

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: P823393

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

Issue Date: 4/16/2024

Test Information

Test Method: LM-79-08
Report Number: P823393
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-8)
Test Lab: INNOVATION CENTER
Issue Date: 4/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TTN-D2-750-U-MQ
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE
5000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5543 lumens
Efficiency: N/A
Efficacy: 130.4 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type V - Short
BUG Rating: B2 - U0 - G2

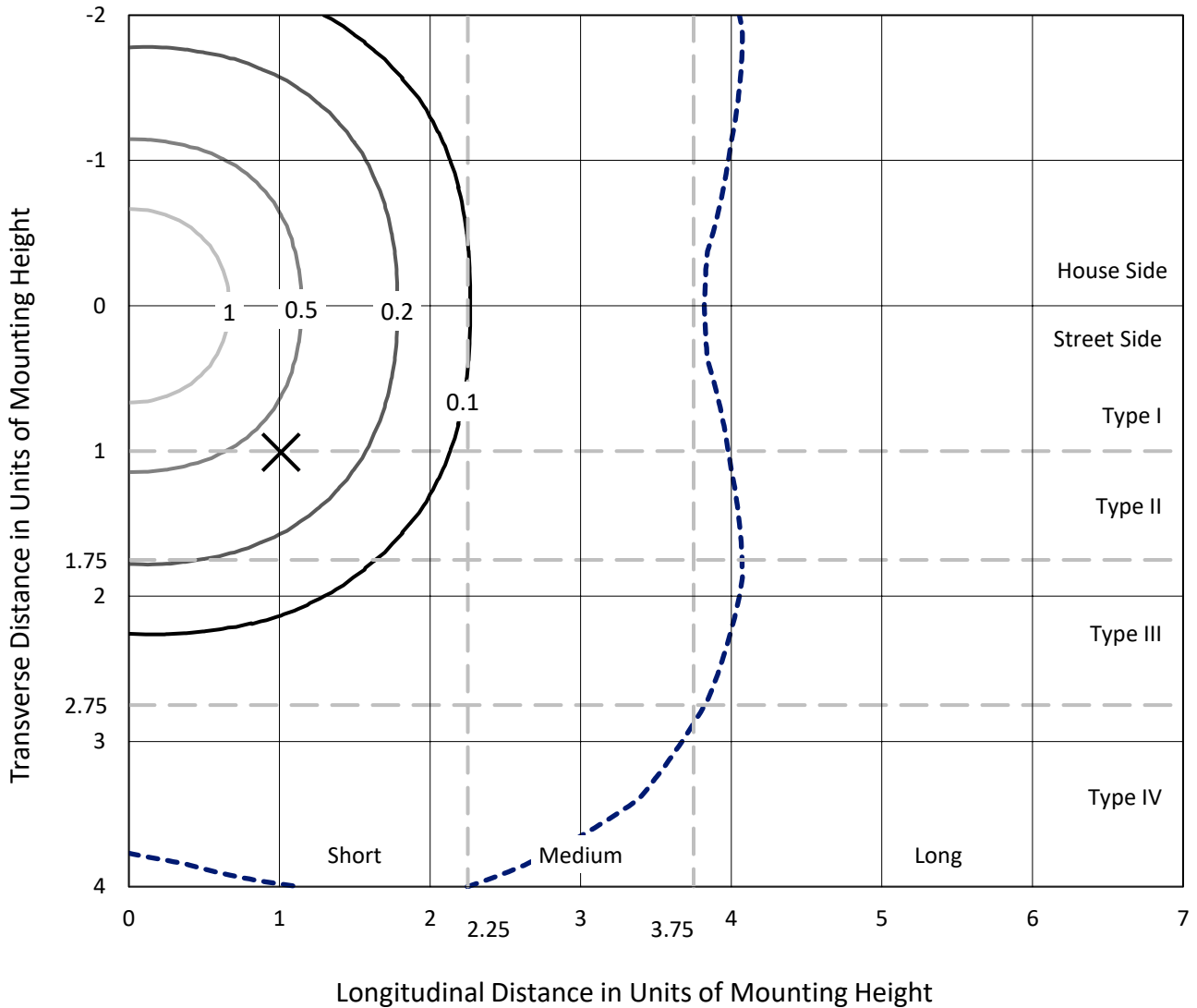
Input Watts (W): 42.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P823393
 CATALOG NUMBER: TTN-D2-750-U-MQ

