

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: P436834

Luminaire Tested: **TT-D4-735-U-DL-HSS**

Issue Date: 12/2/2020

Test Information

Test Method: LM-79-08
Report Number: P436834
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-4)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D4-735-U-DL-HSS
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5261.9 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U1 - G3

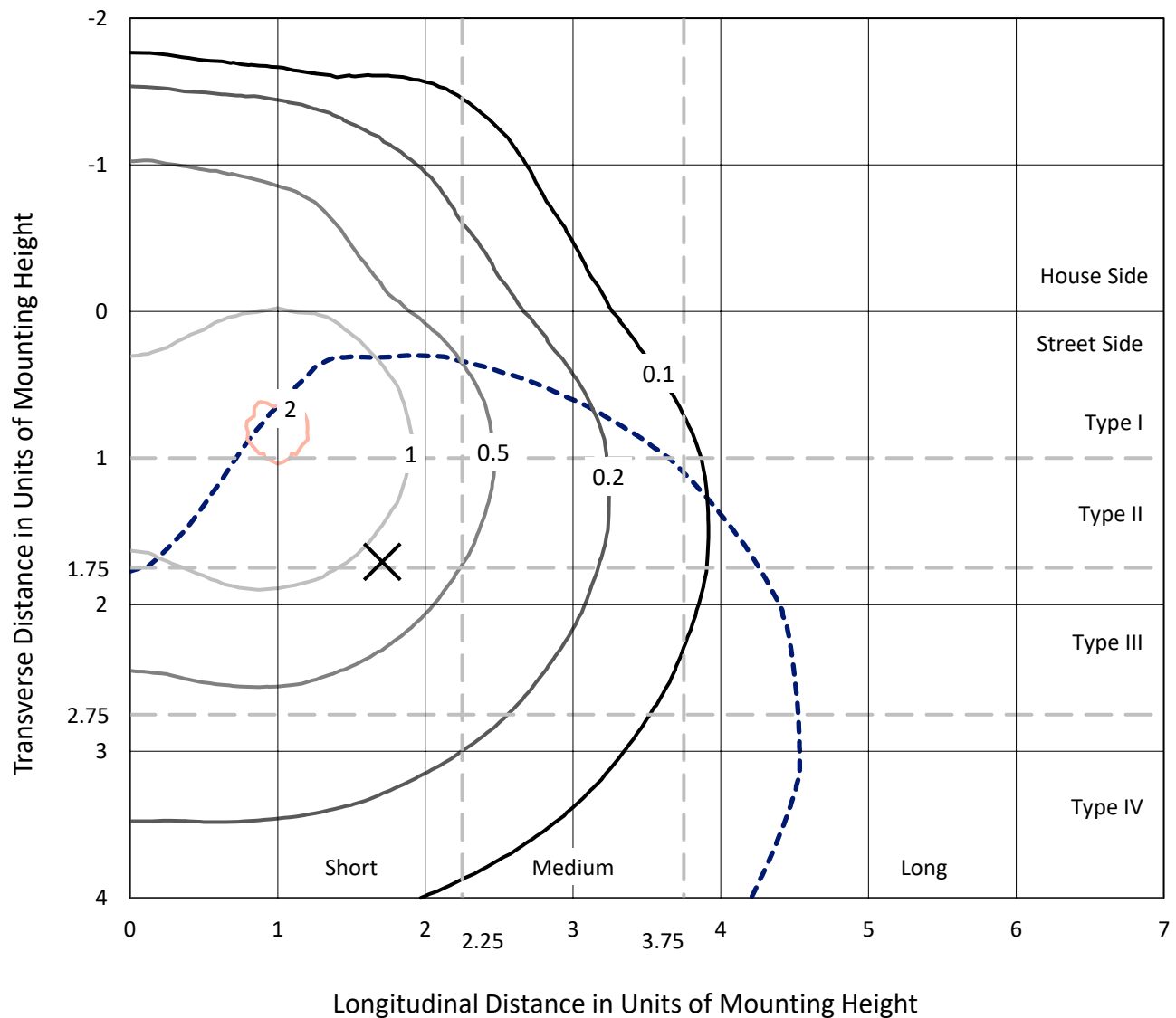
Input Watts (W): 59.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

