

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

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Peachtree City, GA 30269

Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1445256

Luminaire Tested: TPTN-VA3-830-U-DL-CG-GM

Issue Date: 05/21/2026

Test Information

Test Method: LM-79-2024
Report Number: P1445256
Test Lab: INNOVATION CENTER(G1)
Issue Date: 5/21/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: MCGRAW-EDISON
Catalog Number: TPTN-VA3-830-U-DL-CG-GM
Description: TOPTIER NANO SPIDER MOUNT VISUAL COMFORT LED LUMINAIRE 60W 80CRI 3000K w/
DRIVE LANE TYPE IV DISTRIBUTION OPTIC AND GLASS
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4507.1 lumens
Efficiency: N/A
Efficacy: 75.1 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

Input Watts (W): 60
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): 5.3%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

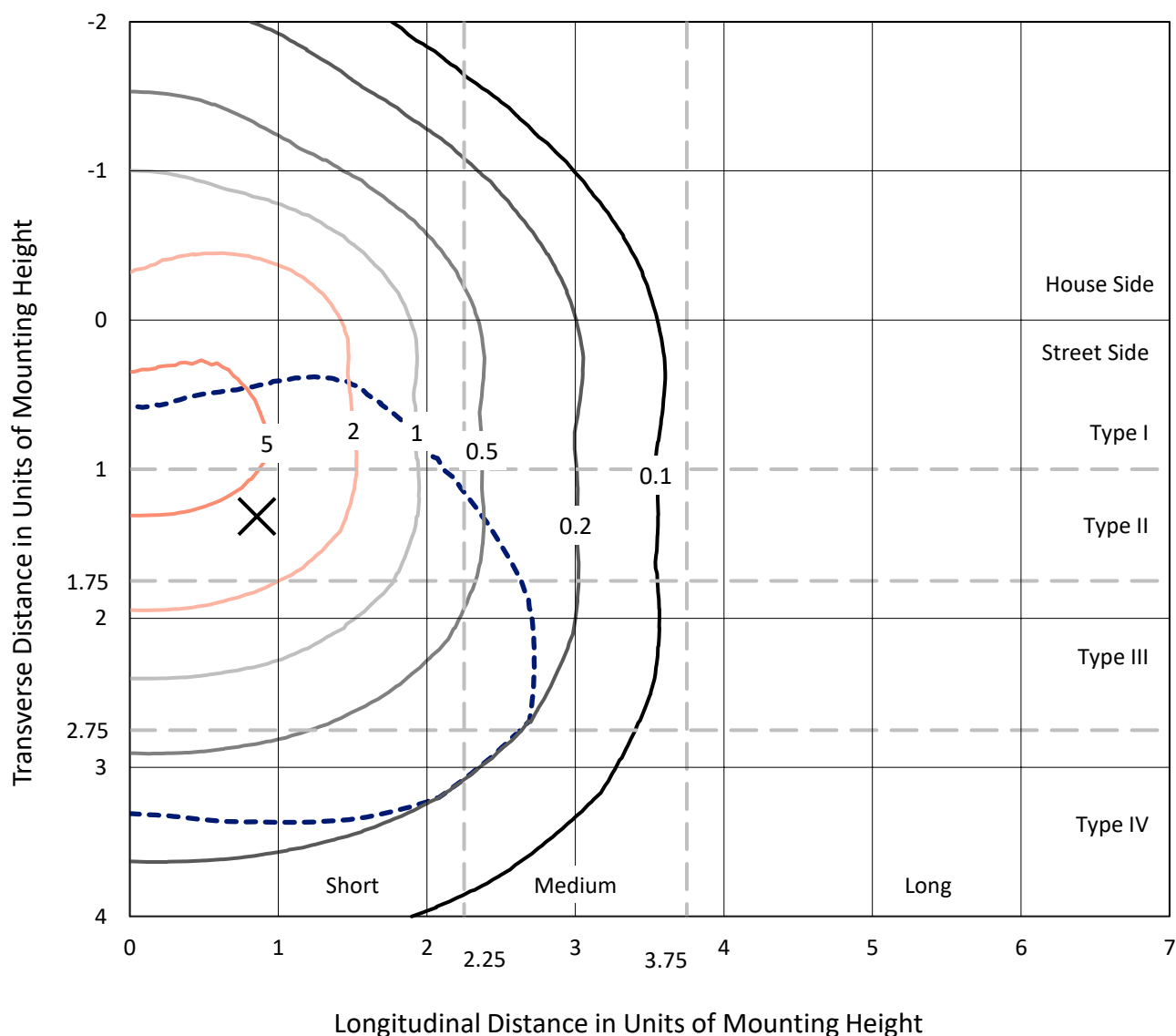
REPORT NUMBER: P1445256

CATALOG NUMBER: TPTN-VA3-830-U-DL-CG-GM

Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

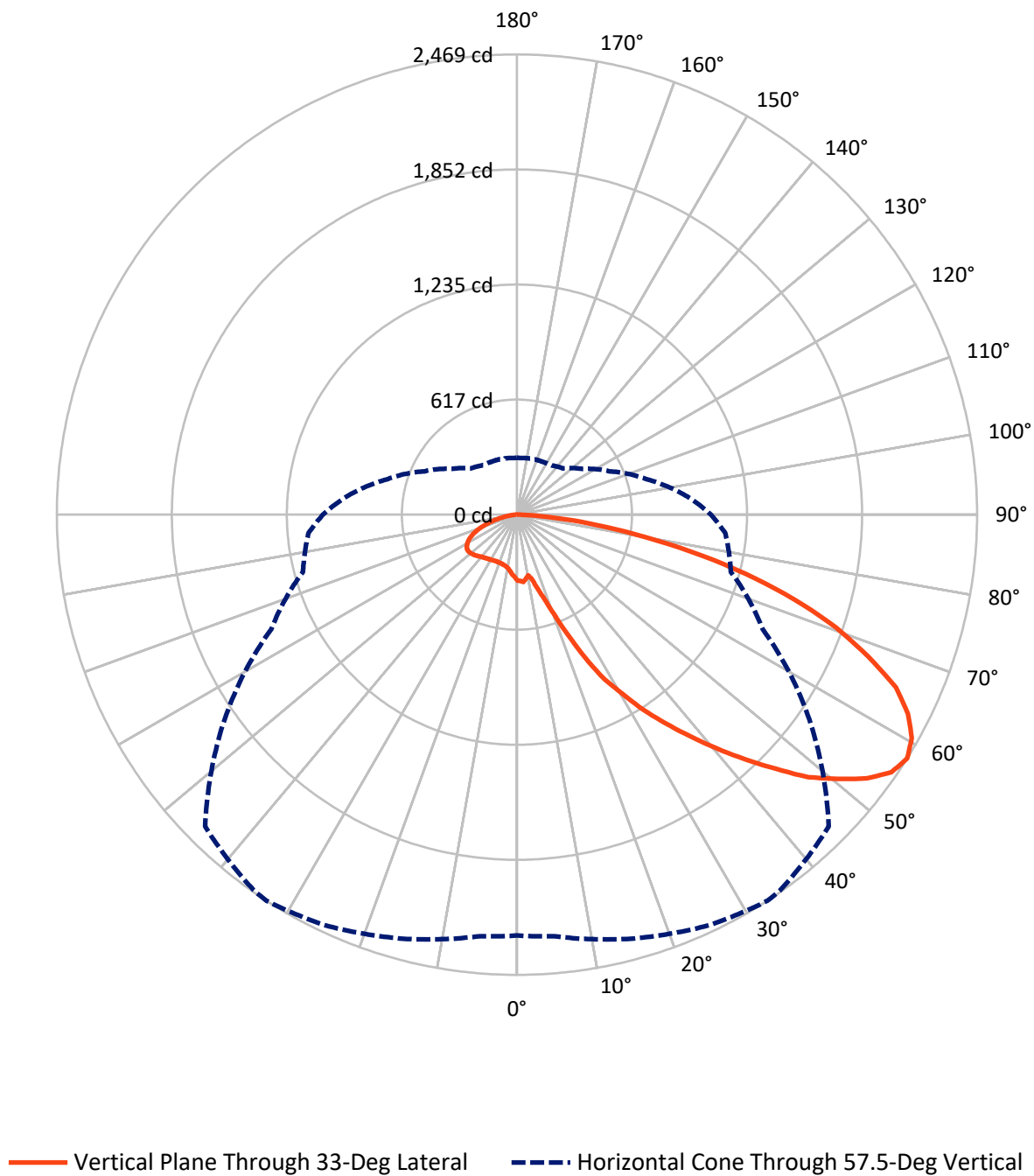


Based on 10 foot mounting height. Maximum calculated value = 8.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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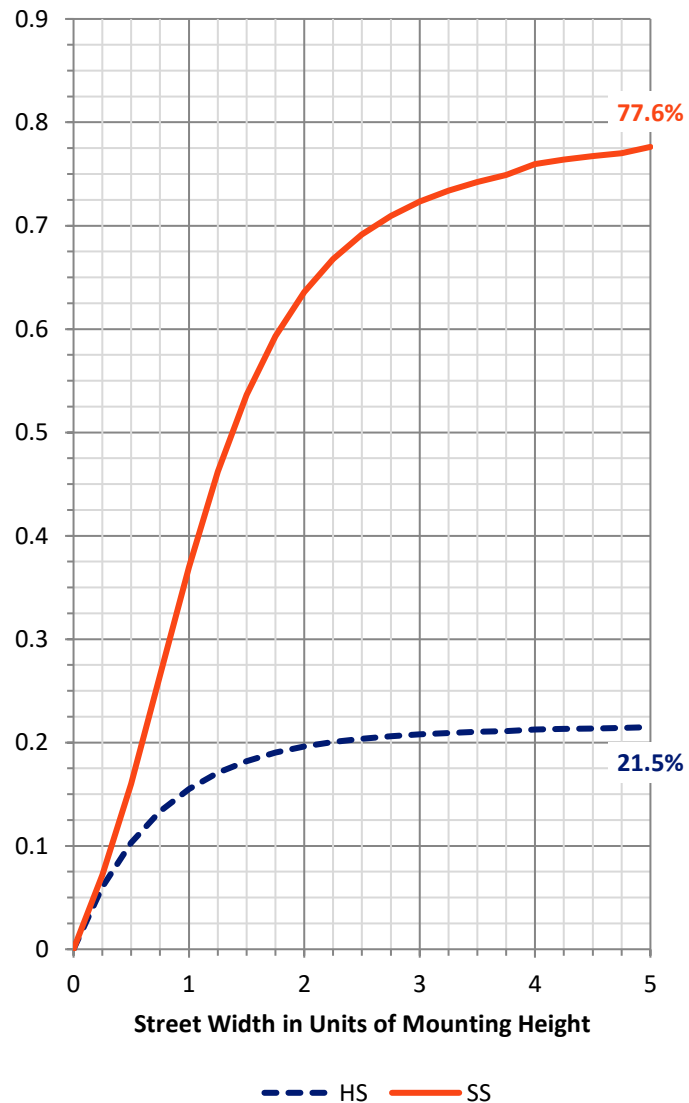
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	976.0	0.0	976.0
	% Fixture	21.7	0.0	21.7
Street Side	Lumens	3531.2	0.0	3531.2
	% Fixture	78.3	0.0	78.3
Total	Lumens	4507.1	0.0	4507.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.9	0.7
10°-20°	101.8	2.3
20°-30°	251.2	5.6
30°-40°	487.5	10.8
40°-50°	792.4	17.6
50°-60°	1071.4	23.8
60°-70°	1043.1	23.1
70°-80°	614.8	13.6
80°-90°	113.2	2.5
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°-90°	4507.1	100.0
0°-180°	4507.1	100.0

