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: STREETWORKS

Report Number: P867778

Luminaire Tested: **MEM2-HTN-SA-30-722-U-5MQ**

Issue Date: 08/21/2024

Report Generated By 670245763

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:	P867778
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	08/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HTN-SA-30-722-U-5MQ
Description:	EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 30W 70CRI 2200K FIXTURE w/ TYPE V SQUARE MEDIUM DISTRIBUTION OPTIC
Light Source:	(10) 2200K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	4425.8 lumens
Efficiency:	N/A
Efficacy:	134.9 lumens/watt
Luminous Opening:	Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B2 - U0 - G1

Input Watts (W):	32.8
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	9.76%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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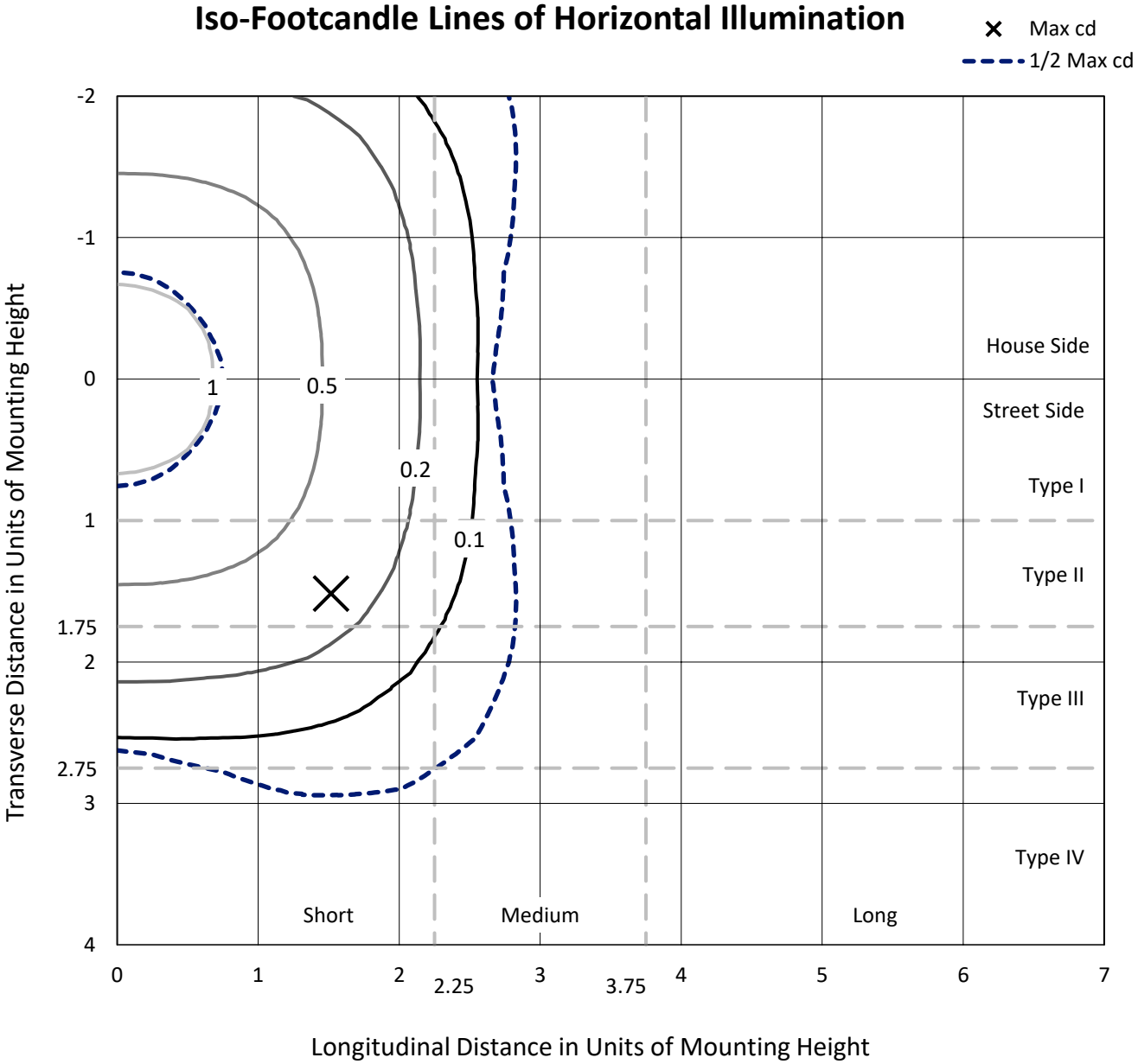
Scaled Data Report

REPORT NUMBER: P867778
CATALOG NUMBER: MEM2-HTN-SA-30-722-U-5MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 1.4 fc
Type V - Short - N/A

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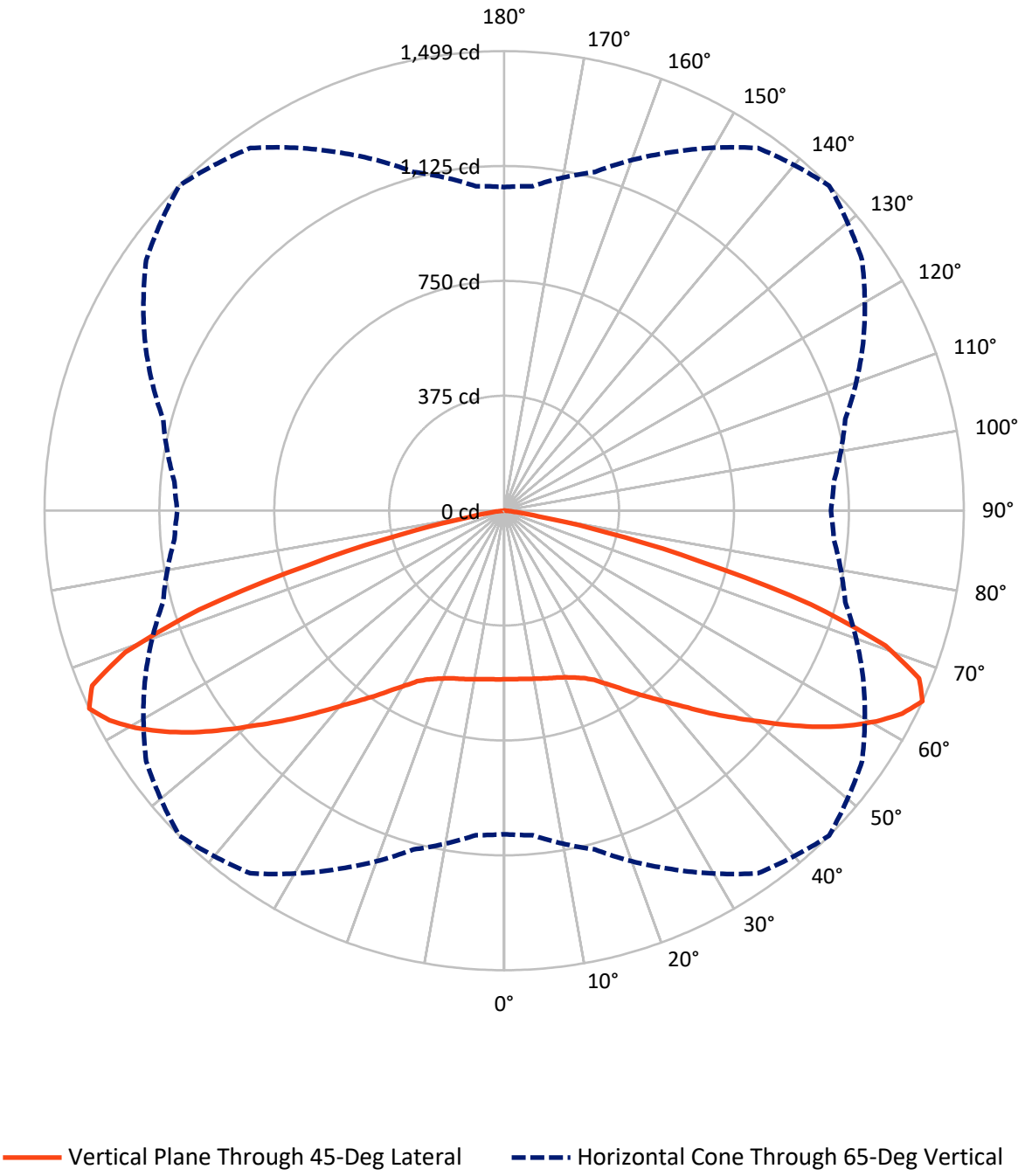
REPORT NUMBER: P867778
CATALOG NUMBER: MEM2-HTN-SA-30-722-U-5MQ