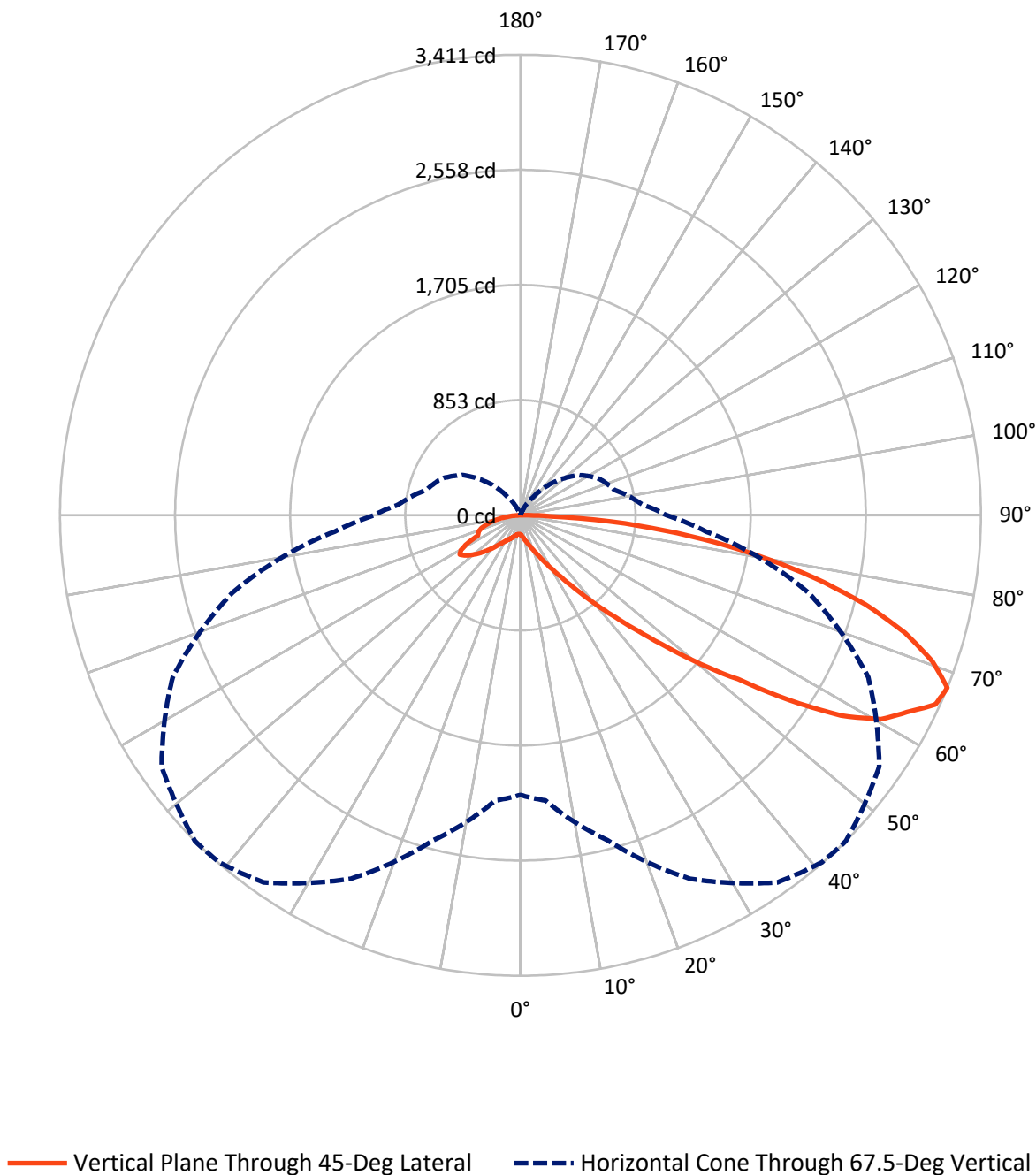


Based on 15 foot mounting height. Maximum calculated value = 2.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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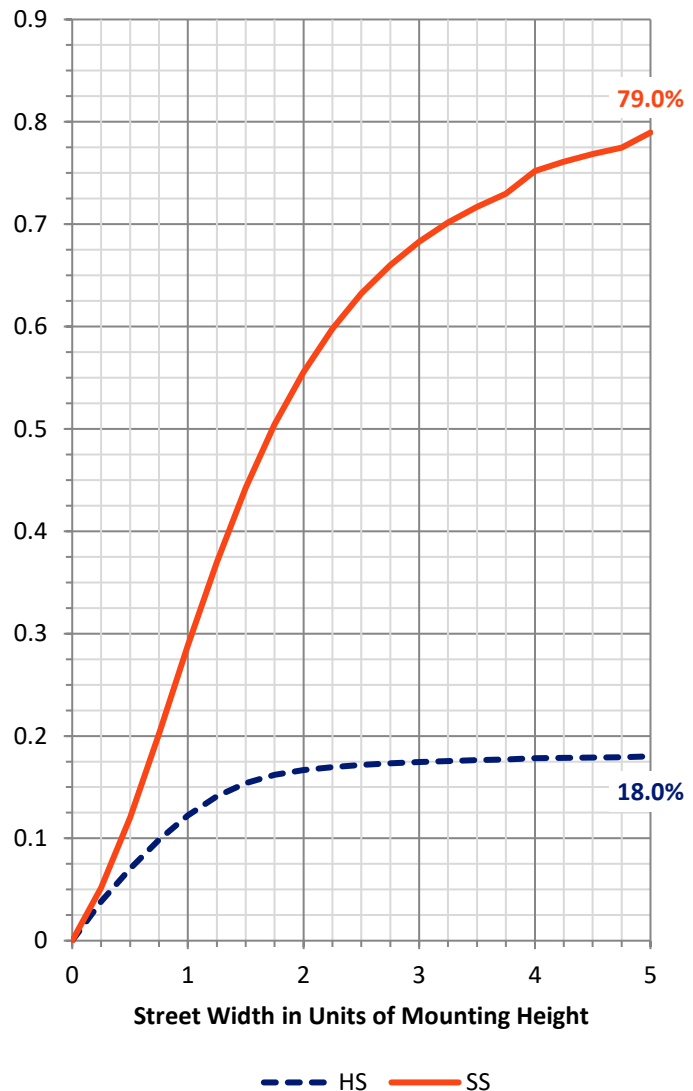
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	956.0	1.1	957.1
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	4293.2	11.7	4304.8
	% Fixture	81.6	0.2	81.8
Total	Lumens	5249.2	12.8	5261.9
	% Fixture	99.8	0.2	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.9	0.3
10°-20°	55.3	1.1
20°-30°	127.7	2.4
30°-40°	272.3	5.2
40°-50°	569.8	10.8
50°-60°	1081.0	20.5
60°-70°	1471.2	28.0
70°-80°	1264.9	24.0
80°-90°	392.2	7.5
90°-100°	8.3	0.2
100°-110°	2.4	0.0
110°-120°	0.7	0.0
120°-130°	0.5	0.0
130°-140°	0.3	0.0
140°-150°	0.3	0.0
150°-160°	0.2	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	5249.2	99.8
0°-180°	5261.9	100.0



