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: P821226

Luminaire Tested: **TT-D3-735-24VDC-MQ**

Issue Date: 5/19/2020

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:	P821226
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-473-16)
Test Lab:	INNOVATION CENTER
Issue Date:	5/19/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D3-735-24VDC-MQ
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3500K, 70 CRI LEDS AND MEDIUM DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	6355 lumens
Efficiency:	N/A
Efficacy:	138.2 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G2

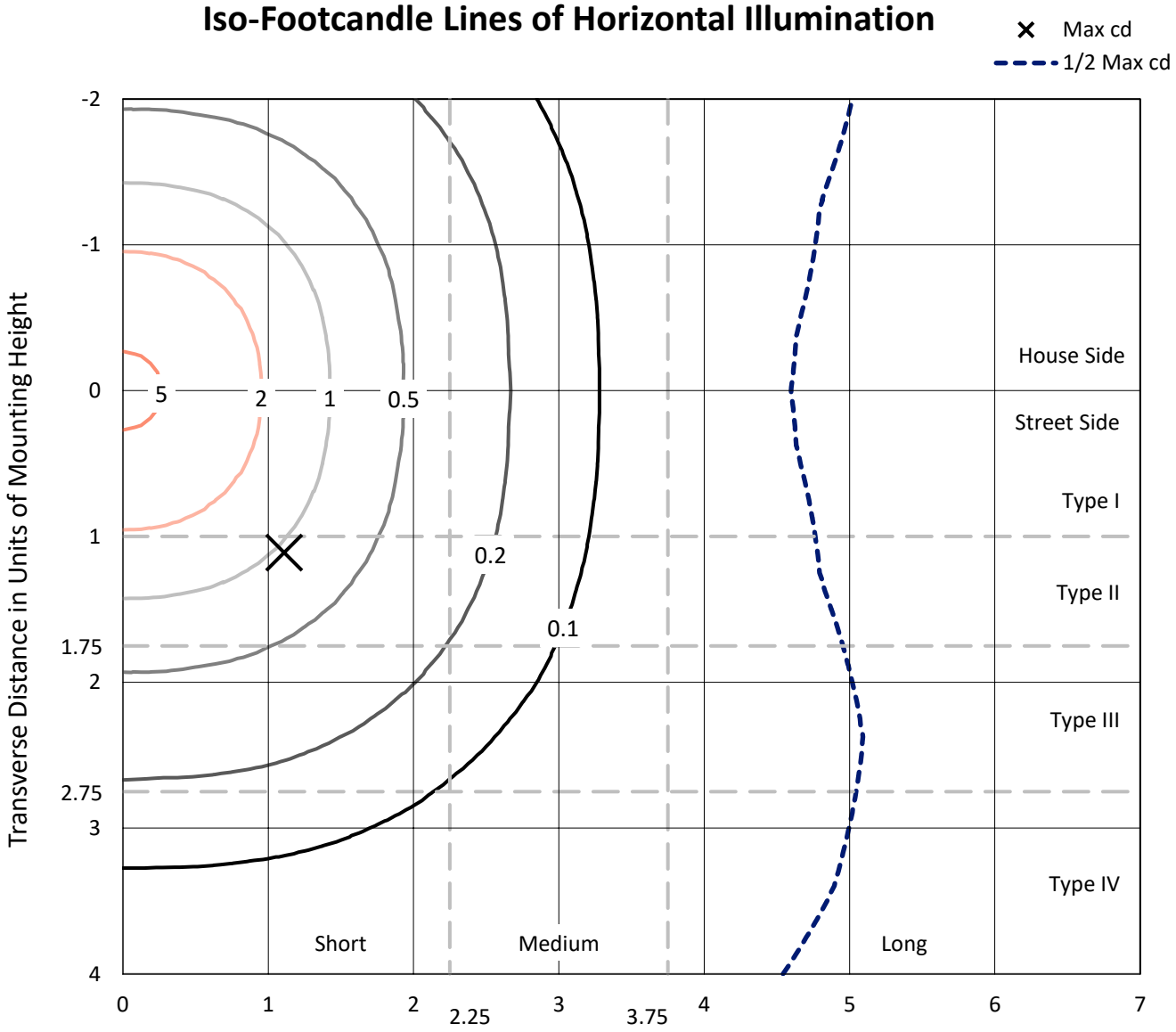
Input Watts (W):	46
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Scaled Data Report