Coefficient of Utilization



REPORT NUMBER: P1445256

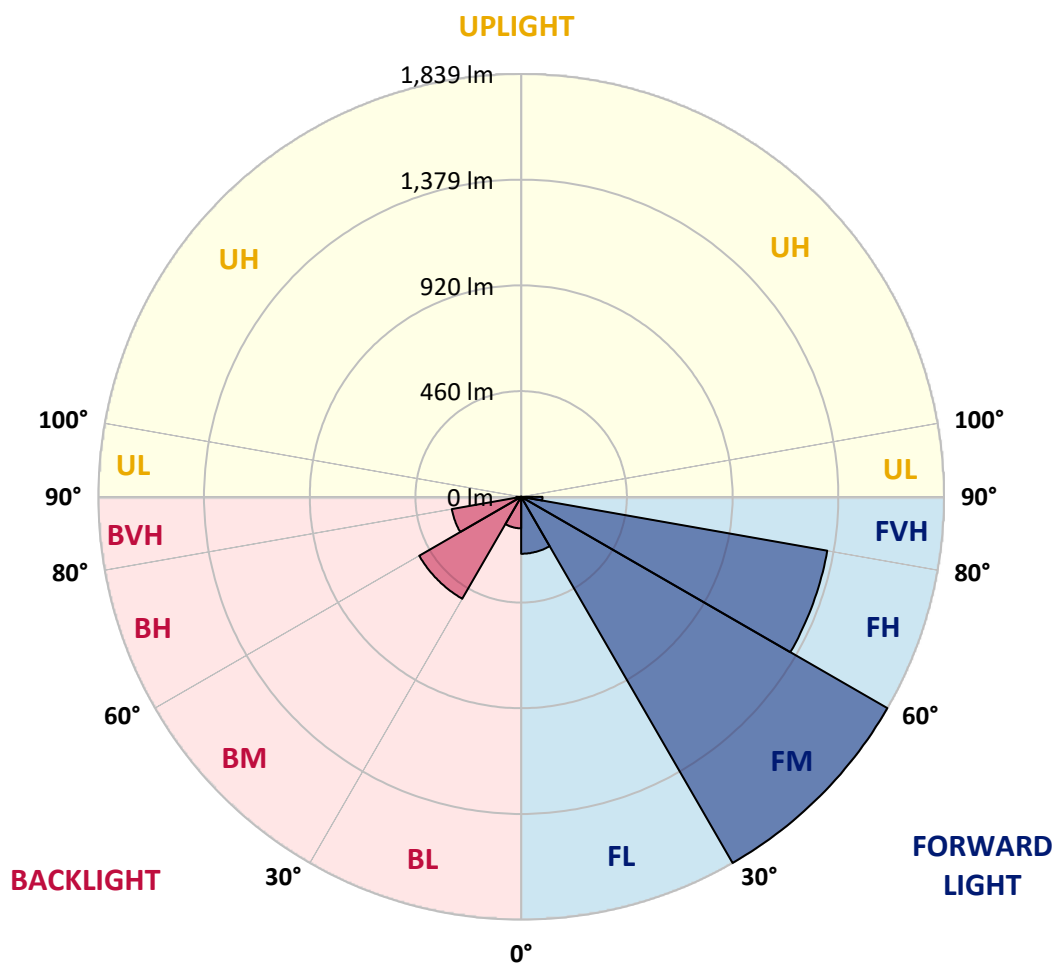
CATALOG NUMBER: TPTN-VA3-830-U-DL-CG-GM

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	247.8	5.5			
FM	(30°-60°)	1839.2	40.8			
FH	(60°-80°)	1351.7	30.0			G1/1800
FVH	(80°-90°)	92.6	2.1			G1/100
BL	(0°-30°)	137.1	3.0	B1/500		
BM	(30°-60°)	512.1	11.4	B1/1000		
BH	(60°-80°)	306.2	6.8	B1/500		G1/500
BVH	(80°-90°)	20.6	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type IV Short



REPORT NUMBER: P1445256

CATALOG NUMBER: TPTN-VA3-830-U-DL-CG-GM

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0
2.5°	358.5	357.6	357.6	356.7	355.8	355.8	354.9	354.0	352.2	350.4	348.6
5°	375.5	373.7	370.1	366.5	363.0	363.0	361.2	360.3	358.5	357.6	355.8
7.5°	358.5	358.5	356.7	352.2	346.8	345.9	337.9	335.2	337.9	337.0	337.9
10°	366.5	365.6	355.8	344.1	330.7	328.0	320.8	318.1	323.5	328.9	333.4
12.5°	394.3	394.3	383.6	368.3	354.0	350.4	335.2	329.8	330.7	337.0	342.3
15°	440.0	440.0	432.0	419.4	406.0	398.8	375.5	360.3	355.8	358.5	363.9
17.5°	509.9	506.3	510.8	492.9	475.0	468.7	432.0	404.2	392.5	393.4	395.2
20°	617.5	615.7	615.7	604.0	572.7	560.1	510.8	461.5	440.9	438.2	436.4
22.5°	754.6	750.1	751.9	737.6	699.0	688.3	612.1	543.1	501.0	488.4	487.5
25°	912.3	913.2	915.0	895.3	849.6	839.7	738.5	638.1	571.8	547.6	541.3
27.5°	1071.8	1071.8	1061.1	1032.4	999.3	982.2	872.0	742.9	650.6	614.8	597.8
30°	1215.2	1214.3	1191.0	1148.9	1114.9	1103.2	981.3	841.5	725.9	672.1	650.6
32.5°	1354.1	1351.5	1310.2	1273.5	1249.3	1231.4	1099.6	936.5	798.5	726.8	699.9
35°	1495.7	1479.6	1432.1	1401.6	1375.6	1355.0	1224.2	1033.3	870.2	785.1	751.0
37.5°	1620.3	1615.8	1560.3	1537.0	1507.4	1496.6	1357.7	1132.8	946.4	843.3	806.6
40°	1742.2	1740.4	1696.5	1673.2	1647.2	1632.0	1499.3	1241.2	1029.7	906.9	865.7
42.5°	1851.5	1855.1	1831.8	1816.6	1794.2	1782.5	1643.6	1355.0	1110.4	967.0	923.1
45°	1974.3	1975.2	1970.7	1964.4	1943.8	1944.7	1798.7	1476.0	1200.9	1032.4	983.1
47.5°	2087.2	2094.4	2105.1	2106.0	2104.3	2095.3	1963.5	1591.6	1286.0	1091.6	1039.6
50°	2167.9	2179.5	2219.0	2231.5	2227.9	2225.2	2095.3	1709.0	1354.1	1143.5	1079.0
52.5°	2245.0	2253.9	2311.3	2351.6	2350.7	2344.4	2219.9	1811.2	1420.5	1180.3	1115.8
55°	2282.6	2288.0	2362.4	2426.9	2438.5	2439.4	2332.8	1885.6	1458.1	1203.6	1134.6
57.5°	2257.5	2270.0	2355.2	2431.4	2469.0	2460.9	2365.9	1915.2	1454.5	1188.3	1122.0
60°	2199.2	2217.2	2298.7	2385.7	2434.0	2422.4	2333.7	1903.5	1422.3	1149.8	1094.2
62.5°	2110.5	2132.9	2212.7	2296.9	2354.3	2357.9	2274.5	1868.6	1362.2	1102.3	1050.3
65°	1940.2	1969.8	2088.1	2180.4	2235.1	2248.5	2158.0	1785.2	1284.2	1030.6	968.8
67.5°	1753.8	1773.6	1868.6	2003.9	2032.6	2051.4	1998.5	1647.2	1183.0	917.7	869.3
70°	1541.4	1571.9	1647.2	1779.8	1817.5	1830.9	1799.5	1476.9	1037.8	793.1	766.2
72.5°	1304.0	1316.5	1401.6	1501.1	1558.5	1575.5	1542.3	1280.7	878.3	661.4	640.8
75°	1022.6	1042.3	1107.7	1206.3	1269.0	1264.5	1259.1	1048.5	695.4	527.0	506.3
77.5°	759.1	769.8	833.5	905.2	956.2	960.7	958.9	799.4	521.6	383.6	369.2
80°	495.6	509.0	555.6	612.1	646.2	661.4	656.0	557.4	357.6	258.1	247.3
82.5°	280.5	284.1	319.0	349.5	391.6	388.9	399.7	339.7	217.8	151.5	138.0
85°	99.5	105.8	123.7	155.9	173.0	184.6	186.4	159.5	97.7	68.1	51.1
87.5°	9.9	9.9	17.0	25.1	32.3	34.1	35.0	35.8	28.7	22.4	7.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

