

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P823466

Luminaire Tested: **TTN-D3-830-U-CQ**

Issue Date: 4/16/2024

Test Information

Test Method: LM-79-08
Report Number: P823466
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-9)
Test Lab: INNOVATION CENTER
Issue Date: 4/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TTN-D3-830-U-CQ
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE
3000K, 80 CRI LEDS AND CONCENTRATED DISTRIBUTION
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6340 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type V - Short
BUG Rating: B2 - U0 - G1

Input Watts (W): 59.2
Input Voltage (V): NR
Input Current (Ain): 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: 24 FT



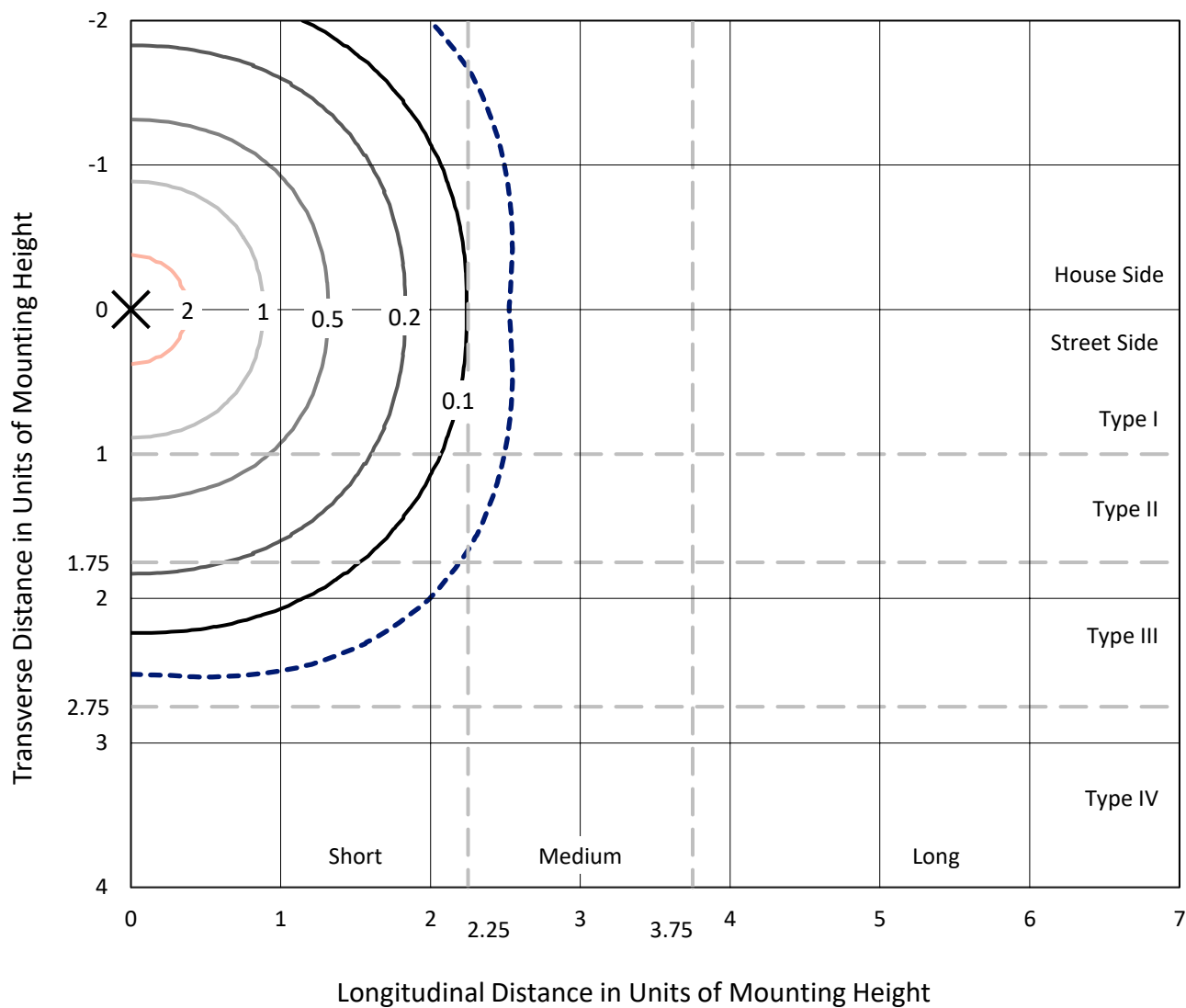
REPORT NUMBER: P823466

CATALOG NUMBER: TTN-D3-830-U-CQ

