

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: P1445240

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

Issue Date: 05/21/2026

Test Information

Test Method: LM-79-2024
Report Number: P1445240
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-GM
Description: TOPTIER NANO SPIDER MOUNT VISUAL COMFORT LED LUMINAIRE 60W 80CRI 3000K w/
DRIVE LANE TYPE IV DISTRIBUTION OPTIC
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4638.4 lumens
Efficiency: N/A
Efficacy: 77.3 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

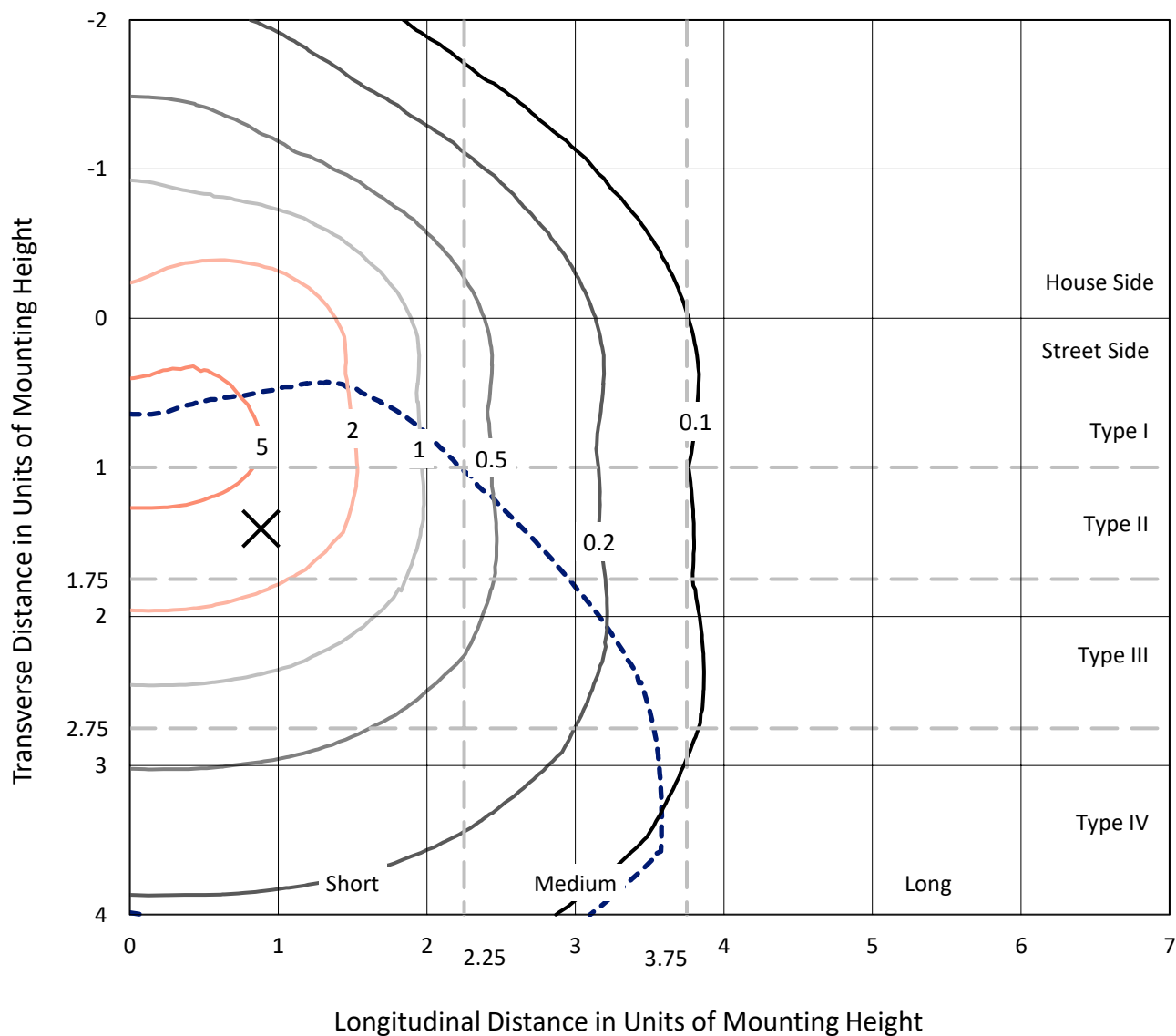
Input Watts (W): 60
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): 5.3%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

