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: P832632

Luminaire Tested: **TTN-D2-750-U-MQ-CG**

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:	P832632
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-13)
Test Lab:	INNOVATION CENTER
Issue Date:	5/14/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D2-750-U-MQ-CG
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE
	5000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION WITH CLEAR GLASS
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5360 lumens
Efficiency:	N/A
Efficacy:	126.1 lumens/watt
Luminous Opening:	Circular (Dia: 0.71' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B2 - U0 - G1

Input Watts (W):	42.5
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

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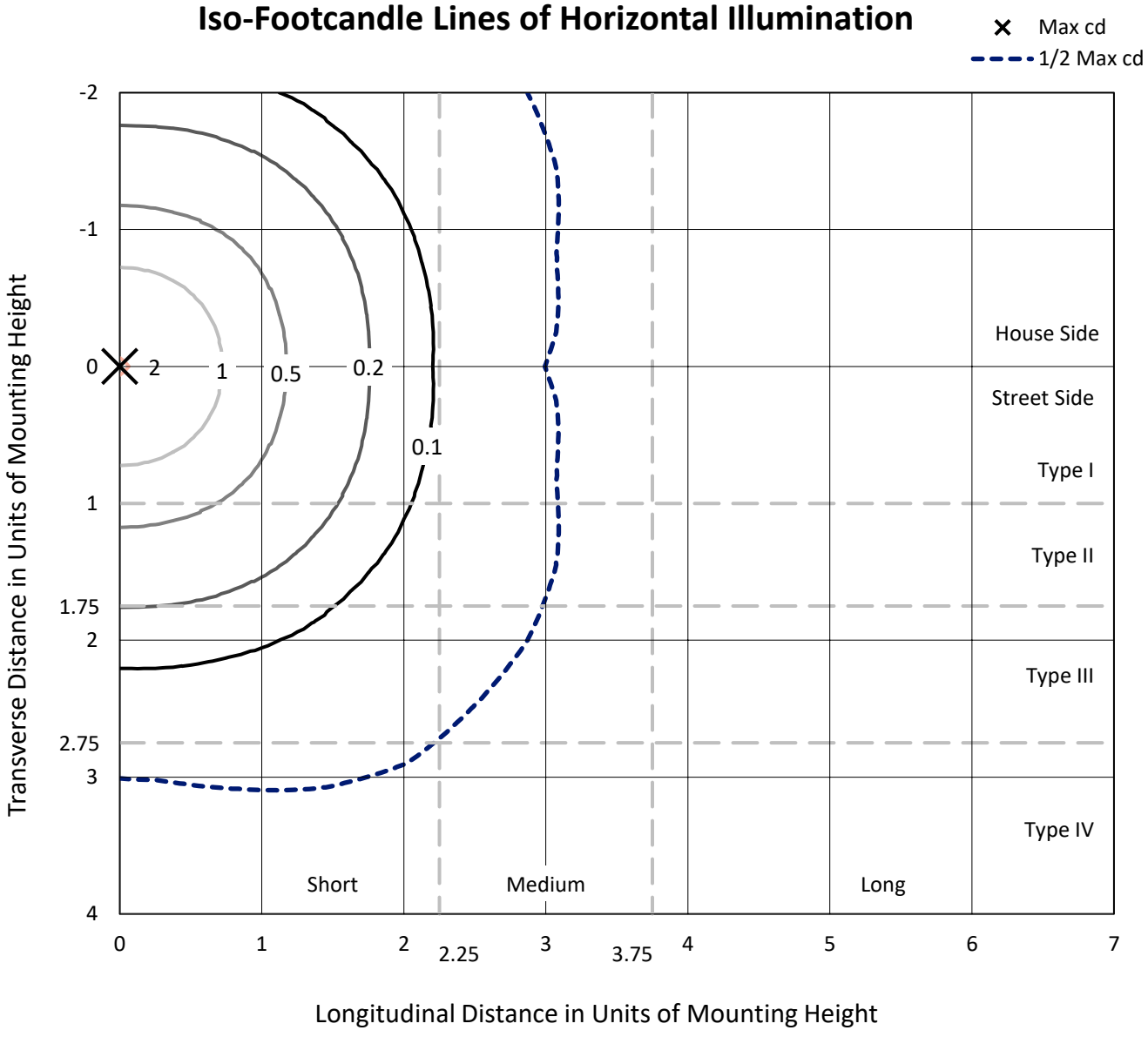
Scaled Data Report