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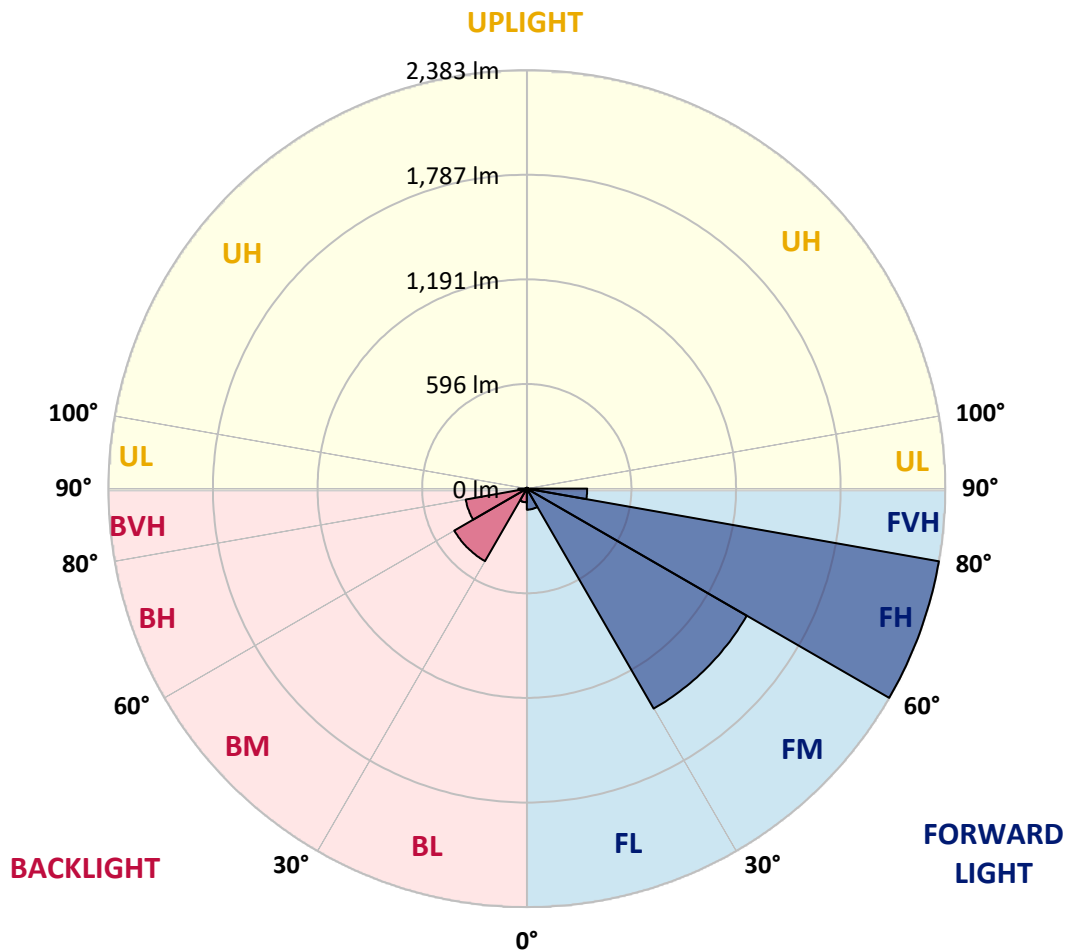
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	119.9	2.3			
FM	(30°-60°)	1446.2	27.5			
FH	(60°-80°)	2382.9	45.3			G2/5000
FVH	(80°-90°)	344.2	6.5			G3/500
BL	(0°-30°)	77.9	1.5	B0/110		
BM	(30°-60°)	476.9	9.1	B1/1000		
BH	(60°-80°)	353.1	6.7	B1/500		G1/500
BVH	(80°-90°)	48.1	0.9			G1/100
UL	(90°-100°)	8.3	0.2		U1/10	
UH	(100°-180°)	4.5	0.1		U1/10	