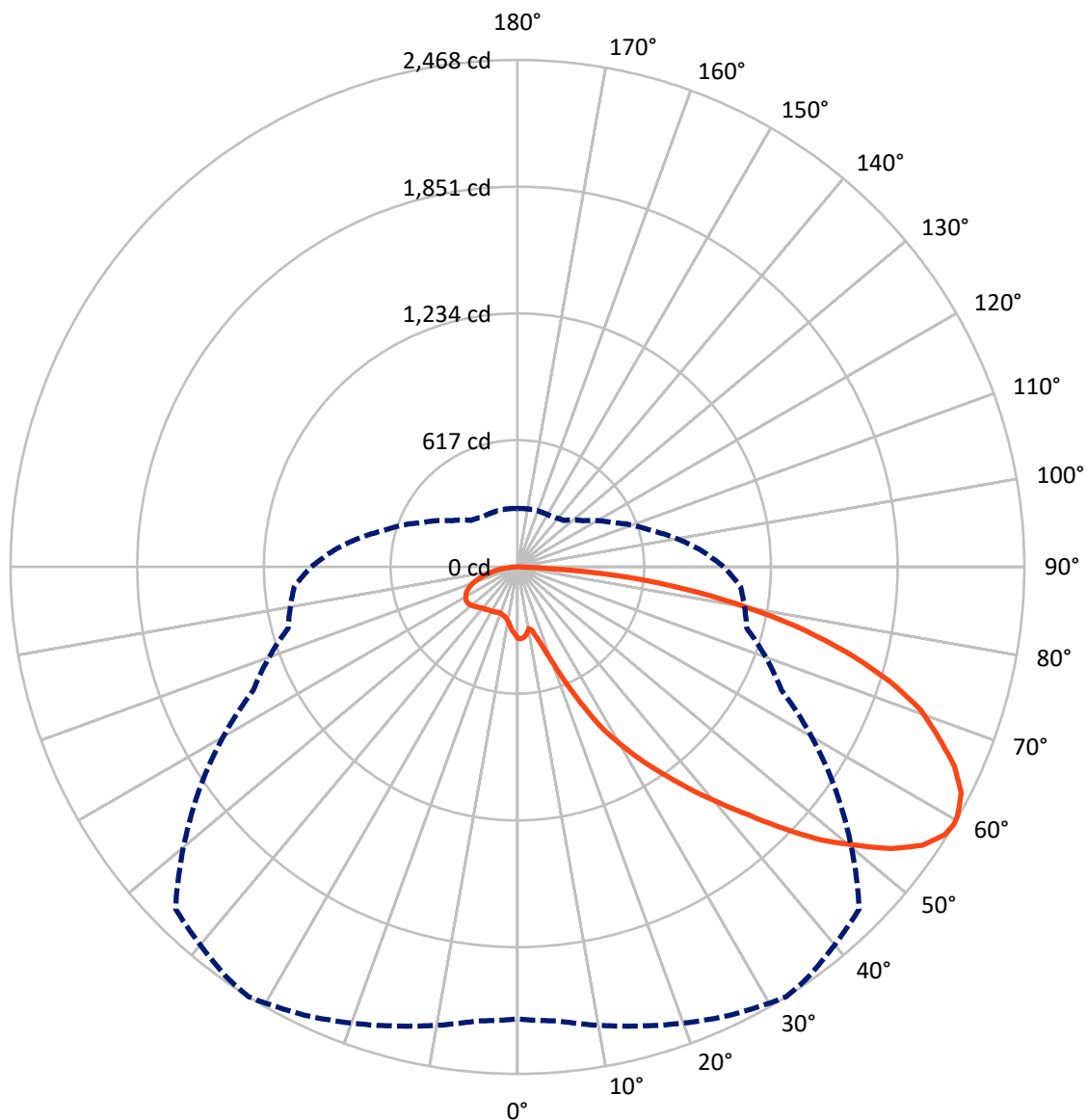


Based on 10 foot mounting height. Maximum calculated value = 7.4 fc
 Type IV - Short - N/A

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

Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 59-Deg Vertical

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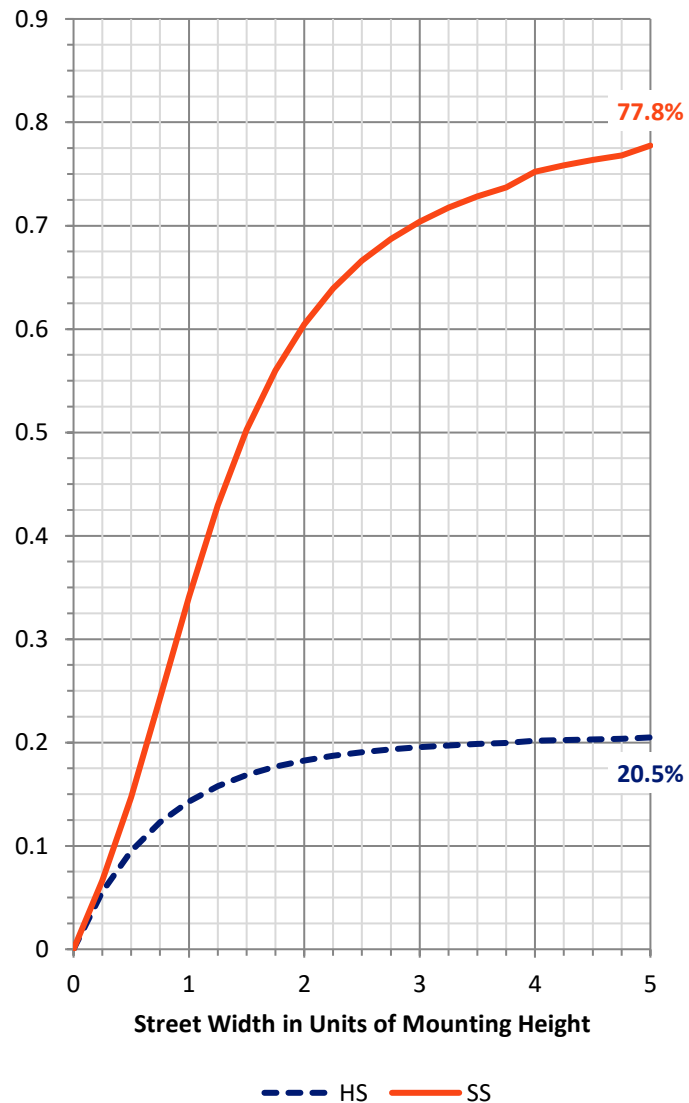
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	964.5	0.0	964.5
	% Fixture	20.8	0.0	20.8
Street Side	Lumens	3673.9	0.0	3673.9
	% Fixture	79.2	0.0	79.2
Total	Lumens	4638.4	0.0	4638.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.3	0.7
10°-20°	91.5	2.0
20°-30°	224.8	4.8
30°-40°	441.2	9.5
40°-50°	733.8	15.8
50°-60°	1036.1	22.3
60°-70°	1088.2	23.5
70°-80°	784.8	16.9
80°-90°	207.7	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°-90°	4638.4	100.0
0°-180°	4638.4	100.0