Luminous Intensity Polar Plot



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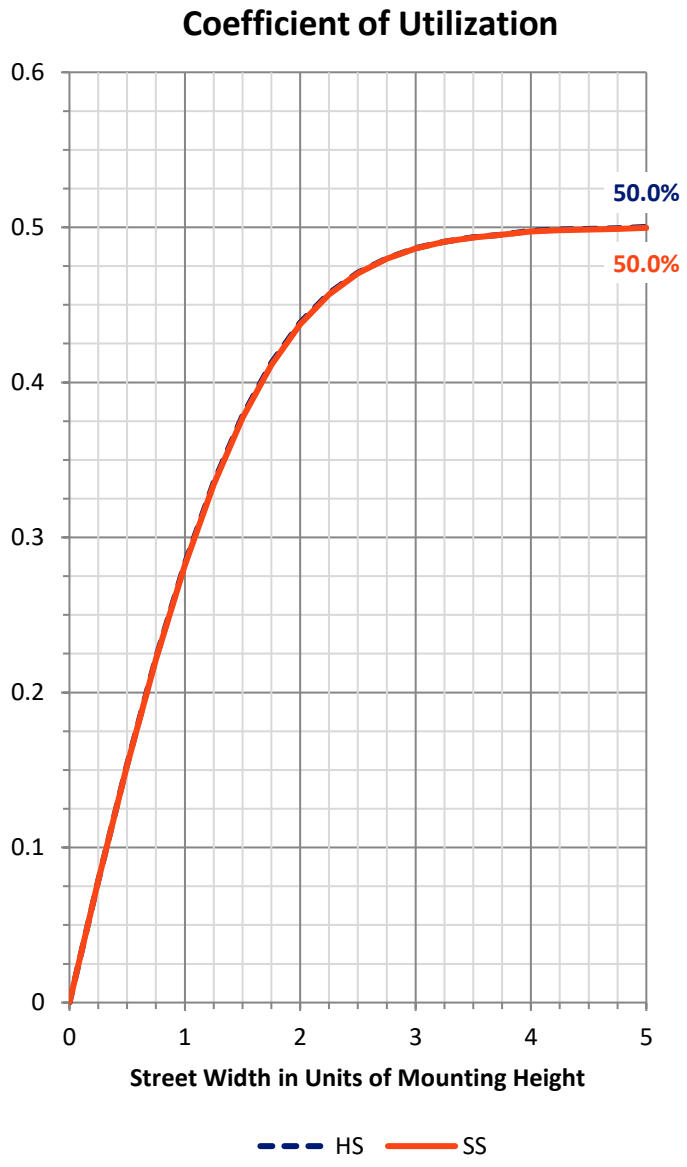
REPORT NUMBER: P867778
CATALOG NUMBER: MEM2-HTN-SA-30-722-U-5MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2212.9	0.0	2212.9
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2212.9	0.0	2212.9
	% Fixture	50.0	0.0	50.0
Total	Lumens	4425.8	0.0	4425.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.9	1.2
10°-20°	161.0	3.6
20°-30°	283.1	6.4
30°-40°	457.9	10.3
40°-50°	713.2	16.1
50°-60°	1042.9	23.6
60°-70°	1201.0	27.1
70°-80°	490.5	11.1
80°-90°	23.4	0.5
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°	4425.8	100.0
0°-180°	4425.8	100.0



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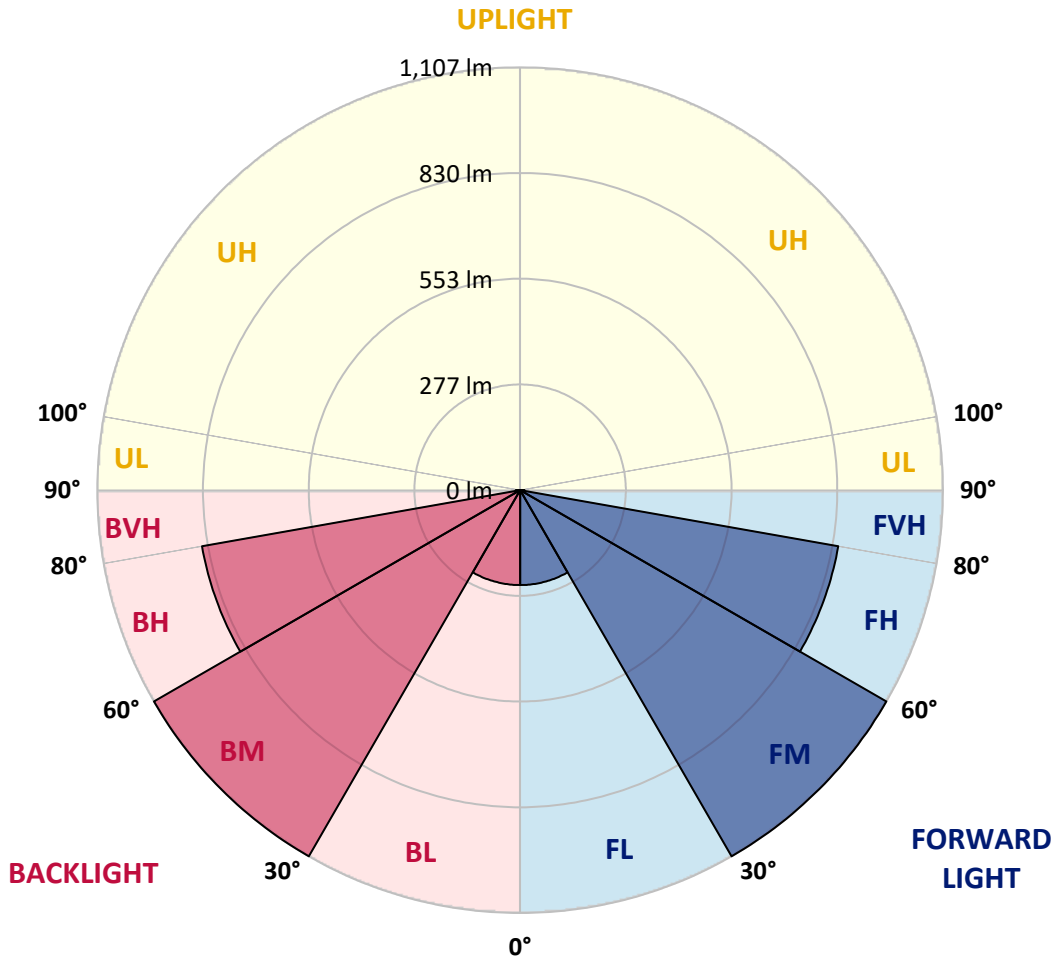
Scaled Data Report

