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: P833527

Luminaire Tested: **TTN-D2-735-U-DL-UPL1**

Issue Date: 5/15/2024

Report Generated By 670246001

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:	P833527
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G3-2308-121-4) AND
Test Lab:	INNOVATION CENTER
Issue Date:	5/15/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D2-735-U-DL-UPL1
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	3500K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5051.9 lumens
Efficiency:	N/A
Efficacy:	112.0 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U3 - G2

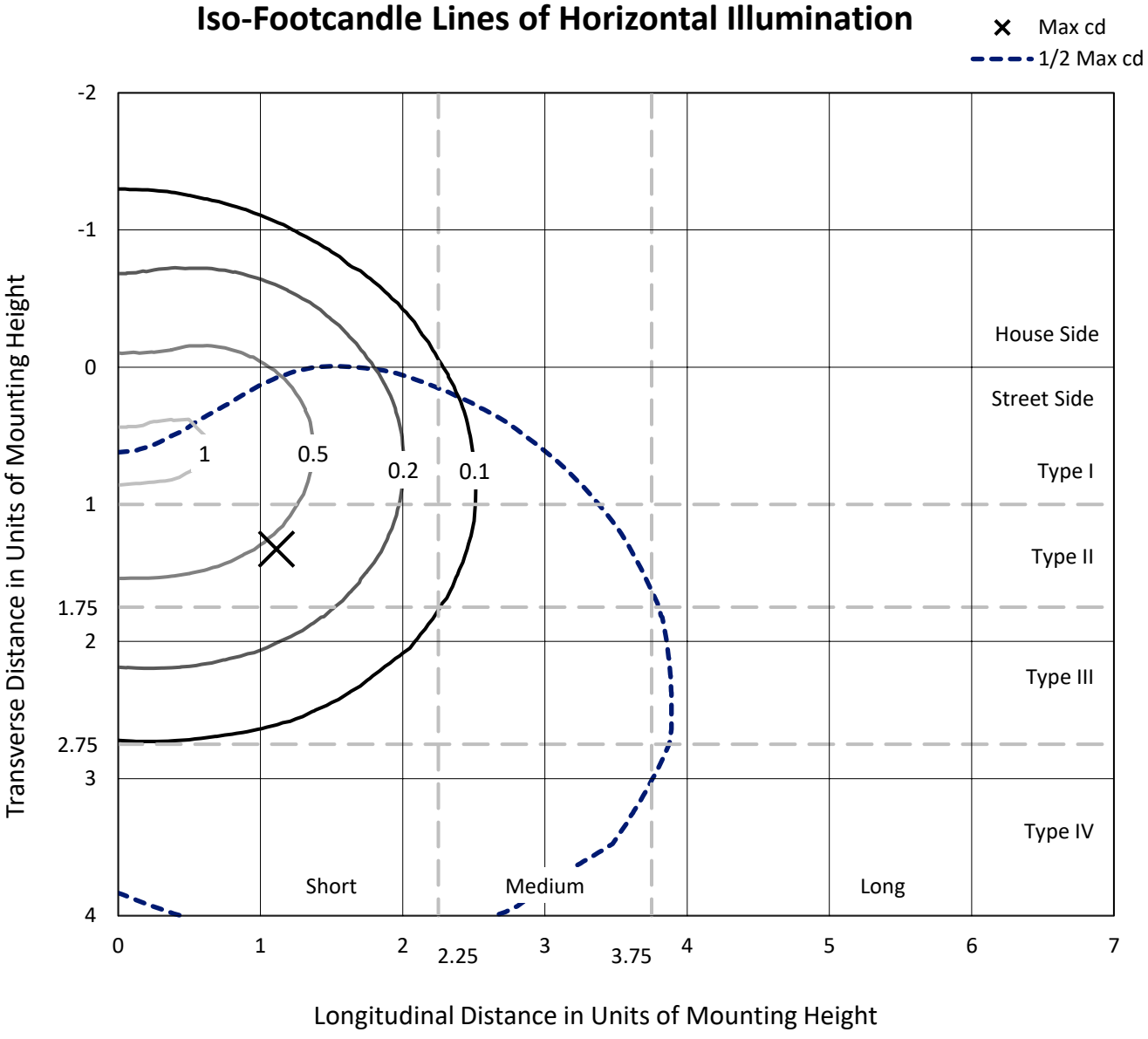
Input Watts (W):	45.1
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

Iso-Footcandle Lines of Horizontal Illumination



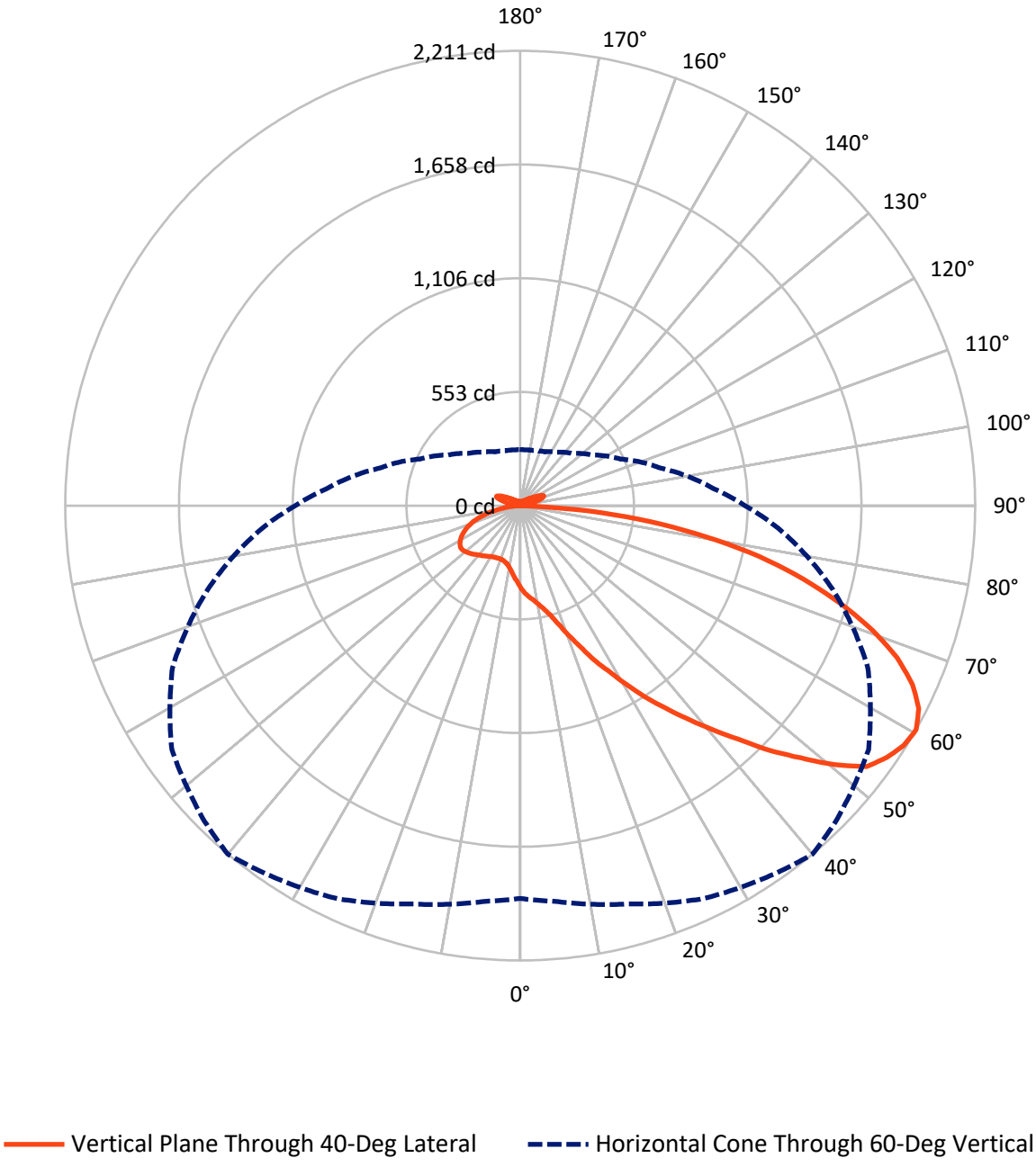
Based on 25 foot mounting height. Maximum calculated value = 1.1 fc
Type IV - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