Coefficient of Utilization



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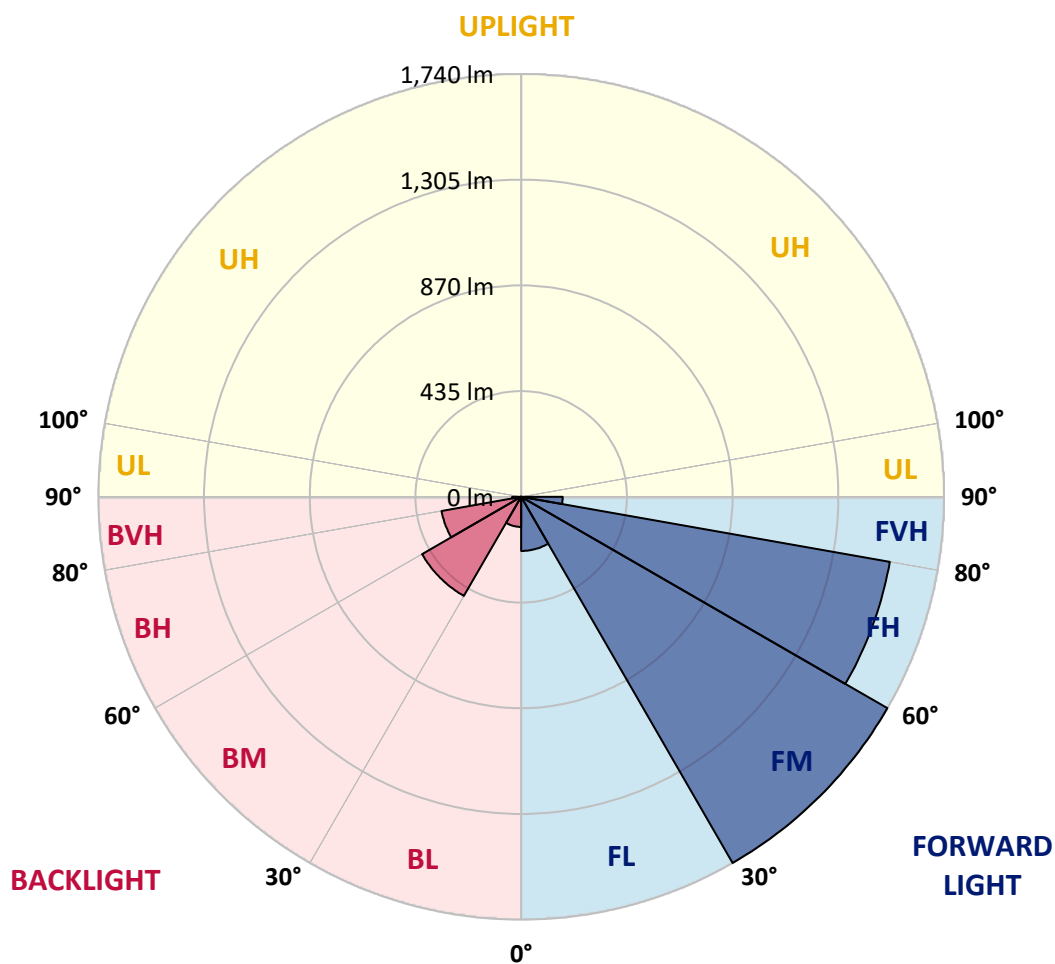
CATALOG NUMBER: TPTN-VA3-830-U-DL-GM

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	222.7	4.8			
FM	(30°-60°)	1740.0	37.5			
FH	(60°-80°)	1540.4	33.2			G1/1800
FVH	(80°-90°)	170.8	3.7			G2/225
BL	(0°-30°)	123.9	2.7	B1/500		
BM	(30°-60°)	471.1	10.2	B1/1000		
BH	(60°-80°)	332.6	7.2	B1/500		G1/500
BVH	(80°-90°)	36.9	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	32°	35°	45°	55°	65°	75°	85°
0°	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6
2.5°	353.0	352.1	352.1	351.2	350.3	350.3	349.4	347.6	344.9	342.2	340.4
5°	349.4	348.5	346.7	345.8	344.0	343.1	341.3	337.7	336.0	336.9	336.9
7.5°	334.2	335.1	333.3	330.6	327.9	327.0	322.5	321.6	320.7	318.0	319.8
10°	331.5	332.4	324.3	315.3	305.5	301.9	298.3	299.2	304.6	308.2	311.8
12.5°	353.9	350.3	343.1	330.6	318.0	314.5	304.6	304.6	309.1	312.7	316.2
15°	387.9	387.0	379.0	369.1	358.4	353.9	336.0	327.9	328.8	331.5	334.2
17.5°	438.1	440.8	443.5	430.9	418.4	409.4	383.4	365.5	358.4	359.2	359.2
20°	527.7	528.6	534.8	524.1	504.4	491.8	450.6	417.5	401.4	397.8	396.0
22.5°	655.8	652.2	652.2	649.5	623.5	608.3	542.9	483.8	455.1	445.3	444.4
25°	804.5	802.7	806.3	792.9	758.8	748.1	657.6	570.7	519.6	505.3	494.5
27.5°	949.6	951.4	953.2	929.0	900.4	881.5	776.7	673.7	591.3	565.3	545.6
30°	1086.7	1091.2	1067.9	1033.8	1013.2	989.9	876.2	755.2	658.5	613.7	594.9
32.5°	1222.0	1217.5	1175.4	1149.4	1132.4	1109.1	976.5	842.1	726.6	663.8	638.8
35°	1353.7	1341.1	1288.3	1263.2	1248.9	1229.1	1097.5	931.7	792.9	714.0	683.6
37.5°	1476.4	1469.2	1408.3	1395.8	1377.0	1361.7	1228.3	1025.8	864.5	773.1	735.5
40°	1591.1	1592.0	1548.1	1527.5	1508.7	1494.3	1361.7	1124.3	938.9	834.1	792.9
42.5°	1710.2	1709.3	1684.3	1670.8	1651.1	1640.4	1501.5	1233.6	1016.8	898.6	850.2
45°	1822.2	1830.3	1832.1	1824.0	1815.9	1806.1	1672.6	1359.9	1109.1	964.0	912.9
47.5°	1953.9	1963.8	1978.1	1980.8	1985.3	1969.1	1839.2	1479.1	1198.7	1028.5	972.0
50°	2051.6	2061.4	2107.1	2121.4	2129.5	2122.3	1996.9	1608.1	1279.3	1089.4	1017.7
52.5°	2148.3	2153.7	2218.2	2268.4	2278.2	2266.6	2151.9	1730.8	1358.2	1137.8	1064.3
55°	2205.7	2213.7	2297.0	2371.4	2392.0	2387.5	2286.3	1816.8	1406.5	1171.8	1093.9
57.5°	2211.0	2225.4	2321.2	2410.8	2456.5	2444.9	2348.1	1874.2	1420.9	1168.2	1094.8
59°	2201.2	2218.2	2314.1	2412.6	2468.2	2451.1	2354.4	1891.2	1418.2	1155.7	1090.3
60°	2193.1	2210.1	2301.5	2406.3	2461.9	2447.5	2353.5	1899.3	1406.5	1148.5	1086.7
62.5°	2144.7	2174.3	2264.8	2358.0	2426.0	2434.1	2335.6	1902.9	1382.3	1125.2	1067.9
65°	2031.0	2059.6	2178.8	2292.6	2337.4	2365.1	2269.3	1856.3	1326.8	1077.7	1006.1
67.5°	1888.5	1912.7	2029.2	2178.8	2210.1	2235.2	2177.0	1764.0	1256.0	985.5	929.9
70°	1742.5	1772.1	1866.1	2022.9	2082.0	2099.9	2057.8	1663.7	1154.8	893.2	855.6
72.5°	1546.3	1570.5	1682.5	1827.6	1889.4	1911.8	1877.8	1530.2	1026.7	800.0	765.1
75°	1327.7	1342.0	1446.8	1593.8	1652.9	1675.3	1664.5	1359.9	888.7	683.6	647.7
77.5°	1063.4	1095.7	1182.6	1299.9	1384.1	1388.6	1387.7	1153.0	731.0	538.4	525.9
80°	793.8	822.4	904.8	1015.9	1074.2	1090.3	1088.5	909.3	567.1	412.1	391.5
82.5°	502.6	520.5	606.5	696.1	757.0	771.4	787.5	656.7	395.1	273.2	250.0
85°	199.8	198.9	273.2	369.1	413.9	438.1	449.7	382.5	214.1	121.8	103.0
87.5°	14.3	15.2	18.8	23.3	24.2	26.0	29.6	37.6	29.6	26.0	13.4
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: P1445240