BUG Rating: B1-U1-G3

Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
0°	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0
2.5°	156.3	155.1	155.1	154.0	154.0	151.8	151.8	150.7	149.6	148.4	146.2
5°	167.4	166.3	166.3	165.2	164.1	161.8	160.7	158.5	156.3	154.0	151.8
7.5°	180.8	179.7	179.7	178.6	176.3	173.0	171.9	168.5	165.2	161.8	158.5
10°	197.6	196.4	196.4	194.2	192.0	188.6	186.4	181.9	178.6	173.0	167.4
12.5°	215.4	214.3	214.3	212.1	207.6	205.4	203.1	197.6	192.0	185.3	178.6
15°	235.5	235.5	235.5	234.4	229.9	225.5	223.2	216.5	209.8	199.8	190.9
17.5°	261.2	260.1	260.1	257.8	252.2	250.0	246.7	238.9	228.8	217.6	206.5
20°	292.4	291.3	289.1	288.0	282.4	280.1	275.7	266.8	253.4	238.9	223.2
22.5°	323.7	323.7	322.6	323.7	319.2	317.0	311.4	299.1	283.5	262.3	243.3
25°	359.4	360.5	362.7	366.1	360.5	358.3	353.8	338.2	319.2	292.4	265.6
27.5°	404.0	404.0	409.6	415.2	410.7	409.6	402.9	386.2	359.4	327.0	295.8
30°	452.0	453.1	462.1	472.1	469.9	469.9	464.3	445.3	413.0	375.0	331.5
32.5°	507.8	512.3	521.2	532.4	540.2	540.2	538.0	517.9	479.9	428.6	375.0
35°	581.5	573.7	590.4	607.2	623.9	627.3	628.4	609.4	565.9	501.1	428.6
37.5°	645.1	644.0	669.7	698.7	726.6	737.8	741.1	723.2	667.4	582.6	486.6
40°	718.8	725.5	760.1	803.6	850.5	869.5	878.4	858.3	789.1	679.7	553.6
42.5°	795.8	815.9	859.4	925.3	996.7	1024.6	1034.6	1015.7	934.2	801.4	638.4
45°	886.2	914.1	972.1	1065.9	1159.7	1200.9	1223.3	1216.6	1132.9	967.7	747.8
47.5°	997.8	1017.9	1097.1	1223.3	1356.1	1424.2	1455.4	1474.4	1355.0	1139.6	843.8
50°	1123.9	1127.3	1236.7	1396.3	1590.5	1680.9	1735.6	1726.6	1584.9	1337.1	965.4
52.5°	1251.2	1247.8	1390.7	1607.2	1861.7	1980.0	2016.8	2053.7	1914.2	1638.5	1160.8
55°	1396.3	1389.6	1569.3	1843.8	2159.7	2316.0	2419.8	2471.1	2251.2	1837.1	1245.6
57.5°	1516.8	1538.0	1763.5	2093.8	2534.7	2731.2	2799.2	2771.3	2436.5	1937.6	1286.9
60°	1669.7	1701.0	1957.7	2420.9	2859.5	3005.7	3068.2	2941.0	2554.8	2013.5	1315.9
62.5°	1813.7	1853.9	2170.9	2686.5	3062.6	3196.6	3212.2	3073.8	2721.1	2163.0	1400.7
65°	1948.8	1994.5	2382.9	2843.9	3240.1	3351.7	3378.5	3269.1	2897.5	2251.2	1434.2
67.5°	2072.6	2120.6	2492.3	2970.0	3319.3	3405.3	3410.9	3244.6	2842.8	2205.5	1380.6
70°	2167.5	2188.7	2544.8	2966.7	3225.6	3259.1	3236.8	3069.3	2714.4	2111.7	1303.6
72.5°	2186.5	2202.1	2472.2	2801.5	2965.5	2996.8	2978.9	2831.6	2512.4	1944.3	1178.6
75°	2090.5	2093.8	2276.9	2504.6	2624.0	2662.0	2638.5	2502.3	2208.8	1707.7	1014.6
77.5°	1839.4	1846.1	1956.6	2109.5	2209.9	2242.3	2224.4	2099.4	1850.5	1434.2	839.3
80°	1457.7	1471.0	1550.3	1656.3	1747.8	1781.3	1760.1	1659.7	1456.5	1127.3	655.2
82.5°	993.3	1010.1	1082.6	1170.8	1251.2	1283.5	1265.7	1202.1	1050.3	812.5	467.7
85°	502.3	520.1	594.9	677.5	747.8	782.4	776.8	750.0	646.2	501.1	282.4
87.5°	79.2	87.1	118.3	157.4	200.9	233.3	213.2	210.9	167.4	133.9	68.1
90°	32.4	32.4	31.3	30.1	26.8	24.6	23.4	19.0	14.5	8.9	3.3
92.5°	29.0	29.0	27.9	25.7	23.4	22.3	20.1	16.7	12.3	7.8	3.3
95°	23.4	23.4	22.3	21.2	19.0	17.9	15.6	13.4	10.0	6.7	3.3
97.5°	17.9	17.9	16.7	15.6	14.5	12.3	12.3	10.0	6.7	4.5	2.2
100°	13.4	13.4	12.3	11.2	10.0	8.9	8.9	6.7	4.5	3.3	2.2
102.5°	8.9	8.9	8.9	7.8	6.7	6.7	5.6	4.5	3.3	2.2	2.2
105°	5.6	5.6	5.6	5.6	4.5	3.3	3.3	2.2	2.2	2.2	2.2
107.5°	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
110°	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	2.2	1.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	41°	45°	55°	65°	75°	85°
112.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
115°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
