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: P832807

Luminaire Tested: **TTN-D0-735-U-DL-UPL1**

Issue Date: 5/15/2024

Report Generated By 670246001

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P832807
	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-D0-735-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:	1392.9 lumens
Efficiency:	N/A
Efficacy:	104.7 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification:	Type IV - Short
BUG Rating:	B0 - U3 - G1

Input Watts (W):	13.3
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

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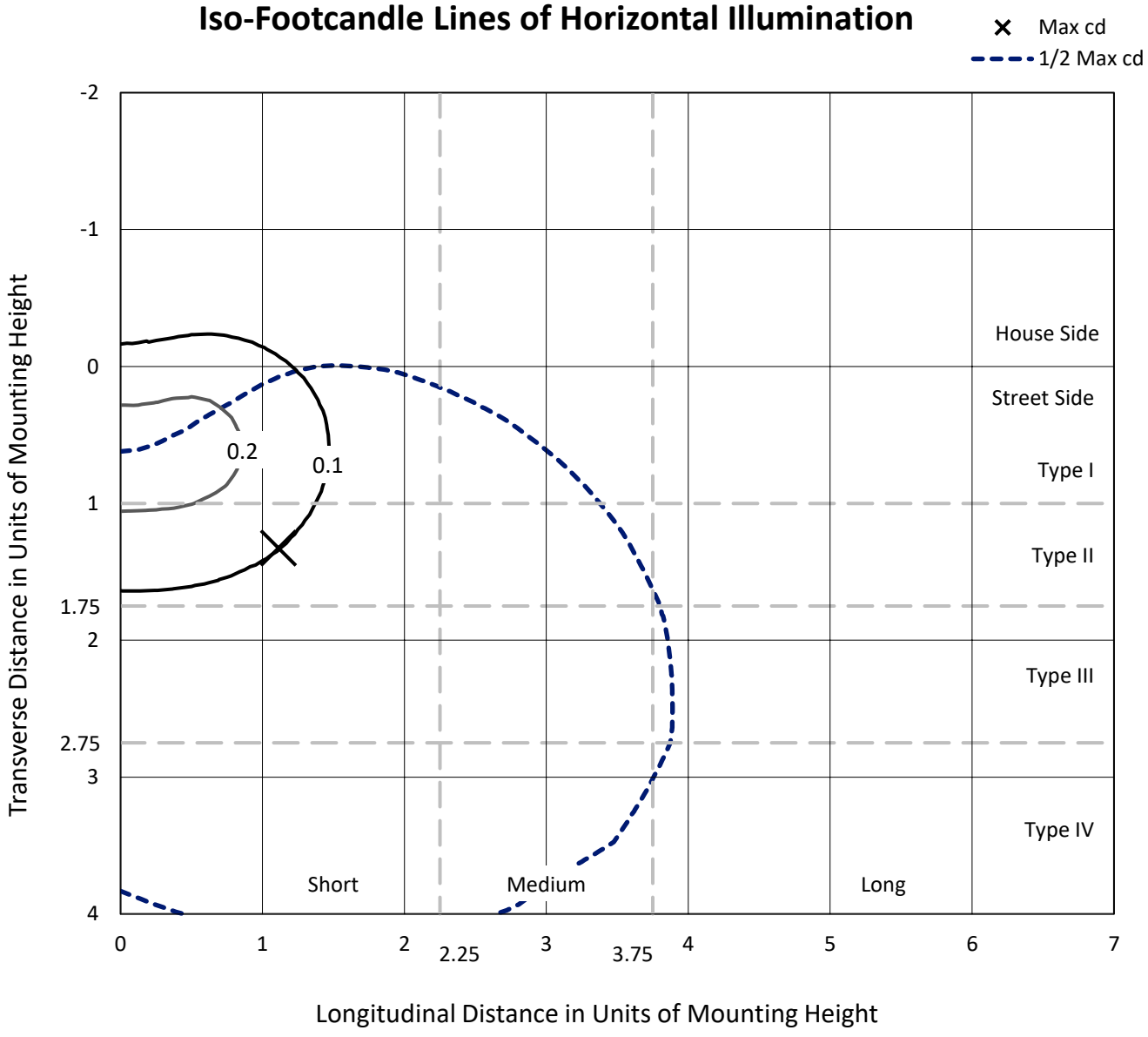
Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 0.2 fc
Type IV - Short - N/A

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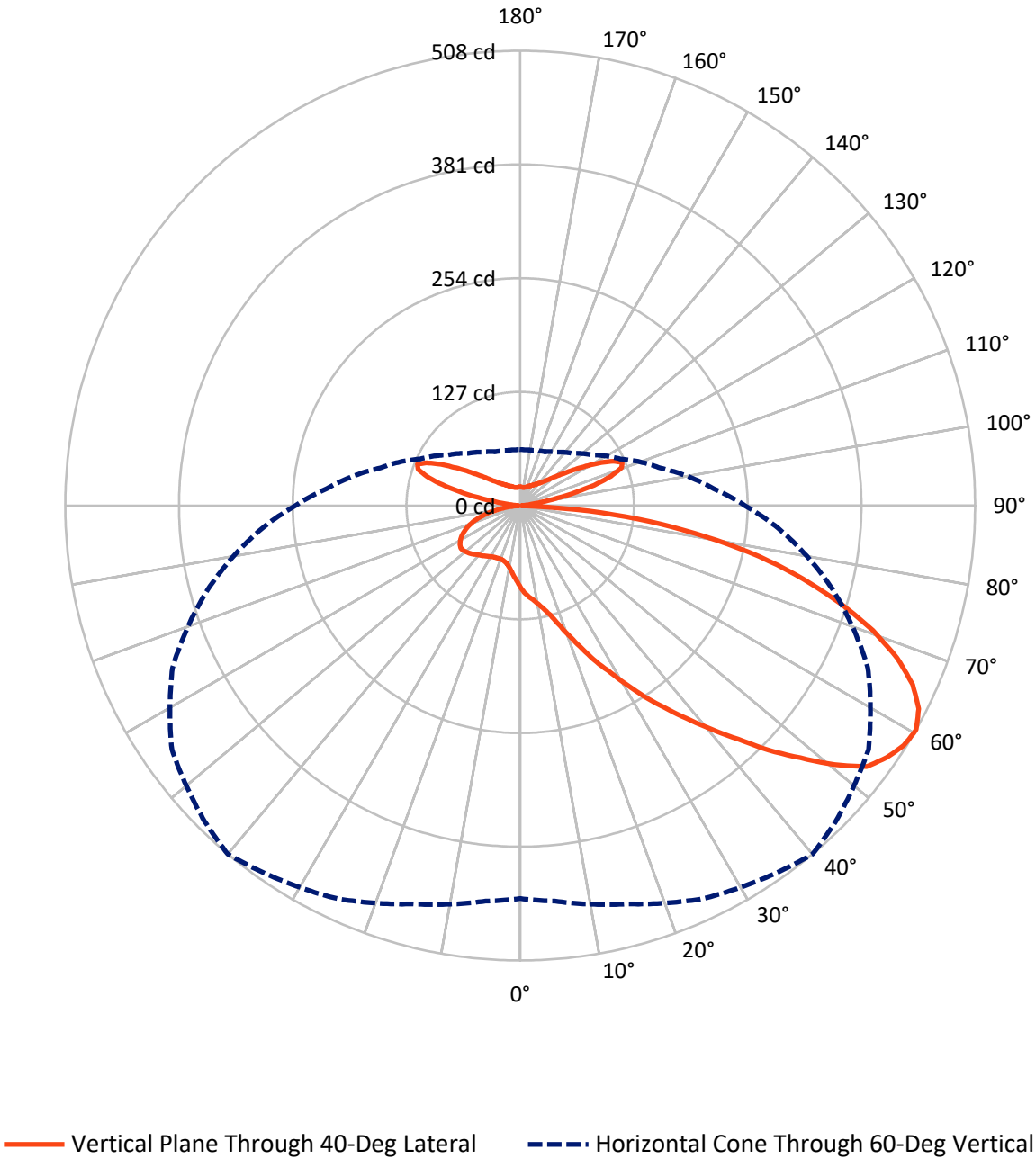
Luminous Intensity Polar Plot