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

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6	347.6
2.5°	339.5	338.6	335.1	333.3	330.6	329.7	328.8	327.0	326.1	325.2	326.1
5°	334.2	334.2	330.6	327.9	321.6	317.1	312.7	306.4	301.9	299.2	298.3
7.5°	321.6	322.5	321.6	316.2	310.9	303.7	293.0	282.2	274.1	269.7	267.9
10°	310.9	312.7	311.8	308.2	299.2	287.6	274.1	259.8	247.3	239.2	238.3
12.5°	316.2	316.2	313.6	306.4	294.7	279.5	262.5	243.7	229.3	220.4	218.6
15°	334.2	332.4	324.3	312.7	294.7	275.9	255.3	233.8	216.8	206.9	206.1
17.5°	360.1	356.6	342.2	320.7	297.4	274.1	251.7	227.6	206.9	194.4	192.6
20°	394.2	386.1	363.7	331.5	302.8	275.9	248.2	221.3	200.7	186.3	182.8
22.5°	436.3	422.9	387.9	344.9	310.0	279.5	249.1	219.5	197.1	183.7	182.8
25°	480.2	462.3	415.7	361.0	318.0	282.2	250.0	223.1	200.7	190.8	189.0
27.5°	525.0	503.5	445.3	379.9	327.0	286.7	253.5	228.4	211.4	203.4	202.5
30°	568.9	540.2	471.2	396.0	336.0	289.4	256.2	228.4	216.8	210.5	209.6
32.5°	609.2	574.3	495.4	413.0	344.9	294.7	258.9	231.1	220.4	218.6	217.7
35°	652.2	614.6	520.5	427.3	353.9	299.2	261.6	233.8	225.8	225.8	225.8
37.5°	698.8	654.9	547.4	443.5	362.8	307.3	265.2	240.1	232.9	234.7	234.7
40°	748.1	697.9	575.2	460.5	370.9	311.8	267.9	246.4	240.1	241.9	242.8
42.5°	799.1	740.0	603.8	475.7	381.6	317.1	273.2	254.4	250.0	251.7	251.7
45°	851.1	784.8	630.7	491.8	390.6	322.5	279.5	263.4	259.8	260.7	260.7
47.5°	902.2	825.1	654.9	506.2	398.7	327.0	285.8	272.3	269.7	270.6	269.7
50°	945.2	860.0	676.4	516.9	406.7	331.5	293.0	281.3	279.5	277.7	276.8
52.5°	982.8	891.4	693.4	525.0	410.3	333.3	299.2	290.3	288.5	284.9	284.0
55°	1003.4	905.7	697.9	526.8	407.6	331.5	301.0	294.7	293.0	288.5	288.5
57.5°	1007.9	905.7	688.0	518.7	398.7	325.2	300.1	293.0	291.2	286.7	286.7
59°	1003.4	900.4	679.1	509.8	391.5	319.8	296.5	291.2	288.5	284.9	284.9
60°	998.9	896.8	672.8	500.8	387.0	316.2	293.0	288.5	285.8	283.1	283.1
62.5°	979.2	876.2	655.8	477.5	371.8	302.8	284.9	282.2	280.4	277.7	276.8
65°	924.5	826.9	619.9	451.5	348.5	286.7	271.5	270.6	269.7	265.2	263.4
67.5°	860.0	766.0	568.0	418.4	318.9	267.9	255.3	255.3	251.7	248.2	249.1
70°	793.8	707.7	514.2	377.2	284.9	243.7	233.8	234.7	231.1	230.2	231.1
72.5°	706.0	625.3	455.1	327.0	250.0	215.9	207.8	210.5	209.6	208.7	208.7
75°	594.9	530.4	383.4	275.9	211.4	185.4	181.0	181.9	182.8	181.9	181.9
77.5°	484.7	430.9	303.7	217.7	167.5	149.6	148.7	153.2	154.1	153.2	154.1
80°	359.2	317.1	221.3	159.5	124.5	114.7	116.5	122.7	124.5	124.5	126.3
82.5°	231.1	198.9	143.3	103.0	83.3	80.6	86.0	92.3	95.0	95.0	95.0
85°	91.4	82.4	66.3	51.1	47.5	51.1	57.3	60.9	65.4	65.4	64.5
87.5°	5.4	13.4	20.6	20.6	20.6	22.4	22.4	23.3	24.2	23.3	23.3
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