Iso-Footcandle Lines of Horizontal Illumination

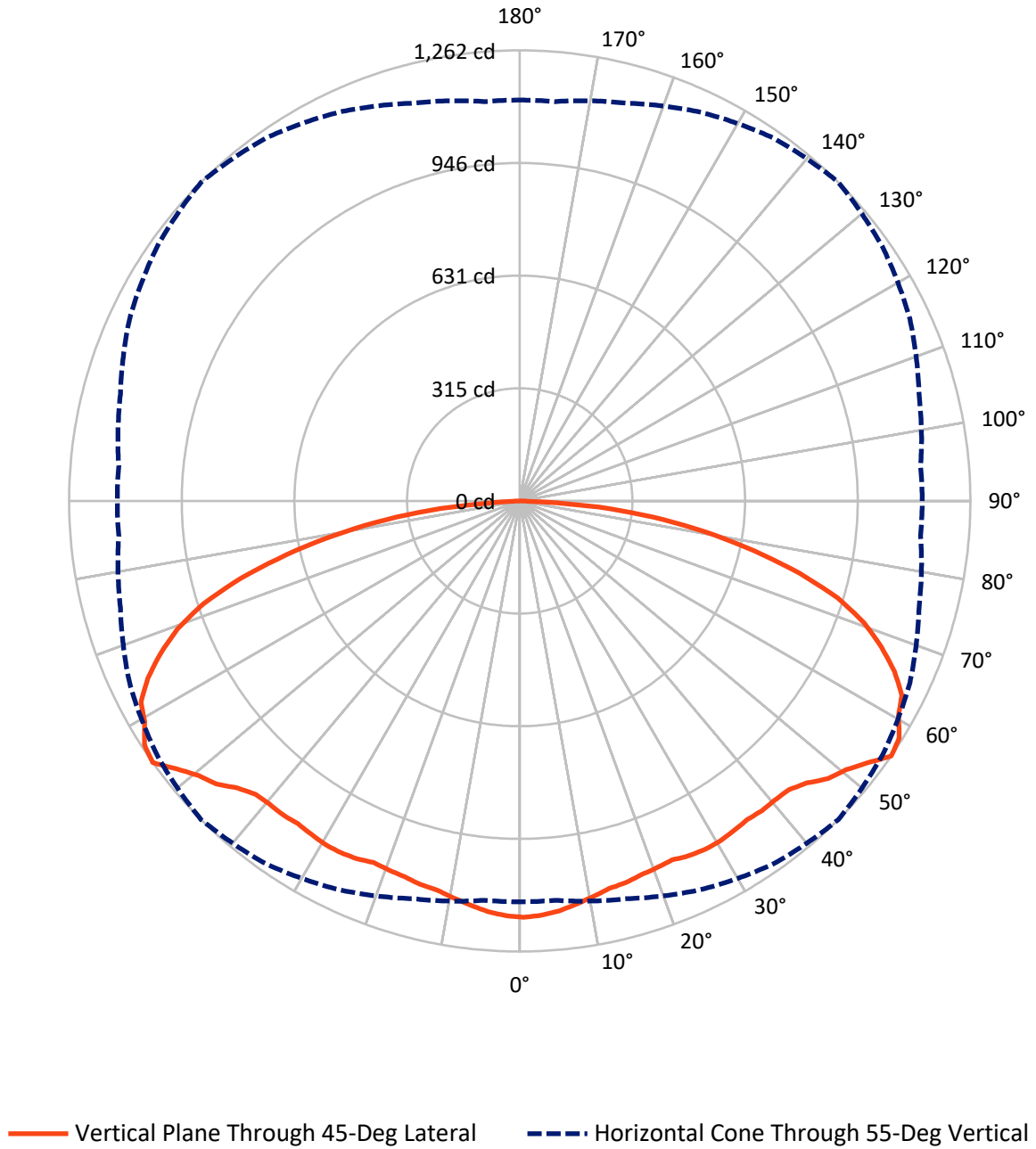
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.9 fc
 Type V - Short - N/A