Luminous Intensity Polar Plot



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

Scaled Data Report

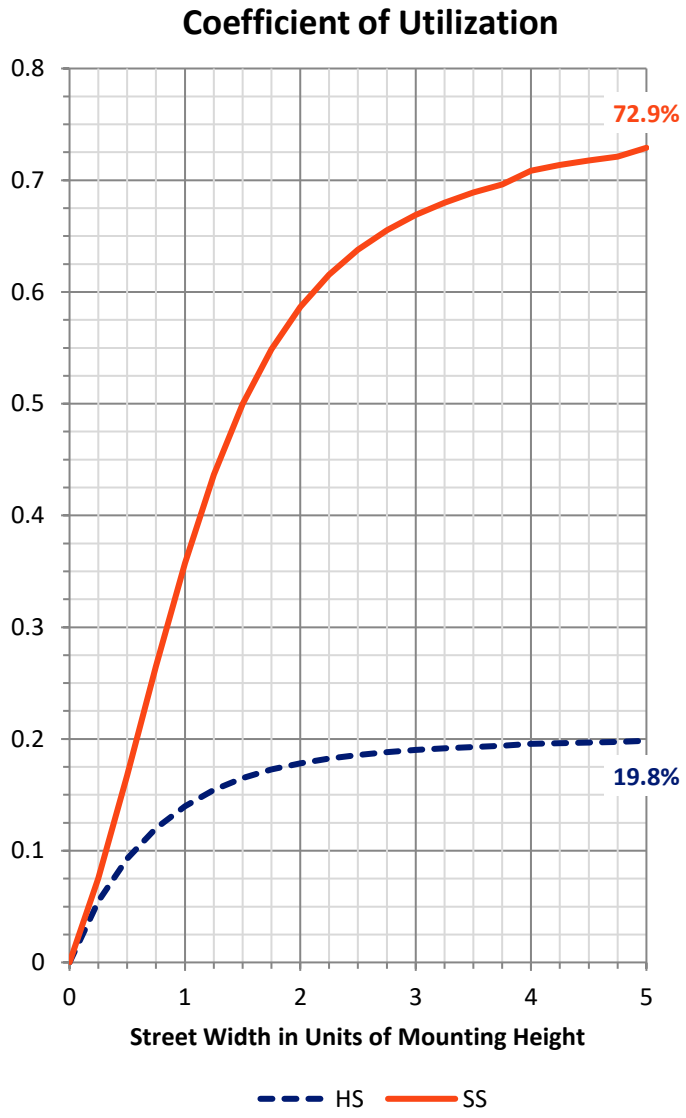
REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1012.0	150.2	1162.2
	% Fixture	20.0	3.0	23.0
Street Side	Lumens	3739.5	150.2	3889.7
	% Fixture	74.0	3.0	77.0
Total	Lumens	4751.4	300.5	5051.9
	% Fixture	94.1	5.9	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	0.7
10°-20°	120.4	2.4
20°-30°	254.4	5.0
30°-40°	465.0	9.2
40°-50°	755.6	15.0
50°-60°	1050.2	20.8
60°-70°	1088.7	21.6
70°-80°	780.1	15.4
80°-90°	199.3	3.9
90°-100°	6.7	0.1
100°-110°	68.2	1.3
110°-120°	99.6	2.0
120°-130°	57.8	1.1
130°-140°	30.6	0.6
140°-150°	18.2	0.4
150°-160°	11.2	0.2
160°-170°	6.1	0.1
170°-180°	2.0	0.0
0°-90°	4751.4	94.1
0°-180°	5051.9	100.0



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

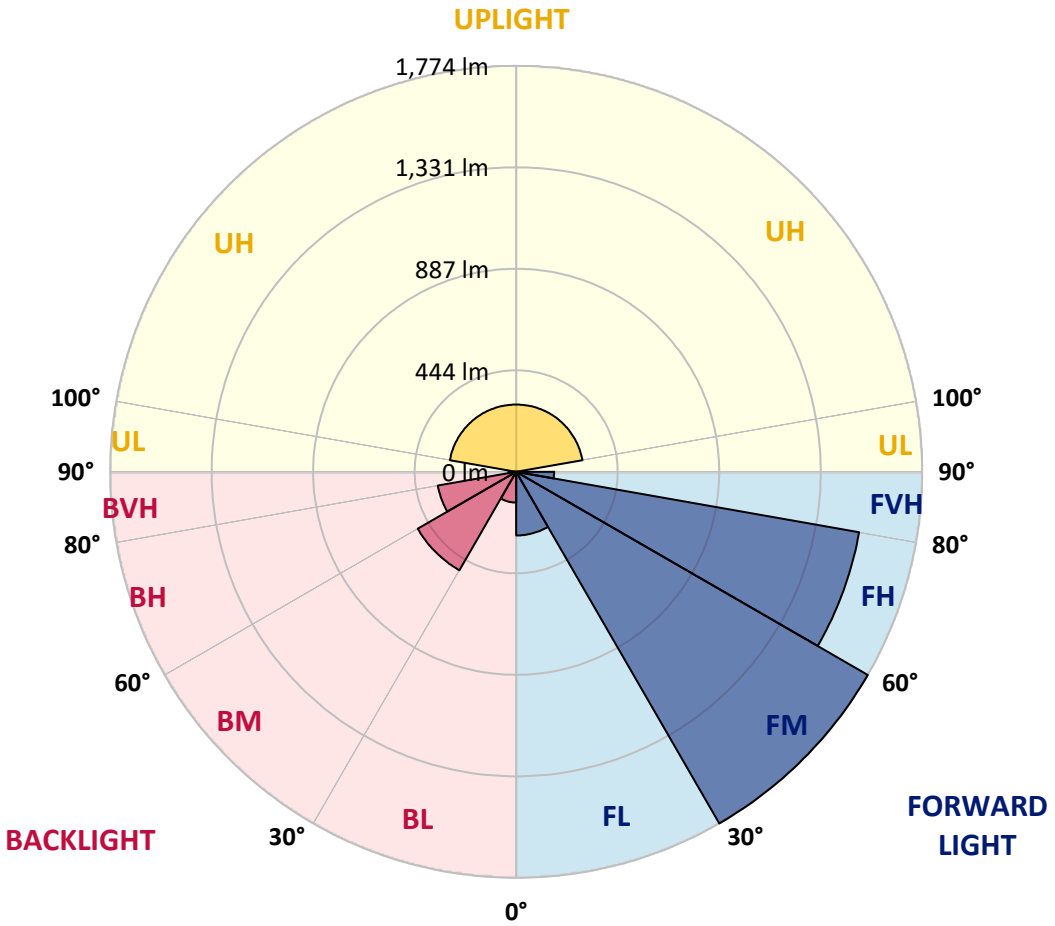
Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	278.0	5.5			
FM	(30°-60°)	1774.0	35.1			
FH	(60°-80°)	1521.5	30.1			G1/1800
FVH	(80°-90°)	165.9	3.3			G2/225
BL	(0°-30°)	134.6	2.7	B1/500		
BM	(30°-60°)	496.7	9.8	B1/1000		
BH	(60°-80°)	347.3	6.9	B1/500		G1/500
BVH	(80°-90°)	33.4	0.7			G1/100
UL	(90°-100°)	6.7	0.1		U1/10	
UH	(100°-180°)	293.8	5.8		U3/500	