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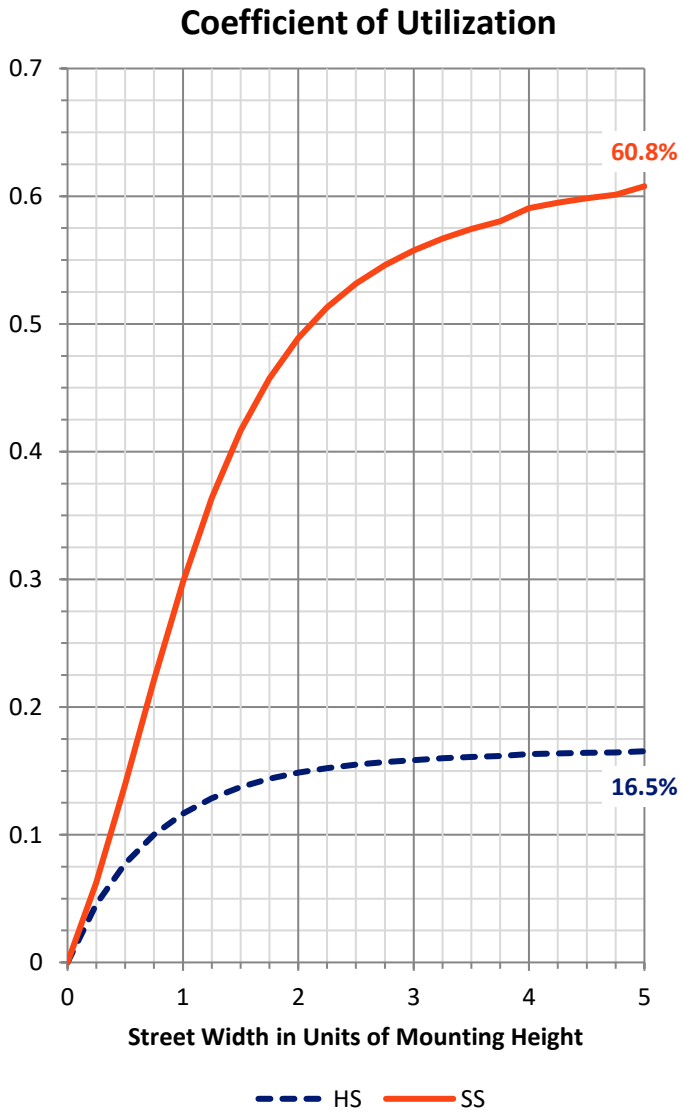
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	232.7	150.2	383.0
	% Fixture	16.7	10.8	27.5
Street Side	Lumens	859.7	150.2	1009.9
	% Fixture	61.7	10.8	72.5
Total	Lumens	1092.4	300.5	1392.9
	% Fixture	78.4	21.6	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	8.7	0.6
10°-20°	27.7	2.0
20°-30°	58.5	4.2
30°-40°	106.9	7.7
40°-50°	173.7	12.5
50°-60°	241.4	17.3
60°-70°	250.2	18.0
70°-80°	179.3	12.9
80°-90°	46.1	3.3
90°-100°	6.7	0.5
100°-110°	68.2	4.9
110°-120°	99.6	7.2
120°-130°	57.8	4.2
130°-140°	30.6	2.2
140°-150°	18.2	1.3
150°-160°	11.2	0.8
160°-170°	6.1	0.4
170°-180°	2.0	0.1
0°-90°	1092.4	78.4
0°-180°	1392.9	100.0