REPORT NUMBER: P867778
CATALOG NUMBER: MEM2-HTN-SA-30-722-U-5MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	248.5	5.6			
FM	(30°-60°)	1107.0	25.0			
FH	(60°-80°)	845.7	19.1			G1/1800
FVH	(80°-90°)	11.7	0.3			G1/100
BL	(0°-30°)	248.5	5.6	B1/500		
BM	(30°-60°)	1107.0	25.0	B2/2500		
BH	(60°-80°)	845.7	19.1	B2/1000		G1/1800
BVH	(80°-90°)	11.7	0.3			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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REPORT NUMBER: P867778
CATALOG NUMBER: MEM2-HTN-SA-30-722-U-5MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	549.9	549.9	549.9	549.9	549.9	*549.9*	549.9	549.9	549.9	549.9	549.9
2.5°	551.6	551.6	550.8	550.8	549.1	*550.8*	549.9	550.8	549.9	549.9	550.8
5°	553.3	553.3	551.6	552.5	550.8	*551.6*	550.8	552.5	551.6	550.8	552.5
7.5°	555.9	555.9	554.2	555.0	553.3	*554.2*	553.3	555.0	554.2	554.2	555.0
10°	558.4	559.3	557.6	556.7	556.7	*557.6*	558.4	559.3	558.4	558.4	560.1
12.5°	562.7	563.5	561.8	561.0	561.0	*561.8*	562.7	564.4	561.8	561.8	561.8
15°	566.9	566.9	566.1	565.2	566.1	*566.9*	566.9	568.6	566.9	565.2	565.2
17.5°	568.6	569.5	568.6	570.3	571.2	*572.0*	572.9	572.9	570.3	569.5	569.5
20°	574.6	575.4	573.7	574.6	577.1	*580.5*	580.5	580.5	580.5	578.0	578.0
22.5°	584.8	585.6	584.8	584.8	588.2	*591.6*	591.6	594.1	590.7	589.0	589.0
25°	601.8	601.8	600.9	601.8	603.5	*605.2*	608.6	610.3	610.3	609.4	610.3
27.5°	622.2	623.0	622.2	622.2	621.3	*624.7*	629.8	632.4	633.2	634.1	634.1
30°	649.4	651.1	650.2	651.1	652.8	*655.3*	657.0	657.9	657.9	656.2	656.2
32.5°	679.1	680.8	679.1	683.4	689.3	*689.3*	687.6	691.0	688.5	686.8	685.1
35°	714.0	714.0	715.7	717.4	725.9	*730.1*	730.1	728.4	723.3	720.8	722.5
37.5°	753.9	754.8	756.5	757.3	765.0	*772.6*	771.8	767.5	761.6	754.8	754.8
40°	801.5	799.8	800.7	806.6	812.6	*821.9*	822.8	816.8	806.6	799.8	799.8
42.5°	844.9	845.7	849.1	856.8	870.4	*878.0*	873.8	863.6	852.5	844.0	843.2
45°	890.8	889.9	899.3	915.4	933.3	*942.6*	935.8	921.4	904.4	893.3	893.3
47.5°	937.5	936.7	952.0	978.3	1001.3	*1008.9*	1002.1	983.4	960.5	944.3	941.8
50°	986.0	989.4	1005.5	1042.9	1072.7	*1081.2*	1072.7	1048.0	1017.4	996.2	992.8
52.5°	1041.2	1043.8	1065.0	1105.8	1142.4	*1161.9*	1149.2	1112.6	1073.5	1048.0	1044.6
55°	1092.2	1093.9	1124.5	1173.8	1218.9	*1245.2*	1224.8	1178.1	1128.8	1096.5	1093.1
57.5°	1127.9	1132.2	1171.3	1235.0	1292.8	*1323.4*	1292.8	1242.7	1177.2	1137.3	1134.7
60°	1150.9	1157.7	1202.7	1282.6	1362.5	*1395.7*	1364.2	1294.5	1213.8	1161.9	1159.4
62.5°	1139.0	1148.3	1206.1	1310.7	1422.0	*1457.7*	1416.9	1319.2	1209.5	1144.1	1137.3
65°	*1055.7*	*1062.5*	*1144.1*	*1290.3*	*1444.1*	*1499.4*	*1425.4*	*1292.0*	*1151.7*	*1079.5*	*1065.9*
67.5°	883.1	895.0	1003.0	1191.7	1396.5	*1460.3*	1366.8	1194.2	1025.1	936.7	921.4
70°	678.3	699.5	817.7	1022.5	1247.8	*1320.0*	1217.2	1008.1	809.2	719.1	691.0
72.5°	391.8	425.0	598.4	798.1	992.8	*1047.2*	902.7	704.6	537.2	473.4	465.8
75°	130.0	141.9	284.7	459.8	633.2	*660.4*	564.4	444.5	353.6	302.6	305.1
77.5°	63.7	63.7	85.8	168.3	288.1	*340.0*	308.5	215.0	154.7	117.3	113.9
80°	51.0	51.0	59.5	82.4	96.9	*113.9*	96.9	70.5	57.8	52.7	55.2
82.5°	24.6	23.8	28.0	39.9	40.8	*39.1*	36.5	36.5	34.8	32.3	31.4
85°	1.7	1.7	3.4	7.6	12.7	*17.0*	19.5	18.7	17.8	15.3	17.0
87.5°	0.8	0.8	0.8	0.8	0.8	*0.8*	0.8	1.7	1.7	1.7	1.7
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

Streetworks

Report Number: SP1-2407-157-2

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-722-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-722-U-5WQ-2

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

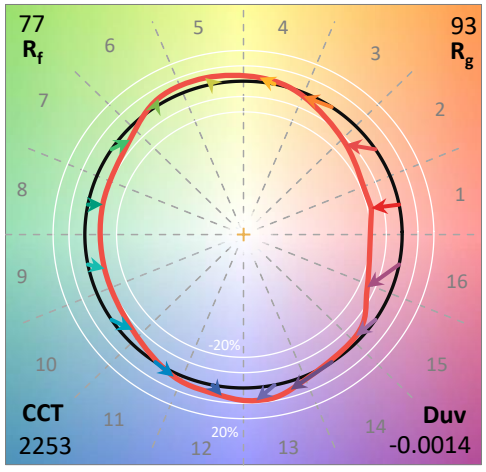
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-157-2
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	08/20/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-SA-30-722-U-5WQ-2**
Description:	Epic Modern Light Square 30W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K):	2253
CIE u':	0.2868
CIE v':	0.5332
Duv:	-0.0014
CIE x:	0.4974
CIE y:	0.4110
CIE z:	0.0915
Peak Wavelength (nm):	603
Dominant Wavelength (nm):	587
Purity:	72.69432
Rf:	76.9
Rg:	92.7