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

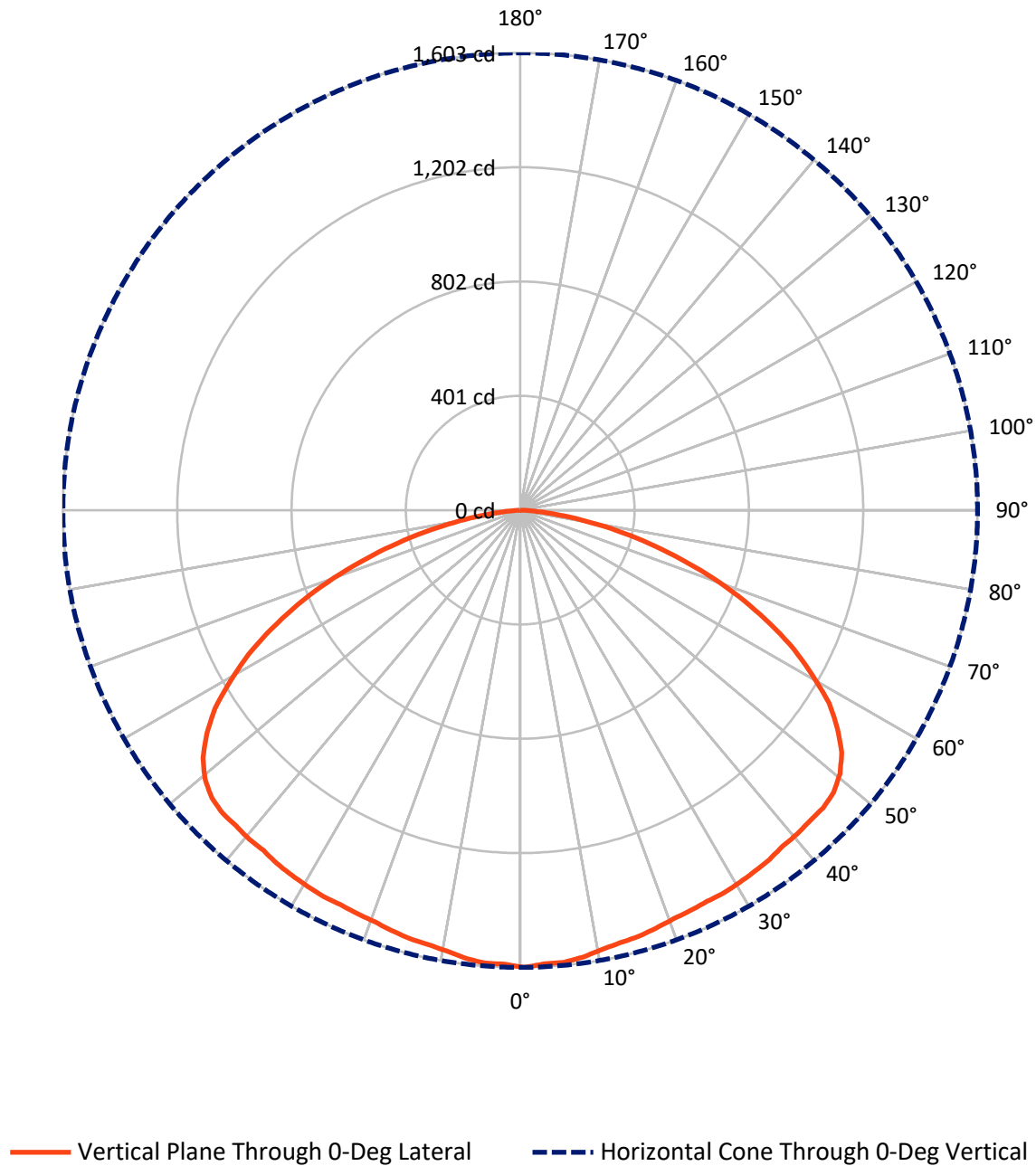


Based on 25 foot mounting height. Maximum calculated value = 2.6 fc
 Type V - Short - N/A

REPORT NUMBER: P823466

CATALOG NUMBER: TTN-D3-830-U-CQ

Luminous Intensity Polar Plot



REPORT NUMBER: P823466

CATALOG NUMBER: TTN-D3-830-U-CQ

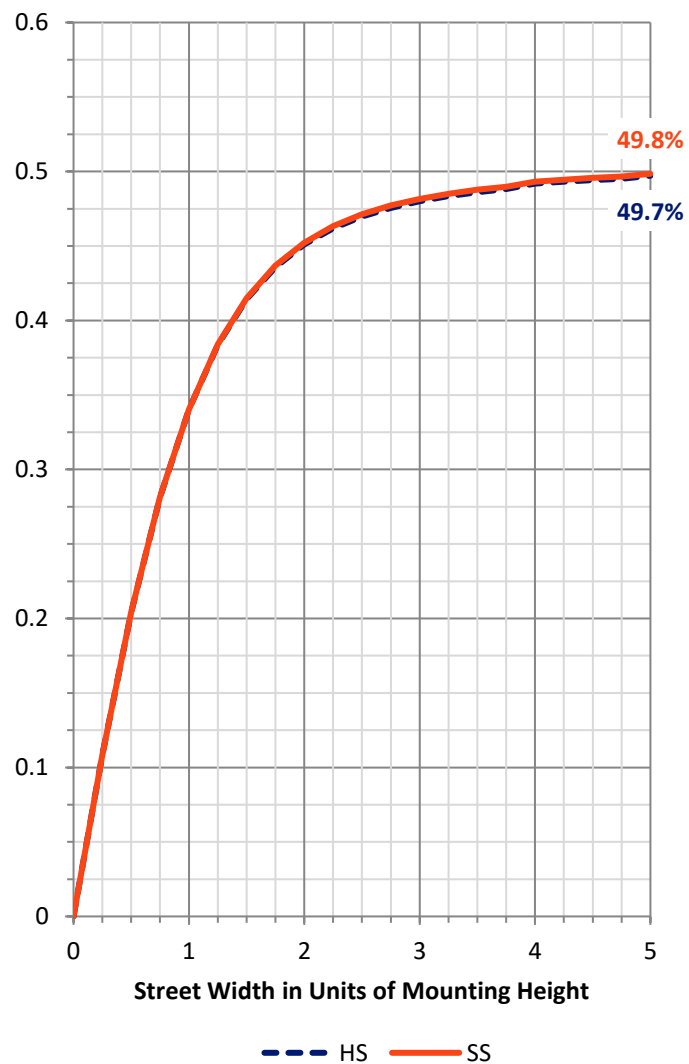
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3170.0	0.0	3170.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3170.0	0.0	3170.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	6340.0	0.0	6340.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.1	2.4
10°-20°	438.9	6.9
20°-30°	706.8	11.1
30°-40°	950.6	15.0
40°-50°	1172.9	18.5
50°-60°	1258.3	19.8
60°-70°	1020.4	16.1
70°-80°	540.8	8.5
80°-90°	100.0	1.6
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°	6340.0	100.0
0°-180°	6340.0	100.0

