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: P832690

Luminaire Tested: **TTN-D3-740-U-WQ-SG**

Issue Date: 5/14/2024

Report Generated By 670246001

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

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P832690
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-16)
Test Lab:	INNOVATION CENTER
Issue Date:	5/14/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D3-740-U-WQ-SG
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE
	4000K, 70 CRI LEDS AND WIDE DISTRIBUTION WITH SOLITE GLASS
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	6549 lumens
Efficiency:	N/A
Efficacy:	110.6 lumens/watt
Luminous Opening:	Circular (Dia: 0.71' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G1

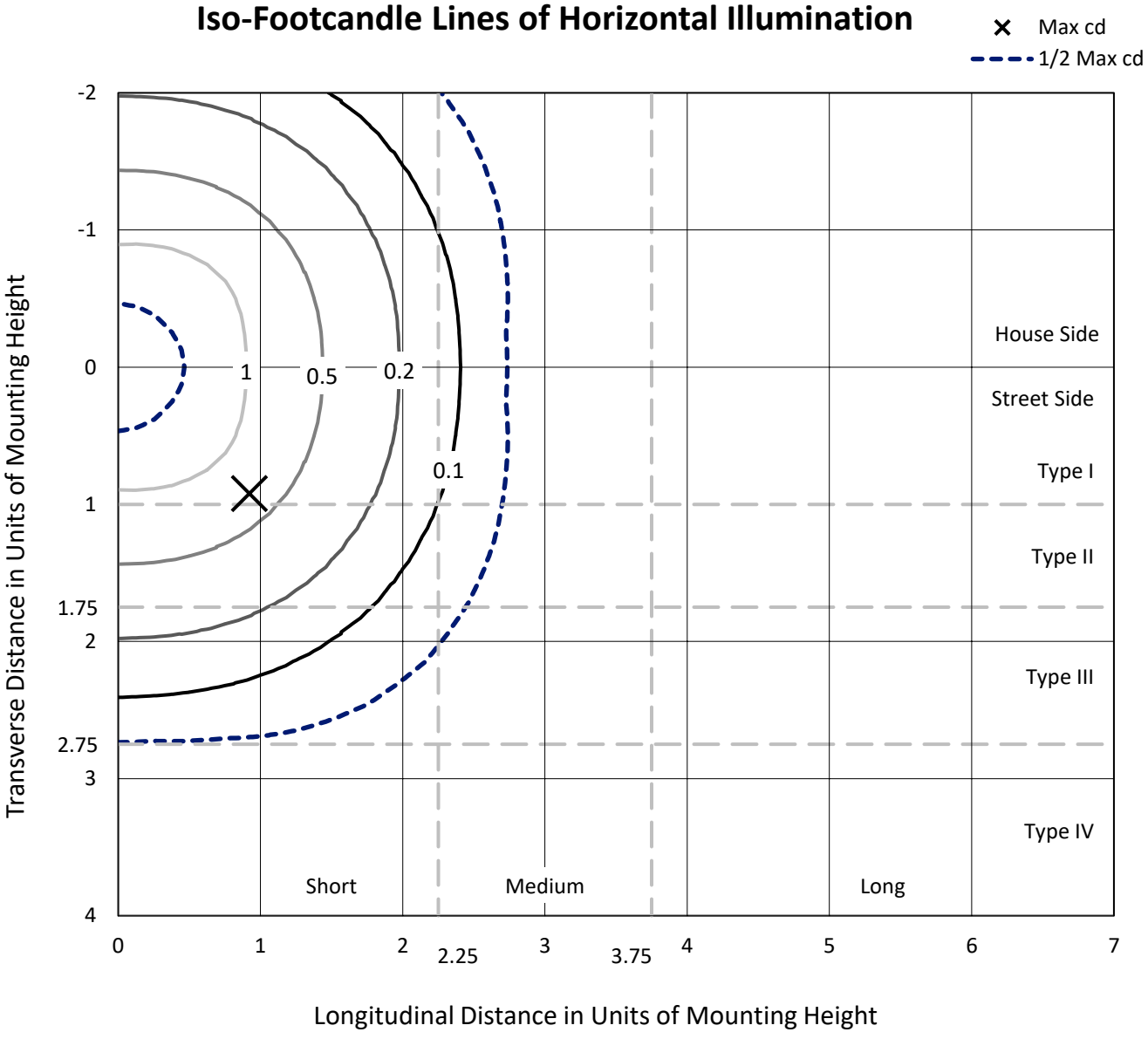
Input Watts (W):	59.2
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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