REPORT NUMBER: P1445256

CATALOG NUMBER: TPTN-VA3-830-U-DL-CG-GM

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0	354.0
2.5°	348.6	346.8	343.2	339.7	338.8	335.2	334.3	333.4	331.6	331.6	330.7
5°	352.2	350.4	345.0	338.8	332.5	327.1	322.6	318.1	314.6	311.9	311.9
7.5°	339.7	340.6	340.6	336.1	327.1	317.3	305.6	296.6	288.6	285.0	283.2
10°	334.3	337.0	336.1	331.6	322.6	309.2	293.9	279.6	268.0	260.8	259.9
12.5°	344.1	344.1	341.4	334.3	321.7	304.7	286.8	268.0	254.5	246.5	245.6
15°	365.6	364.7	354.9	341.4	323.5	303.8	283.2	262.6	245.6	236.6	235.7
17.5°	396.1	391.6	375.5	352.2	328.0	303.8	280.5	258.1	240.2	229.4	227.6
20°	433.8	424.8	399.7	365.6	333.4	305.6	278.7	254.5	236.6	224.9	224.0
22.5°	480.4	466.0	426.6	380.9	342.3	309.2	278.7	252.7	235.7	226.7	226.7
25°	527.0	507.2	457.1	397.9	351.3	311.9	278.7	254.5	240.2	233.9	233.0
27.5°	578.0	550.3	486.6	417.6	360.3	315.5	280.5	255.4	244.7	240.2	240.2
30°	624.6	593.3	517.1	436.4	370.1	319.9	284.1	258.1	247.3	245.6	243.8
32.5°	668.6	631.8	545.8	454.4	381.8	324.4	286.8	260.8	250.9	249.1	248.2
35°	717.0	676.6	571.8	471.4	390.7	331.6	290.4	265.3	255.4	253.6	253.6
37.5°	768.9	718.7	602.2	489.3	399.7	338.8	293.9	271.5	261.7	259.9	259.0
40°	819.1	763.6	632.7	507.2	410.5	344.1	298.4	276.9	268.9	267.1	266.2
42.5°	872.9	809.3	662.3	523.4	421.2	349.5	304.7	285.0	277.8	274.2	273.3
45°	922.2	853.2	689.2	540.4	431.1	355.8	311.9	294.8	287.7	284.1	283.2
47.5°	969.7	890.8	714.3	552.9	439.1	360.3	319.0	302.9	297.5	293.9	292.2
50°	1008.2	921.3	732.2	561.0	444.5	363.0	324.4	310.1	305.6	300.2	299.3
52.5°	1036.0	945.5	744.7	567.3	445.4	363.0	328.0	318.1	312.8	307.4	305.6
55°	1049.4	954.4	743.8	564.6	440.0	360.3	328.0	319.9	315.5	309.2	308.3
57.5°	1040.5	941.9	726.8	549.4	427.5	350.4	322.6	314.6	310.1	304.7	304.7
60°	1012.7	915.9	699.9	526.1	407.8	334.3	311.0	304.7	300.2	295.7	295.7
62.5°	968.8	878.3	665.9	491.1	383.6	315.5	295.7	290.4	287.7	283.2	282.3
65°	892.6	804.8	617.5	454.4	351.3	291.3	274.2	272.4	268.9	262.6	261.7
67.5°	804.8	724.1	546.7	408.7	313.7	260.8	248.2	246.5	242.9	237.5	238.4
70°	706.2	634.5	473.2	352.2	268.0	227.6	216.9	214.2	211.5	210.6	209.7
72.5°	595.1	534.1	396.1	287.7	224.0	191.8	182.8	181.0	179.2	178.3	177.4
75°	462.4	421.2	316.4	226.7	177.4	154.1	146.1	145.2	145.2	143.4	141.6
77.5°	340.6	306.5	230.3	164.9	128.2	112.0	109.3	109.3	110.2	109.3	106.6
80°	225.8	204.3	150.6	109.3	85.1	74.4	74.4	75.3	76.2	75.3	76.2
82.5°	120.1	112.9	85.1	63.6	50.2	43.9	44.8	45.7	47.5	45.7	47.5
85°	43.9	44.8	37.6	28.7	24.2	22.4	23.3	24.2	25.1	24.2	24.2
87.5°	2.7	9.0	15.2	13.4	11.7	11.7	11.7	11.7	11.7	10.8	9.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2411-284-4

Test Date: 11/22/2024

Luminaire Tested: TTN-D0-830-U-WQ

Data in this report applies to families of products including TTN-D0-830-U-WQ

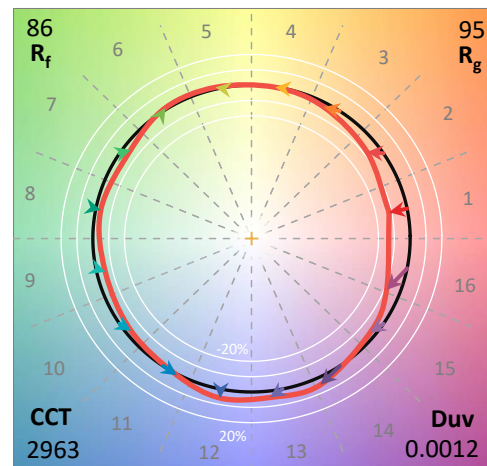
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2411-284-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/22/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **TTN-D0-830-U-WQ**
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3000K, 80 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K): 2963
 CIE u' : 0.2515
 CIE v' : 0.5238
 Duv: 0.0012
 CIE x: 0.4414
 CIE y: 0.4086
 CIE z: 0.1501
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 582
 Purity: 55.12798
 R_f: 86.1
 R_g: 94.9

CRI (Ra): 82.9
 R1: 81.4
 R2: 91.9
 R3: 95.2
 R4: 81.6
 R5: 82.3
 R6: 91.4
 R7: 82.0
 R8: 57.2
 R9: 3.9
 R10: 82.5
 R11: 82.3
 R12: 76.5
 R13: 83.9
 R14: 97.8
 R15: 72.6



Test Conditions

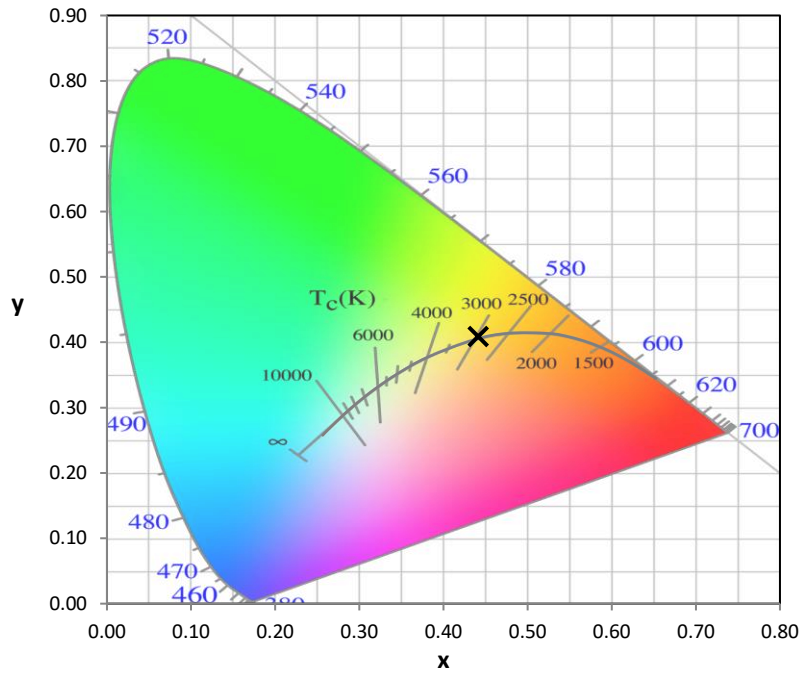
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

