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: P821309

Luminaire Tested: **TT-D4-740-24VDC-CQ**

Issue Date: 2/18/2020

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:	P821309
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-473-17)
Test Lab:	INNOVATIONS CENTER
Issue Date:	2/18/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D4-740-24VDC-CQ
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	4000K, 70 CRI LEDS AND CONCENTRATED DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	7480 lumens
Efficiency:	N/A
Efficacy:	131.2 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B2 - U0 - G1

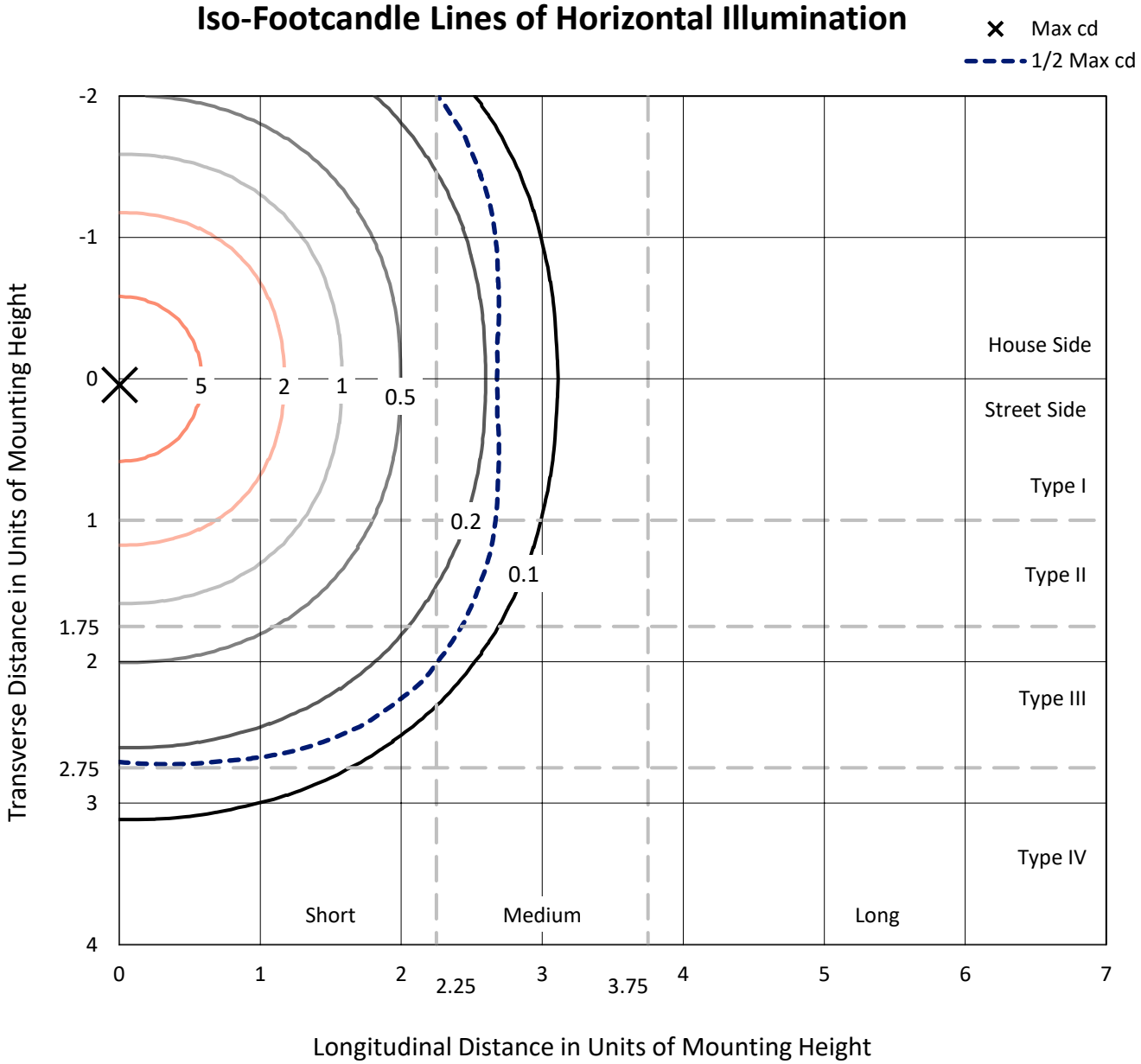
Input Watts (W):	57
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Scaled Data Report