REPORT NUMBER: P821226
CATALOG NUMBER: TT-D3-735-24VDC-MQ

Iso-Footcandle Lines of Horizontal Illumination



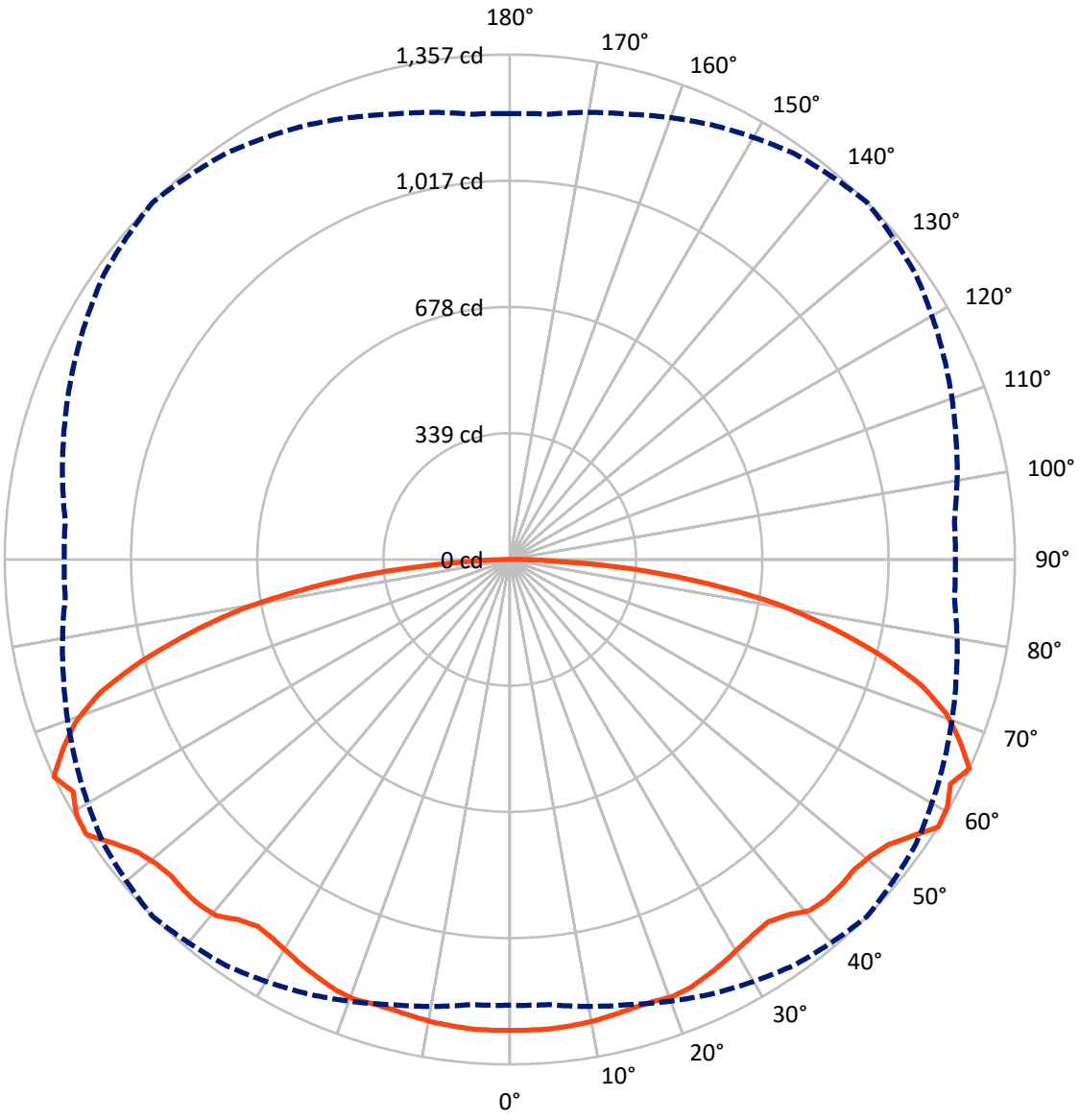
Based on 15 foot mounting height. Maximum calculated value = 5.6 fc
Type V - Short - N/A

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Luminous Intensity Polar Plot



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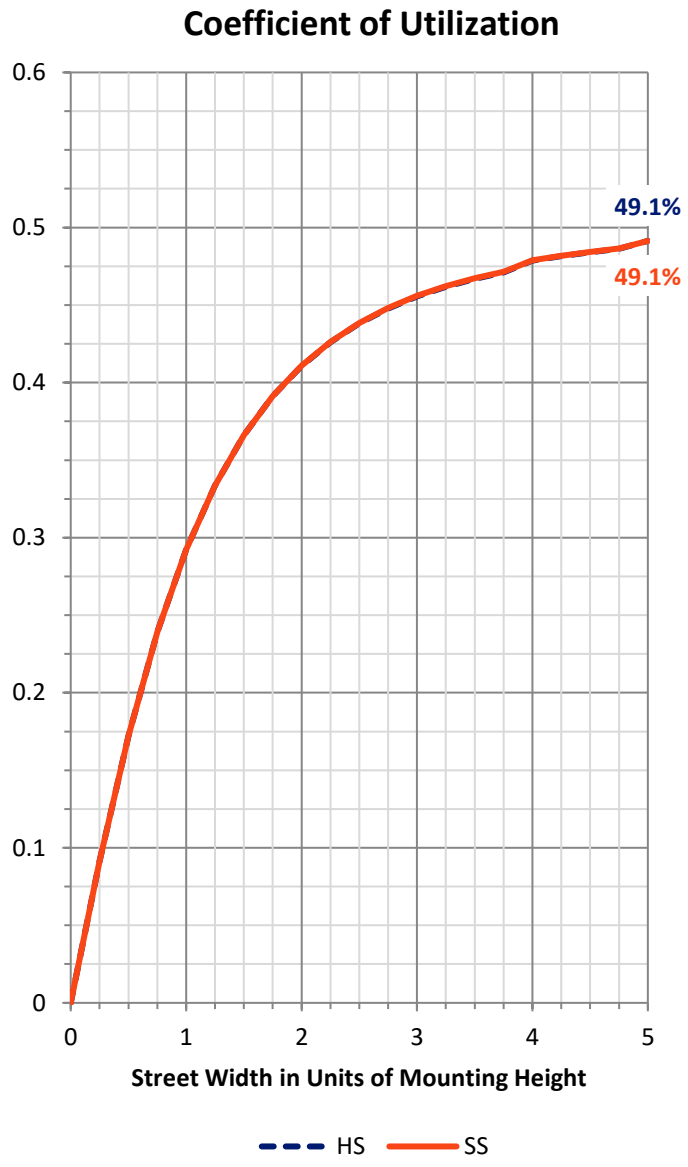
REPORT NUMBER: P821226
CATALOG NUMBER: TT-D3-735-24VDC-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3177.5	0.0	3177.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3177.5	0.0	3177.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	6355.0	0.0	6355.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.6	1.9
10°-20°	354.8	5.6
20°-30°	570.0	9.0
30°-40°	752.5	11.8
40°-50°	941.5	14.8
50°-60°	1119.9	17.6
60°-70°	1214.6	19.1
70°-80°	966.8	15.2
80°-90°	314.3	4.9
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°	6355.0	100.0
0°-180°	6355.0	100.0