CRI (Ra):	70.6
R1:	68.4
R2:	88.7
R3:	85.4
R4:	63.5
R5:	69.0
R6:	88.9
R7:	68.5
R8:	32.0
R9:	-36.0
R10:	78.2
R11:	61.0
R12:	74.2
R13:	72.8
R14:	92.2
R15:	58.0



Test Conditions

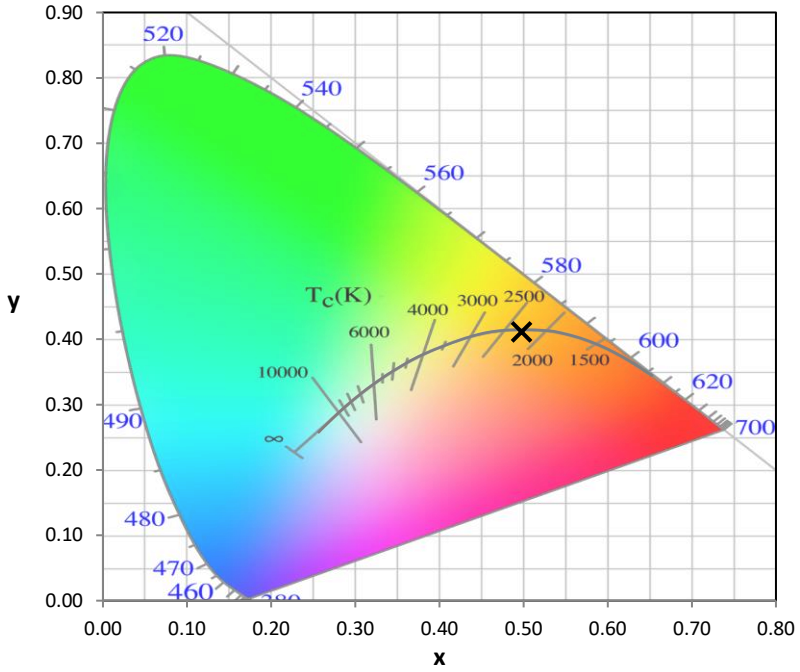
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	24.1

REPORT NUMBER: SP1-2407-157-2

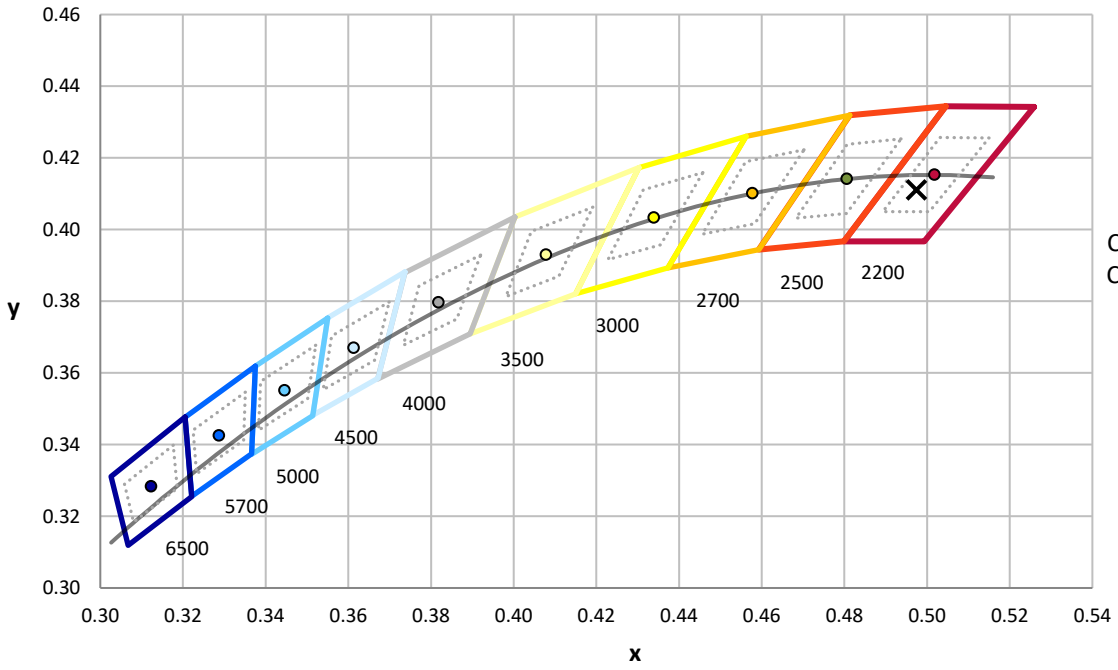
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

