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: P821518

Luminaire Tested: **TT-D1-740-12VDC-DL-UPL**

Issue Date: 7/23/2020

Report Generated By 670245763

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821518
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-1) AND
Test Lab:	INNOVATION CENTER
Issue Date:	7/23/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D1-740-12VDC-DL-UPL
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	4000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	4212.7 lumens
Efficiency:	N/A
Efficacy:	150.5 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U4 - G2

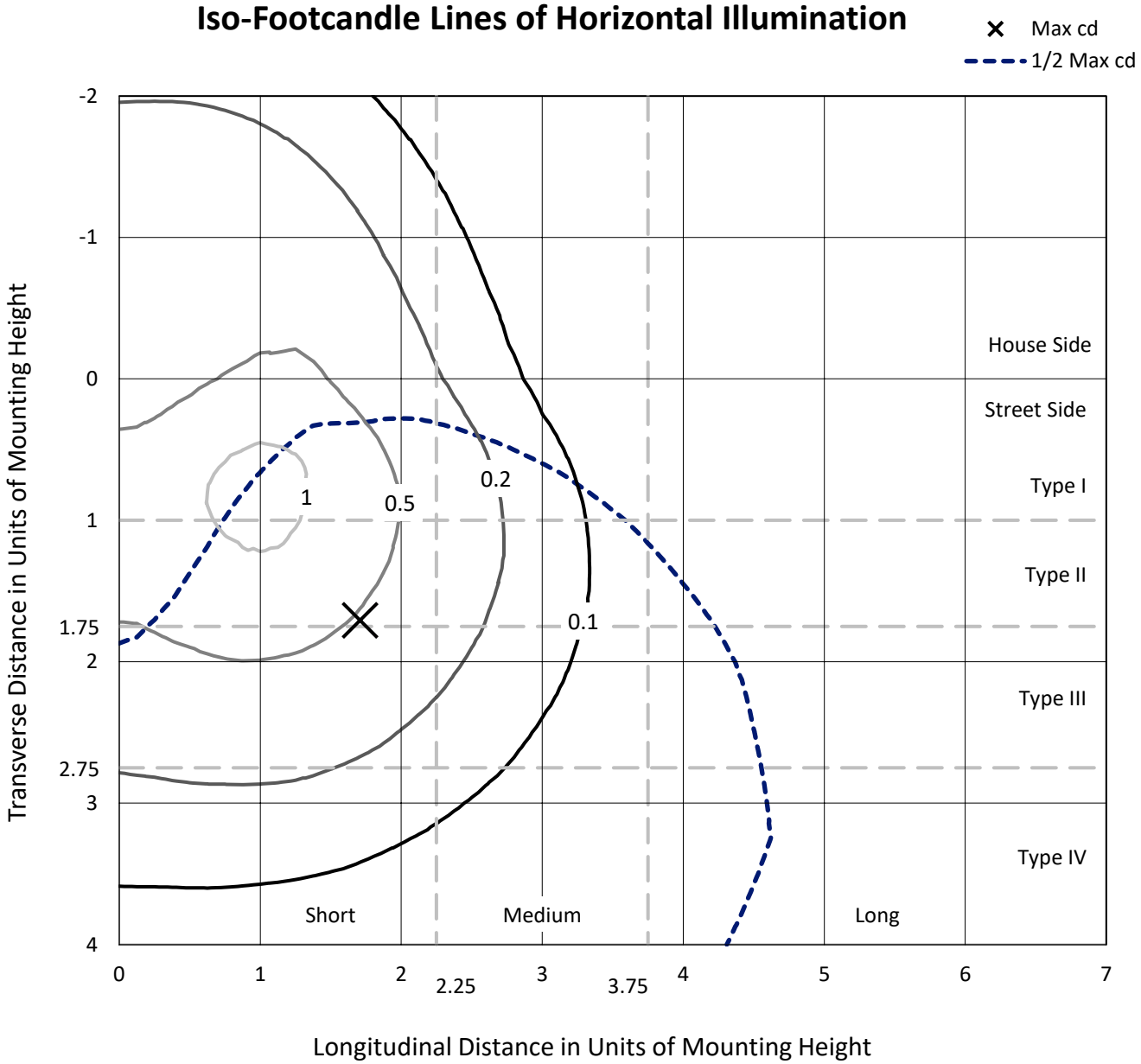
Input Watts (W):	28
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