REPORT NUMBER: P832632
CATALOG NUMBER: TTN-D2-750-U-MQ-CG

Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 2 fc
Type V - Short - N/A

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REPORT NUMBER: P832632
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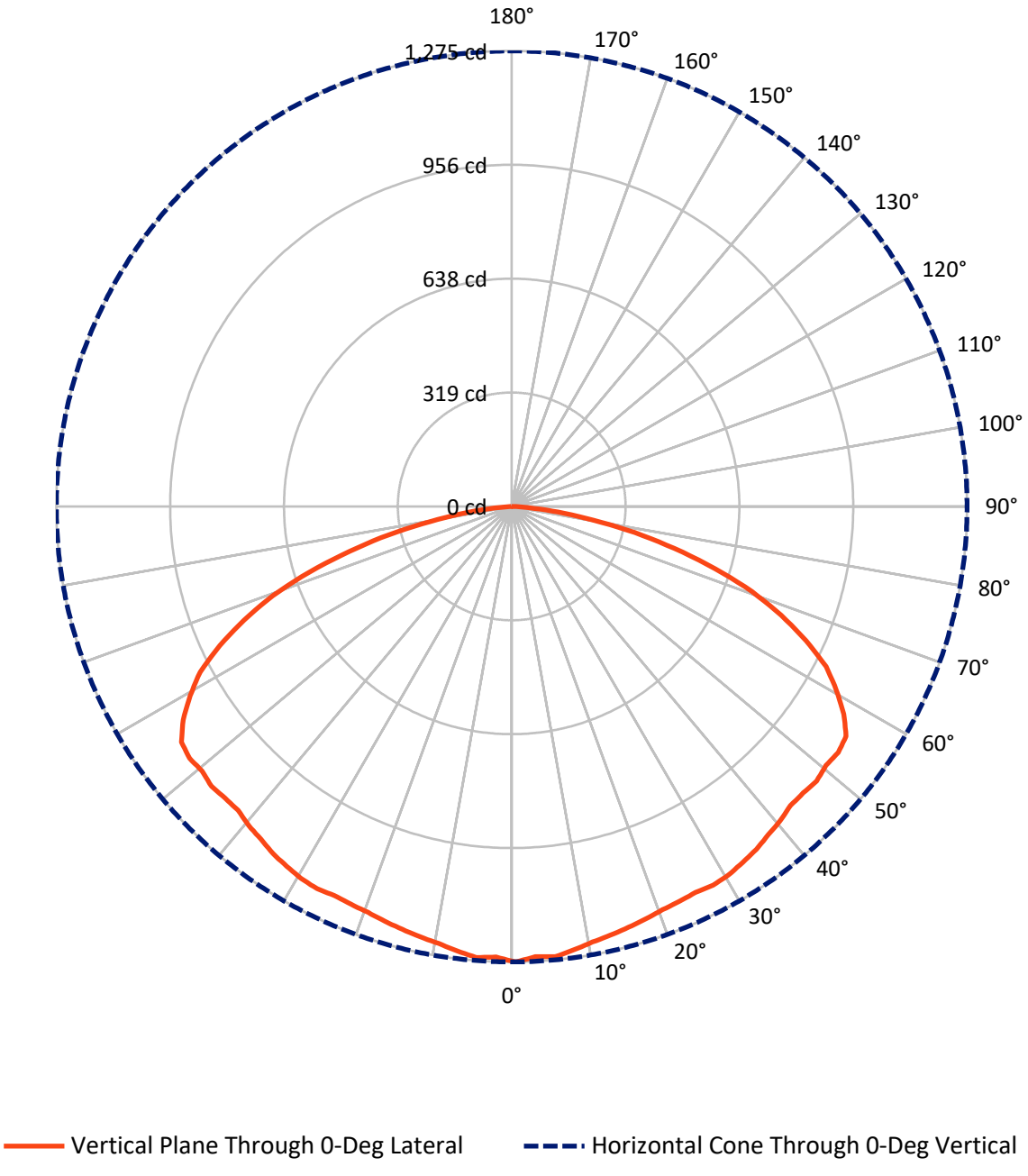
Luminous Intensity Polar Plot



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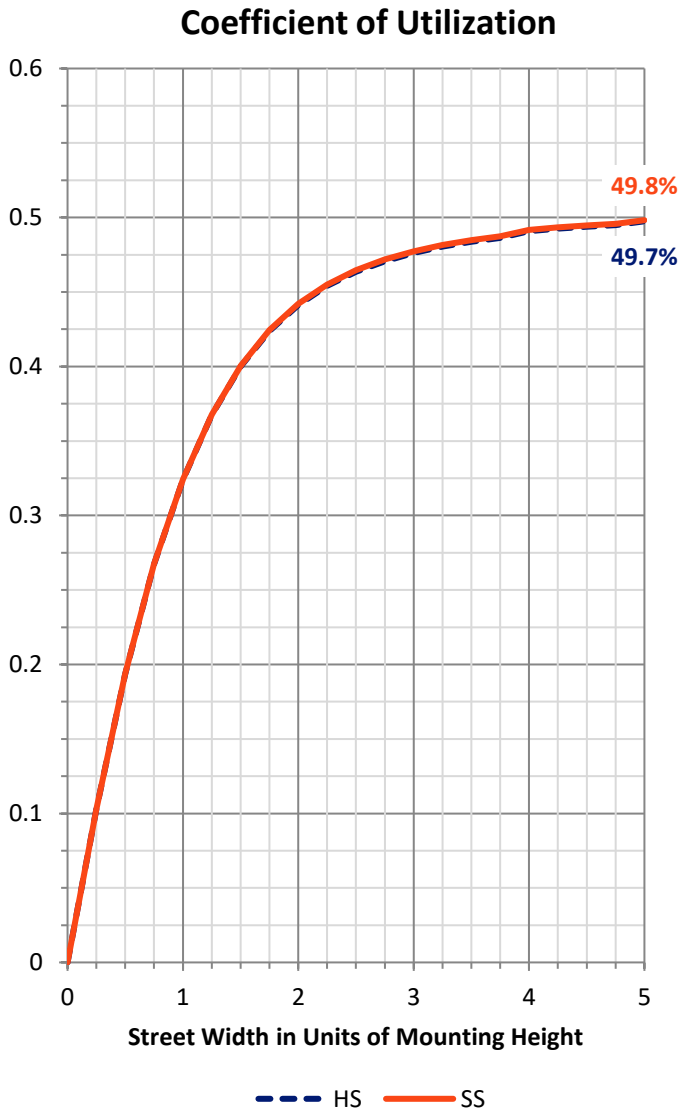
REPORT NUMBER: P832632
CATALOG NUMBER: TTN-D2-750-U-MQ-CG

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2680.0	0.0	2680.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2680.0	0.0	2680.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	5360.0	0.0	5360.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.8	2.2
10°-20°	346.4	6.5
20°-30°	557.3	10.4
30°-40°	744.4	13.9
40°-50°	904.5	16.9
50°-60°	1050.9	19.6
60°-70°	969.6	18.1
70°-80°	567.6	10.6
80°-90°	99.5	1.9
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°	5360.0	100.0
0°-180°	5360.0	100.0