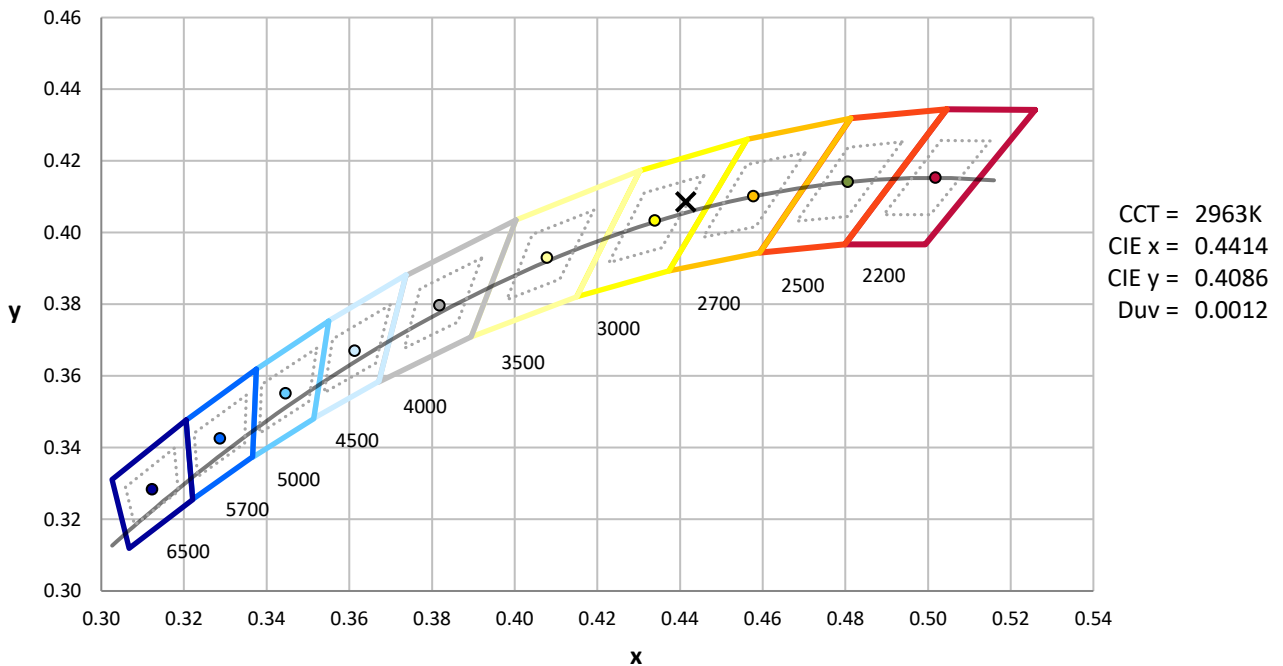
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

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CIE 1931 Chromaticity Diagram



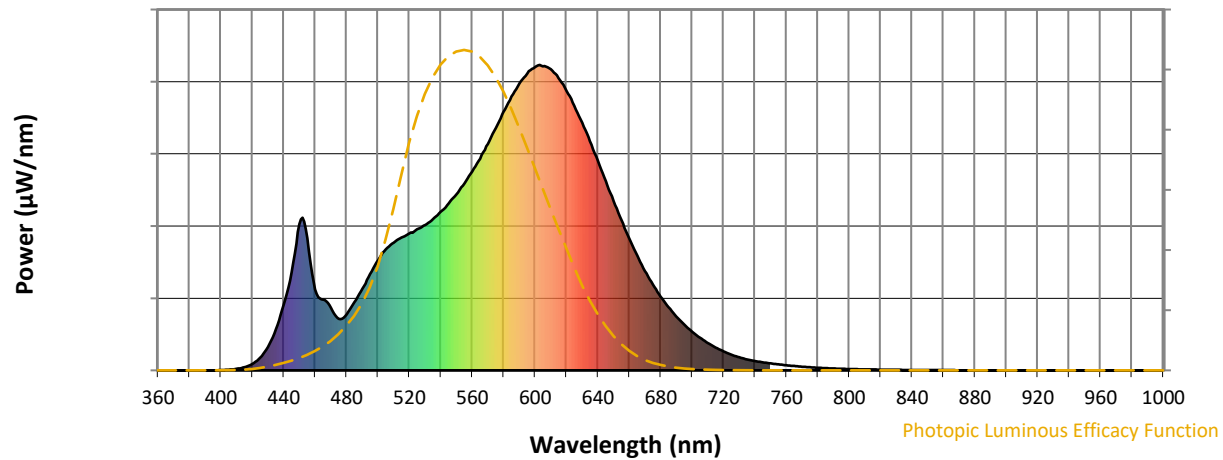
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

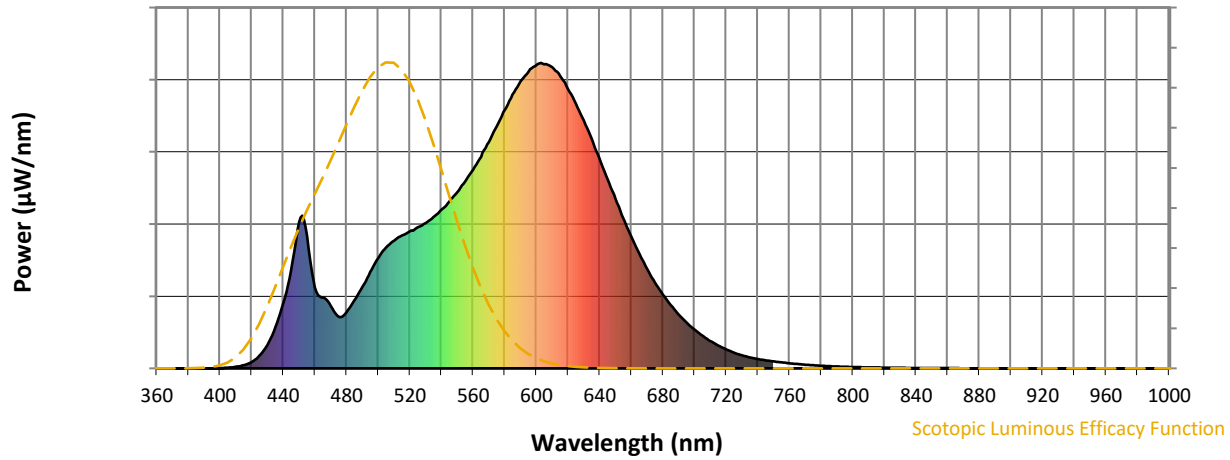


Photopic Lumens: NR

λ (nm)	Power W/nm	Lumens (ϕ/nm)	λ (nm)	Power W/nm	Lumens (ϕ/nm)	λ (nm)	Power W/nm	Lumens (ϕ/nm)	λ (nm)	Power W/nm	Lumens (ϕ/nm)	λ (nm)	Power W/nm	Lumens (ϕ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-4