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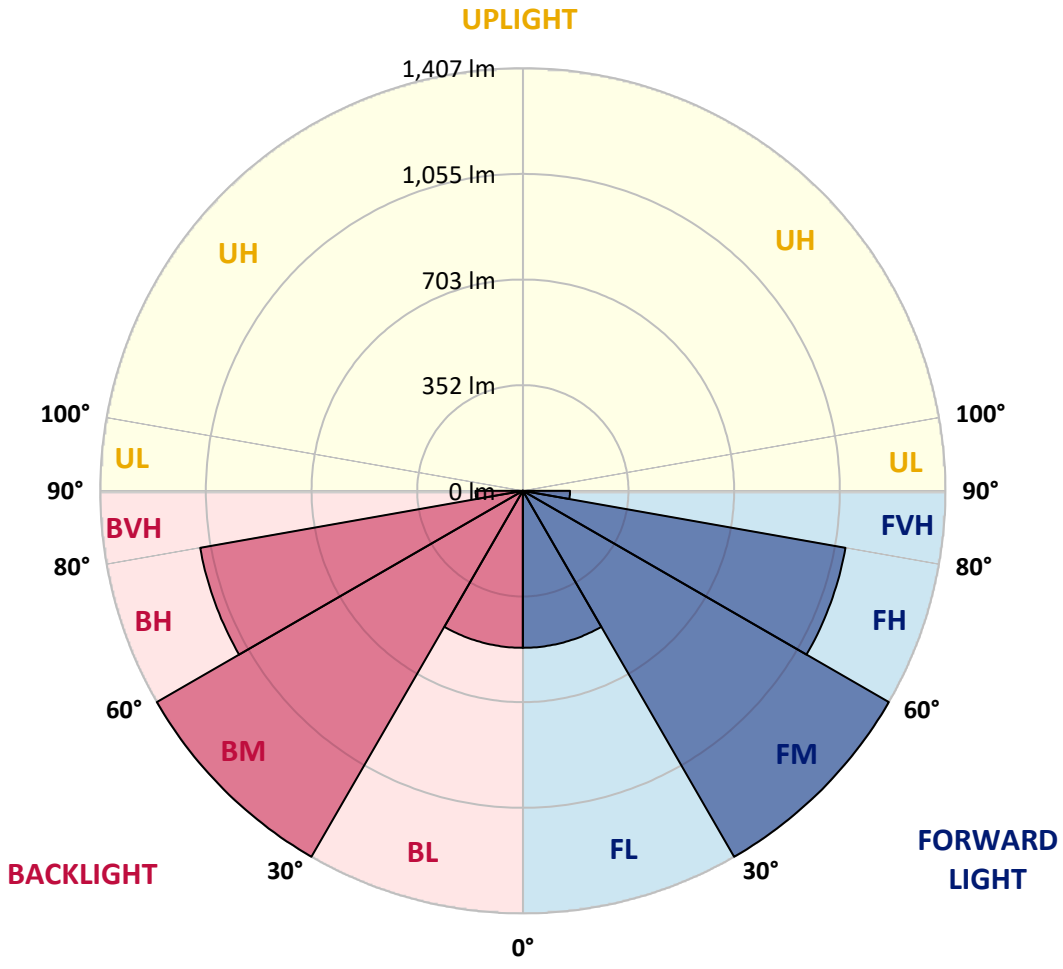
Scaled Data Report

REPORT NUMBER: P821226
CATALOG NUMBER: TT-D3-735-24VDC-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	522.7	8.2			
FM	(30°-60°)	1407.0	22.1			
FH	(60°-80°)	1090.7	17.2			G1/1800
FVH	(80°-90°)	157.1	2.5			G2/225
BL	(0°-30°)	522.7	8.2	B2/1000		
BM	(30°-60°)	1407.0	22.1	B2/2500		
BH	(60°-80°)	1090.7	17.2	B3/2500		G1/1800
BVH	(80°-90°)	157.1	2.5			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G2
Type V Short



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REPORT NUMBER: P821226
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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1265.7	1265.7	1265.7	1265.7	1265.7	*1265.7*	1265.7	1265.7	1265.7	1265.7	1265.7
2.5°	1267.6	1266.7	1267.6	1266.7	1266.7	*1265.7*	1266.7	1266.7	1266.7	1266.7	1266.7
5°	1266.7	1265.7	1265.7	1266.7	1265.7	*1265.7*	1265.7	1265.7	1265.7	1265.7	1265.7
7.5°	1262.9	1262.9	1263.8	1262.9	1262.9	*1262.9*	1262.9	1262.9	1262.9	1263.8	1263.8
10°	1260.0	1259.1	1260.0	1260.0	1259.1	*1260.0*	1259.1	1260.0	1260.0	1260.0	1260.0
12.5°	1256.3	1255.3	1256.3	1256.3	1255.3	*1254.4*	1255.3	1255.3	1256.3	1256.3	1256.3
15°	1249.7	1249.7	1251.5	1250.6	1250.6	*1249.7*	1251.5	1250.6	1249.7	1250.6	1250.6
17.5°	1244.9	1244.9	1246.8	1248.7	1248.7	*1248.7*	1248.7	1247.8	1245.9	1246.8	1244.9
20°	1245.9	1246.8	1247.8	1250.6	1252.5	*1253.4*	1253.4	1250.6	1247.8	1248.7	1247.8
22.5°	1243.0	1242.1	1243.0	1244.9	1247.8	*1247.8*	1247.8	1244.0	1243.0	1242.1	1242.1
25°	1231.7	1231.7	1233.6	1235.5	1237.4	*1236.4*	1237.4	1235.5	1233.6	1231.7	1231.7
27.5°	1218.5	1218.5	1221.3	1223.2	1225.1	*1225.1*	1224.1	1222.2	1221.3	1219.4	1218.5
30°	1205.2	1205.2	1208.1	1209.9	1212.8	*1211.8*	1211.8	1209.0	1206.2	1204.3	1204.3
32.5°	1191.0	1190.1	1192.9	1197.7	1201.4	*1201.4*	1201.4	1195.8	1192.0	1190.1	1189.2
35°	1178.8	1178.8	1182.5	1191.0	1195.8	*1195.8*	1193.9	1190.1	1181.6	1178.8	1178.8
37.5°	1175.0	1177.8	1188.2	1200.5	1209.9	*1211.8*	1209.0	1198.6	1187.3	1178.8	1175.9
40°	1187.3	1190.1	1203.3	1223.2	1237.4	*1240.2*	1237.4	1222.2	1202.4	1189.2	1188.2
42.5°	1189.2	1191.0	1207.1	1229.8	1243.0	*1247.8*	1243.0	1227.9	1206.2	1190.1	1189.2
45°	1182.5	1183.5	1202.4	1226.0	1242.1	*1247.8*	1242.1	1224.1	1201.4	1183.5	1182.5
47.5°	1174.0	1175.9	1196.7	1221.3	1241.1	*1244.9*	1240.2	1220.3	1194.8	1176.9	1174.0
50°	1167.4	1173.1	1192.0	1219.4	1243.0	*1254.4*	1243.0	1216.6	1191.0	1171.2	1167.4
52.5°	1171.2	1173.1	1197.7	1236.4	1268.6	*1273.3*	1267.6	1236.4	1195.8	1173.1	1170.2
55°	1182.5	1191.0	1217.5	1273.3	1302.6	*1311.1*	1298.8	1271.4	1218.5	1191.0	1182.5
57.5°	*1197.7*	*1200.5*	*1238.3*	*1287.5*	*1330.9*	*1356.5*	*1331.9*	*1286.5*	*1241.1*	*1198.6*	*1196.7*
60°	1185.4	1176.9	1224.1	1281.8	1340.4	*1350.8*	1336.6	1282.7	1222.2	1175.9	1184.4
62.5°	1152.3	1158.0	1196.7	1276.1	1316.8	*1328.1*	1313.0	1276.1	1194.8	1162.7	1149.5
65°	1125.8	1159.8	1202.4	1259.1	1324.3	*1356.5*	1325.3	1257.2	1204.3	1154.2	1123.0
67.5°	1089.0	1095.6	1158.9	1228.9	1287.5	*1303.5*	1286.5	1229.8	1153.2	1090.8	1095.6
70°	1026.6	1017.1	1081.4	1162.7	1218.5	*1244.0*	1220.3	1158.9	1078.6	1015.2	1023.7
72.5°	923.5	929.2	988.8	1074.8	1132.4	*1157.0*	1133.4	1068.2	986.9	934.9	929.2
75°	815.8	822.4	880.0	958.5	1017.1	*1027.5*	1020.9	953.8	881.9	821.4	815.8
77.5°	692.9	699.5	746.8	832.8	867.8	*883.8*	869.7	837.5	744.9	698.6	691.0
80°	556.8	554.9	596.5	670.2	713.7	*731.6*	713.7	672.1	594.6	558.7	546.4
82.5°	398.0	399.9	438.6	489.7	531.2	*536.9*	528.4	494.4	434.8	404.6	387.6
85°	221.2	229.7	258.1	295.9	323.3	*332.7*	318.6	286.4	257.1	233.5	225.9
87.5°	52.9	57.7	67.1	85.1	95.5	*104.9*	95.5	88.9	63.3	57.7	52.9
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: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

