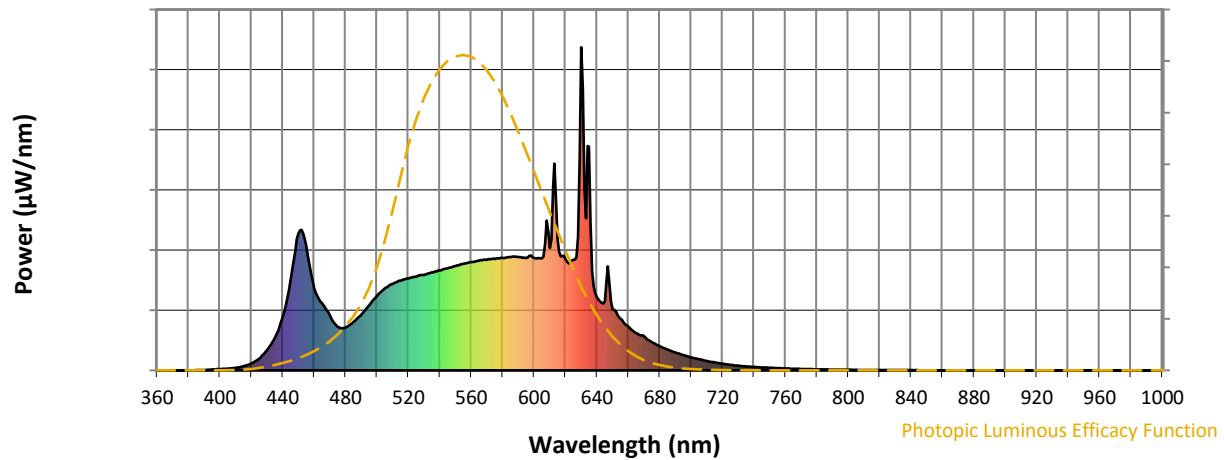


CCT = 3850K  
 CIE x = 0.3868  
 CIE y = 0.3794  
 Duv = -0.0006

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2506-457-7

**Photopic Flux vs. Wavelength**

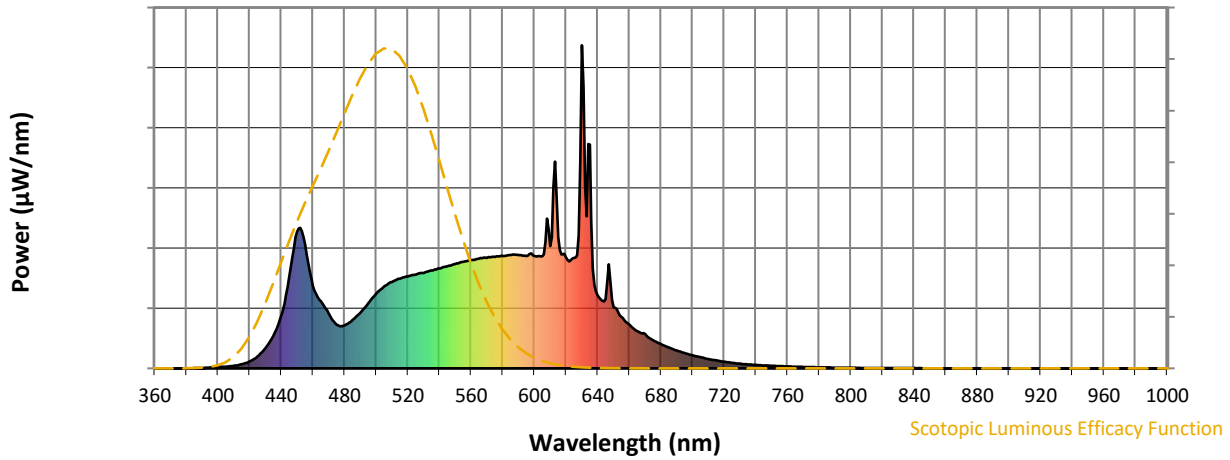


**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	173	NR	620	343	NR	750	8	NR	880	0	NR
365	0	NR	495	201	NR	625	342	NR	755	7	NR	885	0	NR
370	0	NR	500	231	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	253	NR	635	692	NR	765	5	NR	895	0	NR
380	0	NR	510	268	NR	640	226	NR	770	4	NR	900	0	NR
385	1	NR	515	277	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	284	NR	650	190	NR	780	3	NR	910	0	NR
395	3	NR	525	290	NR	655	160	NR	785	3	NR	915	0	NR
400	4	NR	530	296	NR	660	136	NR	790	2	NR	920	0	NR
405	5	NR	535	303	NR	665	115	NR	795	2	NR	925	0	NR
410	8	NR	540	310	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	316	NR	675	87	NR	805	2	NR	935	0	NR
420	22	NR	550	323	NR	680	75	NR	810	1	NR	940	0	NR
425	37	NR	555	330	NR	685	64	NR	815	1	NR	945	0	NR
430	62	NR	560	335	NR	690	55	NR	820	1	NR	950	0	NR
435	102	NR	565	340	NR	695	47	NR	825	1	NR	955	0	NR
440	164	NR	570	342	NR	700	40	NR	830	1	NR	960	0	NR
445	281	NR	575	345	NR	705	34	NR	835	1	NR	965	0	NR
450	423	NR	580	348	NR	710	29	NR	840	1	NR	970	0	NR
455	384	NR	585	350	NR	715	25	NR	845	1	NR	975	0	NR
460	256	NR	590	351	NR	720	21	NR	850	0	NR	980	0	NR
465	208	NR	595	348	NR	725	17	NR	855	0	NR	985	0	NR
470	169	NR	600	348	NR	730	14	NR	860	0	NR	990	0	NR
475	135	NR	605	347	NR	735	12	NR	865	0	NR	995	0	NR