Scotopic Flux vs. Wavelength

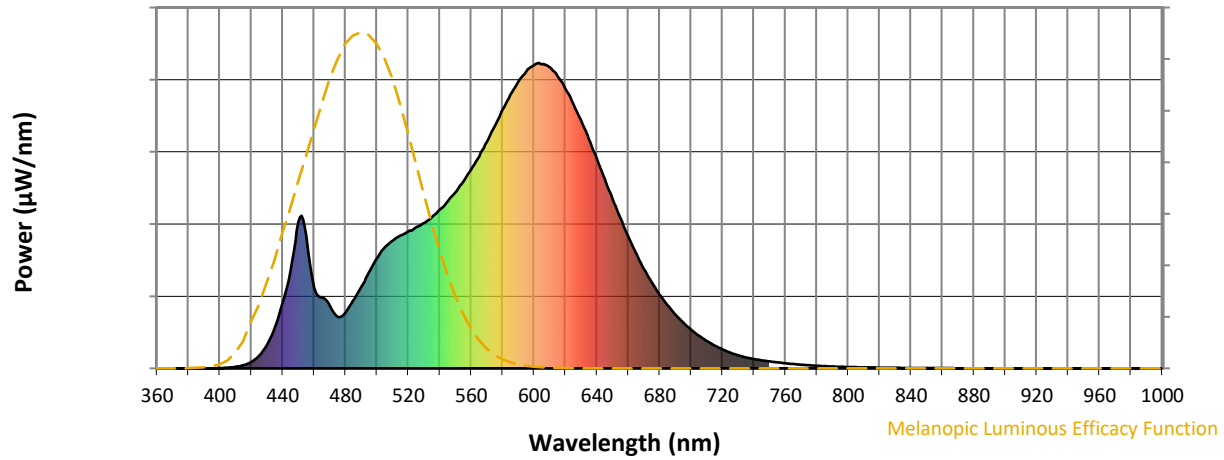


Scotopic Lumens: NR

S/P: 1.34

λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

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Melanopic Flux vs. Wavelength

Melanopic Lumens: NR
M/P: 2.58

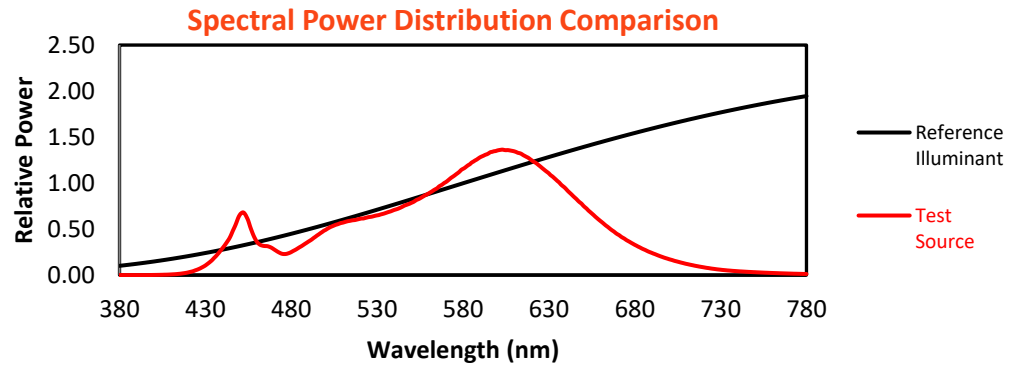
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

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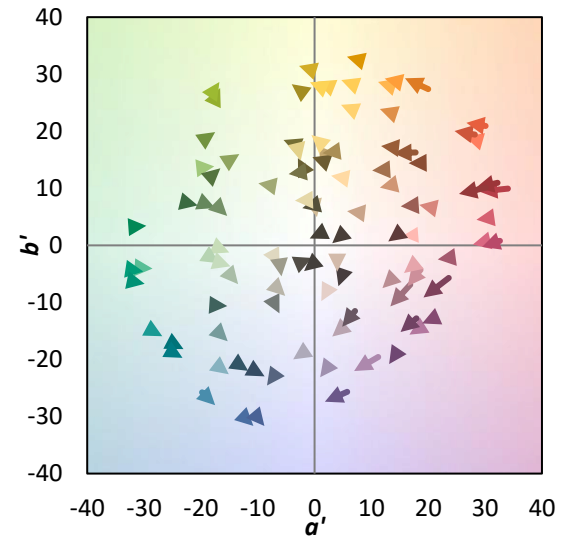
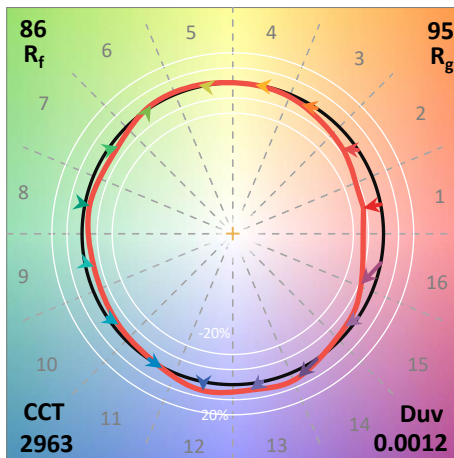
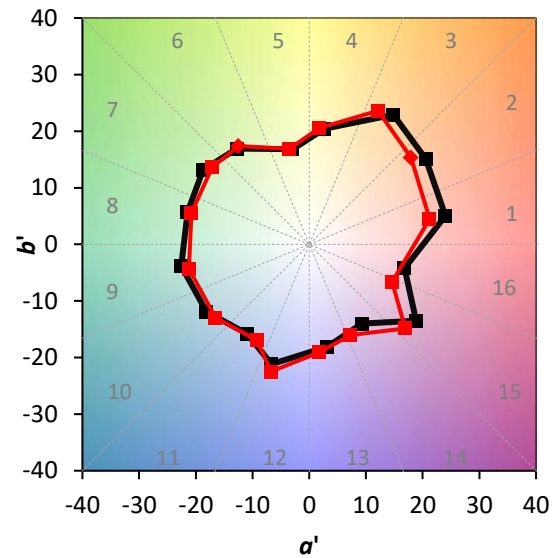
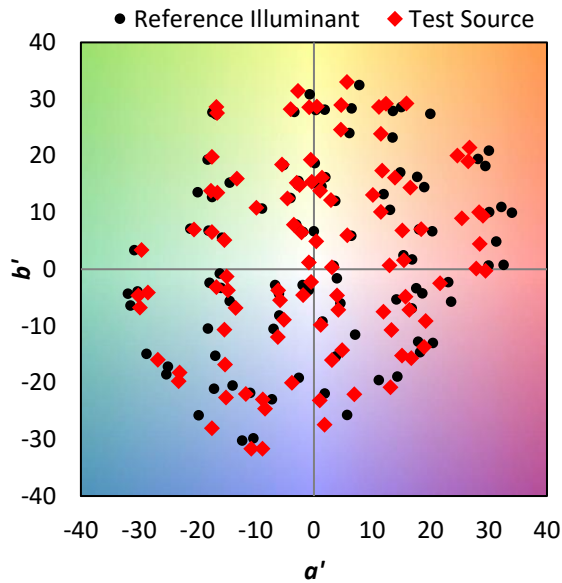
TM-30-18