Coefficient of Utilization



REPORT NUMBER: P823466

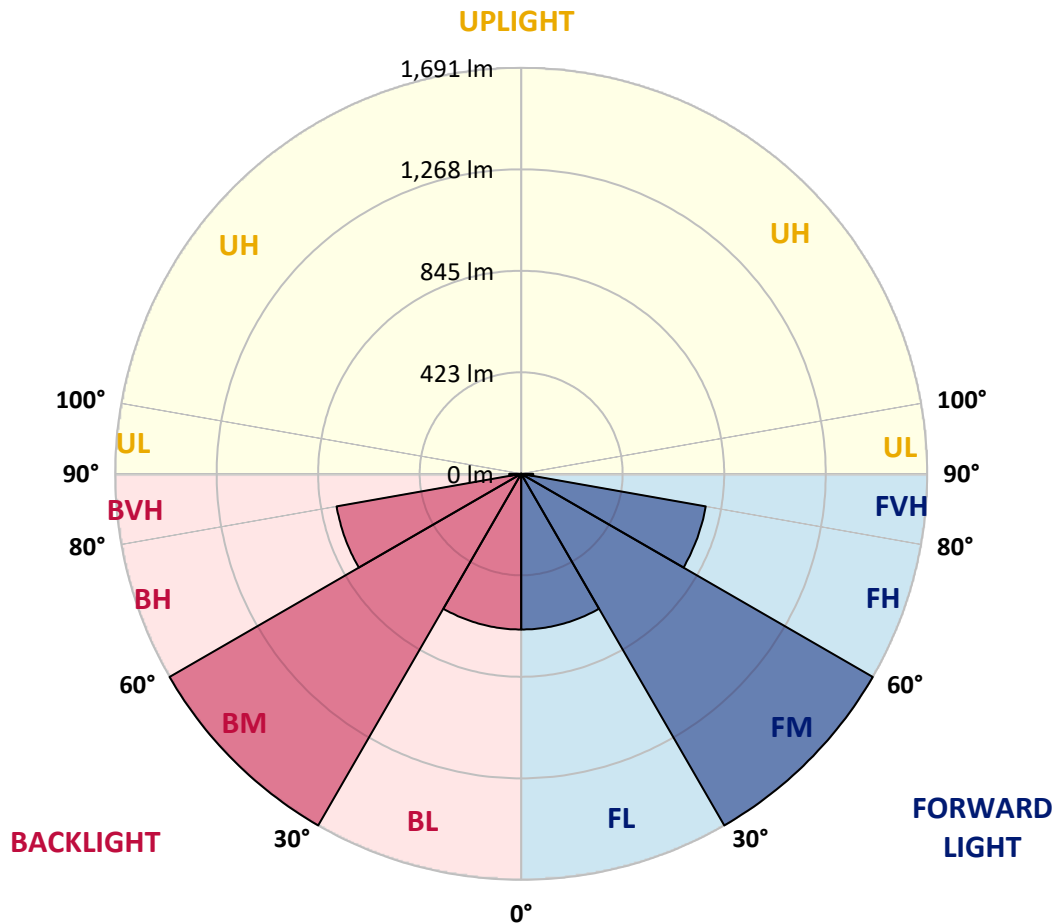
CATALOG NUMBER: TTN-D3-830-U-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	648.4	10.2			
FM	(30°-60°)	1690.9	26.7			
FH	(60°-80°)	780.6	12.3			G1/1800
FVH	(80°-90°)	50.0	0.8			G1/100
BL	(0°-30°)	648.4	10.2	B2/1000		
BM	(30°-60°)	1690.9	26.7	B2/2500		
BH	(60°-80°)	780.6	12.3	B2/1000		G1/1800
BVH	(80°-90°)	50.0	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G1

Type V Short



REPORT NUMBER: P823466

CATALOG NUMBER: TTN-D3-830-U-CQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2	1603.2
2.5°	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8	1598.0
5°	1592.8	1592.8	1592.8	1592.8	1587.6	1592.8	1592.8	1592.8	1592.8	1592.8	1592.8
7.5°	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4
10°	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8	1566.8
12.5°	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5	1556.5
15°	1551.3	1551.3	1551.3	1551.3	1551.3	1551.3	1551.3	1551.3	1551.3	1546.1	1546.1
17.5°	1540.9	1540.9	1540.9	1540.9	1546.1	1546.1	1546.1	1540.9	1540.9	1540.9	1540.9
20°	1530.5	1530.5	1530.5	1535.7	1535.7	1535.7	1535.7	1535.7	1530.5	1530.5	1530.5
22.5°	1525.3	1525.3	1525.3	1525.3	1530.5	1530.5	1530.5	1530.5	1525.3	1525.3	1525.3
25°	1520.1	1520.1	1525.3	1525.3	1530.5	1530.5	1530.5	1525.3	1525.3	1520.1	1520.1
27.5°	1520.1	1520.1	1525.3	1525.3	1530.5	1530.5	1530.5	1530.5	1525.3	1520.1	1520.1
30°	1515.0	1520.1	1520.1	1525.3	1530.5	1530.5	1530.5	1525.3	1520.1	1515.0	1515.0
32.5°	1509.8	1509.8	1515.0	1520.1	1525.3	1525.3	1525.3	1520.1	1515.0	1509.8	1504.6
35°	1504.6	1504.6	1504.6	1515.0	1520.1	1520.1	1520.1	1515.0	1504.6	1499.4	1499.4
37.5°	1494.2	1499.4	1504.6	1509.8	1520.1	1520.1	1520.1	1509.8	1499.4	1494.2	1489.0
40°	1494.2	1494.2	1504.6	1509.8	1525.3	1525.3	1520.1	1509.8	1499.4	1489.0	1483.8
42.5°	1489.0	1494.2	1504.6	1520.1	1535.7	1535.7	1530.5	1515.0	1499.4	1489.0	1483.8
45°	1489.0	1489.0	1504.6	1525.3	1546.1	1551.3	1540.9	1525.3	1504.6	1483.8	1483.8
47.5°	1478.6	1478.6	1499.4	1525.3	1551.3	1556.5	1551.3	1525.3	1499.4	1483.8	1478.6
50°	1452.7	1452.7	1478.6	1509.8	1540.9	1551.3	1540.9	1520.1	1483.8	1463.1	1457.9
52.5°	1411.2	1411.2	1437.1	1478.6	1509.8	1525.3	1515.0	1489.0	1452.7	1421.6	1416.4
55°	1348.9	1354.1	1380.1	1426.8	1463.1	1478.6	1468.3	1437.1	1395.6	1364.5	1354.1
57.5°	1276.3	1276.3	1312.6	1359.3	1395.6	1411.2	1400.8	1369.7	1323.0	1291.9	1281.5
60°	1177.7	1182.9	1214.0	1276.3	1312.6	1328.2	1317.8	1281.5	1229.6	1193.3	1182.9
62.5°	1079.1	1084.3	1115.5	1167.3	1208.9	1219.2	1208.9	1172.5	1125.8	1089.5	1079.1
65°	965.0	970.2	1006.5	1053.2	1084.3	1099.9	1084.3	1053.2	1011.7	975.4	970.2
67.5°	845.7	850.9	887.2	928.7	959.8	970.2	954.6	928.7	887.2	856.1	845.7
70°	721.2	726.4	757.5	793.8	819.7	830.1	819.7	788.6	757.5	726.4	721.2
72.5°	591.5	596.6	627.8	658.9	679.7	690.0	674.5	653.7	622.6	596.6	591.5
75°	466.9	466.9	492.9	518.8	539.6	544.8	534.4	518.8	492.9	472.1	461.8
77.5°	347.6	347.6	373.6	389.1	399.5	409.9	399.5	383.9	368.4	347.6	347.6
80°	233.5	233.5	254.2	264.6	275.0	280.2	275.0	264.6	254.2	238.7	233.5
82.5°	140.1	140.1	150.5	160.8	160.8	166.0	166.0	160.8	150.5	140.1	140.1
85°	62.3	57.1	67.4	72.6	72.6	77.8	77.8	72.6	67.4	62.3	62.3
87.5°	5.2	10.4	10.4	15.6	15.6	15.6	15.6	15.6	10.4	10.4	10.4
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 TT and TTN families of products