REPORT NUMBER: SP1-2407-157-2

CIE 1931 Chromaticity Diagram



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

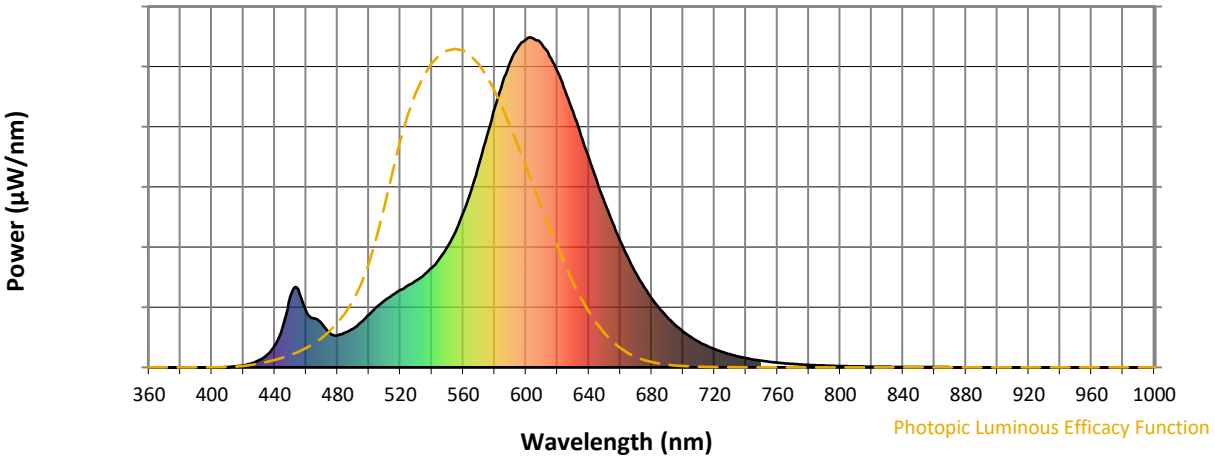


CCT = 2253K
CIE x = 0.4974
CIE y = 0.4110
Duv = -0.0014

Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-2

Photopic Flux vs. Wavelength

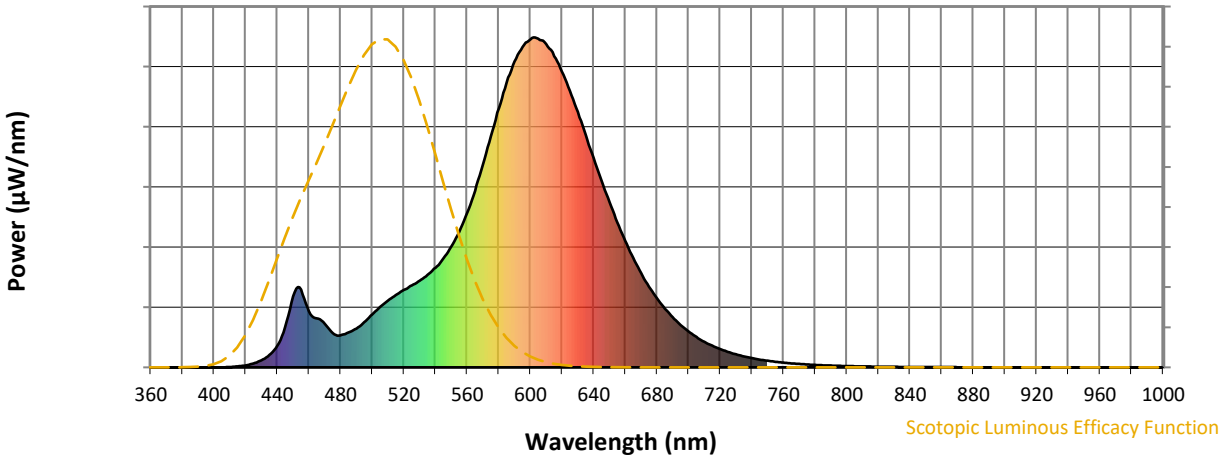


Photopic Lumens: NR

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	117	NR	620	896	NR	750	20	NR	880	0	NR
365	0	NR	495	137	NR	625	838	NR	755	17	NR	885	0	NR
370	0	NR	500	160	NR	630	774	NR	760	14	NR	890	0	NR
375	0	NR	505	183	NR	635	704	NR	765	12	NR	895	0	NR
380	0	NR	510	202	NR	640	635	NR	770	10	NR	900	0	NR
385	0	NR	515	219	NR	645	565	NR	775	9	NR	905	0	NR
390	0	NR	520	235	NR	650	501	NR	780	7	NR	910	0	NR
395	0	NR	525	249	NR	655	440	NR	785	6	NR	915	0	NR
400	0	NR	530	263	NR	660	383	NR	790	5	NR	920	0	NR
405	0	NR	535	281	NR	665	332	NR	795	5	NR	925	0	NR
410	1	NR	540	302	NR	670	286	NR	800	4	NR	930	0	NR
415	3	NR	545	331	NR	675	245	NR	805	3	NR	935	0	NR
420	6	NR	550	366	NR	680	210	NR	810	3	NR	940	0	NR
425	12	NR	555	411	NR	685	178	NR	815	3	NR	945	0	NR
430	21	NR	560	469	NR	690	152	NR	820	2	NR	950	0	NR
435	38	NR	565	536	NR	695	129	NR	825	2	NR	955	0	NR
440	66	NR	570	614	NR	700	109	NR	830	2	NR	960	0	NR
445	122	NR	575	701	NR	705	92	NR	835	1	NR	965	0	NR
450	215	NR	580	785	NR	710	77	NR	840	1	NR	970	0	NR
455	236	NR	585	863	NR	715	66	NR	845	1	NR	975	0	NR
460	170	NR	590	928	NR	720	55	NR	850	1	NR	980	0	NR
465	148	NR	595	971	NR	725	47	NR	855	1	NR	985	0	NR
470	132	NR	600	994	NR	730	40	NR	860	1	NR	990	0	NR
475	104	NR	605	996	NR	735	33	NR	865	1	NR	995	0	NR
480	97	NR	610	979	NR	740	28	NR	870	1	NR	1000	0	NR
485	105	NR	615	943	NR	745	24	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-2

Scotopic Flux vs. Wavelength

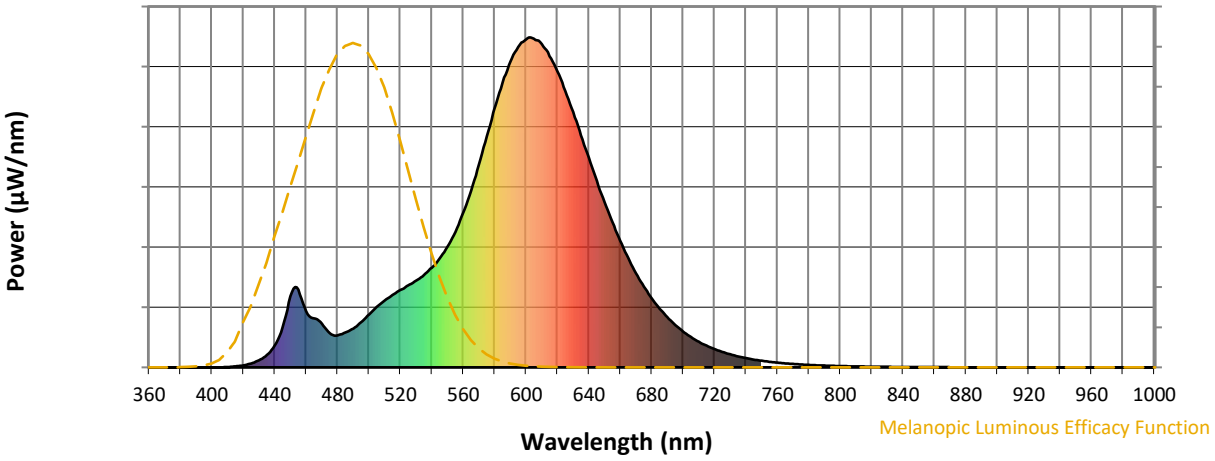


Scotopic Lumens: NR **S/P: 0.96**

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	117	NR	620	896	NR	750	20	NR	880	0	NR
365	0	NR	495	137	NR	625	838	NR	755	17	NR	885	0	NR
370	0	NR	500	160	NR	630	774	NR	760	14	NR	890	0	NR
375	0	NR	505	183	NR	635	704	NR	765	12	NR	895	0	NR
380	0	NR	510	202	NR	640	635	NR	770	10	NR	900	0	NR
385	0	NR	515	219	NR	645	565	NR	775	9	NR	905	0	NR
390	0	NR	520	235	NR	650	501	NR	780	7	NR	910	0	NR
395	0	NR	525	249	NR	655	440	NR	785	6	NR	915	0	NR
400	0	NR	530	263	NR	660	383	NR	790	5	NR	920	0	NR
405	0	NR	535	281	NR	665	332	NR	795	5	NR	925	0	NR
410	1	NR	540	302	NR	670	286	NR	800	4	NR	930	0	NR
415	3	NR	545	331	NR	675	245	NR	805	3	NR	935	0	NR
420	6	NR	550	366	NR	680	210	NR	810	3	NR	940	0	NR
425	12	NR	555	411	NR	685	178	NR	815	3	NR	945	0	NR
430	21	NR	560	469	NR	690	152	NR	820	2	NR	950	0	NR
435	38	NR	565	536	NR	695	129	NR	825	2	NR	955	0	NR
440	66	NR	570	614	NR	700	109	NR	830	2	NR	960	0	NR
445	122	NR	575	701	NR	705	92	NR	835	1	NR	965	0	NR
450	215	NR	580	785	NR	710	77	NR	840	1	NR	970	0	NR
455	236	NR	585	863	NR	715	66	NR	845	1	NR	975	0	NR
460	170	NR	590	928	NR	720	55	NR	850	1	NR	980	0	NR
465	148	NR	595	971	NR	725	47	NR	855	1	NR	985	0	NR
470	132	NR	600	994	NR	730	40	NR	860	1	NR	990	0	NR
475	104	NR	605	996	NR	735	33	NR	865	1	NR	995	0	NR
480	97	NR	610	979	NR	740	28	NR	870	1	NR	1000	0	NR
485	105	NR	615	943	NR	745	24	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 1.71**