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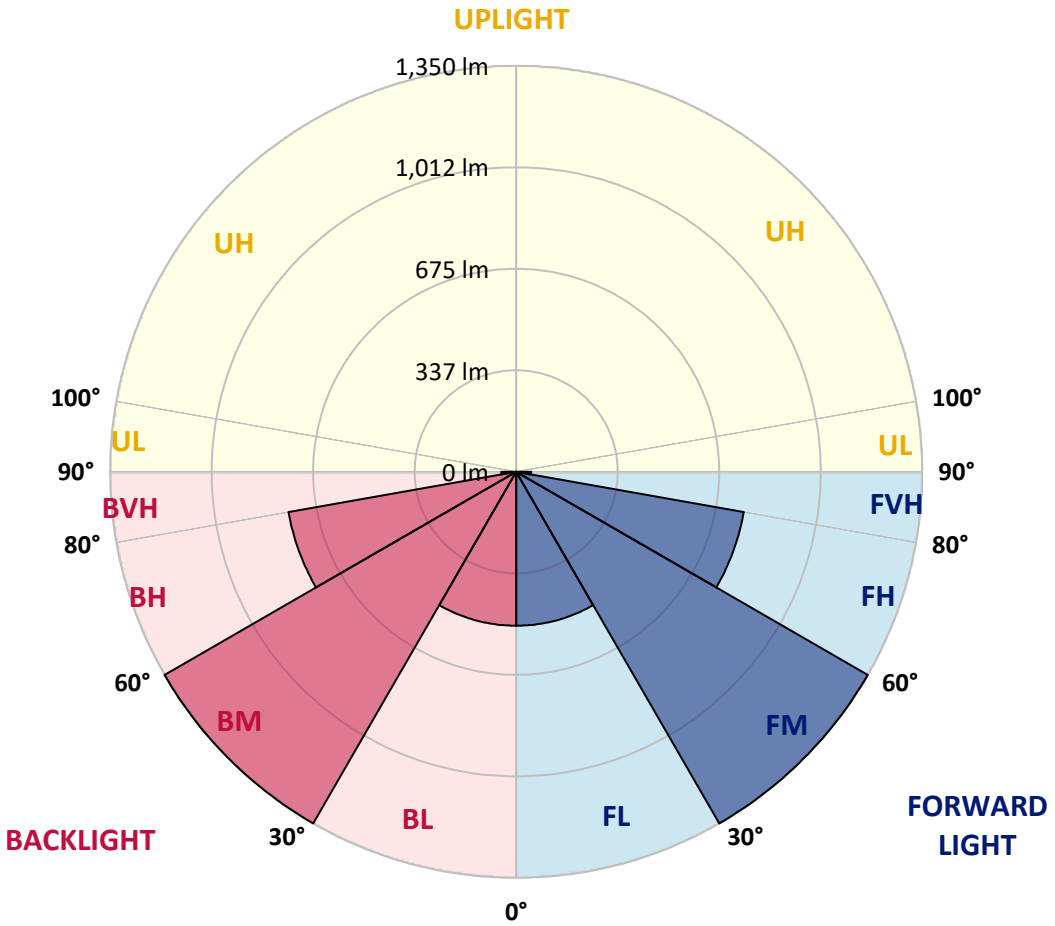
Scaled Data Report

REPORT NUMBER: P832632
CATALOG NUMBER: TTN-D2-750-U-MQ-CG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	511.7	9.5			
FM	(30°-60°)	1349.9	25.2			
FH	(60°-80°)	768.6	14.3			G1/1800
FVH	(80°-90°)	49.7	0.9			G1/100
BL	(0°-30°)	511.7	9.5	B2/1000		
BM	(30°-60°)	1349.9	25.2	B2/2500		
BH	(60°-80°)	768.6	14.3	B2/1000		G1/1800
BVH	(80°-90°)	49.7	0.9			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



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Scaled Data Report

REPORT NUMBER: P832632
CATALOG NUMBER: TTN-D2-750-U-MQ-CG

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*	*1275.1*
2.5°	*1262.1*	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4
5°	*1266.4*	1266.4	1266.4	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4	1266.4
7.5°	*1253.4*	1253.4	1253.4	1253.4	1253.4	1249.0	1253.4	1253.4	1253.4	1253.4	1253.4
10°	*1240.3*	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3
12.5°	*1231.6*	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1227.3	1227.3
15°	*1222.9*	1222.9	1222.9	1222.9	1227.3	1227.3	1222.9	1222.9	1222.9	1222.9	1222.9
17.5°	*1214.2*	1214.2	1214.2	1214.2	1218.6	1218.6	1218.6	1214.2	1214.2	1214.2	1214.2
20°	*1205.5*	1205.5	1205.5	1205.5	1209.9	1209.9	1209.9	1209.9	1209.9	1205.5	1205.5
22.5°	*1201.1*	1201.1	1201.1	1201.1	1205.5	1205.5	1205.5	1205.5	1201.1	1201.1	1201.1
25°	*1196.8*	1201.1	1201.1	1201.1	1205.5	1209.9	1209.9	1205.5	1201.1	1196.8	1196.8
27.5°	*1201.1*	1201.1	1201.1	1205.5	1205.5	1209.9	1209.9	1205.5	1201.1	1201.1	1201.1
30°	*1196.8*	1196.8	1196.8	1201.1	1205.5	1209.9	1205.5	1205.5	1201.1	1196.8	1196.8
32.5°	*1188.1*	1188.1	1192.4	1196.8	1201.1	1201.1	1201.1	1196.8	1192.4	1188.1	1188.1
35°	*1179.4*	1179.4	1179.4	1183.7	1192.4	1192.4	1192.4	1188.1	1183.7	1179.4	1175.0
37.5°	*1166.3*	1170.7	1170.7	1179.4	1183.7	1188.1	1183.7	1179.4	1170.7	1166.3	1166.3
40°	*1157.6*	1157.6	1162.0	1170.7	1179.4	1179.4	1175.0	1170.7	1162.0	1157.6	1157.6
42.5°	*1144.6*	1144.6	1153.3	1162.0	1175.0	1175.0	1170.7	1162.0	1153.3	1144.6	1144.6
45°	*1144.6*	1144.6	1153.3	1170.7	1179.4	1188.1	1179.4	1170.7	1153.3	1144.6	1140.2
47.5°	*1148.9*	1148.9	1157.6	1179.4	1196.8	1205.5	1192.4	1175.0	1157.6	1148.9	1144.6
50°	*1140.2*	1144.6	1162.0	1183.7	1205.5	1209.9	1205.5	1179.4	1162.0	1140.2	1140.2
52.5°	*1144.6*	1144.6	1166.3	1201.1	1222.9	1231.6	1222.9	1201.1	1162.0	1140.2	1140.2
55°	*1135.9*	1131.5	1162.0	1201.1	1236.0	1253.4	1236.0	1201.1	1157.6	1131.5	1127.2
57.5°	*1096.7*	1096.7	1135.9	1175.0	1218.6	1227.3	1214.2	1175.0	1131.5	1096.7	1088.0
60°	*1044.5*	1048.8	1088.0	1131.5	1170.7	1175.0	1166.3	1131.5	1088.0	1048.8	1035.8
62.5°	*987.9*	996.6	1035.8	1079.3	1127.2	1135.9	1122.8	1079.3	1027.1	1001.0	979.2
65°	*905.2*	918.3	961.8	1009.7	1061.9	1057.5	1057.5	1005.3	966.1	922.6	900.9
67.5°	*813.8*	826.9	857.3	922.6	966.1	961.8	957.4	922.6	857.3	826.9	813.8
70°	*713.7*	722.4	752.9	818.2	857.3	861.7	848.6	813.8	752.9	731.1	709.4
72.5°	*596.2*	600.6	644.1	696.3	735.5	731.1	726.8	696.3	639.7	618.0	591.9
75°	*470.0*	474.4	513.5	561.4	591.9	587.5	583.2	561.4	513.5	487.4	465.7
77.5°	*352.5*	348.2	387.3	422.1	439.6	443.9	435.2	417.8	383.0	361.2	348.2
80°	*230.7*	226.3	261.1	287.2	300.3	300.3	295.9	282.9	256.8	239.4	230.7
82.5°	*130.6*	126.2	148.0	165.4	178.4	174.1	169.7	161.0	148.0	134.9	126.2
85°	*47.9*	47.9	60.9	69.6	78.3	78.3	74.0	69.6	56.6	52.2	47.9
87.5°	*4.4*	4.4	8.7	13.1	13.1	13.1	8.7	8.7	4.4	4.4	4.4
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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LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2411-284-3