Scaled Data Report

REPORT NUMBER: P832690
CATALOG NUMBER: TTN-D3-740-U-WQ-SG

Iso-Footcandle Lines of Horizontal Illumination



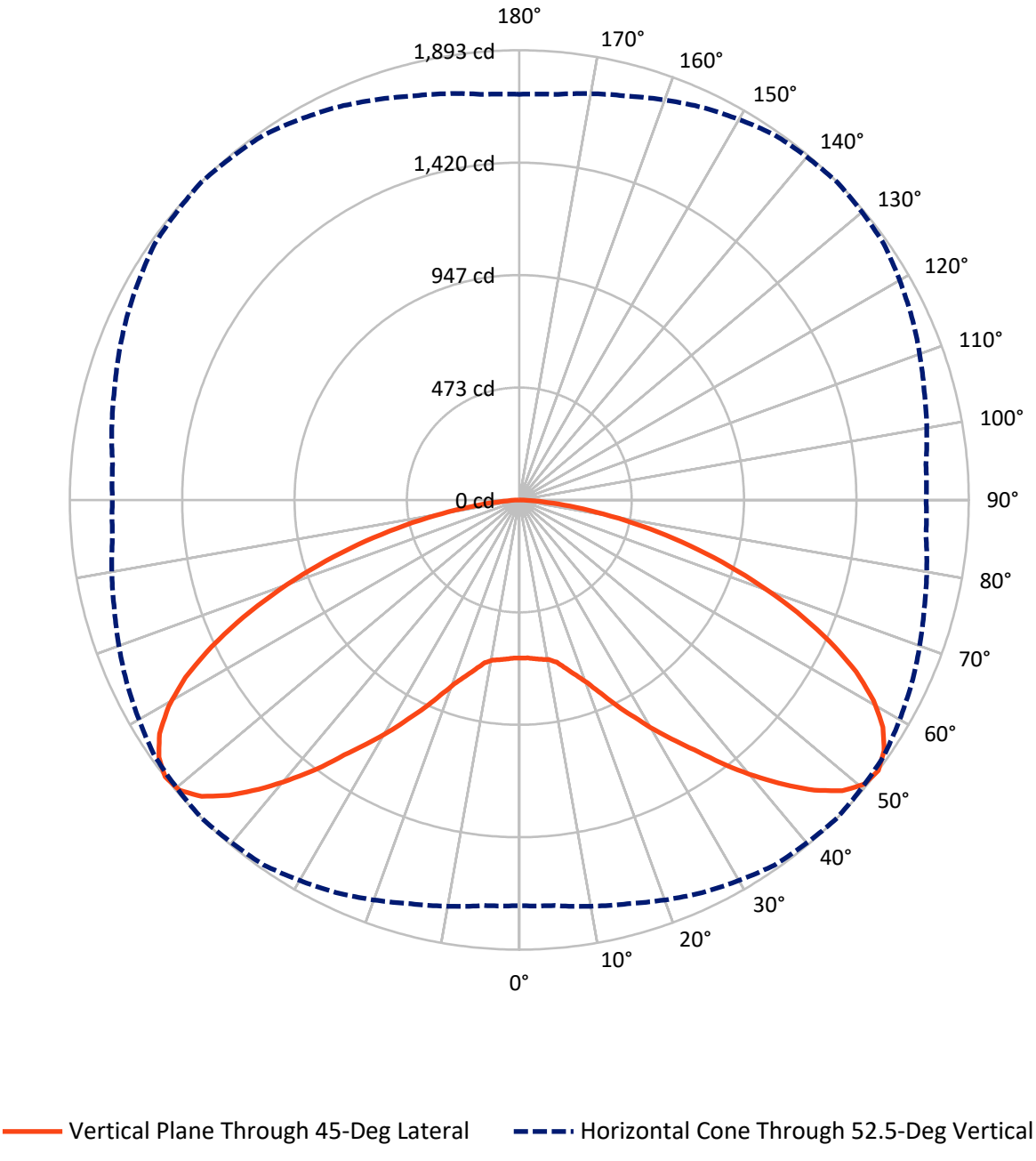
Based on 25 foot mounting height. Maximum calculated value = 1.2 fc
Type V - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P832690
CATALOG NUMBER: TTN-D3-740-U-WQ-SG

Luminous Intensity Polar Plot



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

Scaled Data Report

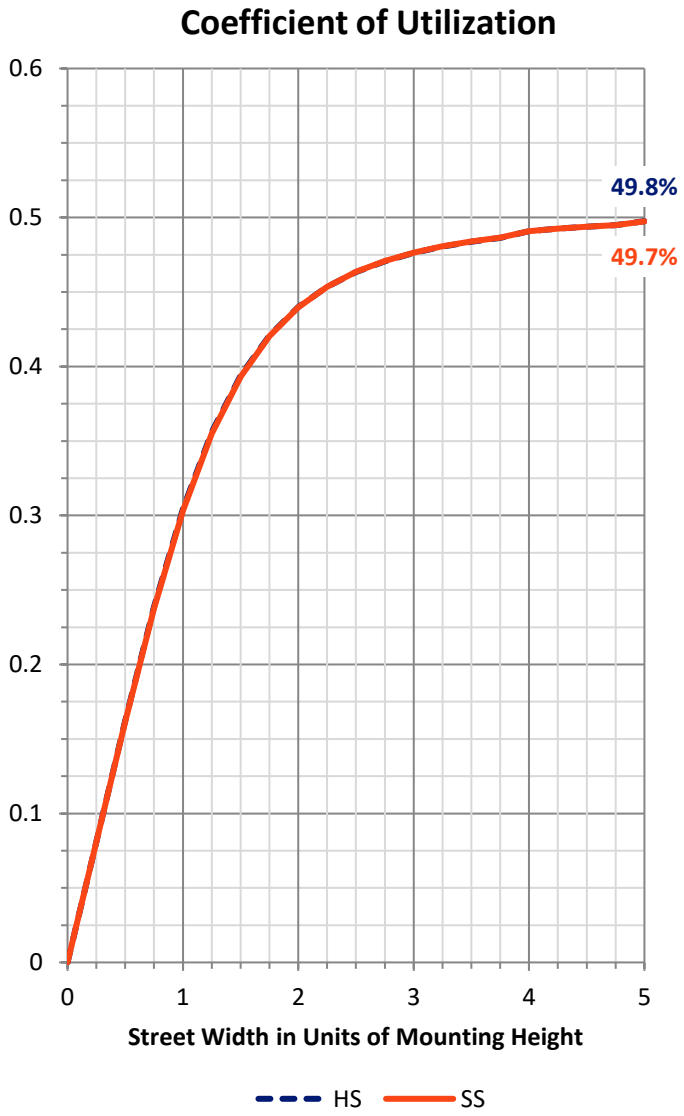
REPORT NUMBER: P832690
CATALOG NUMBER: TTN-D3-740-U-WQ-SG

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3274.5	0.0	3274.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3274.5	0.0	3274.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	6549.0	0.0	6549.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.3	1.0
10°-20°	211.3	3.2
20°-30°	446.0	6.8
30°-40°	814.8	12.4
40°-50°	1297.1	19.8
50°-60°	1568.4	23.9
60°-70°	1318.7	20.1
70°-80°	699.0	10.7
80°-90°	129.3	2.0
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°	6549.0	100.0
0°-180°	6549.0	100.0