BUG Rating: B1-U3-G2
Type IV Short



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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	429.0	429.0	429.0	429.0	424.9	424.9	420.8	416.6	412.5	408.4	400.1
5°	466.1	466.1	462.0	457.9	449.6	445.5	441.4	433.1	424.9	416.6	404.3
7.5°	482.6	482.6	482.6	478.5	466.1	462.0	453.8	441.4	429.0	416.6	400.1
10°	511.5	511.5	507.4	503.3	490.9	486.8	478.5	462.0	441.4	420.8	400.1
12.5°	548.6	544.5	540.4	536.3	523.9	515.6	503.3	486.8	462.0	437.3	412.5
15°	594.0	585.8	585.8	577.5	565.1	552.8	544.5	519.8	495.0	462.0	429.0
17.5°	643.5	639.4	635.3	627.0	614.6	606.4	594.0	565.1	532.1	490.9	453.8
20°	705.4	697.1	701.3	688.9	676.5	672.4	651.8	618.8	577.5	532.1	486.8
22.5°	779.7	771.4	771.4	759.0	750.8	742.5	721.9	684.8	631.1	581.6	523.9
25°	862.2	853.9	853.9	845.7	837.4	829.2	804.4	763.2	701.3	639.4	573.4
27.5°	952.9	944.7	944.7	940.5	919.9	907.5	886.9	841.5	779.7	701.3	622.9
30°	1047.8	1039.5	1047.8	1039.5	1027.2	1002.4	977.7	928.2	858.0	771.4	676.5
32.5°	1122.0	1122.0	1126.2	1134.4	1126.2	1105.5	1076.7	1035.4	940.5	833.3	726.0
35°	1208.7	1208.7	1216.9	1229.3	1225.2	1204.5	1175.7	1130.3	1031.3	903.4	779.7
37.5°	1303.5	1303.5	1311.8	1332.4	1324.2	1311.8	1291.2	1233.4	1122.0	973.5	837.4
40°	1406.7	1402.5	1410.8	1439.7	1443.8	1427.3	1402.5	1344.8	1216.9	1064.3	899.3
42.5°	1509.8	1505.7	1522.2	1551.1	1555.2	1551.1	1526.3	1460.3	1315.9	1155.0	961.2
45°	1612.9	1612.9	1637.7	1683.1	1703.7	1695.4	1674.8	1592.3	1439.7	1249.9	1043.7
47.5°	1720.2	1720.2	1753.2	1810.9	1835.7	1831.6	1823.3	1724.3	1559.3	1348.9	1113.8
50°	1802.7	1802.7	1856.3	1922.3	1963.6	1980.1	1938.8	1848.1	1662.4	1435.6	1171.5
52.5°	1885.2	1885.2	1938.8	2041.9	2083.2	2107.9	2054.3	1959.4	1777.9	1513.9	1225.2
55°	1926.4	1934.7	2008.9	2107.9	2174.0	2161.6	2182.2	2054.3	1852.2	1571.7	1258.2
57.5°	1930.6	1942.9	2025.4	2128.6	2202.8	2198.7	2202.8	2087.3	1881.1	1584.1	1262.3
60°	1909.9	1930.6	2004.8	2107.9	2178.1	2211.1	2169.8	2066.7	1864.6	1571.7	1258.2
62.5°	1860.4	1901.7	1980.1	2058.4	2161.6	2174.0	2140.9	2054.3	1819.2	1559.3	1237.5
65°	1749.1	1794.4	1905.8	1996.6	2079.1	2095.6	2058.4	1984.2	1773.8	1501.6	1171.5
67.5°	1637.7	1666.6	1761.4	1901.7	1959.4	1975.9	1963.6	1876.9	1695.4	1386.0	1093.2
70°	1509.8	1546.9	1621.2	1765.6	1823.3	1819.2	1856.3	1757.3	1575.8	1287.0	1010.7
72.5°	1336.5	1390.2	1464.4	1584.1	1654.2	1629.4	1687.2	1604.7	1419.0	1163.3	899.3
75°	1134.4	1179.8	1274.7	1369.5	1447.9	1419.0	1464.4	1406.7	1237.5	1014.8	771.4
77.5°	907.5	961.2	1047.8	1134.4	1188.0	1188.0	1208.7	1159.2	1027.2	833.3	631.1
80°	672.4	721.9	800.3	862.2	911.7	915.8	936.4	911.7	792.0	647.6	482.6
82.5°	445.5	470.3	540.4	589.9	639.4	635.3	668.3	651.8	552.8	445.5	321.8
85°	189.8	206.3	264.0	305.3	350.6	334.1	379.5	375.4	297.0	214.5	144.4
87.5°	8.3	12.4	12.4	8.3	12.4	4.1	12.4	16.5	12.4	8.3	8.3
90°	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.6
92.5°	2.6	2.6	2.6	3.6	4.1	3.8	3.6	4.1	3.1	3.1	2.6
95°	3.1	3.1	3.6	4.6	5.7	6.0	6.2	6.2	3.6	3.6	3.1
97.5°	4.1	4.6	4.6	5.7	9.3	13.2	17.0	10.3	5.1	5.1	4.6
100°	6.7	7.2	7.2	12.9	27.2	31.8	36.5	26.2	13.4	9.8	7.2
102.5°	21.6	22.6	27.8	41.6	61.7	58.8	56.0	47.3	44.7	30.8	24.7
105°	55.0	54.5	58.6	69.4	86.4	85.6	84.8	78.1	70.9	61.2	56.5
107.5°	72.5	72.5	76.1	85.3	98.2	106.4	114.6	116.2	92.0	80.7	75.6
110°	81.7	81.7	84.8	92.5	109.5	121.0	132.6	131.6	113.6	99.7	93.0

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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
112.5°	83.8	84.3	88.4	100.2	118.7	*123.8*	129.0	124.4	117.2	111.0	105.9
115°	86.9	86.9	91.5	102.8	113.1	*115.2*	117.2	112.1	106.4	102.3	100.2
117.5°	85.8	87.4	88.4	94.6	101.3	*102.8*	104.4	101.8	94.1	91.0	90.0
120°	79.7	79.7	80.7	83.8	87.4	*88.2*	88.9	87.9	82.8	80.2	79.7
122.5°	70.9	71.5	70.9	72.5	75.0	*75.8*	76.6	75.6	71.5	70.4	70.4
125°	62.2	62.2	61.7	62.7	64.3	*64.0*	63.7	64.3	62.2	61.7	61.7
127.5°	56.0	55.5	54.5	55.0	55.5	*55.5*	55.5	56.0	54.0	54.5	55.0
130°	49.9	49.9	48.8	48.8	48.8	*48.3*	47.8	48.8	47.8	48.3	48.8
132.5°	44.2	44.2	42.7	42.2	42.2	*42.2*	42.2	42.7	42.2	43.2	44.2
135°	39.6	39.6	38.0	38.6	38.6	*38.3*	38.0	38.6	38.0	39.1	39.6
137.5°	36.0	36.0	35.0	35.0	35.0	*34.7*	34.4	35.0	35.0	35.5	36.5
140°	32.9	32.9	32.4	32.4	31.9	*32.2*	32.4	32.4	32.4	32.9	33.4
142.5°	31.4	30.8	30.3	29.8	30.3	*30.3*	30.3	30.3	29.8	30.3	31.4
145°	28.8	28.8	28.3	28.3	28.3	*28.6*	28.8	28.3	28.3	28.8	28.8
147.5°	27.2	27.2	26.7	27.2	27.2	*27.2*	27.2	27.2	26.7	27.2	27.2
150°	26.7	26.2	25.7	26.2	26.2	*26.0*	25.7	25.7	25.7	25.7	26.2
152.5°	25.2	25.2	24.7	25.2	24.7	*24.7*	24.7	24.7	24.7	24.7	25.2
155°	24.2	24.2	23.6	24.2	24.2	*24.2*	24.2	24.2	24.2	24.2	24.2
157.5°	23.1	23.6	23.1	23.1	23.1	*23.1*	23.1	23.1	23.1	23.1	23.6
160°	22.6	22.6	22.6	22.6	22.1	*22.1*	22.1	22.1	22.6	22.6	22.6
162.5°	22.1	22.1	22.1	22.1	21.6	*21.6*	21.6	21.6	21.6	22.1	22.1
165°	22.1	21.6	21.6	21.6	21.1	*21.1*	21.1	21.1	21.1	21.6	22.1
167.5°	21.1	21.1	21.1	21.1	21.1	*20.8*	20.6	20.6	21.1	21.1	21.1
170°	21.1	21.1	20.6	20.6	20.6	*20.6*	20.6	20.6	20.6	20.6	20.6
172.5°	21.1	21.1	21.1	21.1	20.6	*20.6*	20.6	20.6	20.6	20.6	21.1
175°	21.1	21.1	21.1	21.1	20.6	*20.6*	20.6	20.6	21.1	21.1	21.1
177.5°	21.1	21.1	21.1	21.1	20.6	*20.8*	21.1	21.1	21.1	21.1	21.1
180°	21.1	21.1	21.1	21.1	21.1	*21.1*	21.1	21.1	21.1	21.1	21.1