Test Date: 11/21/2024

Luminaire Tested: TTN-D0-750-U-WQ

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

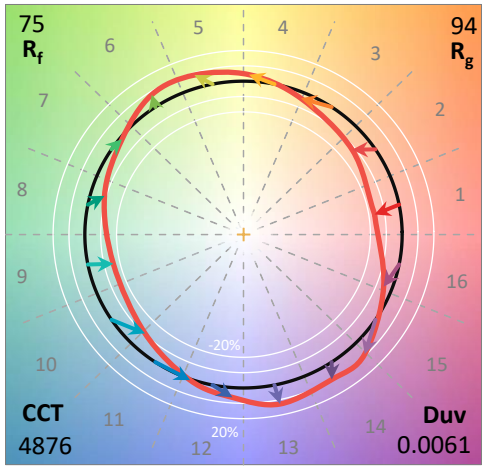
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2411-284-3
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**TTN-D0-750-U-WQ**
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 5000K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K):	4876
CIE u':	0.2086
CIE v':	0.4932
Duv:	0.0061
CIE x:	0.3502
CIE y:	0.3680
CIE z:	0.2818
Peak Wavelength (nm):	451
Dominant Wavelength (nm):	569
Purity:	15.51324
Rf:	74.6
Rg:	94.4

CRI (Ra):	72.6
R1:	69.5
R2:	77.0
R3:	82.2
R4:	72.6
R5:	69.3
R6:	67.6
R7:	83.7
R8:	58.6
R9:	-24.6
R10:	44.8
R11:	68.2
R12:	36.1
R13:	70.5
R14:	89.9
R15:	63.1



Test Conditions

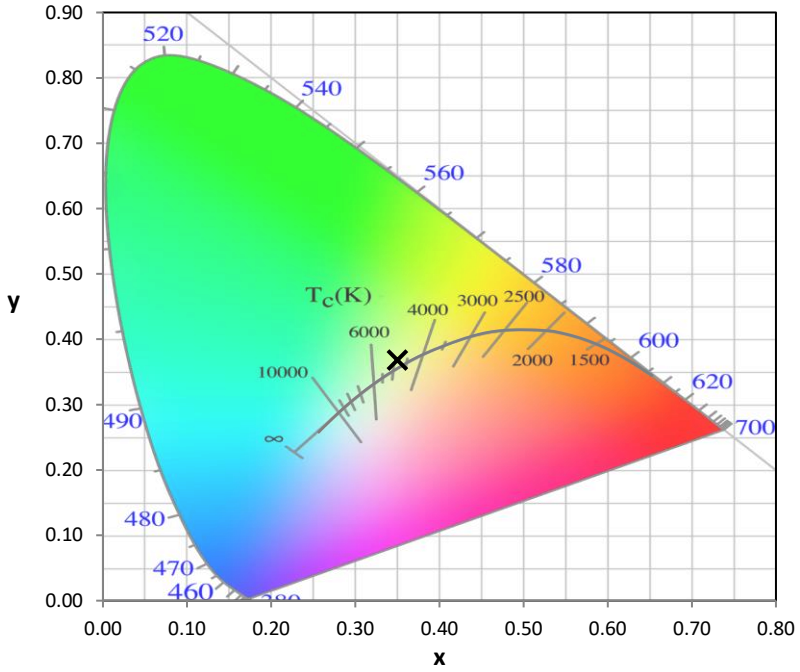
Stabilization Time:	51M
Operation Time:	1H 51M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-3

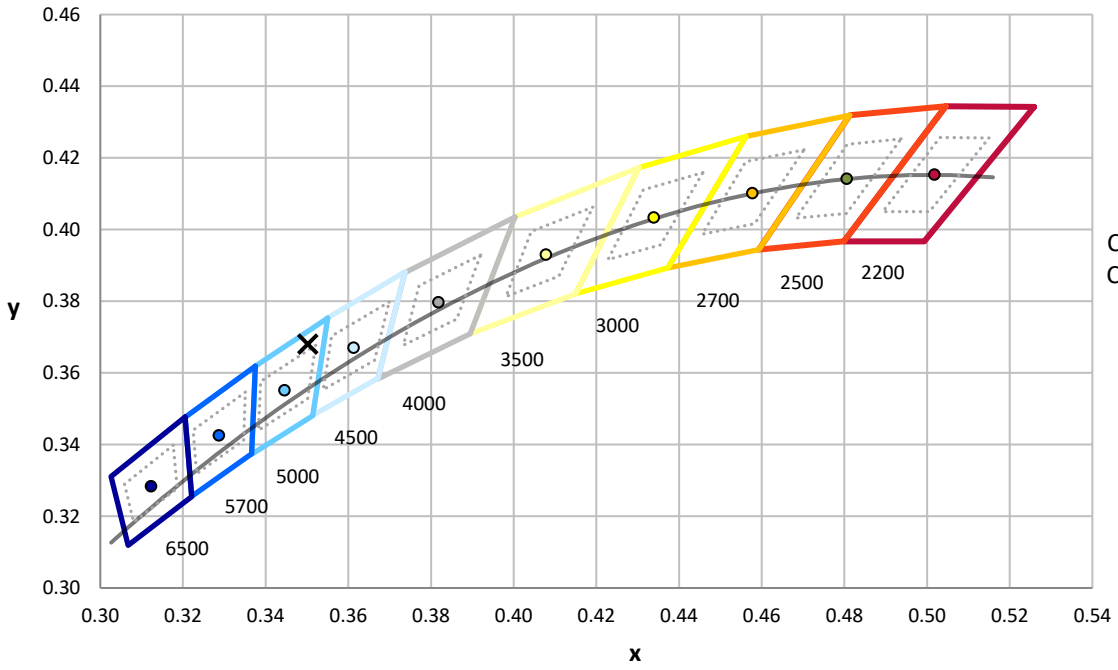
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-3