480	133	NR	610	379	NR	740	11	NR	870	0	NR	1000	0	NR
485	149	NR	615	406	NR	745	9	NR	875	0	NR			

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.74**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	173	NR	620	343	NR	750	8	NR	880	0	NR
365	0	NR	495	201	NR	625	342	NR	755	7	NR	885	0	NR
370	0	NR	500	231	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	253	NR	635	692	NR	765	5	NR	895	0	NR
380	0	NR	510	268	NR	640	226	NR	770	4	NR	900	0	NR
385	1	NR	515	277	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	284	NR	650	190	NR	780	3	NR	910	0	NR
395	3	NR	525	290	NR	655	160	NR	785	3	NR	915	0	NR
400	4	NR	530	296	NR	660	136	NR	790	2	NR	920	0	NR
405	5	NR	535	303	NR	665	115	NR	795	2	NR	925	0	NR
410	8	NR	540	310	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	316	NR	675	87	NR	805	2	NR	935	0	NR
420	22	NR	550	323	NR	680	75	NR	810	1	NR	940	0	NR
425	37	NR	555	330	NR	685	64	NR	815	1	NR	945	0	NR
430	62	NR	560	335	NR	690	55	NR	820	1	NR	950	0	NR
435	102	NR	565	340	NR	695	47	NR	825	1	NR	955	0	NR
440	164	NR	570	342	NR	700	40	NR	830	1	NR	960	0	NR
445	281	NR	575	345	NR	705	34	NR	835	1	NR	965	0	NR
450	423	NR	580	348	NR	710	29	NR	840	1	NR	970	0	NR
455	384	NR	585	350	NR	715	25	NR	845	1	NR	975	0	NR
460	256	NR	590	351	NR	720	21	NR	850	0	NR	980	0	NR
465	208	NR	595	348	NR	725	17	NR	855	0	NR	985	0	NR
470	169	NR	600	348	NR	730	14	NR	860	0	NR	990	0	NR
475	135	NR	605	347	NR	735	12	NR	865	0	NR	995	0	NR
480	133	NR	610	379	NR	740	11	NR	870	0	NR	1000	0	NR
485	149	NR	615	406	NR	745	9	NR	875	0	NR			