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

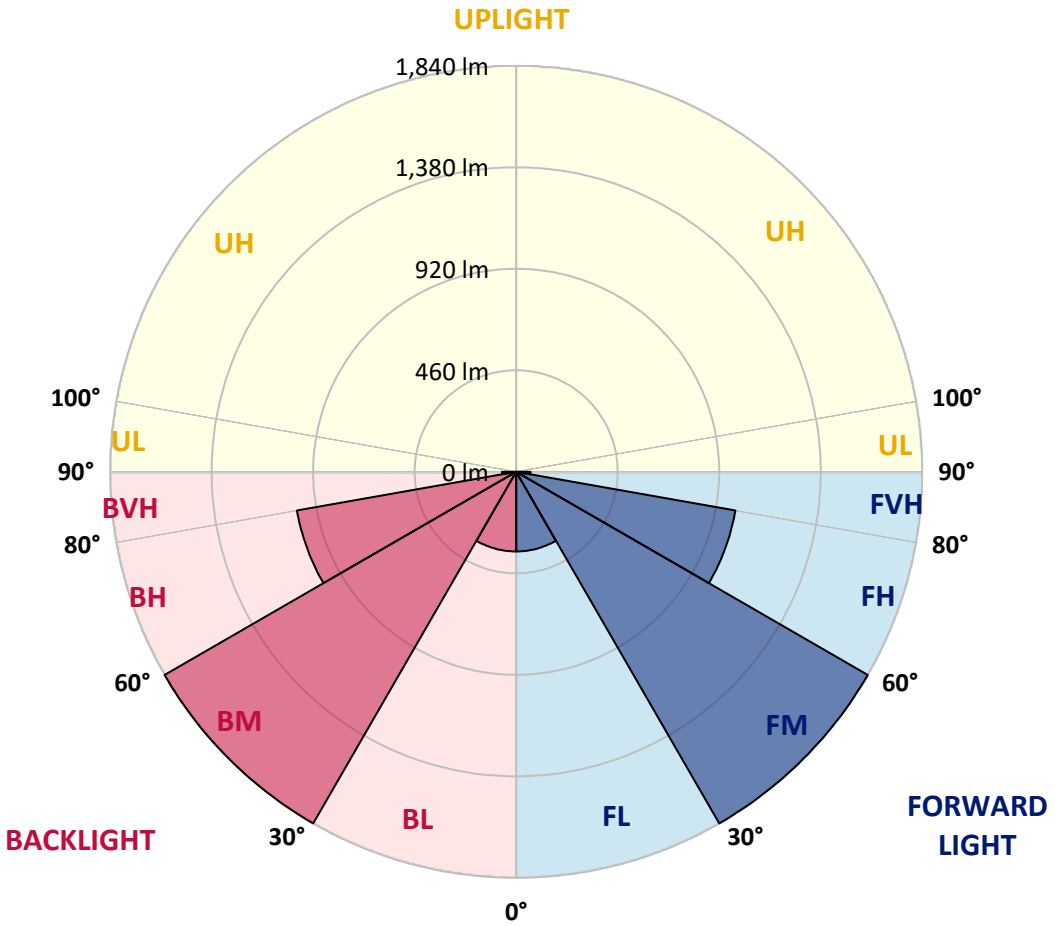
Scaled Data Report

REPORT NUMBER: P832690
CATALOG NUMBER: TTN-D3-740-U-WQ-SG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	360.8	5.5			
FM	(30°-60°)	1840.1	28.1			
FH	(60°-80°)	1008.9	15.4			G1/1800
FVH	(80°-90°)	64.7	1.0			G1/100
BL	(0°-30°)	360.8	5.5	B1/500		
BM	(30°-60°)	1840.1	28.1	B2/2500		
BH	(60°-80°)	1008.9	15.4	B3/2500		G1/1800
BVH	(80°-90°)	64.7	1.0			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G1
Type V Short



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

Scaled Data Report

REPORT NUMBER: P832690
CATALOG NUMBER: TTN-D3-740-U-WQ-SG

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
5°	671.6	671.6	665.8	671.6	671.6	671.6	671.6	671.6	671.6	671.6	671.6
7.5°	671.6	671.6	671.6	677.4	677.4	677.4	677.4	671.6	671.6	671.6	671.6
10°	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2
12.5°	700.6	700.6	700.6	700.6	700.6	700.6	700.6	700.6	700.6	700.6	700.6
15°	729.5	729.5	729.5	729.5	735.3	735.3	735.3	729.5	729.5	729.5	729.5
17.5°	764.2	764.2	770.0	770.0	775.8	775.8	775.8	770.0	764.2	770.0	764.2
20°	816.4	816.4	816.4	822.1	827.9	822.1	827.9	816.4	816.4	816.4	816.4
22.5°	874.3	874.3	874.3	880.0	885.8	885.8	885.8	874.3	874.3	874.3	874.3
25°	943.7	943.7	943.7	949.5	955.3	961.1	961.1	949.5	943.7	943.7	937.9
27.5°	1013.2	1013.2	1024.8	1030.6	1036.4	1036.4	1036.4	1024.8	1019.0	1019.0	1019.0
30°	1094.3	1094.3	1105.8	1111.6	1123.2	1123.2	1123.2	1105.8	1100.0	1094.3	1094.3
32.5°	1169.5	1175.3	1186.9	1198.5	1210.1	1210.1	1215.8	1192.7	1181.1	1175.3	1175.3
35°	1250.6	1256.4	1268.0	1285.3	1296.9	1302.7	1308.5	1285.3	1268.0	1262.2	1262.2
37.5°	1343.2	1349.0	1366.4	1383.7	1406.9	1418.5	1424.3	1389.5	1360.6	1349.0	1349.0
40°	1447.4	1453.2	1470.6	1493.8	1516.9	1528.5	1534.3	1499.5	1470.6	1459.0	1453.2
42.5°	1534.3	1545.9	1563.2	1598.0	1621.1	1638.5	1638.5	1598.0	1563.2	1545.9	1545.9
45°	1615.3	1626.9	1655.9	1690.6	1725.3	1742.7	1736.9	1696.4	1655.9	1632.7	1626.9
47.5°	1679.0	1690.6	1725.3	1765.9	1812.2	1829.6	1823.8	1777.4	1725.3	1696.4	1690.6
50°	1713.8	1719.6	1760.1	1818.0	1864.3	1881.7	1870.1	1823.8	1765.9	1725.3	1719.6
52.5°	1708.0	1713.8	1760.1	1823.8	1875.9	1893.2	1875.9	1823.8	1765.9	1719.6	1713.8
55°	1673.2	1679.0	1725.3	1794.8	1846.9	1864.3	1846.9	1794.8	1731.1	1684.8	1679.0
57.5°	1609.5	1615.3	1661.7	1731.1	1789.0	1806.4	1783.2	1725.3	1661.7	1615.3	1615.3
60°	1516.9	1522.7	1569.0	1644.3	1696.4	1713.8	1684.8	1638.5	1574.8	1522.7	1516.9
62.5°	1395.3	1395.3	1447.4	1522.7	1569.0	1592.2	1563.2	1511.1	1453.2	1395.3	1401.1
65°	1250.6	1244.8	1296.9	1366.4	1418.5	1435.9	1406.9	1360.6	1302.7	1250.6	1250.6
67.5°	1100.0	1100.0	1140.6	1198.5	1244.8	1262.2	1233.2	1192.7	1146.4	1100.0	1100.0
70°	937.9	937.9	966.9	1024.8	1065.3	1076.9	1059.5	1019.0	978.5	937.9	937.9
72.5°	775.8	770.0	799.0	845.3	880.0	891.6	874.3	851.1	804.8	775.8	775.8
75°	613.7	607.9	625.3	665.8	694.8	706.3	689.0	671.6	636.9	613.7	613.7
77.5°	457.4	451.6	469.0	503.7	521.1	526.9	515.3	503.7	474.8	457.4	457.4
80°	312.6	306.9	318.4	341.6	359.0	359.0	353.2	347.4	324.2	312.6	318.4
82.5°	185.3	179.5	191.1	208.4	220.0	214.2	214.2	208.4	191.1	185.3	185.3
85°	81.1	75.3	81.1	92.6	104.2	98.4	98.4	98.4	86.8	81.1	81.1
87.5°	11.6	11.6	11.6	17.4	23.2	17.4	17.4	17.4	11.6	11.6	11.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