CIE 1931 Chromaticity Diagram



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

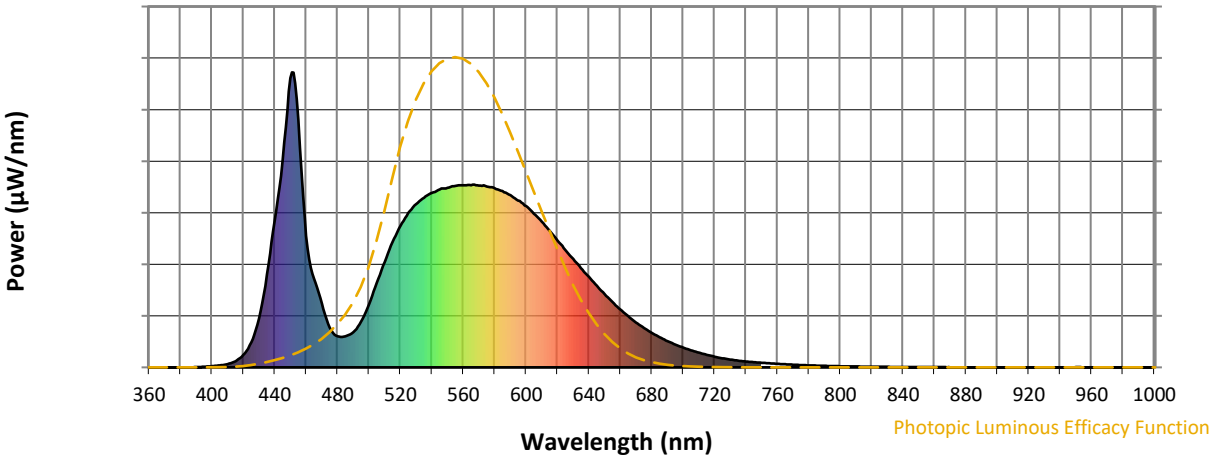


CCT = 4876K
CIE x = 0.3502
CIE y = 0.3680
Duv = 0.0061

Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-3

Photopic Flux vs. Wavelength

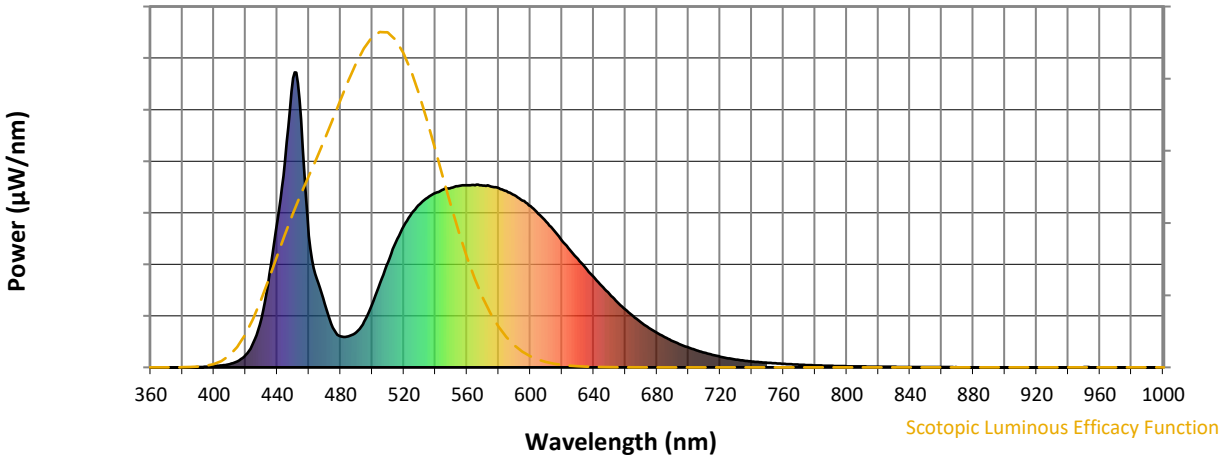


Photopic Lumens: NR

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-3

Scotopic Flux vs. Wavelength

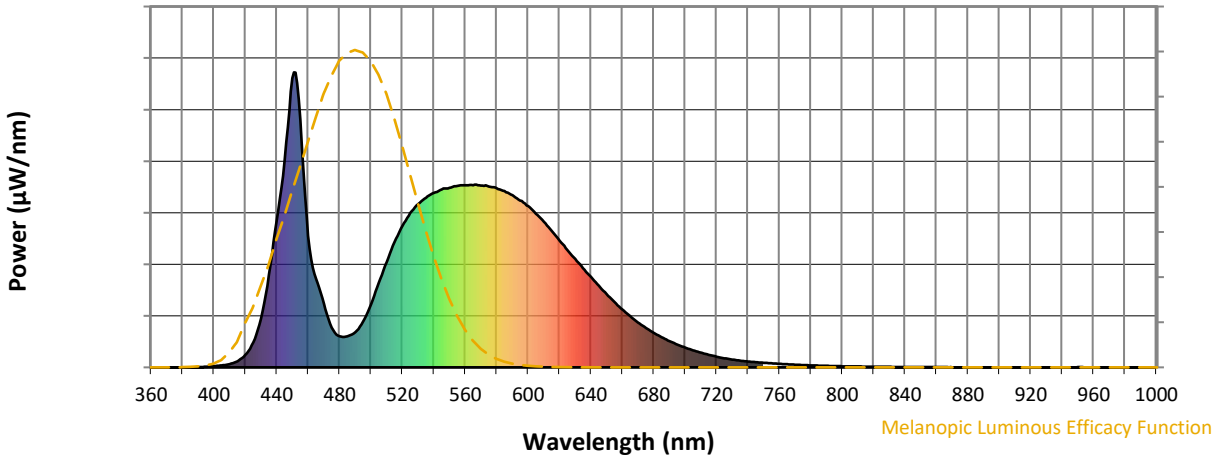


Scotopic Lumens: NR **S/P: 1.74**

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.51**

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	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