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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	400.1	396.0	387.8	383.6	379.5	371.3	371.3	367.1	367.1	367.1	363.0
5°	400.1	391.9	383.6	371.3	363.0	354.8	346.5	338.3	334.1	334.1	330.0
7.5°	391.9	383.6	371.3	358.9	346.5	330.0	321.8	305.3	301.1	297.0	297.0
10°	391.9	383.6	363.0	346.5	330.0	313.5	301.1	284.6	272.3	268.1	268.1
12.5°	396.0	383.6	363.0	342.4	321.8	301.1	284.6	268.1	255.8	247.5	247.5
15°	412.5	396.0	371.3	342.4	317.6	292.9	276.4	255.8	243.4	235.1	235.1
17.5°	433.1	416.6	379.5	346.5	317.6	288.8	268.1	247.5	235.1	226.9	222.8
20°	462.0	437.3	396.0	350.6	317.6	288.8	264.0	243.4	226.9	218.6	218.6
22.5°	495.0	466.1	412.5	358.9	321.8	288.8	264.0	239.3	222.8	214.5	214.5
25°	536.3	499.1	437.3	375.4	330.0	292.9	264.0	239.3	222.8	214.5	214.5
27.5°	581.6	540.4	462.0	391.9	338.3	297.0	264.0	239.3	222.8	214.5	214.5
30°	622.9	577.5	486.8	408.4	350.6	301.1	268.1	243.4	226.9	218.6	214.5
32.5°	668.3	610.5	511.5	424.9	358.9	309.4	272.3	247.5	226.9	218.6	218.6
35°	713.6	651.8	536.3	445.5	371.3	317.6	276.4	251.6	231.0	222.8	222.8
37.5°	763.2	697.1	565.1	462.0	383.6	325.9	284.6	255.8	235.1	226.9	226.9
40°	820.9	742.5	594.0	482.6	396.0	334.1	288.8	264.0	243.4	235.1	235.1
42.5°	874.5	783.8	622.9	499.1	408.4	342.4	297.0	268.1	251.6	243.4	243.4
45°	928.2	833.3	651.8	519.8	420.8	354.8	305.3	280.5	259.9	251.6	251.6
47.5°	990.0	878.7	684.8	536.3	433.1	363.0	313.5	288.8	268.1	264.0	259.9
50°	1039.5	911.7	705.4	552.8	441.4	371.3	321.8	292.9	276.4	268.1	268.1
52.5°	1084.9	944.7	721.9	561.0	445.5	375.4	330.0	301.1	284.6	276.4	276.4
55°	1109.7	957.0	734.3	561.0	449.6	379.5	330.0	301.1	284.6	280.5	276.4
57.5°	1109.7	957.0	726.0	552.8	441.4	371.3	325.9	297.0	284.6	276.4	276.4
60°	*1093.2*	*944.7*	*705.4*	*536.3*	*429.0*	*358.9*	*317.6*	*288.8*	*276.4*	*272.3*	*272.3*
62.5°	1068.4	924.0	688.9	515.6	412.5	342.4	305.3	276.4	268.1	268.1	264.0
65°	1002.4	862.2	651.8	486.8	387.8	321.8	288.8	264.0	255.8	251.6	247.5
67.5°	932.3	804.4	594.0	453.8	354.8	301.1	268.1	247.5	235.1	235.1	231.0
70°	862.2	742.5	540.4	408.4	317.6	276.4	243.4	222.8	214.5	214.5	214.5
72.5°	767.3	664.1	478.5	358.9	280.5	243.4	218.6	198.0	193.9	193.9	189.8
75°	655.9	565.1	404.3	305.3	235.1	206.3	185.6	165.0	165.0	165.0	165.0
77.5°	536.3	457.9	321.8	243.4	185.6	165.0	152.6	136.1	136.1	136.1	136.1
80°	404.3	338.3	235.1	177.4	136.1	119.6	111.4	103.1	107.3	107.3	103.1
82.5°	264.0	222.8	148.5	111.4	86.6	78.4	78.4	70.1	74.3	74.3	74.3
85°	115.5	99.0	61.9	49.5	41.3	41.3	41.3	37.1	41.3	41.3	41.3
87.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	0.0	4.1	8.3	4.1
90°	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.6	2.6
92.5°	2.6	2.6	3.1	3.1	4.1	3.6	4.1	3.6	2.6	2.6	2.6
95°	3.1	3.1	3.6	3.6	6.2	6.2	5.7	4.6	3.6	3.1	3.1
97.5°	4.1	4.6	5.1	5.1	10.3	17.0	9.3	5.7	4.6	4.6	4.1
100°	7.2	7.2	9.8	13.4	26.2	36.5	27.2	12.9	7.2	7.2	6.7
102.5°	23.6	24.7	30.8	44.7	47.3	56.0	61.7	41.6	27.8	22.6	21.6
105°	56.5	56.5	61.2	70.9	78.1	84.8	86.4	69.4	58.6	54.5	55.0
107.5°	75.0	75.6	80.7	92.0	116.2	114.6	98.2	85.3	76.1	72.5	72.5
110°	92.0	93.0	99.7	113.6	131.6	132.6	109.5	92.5	84.8	81.7	81.7