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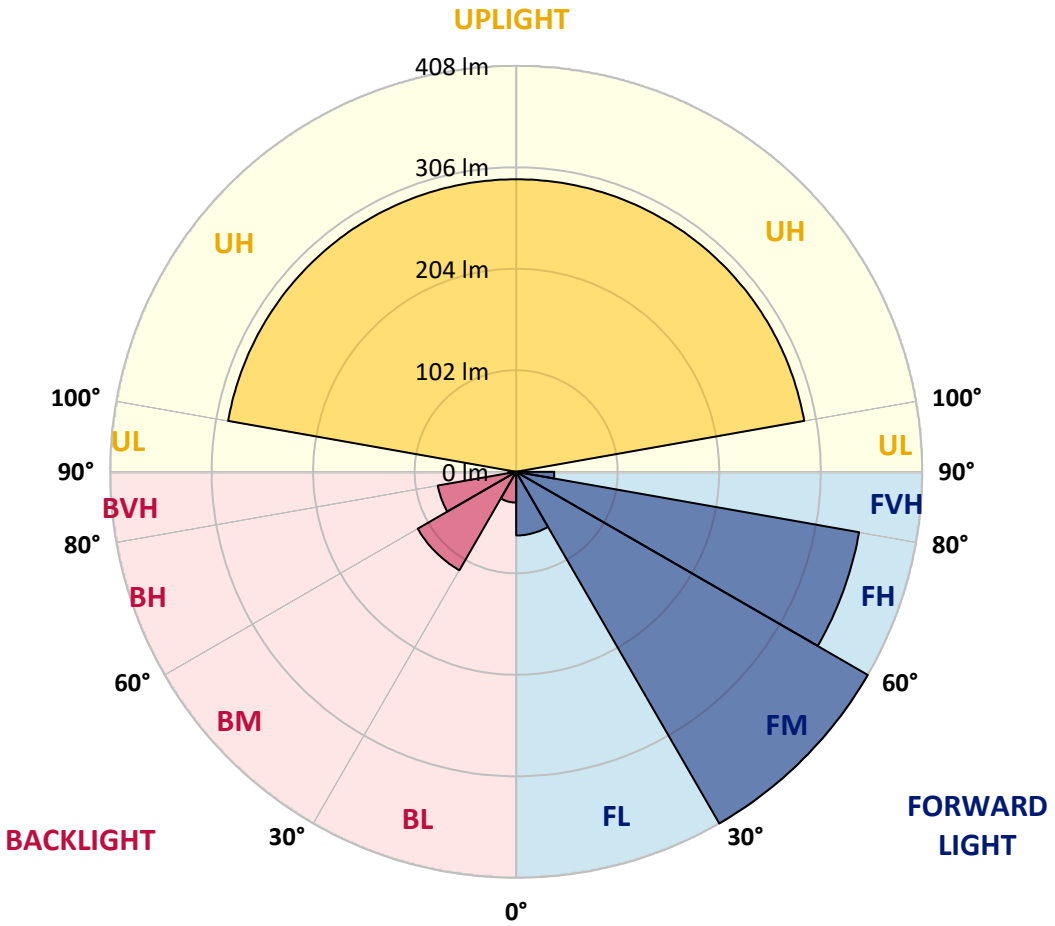
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	63.9	4.6			
FM	(30°-60°)	407.8	29.3			
FH	(60°-80°)	349.7	25.1			G0/660
FVH	(80°-90°)	38.3	2.7			G1/100
BL	(0°-30°)	30.9	2.2	B0/110		
BM	(30°-60°)	114.2	8.2	B0/220		
BH	(60°-80°)	79.8	5.7	B0/110		G0/110
BVH	(80°-90°)	7.8	0.6			G0/10
UL	(90°-100°)	6.7	0.5		U1/10	
UH	(100°-180°)	293.8	21.1		U3/500	

BUG Rating: B0-U3-G1
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	92.0	92.0	92.0	92.0	92.0	*92.0*	92.0	92.0	92.0	92.0	92.0
2.5°	98.6	98.6	98.6	98.6	97.7	*97.7*	96.7	95.8	94.8	93.9	92.0
5°	107.1	107.1	106.2	105.2	103.3	*102.4*	101.5	99.6	97.7	95.8	92.9
7.5°	110.9	110.9	110.9	110.0	107.1	*106.2*	104.3	101.5	98.6	95.8	92.0
10°	117.6	117.6	116.6	115.7	112.8	*111.9*	110.0	106.2	101.5	96.7	92.0
12.5°	126.1	125.2	124.2	123.3	120.4	*118.5*	115.7	111.9	106.2	100.5	94.8
15°	136.5	134.6	134.6	132.7	129.9	*127.1*	125.2	119.5	113.8	106.2	98.6
17.5°	147.9	147.0	146.0	144.1	141.3	*139.4*	136.5	129.9	122.3	112.8	104.3
20°	162.1	160.2	161.2	158.3	155.5	*154.5*	149.8	142.2	132.7	122.3	111.9
22.5°	179.2	177.3	177.3	174.5	172.6	*170.7*	165.9	157.4	145.1	133.7	120.4
25°	198.2	196.3	196.3	194.4	192.5	*190.6*	184.9	175.4	161.2	147.0	131.8
27.5°	219.0	217.1	217.1	216.2	211.4	*208.6*	203.9	193.4	179.2	161.2	143.2
30°	240.8	238.9	240.8	238.9	236.1	*230.4*	224.7	213.3	197.2	177.3	155.5
32.5°	257.9	257.9	258.8	260.7	258.8	*254.1*	247.5	238.0	216.2	191.5	166.9
35°	277.8	277.8	279.7	282.5	281.6	*276.9*	270.2	259.8	237.0	207.6	179.2
37.5°	299.6	299.6	301.5	306.3	304.4	*301.5*	296.8	283.5	257.9	223.8	192.5
40°	323.3	322.4	324.3	330.9	331.9	*328.1*	322.4	309.1	279.7	244.6	206.7
42.5°	347.0	346.1	349.9	356.5	357.5	*356.5*	350.8	335.6	302.5	265.5	220.9
45°	370.7	370.7	376.4	386.8	391.6	*389.7*	384.9	366.0	330.9	287.3	239.9
47.5°	395.4	395.4	403.0	416.2	421.9	*421.0*	419.1	396.3	358.4	310.0	256.0
50°	414.3	414.3	426.7	441.8	451.3	*455.1*	445.6	424.8	382.1	330.0	269.3
52.5°	433.3	433.3	445.6	469.3	478.8	*484.5*	472.2	450.4	408.7	348.0	281.6
55°	442.8	444.7	461.7	484.5	499.7	*496.8*	501.6	472.2	425.7	361.2	289.2
57.5°	443.7	446.6	465.5	489.2	506.3	*505.4*	506.3	479.8	432.4	364.1	290.1
60°	*439.0*	*443.7*	*460.8*	*484.5*	*500.6*	*508.2*	*498.7*	*475.0*	*428.6*	*361.2*	*289.2*
62.5°	427.6	437.1	455.1	473.1	496.8	*499.7*	492.1	472.2	418.1	358.4	284.4
65°	402.0	412.4	438.0	458.9	477.9	*481.7*	473.1	456.1	407.7	345.1	269.3
67.5°	376.4	383.1	404.9	437.1	450.4	*454.2*	451.3	431.4	389.7	318.6	251.3
70°	347.0	355.6	372.6	405.8	419.1	*418.1*	426.7	403.9	362.2	295.8	232.3
72.5°	307.2	319.5	336.6	364.1	380.2	*374.5*	387.8	368.8	326.2	267.4	206.7
75°	260.7	271.2	293.0	314.8	332.8	*326.2*	336.6	323.3	284.4	233.2	177.3
77.5°	208.6	220.9	240.8	260.7	273.1	*273.1*	277.8	266.4	236.1	191.5	145.1
80°	154.5	165.9	183.9	198.2	209.5	*210.5*	215.2	209.5	182.0	148.9	110.9
82.5°	102.4	108.1	124.2	135.6	147.0	*146.0*	153.6	149.8	127.1	102.4	74.0
85°	43.6	47.4	60.7	70.2	80.6	*76.8*	87.2	86.3	68.3	49.3	33.2
87.5°	1.9	2.8	2.8	1.9	2.8	*0.9*	2.8	3.8	2.8	1.9	1.9
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