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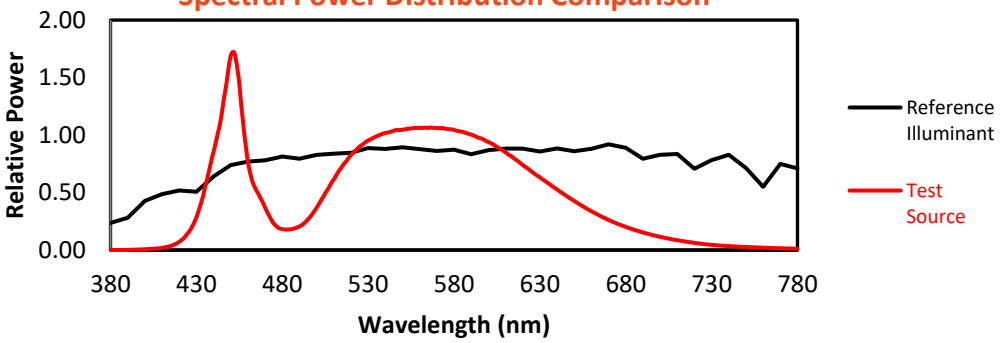
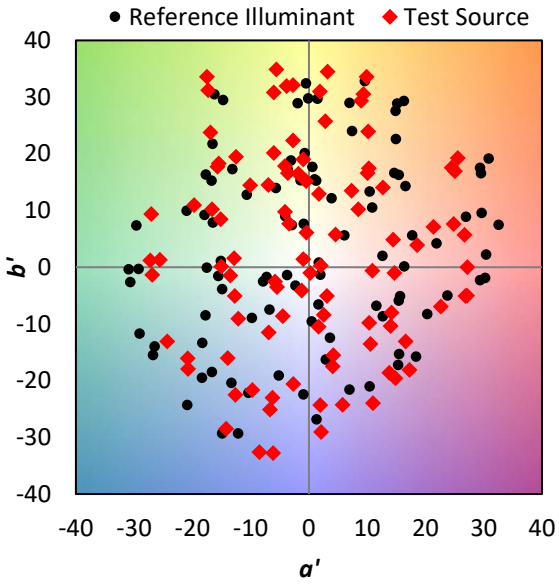
Summary

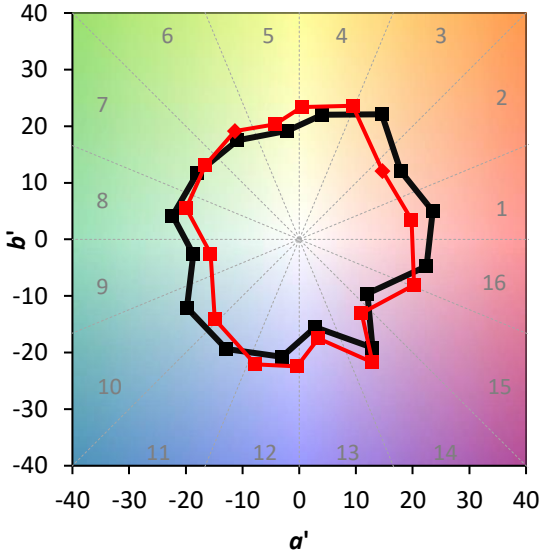
R_f = 74.6
R_g = 94.4
CIE R_a = 72.6
R_9 = -24.6