Summary

$R_f = 86.1$
 $R_g = 94.9$
 $CIE R_a = 82.9$
 $R_9 = 3.9$

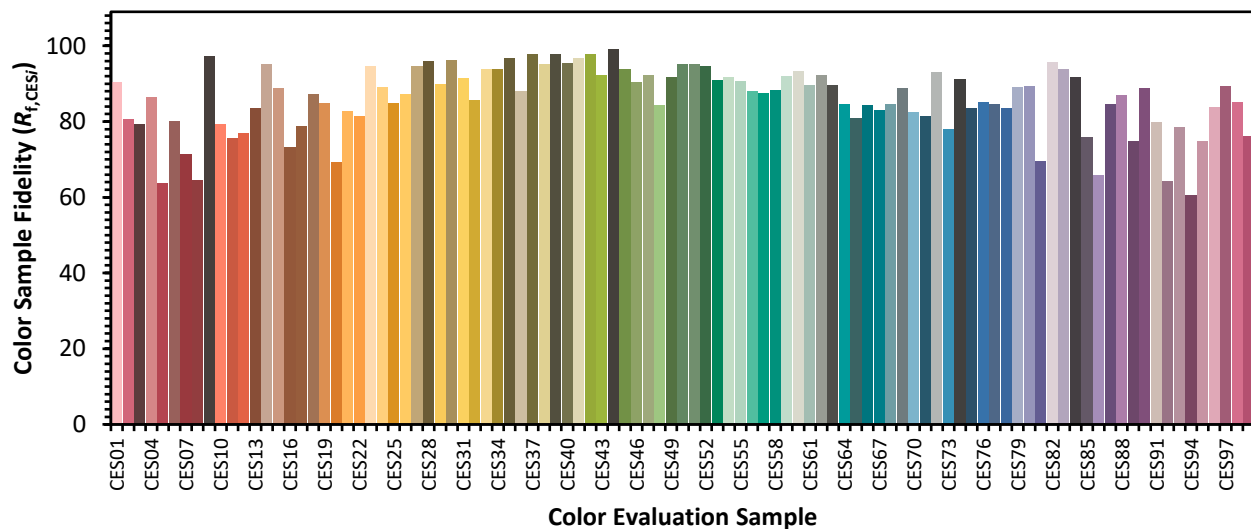


Color Vector Graphics

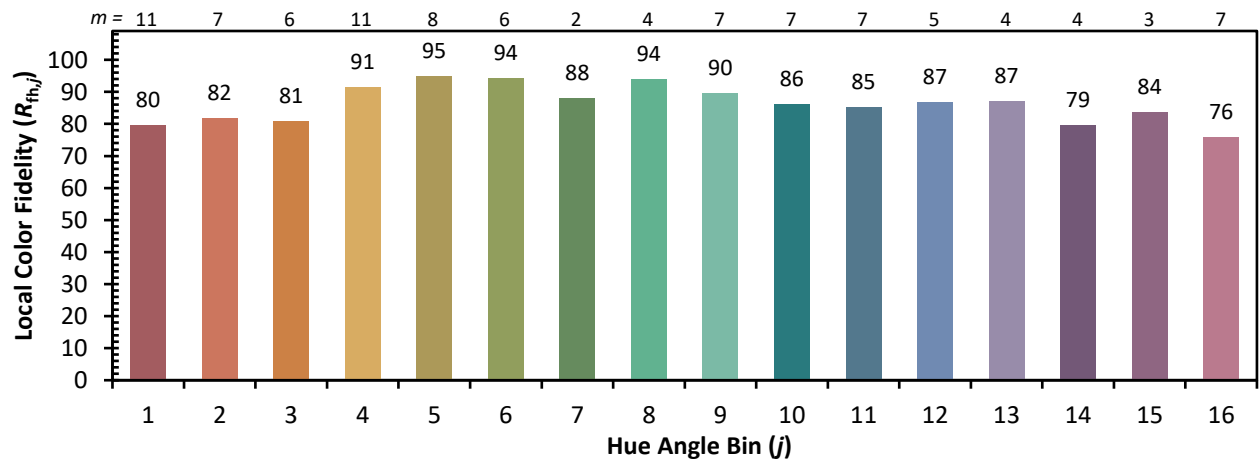
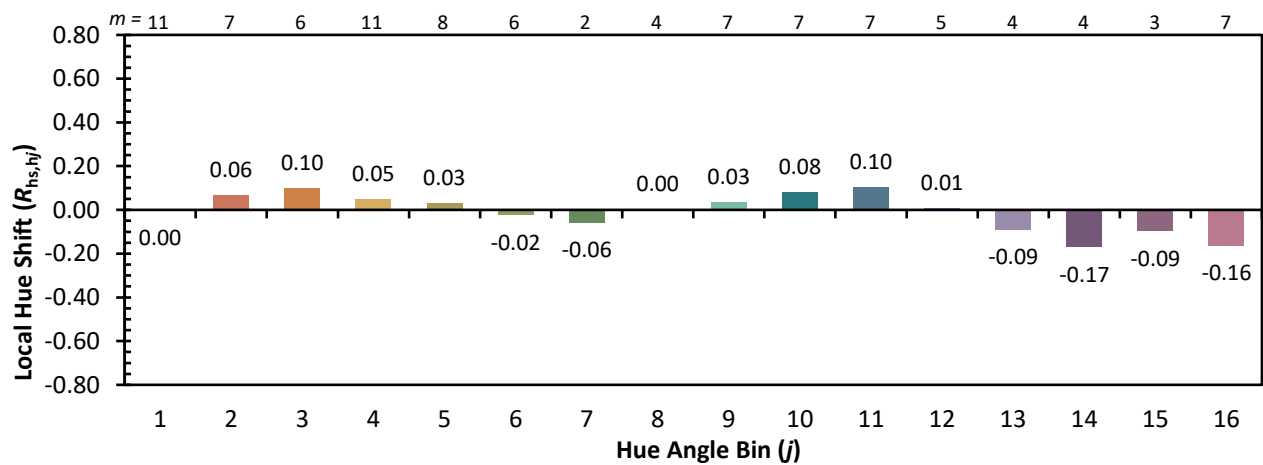
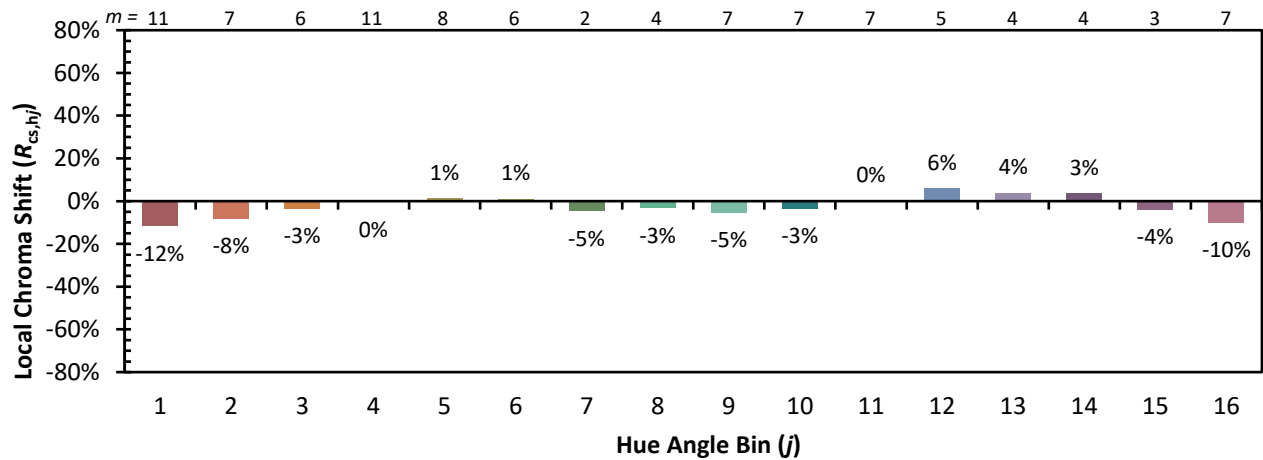