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 3.6**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	173	NR	620	343	NR	750	8	NR	880	0	NR
365	0	NR	495	201	NR	625	342	NR	755	7	NR	885	0	NR
370	0	NR	500	231	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	253	NR	635	692	NR	765	5	NR	895	0	NR
380	0	NR	510	268	NR	640	226	NR	770	4	NR	900	0	NR
385	1	NR	515	277	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	284	NR	650	190	NR	780	3	NR	910	0	NR
395	3	NR	525	290	NR	655	160	NR	785	3	NR	915	0	NR
400	4	NR	530	296	NR	660	136	NR	790	2	NR	920	0	NR
405	5	NR	535	303	NR	665	115	NR	795	2	NR	925	0	NR
410	8	NR	540	310	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	316	NR	675	87	NR	805	2	NR	935	0	NR
420	22	NR	550	323	NR	680	75	NR	810	1	NR	940	0	NR
425	37	NR	555	330	NR	685	64	NR	815	1	NR	945	0	NR
430	62	NR	560	335	NR	690	55	NR	820	1	NR	950	0	NR
435	102	NR	565	340	NR	695	47	NR	825	1	NR	955	0	NR
440	164	NR	570	342	NR	700	40	NR	830	1	NR	960	0	NR
445	281	NR	575	345	NR	705	34	NR	835	1	NR	965	0	NR
450	423	NR	580	348	NR	710	29	NR	840	1	NR	970	0	NR
455	384	NR	585	350	NR	715	25	NR	845	1	NR	975	0	NR
460	256	NR	590	351	NR	720	21	NR	850	0	NR	980	0	NR
465	208	NR	595	348	NR	725	17	NR	855	0	NR	985	0	NR
470	169	NR	600	348	NR	730	14	NR	860	0	NR	990	0	NR
475	135	NR	605	347	NR	735	12	NR	865	0	NR	995	0	NR
480	133	NR	610	379	NR	740	11	NR	870	0	NR	1000	0	NR
485	149	NR	615	406	NR	745	9	NR	875	0	NR			