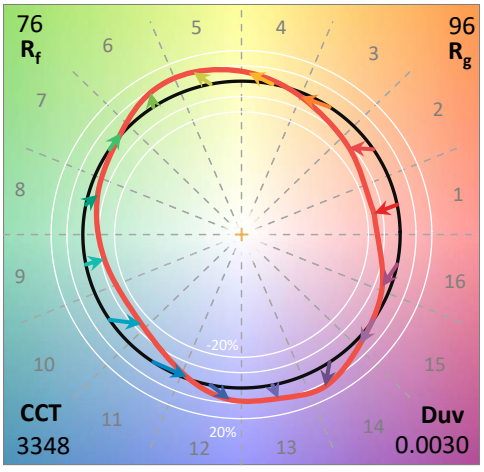
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-4
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	09/27/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-VA-30-735-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3348
CIE u':	0.2384
CIE v':	0.5184
Duv:	0.0030
CIE x:	0.4177
CIE y:	0.4036
CIE z:	0.1787
Peak Wavelength (nm):	593
Dominant Wavelength (nm):	580
Purity:	46.5223
Rf:	75.8
Rg:	95.8

CRI (Ra):	73.4
R1:	70.8
R2:	79.9
R3:	87.6
R4:	72.6
R5:	69.3
R6:	71.3
R7:	82.1
R8:	53.3
R9:	-19.2
R10:	52.5
R11:	68.0
R12:	42.6
R13:	72.0
R14:	92.6
R15:	63.8



Test Conditions

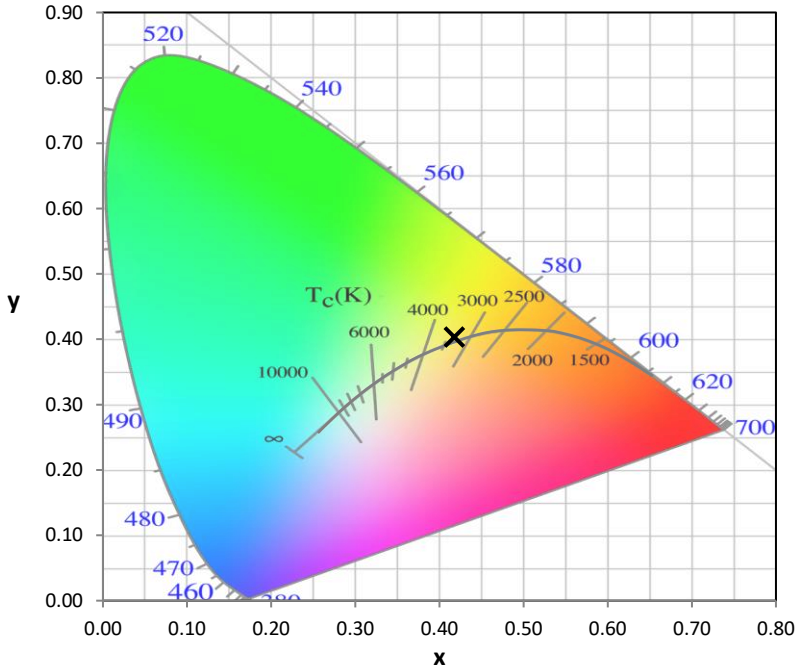
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