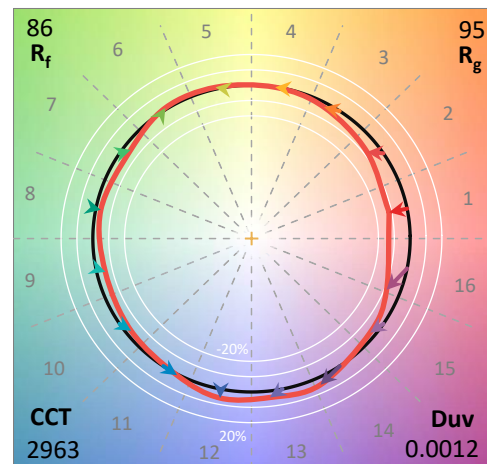
Test Information

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

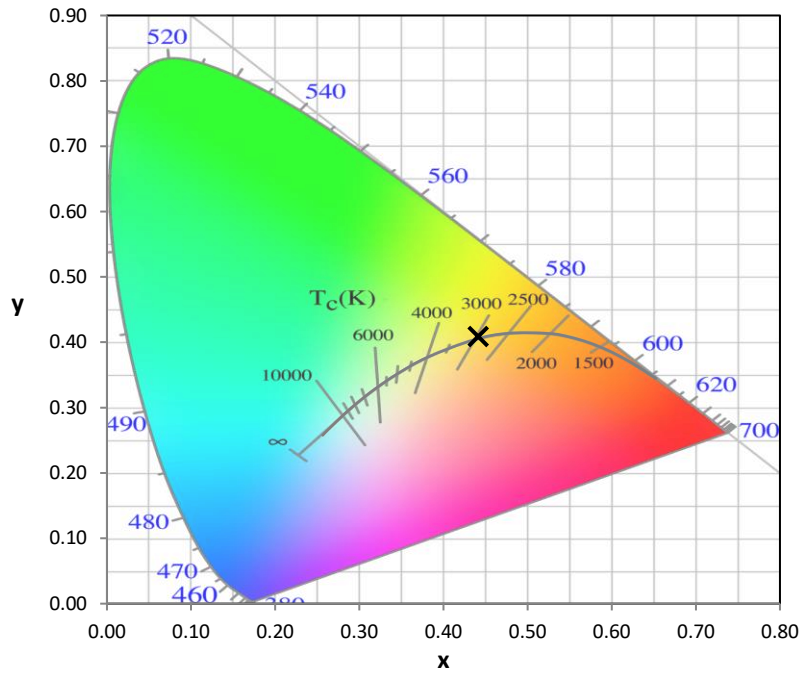
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

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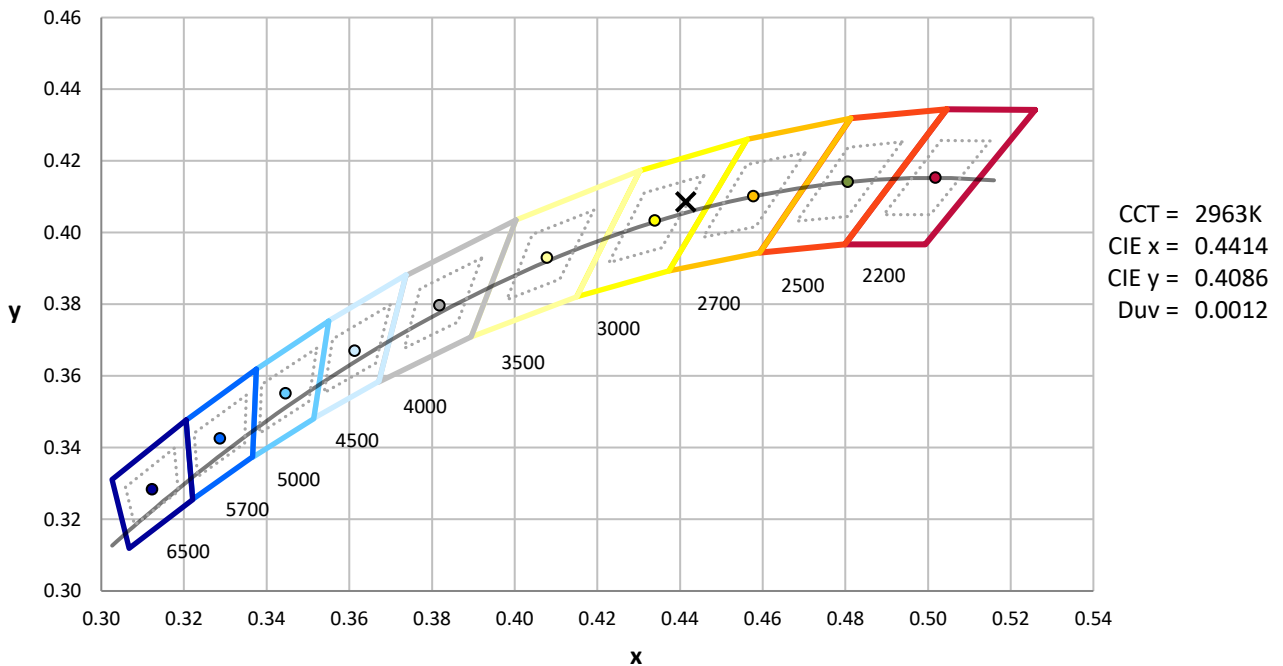
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



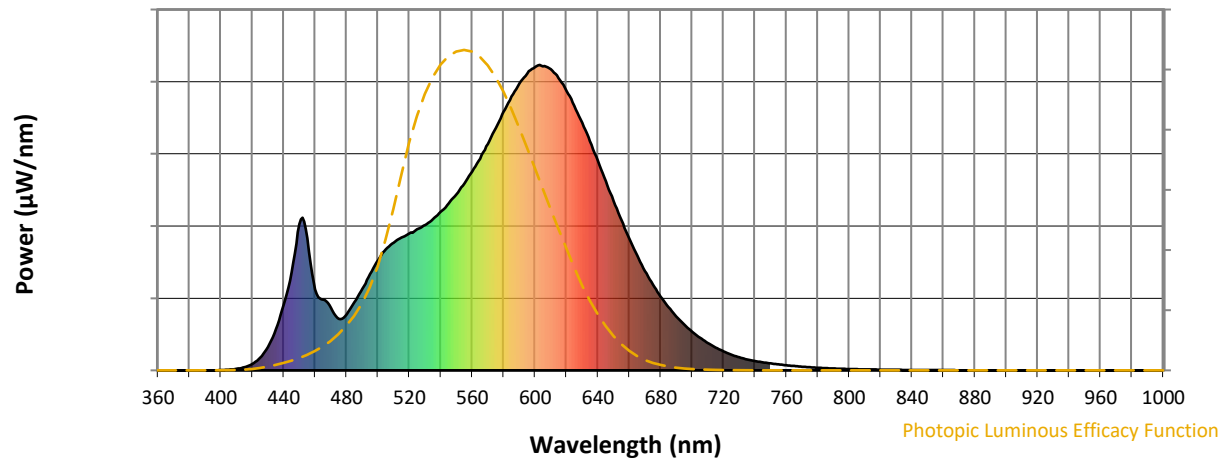
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