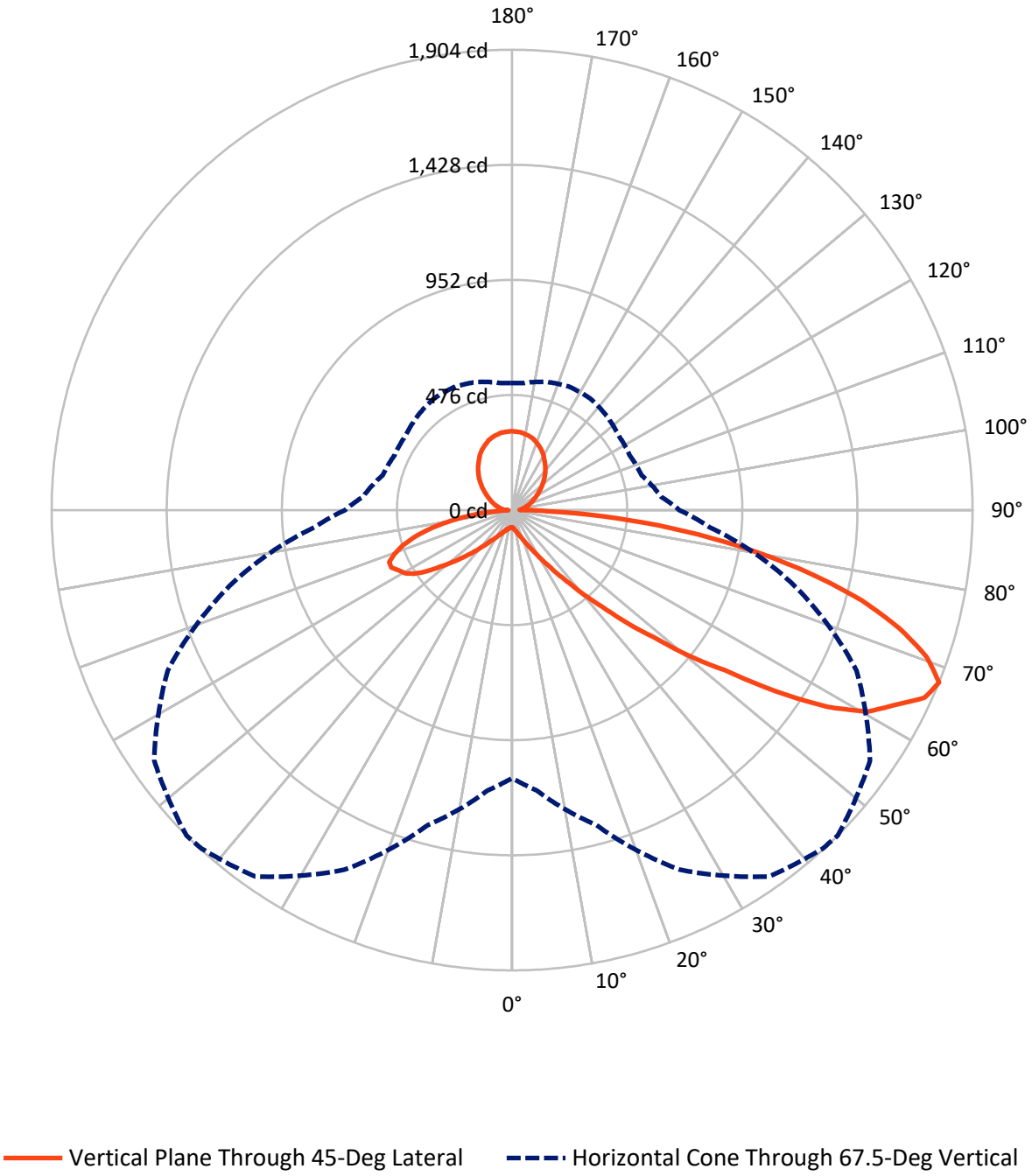
Based on 15 foot mounting height. Maximum calculated value = 1.1 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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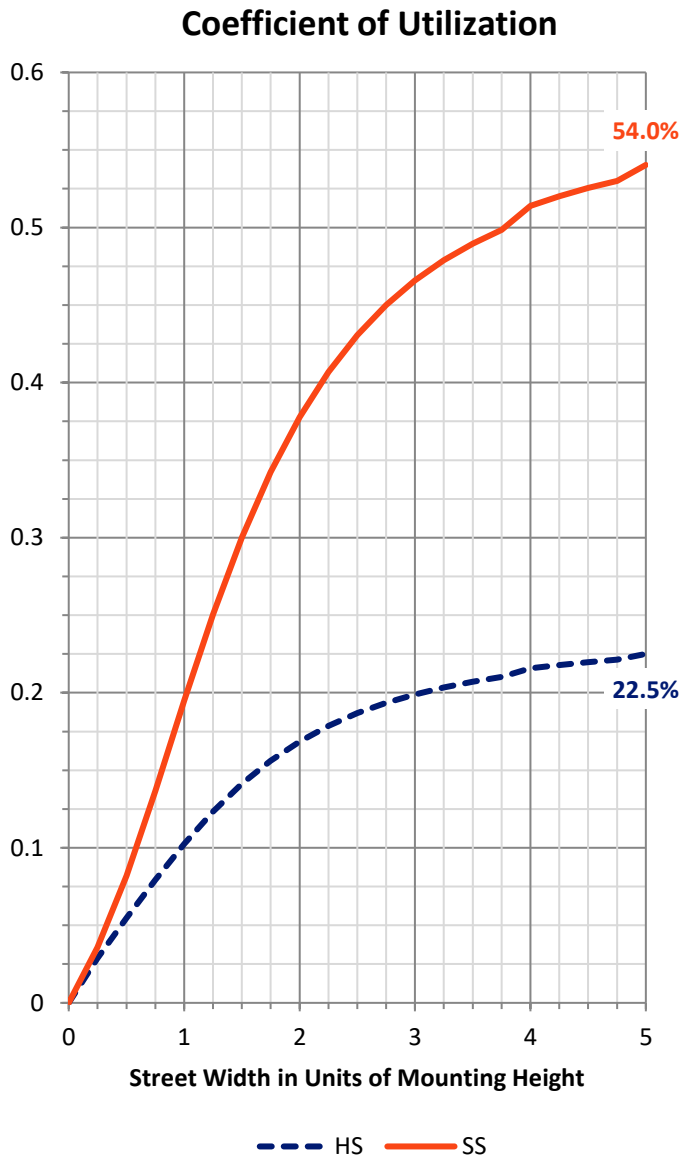
REPORT NUMBER: P821518
CATALOG NUMBER: TT-D1-740-12VDC-DL-UPL

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	970.4	442.7	1413.2
	% Fixture	23.0	10.5	33.5
Street Side	Lumens	2356.8	442.7	2799.5
	% Fixture	55.9	10.5	66.5
Total	Lumens	3327.2	885.5	4212.7
	% Fixture	79.0	21.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.4	0.2
10°-20°	27.6	0.7
20°-30°	65.2	1.5
30°-40°	147.5	3.5
40°-50°	328.9	7.8
50°-60°	661.2	15.7
60°-70°	971.2	23.1
70°-80°	854.0	20.3
80°-90°	264.2	6.3
90°-100°	45.4	1.1
100°-110°	70.3	1.7
110°-120°	97.7	2.3
120°-130°	126.6	3.0
130°-140°	147.6	3.5
140°-150°	149.5	3.5
150°-160°	129.8	3.1
160°-170°	87.7	2.1
170°-180°	30.8	0.7
0°-90°	3327.2	79.0
0°-180°	4212.7	100.0



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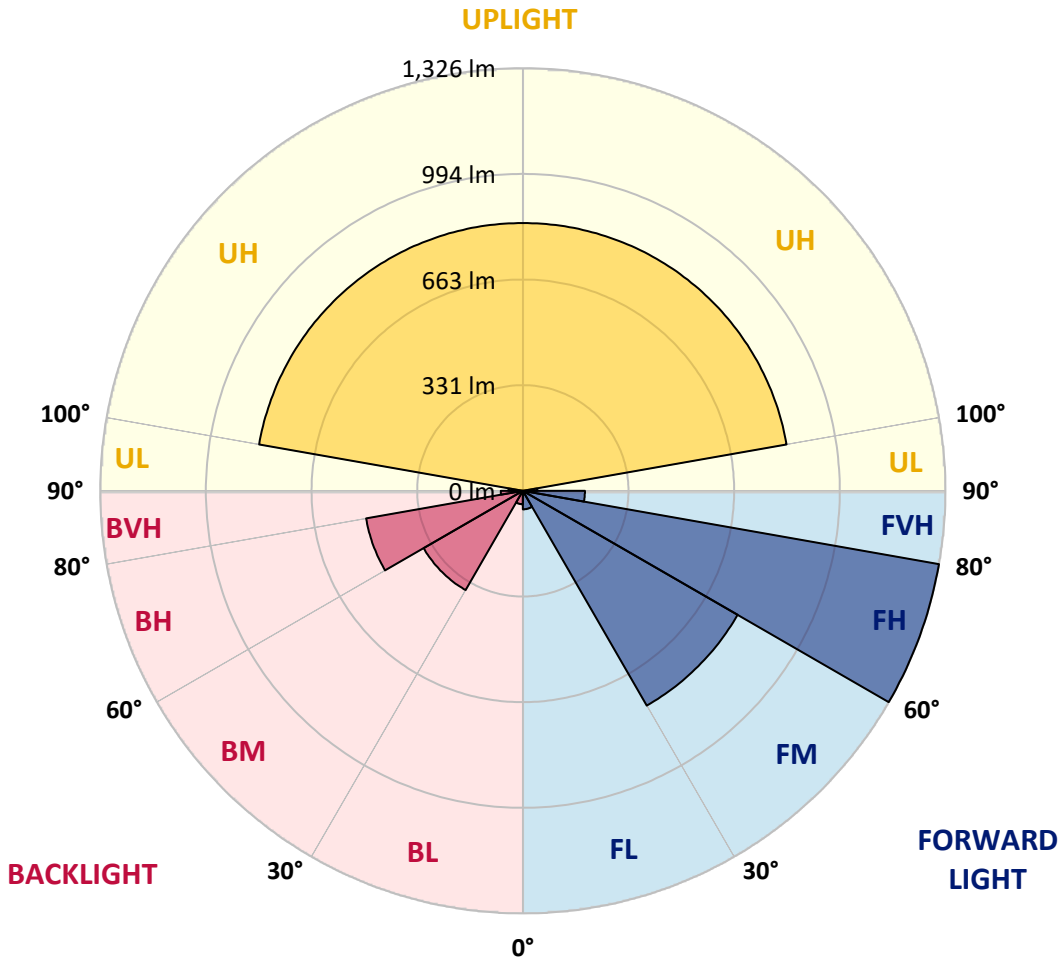
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	58.0	1.4			
FM	(30°-60°)	778.2	18.5			
FH	(60°-80°)	1325.8	31.5			G1/1800
FVH	(80°-90°)	194.8	4.6			G2/225
BL	(0°-30°)	42.1	1.0	B0/110		
BM	(30°-60°)	359.5	8.5	B1/1000		
BH	(60°-80°)	499.3	11.9	B1/500		G1/500
BVH	(80°-90°)	69.5	1.6			G1/100
UL	(90°-100°)	45.4	1.1		U2/50	
UH	(100°-180°)	840.1	19.9		U4/1000	