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

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2411-284-2

Test Date: 11/20/2024

Luminaire Tested: TTN-D0-740-U-WQ

Data in this report applies to TT and TTN families of products

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

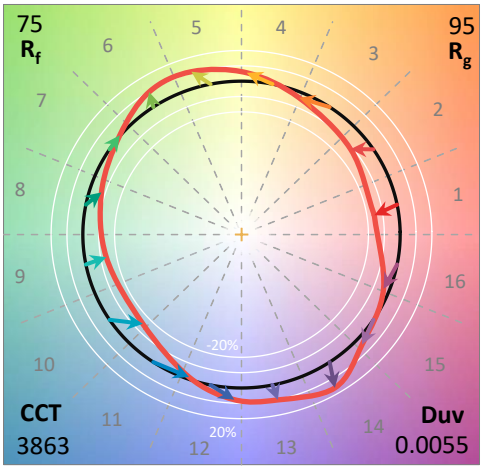
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2411-284-2
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	11/20/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**TTN-D0-740-U-WQ**
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 4000K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K):	3863
CIE u':	0.2247
CIE v':	0.5111
Duv:	0.0055
CIE x:	0.3911
CIE y:	0.3954
CIE z:	0.2136
Peak Wavelength (nm):	448
Dominant Wavelength (nm):	577
Purity:	36.03443
Rf:	74.7
Rg:	95.4

CRI (Ra):	71.9
R1:	69.4
R2:	76.9
R3:	83.3
R4:	72.7
R5:	68.4
R6:	67.5
R7:	82.0
R8:	55.3
R9:	-23.5
R10:	45.4
R11:	68.7
R12:	38.7
R13:	70.0
R14:	90.3
R15:	62.1



Test Conditions

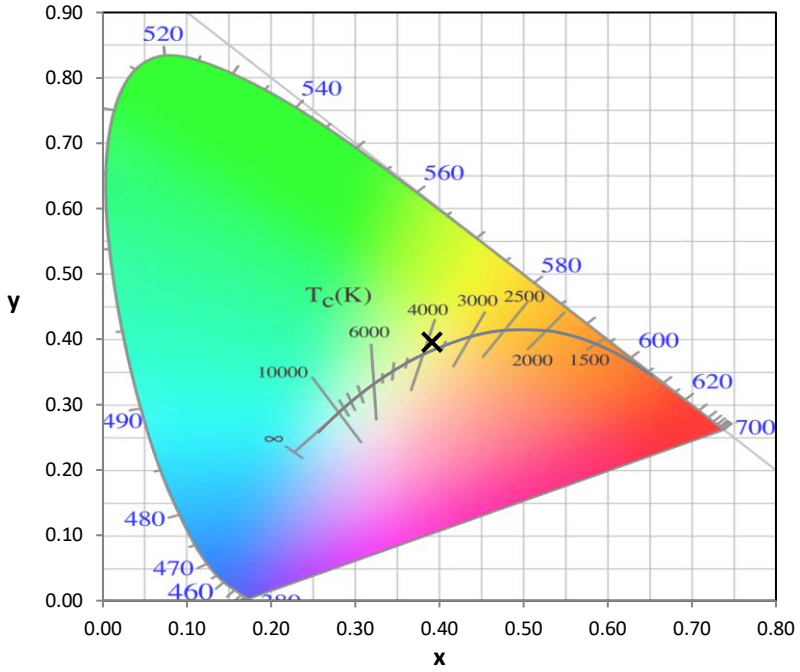
Stabilization Time:	37M
Operation Time:	1H 37M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2411-284-2