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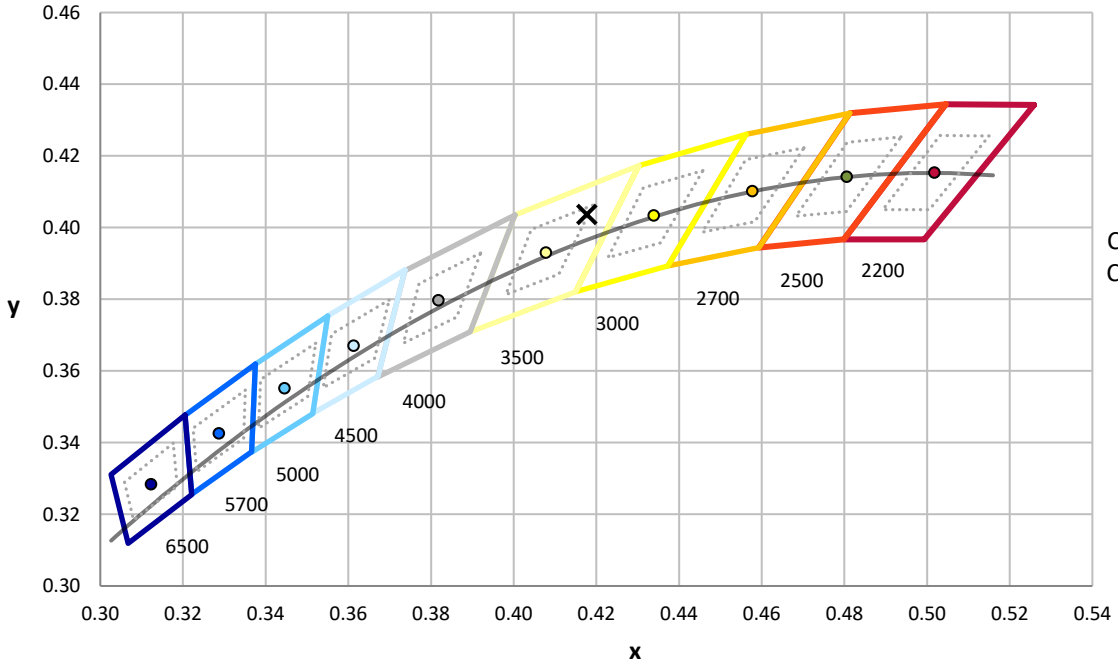
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