**Summary**

$R_f = 91.3$   
 $R_g = 99.8$   
 $CIE R_a = 94.0$   
 $R_9 = 65.3$



**Color Vector Graphics**

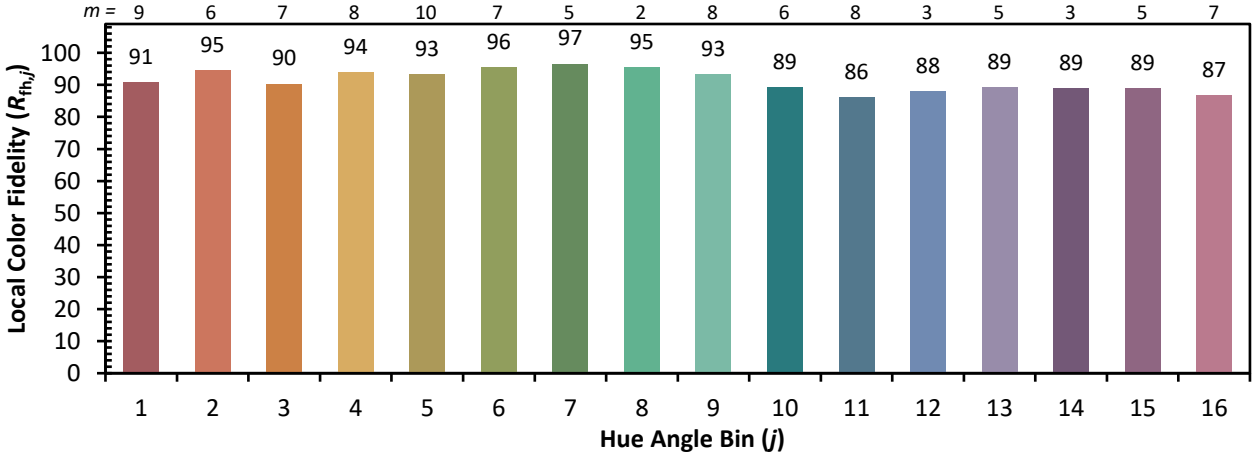


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

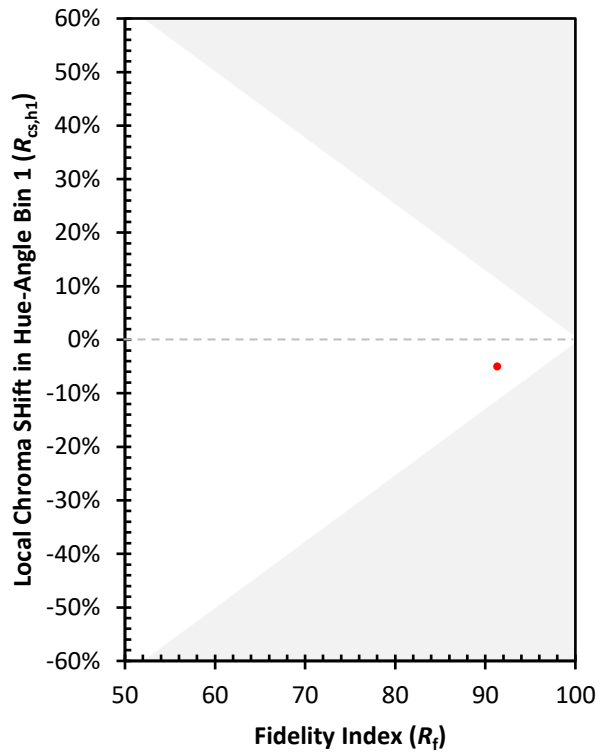
CES01 = 86	CES26 = 93	CES51 = 98	CES76 = 87
CES02 = 62	CES27 = 91	CES52 = 99	CES77 = 88
CES03 = 31	CES28 = 96	CES53 = 97	CES78 = 83
CES04 = 69	CES29 = 96	CES54 = 94	CES79 = 93
CES05 = 49	CES30 = 93	CES55 = 92	CES80 = 92
CES06 = 50	CES31 = 96	CES56 = 95	CES81 = 79
CES07 = 42	CES32 = 88	CES57 = 94	CES82 = 96
CES08 = 41	CES33 = 99	CES58 = 95	CES83 = 95
CES09 = 29	CES34 = 93	CES59 = 97	CES84 = 94
CES10 = 74	CES35 = 96	CES60 = 93	CES85 = 81
CES11 = 57	CES36 = 81	CES61 = 92	CES86 = 83
CES12 = 63	CES37 = 94	CES62 = 87	CES87 = 92
CES13 = 43	CES38 = 88	CES63 = 93	CES88 = 98
CES14 = 74	CES39 = 99	CES64 = 91	CES89 = 85
CES15 = 71	CES40 = 97	CES65 = 89	CES90 = 97
CES16 = 47	CES41 = 97	CES66 = 88	CES91 = 73
CES17 = 49	CES42 = 93	CES67 = 87	CES92 = 77
CES18 = 56	CES43 = 93	CES68 = 88	CES93 = 86
CES19 = 71	CES44 = 99	CES69 = 89	CES94 = 76
CES20 = 66	CES45 = 96	CES70 = 86	CES95 = 83
CES21 = 85	CES46 = 97	CES71 = 81	CES96 = 92
CES22 = 78	CES47 = 93	CES72 = 94	CES97 = 95
CES23 = 91	CES48 = 92	CES73 = 80	CES98 = 95
CES24 = 90	CES49 = 96	CES74 = 91	CES99 = 93
CES25 = 71	CES50 = 98	CES75 = 83	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)