REPORT NUMBER: P823393
CATALOG NUMBER: TTN-D2-750-U-MQ

Luminous Intensity Polar Plot



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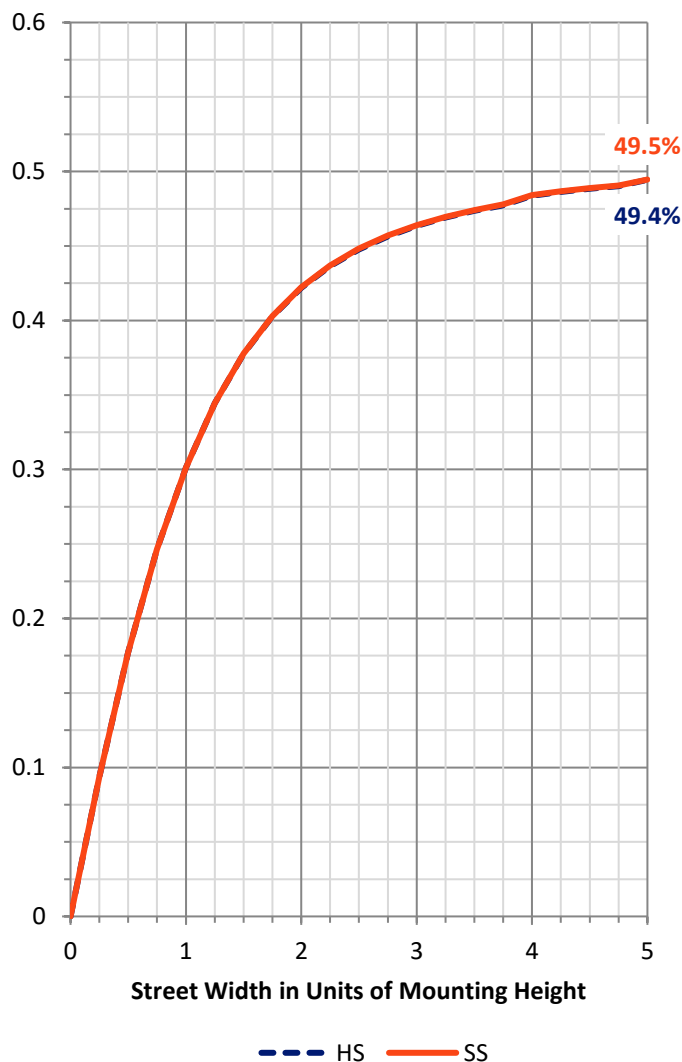
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2771.5	0.0	2771.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2771.5	0.0	2771.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	5543.0	0.0	5543.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.2	2.0
10°-20°	313.3	5.7
20°-30°	506.5	9.1
30°-40°	685.3	12.4
40°-50°	858.4	15.5
50°-60°	1052.0	19.0
60°-70°	1054.5	19.0
70°-80°	761.0	13.7
80°-90°	202.9	3.7
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°	5543.0	100.0
0°-180°	5543.0	100.0

Coefficient of Utilization



REPORT NUMBER: P823393

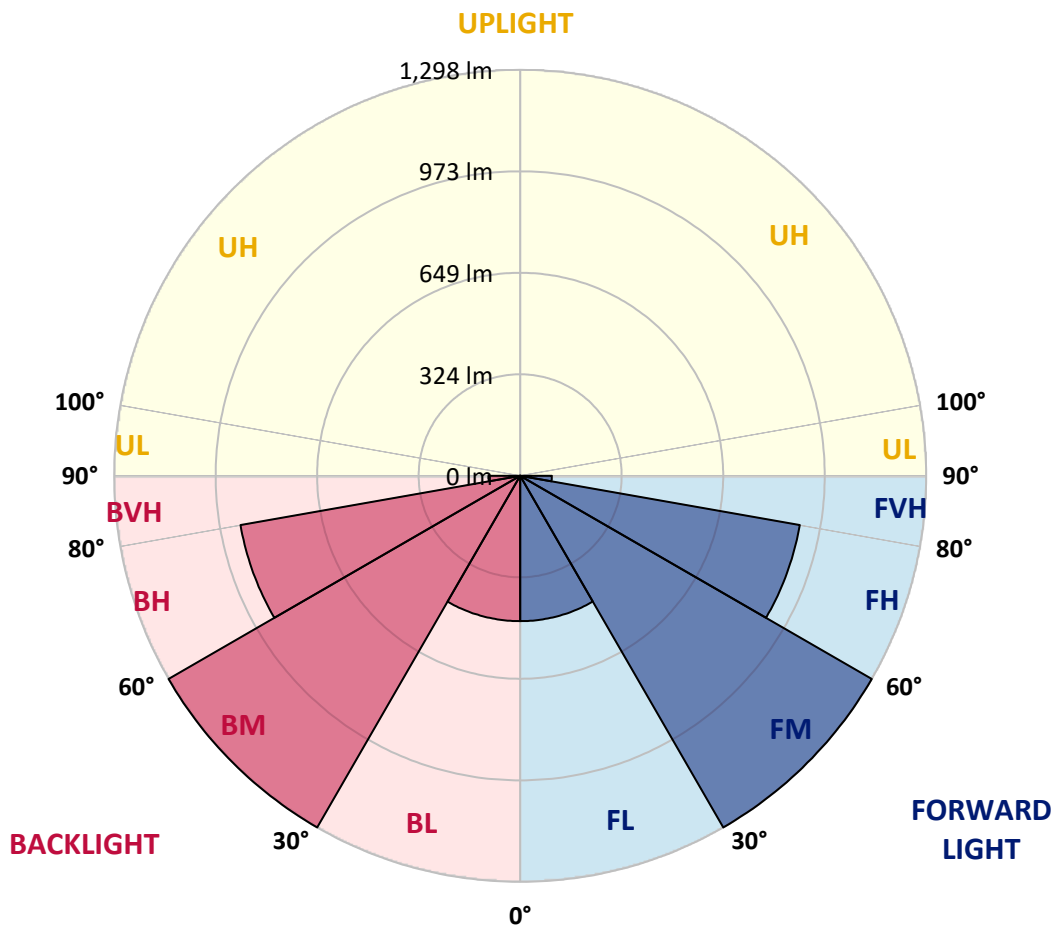
CATALOG NUMBER: TTN-D2-750-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	464.5	8.4			
FM (30°-60°)	1297.8	23.4			
FH (60°-80°)	907.7	16.4			G1/1800
FVH (80°-90°)	101.5	1.8			G2/225
BL (0°-30°)	464.5	8.4	B1/500		
BM (30°-60°)	1297.8	23.4	B2/2500		
BH (60°-80°)	907.7	16.4	B2/1000		G1/1800
BVH (80°-90°)	101.5	1.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type V Short