REPORT NUMBER: P821309
CATALOG NUMBER: TT-D4-740-24VDC-CQ

Iso-Footcandle Lines of Horizontal Illumination



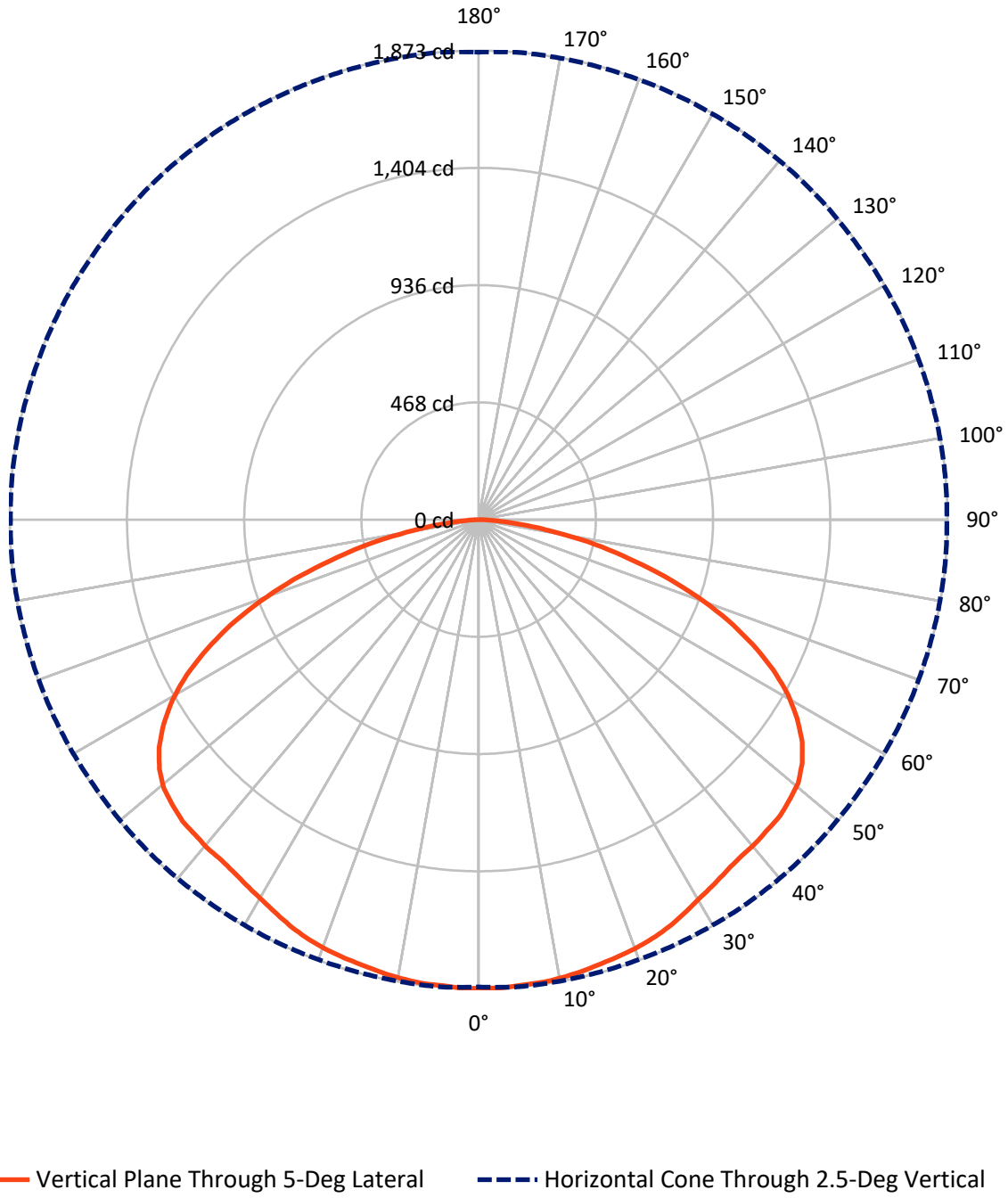
Based on 15 foot mounting height. Maximum calculated value = 8.3 fc
Type V - Short - N/A

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REPORT NUMBER: P821309
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Luminous Intensity Polar Plot



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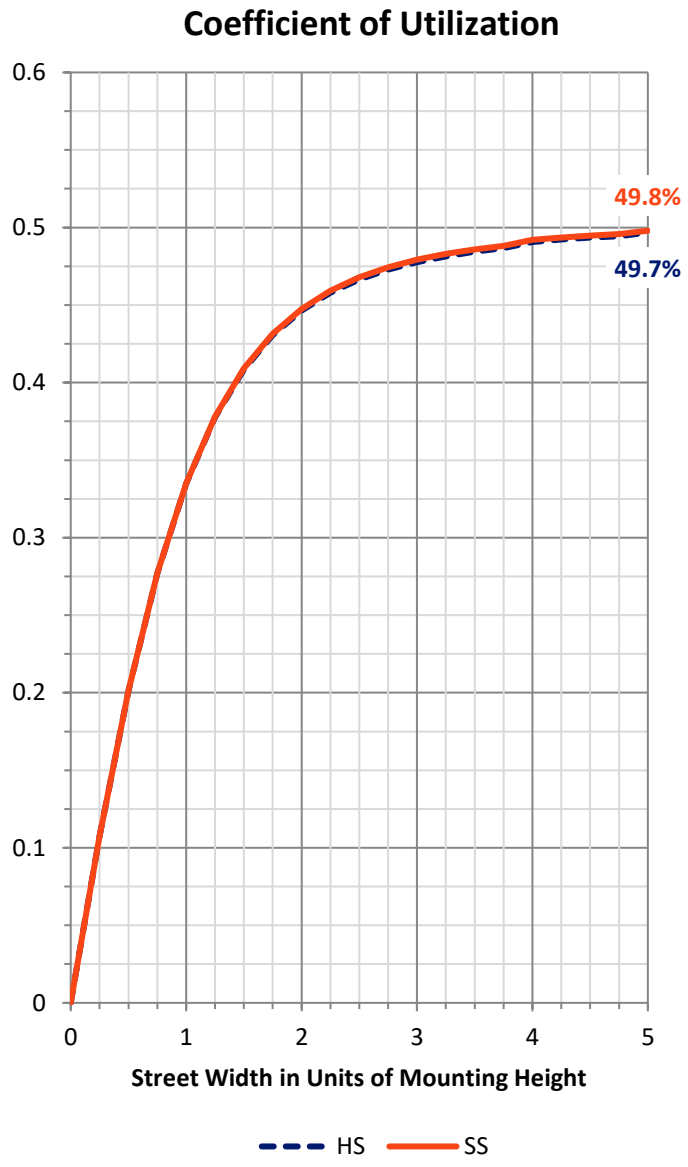
REPORT NUMBER: P821309
CATALOG NUMBER: TT-D4-740-24VDC-CQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3740.0	0.0	3740.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3740.0	0.0	3740.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	7480.0	0.0	7480.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.0	2.4
10°-20°	521.2	7.0
20°-30°	828.9	11.1
30°-40°	1090.4	14.6
40°-50°	1334.6	17.8
50°-60°	1445.5	19.3
60°-70°	1243.6	16.6
70°-80°	699.1	9.3
80°-90°	138.6	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°	7480.0	100.0
0°-180°	7480.0	100.0