120°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	0.0	0.0	1.1	0.0	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	0.0	0.0	0.0	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1
130°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
135°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
142.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
145°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
147.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
150°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
155°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
165°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
170°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
175°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
180°	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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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0	144.0
2.5°	146.2	145.1	142.9	141.7	139.5	139.5	138.4	137.3	137.3	137.3	137.3
5°	149.6	148.4	146.2	144.0	141.7	139.5	138.4	137.3	137.3	137.3	136.2
7.5°	156.3	154.0	150.7	147.3	144.0	141.7	140.6	139.5	138.4	138.4	138.4
10°	164.1	161.8	156.3	152.9	148.4	145.1	144.0	142.9	141.7	141.7	141.7
12.5°	174.1	170.8	164.1	158.5	154.0	150.7	148.4	147.3	147.3	146.2	147.3
15°	186.4	181.9	173.0	166.3	160.7	157.4	155.1	154.0	154.0	154.0	152.9
17.5°	199.8	194.2	183.0	175.2	168.5	165.2	163.0	161.8	161.8	161.8	161.8
20°	215.4	207.6	195.3	185.3	178.6	174.1	171.9	171.9	170.8	171.9	171.9
22.5°	232.2	223.2	207.6	196.4	187.5	183.0	180.8	180.8	180.8	181.9	183.0
25°	252.2	241.1	222.1	207.6	197.6	193.1	190.9	192.0	192.0	193.1	193.1
27.5°	279.0	262.3	238.9	221.0	209.8	204.3	202.0	203.1	204.3	204.3	204.3
30°	309.2	289.1	256.7	237.7	224.3	217.6	215.4	216.5	217.6	219.9	218.8
32.5°	346.0	321.4	283.5	256.7	242.2	234.4	232.2	231.0	233.3	235.5	235.5
35°	390.6	359.4	314.7	283.5	262.3	252.2	250.0	248.9	250.0	252.2	254.5
37.5°	438.6	400.7	346.0	313.6	290.2	279.0	273.5	269.0	270.1	271.2	274.6
40°	493.3	446.4	381.7	342.6	321.4	308.0	300.2	293.5	295.8	295.8	296.9
42.5°	562.5	503.4	426.4	377.2	354.9	340.4	328.1	320.3	315.9	317.0	312.5
45°	652.9	579.3	482.2	426.4	395.1	372.8	358.3	342.6	331.5	333.7	327.0
47.5°	727.7	639.5	534.6	473.2	439.8	411.8	381.7	359.4	343.8	341.5	337.1
50°	819.2	713.2	594.9	524.6	488.9	446.4	410.7	372.8	347.1	340.4	341.5
52.5°	973.3	842.7	680.8	593.8	531.3	481.0	426.4	373.9	339.3	329.3	332.6
55°	1029.1	886.2	725.5	650.7	589.3	511.2	433.1	361.6	317.0	308.0	309.2
57.5°	1041.3	886.2	728.8	668.6	617.2	535.7	429.7	333.7	274.6	266.8	265.6
60°	1048.0	880.6	716.6	655.2	599.4	512.3	386.2	269.0	210.9	205.4	202.0
62.5°	1110.5	927.5	728.8	645.1	565.9	449.8	293.5	171.9	117.2	116.1	113.8
65°	1129.5	944.2	744.5	651.8	529.0	349.3	174.1	58.0	12.3	13.4	11.2
67.5°	1082.6	906.3	722.1	641.8	517.9	340.4	167.4	49.1	0.0	0.0	0.0
70°	1017.9	851.6	683.1	607.2	494.4	327.0	164.1	49.1	0.0	0.0	0.0
72.5°	915.2	773.5	620.6	560.3	454.3	300.2	152.9	46.9	0.0	0.0	0.0
75°	794.7	673.0	543.6	496.7	402.9	263.4	137.3	42.4	0.0	0.0	0.0
77.5°	665.2	561.4	454.3	418.5	340.4	224.3	116.1	35.7	0.0	0.0	0.0
80°	522.3	444.2	358.3	333.7	269.0	178.6	92.6	27.9	0.0	0.0	0.0
82.5°	376.1	322.6	264.5	244.4	197.6	129.5	67.0	19.0	0.0	0.0	0.0
85°	232.2	202.0	170.8	158.5	125.0	80.4	40.2	10.0	0.0	0.0	0.0
87.5°	69.2	67.0	60.3	59.2	42.4	24.6	8.9	1.1	0.0	0.0	0.0
90°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: TT-D4-735-U-DL-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