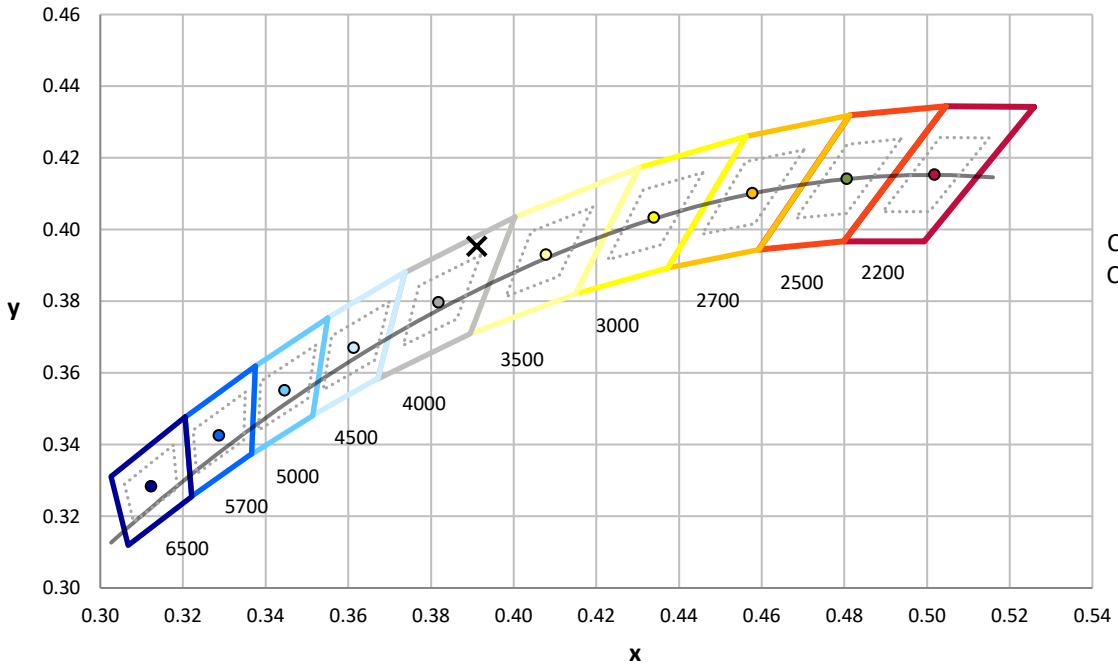
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-2

CIE 1931 Chromaticity Diagram



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

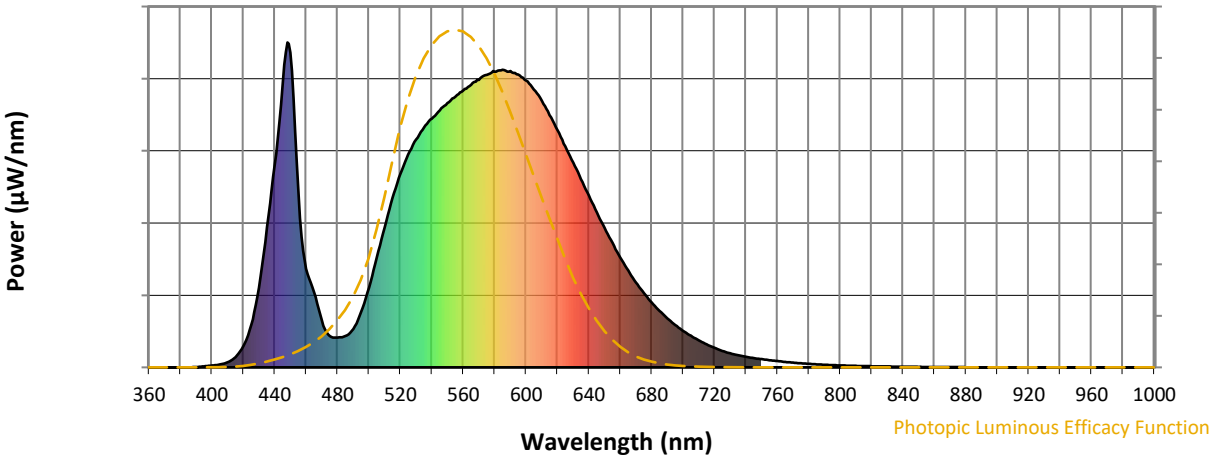


CCT = 3863K
CIE x = 0.3911
CIE y = 0.3954
Duv = 0.0055

Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-2

Photopic Flux vs. Wavelength

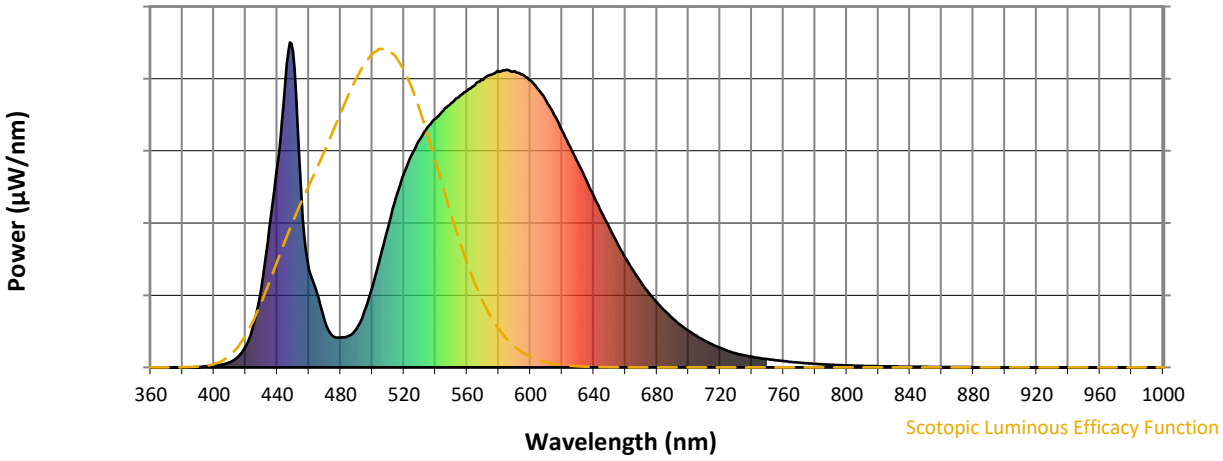


Photopic Lumens: NR

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	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-2