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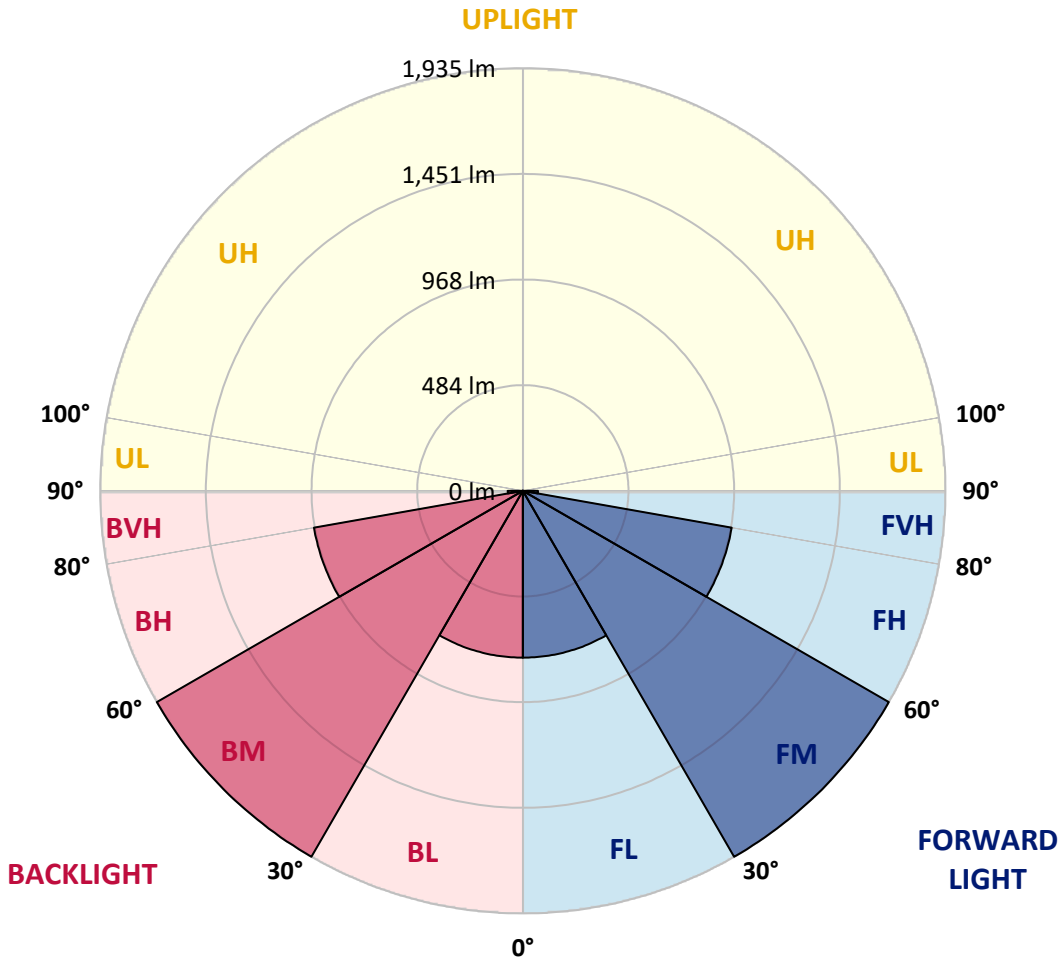
Scaled Data Report

REPORT NUMBER: P821309
CATALOG NUMBER: TT-D4-740-24VDC-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	764.1	10.2			
FM	(30°-60°)	1935.3	25.9			
FH	(60°-80°)	971.4	13.0			G1/1800
FVH	(80°-90°)	69.3	0.9			G1/100
BL	(0°-30°)	764.1	10.2	B2/1000		
BM	(30°-60°)	1935.3	25.9	B2/2500		
BH	(60°-80°)	971.4	13.0	B2/1000		G1/1800
BVH	(80°-90°)	69.3	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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REPORT NUMBER: P821309
CATALOG NUMBER: TT-D4-740-24VDC-CQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3	1871.3
2.5°	1866.5	1872.5	1870.1	1870.1	1870.1	1870.1	1867.7	1870.1	1870.1	1871.3	1870.1
5°	1867.7	1866.5	1866.5	1867.7	1867.7	1868.9	1866.5	1867.7	1868.9	1868.9	1870.1
7.5°	1864.1	1865.3	1862.9	1865.3	1862.9	1864.1	1864.1	1865.3	1864.1	1865.3	1867.7
10°	1857.0	1858.2	1857.0	1857.0	1857.0	1859.4	1854.6	1858.2	1857.0	1858.2	1857.0
12.5°	1843.9	1849.9	1847.5	1849.9	1849.9	1849.9	1846.3	1848.7	1849.9	1849.9	1849.9
15°	1837.9	1839.1	1835.6	1840.3	1841.5	1842.7	1837.9	1840.3	1840.3	1841.5	1842.7
17.5°	1824.9	1830.8	1829.6	1833.2	1832.0	1835.6	1834.4	1833.2	1832.0	1834.4	1832.0
20°	1815.3	1821.3	1820.1	1823.7	1824.9	1828.4	1824.9	1824.9	1821.3	1822.5	1826.0
22.5°	1805.8	1808.2	1808.2	1811.8	1811.8	1815.3	1811.8	1810.6	1810.6	1809.4	1812.9
25°	1790.3	1791.5	1790.3	1793.9	1796.3	1798.7	1797.5	1795.1	1793.9	1793.9	1792.7
27.5°	1765.3	1770.1	1772.5	1777.2	1778.4	1782.0	1777.2	1777.2	1774.9	1772.5	1773.7
30°	1746.3	1748.7	1748.7	1759.4	1759.4	1765.3	1759.4	1758.2	1757.0	1755.8	1753.4
32.5°	1728.4	1732.0	1735.6	1743.9	1749.9	1752.2	1748.7	1746.3	1740.3	1736.8	1735.6
35°	1714.1	1715.3	1722.5	1734.4	1741.5	1747.5	1742.7	1736.8	1728.4	1722.5	1727.2
37.5°	1703.4	1704.6	1715.3	1730.8	1743.9	1748.7	1741.5	1732.0	1718.9	1711.8	1709.4
40°	1693.9	1701.1	1713.0	1734.4	1748.7	1755.8	1749.9	1736.8	1717.7	1703.4	1702.2
42.5°	1689.1	1692.7	1710.6	1735.6	1755.8	1765.3	1757.0	1739.1	1715.3	1698.7	1697.5
45°	1677.2	1688.0	1704.6	1736.8	1759.4	1771.3	1759.4	1736.8	1708.2	1689.1	1685.6
47.5°	1667.7	1671.3	1697.5	1734.4	1761.8	1771.3	1759.4	1730.8	1695.1	1670.1	1667.7
50°	1645.1	1653.4	1679.6	1718.9	1751.0	1760.6	1746.3	1708.2	1667.7	1640.3	1635.6
52.5°	1610.6	1617.7	1648.7	1697.5	1728.4	1739.1	1717.7	1677.2	1629.6	1596.3	1596.3
55°	1557.0	1567.7	1599.9	1649.9	1689.1	1698.7	1673.7	1630.8	1577.3	1543.9	1542.7
57.5°	1492.7	1499.9	1534.4	1589.2	1627.2	1641.5	1616.5	1568.9	1515.4	1476.1	1472.5
60°	1409.4	1418.9	1455.8	1508.2	1547.5	1559.4	1538.0	1490.4	1435.6	1393.9	1393.9
62.5°	1309.4	1320.1	1357.0	1410.6	1451.1	1468.9	1439.2	1393.9	1336.8	1296.3	1292.8
65°	1192.8	1202.3	1235.6	1291.6	1333.2	1346.3	1323.7	1276.1	1221.3	1183.2	1179.7
67.5°	1061.8	1074.9	1108.2	1155.9	1191.6	1208.2	1194.0	1151.1	1094.0	1054.7	1051.1
70°	920.2	929.7	955.9	999.9	1040.4	1052.3	1030.9	1002.3	948.7	913.0	908.3
72.5°	769.0	777.3	798.7	840.4	869.0	884.5	872.5	835.6	792.8	763.0	767.8
75°	616.6	615.4	639.2	669.0	695.2	705.9	697.6	673.8	634.5	609.5	608.3
77.5°	464.2	476.2	484.5	509.5	530.9	539.2	527.3	508.3	478.5	458.3	461.9
80°	326.2	319.0	334.5	350.0	364.3	372.6	365.4	354.7	334.5	319.0	316.6
82.5°	200.0	194.0	201.2	215.5	225.0	227.4	228.6	215.5	207.1	195.2	197.6
85°	88.1	89.3	95.2	104.8	105.9	107.1	107.1	104.8	95.2	94.0	91.7
87.5°	21.4	21.4	22.6	26.2	26.2	27.4	27.4	23.8	22.6	20.2	21.4
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

