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: P821435

Luminaire Tested: **TT-D1-830-12VDC-RW-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P821435
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-5)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D1-830-12VDC-RW-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3000K, 80 CRI LEDS AND RECTANGULAR DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2176.9 lumens
Efficiency:	N/A
Efficacy:	77.7 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U1 - G2

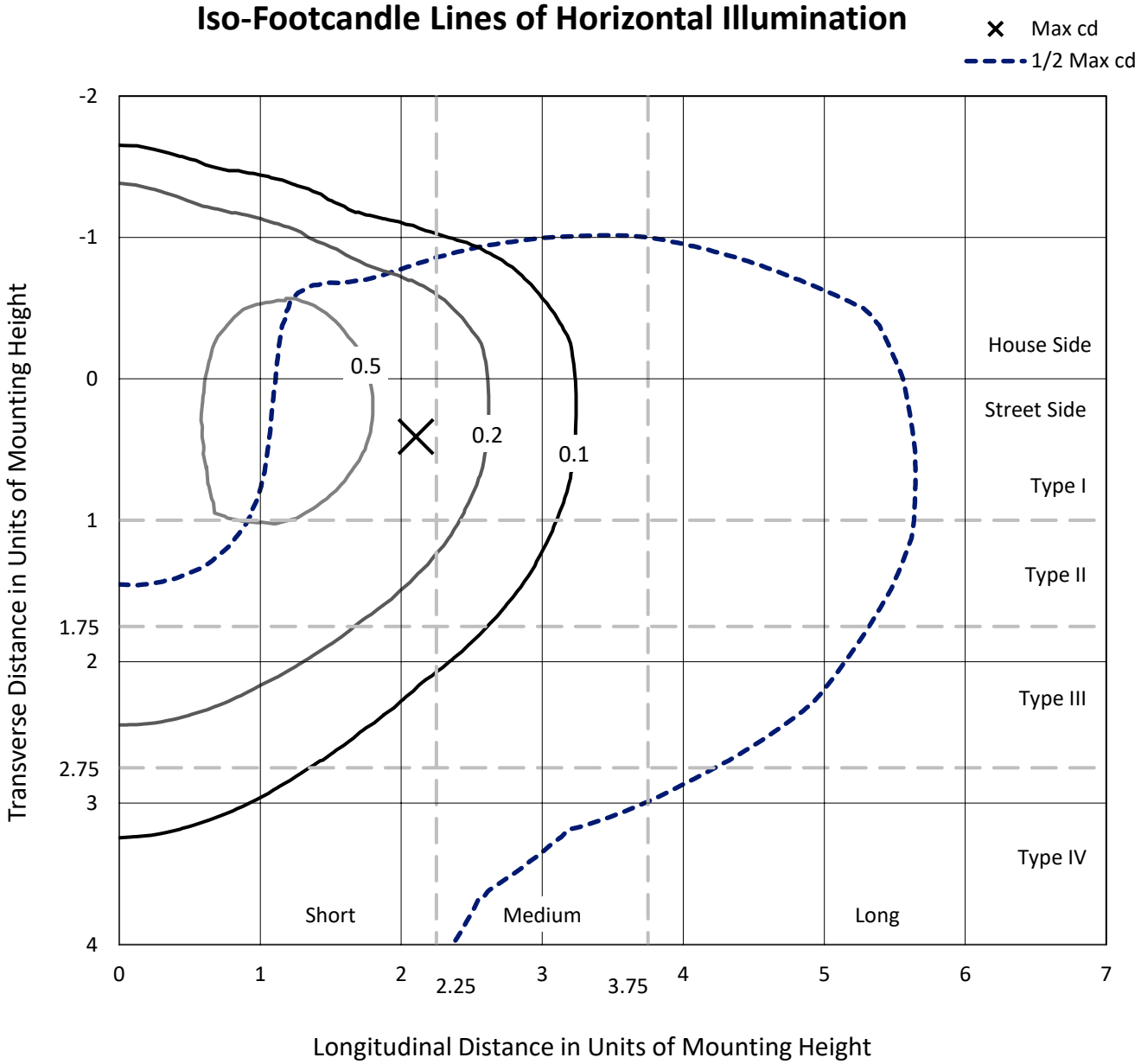
Input Watts (W):	28
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