BUG Rating: B1-U4-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
0°	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1
2.5°	75.2	74.6	74.6	74.6	73.9	73.9	73.9	73.9	73.3	73.3	73.3
5°	79.5	78.9	79.5	78.3	77.7	77.7	77.0	77.0	76.4	75.8	75.2
7.5°	85.7	85.1	85.1	83.9	83.3	82.6	82.6	81.4	80.8	79.5	78.3
10°	92.6	92.6	92.0	91.3	90.1	88.9	88.9	87.0	86.4	84.5	82.6
12.5°	100.7	100.7	100.7	99.4	98.2	97.6	96.3	95.1	93.2	90.1	88.2
15°	110.6	110.6	110.6	109.4	108.1	106.9	106.3	103.8	100.7	97.6	93.8
17.5°	123.0	121.8	121.8	120.5	119.3	118.7	117.4	115.0	110.6	106.9	101.9
20°	136.7	136.1	135.5	135.5	134.2	133.0	132.4	128.6	123.7	116.8	110.6
22.5°	152.2	151.6	151.6	152.9	152.2	150.4	150.4	144.8	137.9	129.9	120.5
25°	171.5	170.9	172.1	174.6	174.6	173.4	171.5	165.9	156.0	144.8	133.6
27.5°	192.6	192.0	194.5	198.8	200.1	198.2	197.0	190.8	179.6	164.7	148.5
30°	218.1	218.7	225.6	230.5	233.6	232.4	231.8	224.9	206.9	189.5	168.4
32.5°	249.2	247.3	256.0	264.1	269.7	272.8	270.9	262.8	247.3	220.0	193.2
35°	282.1	282.7	293.3	305.1	318.1	319.4	323.1	315.0	293.9	261.6	224.3
37.5°	325.0	320.0	333.7	356.0	371.6	385.2	382.8	377.8	352.9	310.1	259.1
40°	363.5	362.3	381.5	412.6	441.2	461.1	463.5	457.3	424.4	363.5	296.4
42.5°	407.6	411.3	438.1	480.9	524.4	553.0	546.2	543.1	504.6	426.9	347.3
45°	452.4	464.8	499.0	561.1	612.0	653.1	664.9	654.3	607.1	526.9	412.0
47.5°	506.4	523.2	565.4	649.3	732.6	780.4	782.9	814.6	743.2	623.2	479.1
50°	577.9	585.3	644.4	746.9	861.2	928.3	947.6	948.2	876.8	720.2	554.9
52.5°	648.1	653.7	731.4	863.7	1019.0	1095.5	1099.8	1124.1	1026.5	876.8	663.6
55°	732.6	730.1	837.0	996.1	1179.4	1290.6	1322.9	1355.8	1231.6	1000.4	725.8
57.5°	814.6	810.9	939.5	1148.3	1398.7	1509.3	1536.0	1512.4	1327.9	1052.0	756.2
60°	890.4	903.5	1060.1	1316.7	1568.3	1674.0	1692.0	1628.0	1390.0	1091.7	775.5
62.5°	969.3	995.4	1185.0	1457.1	1698.2	1774.0	1775.3	1700.1	1493.8	1168.8	838.2
65°	1043.3	1084.9	1281.9	1577.0	1788.9	1864.7	1873.4	1805.7	1595.7	1235.9	848.8
67.5°	1108.5	1163.8	1349.0	1641.7	1850.4	1899.5	1903.9	1806.3	1571.4	1208.6	819.6
70°	1161.3	1206.1	1390.6	1642.9	1807.6	1821.2	1818.1	1714.4	1504.3	1154.5	770.5
72.5°	1181.8	1218.5	1370.7	1565.9	1681.4	1678.3	1675.8	1580.1	1393.7	1064.4	699.7
75°	1152.6	1163.2	1262.0	1401.2	1474.5	1491.9	1494.4	1408.0	1222.9	930.8	600.2
77.5°	1032.1	1026.5	1102.3	1194.3	1249.6	1262.0	1259.5	1187.4	1025.3	773.6	503.3
80°	818.3	830.2	877.4	938.3	993.6	1007.2	998.5	943.9	797.8	603.4	386.5
82.5°	572.3	586.6	626.3	672.3	714.0	714.0	722.0	669.2	565.4	433.1	270.3
85°	308.8	300.7	344.2	396.4	426.3	431.9	435.0	417.6	349.8	261.6	160.3
87.5°	51.0	54.7	67.7	103.8	118.1	136.7	145.4	113.7	69.0	44.1	32.3
90°	32.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
92.5°	37.0	37.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
95°	42.0	42.0	42.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
97.5°	48.0	48.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
100°	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
102.5°	60.0	59.0	60.0	60.0	59.0	59.0	59.0	59.0	60.0	60.0	60.0
105°	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	67.0	66.0	66.0
107.5°	73.0	73.0	73.0	74.0	74.0	74.0	74.0	74.0	74.0	73.0	74.0
110°	80.0	80.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	42.5°	45°	55°	65°	75°	85°
112.5°	89.0	89.0	89.0	89.0	89.0	89.8	*90.0*	90.0	90.0	90.0	90.0
115°	97.0	97.0	98.0	98.0	98.0	98.0	*98.0*	99.0	99.0	98.0	98.0
117.5°	107.0	107.0	107.0	107.0	107.0	107.8	*108.0*	108.0	108.0	108.0	108.0
120°	117.0	117.0	117.0	118.0	118.0	118.0	*118.0*	119.0	119.0	118.0	118.0
122.5°	129.0	128.0	129.0	129.0	129.0	129.0	*129.0*	130.0	130.0	130.0	130.0
125°	140.0	140.0	141.0	141.0	141.0	141.0	*141.0*	142.0	142.0	142.0	142.0
127.5°	153.0	153.0	153.0	153.0	153.0	153.8	*154.0*	154.0	154.0	154.0	154.0
130°	165.0	165.0	166.0	166.0	166.0	166.0	*166.0*	167.0	167.0	167.0	167.0
132.5°	179.0	178.0	179.0	178.0	178.0	178.8	*179.0*	179.0	180.0	179.0	180.0
135°	191.0	191.0	191.0	191.0	191.0	191.8	*192.0*	192.0	192.0	192.0	192.0
137.5°	204.0	203.0	204.0	203.0	203.0	203.8	*204.0*	204.0	204.0	204.0	204.0
140°	216.0	215.0	216.0	215.0	216.0	216.0	*216.0*	216.0	216.0	216.0	216.0
142.5°	228.0	227.0	228.0	227.0	227.0	227.8	*228.0*	228.0	228.0	228.0	228.0
145°	239.0	239.0	239.0	238.0	239.0	239.0	*239.0*	239.0	239.0	239.0	239.0
147.5°	250.0	249.0	250.0	249.0	249.0	249.8	*250.0*	250.0	250.0	250.0	250.0
150°	263.0	262.0	263.0	262.0	263.0	263.0	*263.0*	263.0	263.0	263.0	263.0
152.5°	273.0	273.0	273.0	273.0	273.0	273.0	*273.0*	273.0	273.0	273.0	273.0
155°	282.0	282.0	283.0	282.0	282.0	282.0	*282.0*	283.0	282.0	282.0	282.0
157.5°	290.0	290.0	290.0	290.0	290.0	290.0	*290.0*	291.0	291.0	290.0	291.0
160°	298.0	298.0	299.0	298.0	298.0	298.0	*298.0*	299.0	298.0	298.0	298.0
162.5°	306.0	305.0	306.0	305.0	306.0	306.0	*306.0*	306.0	306.0	306.0	306.0
165°	311.0	311.0	312.0	311.0	311.0	311.0	*311.0*	312.0	311.0	311.0	311.0
167.5°	316.0	315.0	316.0	316.0	316.0	316.0	*316.0*	316.0	316.0	316.0	316.0
170°	319.0	319.0	320.0	319.0	319.0	319.0	*319.0*	320.0	319.0	319.0	319.0
172.5°	323.0	323.0	323.0	323.0	323.0	323.0	*323.0*	323.0	323.0	323.0	323.0
175°	324.0	324.0	325.0	324.0	325.0	324.2	*324.0*	325.0	324.0	324.0	324.0
177.5°	325.0	325.0	326.0	325.0	325.0	325.0	*325.0*	325.0	325.0	325.0	325.0
180°	326.0	326.0	326.0	326.0	326.0	326.0	*326.0*	326.0	326.0	326.0	326.0