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	117	NR	620	896	NR	750	20	NR	880	0	NR
365	0	NR	495	137	NR	625	838	NR	755	17	NR	885	0	NR
370	0	NR	500	160	NR	630	774	NR	760	14	NR	890	0	NR
375	0	NR	505	183	NR	635	704	NR	765	12	NR	895	0	NR
380	0	NR	510	202	NR	640	635	NR	770	10	NR	900	0	NR
385	0	NR	515	219	NR	645	565	NR	775	9	NR	905	0	NR
390	0	NR	520	235	NR	650	501	NR	780	7	NR	910	0	NR
395	0	NR	525	249	NR	655	440	NR	785	6	NR	915	0	NR
400	0	NR	530	263	NR	660	383	NR	790	5	NR	920	0	NR
405	0	NR	535	281	NR	665	332	NR	795	5	NR	925	0	NR
410	1	NR	540	302	NR	670	286	NR	800	4	NR	930	0	NR
415	3	NR	545	331	NR	675	245	NR	805	3	NR	935	0	NR
420	6	NR	550	366	NR	680	210	NR	810	3	NR	940	0	NR
425	12	NR	555	411	NR	685	178	NR	815	3	NR	945	0	NR
430	21	NR	560	469	NR	690	152	NR	820	2	NR	950	0	NR
435	38	NR	565	536	NR	695	129	NR	825	2	NR	955	0	NR
440	66	NR	570	614	NR	700	109	NR	830	2	NR	960	0	NR
445	122	NR	575	701	NR	705	92	NR	835	1	NR	965	0	NR
450	215	NR	580	785	NR	710	77	NR	840	1	NR	970	0	NR
455	236	NR	585	863	NR	715	66	NR	845	1	NR	975	0	NR
460	170	NR	590	928	NR	720	55	NR	850	1	NR	980	0	NR
465	148	NR	595	971	NR	725	47	NR	855	1	NR	985	0	NR
470	132	NR	600	994	NR	730	40	NR	860	1	NR	990	0	NR
475	104	NR	605	996	NR	735	33	NR	865	1	NR	995	0	NR
480	97	NR	610	979	NR	740	28	NR	870	1	NR	1000	0	NR
485	105	NR	615	943	NR	745	24	NR	875	0	NR			

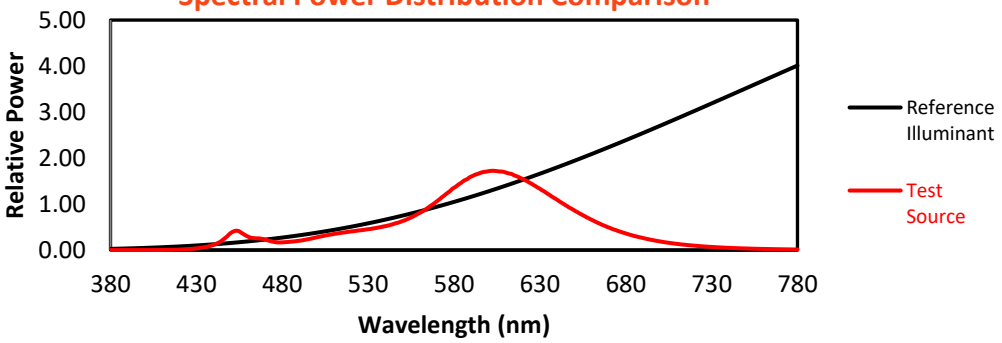
REPORT NUMBER: SP1-2407-157-2

TM-30-18

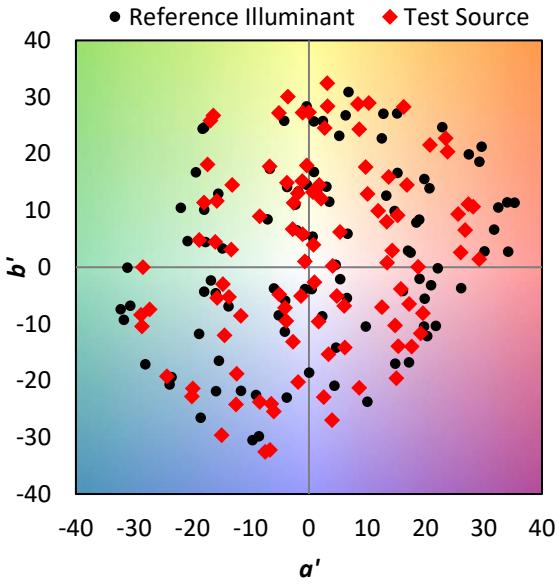
Summary

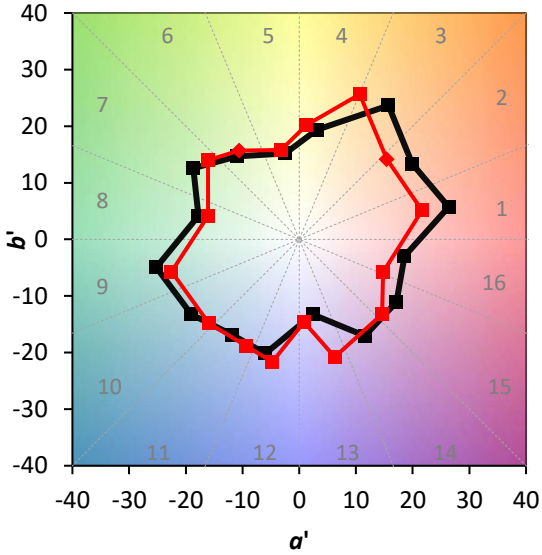
R_f = 76.9
R_g = 92.7
CIE R_a = 70.6
R_9 = -36.0