REPORT NUMBER: P823393
 CATALOG NUMBER: TTN-D2-750-U-MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2	1166.2
2.5°	1161.9	1161.9	1161.9	1157.5	1161.9	1161.9	1161.9	1161.9	1161.9	1161.9	1161.9
5°	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2	1153.2
7.5°	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1	1140.1
10°	1122.7	1122.7	1122.7	1122.7	1127.0	1127.0	1127.0	1127.0	1122.7	1122.7	1122.7
12.5°	1109.6	1109.6	1109.6	1114.0	1114.0	1114.0	1114.0	1114.0	1114.0	1114.0	1109.6
15°	1105.3	1105.3	1105.3	1105.3	1109.6	1109.6	1109.6	1109.6	1105.3	1105.3	1105.3
17.5°	1096.6	1096.6	1096.6	1100.9	1100.9	1100.9	1100.9	1100.9	1096.6	1096.6	1096.6
20°	1087.9	1087.9	1092.2	1092.2	1096.6	1096.6	1096.6	1092.2	1092.2	1087.9	1092.2
22.5°	1087.9	1087.9	1087.9	1092.2	1092.2	1092.2	1092.2	1087.9	1087.9	1087.9	1087.9
25°	1087.9	1087.9	1092.2	1096.6	1096.6	1100.9	1096.6	1092.2	1087.9	1087.9	1087.9
27.5°	1092.2	1092.2	1096.6	1100.9	1100.9	1105.3	1100.9	1096.6	1092.2	1092.2	1092.2
30°	1092.2	1092.2	1096.6	1100.9	1100.9	1105.3	1100.9	1096.6	1092.2	1092.2	1092.2
32.5°	1083.5	1087.9	1092.2	1096.6	1100.9	1100.9	1100.9	1096.6	1092.2	1087.9	1087.9
35°	1079.2	1083.5	1087.9	1092.2	1096.6	1096.6	1096.6	1092.2	1087.9	1083.5	1083.5
37.5°	1074.8	1074.8	1083.5	1087.9	1092.2	1100.9	1096.6	1087.9	1083.5	1079.2	1079.2
40°	1070.5	1074.8	1079.2	1087.9	1092.2	1100.9	1096.6	1087.9	1079.2	1074.8	1074.8
42.5°	1070.5	1070.5	1079.2	1087.9	1096.6	1105.3	1100.9	1092.2	1079.2	1074.8	1070.5
45°	1074.8	1079.2	1092.2	1109.6	1118.3	1127.0	1122.7	1109.6	1087.9	1079.2	1074.8
47.5°	1092.2	1096.6	1109.6	1127.0	1148.8	1161.9	1148.8	1127.0	1109.6	1096.6	1092.2
50°	1100.9	1105.3	1127.0	1148.8	1179.3	1183.6	1179.3	1148.8	1127.0	1105.3	1105.3
52.5°	1118.3	1118.3	1144.4	1183.6	1209.7	1218.4	1209.7	1188.0	1144.4	1122.7	1118.3
55°	1122.7	1122.7	1153.2	1201.0	1240.2	1261.9	1240.2	1205.4	1157.5	1127.0	1127.0
57.5°	1096.6	1105.3	1144.4	1192.3	1240.2	1253.2	1240.2	1196.7	1148.8	1109.6	1105.3
60°	1066.1	1079.2	1114.0	1170.6	1205.4	1218.4	1209.7	1170.6	1118.3	1079.2	1074.8
62.5°	1035.7	1053.1	1092.2	1135.7	1188.0	1201.0	1188.0	1135.7	1092.2	1053.1	1035.7
65°	970.4	987.8	1044.4	1096.6	1144.4	1153.2	1148.8	1096.6	1044.4	987.8	979.1
67.5°	905.1	918.2	957.3	1040.0	1079.2	1092.2	1083.5	1035.7	961.7	918.2	913.8
70°	835.5	848.5	883.4	961.7	1000.8	1022.6	1005.2	961.7	883.4	848.5	844.2
72.5°	744.1	761.5	800.7	870.3	909.5	931.2	913.8	870.3	800.7	757.2	748.5
75°	635.3	648.4	696.2	752.8	792.0	809.4	796.3	757.2	696.2	648.4	644.0
77.5°	517.8	530.9	574.4	631.0	652.7	670.1	657.1	626.6	574.4	530.9	526.5
80°	391.6	404.7	443.9	487.4	509.1	526.5	513.5	483.0	443.9	404.7	400.3
82.5°	256.7	269.8	304.6	339.4	361.2	378.6	365.5	335.1	309.0	269.8	265.4
85°	108.8	121.8	152.3	187.1	204.5	221.9	208.9	182.8	152.3	126.2	121.8
87.5°	8.7	13.1	13.1	17.4	13.1	21.8	13.1	13.1	13.1	13.1	13.1
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
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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