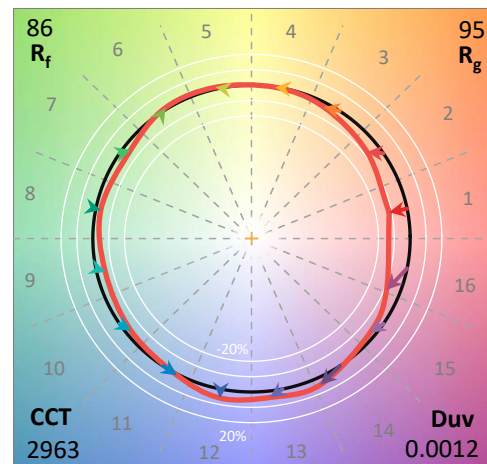
Test Information

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

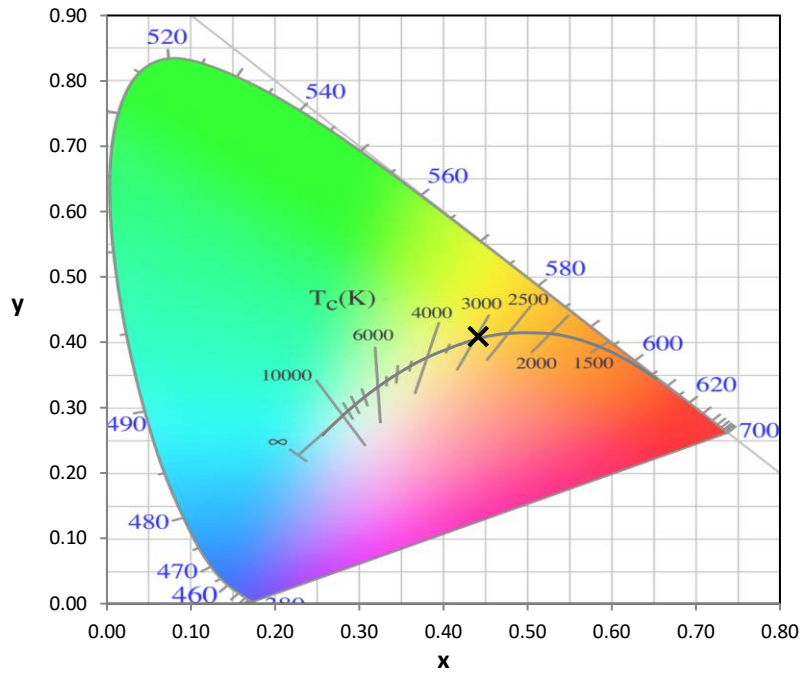
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