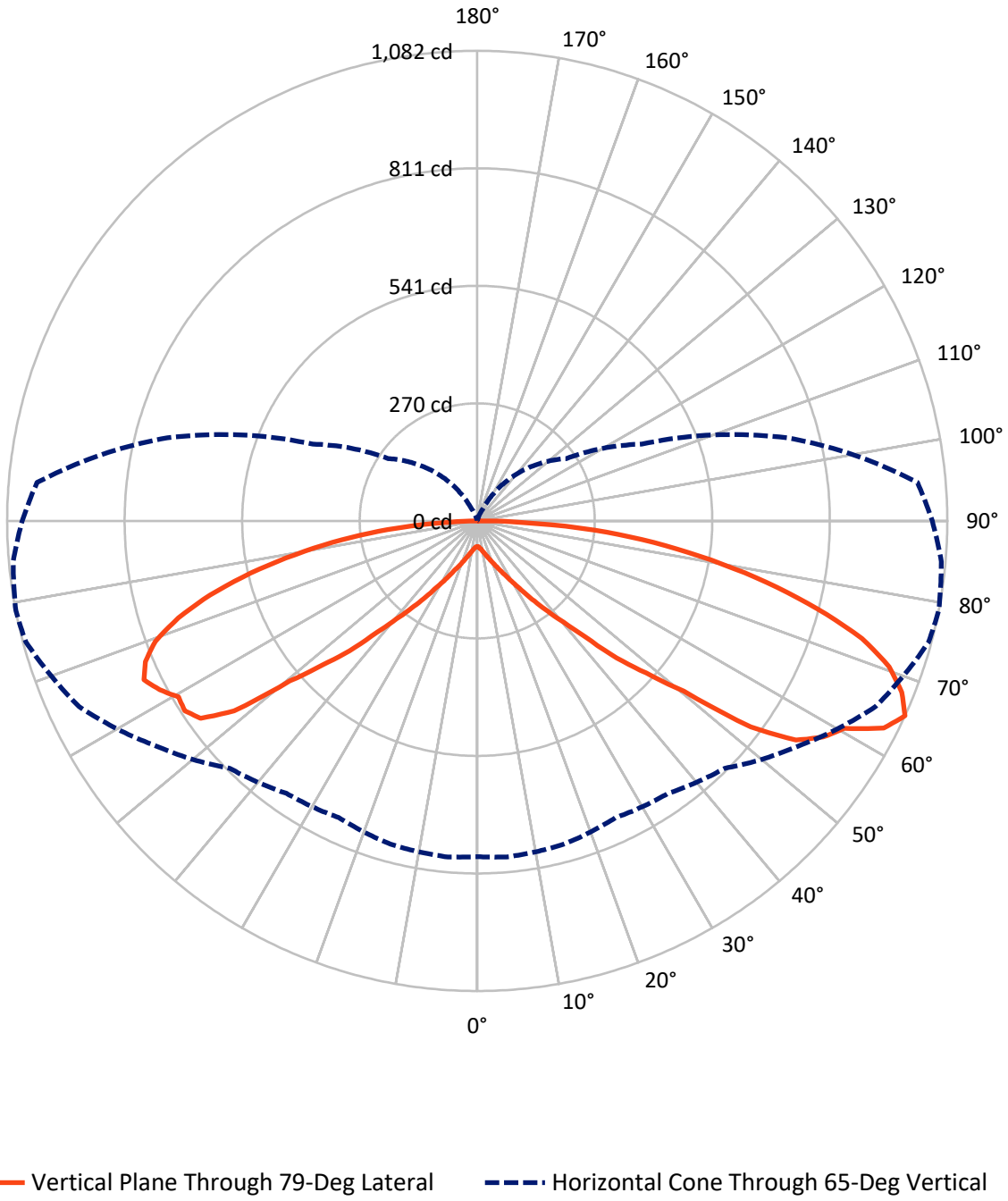
Based on 15 foot mounting height. Maximum calculated value = 0.8 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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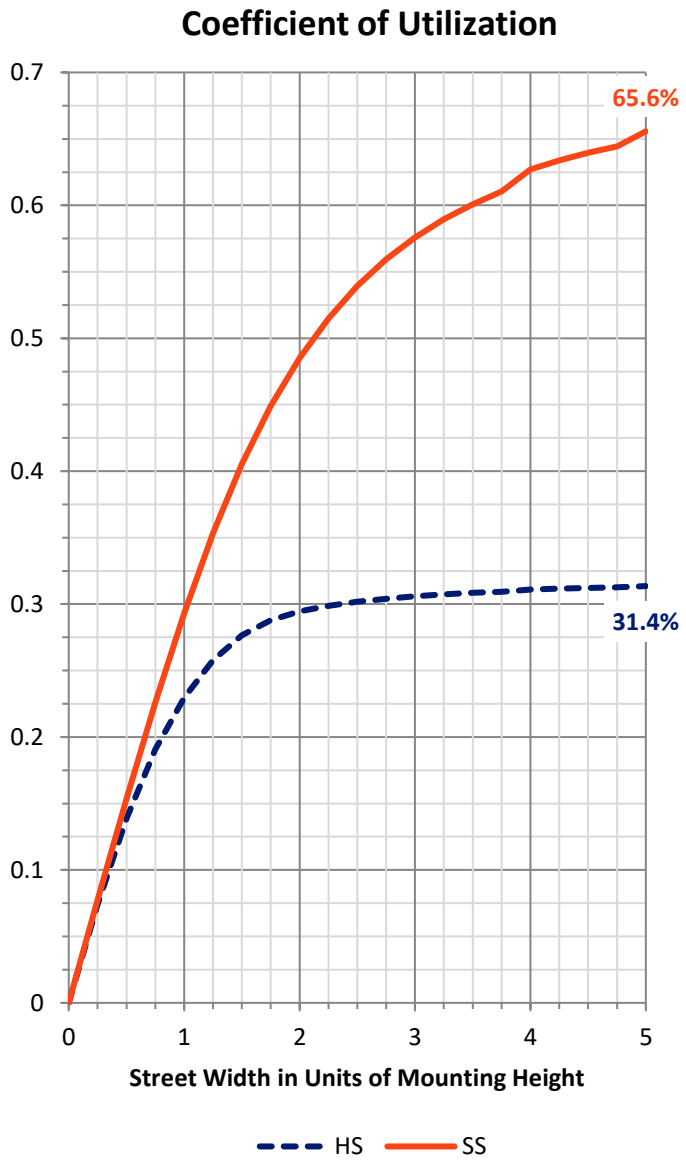
REPORT NUMBER: P821435
CATALOG NUMBER: TT-D1-830-12VDC-RW-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	687.5	0.8	688.3
	% Fixture	31.6	0.0	31.6
Street Side	Lumens	1479.1	9.6	1488.6
	% Fixture	67.9	0.4	68.4
Total	Lumens	2166.5	10.4	2176.9
	% Fixture	99.5	0.5	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	6.2	0.3
10°-20°	23.4	1.1
20°-30°	54.1	2.5
30°-40°	115.9	5.3
40°-50°	248.2	11.4
50°-60°	468.8	21.5
60°-70°	582.6	26.8
70°-80°	498.7	22.9
80°-90°	168.7	7.7
90°-100°	7.3	0.3
100°-110°	2.1	0.1
110°-120°	0.4	0.0
120°-130°	0.2	0.0
130°-140°	0.1	0.0
140°-150°	0.1	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	2166.5	99.5
0°-180°	2176.9	100.0