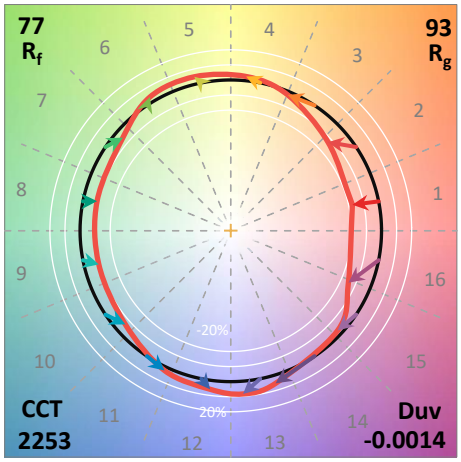
Spectral Power Distribution Comparison

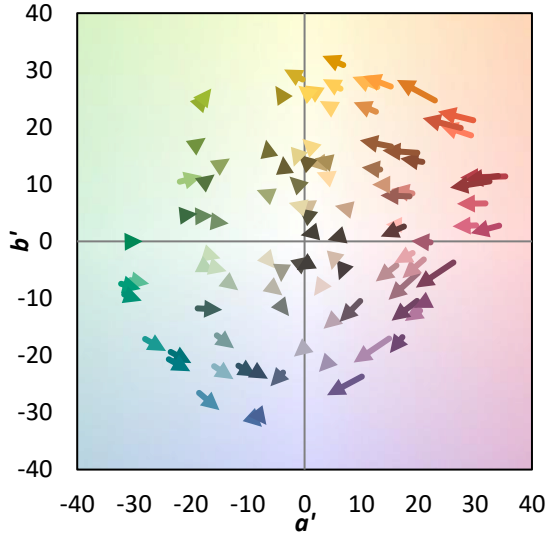


Color Vector Graphics







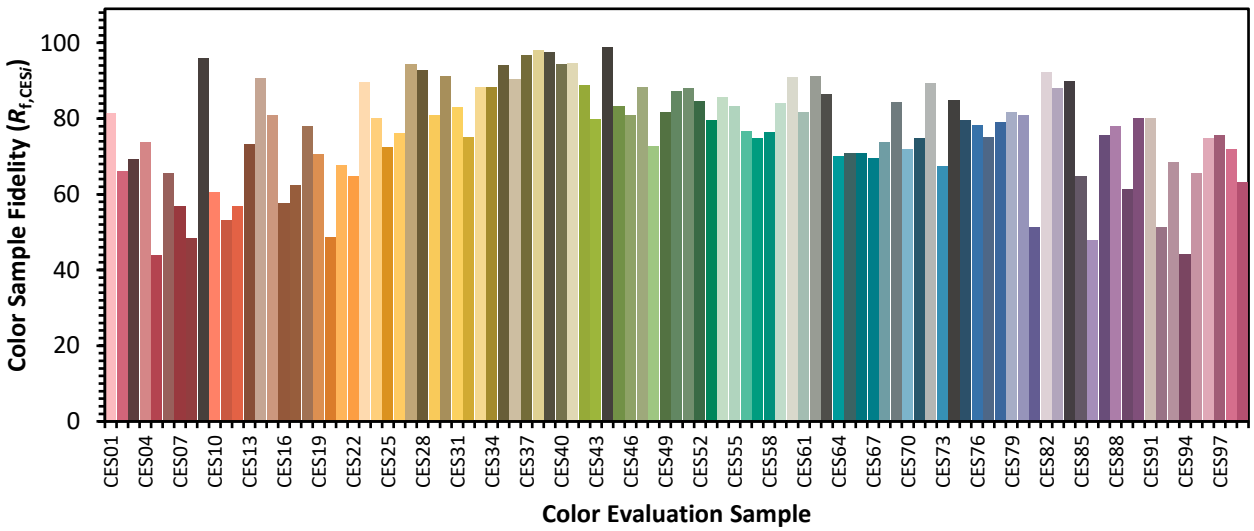


REPORT NUMBER: SP1-2407-157-2

TM-30-18

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

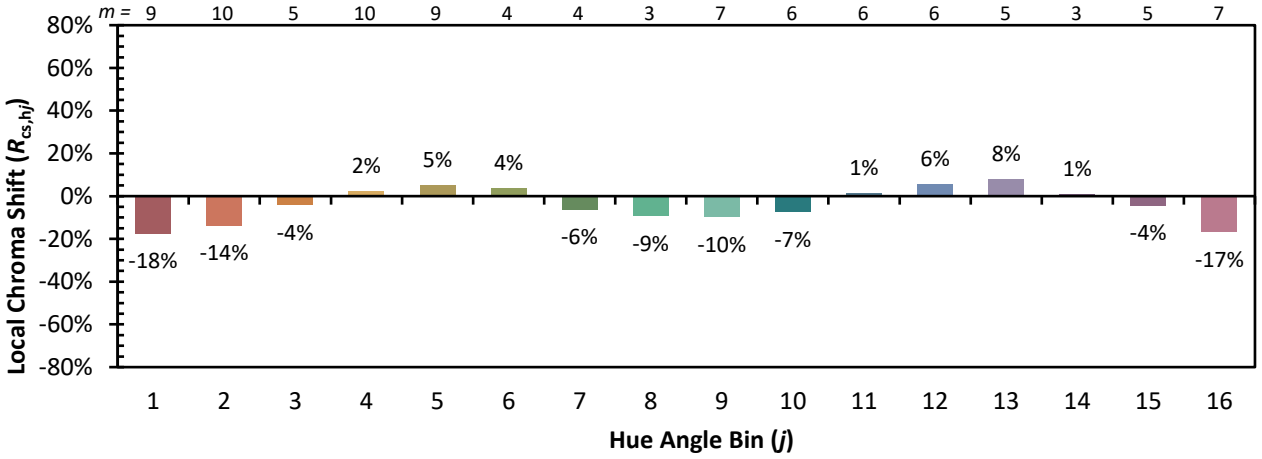
CES01 = 87	CES26 = 76	CES51 = 88	CES76 = 78
CES02 = 65	CES27 = 94	CES52 = 85	CES77 = 75
CES03 = 32	CES28 = 93	CES53 = 80	CES78 = 79
CES04 = 72	CES29 = 81	CES54 = 86	CES79 = 82
CES05 = 51	CES30 = 91	CES55 = 83	CES80 = 81
CES06 = 52	CES31 = 83	CES56 = 77	CES81 = 51
CES07 = 44	CES32 = 75	CES57 = 75	CES82 = 92
CES08 = 42	CES33 = 88	CES58 = 76	CES83 = 88
CES09 = 29	CES34 = 88	CES59 = 84	CES84 = 90
CES10 = 79	CES35 = 94	CES60 = 91	CES85 = 65
CES11 = 62	CES36 = 90	CES61 = 82	CES86 = 48
CES12 = 68	CES37 = 97	CES62 = 91	CES87 = 76
CES13 = 45	CES38 = 98	CES63 = 86	CES88 = 78
CES14 = 75	CES39 = 97	CES64 = 70	CES89 = 61
CES15 = 72	CES40 = 94	CES65 = 71	CES90 = 80
CES16 = 48	CES41 = 95	CES66 = 71	CES91 = 80
CES17 = 51	CES42 = 89	CES67 = 70	CES92 = 51
CES18 = 57	CES43 = 80	CES68 = 74	CES93 = 68
CES19 = 74	CES44 = 99	CES69 = 84	CES94 = 44
CES20 = 68	CES45 = 83	CES70 = 72	CES95 = 66
CES21 = 88	CES46 = 81	CES71 = 75	CES96 = 75
CES22 = 81	CES47 = 88	CES72 = 89	CES97 = 76
CES23 = 92	CES48 = 73	CES73 = 68	CES98 = 72
CES24 = 92	CES49 = 82	CES74 = 85	CES99 = 63
CES25 = 73	CES50 = 87	CES75 = 80	