Individual Sample Fidelity Index ($R_{f,i}$)

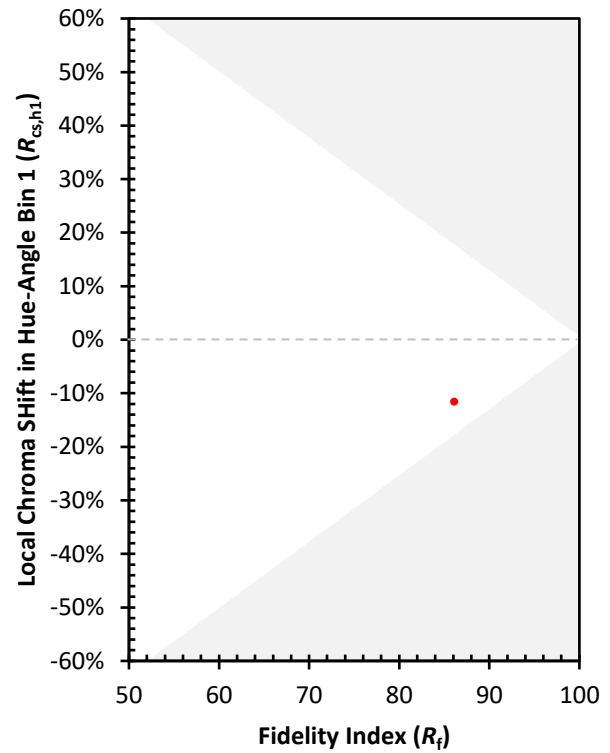
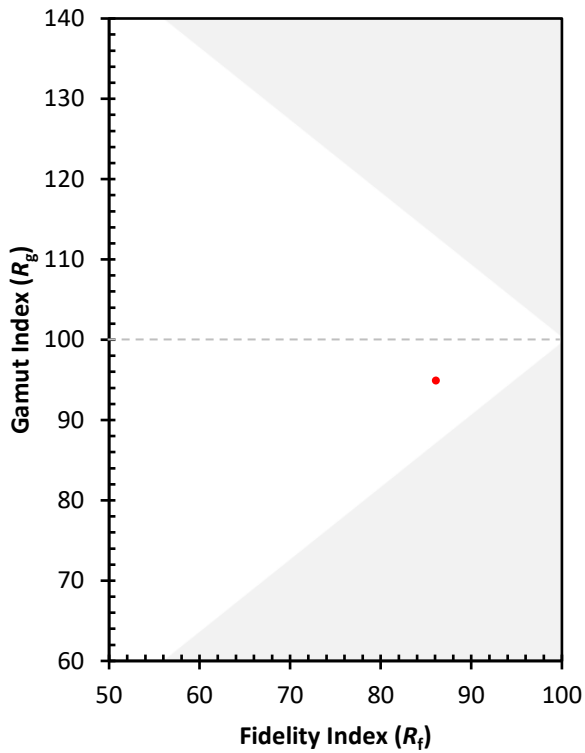
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82 = 96
CES08 = 41	CES33 = 94	CES58 = 88	CES83 = 94
CES09 = 29	CES34 = 94	CES59 = 92	CES84 = 92
CES10 = 76	CES35 = 97	CES60 = 93	CES85 = 76
CES11 = 59	CES36 = 88	CES61 = 90	CES86 = 66
CES12 = 65	CES37 = 98	CES62 = 92	CES87 = 85
CES13 = 44	CES38 = 95	CES63 = 90	CES88 = 87
CES14 = 74	CES39 = 98	CES64 = 85	CES89 = 75
CES15 = 72	CES40 = 96	CES65 = 81	CES90 = 89
CES16 = 48	CES41 = 97	CES66 = 84	CES91 = 80
CES17 = 50	CES42 = 98	CES67 = 83	CES92 = 64
CES18 = 57	CES43 = 92	CES68 = 85	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 89	CES94 = 61
CES20 = 67	CES45 = 94	CES70 = 83	CES95 = 75
CES21 = 87	CES46 = 91	CES71 = 81	CES96 = 84
CES22 = 79	CES47 = 92	CES72 = 93	CES97 = 89
CES23 = 92	CES48 = 84	CES73 = 78	CES98 = 85
CES24 = 91	CES49 = 92	CES74 = 91	CES99 = 76
CES25 = 72	CES50 = 95	CES75 = 84	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)