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

Scaled Data Report

REPORT NUMBER: P833527
CATALOG NUMBER: TTN-D2-735-U-DL-UPL1

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	104.9	105.9	111.0	117.2	124.4	129.0	118.7	100.2	88.4	84.3	83.8
115°	101.3	100.2	102.3	106.4	112.1	117.2	113.1	102.8	91.5	86.9	86.9
117.5°	88.4	90.0	91.0	94.1	101.8	104.4	101.3	94.6	88.4	87.4	85.8
120°	78.6	79.7	80.2	82.8	87.9	88.9	87.4	83.8	80.7	79.7	79.7
122.5°	69.4	70.4	70.4	71.5	75.6	76.6	75.0	72.5	70.9	71.5	70.9
125°	61.2	61.7	61.7	62.2	64.3	63.7	64.3	62.7	61.7	62.2	62.2
127.5°	54.5	55.0	54.5	54.0	56.0	55.5	55.5	55.0	54.5	55.5	56.0
130°	49.3	48.8	48.3	47.8	48.8	47.8	48.8	48.8	48.8	49.9	49.9
132.5°	44.2	44.2	43.2	42.2	42.7	42.2	42.2	42.2	42.7	44.2	44.2
135°	39.6	39.6	39.1	38.0	38.6	38.0	38.6	38.6	38.0	39.6	39.6
137.5°	37.0	36.5	35.5	35.0	35.0	34.4	35.0	35.0	35.0	36.0	36.0
140°	33.4	33.4	32.9	32.4	32.4	32.4	31.9	32.4	32.4	32.9	32.9
142.5°	31.4	31.4	30.3	29.8	30.3	30.3	30.3	29.8	30.3	30.8	31.4
145°	29.3	28.8	28.8	28.3	28.3	28.8	28.3	28.3	28.3	28.8	28.8
147.5°	27.8	27.2	27.2	26.7	27.2	27.2	27.2	27.2	26.7	27.2	27.2
150°	26.2	26.2	25.7	25.7	25.7	25.7	26.2	26.2	25.7	26.2	26.7
152.5°	25.7	25.2	24.7	24.7	24.7	24.7	24.7	25.2	24.7	25.2	25.2
155°	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	23.6	24.2	24.2
157.5°	23.6	23.6	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.6	23.1
160°	23.1	22.6	22.6	22.6	22.1	22.1	22.1	22.6	22.6	22.6	22.6
162.5°	22.6	22.1	22.1	21.6	21.6	21.6	21.6	22.1	22.1	22.1	22.1
165°	21.6	22.1	21.6	21.1	21.1	21.1	21.1	21.6	21.6	21.6	22.1
167.5°	21.6	21.1	21.1	21.1	20.6	20.6	21.1	21.1	21.1	21.1	21.1
170°	21.1	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	21.1	21.1
172.5°	21.1	21.1	20.6	20.6	20.6	20.6	20.6	21.1	21.1	21.1	21.1
175°	20.6	21.1	21.1	21.1	20.6	20.6	20.6	21.1	21.1	21.1	21.1
177.5°	21.1	21.1	21.1	21.1	21.1	21.1	20.6	21.1	21.1	21.1	21.1
180°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1

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

MCGRAW EDISON

Report Number: SP1-2411-284-1

Test Date: 11/15/2024

Luminaire Tested: TTN-D0-735-U-WQ

Data in this report applies to TT and TTN families of products

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

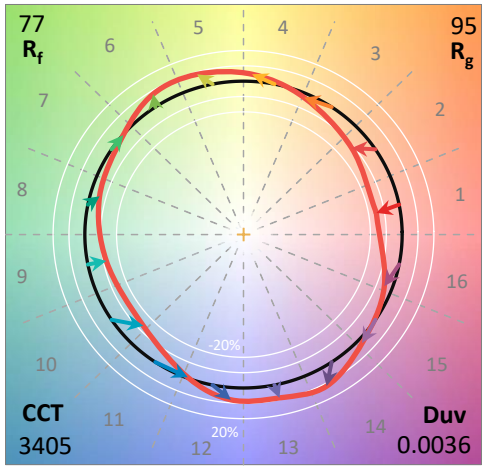
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2411-284-1
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	11/15/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**TTN-D0-735-U-WQ**
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3500K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K):	3405
CIE u':	0.2365
CIE v':	0.5180
Duv:	0.0036
CIE x:	0.4148
CIE y:	0.4038
CIE z:	0.1814
Peak Wavelength (nm):	596
Dominant Wavelength (nm):	579
Purity:	45.70672
Rf:	76.6
Rg:	95.4

CRI (Ra):	73.9				
R1:	71.3	R9:	-18.0		
R2:	80.3	R10:	53.1		
R3:	87.8	R11:	68.6		
R4:	73.2	R12:	42.6		
R5:	69.8	R13:	72.5		
R6:	71.8	R14:	92.7		
R7:	82.8	R15:	64.3		
R8:	54.1				



Test Conditions

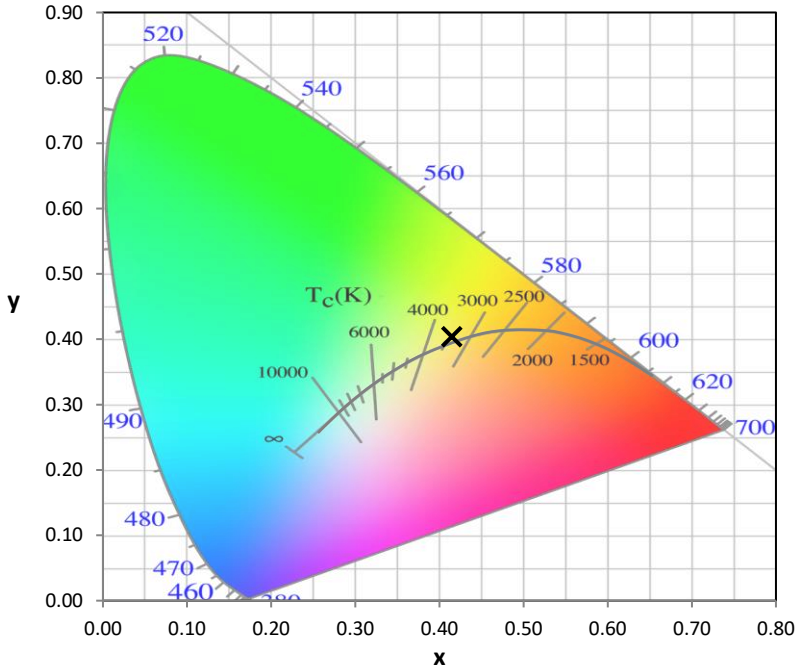
Stabilization Time:	38M
Operation Time:	1H 38M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-1

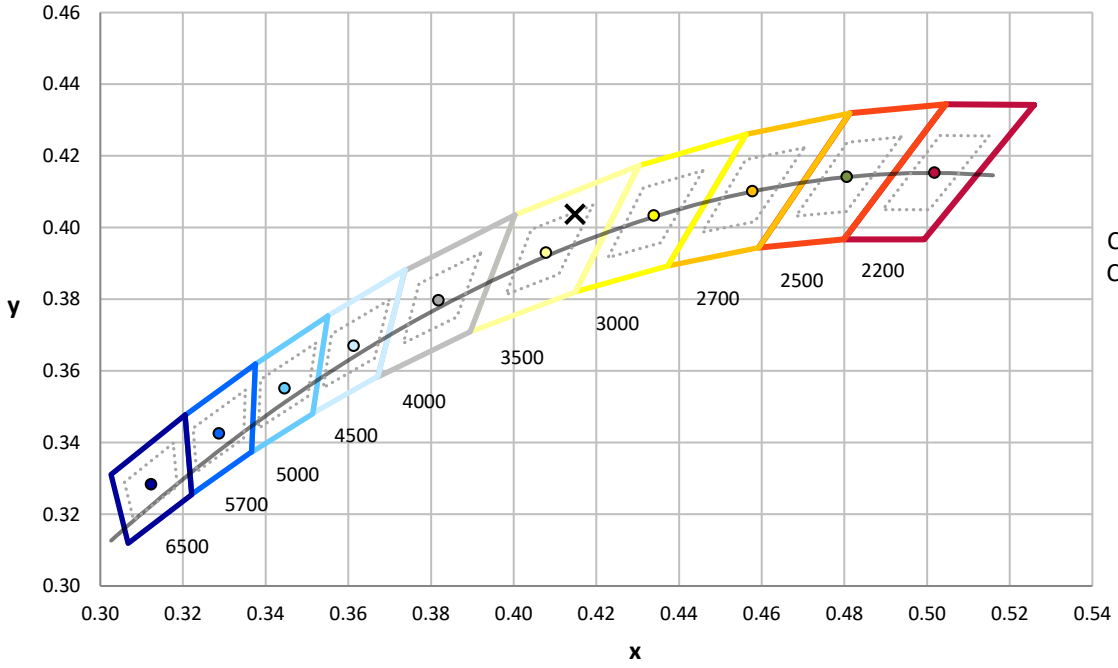
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2411-284-1