Streetworks

Report Number: SP1-2407-176-5

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-740-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-740-U-WQ

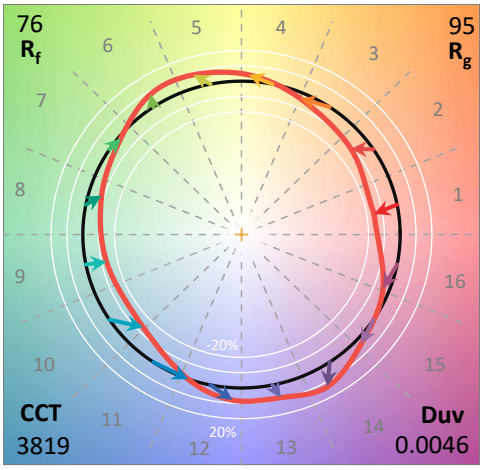
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-5
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-30-740-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3819	CRI (Ra):	72.9		
CIE u':	0.2261	R1:	70.1	R9:	-21.5
CIE v':	0.5108	R2:	78.4	R10:	48.5
Duv:	0.0046	R3:	85.0	R11:	68.4
CIE x:	0.3926	R4:	72.9	R12:	39.0
CIE y:	0.3942	R5:	69.1	R13:	71.1
CIE z:	0.2132	R6:	69.2	R14:	91.3
Peak Wavelength (nm):	450	R7:	82.8	R15:	63.2
Dominant Wavelength (nm):	577	R8:	55.4		
Purity:	36.15483				
Rf:	75.6				
Rg:	94.8				



Test Conditions

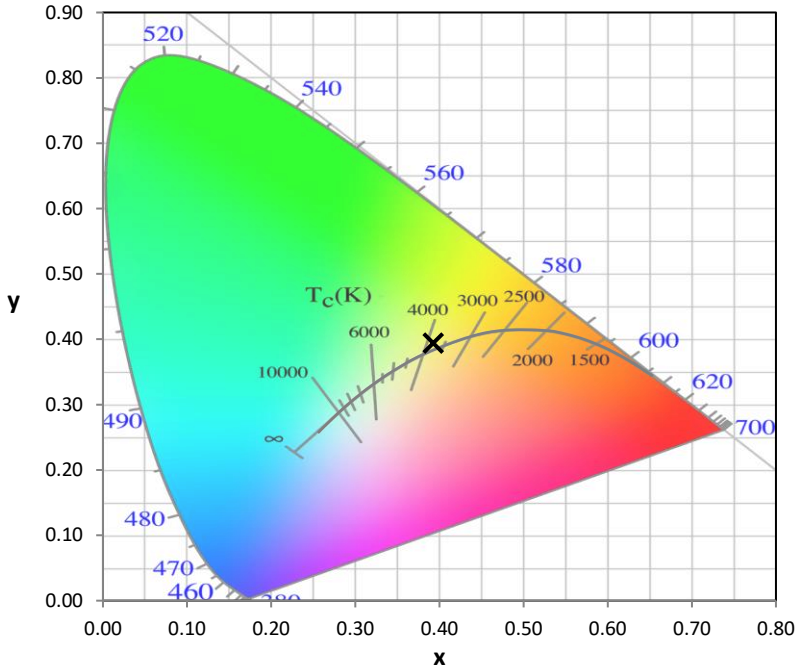
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-5