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1
2.5°	73.3	72.7	72.1	71.5	71.5	70.8	70.8	70.8	71.5	71.5	71.5
5°	75.2	74.6	73.9	73.3	72.1	72.1	72.1	72.1	72.1	72.1	72.1
7.5°	78.3	77.0	76.4	75.2	73.9	73.9	73.3	73.3	73.3	73.9	73.3
10°	82.0	80.8	79.5	77.7	77.0	76.4	75.8	75.8	76.4	76.4	75.8
12.5°	86.4	85.7	83.3	81.4	80.2	79.5	78.9	79.5	78.9	79.5	79.5
15°	92.6	90.7	87.6	85.7	83.9	83.3	82.6	83.3	83.3	83.9	83.3
17.5°	99.4	96.9	93.8	90.7	88.2	87.6	87.6	87.6	88.2	88.9	88.2
20°	107.5	104.4	100.0	96.3	93.8	93.2	93.2	93.8	94.4	95.1	95.1
22.5°	115.6	113.1	106.9	101.9	100.7	100.0	99.4	100.7	101.9	102.5	103.1
25°	128.0	123.0	115.6	110.0	107.5	107.5	108.1	109.4	110.0	111.2	110.6
27.5°	141.1	135.5	126.1	118.7	116.8	116.2	117.4	118.7	121.2	121.2	120.5
30°	159.1	149.8	137.9	131.1	126.1	126.8	128.6	130.5	133.0	134.2	134.2
32.5°	179.6	169.6	153.5	142.9	140.4	141.1	141.7	144.8	147.3	149.8	147.9
35°	206.3	193.9	174.0	162.2	156.0	155.3	157.8	161.6	164.0	165.3	165.3
37.5°	235.5	219.3	194.5	184.5	177.1	176.5	177.1	180.2	183.3	184.5	187.0
40°	270.9	251.0	221.8	205.7	200.1	198.8	201.3	205.7	205.7	207.5	208.2
42.5°	314.4	288.9	256.6	235.5	228.7	228.7	228.0	231.8	231.8	231.8	230.5
45°	369.7	341.1	298.9	277.1	265.3	259.1	261.0	258.5	257.9	259.7	254.1
47.5°	423.2	387.1	337.4	313.8	302.0	298.3	291.4	289.6	286.5	286.5	278.4
50°	485.3	440.6	392.7	359.2	348.0	337.4	331.8	323.1	313.8	311.9	308.8
52.5°	589.1	533.1	457.9	421.9	393.3	382.8	369.7	358.5	347.3	338.6	343.6
55°	631.3	574.1	502.7	467.9	448.0	438.1	413.8	398.9	382.1	369.7	376.6
57.5°	652.4	590.3	523.8	497.7	492.1	482.8	464.8	439.3	420.0	404.5	405.8
60°	664.2	599.0	535.0	511.4	508.3	514.5	505.2	487.8	457.9	442.4	440.6
62.5°	709.6	641.3	566.7	533.1	526.3	530.7	533.1	522.6	497.7	477.2	471.6
65°	718.9	646.2	572.9	551.2	551.8	553.0	554.9	543.7	531.3	505.8	500.8
67.5°	*691.0*	*619.5*	*554.3*	*536.2*	*537.5*	*551.8*	*563.0*	*562.3*	*548.7*	*526.9*	*525.1*
70°	648.7	579.1	518.8	502.7	505.8	518.8	543.1	555.5	553.0	538.7	541.8
72.5°	582.8	520.7	467.9	455.5	462.9	475.3	498.3	520.7	533.8	536.9	543.7
75°	505.8	456.1	406.4	398.9	404.5	418.8	439.9	466.0	494.6	510.1	514.5
77.5°	417.6	372.2	335.5	330.6	338.6	351.7	372.8	393.3	425.6	453.0	459.2
80°	326.8	287.7	261.6	257.2	262.2	273.4	289.6	306.3	337.4	358.5	361.6
82.5°	226.8	203.2	186.4	183.9	187.0	191.4	204.4	220.0	237.4	254.1	256.0
85°	131.7	116.8	112.5	108.7	115.6	115.6	118.7	127.4	136.1	137.3	141.1
87.5°	24.2	23.0	23.6	17.4	21.7	15.5	15.5	19.9	14.9	17.4	14.3
90°	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	32.0
92.5°	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	37.0	37.0
95°	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	42.0	42.0	42.0
97.5°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	48.0	48.0
100°	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
102.5°	59.0	60.0	60.0	60.0	59.0	59.0	59.0	60.0	60.0	59.0	60.0
105°	66.0	66.0	66.0	67.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
107.5°	73.0	74.0	73.0	74.0	74.0	74.0	74.0	74.0	73.0	73.0	73.0
110°	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	80.0	80.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P821518
CATALOG NUMBER: TT-D1-740-12VDC-DL-UPL