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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

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0
2.5°	92.0	91.0	89.1	88.2	87.2	85.3	85.3	84.4	84.4	84.4	83.4
5°	92.0	90.1	88.2	85.3	83.4	81.5	79.6	77.7	76.8	76.8	75.9
7.5°	90.1	88.2	85.3	82.5	79.6	75.9	74.0	70.2	69.2	68.3	68.3
10°	90.1	88.2	83.4	79.6	75.9	72.1	69.2	65.4	62.6	61.6	61.6
12.5°	91.0	88.2	83.4	78.7	74.0	69.2	65.4	61.6	58.8	56.9	56.9
15°	94.8	91.0	85.3	78.7	73.0	67.3	63.5	58.8	55.9	54.0	54.0
17.5°	99.6	95.8	87.2	79.6	73.0	66.4	61.6	56.9	54.0	52.1	51.2
20°	106.2	100.5	91.0	80.6	73.0	66.4	60.7	55.9	52.1	50.3	50.3
22.5°	113.8	107.1	94.8	82.5	74.0	66.4	60.7	55.0	51.2	49.3	49.3
25°	123.3	114.7	100.5	86.3	75.9	67.3	60.7	55.0	51.2	49.3	49.3
27.5°	133.7	124.2	106.2	90.1	77.7	68.3	60.7	55.0	51.2	49.3	49.3
30°	143.2	132.7	111.9	93.9	80.6	69.2	61.6	55.9	52.1	50.3	49.3
32.5°	153.6	140.3	117.6	97.7	82.5	71.1	62.6	56.9	52.1	50.3	50.3
35°	164.0	149.8	123.3	102.4	85.3	73.0	63.5	57.8	53.1	51.2	51.2
37.5°	175.4	160.2	129.9	106.2	88.2	74.9	65.4	58.8	54.0	52.1	52.1
40°	188.7	170.7	136.5	110.9	91.0	76.8	66.4	60.7	55.9	54.0	54.0
42.5°	201.0	180.1	143.2	114.7	93.9	78.7	68.3	61.6	57.8	55.9	55.9
45°	213.3	191.5	149.8	119.5	96.7	81.5	70.2	64.5	59.7	57.8	57.8
47.5°	227.6	202.0	157.4	123.3	99.6	83.4	72.1	66.4	61.6	60.7	59.7
50°	238.9	209.5	162.1	127.1	101.5	85.3	74.0	67.3	63.5	61.6	61.6
52.5°	249.4	217.1	165.9	128.9	102.4	86.3	75.9	69.2	65.4	63.5	63.5
55°	255.1	220.0	168.8	128.9	103.3	87.2	75.9	69.2	65.4	64.5	63.5
57.5°	255.1	220.0	166.9	127.1	101.5	85.3	74.9	68.3	65.4	63.5	63.5
60°	*251.3*	*217.1*	*162.1*	*123.3*	*98.6*	*82.5*	*73.0*	*66.4*	*63.5*	*62.6*	*62.6*
62.5°	245.6	212.4	158.3	118.5	94.8	78.7	70.2	63.5	61.6	61.6	60.7
65°	230.4	198.2	149.8	111.9	89.1	74.0	66.4	60.7	58.8	57.8	56.9
67.5°	214.3	184.9	136.5	104.3	81.5	69.2	61.6	56.9	54.0	54.0	53.1
70°	198.2	170.7	124.2	93.9	73.0	63.5	55.9	51.2	49.3	49.3	49.3
72.5°	176.4	152.7	110.0	82.5	64.5	55.9	50.3	45.5	44.6	44.6	43.6
75°	150.8	129.9	92.9	70.2	54.0	47.4	42.7	37.9	37.9	37.9	37.9
77.5°	123.3	105.2	74.0	55.9	42.7	37.9	35.1	31.3	31.3	31.3	31.3
80°	92.9	77.7	54.0	40.8	31.3	27.5	25.6	23.7	24.7	24.7	23.7
82.5°	60.7	51.2	34.1	25.6	19.9	18.0	18.0	16.1	17.1	17.1	17.1
85°	26.5	22.8	14.2	11.4	9.5	9.5	9.5	8.5	9.5	9.5	9.5
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.9	1.9	0.9
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: P832807
CATALOG NUMBER: TTN-D0-735-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