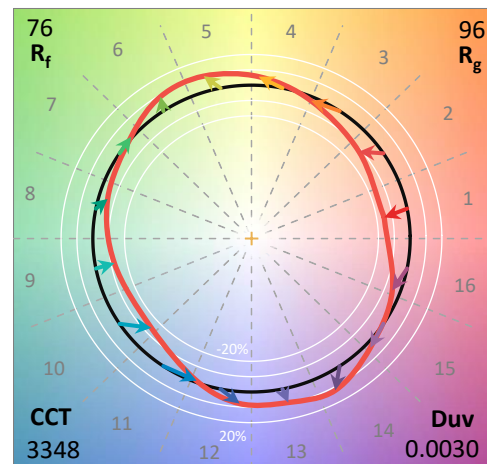
Test Information

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
 R_f: 75.8
 R_g: 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

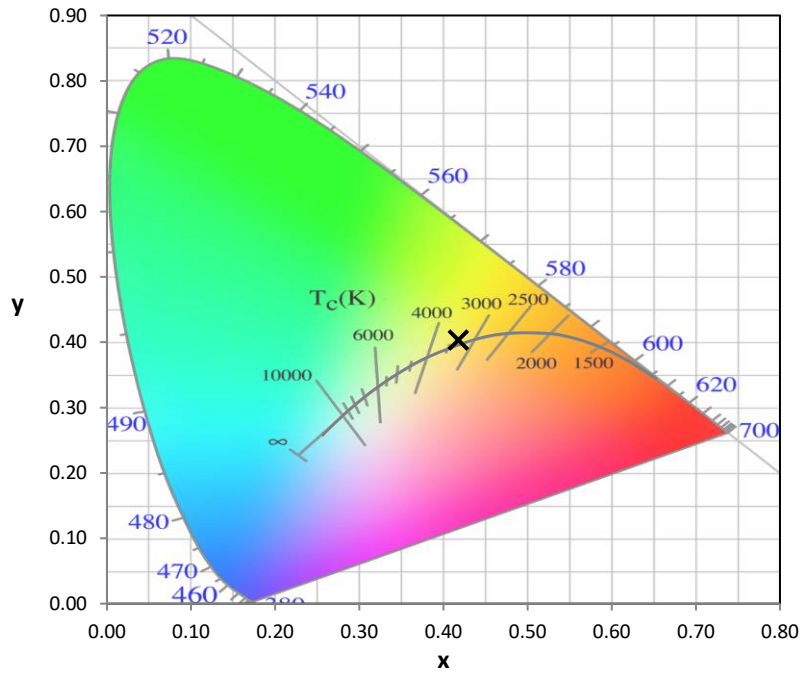
Stabilization Time: 30M
 Operation Time: 1H 30M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-176-4

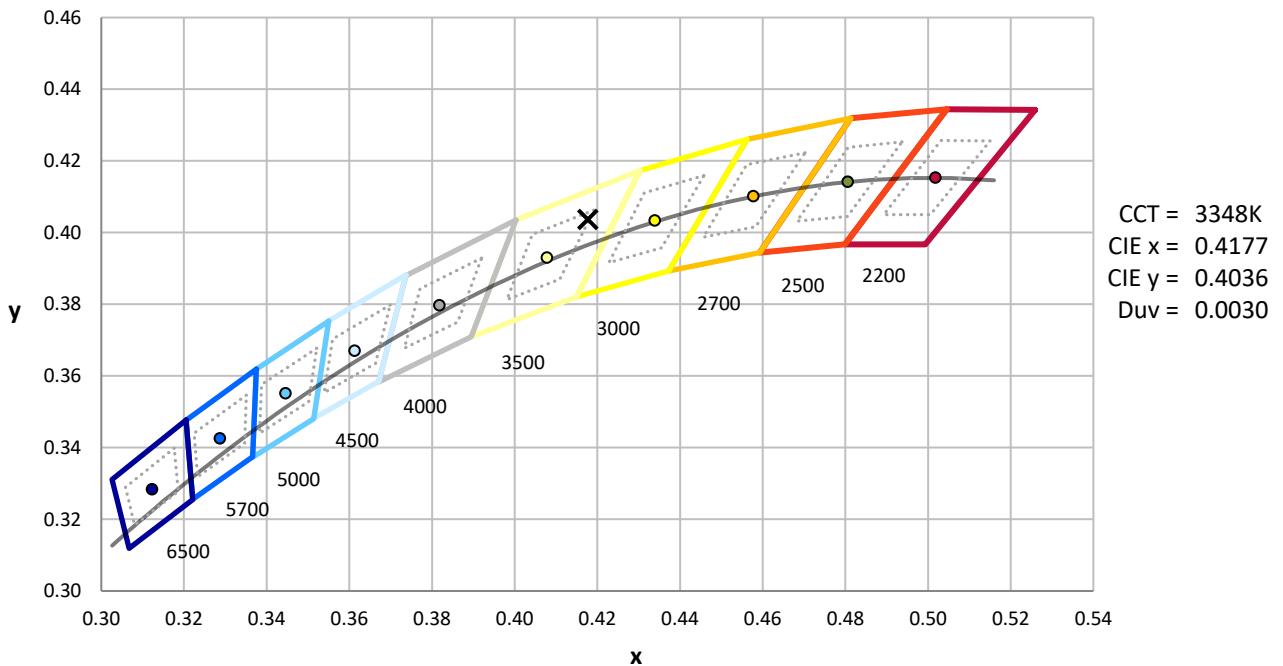
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

Photopic Flux vs. Wavelength

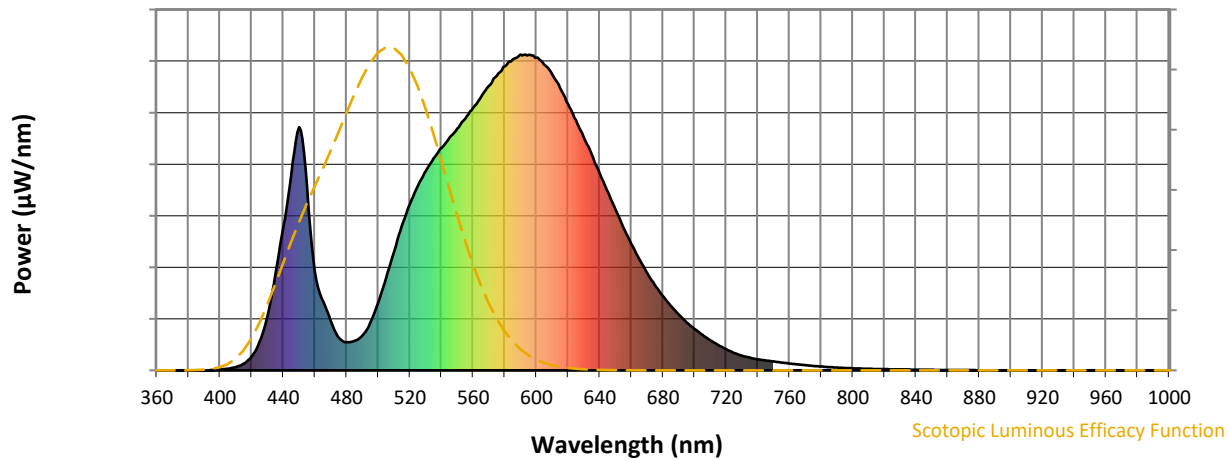


Photopic Lumens: NR

λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /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