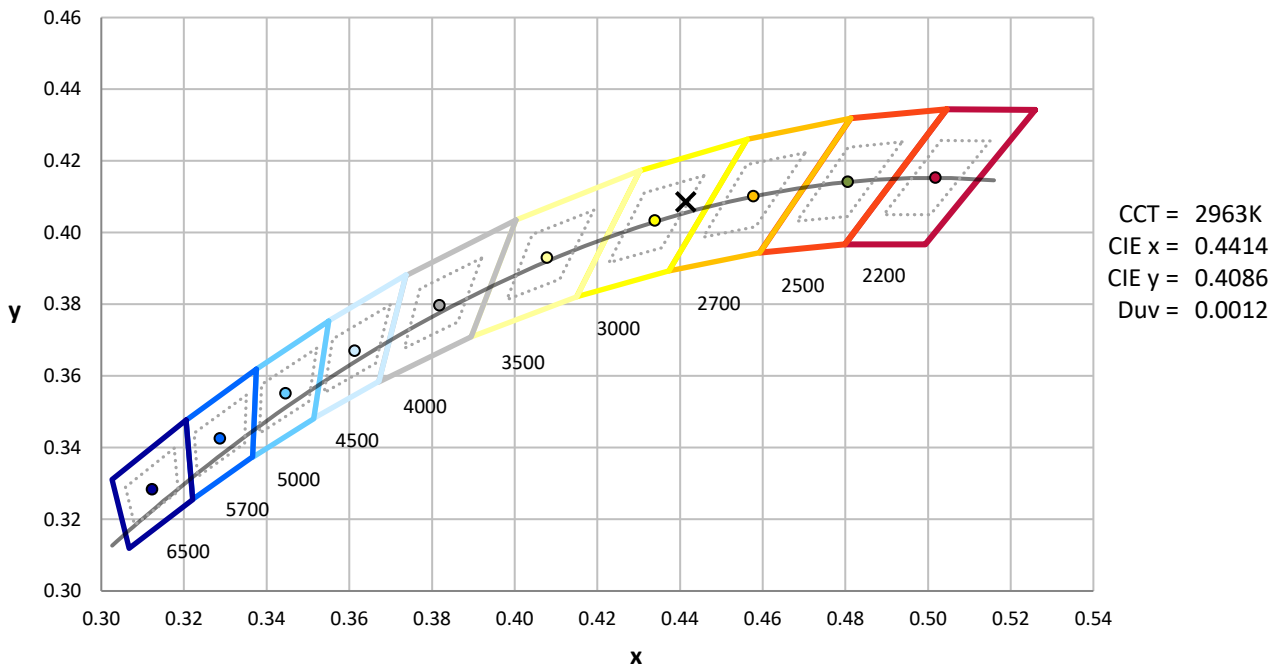
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram