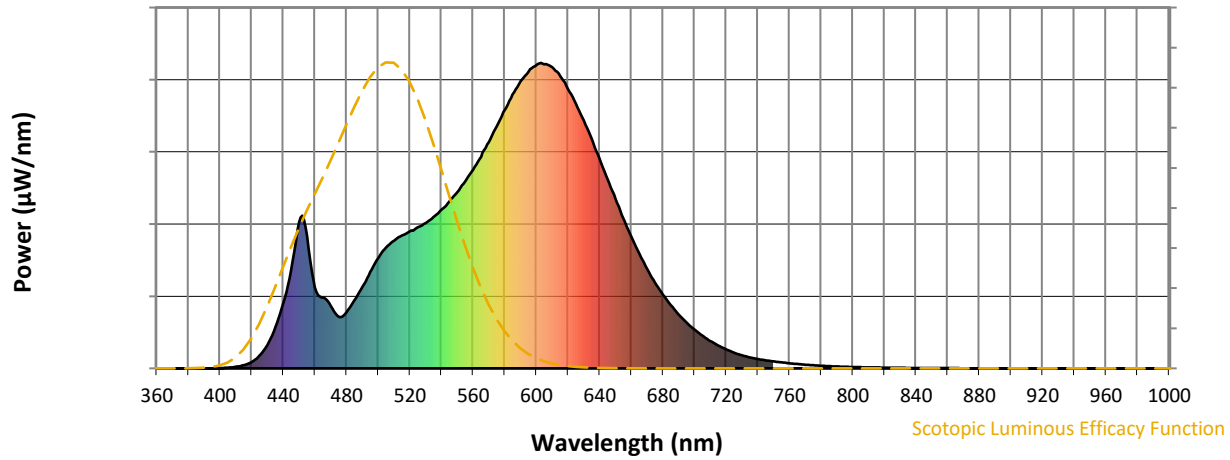


Photopic Lumens: NR

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			

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Scotopic Flux vs. Wavelength



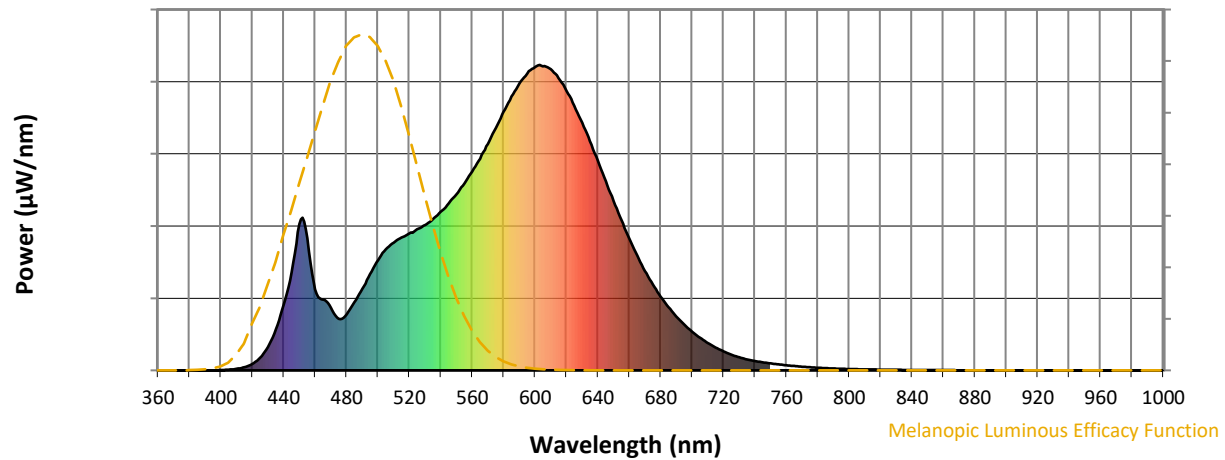
Scotopic Lumens: NR

S/P: 1.34

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			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.58

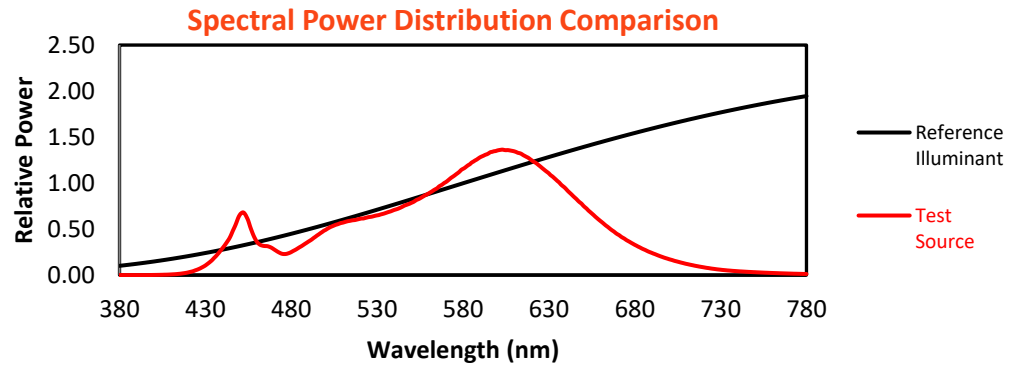
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	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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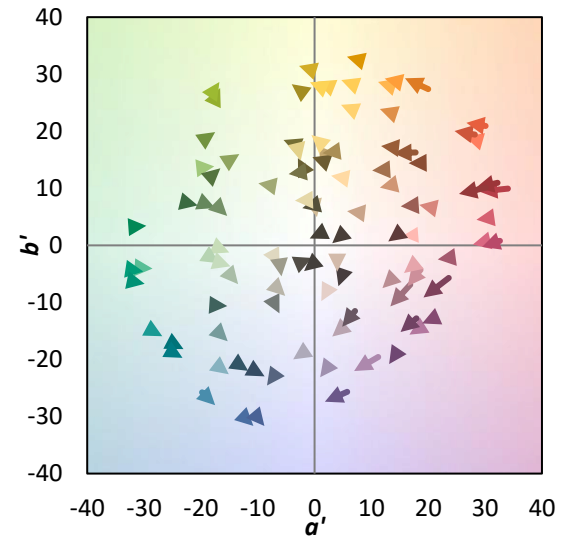
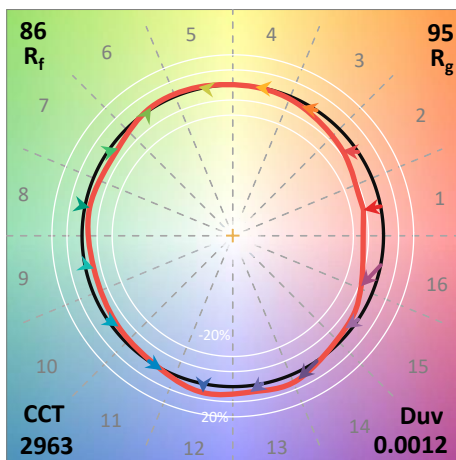
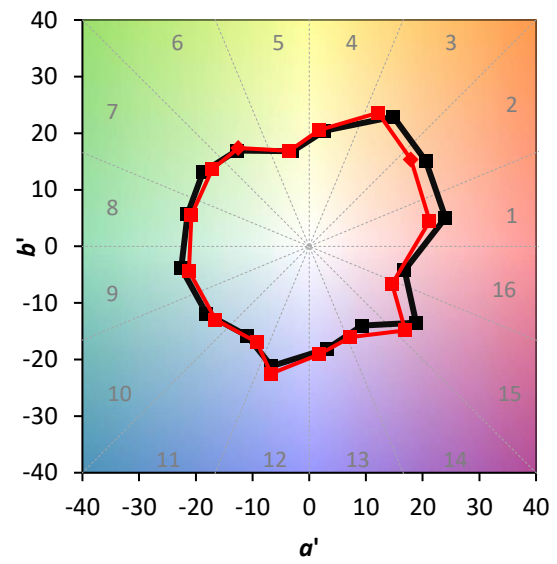
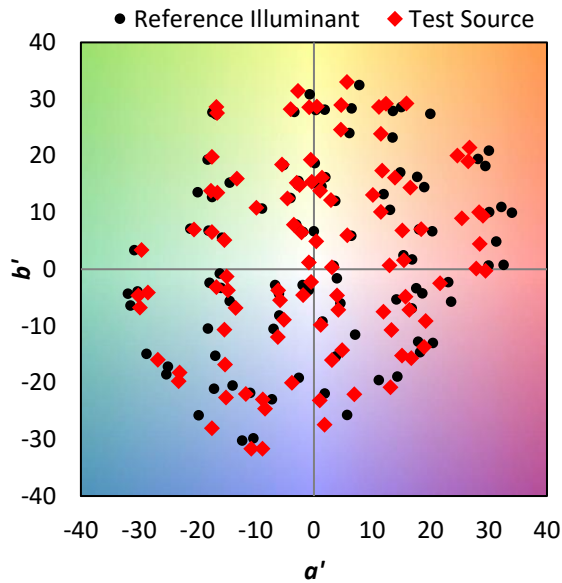
TM-30-18