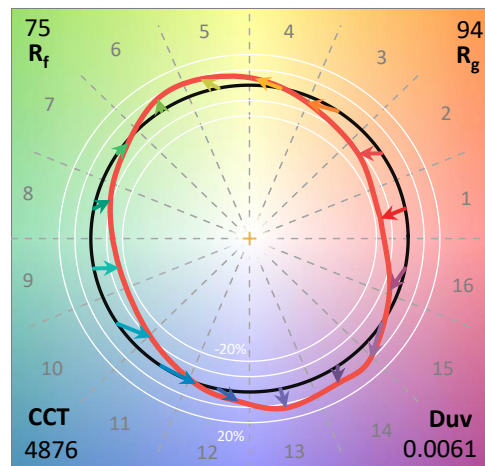
Test Information

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



Test Conditions

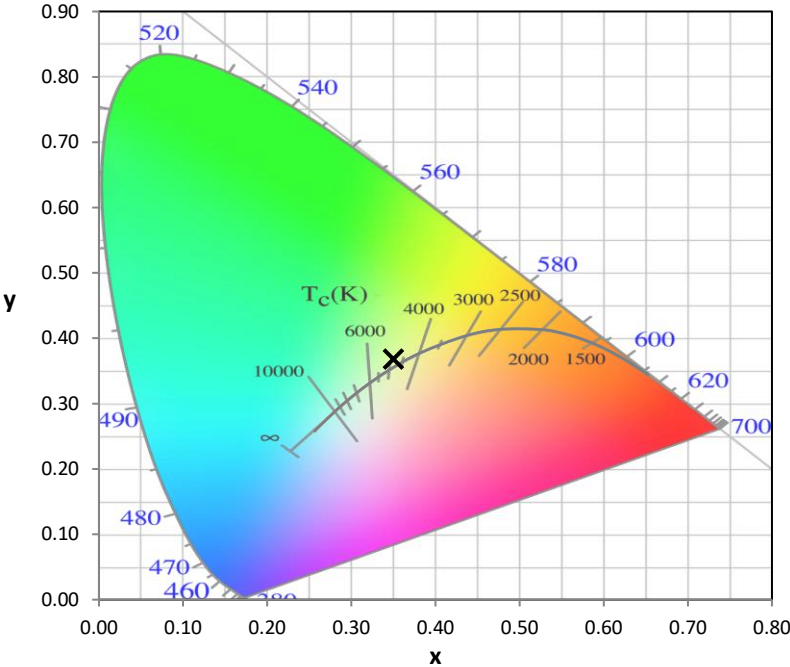
Stabilization Time: 51M
 Operation Time: 1H 51M
 Sphere Temperature (°C): 24.9