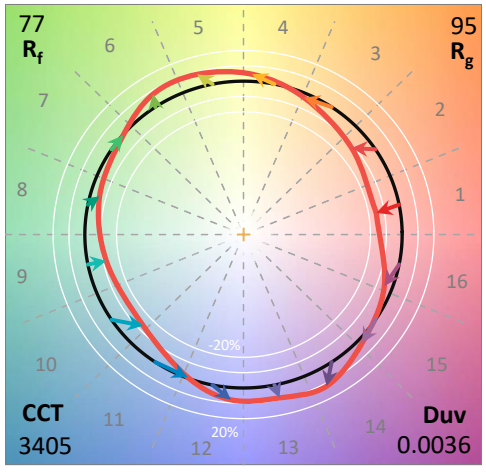
Test Information

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

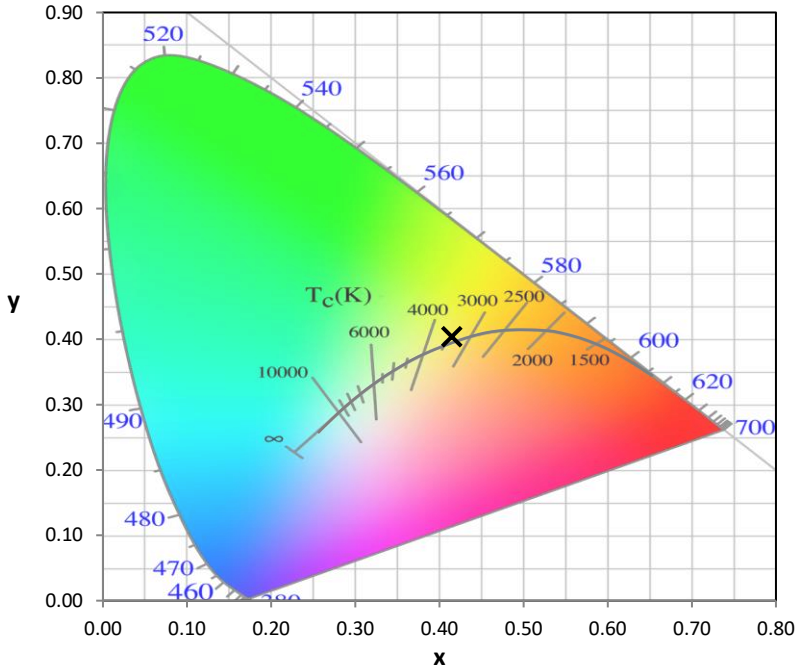
Stabilization Time:	38M
Operation Time:	1H 38M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-1

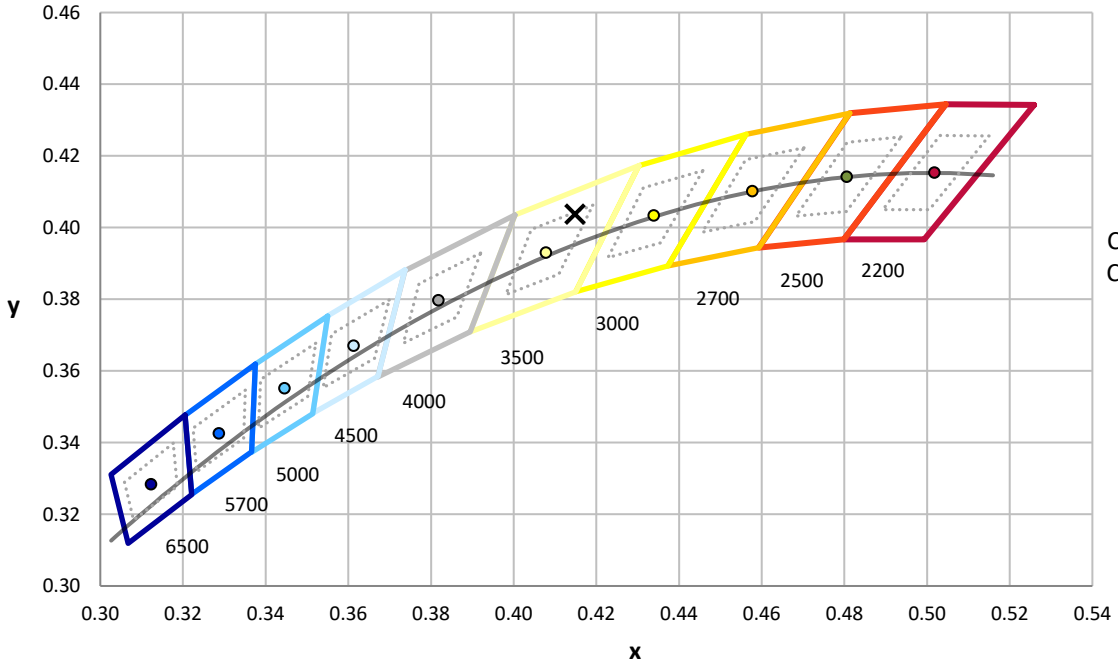
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