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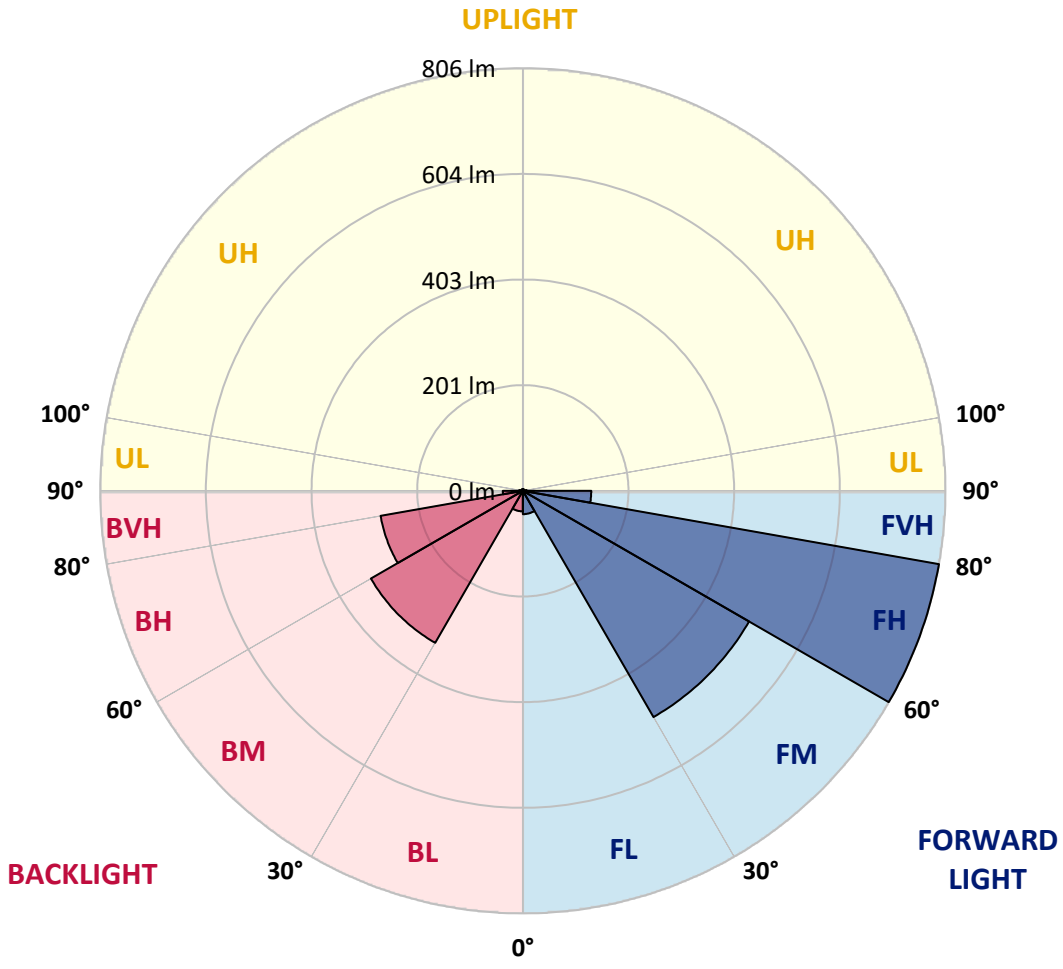
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	44.5	2.0			
FM	(30°-60°)	498.2	22.9			
FH	(60°-80°)	805.8	37.0			G1/1800
FVH	(80°-90°)	130.5	6.0			G2/225
BL	(0°-30°)	39.2	1.8	B0/110		
BM	(30°-60°)	334.6	15.4	B1/1000		
BH	(60°-80°)	275.4	12.7	B1/500		G1/500
BVH	(80°-90°)	38.2	1.8			G1/100
UL	(90°-100°)	7.3	0.3		U1/10	
UH	(100°-180°)	3.1	0.1		U1/10	