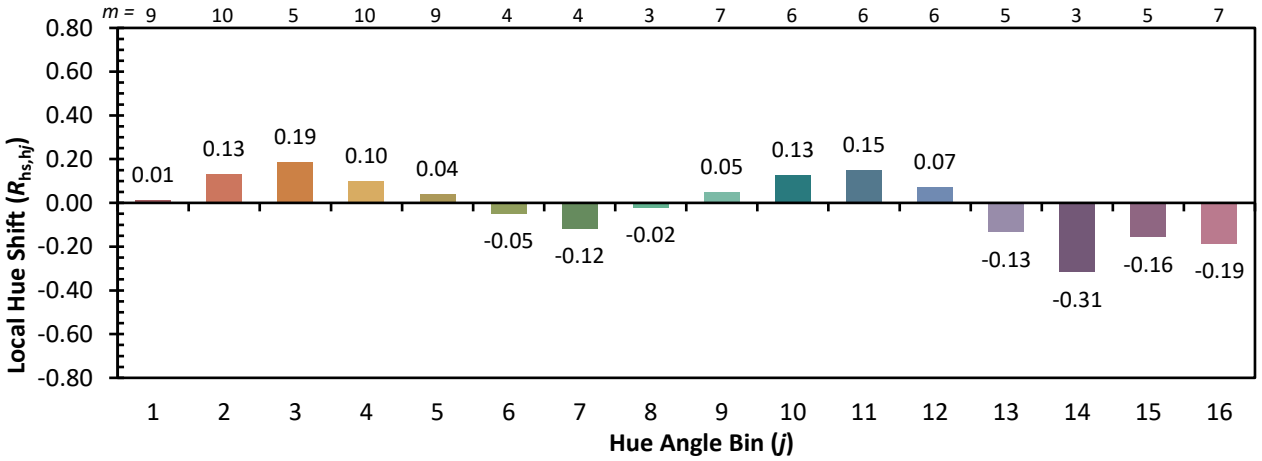


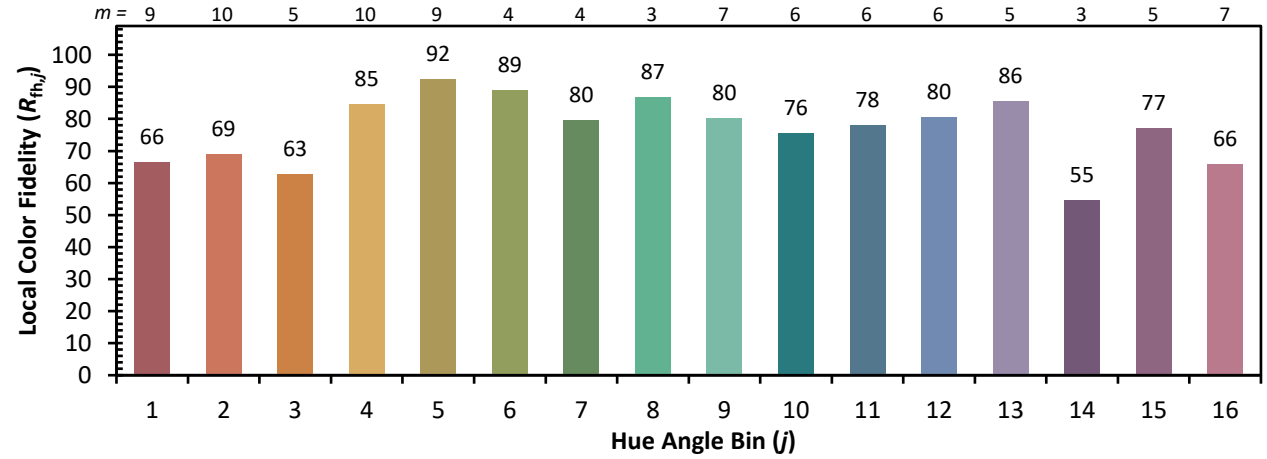
REPORT NUMBER: SP1-2407-157-2

TM-30-18

Color Rendition by Hue-Angle Bin



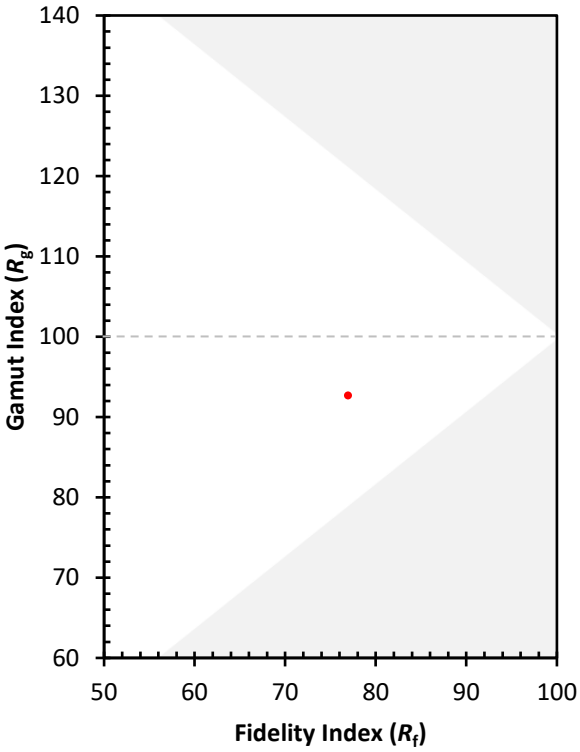


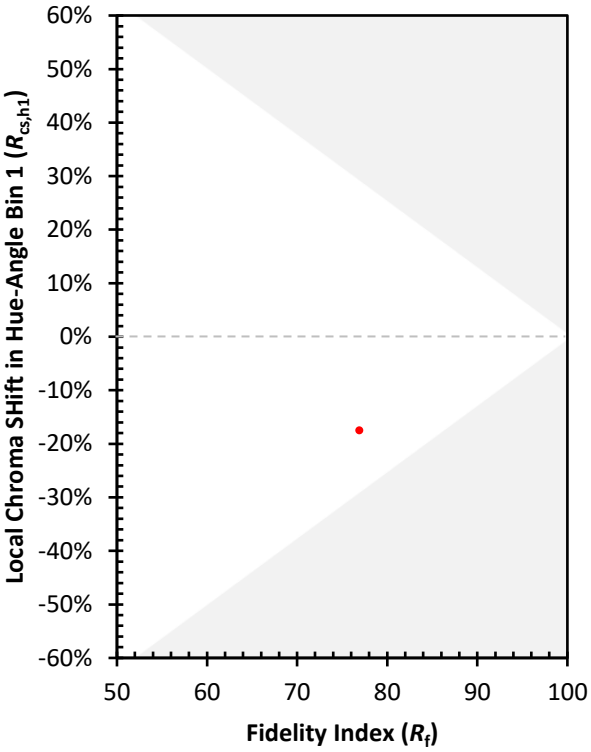


REPORT NUMBER: SP1-2407-157-2

TM-30-18

Measure Comparisons





(END OF REPORT)