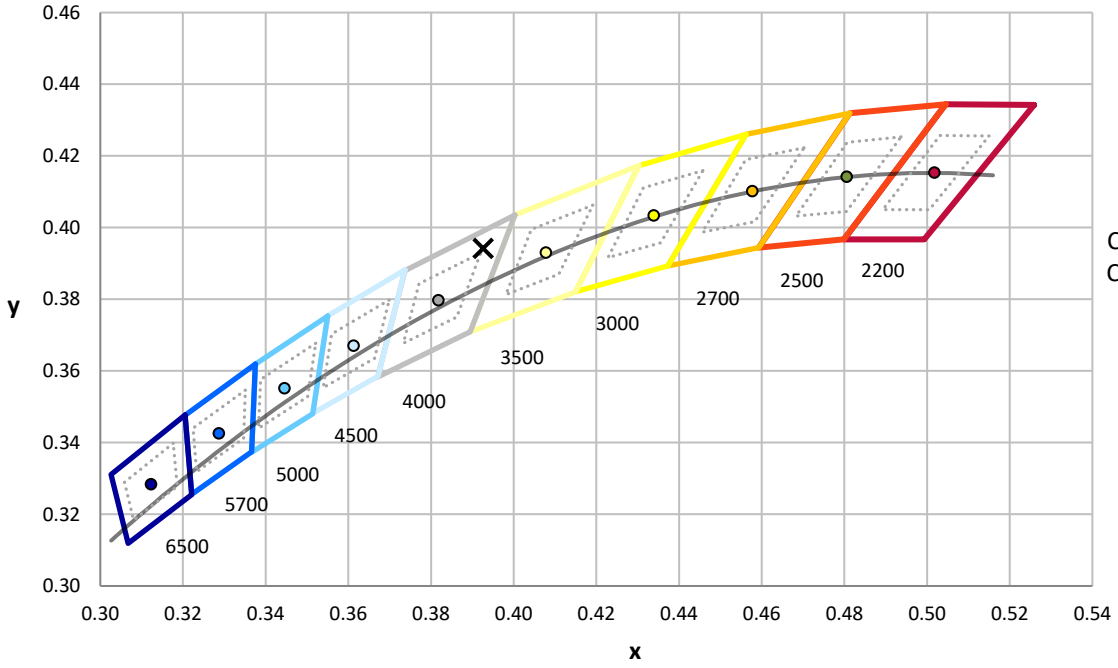
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

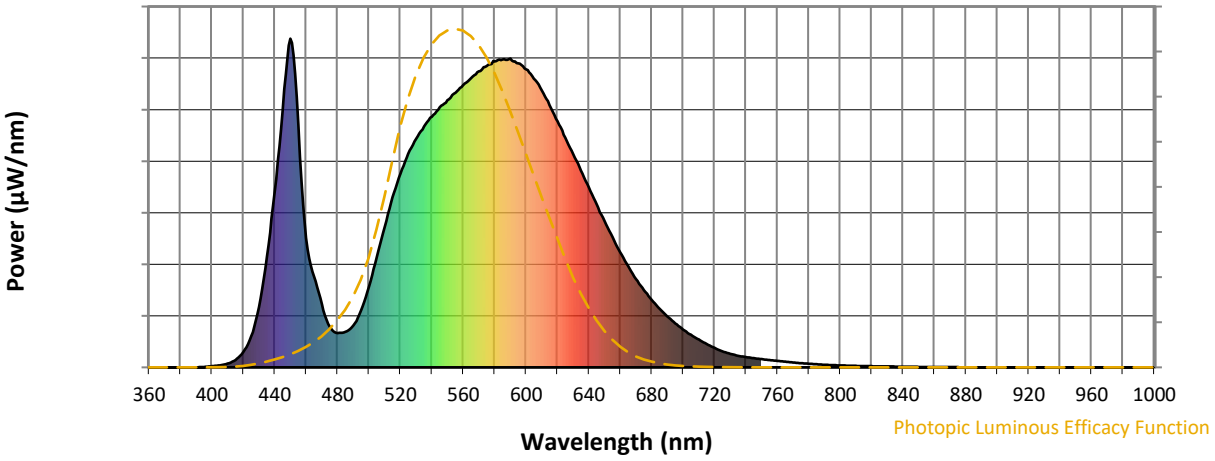


CCT = 3819K
CIE x = 0.3926
CIE y = 0.3942
Duv = 0.0046

Point lies inside the ANSI 4000K 7-step quadrangle

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Photopic Flux vs. Wavelength