BUG Rating: B1-U1-G2
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	*59.1*	59.1
2.5°	62.4	62.4	62.4	61.8	61.8	61.8	61.3	60.8	60.2	*60.2*	60.2
5°	65.6	65.6	65.6	65.6	65.1	64.6	64.0	63.5	62.9	*62.9*	62.4
7.5°	70.0	69.4	70.0	69.4	69.4	68.9	68.4	67.8	66.7	*66.7*	66.2
10°	74.3	74.3	74.3	74.3	74.3	73.8	73.2	72.7	72.1	*71.6*	71.1
12.5°	79.7	79.7	79.7	79.2	79.7	79.2	78.7	78.7	78.1	*77.0*	77.0
15°	85.2	85.2	85.2	85.2	85.7	85.7	85.7	85.2	85.2	*84.6*	84.1
17.5°	91.7	91.1	91.7	91.7	92.2	92.8	93.3	93.8	93.8	*93.3*	93.3
20°	98.7	98.2	98.7	98.7	99.8	100.9	102.5	103.6	104.2	*103.1*	103.1
22.5°	106.3	105.8	106.9	106.9	108.5	110.1	112.8	113.9	115.5	*115.0*	115.0
25°	115.5	115.0	115.5	116.1	118.3	121.0	124.2	126.9	128.6	*128.6*	129.1
27.5°	125.9	125.9	126.4	126.9	129.1	133.4	138.3	143.2	147.0	*146.5*	147.0
30°	140.0	140.0	141.0	141.6	144.3	149.2	155.7	162.2	167.6	*167.6*	168.7
32.5°	155.7	155.1	156.8	157.3	160.0	166.5	175.8	186.1	193.1	*193.1*	194.2
35°	174.7	174.1	175.8	175.8	179.0	188.2	200.2	214.3	226.2	*226.8*	228.4
37.5°	198.5	197.5	197.5	199.1	202.9	214.8	231.1	250.6	263.1	*264.2*	266.9
40°	226.8	226.2	227.3	226.8	231.6	246.3	266.9	289.7	304.3	*307.0*	310.3
42.5°	261.5	262.6	260.9	260.9	266.9	283.7	308.1	334.7	361.3	*364.5*	366.2
45°	303.8	306.0	303.8	303.2	308.7	328.2	361.8	408.5	439.4	*450.2*	453.5
47.5°	354.8	355.9	353.1	352.1	358.0	383.0	426.4	478.5	514.8	*522.9*	531.6
50°	411.7	410.1	407.9	406.3	417.7	448.6	499.1	552.8	615.2	*616.2*	619.5
52.5°	470.3	465.4	466.0	465.4	481.2	514.8	582.1	673.2	768.1	*787.7*	789.8
55°	528.9	522.9	522.4	527.8	550.1	598.3	683.0	801.2	878.3	*890.2*	888.6
57.5°	587.5	584.8	583.7	588.6	621.1	678.6	774.1	873.9	939.6	*938.5*	927.1
60°	648.2	650.4	646.6	655.8	689.5	747.0	816.4	913.5	974.3	*969.4*	958.0
62.5°	710.6	716.1	712.3	713.3	735.0	777.4	845.7	958.5	1042.6	*1049.7*	1036.7
65°	*772.5*	*776.3*	*770.3*	*753.5*	*765.4*	*805.0*	*902.7*	*1011.2*	*1075.2*	*1081.7*	*1071.9*
67.5°	824.6	828.3	807.7	781.2	782.8	811.5	897.2	1000.9	1057.8	*1053.5*	1037.7
70°	869.0	862.0	828.3	782.8	763.8	777.4	858.2	949.9	1007.9	*1005.7*	987.3
72.5°	883.7	874.5	817.5	747.0	709.5	714.4	793.1	875.0	922.2	*926.0*	903.8
75°	860.4	844.6	766.5	678.1	629.8	633.1	700.3	775.7	813.7	*809.4*	792.0
77.5°	776.3	760.5	675.9	581.5	534.3	539.2	592.4	651.5	683.0	*681.3*	669.4
80°	644.5	630.3	556.0	468.1	425.3	428.0	468.7	515.3	539.8	*545.2*	538.7
82.5°	476.3	466.5	413.9	342.8	308.1	307.6	338.5	374.3	398.2	*409.6*	405.2
85°	294.6	289.7	260.4	214.3	189.9	189.3	207.8	234.3	256.0	*271.2*	261.5
87.5°	117.2	115.5	106.9	86.3	75.4	71.6	67.3	84.1	85.7	*101.4*	100.9
90°	28.8	28.2	27.7	26.0	23.3	20.1	16.3	11.9	7.6	*6.0*	3.3
92.5°	25.5	25.5	25.0	23.3	21.2	17.9	14.6	10.8	7.1	*5.4*	2.7
95°	20.6	20.6	20.1	19.0	16.8	14.6	11.4	8.7	5.4	*4.3*	2.2
97.5°	15.7	15.2	15.2	14.1	13.0	10.8	8.7	6.5	4.3	*3.3*	1.6
100°	11.4	11.4	10.8	10.3	9.2	8.1	6.5	4.9	2.7	*2.2*	1.1
102.5°	8.1	7.6	7.6	7.6	6.5	5.4	4.3	3.3	2.2	*1.6*	0.5
105°	5.4	4.9	4.9	4.9	4.3	3.8	2.7	2.2	1.1	*1.1*	0.5
107.5°	3.3	3.3	3.3	3.3	2.7	2.2	1.6	1.1	0.5	*0.5*	0.5
110°	1.6	1.6	1.6	2.2	1.6	1.6	1.1	0.5	0.5	*0.5*	0.5