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	89.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0	89.0
115°	98.0	98.0	98.0	99.0	99.0	98.0	98.0	98.0	98.0	97.0	97.0
117.5°	107.0	108.0	108.0	108.0	108.0	108.0	107.0	107.0	107.0	107.0	107.0
120°	118.0	118.0	118.0	119.0	119.0	118.0	118.0	118.0	117.0	117.0	117.0
122.5°	129.0	130.0	130.0	130.0	130.0	129.0	129.0	129.0	129.0	128.0	129.0
125°	141.0	142.0	142.0	142.0	142.0	141.0	141.0	141.0	141.0	140.0	140.0
127.5°	154.0	154.0	154.0	154.0	154.0	154.0	153.0	153.0	153.0	153.0	153.0
130°	166.0	167.0	167.0	167.0	167.0	166.0	166.0	166.0	166.0	165.0	165.0
132.5°	179.0	180.0	179.0	180.0	179.0	179.0	178.0	178.0	179.0	178.0	179.0
135°	192.0	192.0	192.0	192.0	192.0	192.0	191.0	191.0	191.0	191.0	191.0
137.5°	204.0	204.0	204.0	204.0	204.0	204.0	203.0	203.0	204.0	203.0	204.0
140°	216.0	216.0	216.0	216.0	216.0	216.0	216.0	215.0	216.0	215.0	216.0
142.5°	228.0	228.0	228.0	228.0	228.0	228.0	227.0	227.0	228.0	227.0	228.0
145°	239.0	239.0	239.0	239.0	239.0	239.0	239.0	238.0	239.0	239.0	239.0
147.5°	250.0	250.0	250.0	250.0	250.0	250.0	249.0	249.0	250.0	249.0	250.0
150°	263.0	263.0	263.0	263.0	263.0	263.0	263.0	262.0	263.0	262.0	263.0
152.5°	273.0	273.0	273.0	273.0	273.0	273.0	273.0	273.0	273.0	273.0	273.0
155°	282.0	282.0	282.0	282.0	283.0	282.0	282.0	282.0	283.0	282.0	282.0
157.5°	290.0	291.0	290.0	291.0	291.0	290.0	290.0	290.0	290.0	290.0	290.0
160°	298.0	298.0	298.0	298.0	299.0	298.0	298.0	298.0	299.0	298.0	298.0
162.5°	306.0	306.0	306.0	306.0	306.0	306.0	306.0	305.0	306.0	305.0	306.0
165°	311.0	311.0	311.0	311.0	312.0	311.0	311.0	311.0	312.0	311.0	311.0
167.5°	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	316.0	315.0	316.0
170°	319.0	319.0	319.0	319.0	320.0	319.0	319.0	319.0	320.0	319.0	319.0
172.5°	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0	323.0
175°	324.0	324.0	324.0	324.0	325.0	324.0	325.0	324.0	325.0	324.0	324.0
177.5°	325.0	325.0	325.0	325.0	325.0	325.0	325.0	325.0	326.0	325.0	325.0
180°	326.0	326.0	326.0	326.0	326.0	326.0	326.0	326.0	326.0	326.0	326.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

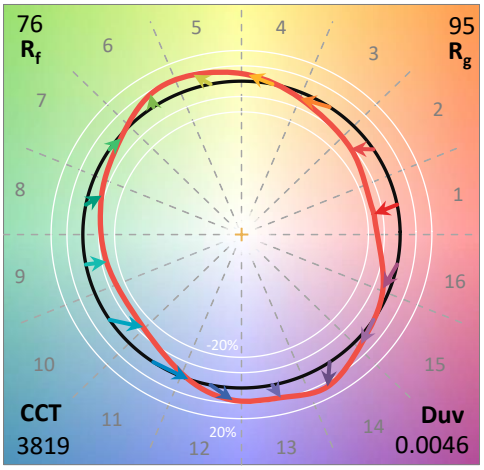
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

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

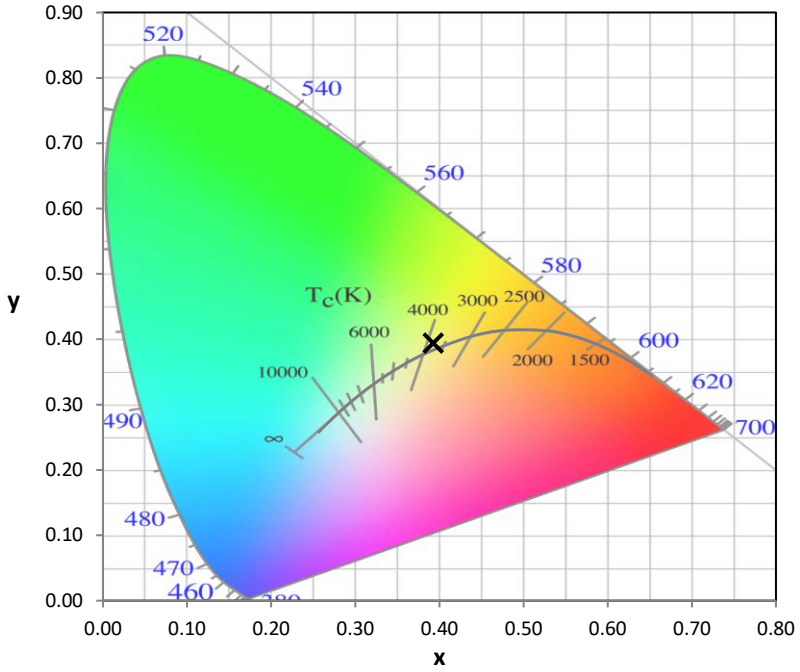
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-5

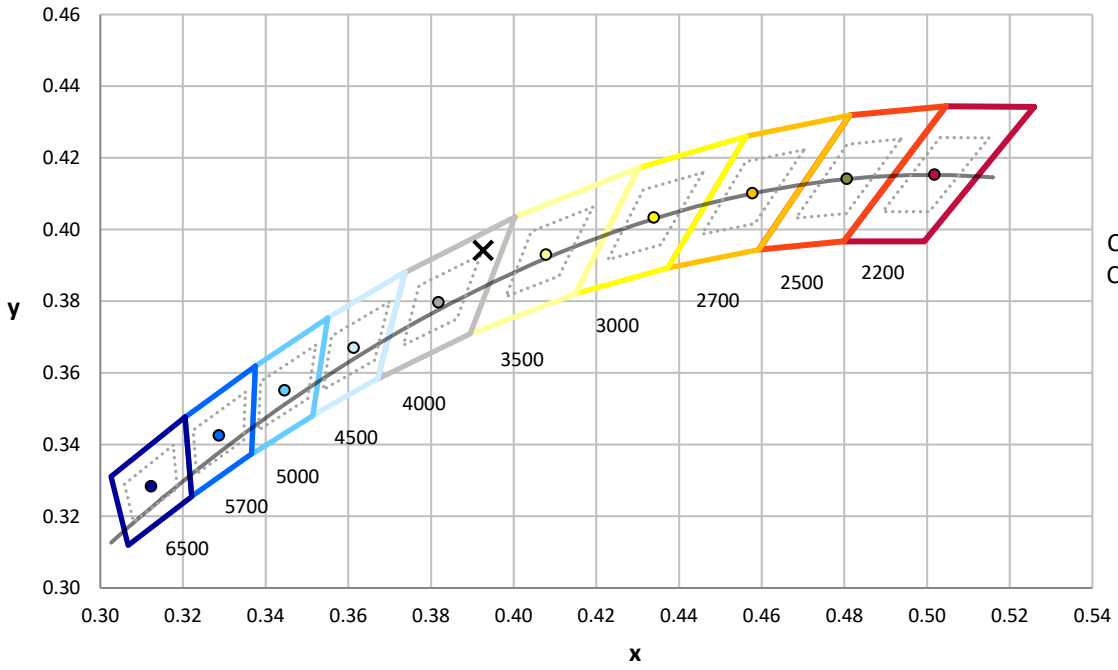
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-5