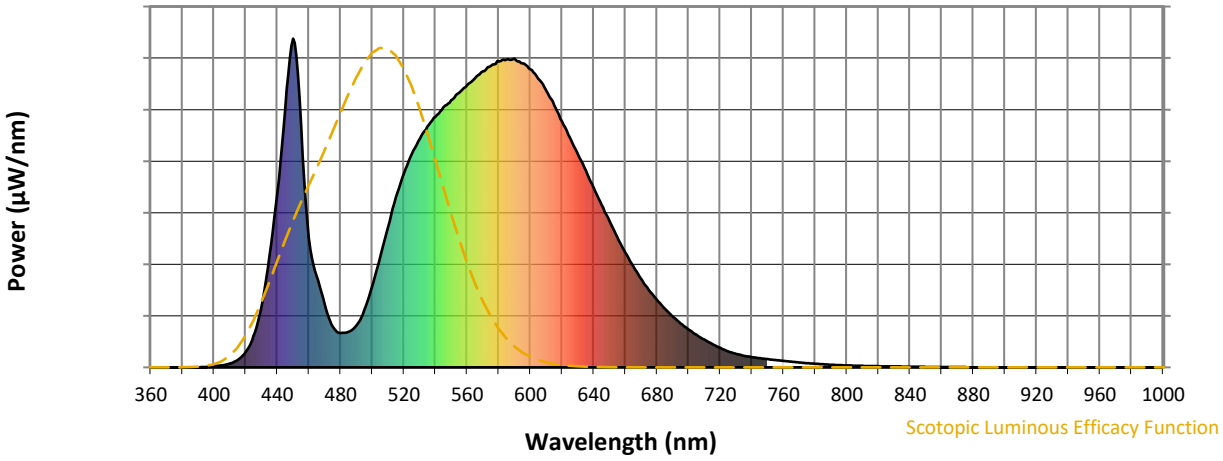


Photopic Lumens: NR

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-5

Scotopic Flux vs. Wavelength

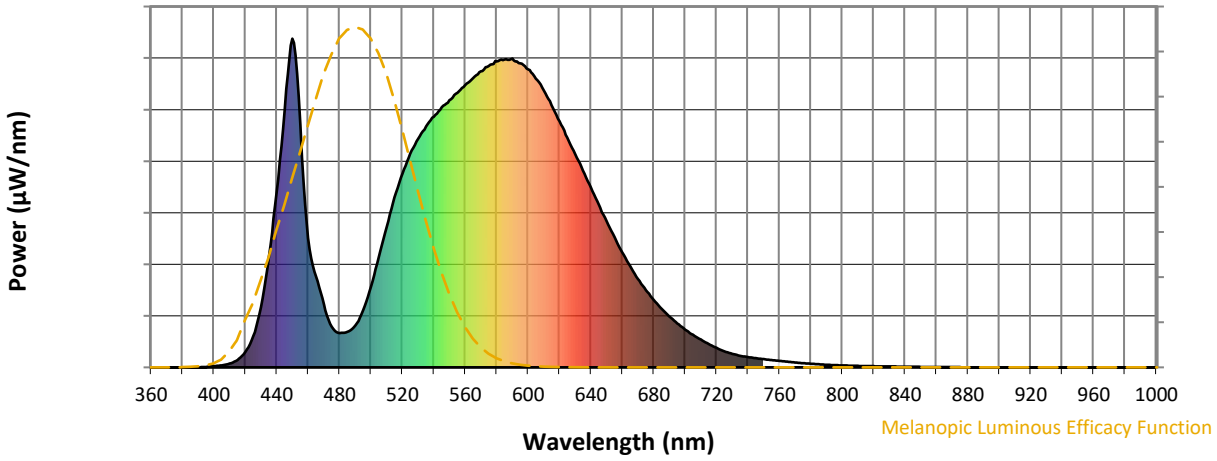


Scotopic Lumens: NR **S/P: 1.45**

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.76**

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	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

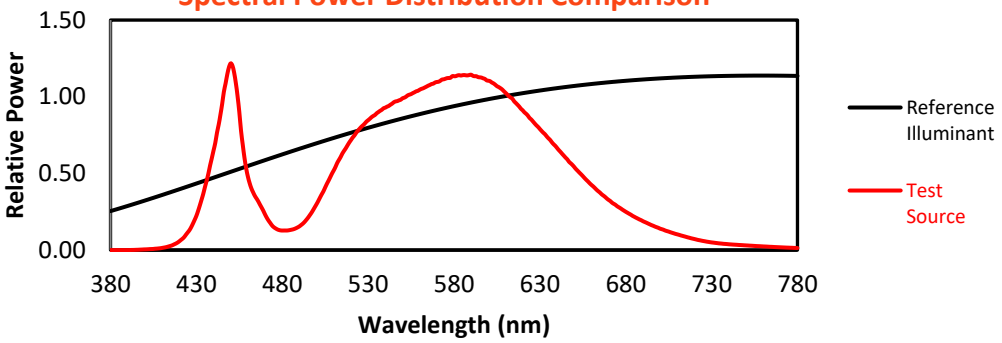
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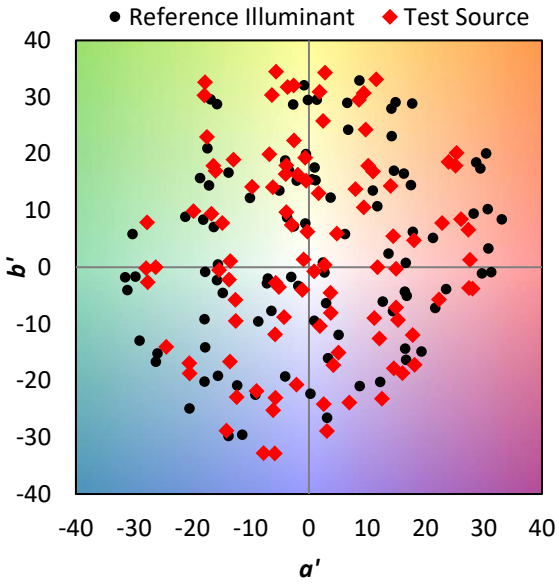
Summary

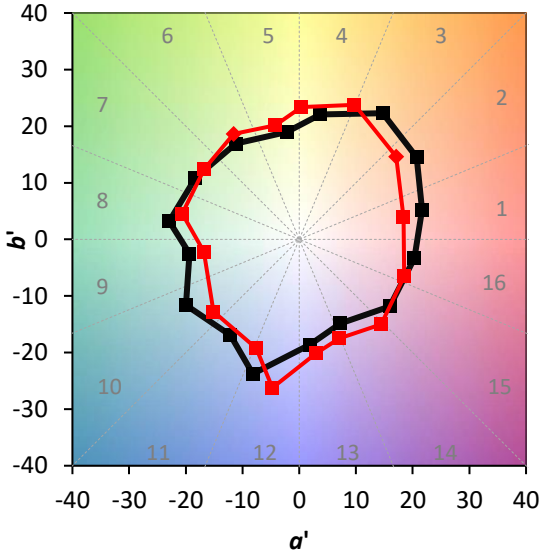
R_f = 75.6
R_g = 94.8
CIE R_a = 72.9
R_9 = -21.5