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
112.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	*0.5*	0.5
115°	0.5	0.5	0.5	1.1	1.1	0.5	0.5	0.0	0.0	*0.5*	0.5
117.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
120°	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
122.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
125°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
127.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
130°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
132.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	*0.0*	0.5
135°	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
137.5°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
140°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
142.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	*0.0*	0.0
145°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	*0.0*	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	*0.0*	0.0
150°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
157.5°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
160°	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	*0.0*	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0
177.5°	0.0	0.0	0.0	0.5	0.0	0.5	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

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1
2.5°	59.7	59.7	59.7	59.1	59.1	59.1	58.6	58.6	58.0	58.0	58.0
5°	61.8	61.8	61.3	61.3	60.8	60.2	60.2	59.7	59.7	59.1	59.1
7.5°	65.6	65.6	65.1	64.6	63.5	62.9	62.4	61.8	61.8	61.3	61.3
10°	70.5	70.5	69.4	68.4	67.3	66.2	65.6	64.6	64.0	64.0	64.0
12.5°	76.5	75.9	74.9	73.2	72.1	70.5	69.4	68.4	67.3	67.3	67.3
15°	83.5	83.5	81.4	79.7	77.6	75.4	73.8	72.1	71.1	70.5	70.5
17.5°	92.2	92.2	89.5	86.8	84.1	81.4	79.2	77.0	75.9	75.4	75.4
20°	102.0	102.0	99.3	96.0	92.2	88.4	85.2	82.5	80.8	80.3	80.3
22.5°	113.9	113.9	110.1	105.8	100.9	95.5	91.1	87.9	86.3	85.2	85.2
25°	127.5	126.4	122.6	117.2	110.1	103.6	97.6	94.4	92.2	90.6	91.1
27.5°	145.9	144.3	139.4	130.2	121.5	112.8	105.8	101.4	98.7	97.6	98.2
30°	167.1	165.5	158.4	148.1	135.1	123.7	115.0	110.1	107.4	105.8	106.3
32.5°	192.6	190.4	181.7	167.6	152.4	136.2	125.3	119.3	116.6	115.0	114.5
35°	226.2	223.5	212.6	193.1	172.0	152.4	137.2	129.6	126.9	125.3	125.9
37.5°	264.2	260.4	245.7	221.9	195.3	170.3	153.0	143.2	140.0	137.2	137.2
40°	307.6	303.2	284.3	252.8	220.8	189.9	167.6	156.8	153.0	153.0	153.0
42.5°	361.8	357.5	335.8	289.7	247.4	211.0	184.4	172.0	168.2	169.3	169.3
45°	445.9	439.9	405.2	344.5	282.1	232.7	201.8	187.7	185.0	187.7	187.7
47.5°	522.9	515.3	464.4	395.5	316.3	254.4	219.2	202.9	201.8	207.8	207.8
50°	609.2	599.4	545.7	436.7	343.9	278.3	234.9	215.4	215.9	224.6	227.3
52.5°	776.3	766.0	673.2	511.5	373.8	287.0	241.4	218.1	218.1	227.8	231.6
55°	875.5	854.4	733.4	560.4	386.2	297.3	238.7	207.2	206.1	217.0	220.2
57.5°	908.1	886.4	745.9	546.3	378.1	284.3	223.0	177.9	175.8	189.9	188.8
60°	934.7	905.9	725.8	499.1	332.0	256.6	192.6	132.4	123.1	135.6	135.1
62.5°	1009.5	978.6	726.9	443.7	277.7	214.3	144.8	74.3	55.3	65.1	60.8
65°	*1047.0*	*1016.6*	*738.3*	*417.7*	*250.1*	*177.4*	*103.6*	*30.4*	*2.2*	*2.2*	*1.1*
67.5°	1015.0	987.8	723.7	411.2	246.3	176.3	105.2	29.8	0.0	0.0	0.0
70°	968.3	942.3	690.0	388.4	233.8	169.8	103.1	29.8	0.0	0.0	0.0
72.5°	886.4	859.8	632.0	355.9	214.8	155.7	95.5	28.2	0.0	0.0	0.0
75°	778.4	758.4	558.2	313.5	189.3	137.2	84.6	25.0	0.0	0.0	0.0
77.5°	659.1	635.2	468.1	260.9	158.4	113.9	71.6	20.6	0.0	0.0	0.0
80°	528.9	511.5	368.9	204.5	122.6	89.0	55.9	15.7	0.0	0.0	0.0
82.5°	393.3	378.6	272.9	146.5	87.3	61.8	38.5	10.3	0.0	0.0	0.0
85°	258.2	254.4	175.2	89.0	52.1	34.2	20.6	4.9	0.0	0.0	0.0
87.5°	93.3	96.6	64.0	25.5	14.1	6.0	2.7	0.5	0.0	0.0	0.0
90°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
92.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
95°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
97.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
100°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
102.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
105°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
107.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
110°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0