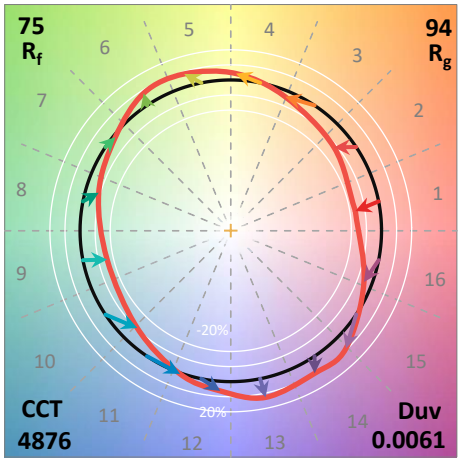
Spectral Power Distribution Comparison

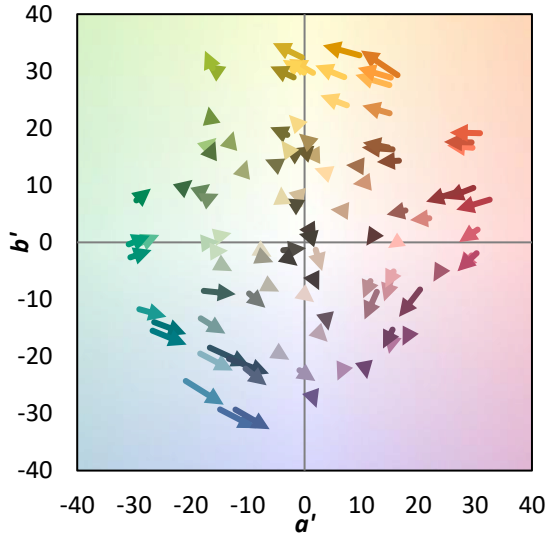


Color Vector Graphics









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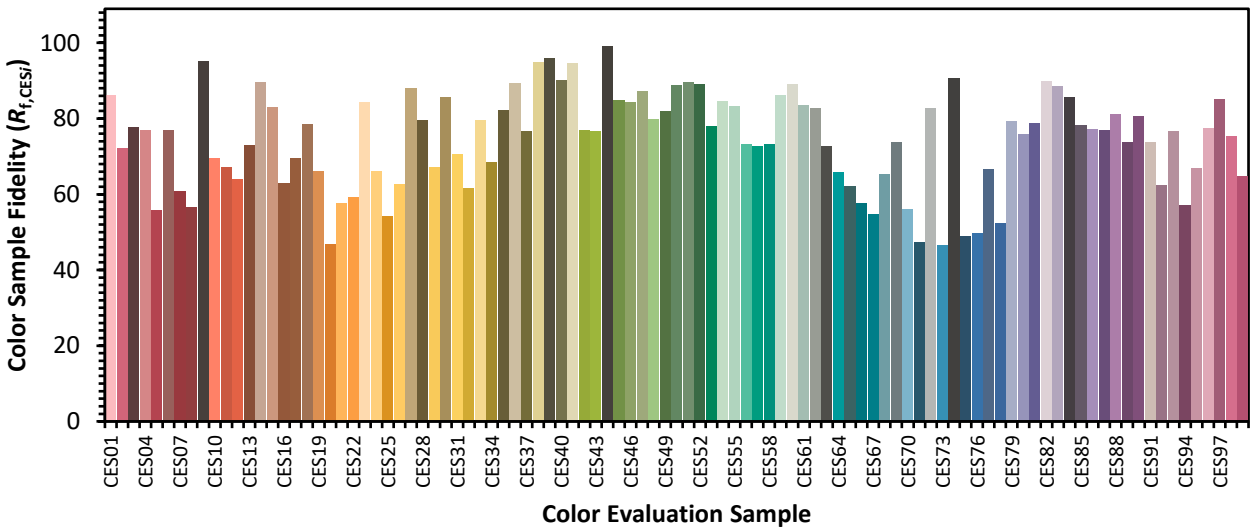
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 63	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 78	CES78 = 52
CES04 = 69	CES29 = 67	CES54 = 85	CES79 = 79
CES05 = 46	CES30 = 86	CES55 = 83	CES80 = 76
CES06 = 50	CES31 = 70	CES56 = 73	CES81 = 79
CES07 = 39	CES32 = 62	CES57 = 73	CES82 = 90
CES08 = 38	CES33 = 80	CES58 = 73	CES83 = 89
CES09 = 29	CES34 = 69	CES59 = 86	CES84 = 86
CES10 = 72	CES35 = 82	CES60 = 89	CES85 = 78
CES11 = 55	CES36 = 89	CES61 = 83	CES86 = 77
CES12 = 61	CES37 = 77	CES62 = 83	CES87 = 77
CES13 = 41	CES38 = 95	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 66	CES89 = 74
CES15 = 70	CES40 = 90	CES65 = 62	CES90 = 81
CES16 = 46	CES41 = 95	CES66 = 58	CES91 = 74
CES17 = 49	CES42 = 77	CES67 = 55	CES92 = 62
CES18 = 55	CES43 = 77	CES68 = 65	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 74	CES94 = 57
CES20 = 64	CES45 = 85	CES70 = 56	CES95 = 67
CES21 = 85	CES46 = 84	CES71 = 47	CES96 = 77
CES22 = 77	CES47 = 87	CES72 = 83	CES97 = 85
CES23 = 91	CES48 = 80	CES73 = 46	CES98 = 75
CES24 = 90	CES49 = 82	CES74 = 91	CES99 = 65
CES25 = 71	CES50 = 89	CES75 = 49	