CIE 1931 Chromaticity Diagram



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

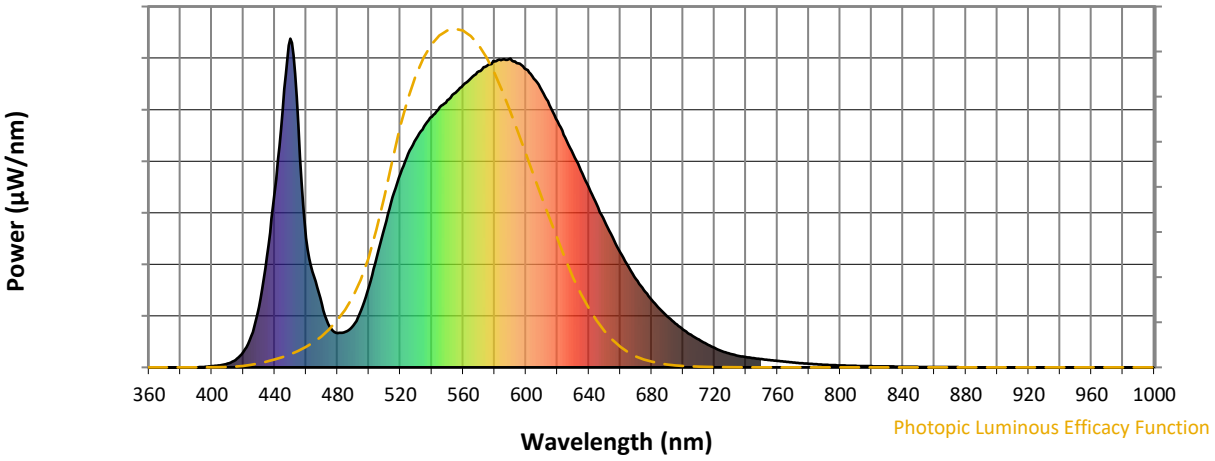


CCT = 3819K
CIE x = 0.3926
CIE y = 0.3942
Duv = 0.0046

Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2407-176-5

Photopic Flux vs. Wavelength

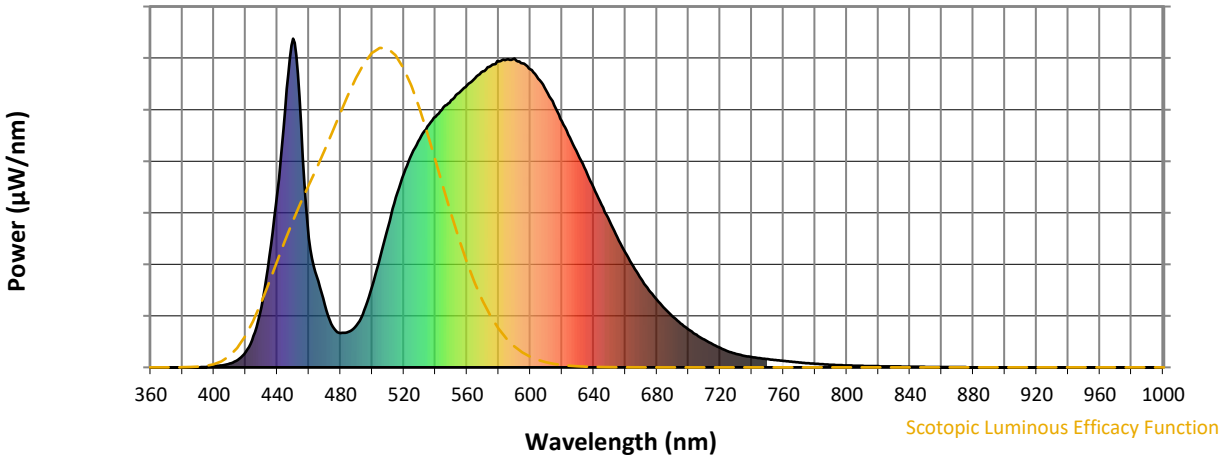


Photopic Lumens: NR

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

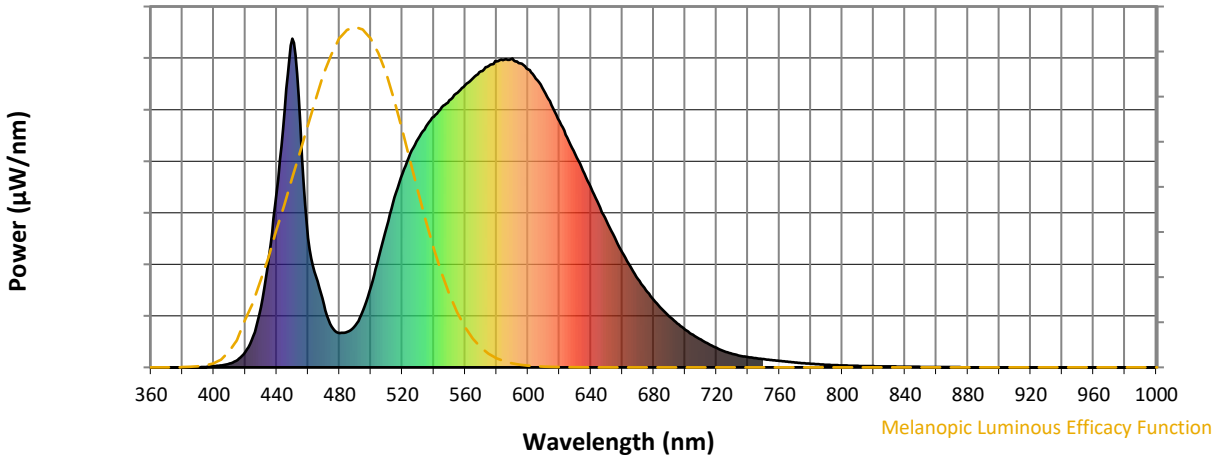


Scotopic Lumens: NR **S/P: 1.45**

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			

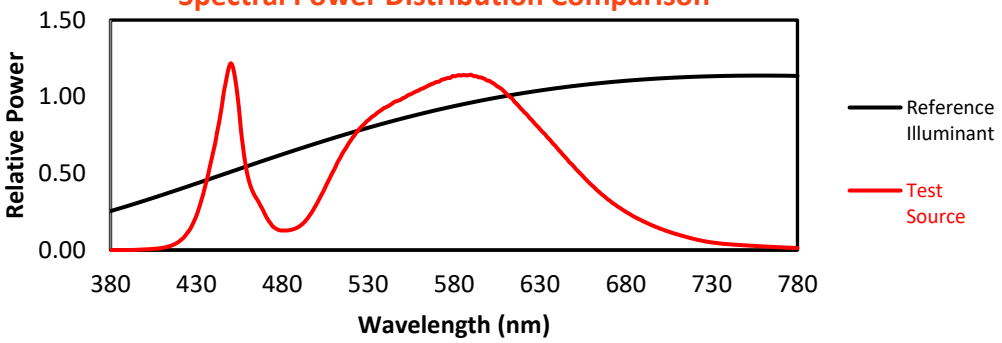
REPORT NUMBER: SP1-2407-176-5

TM-30-18

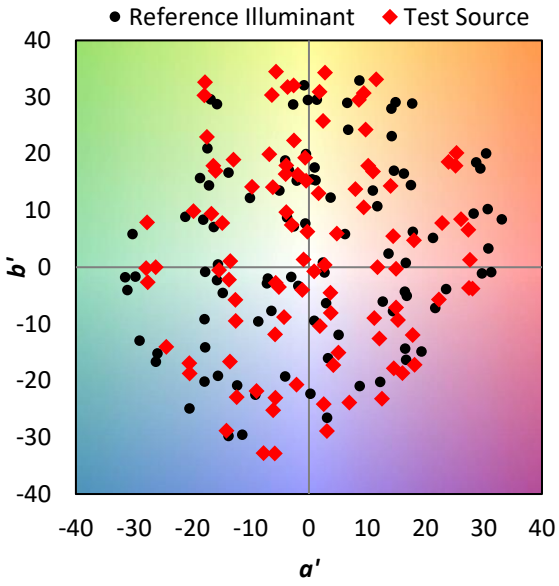
Summary

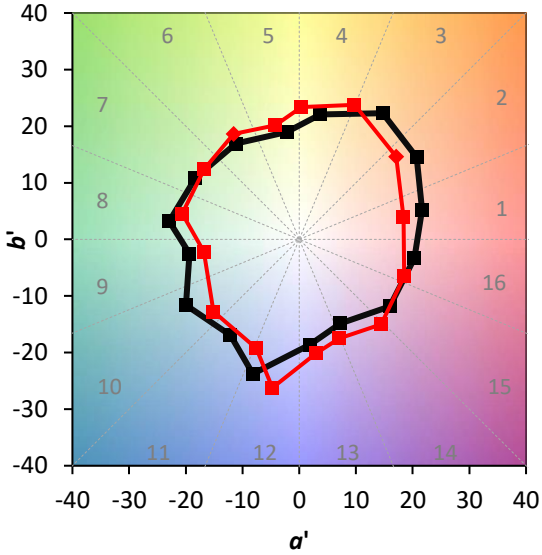
R_f = 75.6
R_g = 94.8