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

Scaled Data Report

REPORT NUMBER: P821435
CATALOG NUMBER: TT-D1-830-12VDC-RW-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
115°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
117.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
120°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
122.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
125°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
127.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
130°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
132.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
135°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.5	0.5	0.5	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

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: SP1-2407-176-7

Test Date: 09/27/2024

Luminaire Tested: MEM2-HTN-VA-30-830-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-830-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

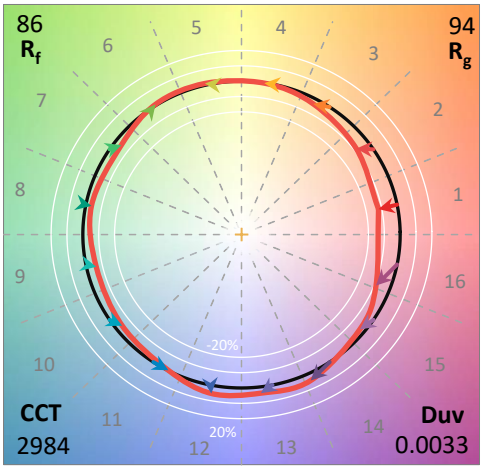
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-7
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-30-830-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	2984	CRI (Ra):	81.8		
CIE u':	0.2500	R1:	79.4	R9:	-1.1
CIE v':	0.5264	R2:	89.9	R10:	78.4
Duv:	0.0033	R3:	96.6	R11:	80.8
CIE x:	0.4431	R4:	80.6	R12:	72.8
CIE y:	0.4147	R5:	80.1	R13:	81.7
CIE z:	0.1422	R6:	88.9	R14:	98.5
Peak Wavelength (nm):	601	R7:	82.6	R15:	70.2
Dominant Wavelength (nm):	581	R8:	56.0		
Purity:	57.4798				