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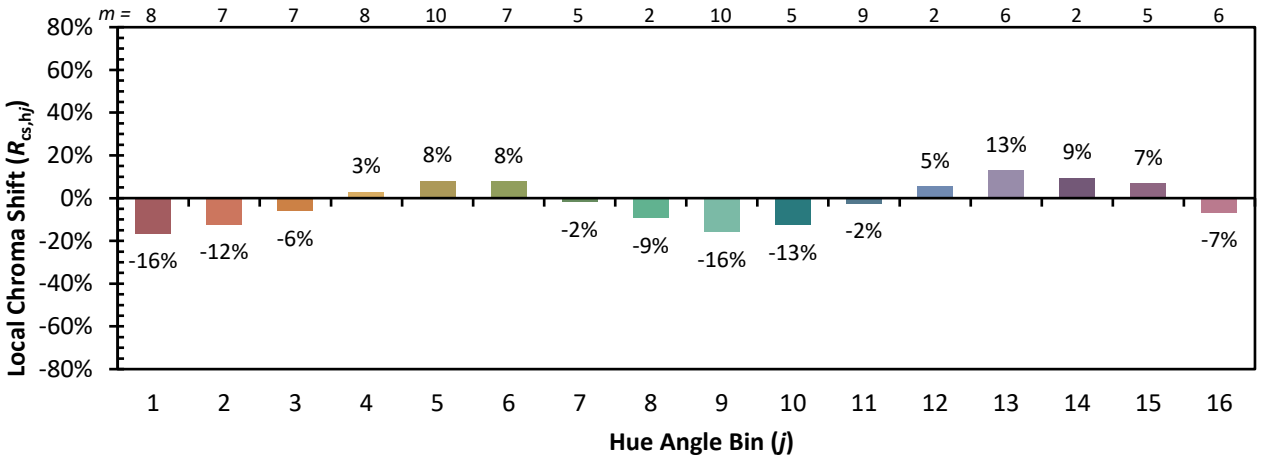
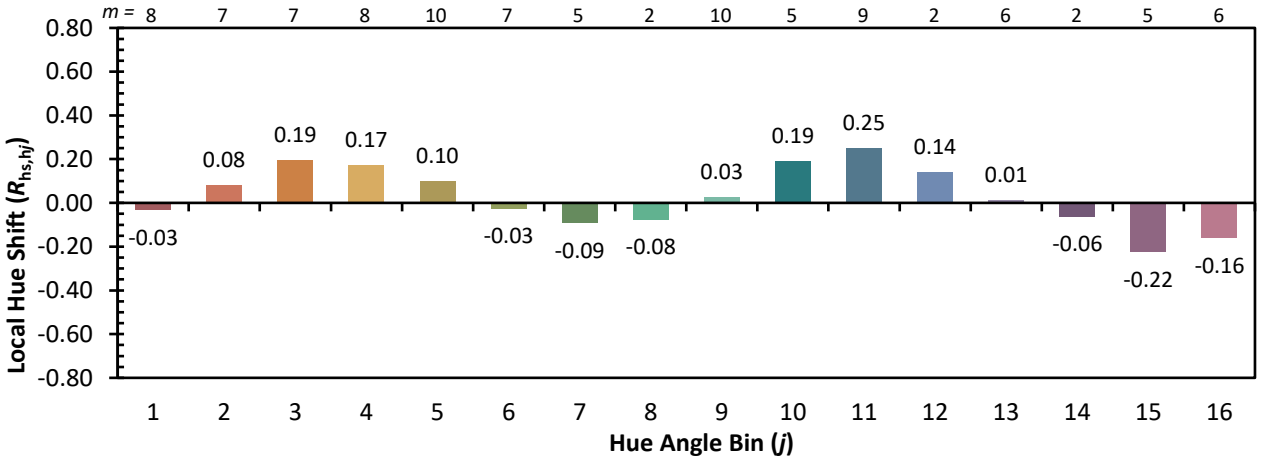
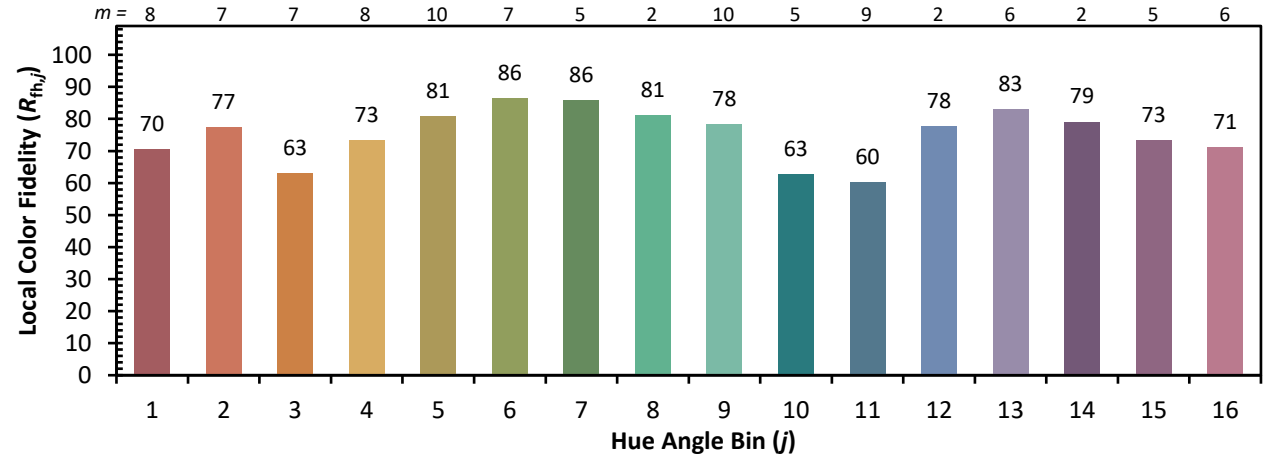
Color Rendition by Hue-Angle Bin







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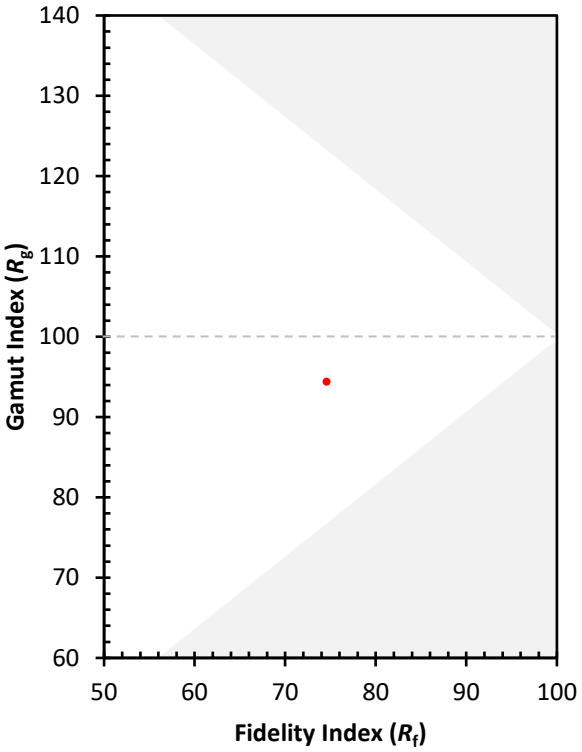
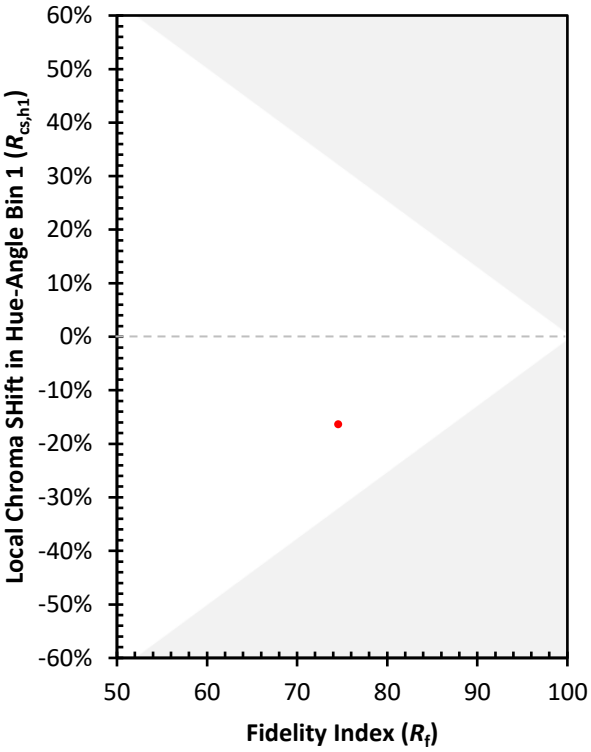
Measure Comparisons





(END OF REPORT)