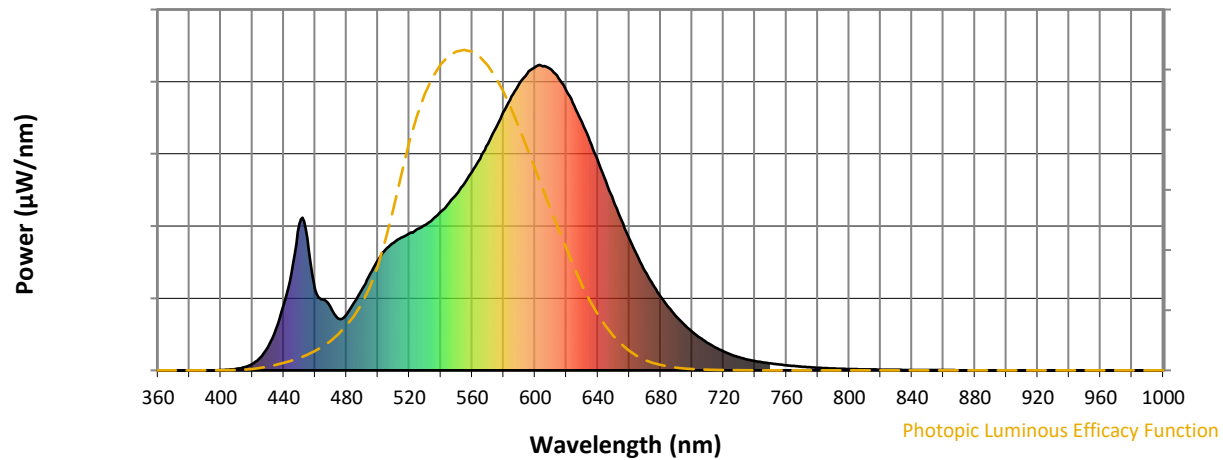


CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

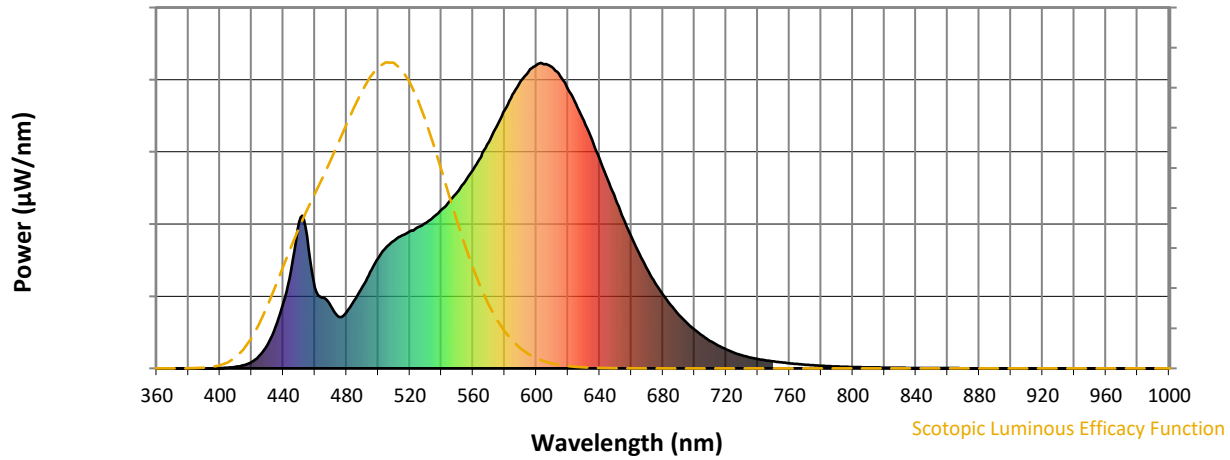
REPORT NUMBER: SP1-2411-284-4

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



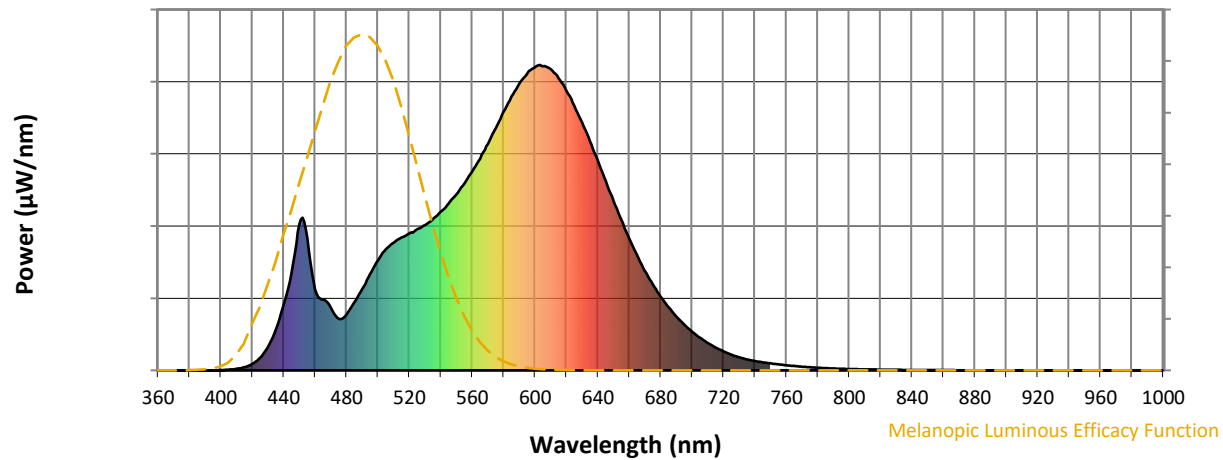
Scotopic Lumens: NR

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

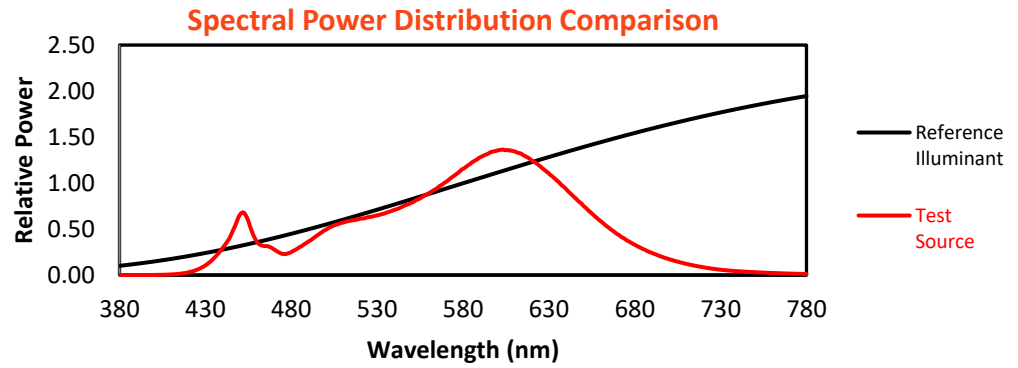
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267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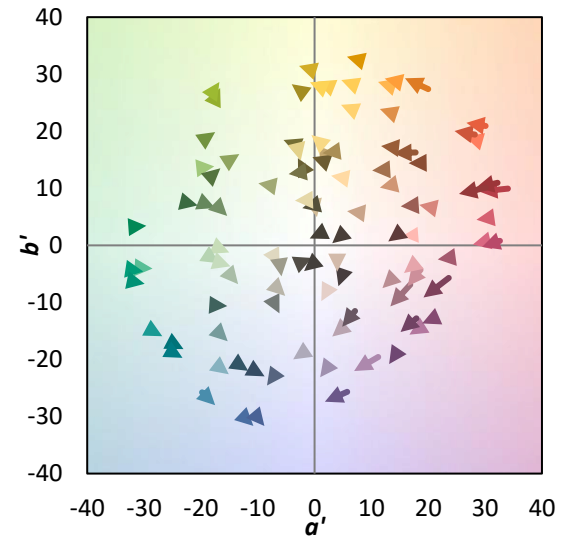
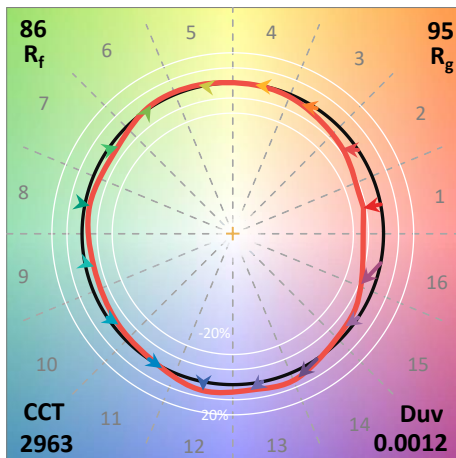
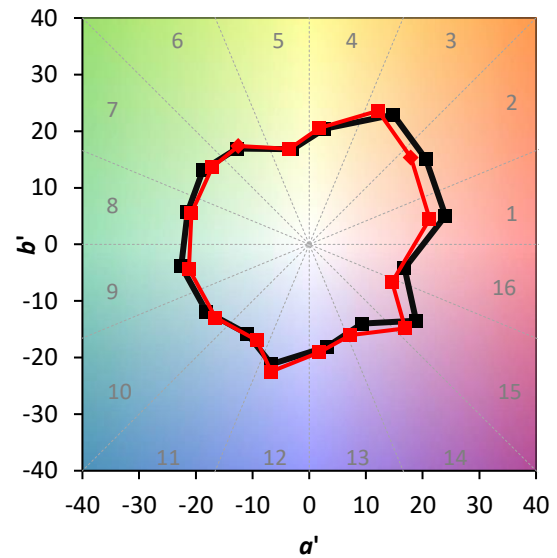
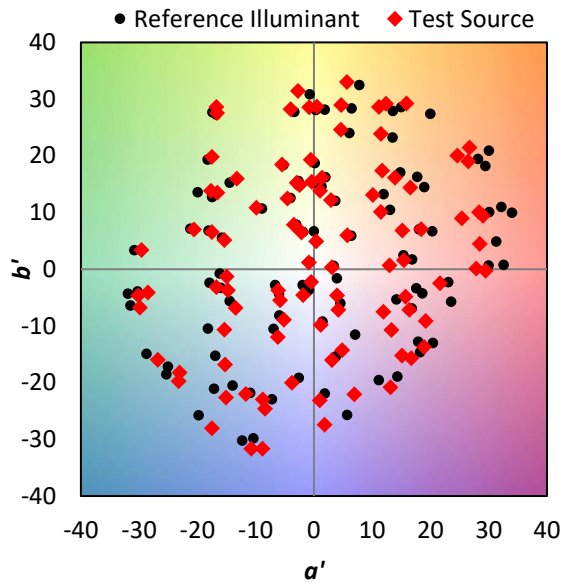
TM-30-18