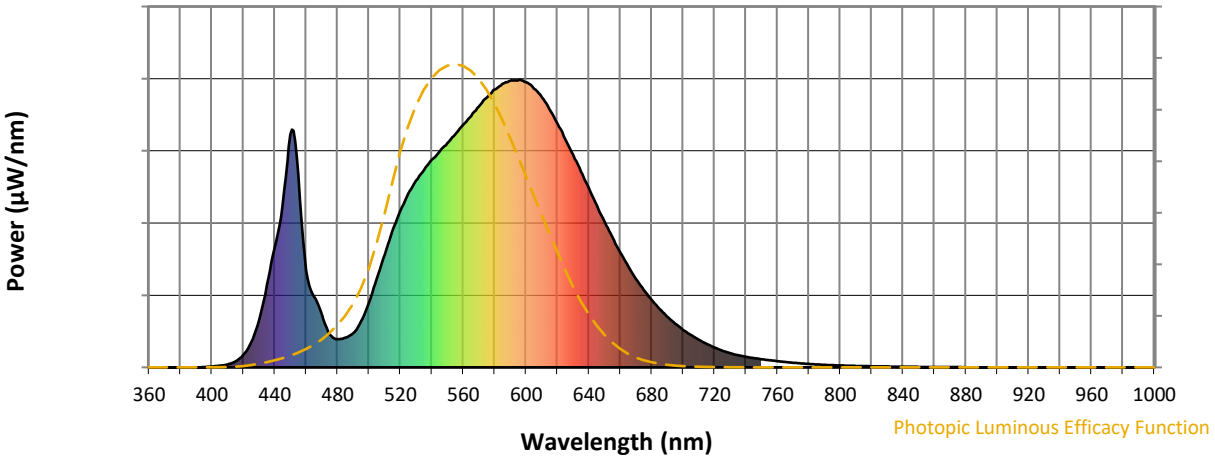


CCT = 3405K
CIE x = 0.4148
CIE y = 0.4038
Duv = 0.0036

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-1

Photopic Flux vs. Wavelength

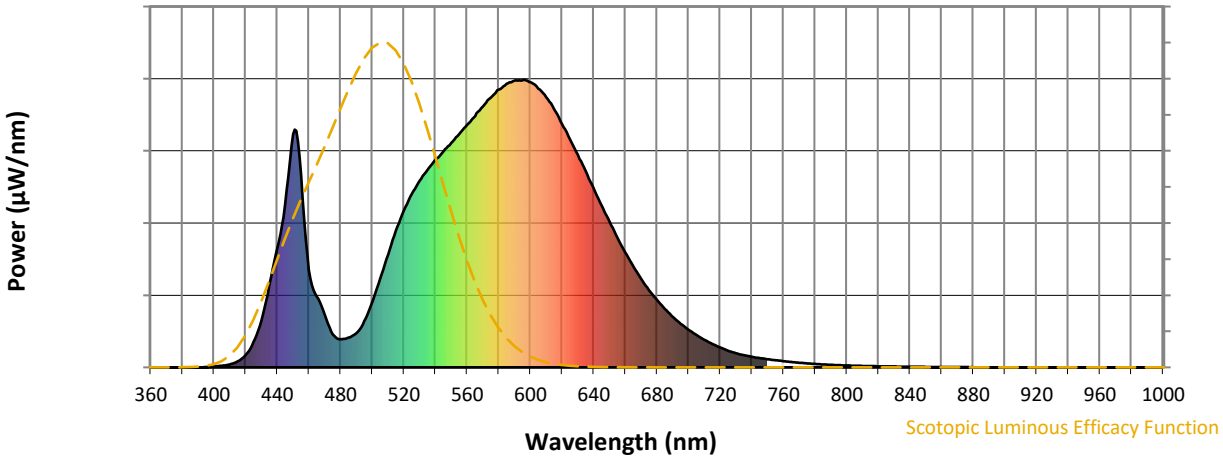


Photopic Lumens: NR

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

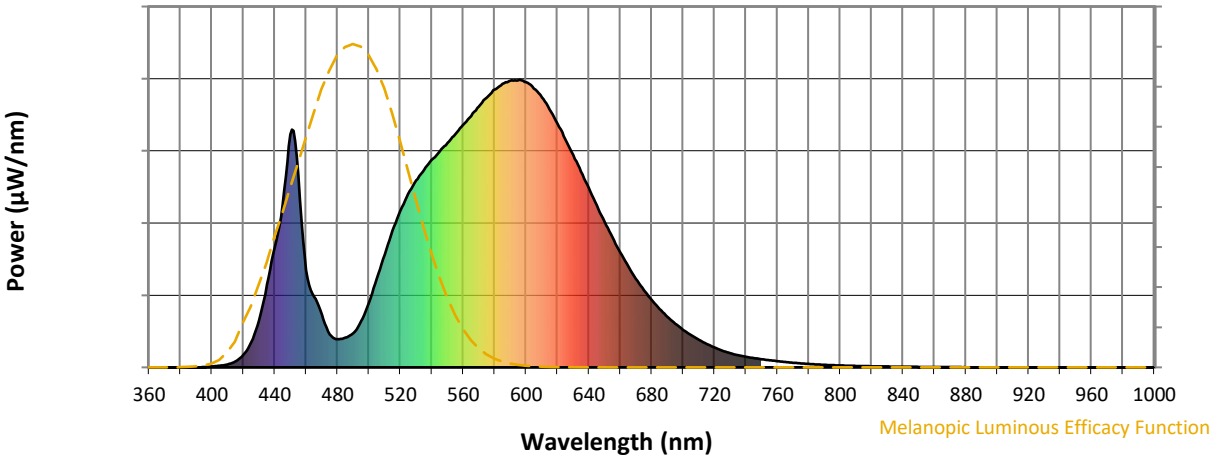


Scotopic Lumens: NR **S/P: 1.33**

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			

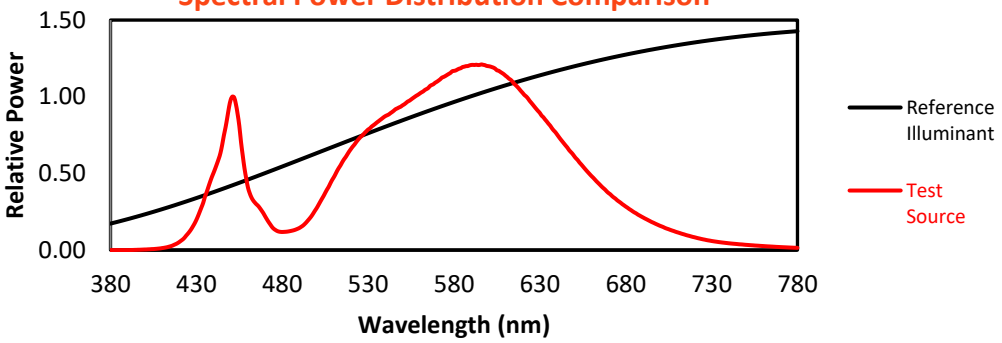
REPORT NUMBER: SP1-2411-284-1

TM-30-18

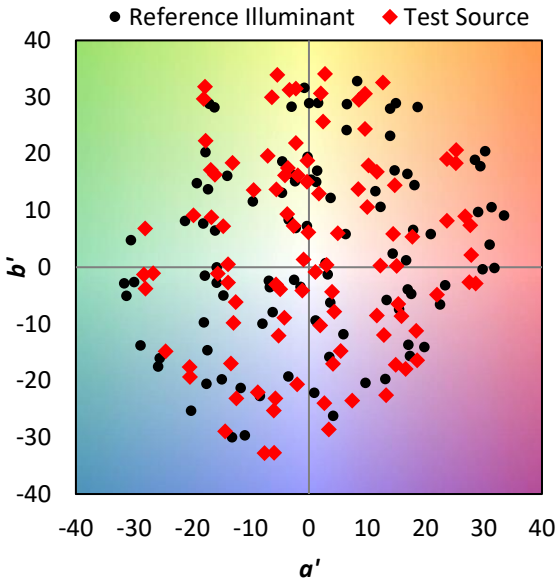
Summary

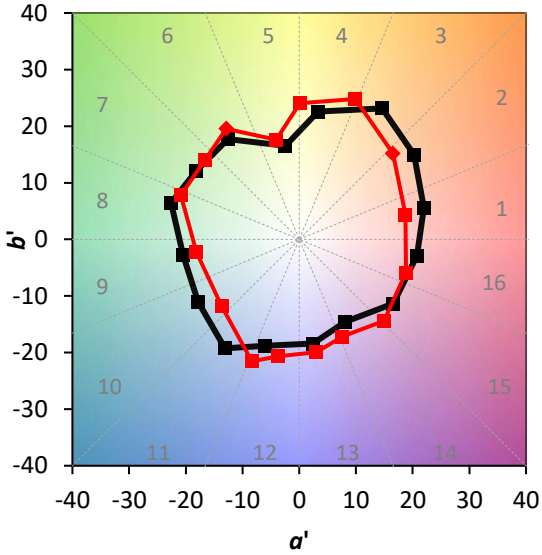
R_f = 76.6
R_g = 95.4
CIE R_a = 73.9
R_9 = -18.0