CIE R_a = 72.9
R_9 = -21.5

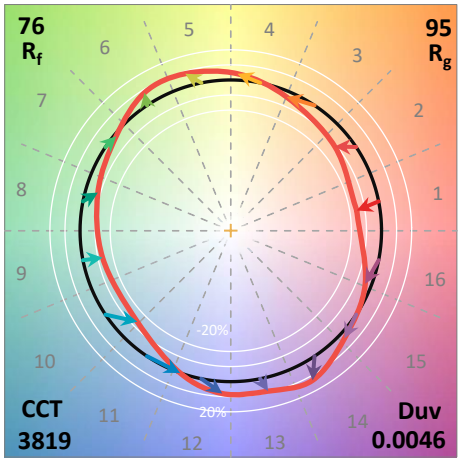
Spectral Power Distribution Comparison

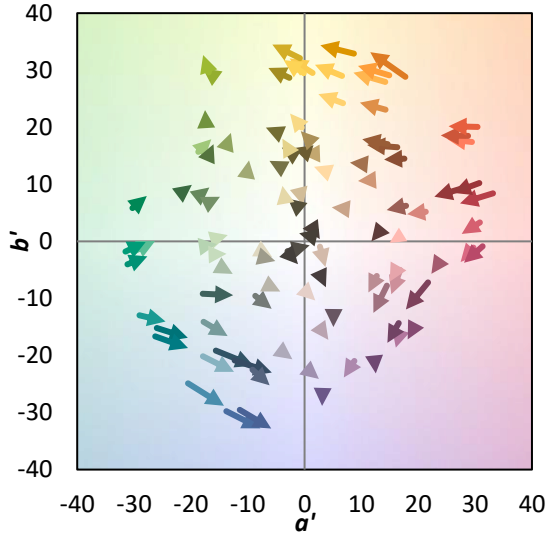


Color Vector Graphics







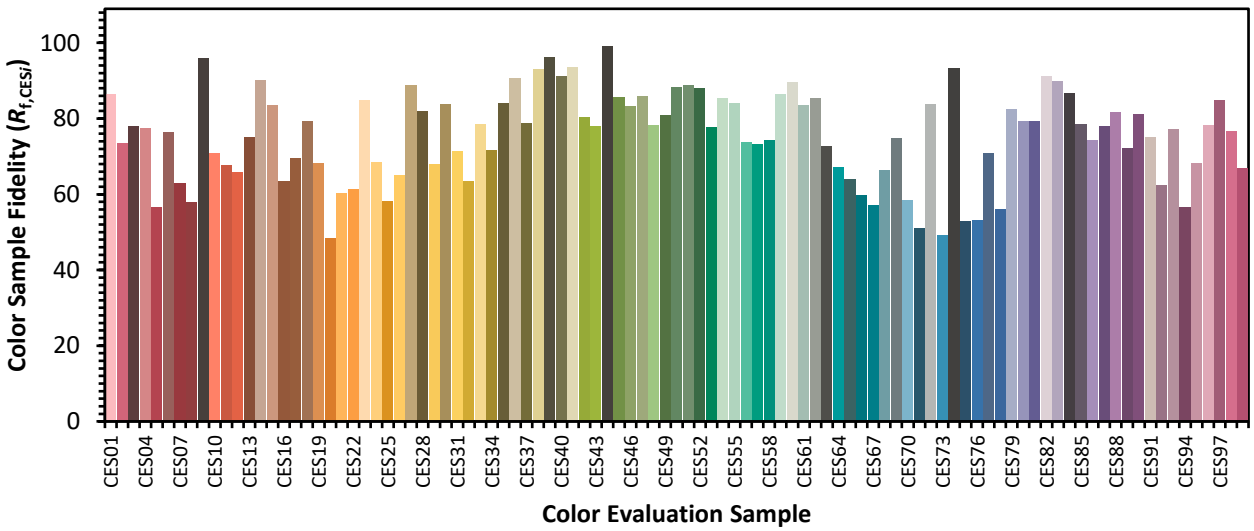


REPORT NUMBER: SP1-2407-176-5

TM-30-18

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

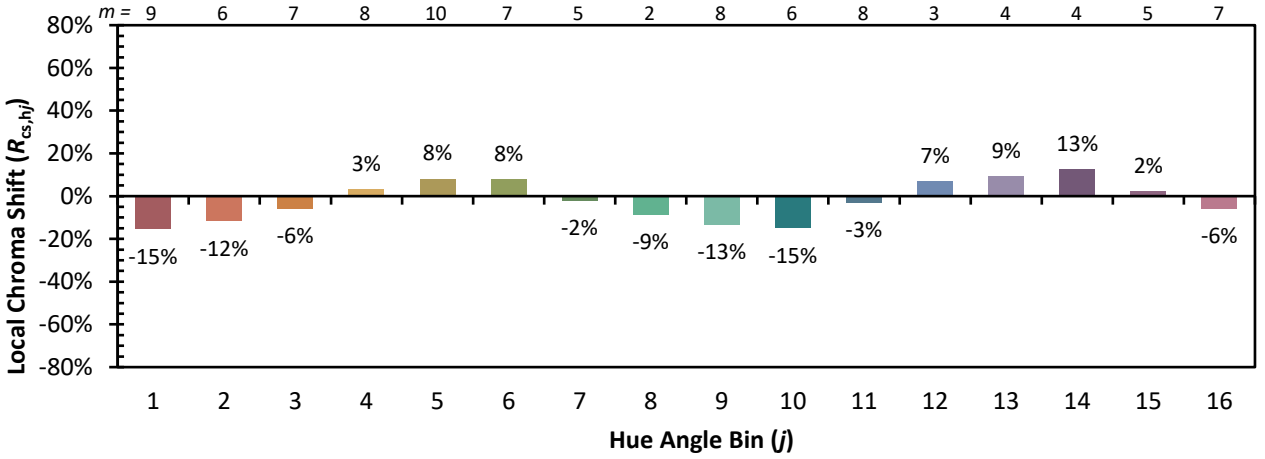
CES01 = 85	CES26 = 65	CES51 = 89	CES76 = 53
CES02 = 61	CES27 = 89	CES52 = 88	CES77 = 71
CES03 = 30	CES28 = 82	CES53 = 78	CES78 = 56
CES04 = 70	CES29 = 68	CES54 = 85	CES79 = 83
CES05 = 48	CES30 = 84	CES55 = 84	CES80 = 79
CES06 = 50	CES31 = 71	CES56 = 74	CES81 = 79
CES07 = 40	CES32 = 63	CES57 = 73	CES82 = 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	