Scotopic Flux vs. Wavelength

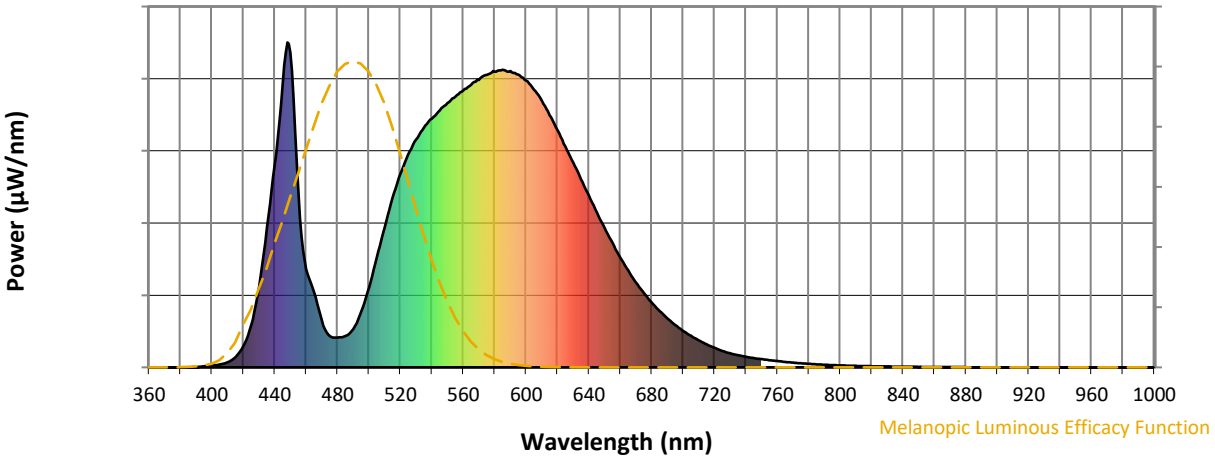


Scotopic Lumens: NR **S/P: 1.45**

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	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.72**

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	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

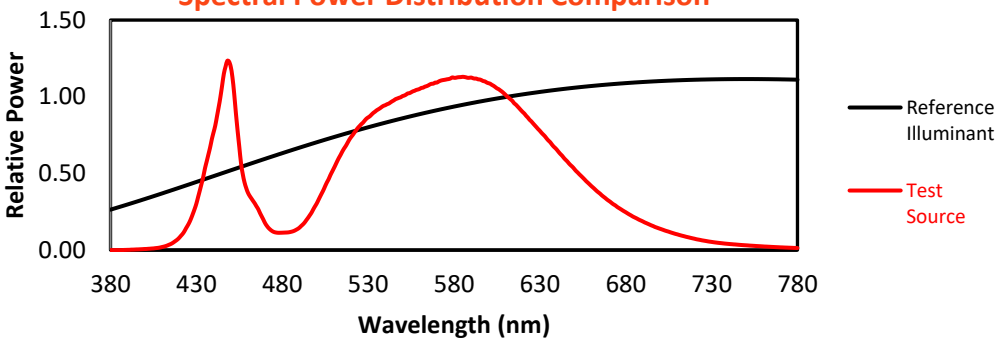
REPORT NUMBER: SP1-2411-284-2

TM-30-18

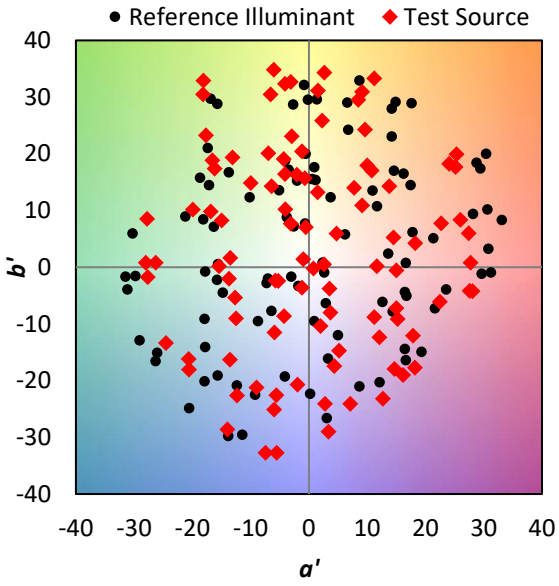
Summary

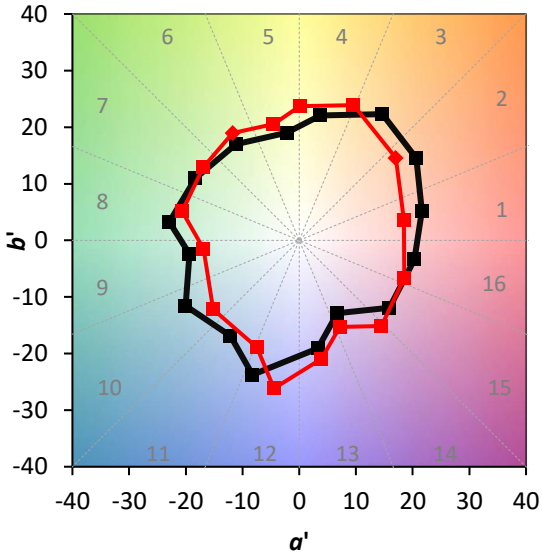
R_f = 74.7
R_g = 95.4
CIE R_a = 71.9
R_9 = -23.5