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

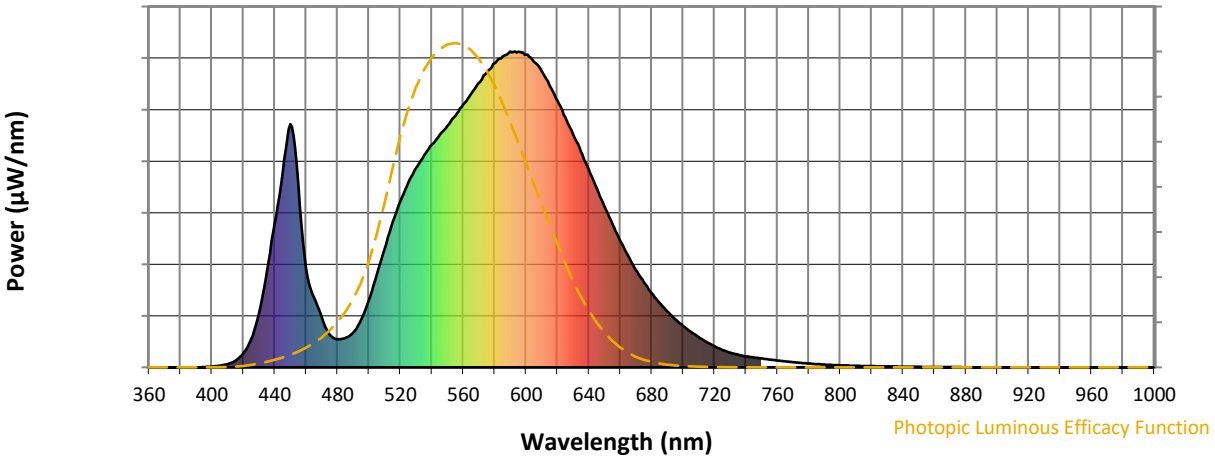


CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

Photopic Flux vs. Wavelength

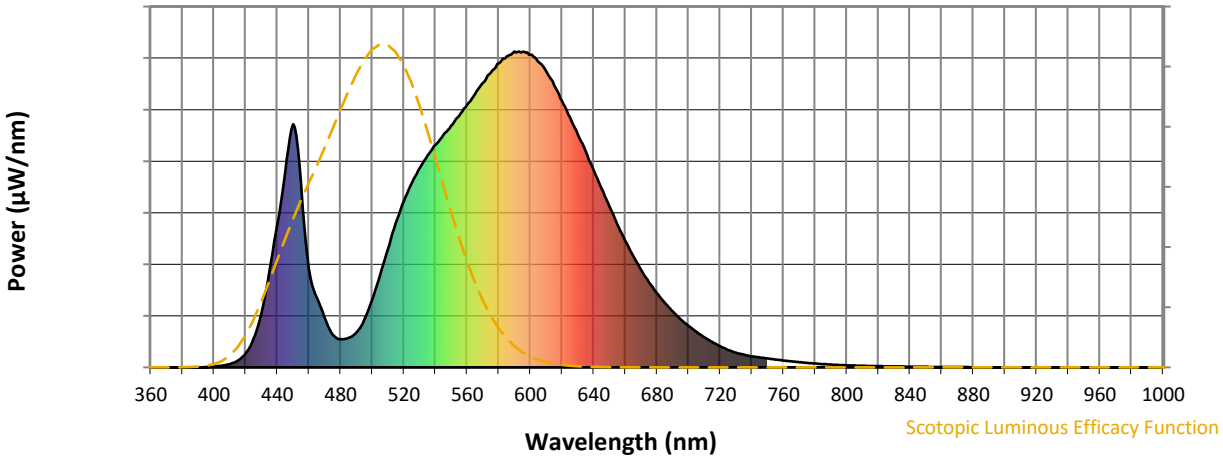


Photopic Lumens: NR

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

Scotopic Flux vs. Wavelength

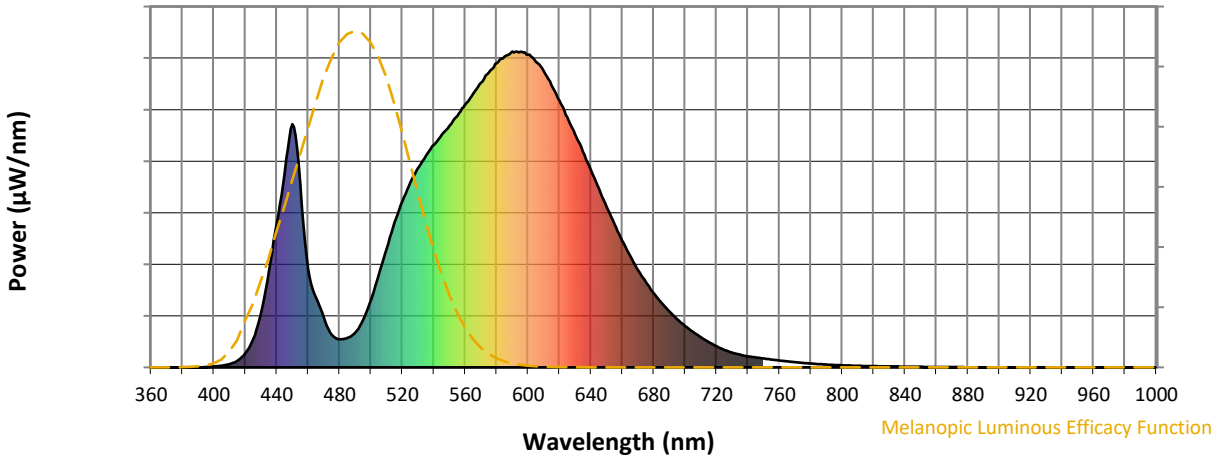


Scotopic Lumens: NR **S/P: 1.31**

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.4**

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

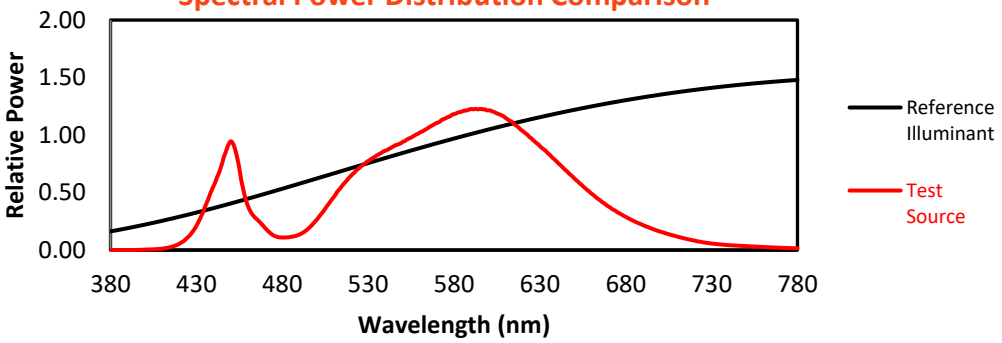
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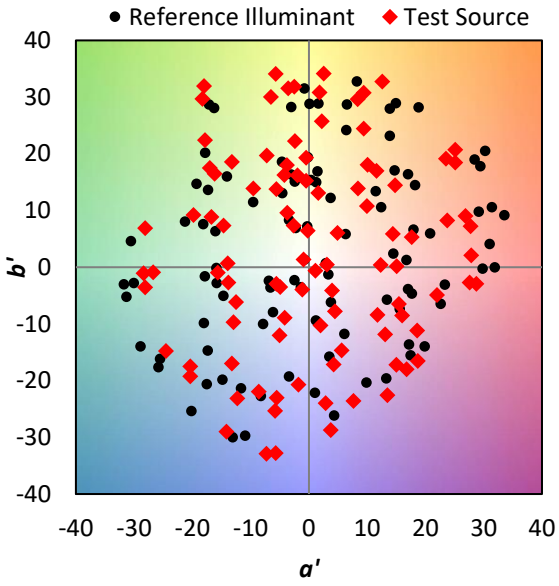
Summary

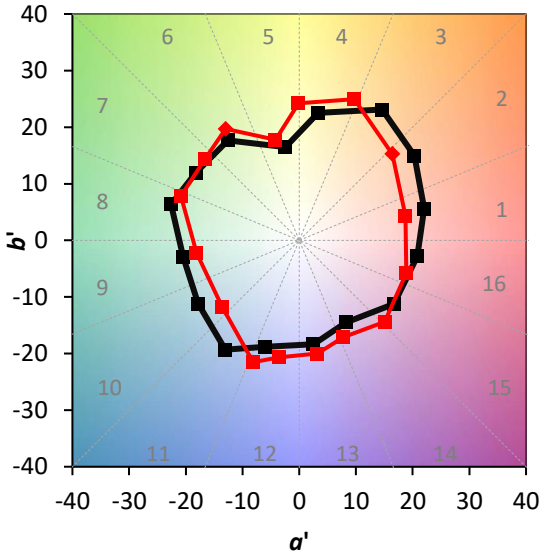
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R_g = 95.8
CIE R_a = 73.4
R_9 = -19.2