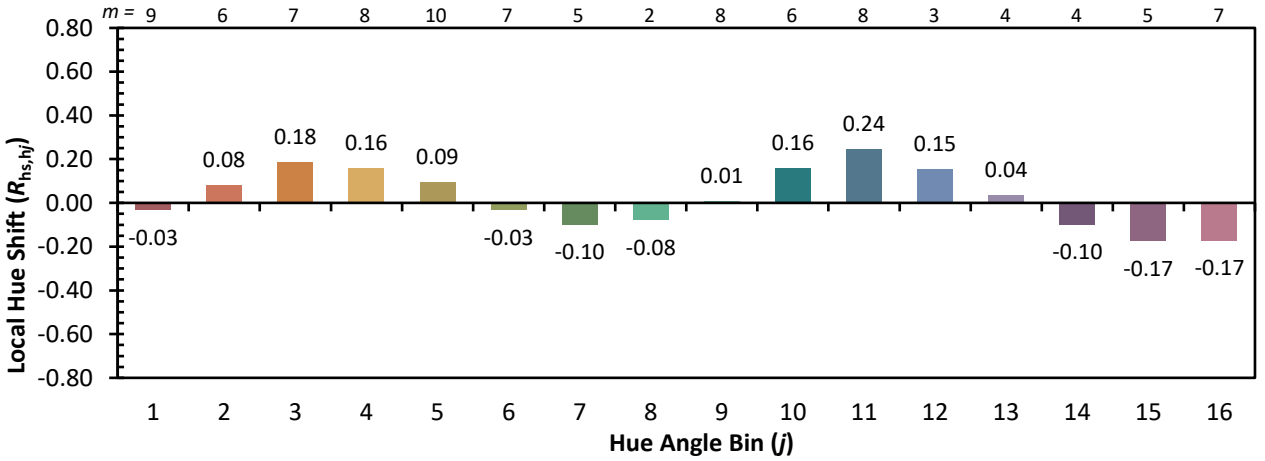


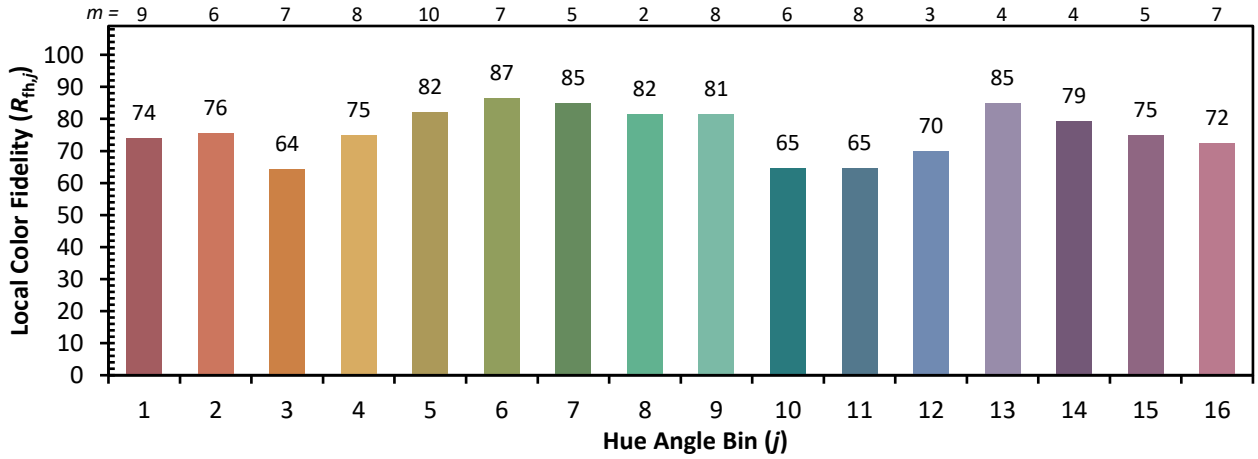
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Color Rendition by Hue-Angle Bin



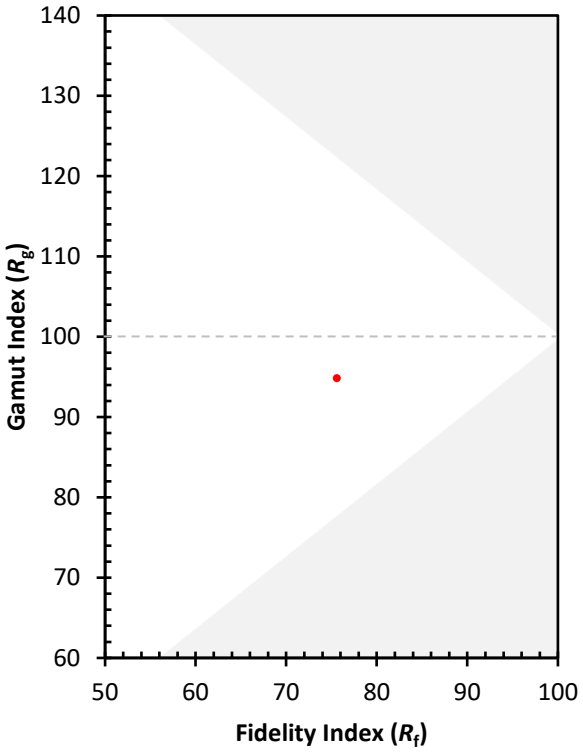


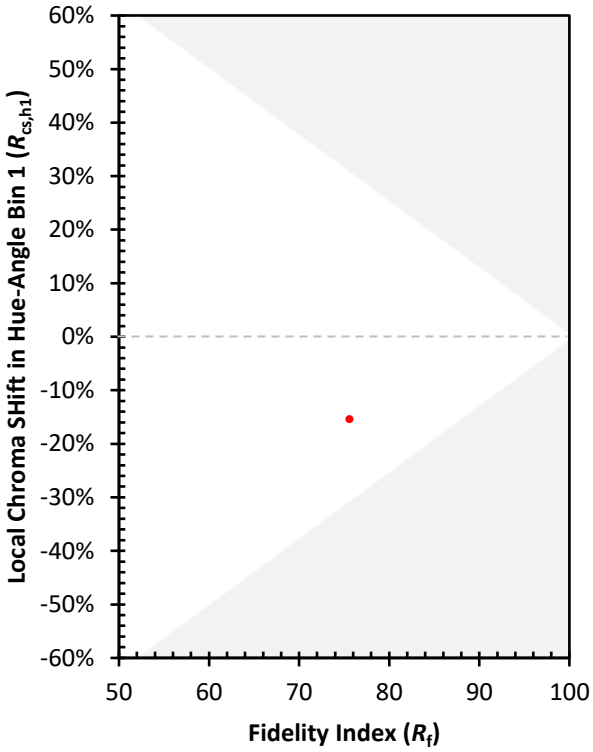


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Measure Comparisons





(END OF REPORT)