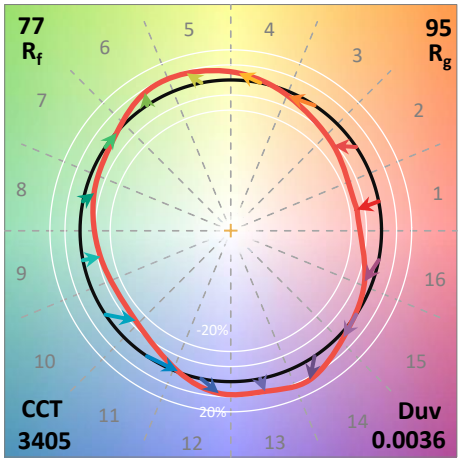
Spectral Power Distribution Comparison

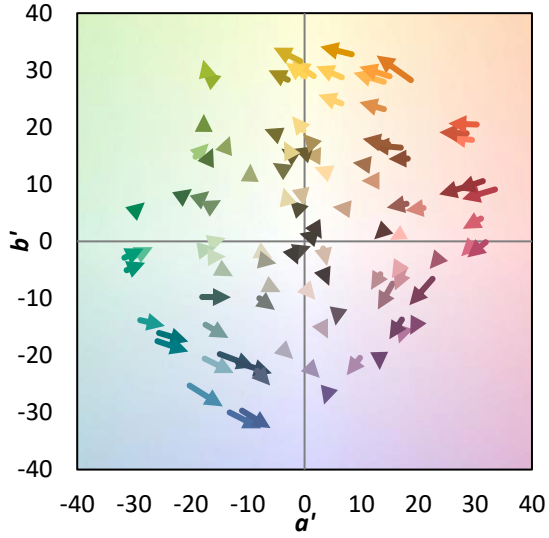


Color Vector Graphics







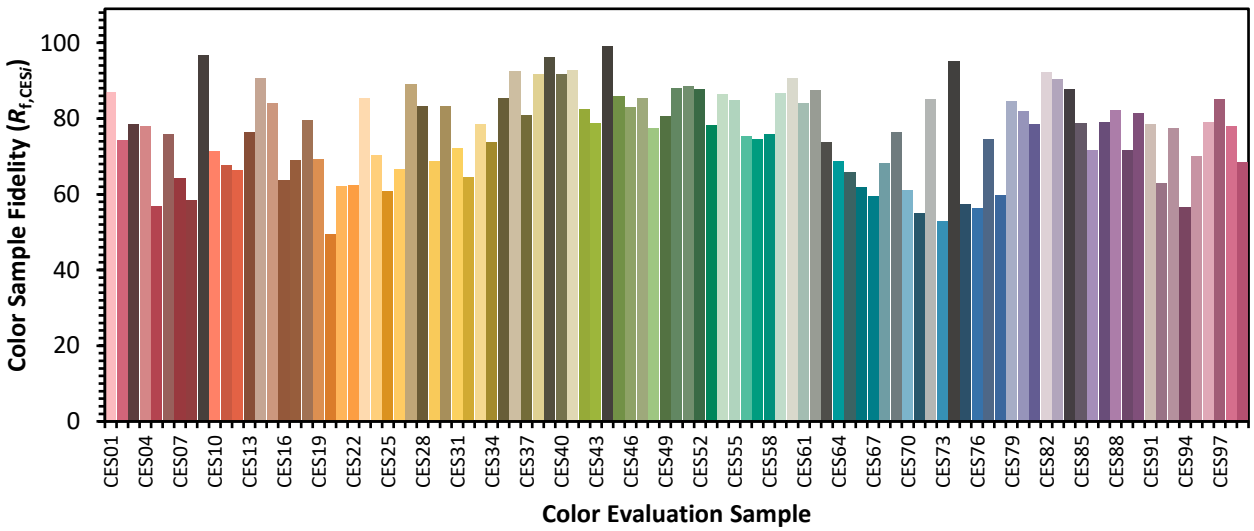


REPORT NUMBER: SP1-2411-284-1

TM-30-18

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

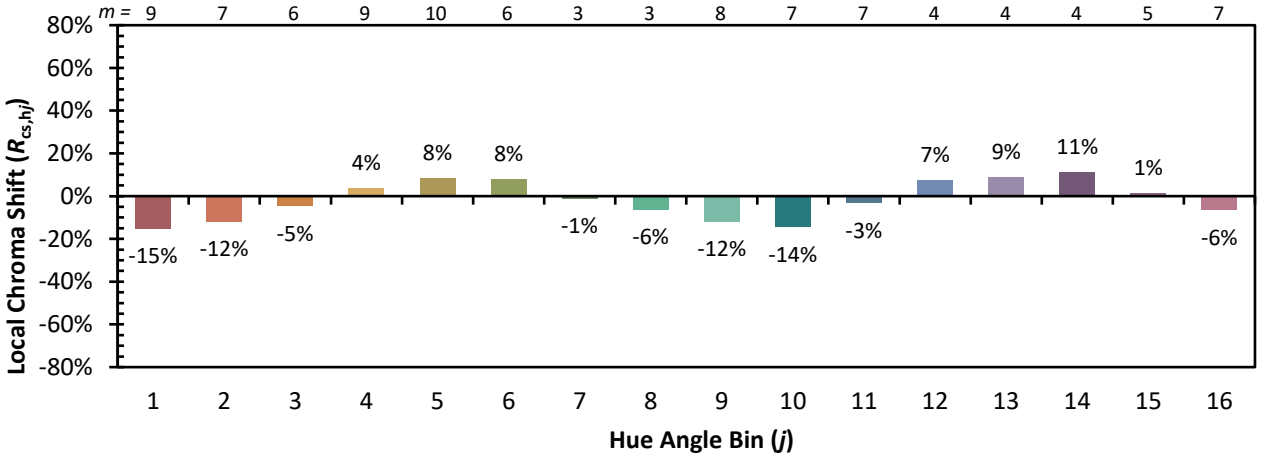
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 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	