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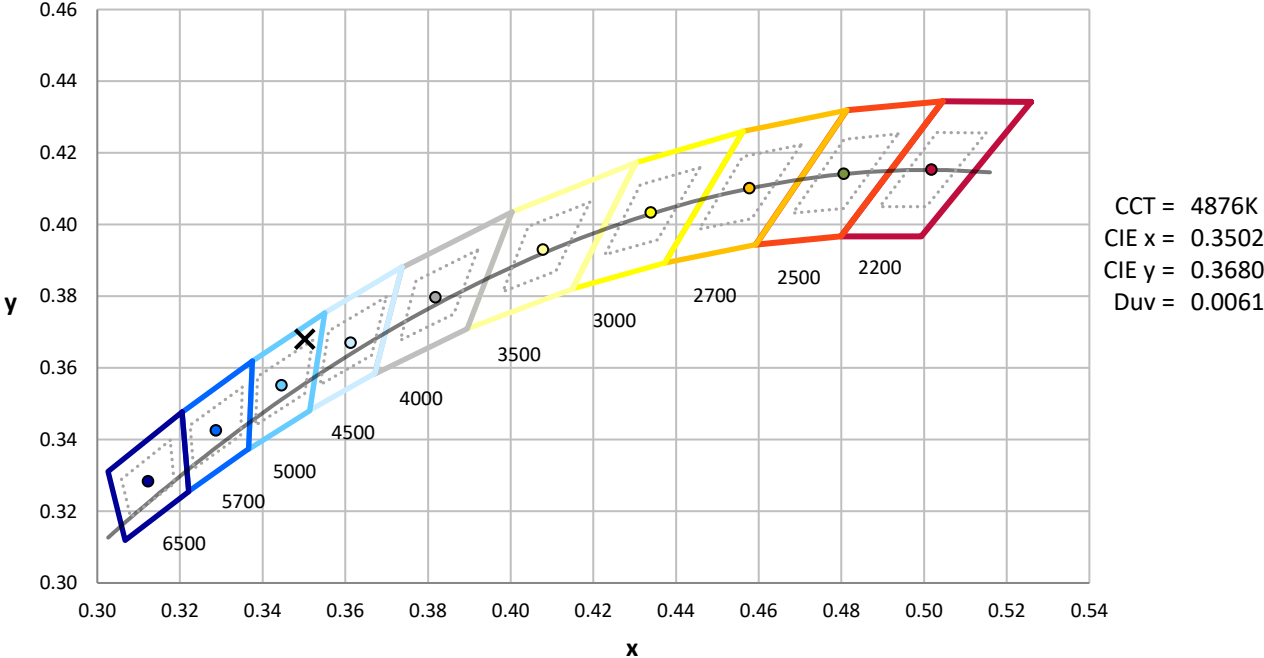
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	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 5000K 7-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	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



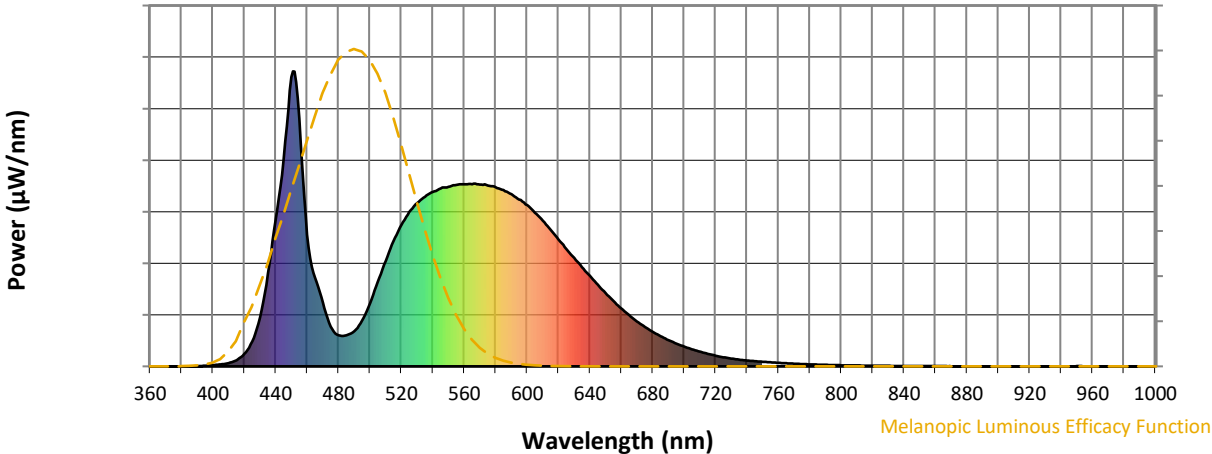
Scotopic Lumens: NR

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			

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Melanopic Flux vs. Wavelength