Summary

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

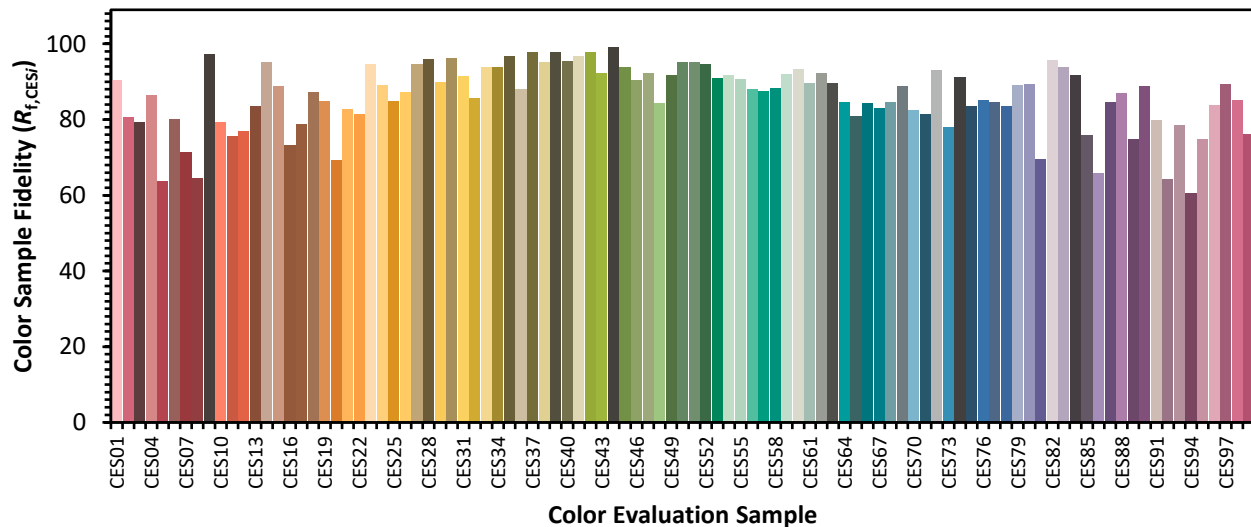


Color Vector Graphics

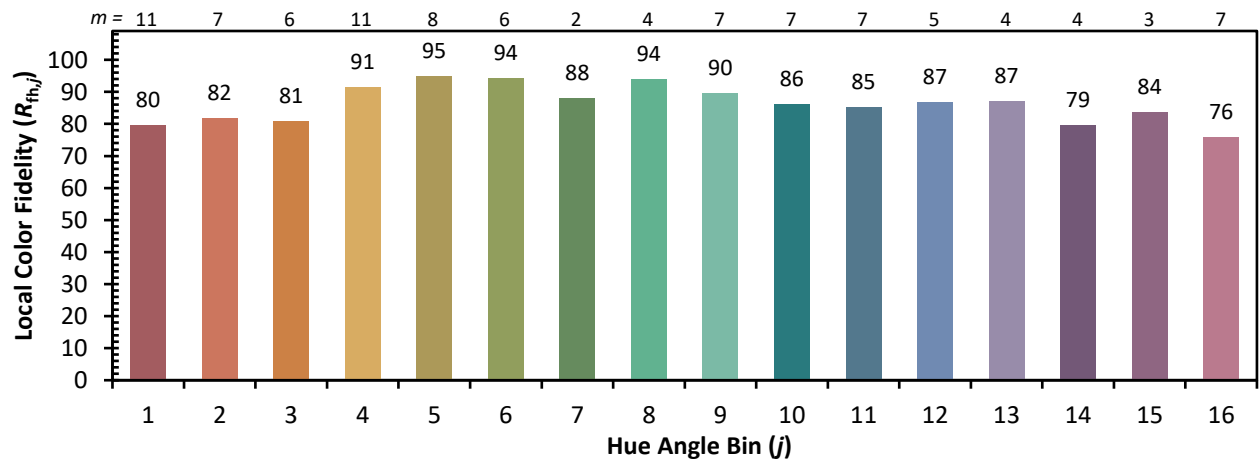
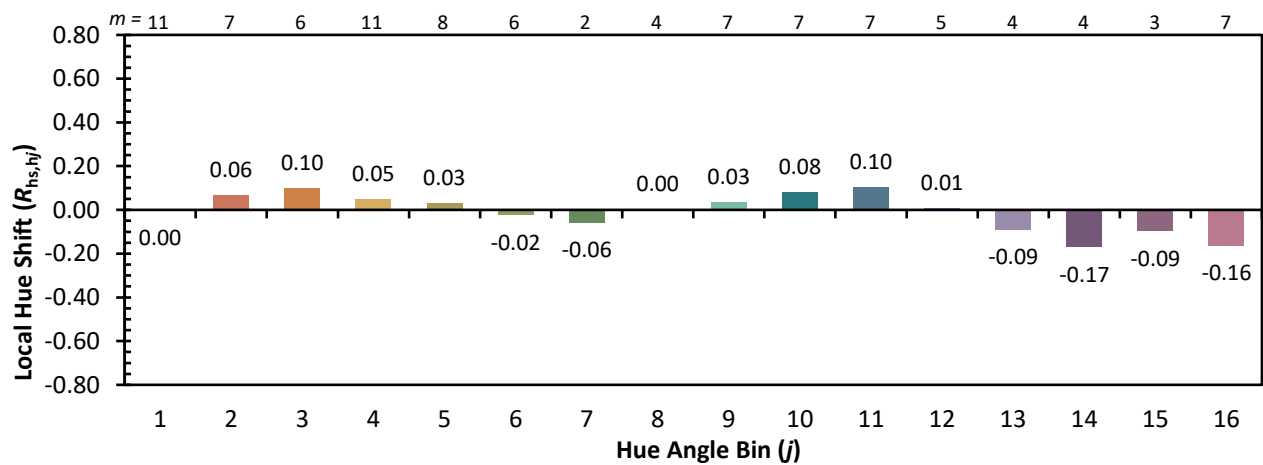
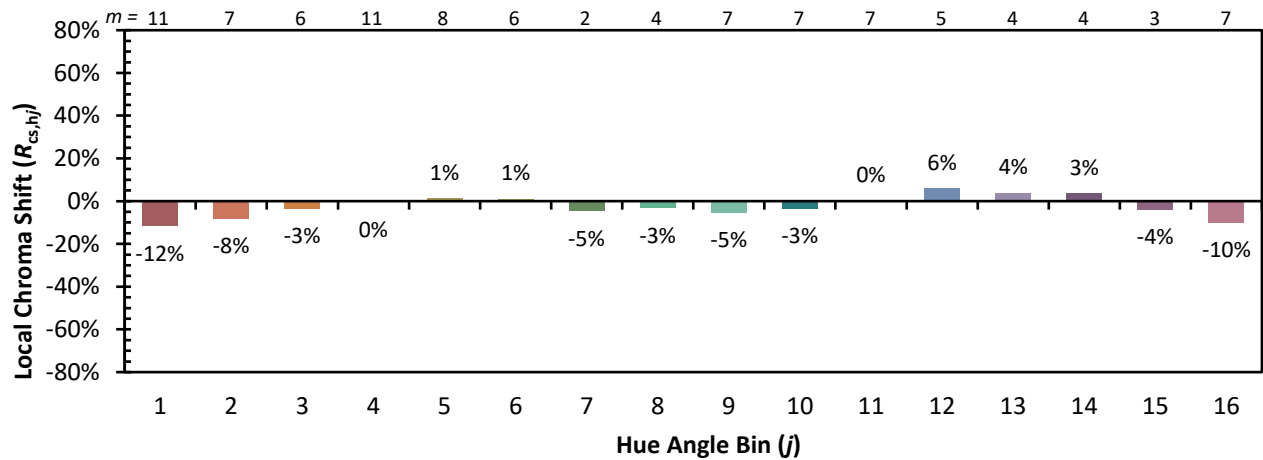