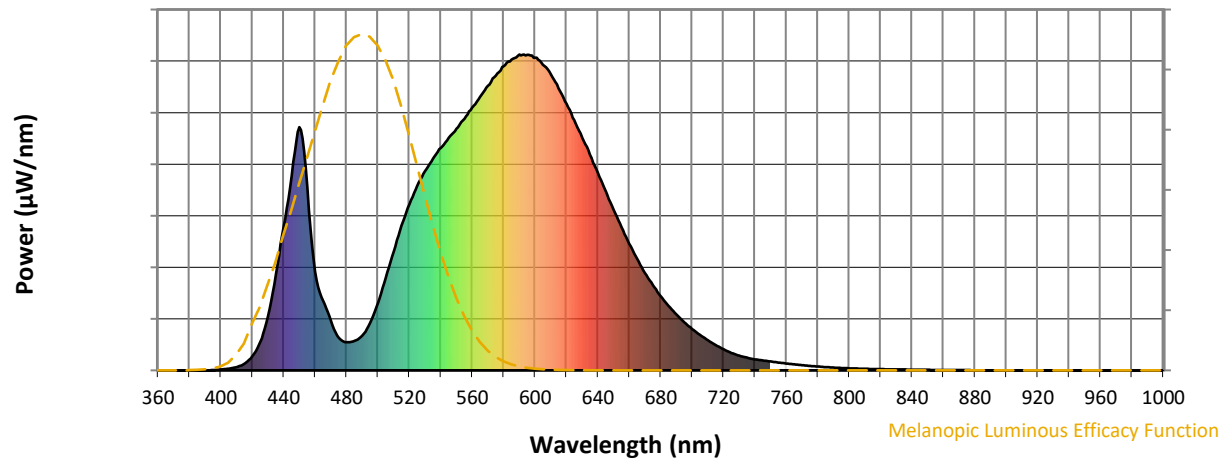
Scotopic Lumens: NR

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

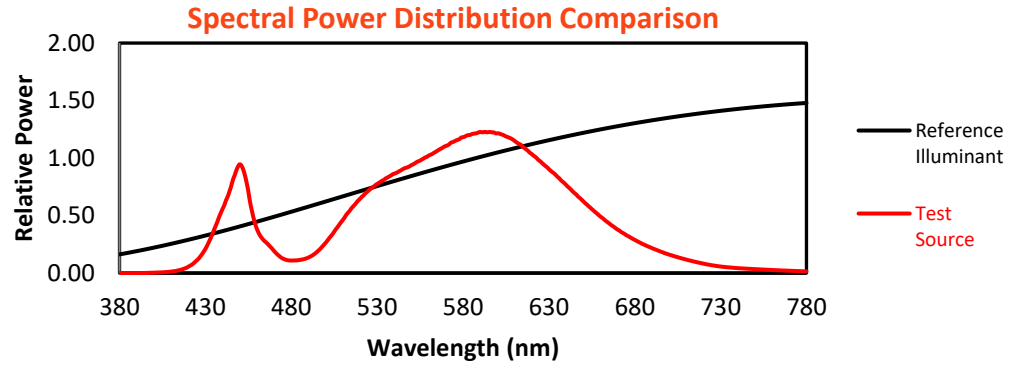
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	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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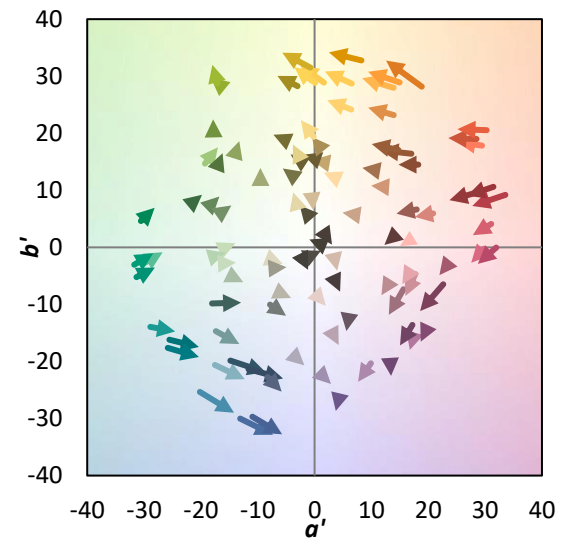
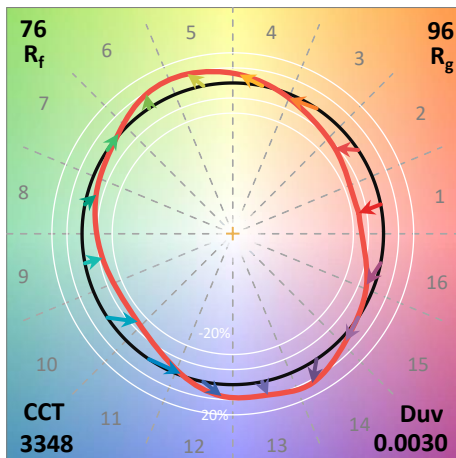
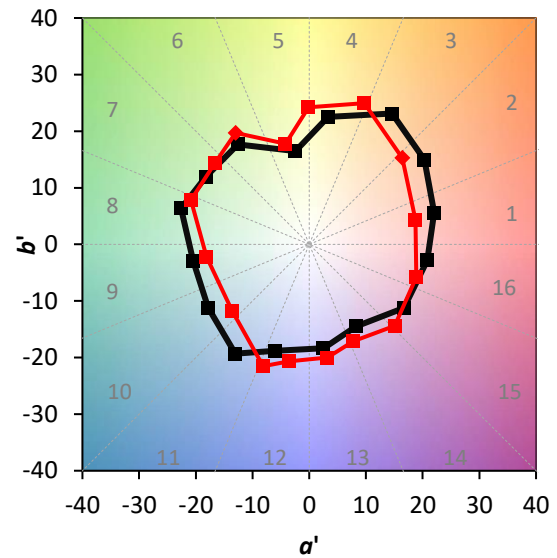
TM-30-18