CIE 1931 Chromaticity Diagram



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

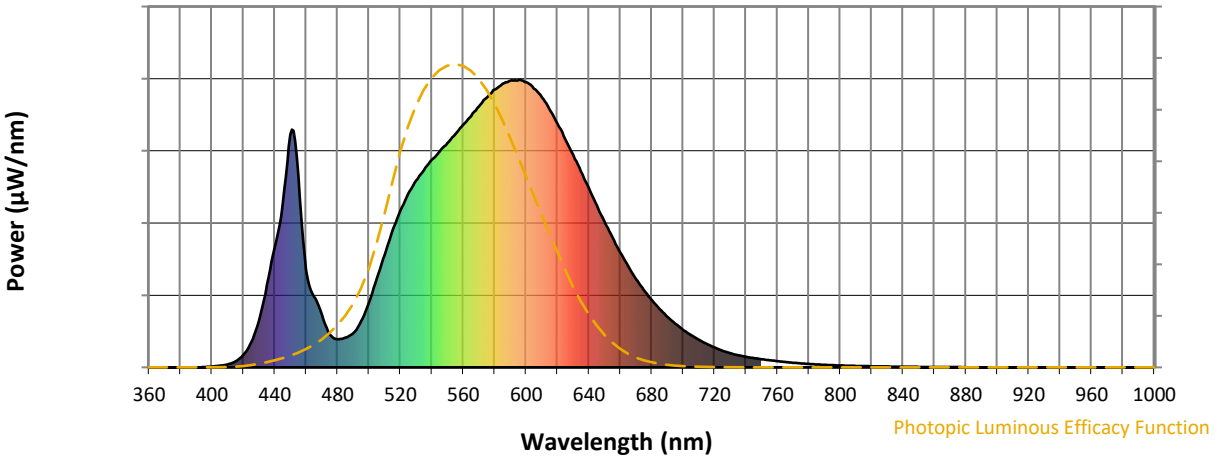


CCT = 3405K
CIE x = 0.4148
CIE y = 0.4038
Duv = 0.0036

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-1

Photopic Flux vs. Wavelength

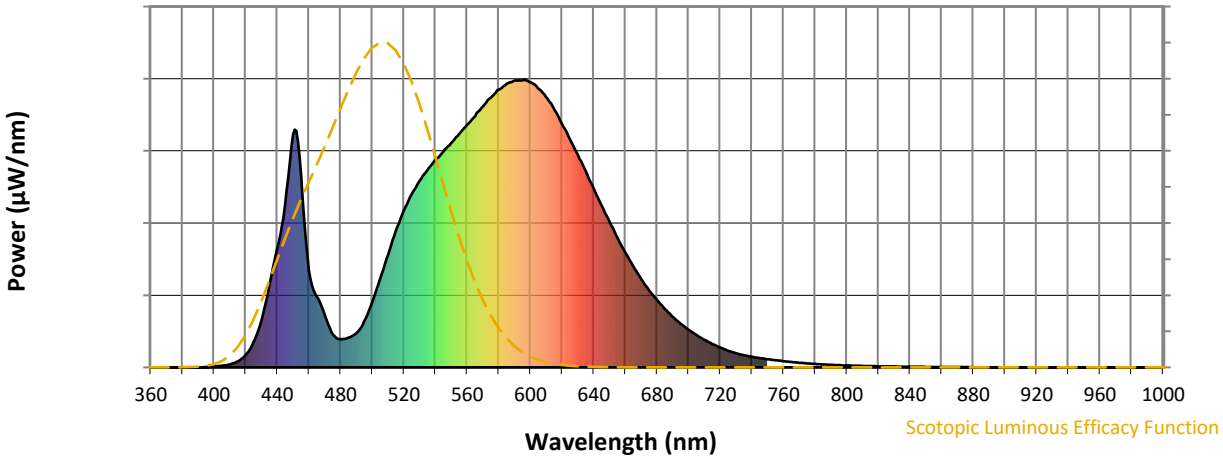


Photopic Lumens: NR

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	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

Scotopic Flux vs. Wavelength

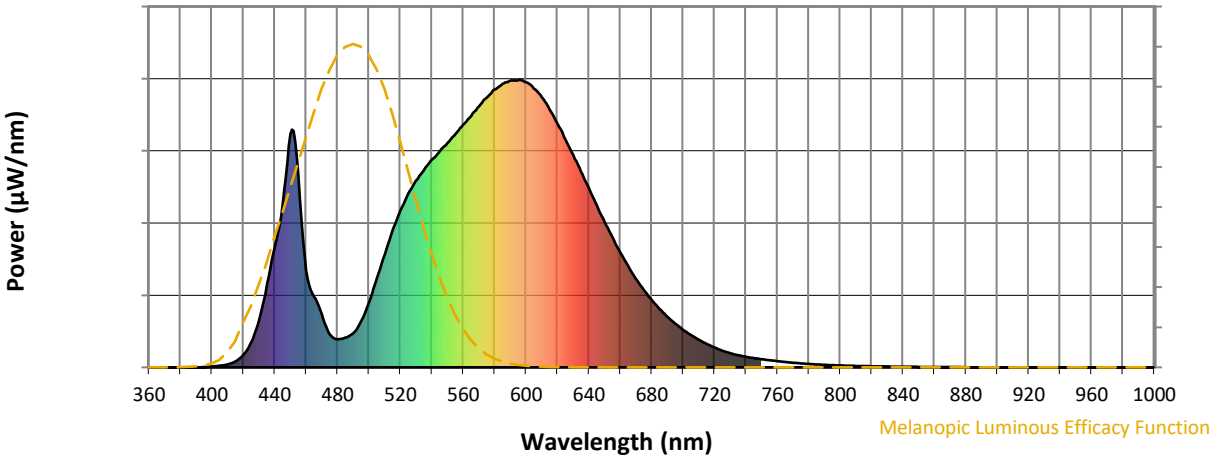


Scotopic Lumens: NR **S/P: 1.33**

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	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.47**

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	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