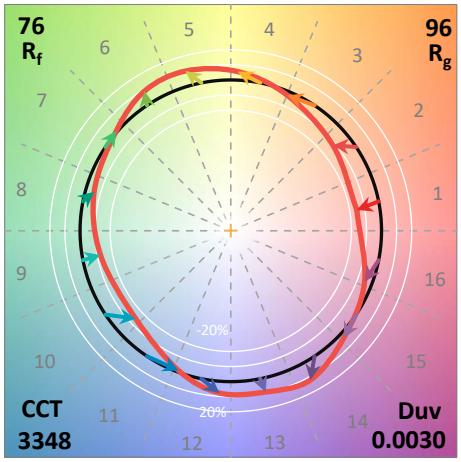
Spectral Power Distribution Comparison

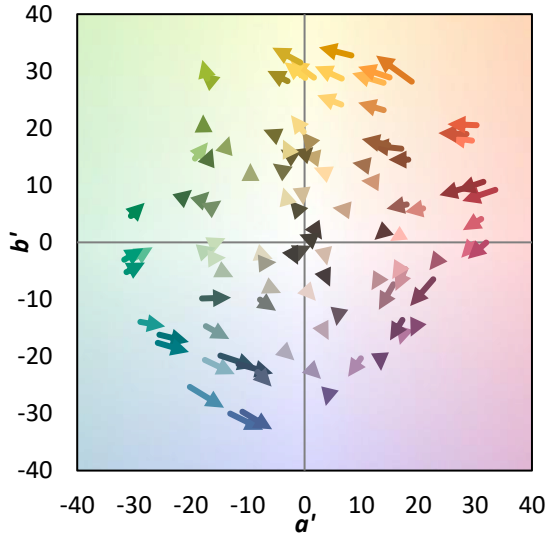


Color Vector Graphics







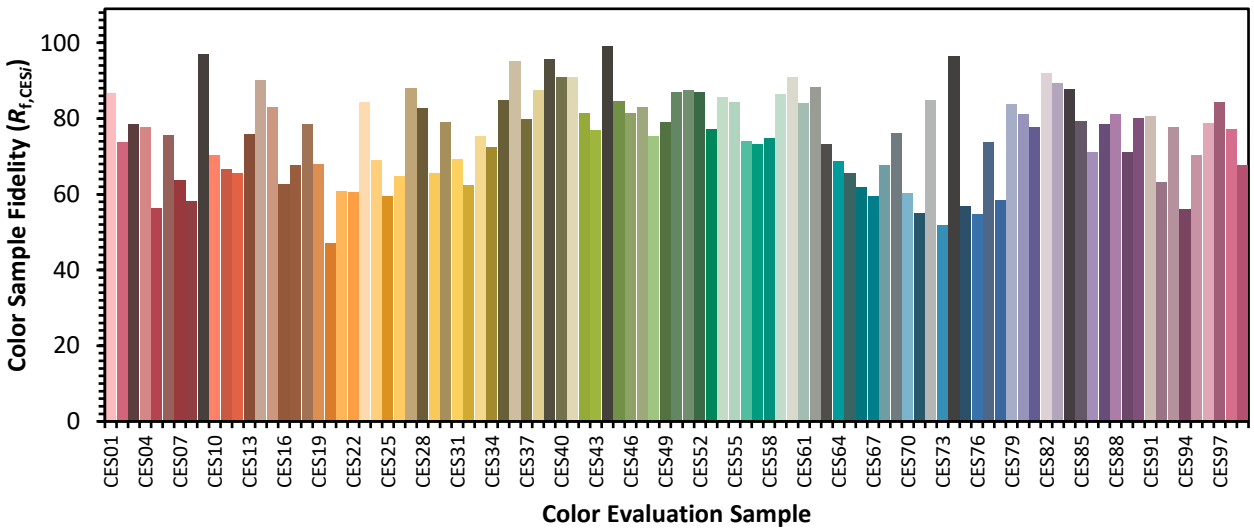


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Individual Sample Fidelity Index ($R_{f,i}$)

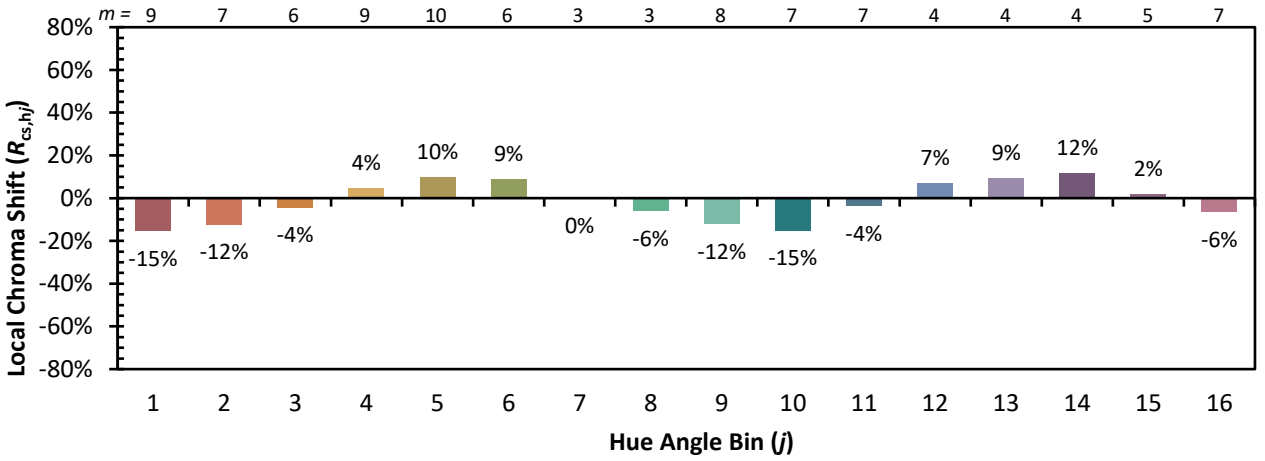
CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 92
CES08 = 40	CES33 = 75	CES58 = 75	CES83 = 89
CES09 = 29	CES34 = 73	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 85	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 95	CES61 = 84	CES86 = 71
CES12 = 64	CES37 = 80	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 88	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 71
CES15 = 71	CES40 = 91	CES65 = 66	CES90 = 80
CES16 = 47	CES41 = 91	CES66 = 62	CES91 = 81
CES17 = 50	CES42 = 81	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 77	CES68 = 68	CES93 = 78
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 85	CES70 = 60	CES95 = 70
CES21 = 87	CES46 = 82	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 83	CES72 = 85	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 52	CES98 = 77
CES24 = 91	CES49 = 79	CES74 = 96	CES99 = 68
CES25 = 72	CES50 = 87	CES75 = 57	