Summary

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

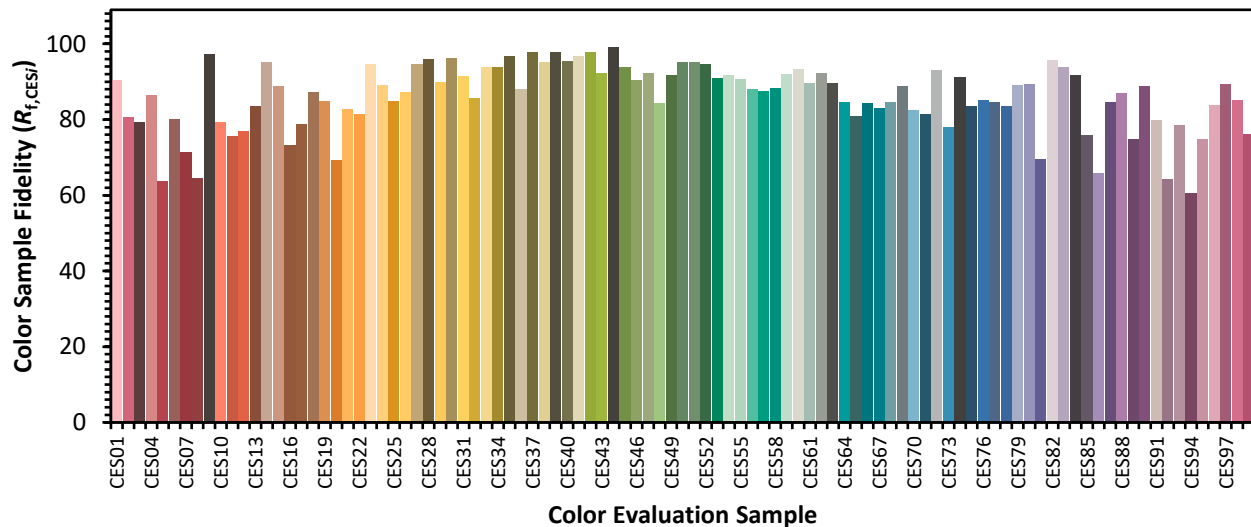


Color Vector Graphics

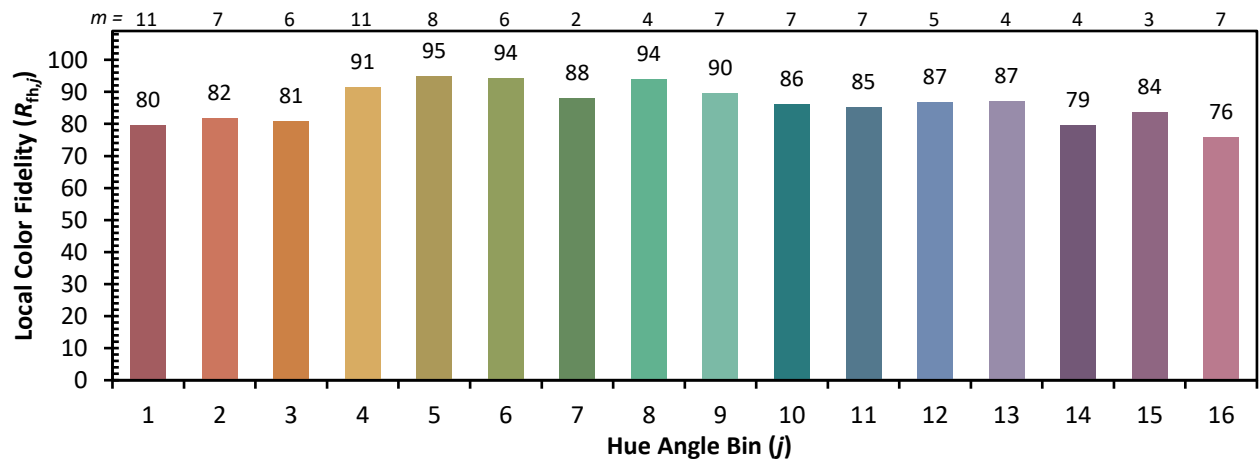
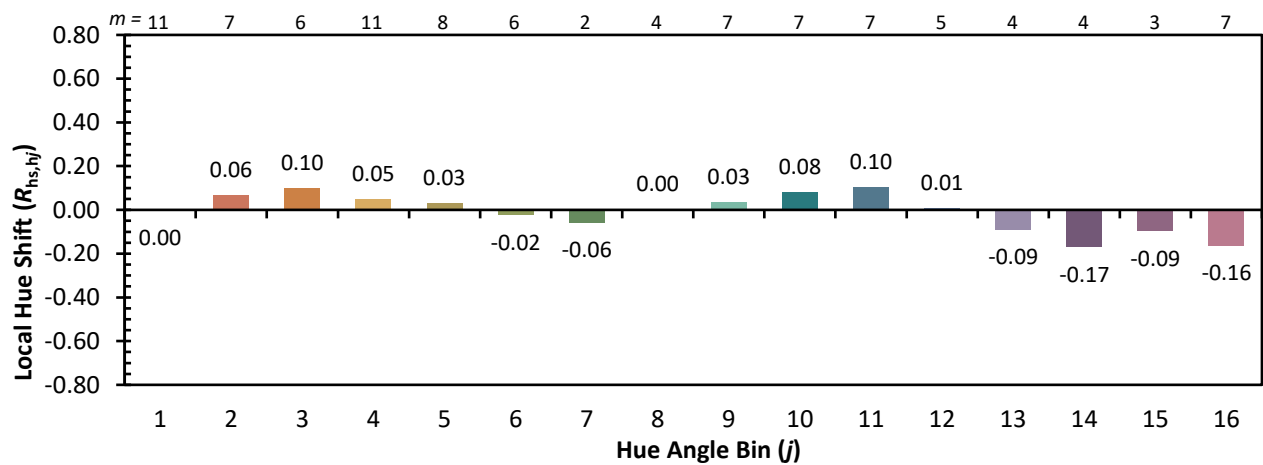
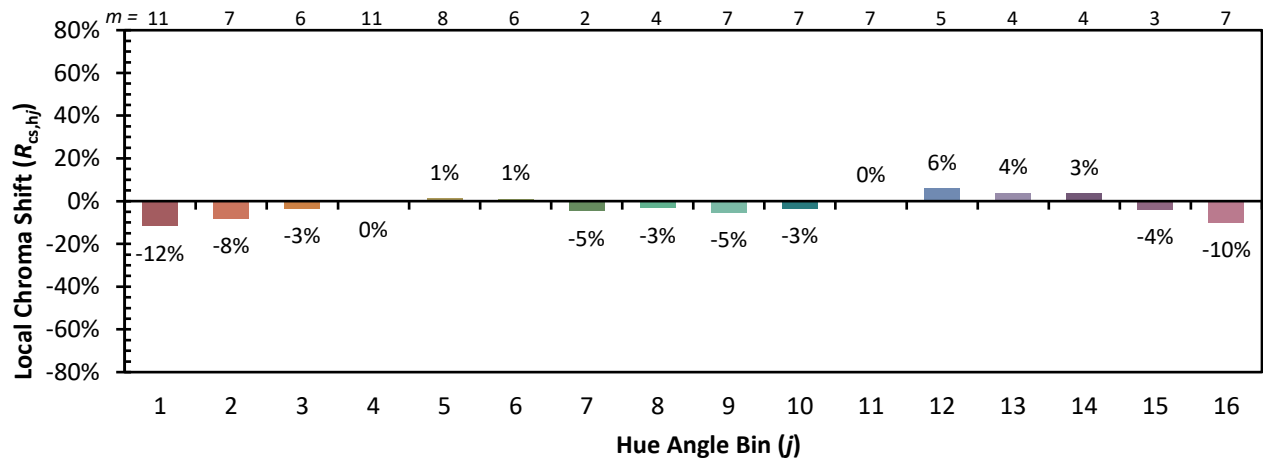