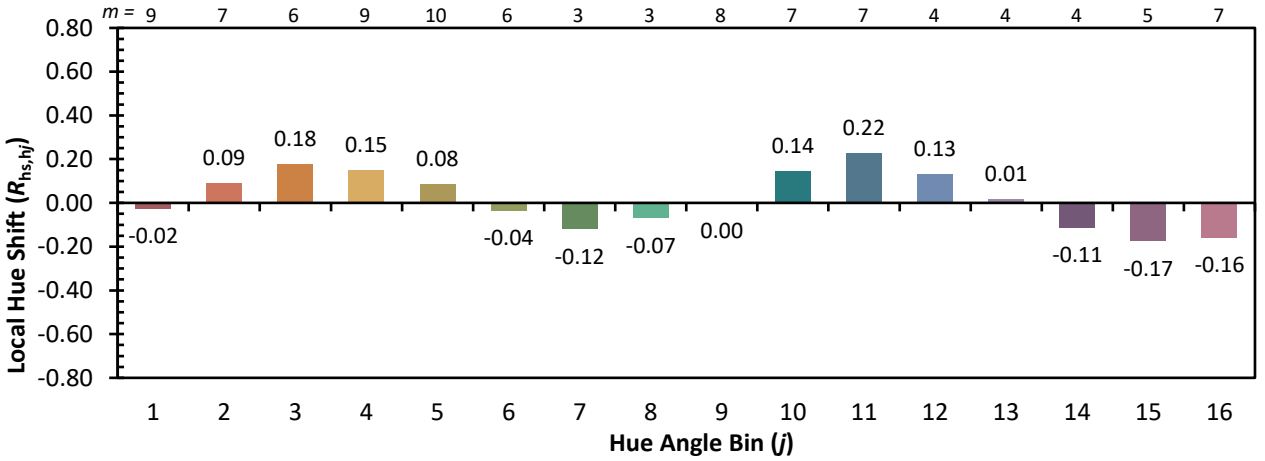


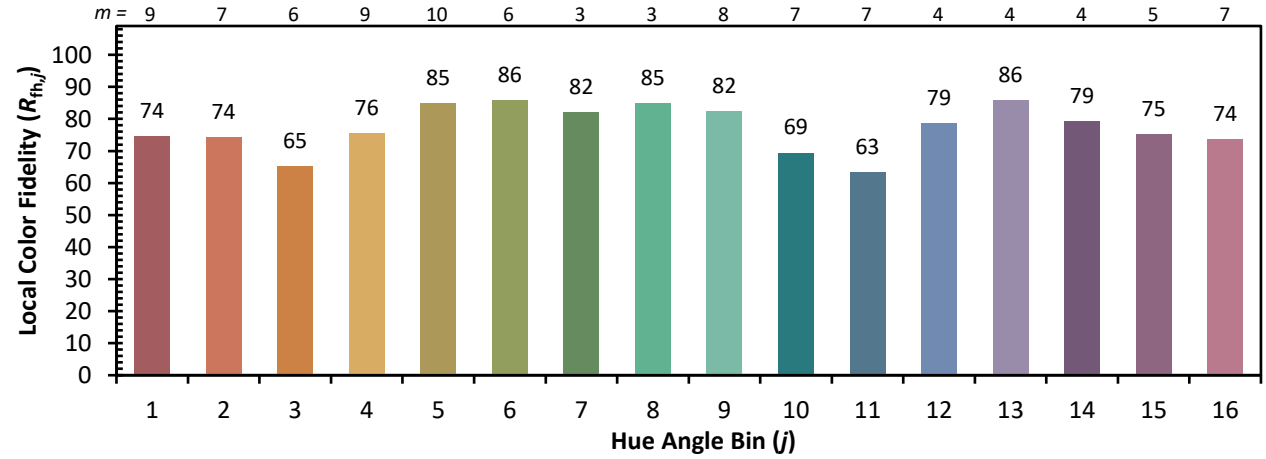
REPORT NUMBER: SP1-2411-284-1

TM-30-18

Color Rendition by Hue-Angle Bin







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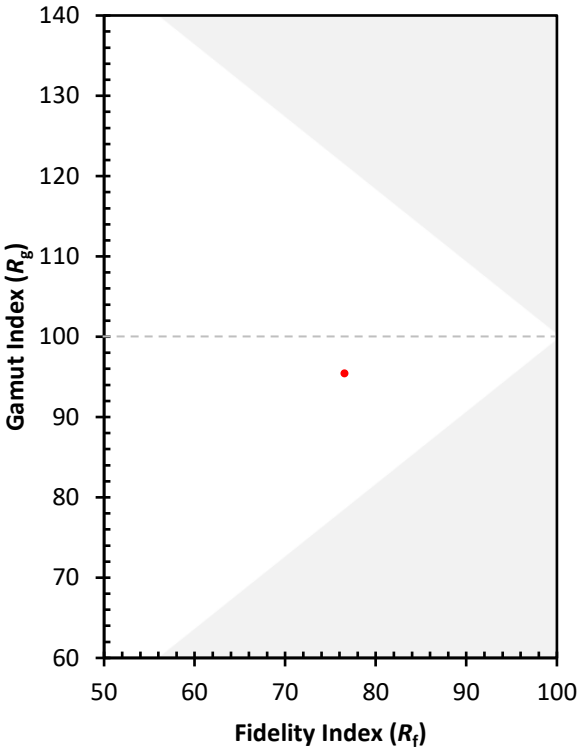
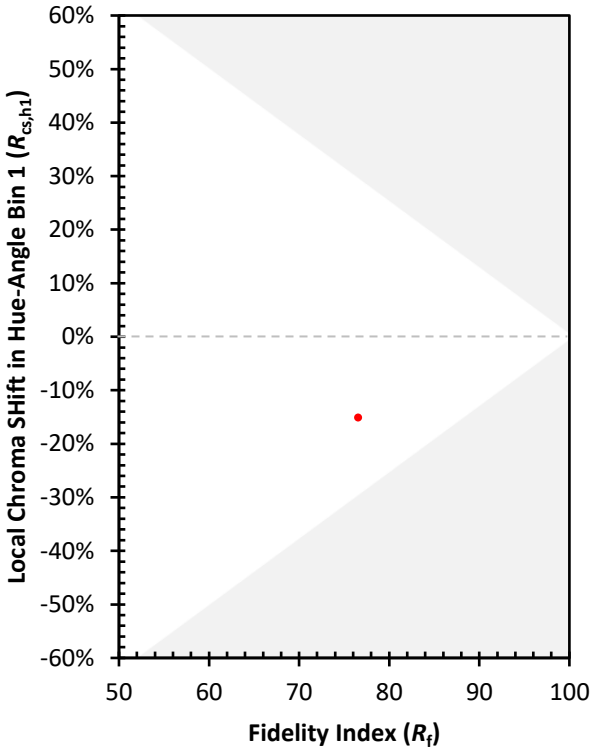
Measure Comparisons





(END OF REPORT)