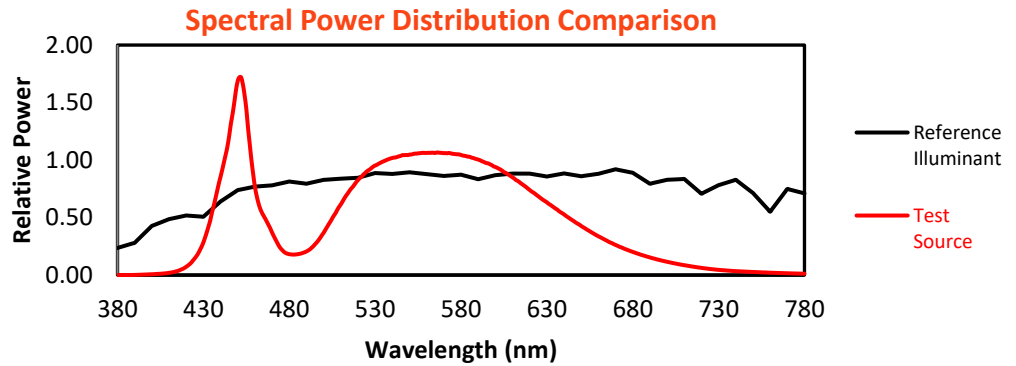
Melanopic Luminous Efficacy Function

Melanopic Lumens: NR M/P: 3.51

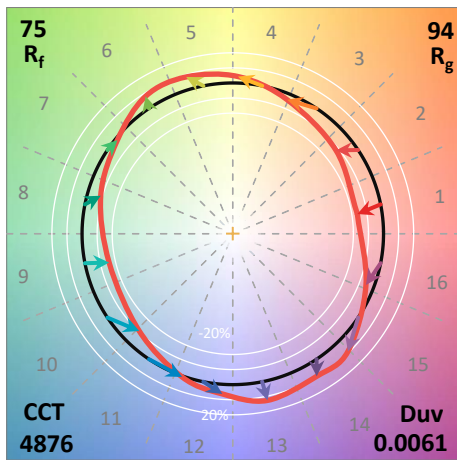
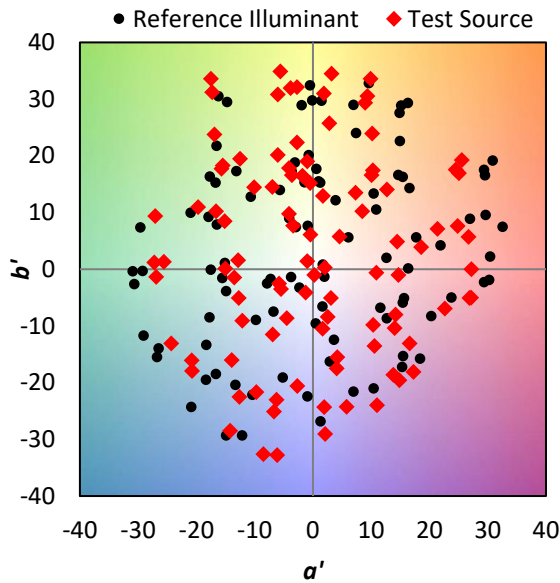
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	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			