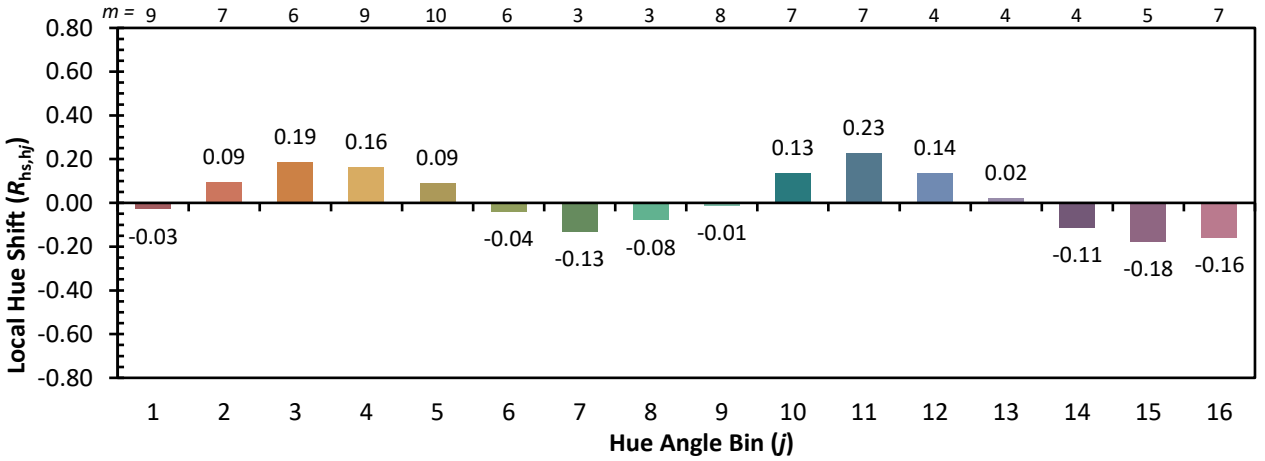


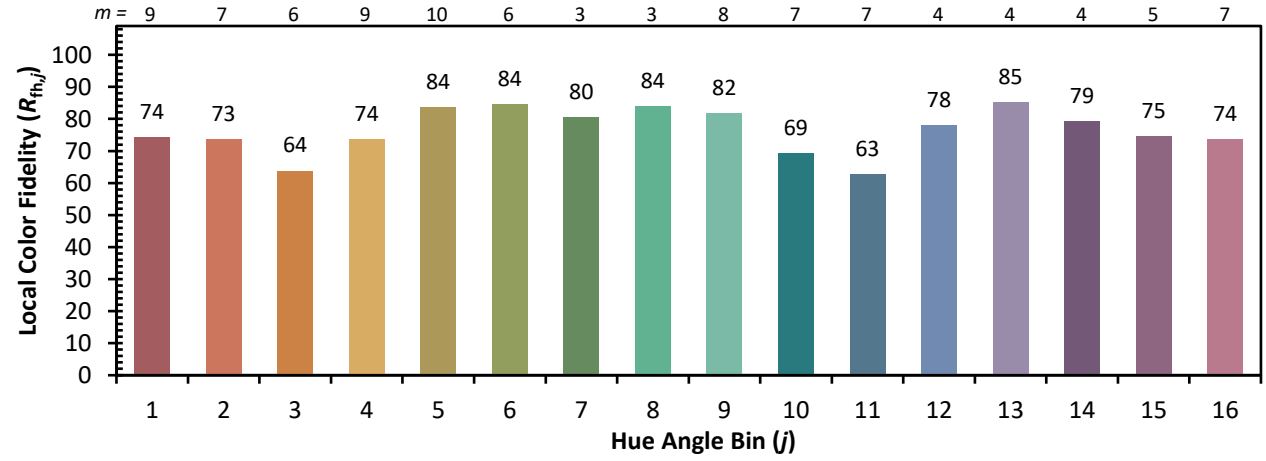
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Color Rendition by Hue-Angle Bin



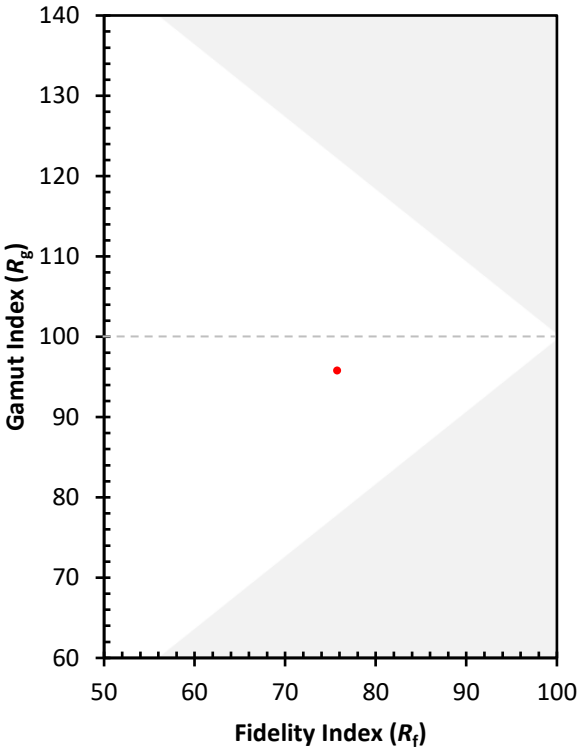


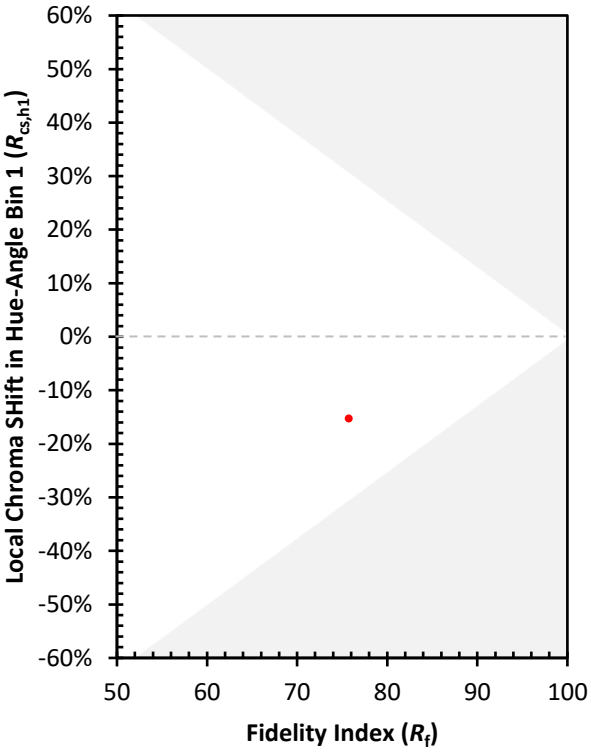


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Measure Comparisons





(END OF REPORT)