Individual Sample Fidelity Index ($R_{f,i}$)

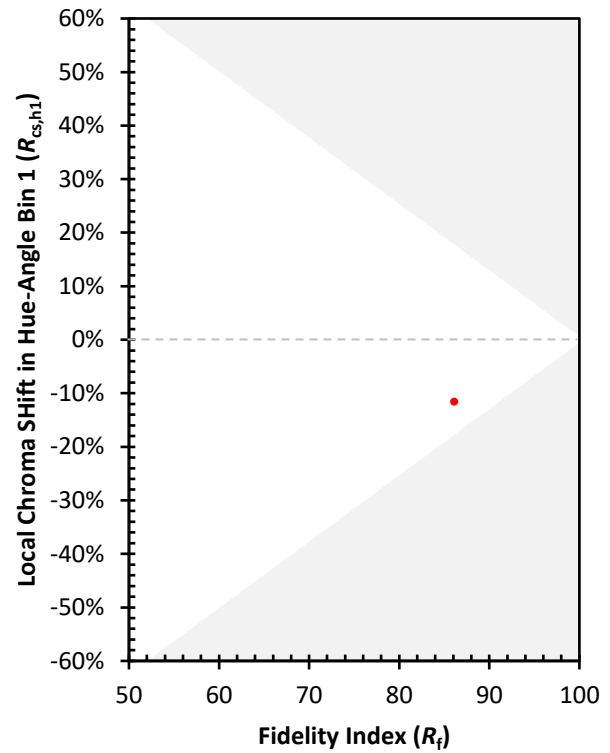
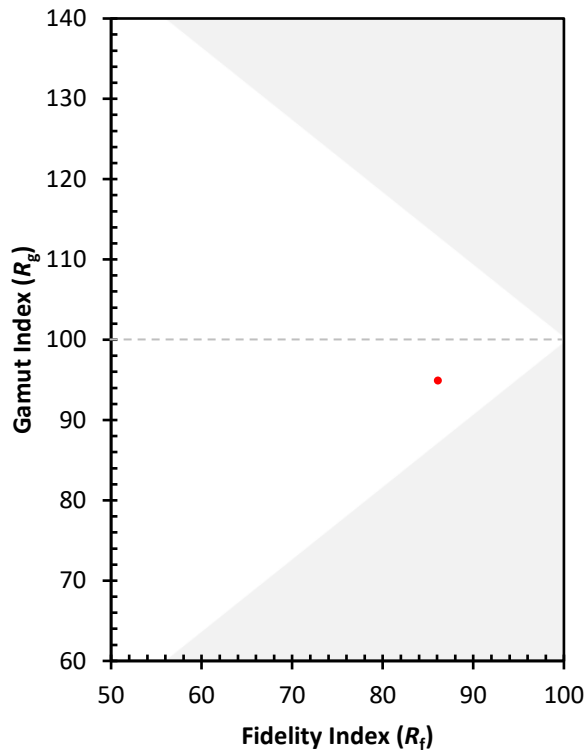
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82 = 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)