Individual Sample Fidelity Index ($R_{f,i}$)

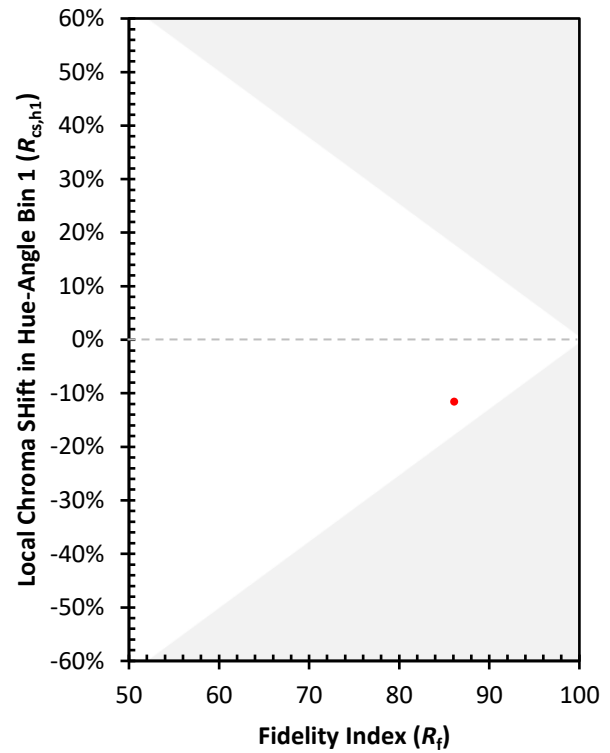
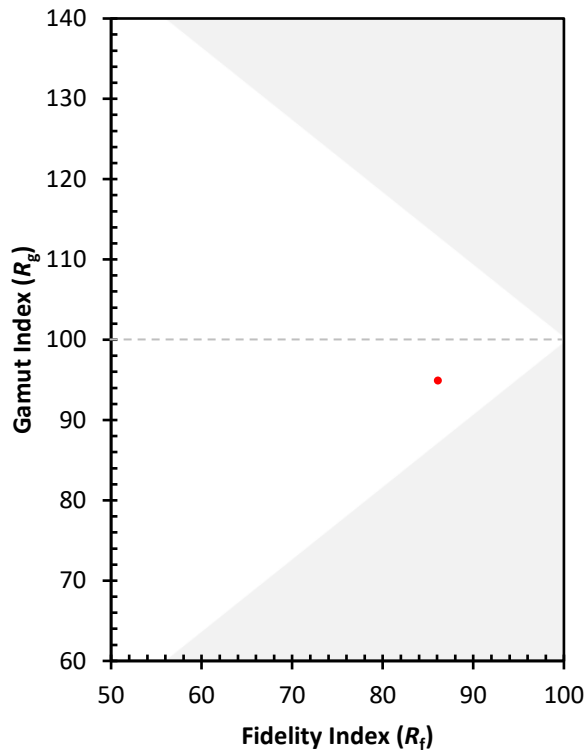
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82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