Summary

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

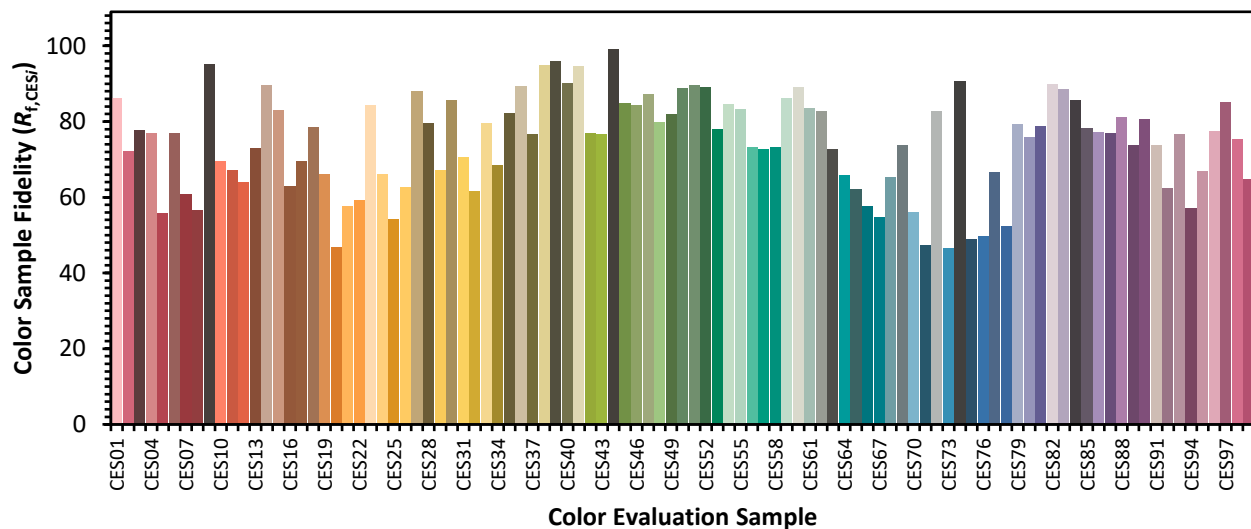


Color Vector Graphics

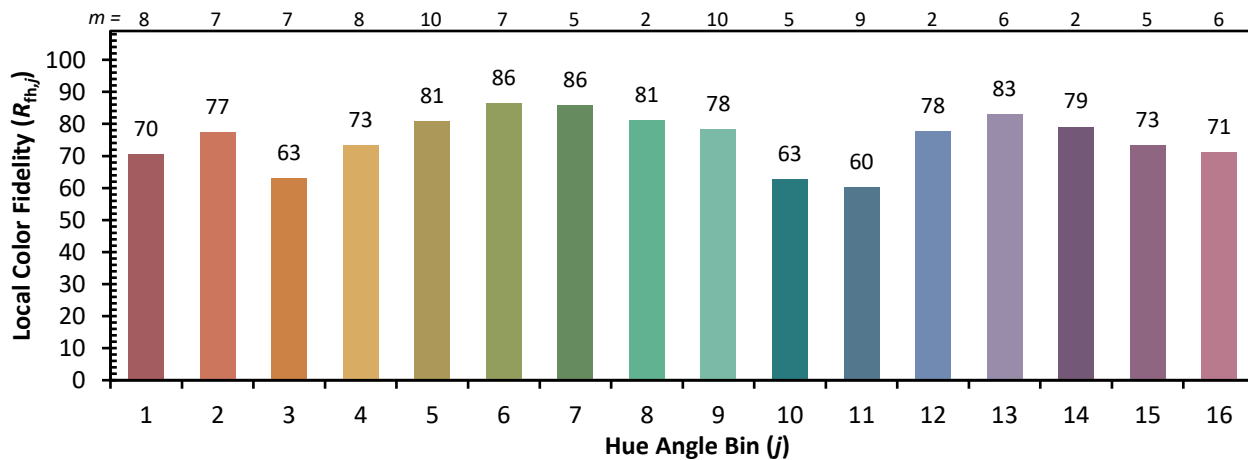
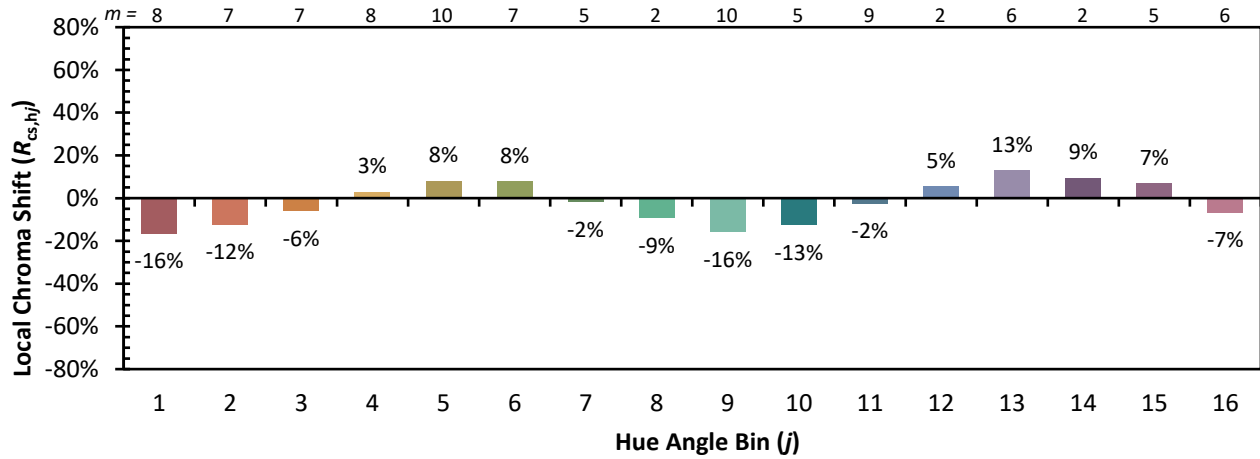


Individual Sample Fidelity Index ($R_{f,i}$)

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	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)