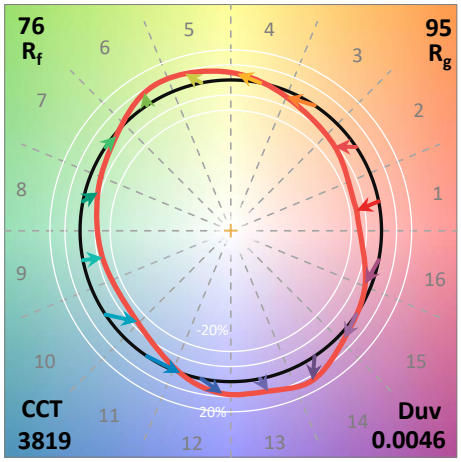
Spectral Power Distribution Comparison

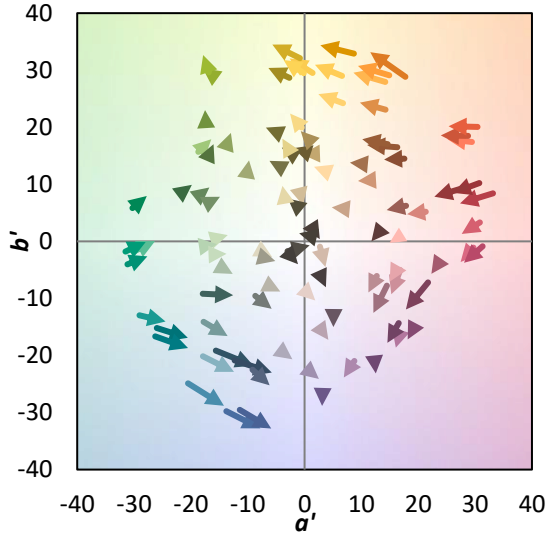


Color Vector Graphics







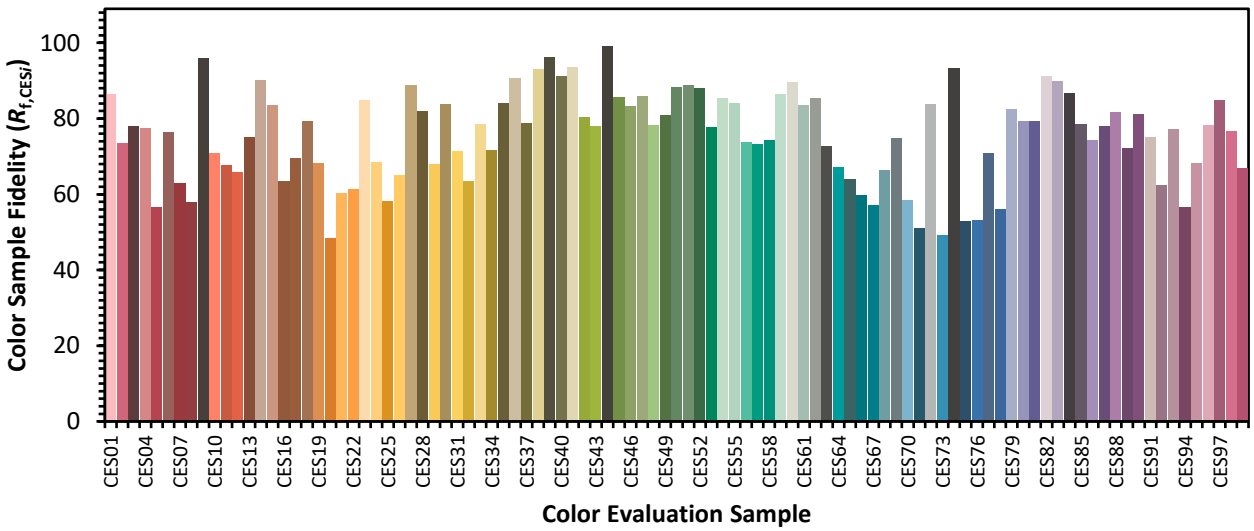


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Individual Sample Fidelity Index ($R_{f,i}$)

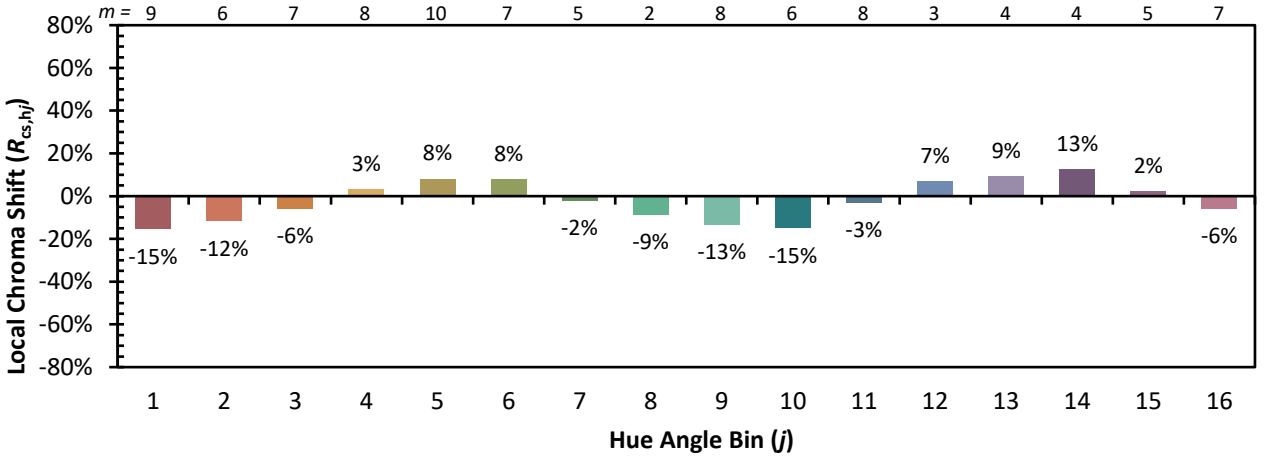
CES01 = 85	CES26 = 65	CES51 = 89	CES76 = 53
CES02 = 61	CES27 = 89	CES52 = 88	CES77 = 71
CES03 = 30	CES28 = 82	CES53 = 78	CES78 = 56
CES04 = 70	CES29 = 68	CES54 = 85	CES79 = 83
CES05 = 48	CES30 = 84	CES55 = 84	CES80 = 79
CES06 = 50	CES31 = 71	CES56 = 74	CES81 = 79
CES07 = 40	CES32 = 63	CES57 = 73	CES82 = 91
CES08 = 39	CES33 = 79	CES58 = 74	CES83 = 90
CES09 = 29	CES34 = 72	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 84	CES60 = 90	CES85 = 78
CES11 = 57	CES36 = 91	CES61 = 84	CES86 = 74
CES12 = 63	CES37 = 79	CES62 = 85	CES87 = 78
CES13 = 42	CES38 = 93	CES63 = 73	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 67	CES89 = 72
CES15 = 71	CES40 = 91	CES65 = 64	CES90 = 81
CES16 = 47	CES41 = 93	CES66 = 60	CES91 = 75
CES17 = 49	CES42 = 80	CES67 = 57	CES92 = 62
CES18 = 56	CES43 = 78	CES68 = 66	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 75	CES94 = 57
CES20 = 65	CES45 = 86	CES70 = 58	CES95 = 68
CES21 = 86	CES46 = 83	CES71 = 51	CES96 = 78
CES22 = 78	CES47 = 86	CES72 = 84	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 49	CES98 = 77
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 67
CES25 = 72	CES50 = 88	CES75 = 53	