Summary

$R_f = 75.8$
 $R_g = 95.8$
 $CIE R_a = 73.4$
 $R_g = -19.2$

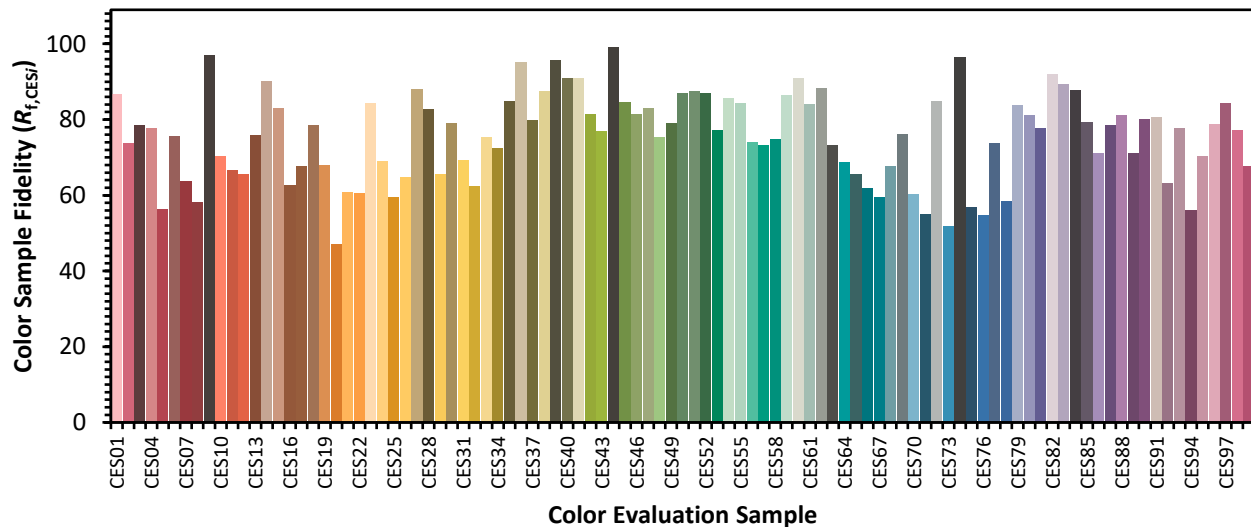


Color Vector Graphics

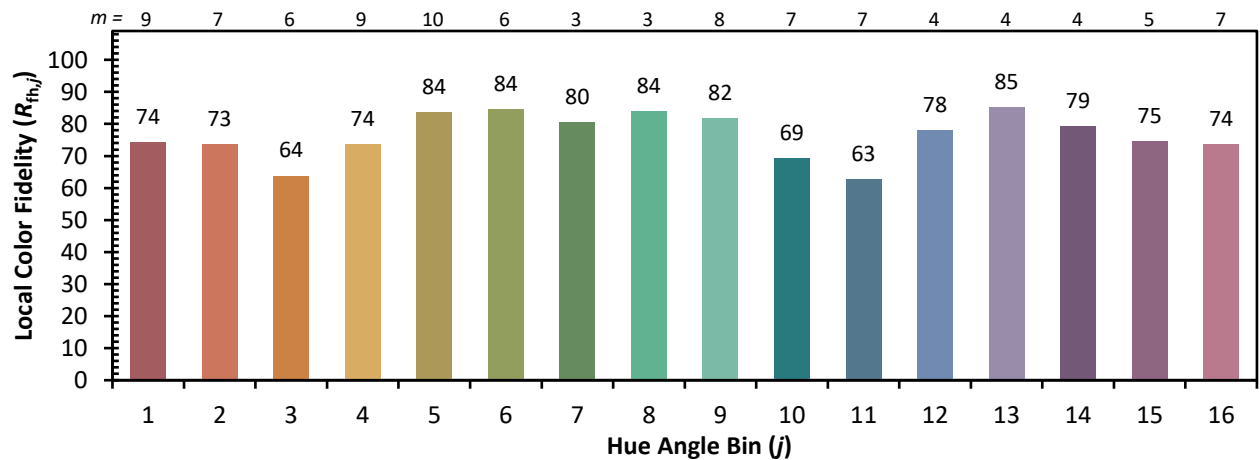


Individual Sample Fidelity Index ($R_{f,i}$)

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	



Color Rendition by Hue-Angle Bin



Measure Comparisons


(END OF REPORT)