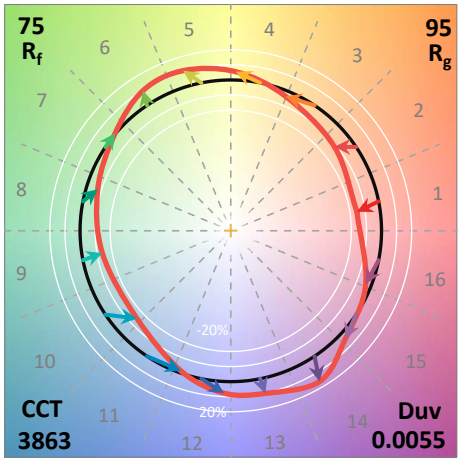
Spectral Power Distribution Comparison

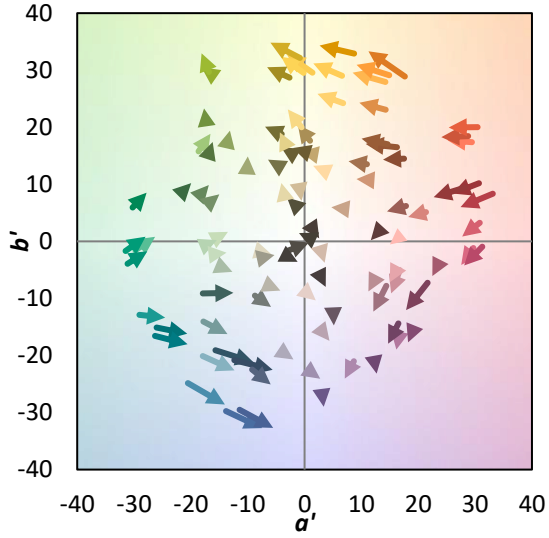


Color Vector Graphics







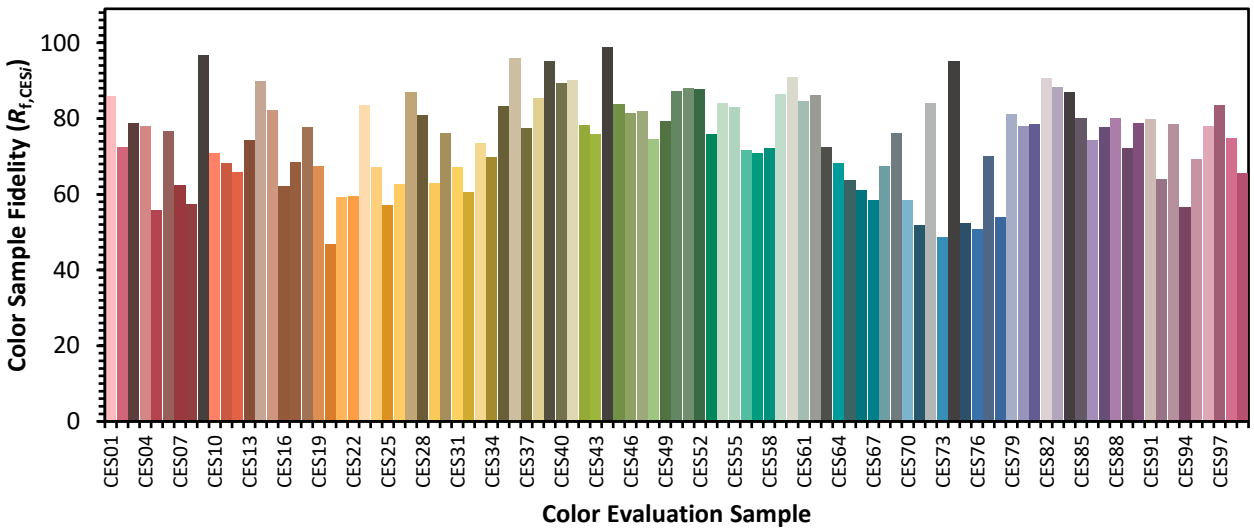


REPORT NUMBER: SP1-2411-284-2

TM-30-18

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

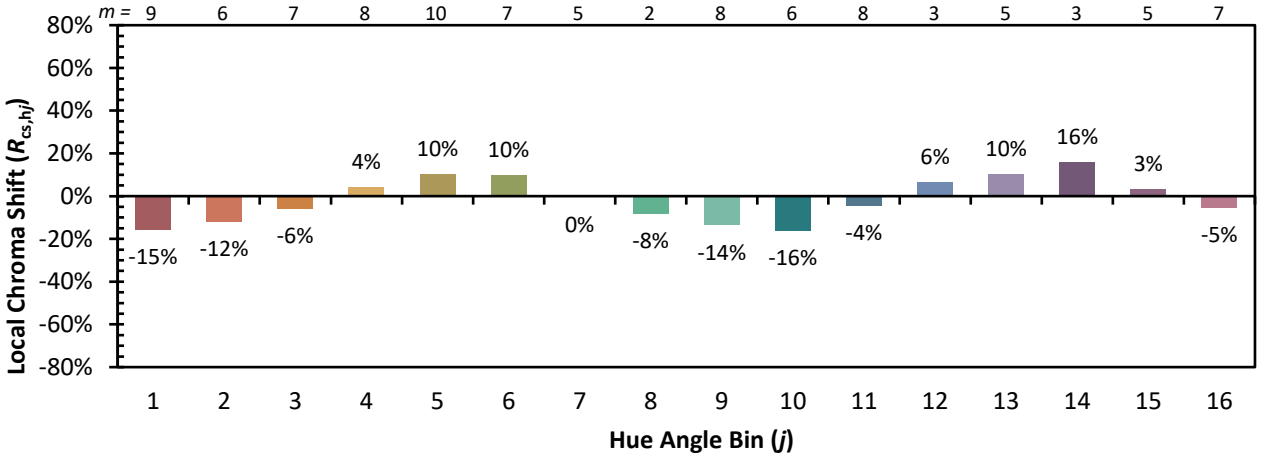
CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 91
CES08 = 39	CES33 = 73	CES58 = 72	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 83	CES60 = 91	CES85 = 80
CES11 = 57	CES36 = 96	CES61 = 85	CES86 = 74
CES12 = 63	CES37 = 77	CES62 = 86	CES87 = 78
CES13 = 42	CES38 = 85	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 95	CES64 = 68	CES89 = 72
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 79
CES16 = 46	CES41 = 90	CES66 = 61	CES91 = 80
CES17 = 49	CES42 = 78	CES67 = 58	CES92 = 64
CES18 = 56	CES43 = 76	CES68 = 67	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 76	CES94 = 57
CES20 = 65	CES45 = 84	CES70 = 58	CES95 = 69
CES21 = 86	CES46 = 81	CES71 = 52	CES96 = 78
CES22 = 78	CES47 = 82	CES72 = 84	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 79	CES74 = 95	CES99 = 66
CES25 = 72	CES50 = 87	CES75 = 52	