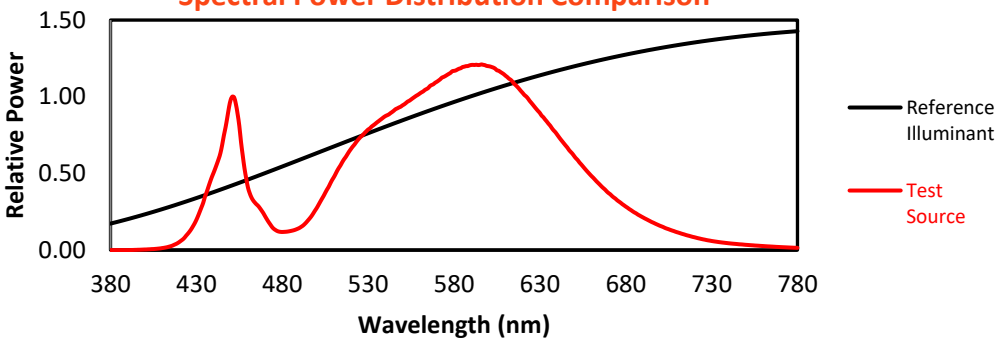
REPORT NUMBER: SP1-2411-284-1

TM-30-18

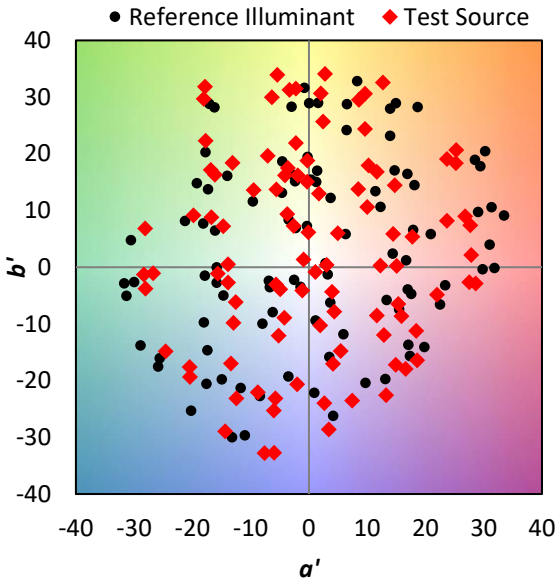
Summary

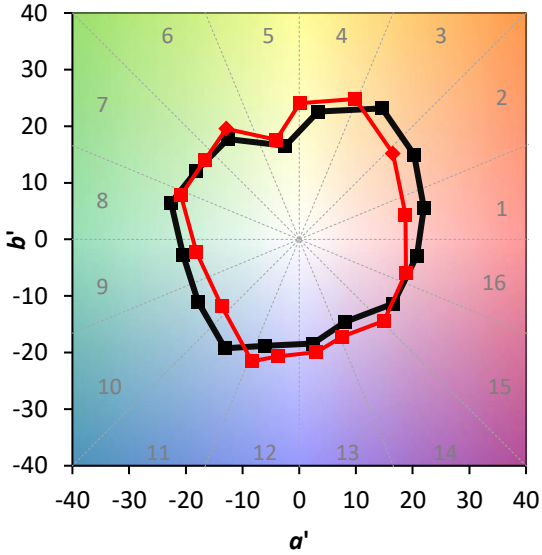
R_f = 76.6
R_g = 95.4
CIE R_a = 73.9
R_9 = -18.0

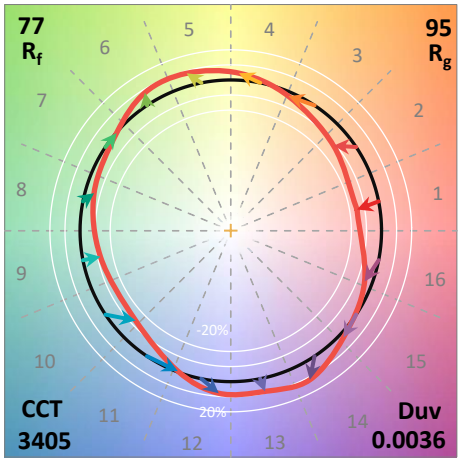
Spectral Power Distribution Comparison

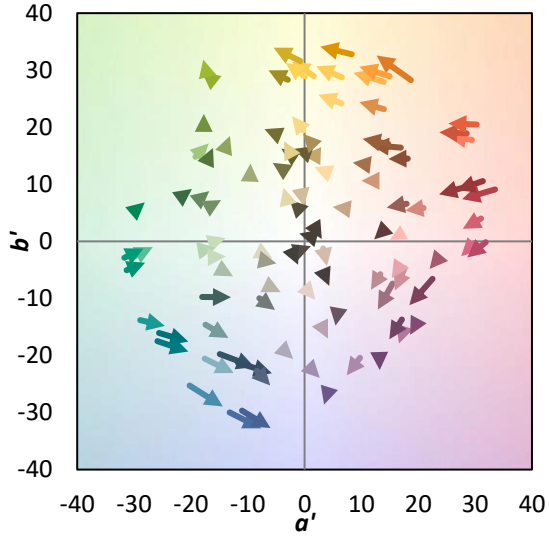


Color Vector Graphics







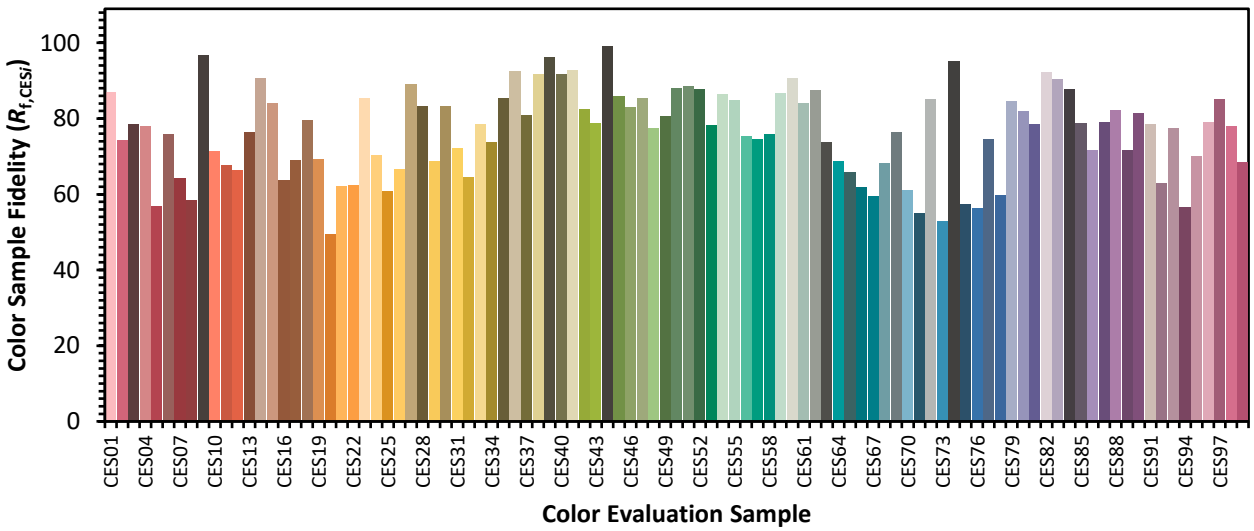


REPORT NUMBER: SP1-2411-284-1

TM-30-18

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

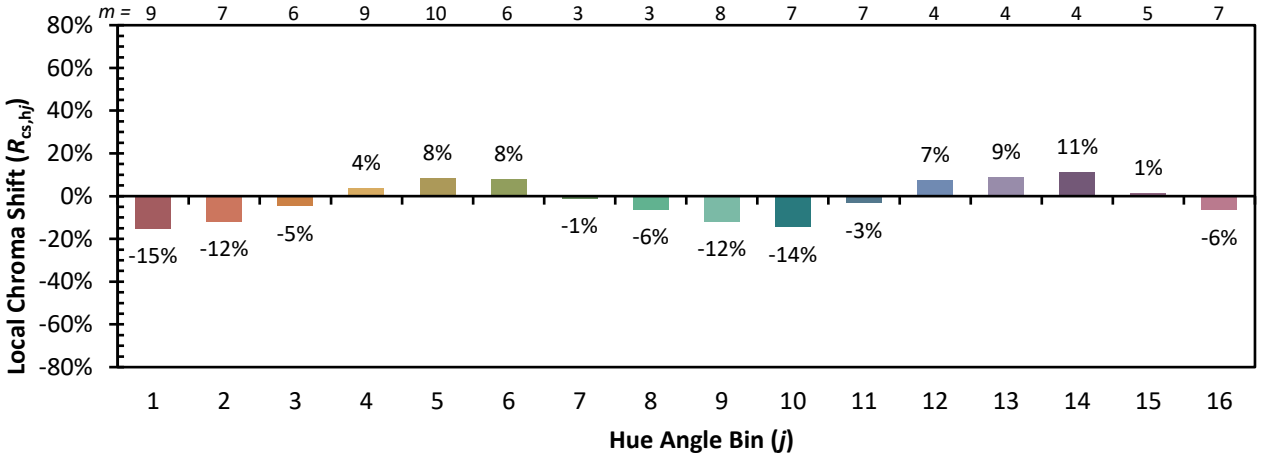
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 92
CES08 = 40	CES33 = 78	CES58 = 76	CES83 = 90
CES09 = 29	CES34 = 74	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 86	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 93	CES61 = 84	CES86 = 72
CES12 = 64	CES37 = 81	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 92	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 92	CES65 = 66	CES90 = 82
CES16 = 47	CES41 = 93	CES66 = 62	CES91 = 79
CES17 = 50	CES42 = 83	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 79	CES68 = 68	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 86	CES70 = 61	CES95 = 70
CES21 = 86	CES46 = 83	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 85	CES72 = 85	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 53	CES98 = 78
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 68
CES25 = 72	CES50 = 88	CES75 = 57	