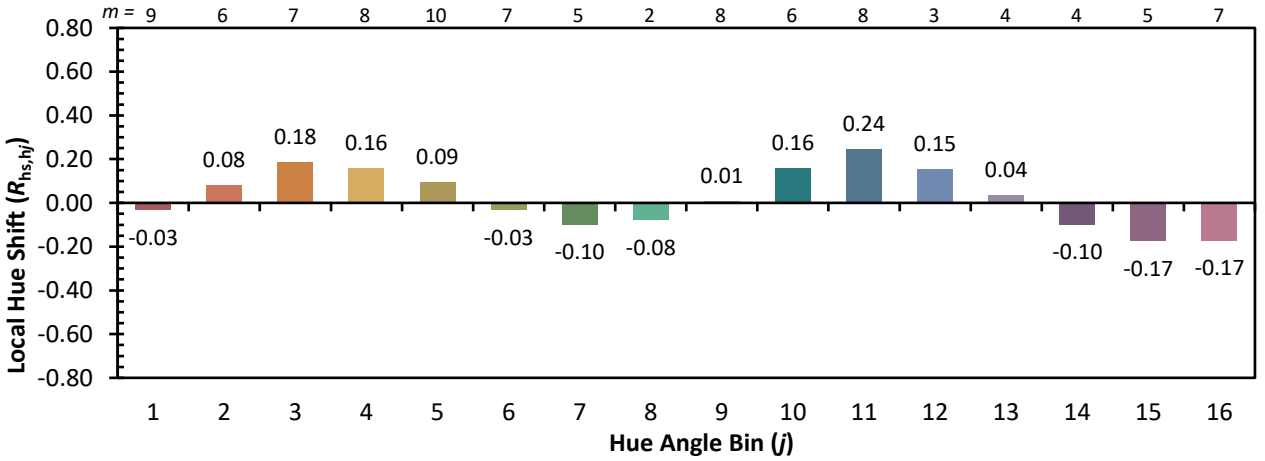


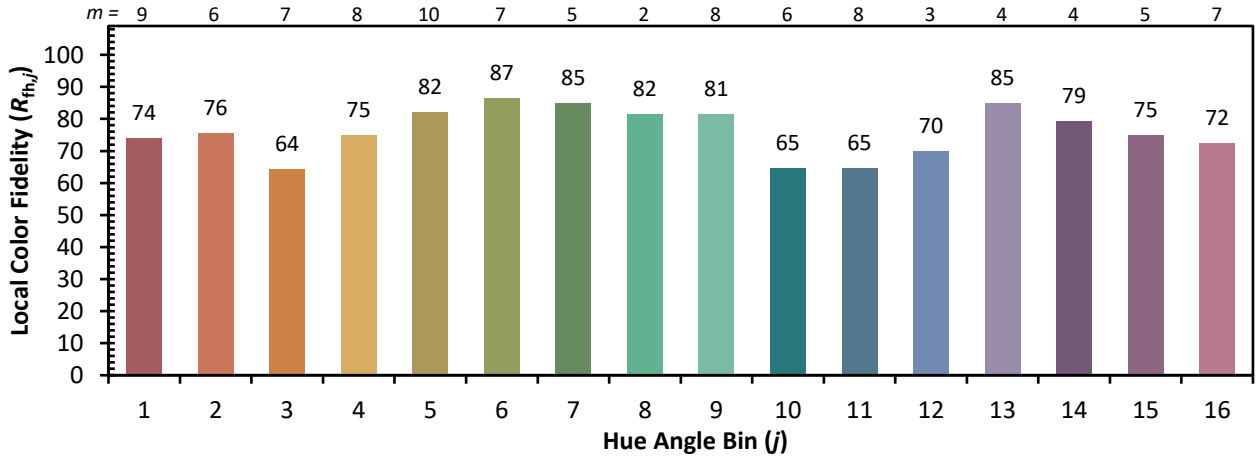
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Color Rendition by Hue-Angle Bin



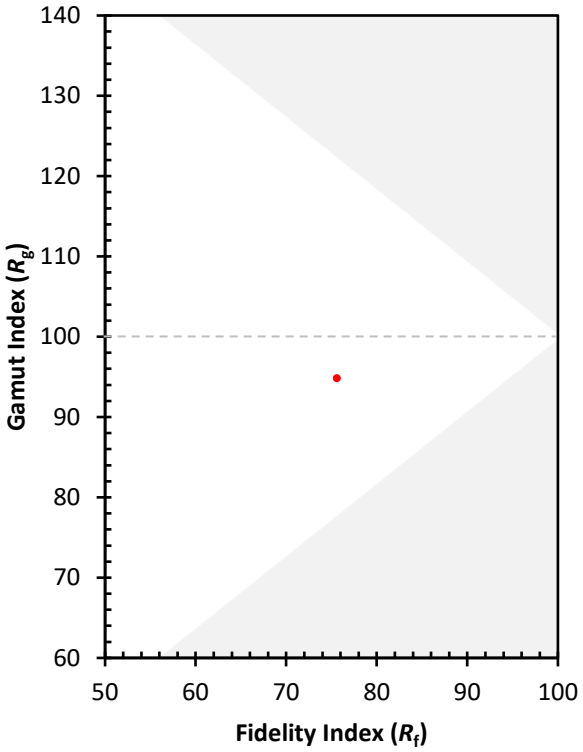


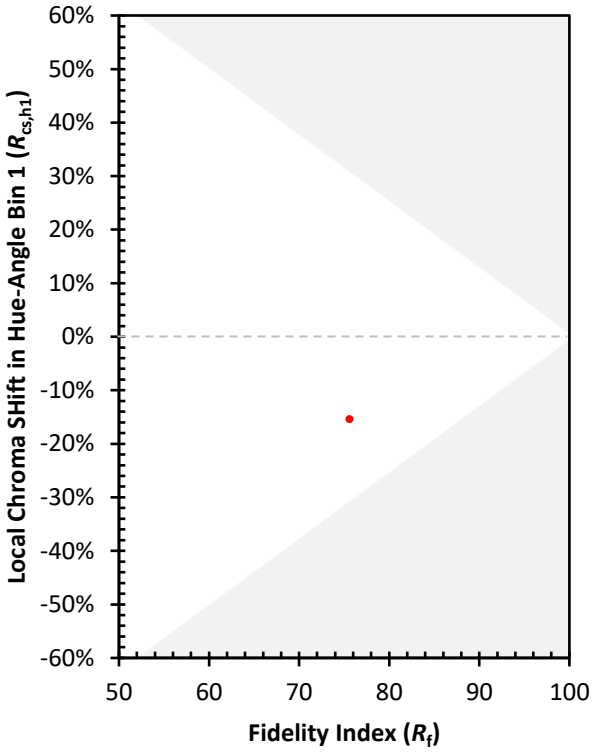


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Measure Comparisons





(END OF REPORT)