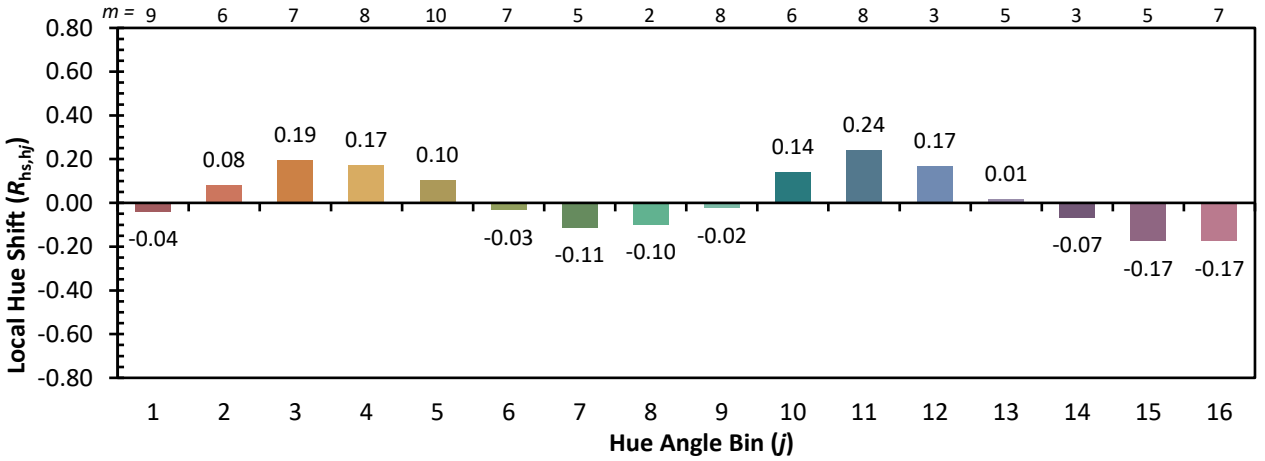


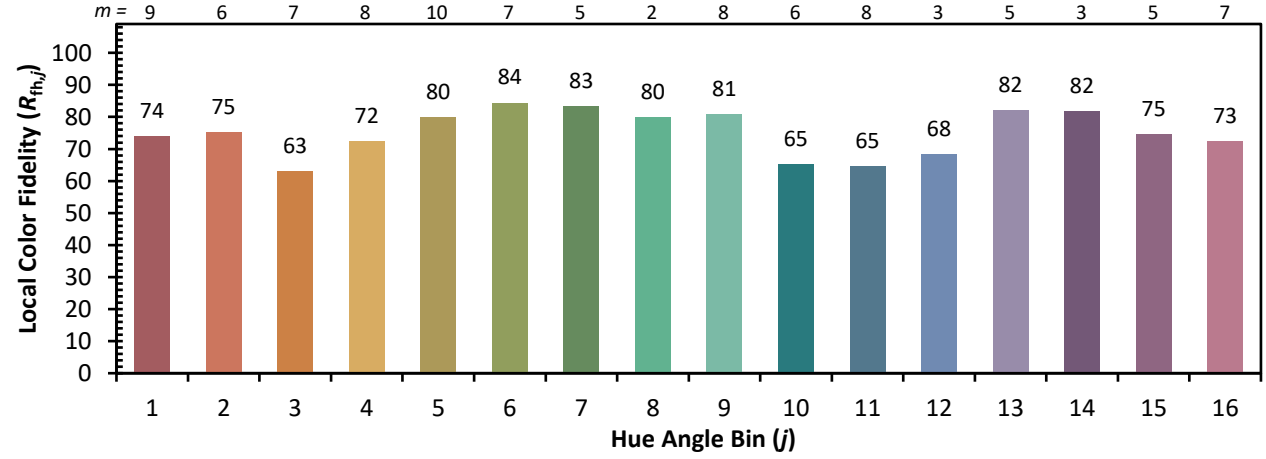
REPORT NUMBER: SP1-2411-284-2

TM-30-18

Color Rendition by Hue-Angle Bin



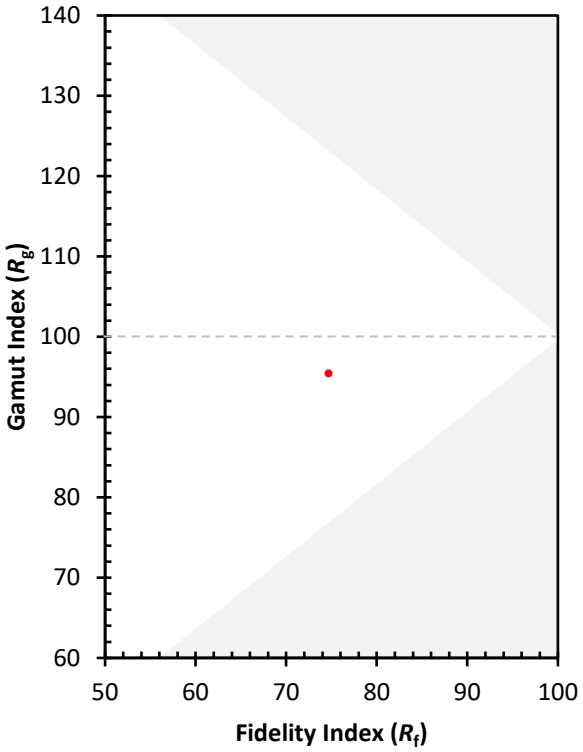


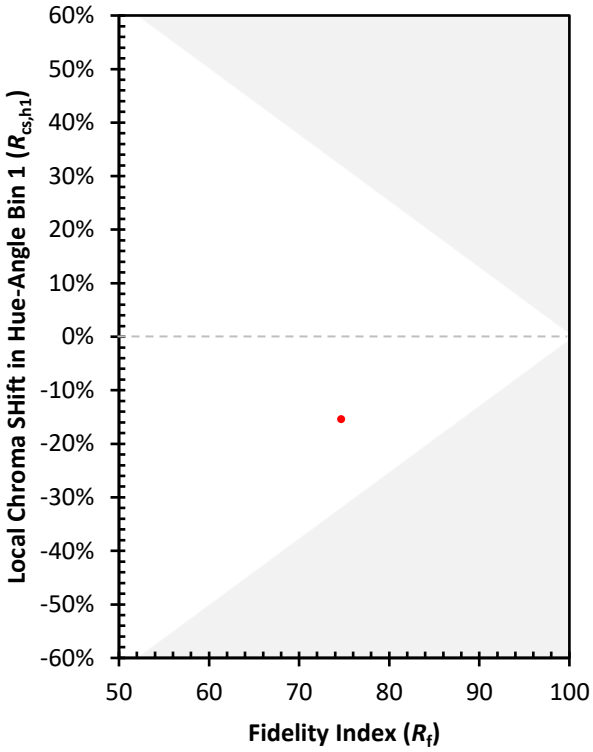


REPORT NUMBER: SP1-2411-284-2

TM-30-18

Measure Comparisons





(END OF REPORT)