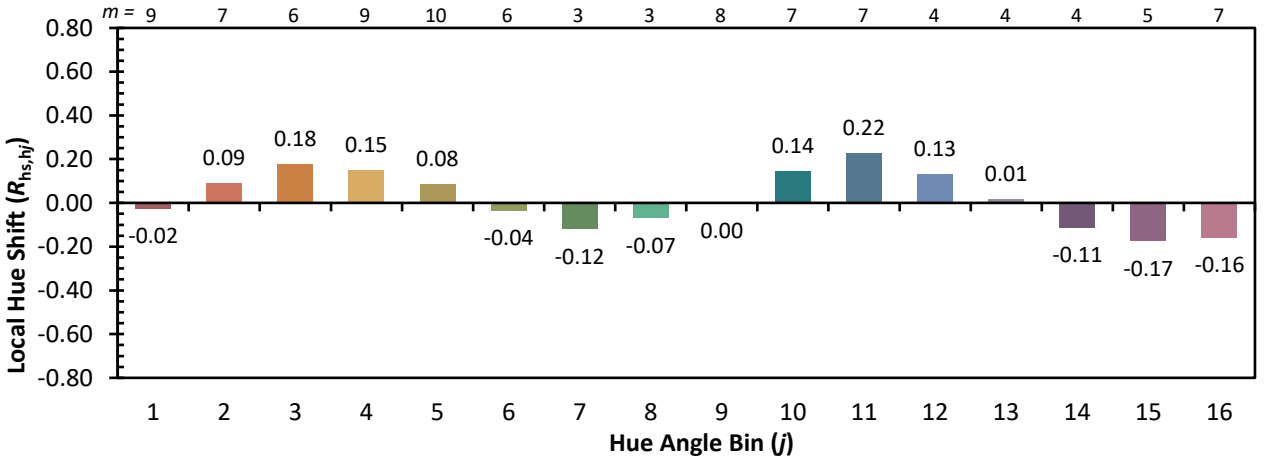


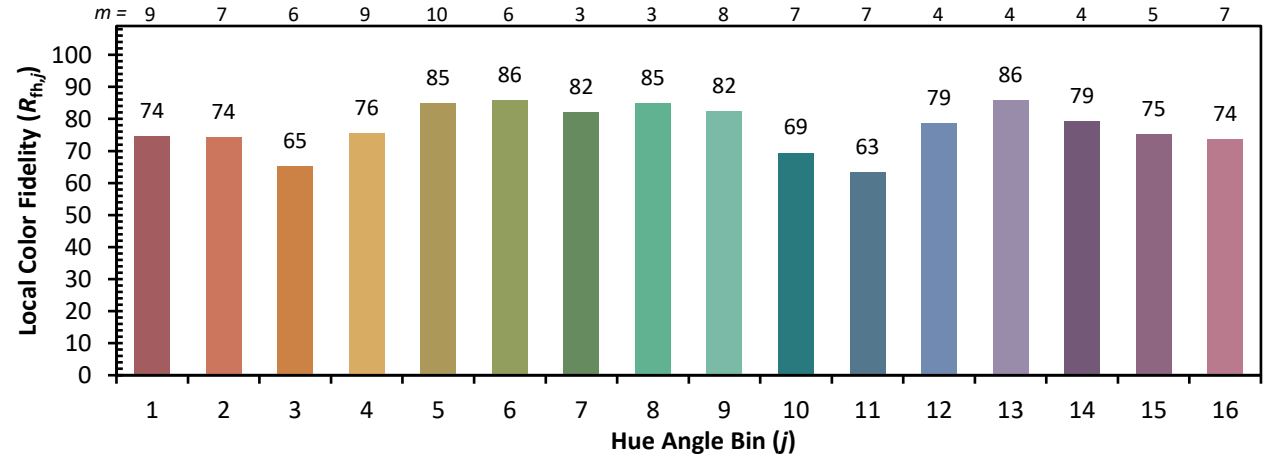
REPORT NUMBER: SP1-2411-284-1

TM-30-18

Color Rendition by Hue-Angle Bin



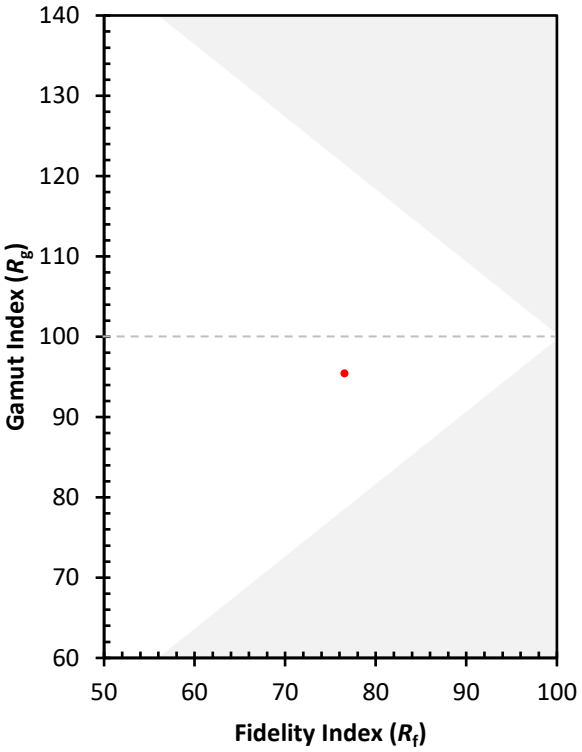


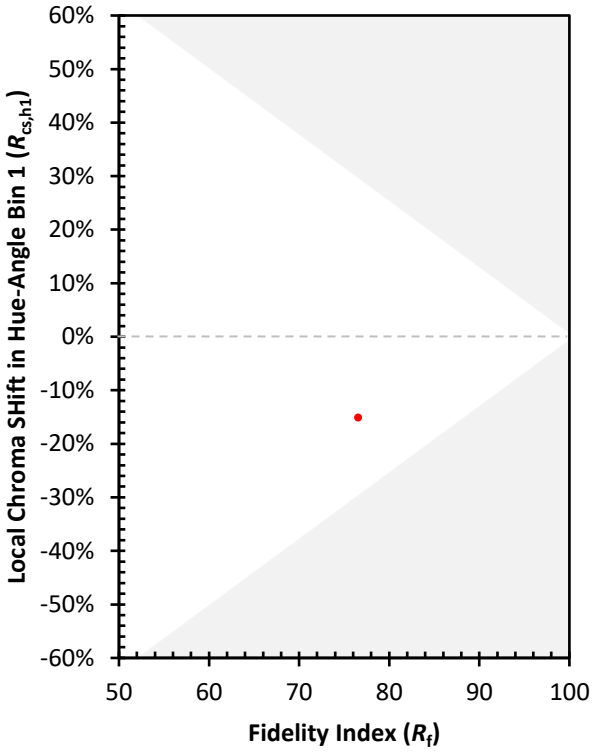


REPORT NUMBER: SP1-2411-284-1

TM-30-18

Measure Comparisons





(END OF REPORT)