Rf:	85.8
Rg:	94.1



Test Conditions

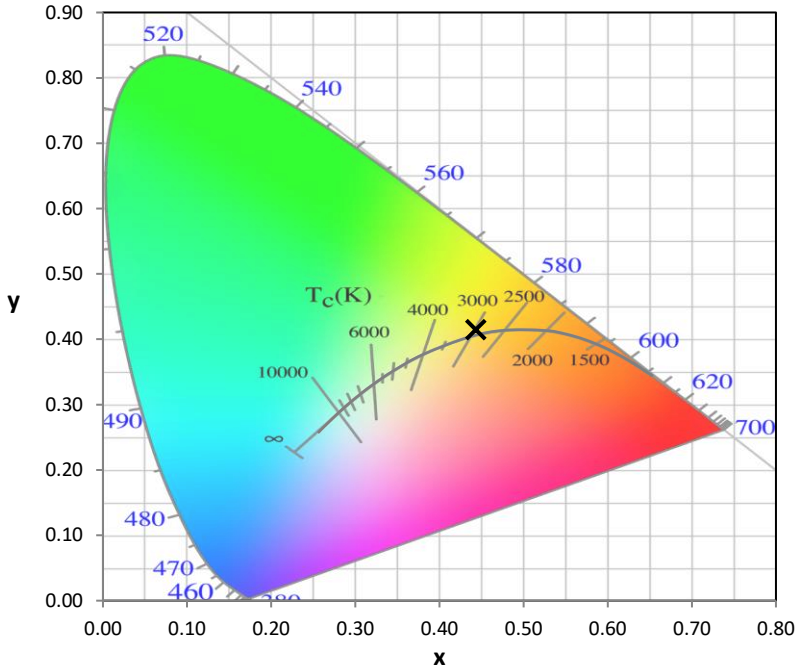
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-7

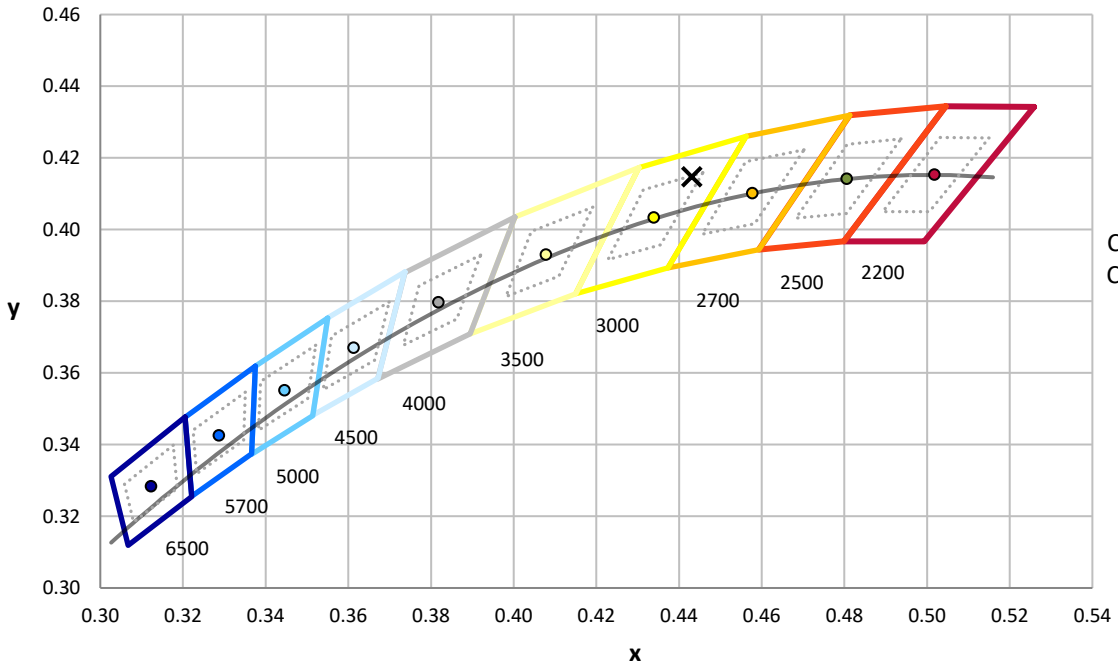
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-7

CIE 1931 Chromaticity Diagram



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

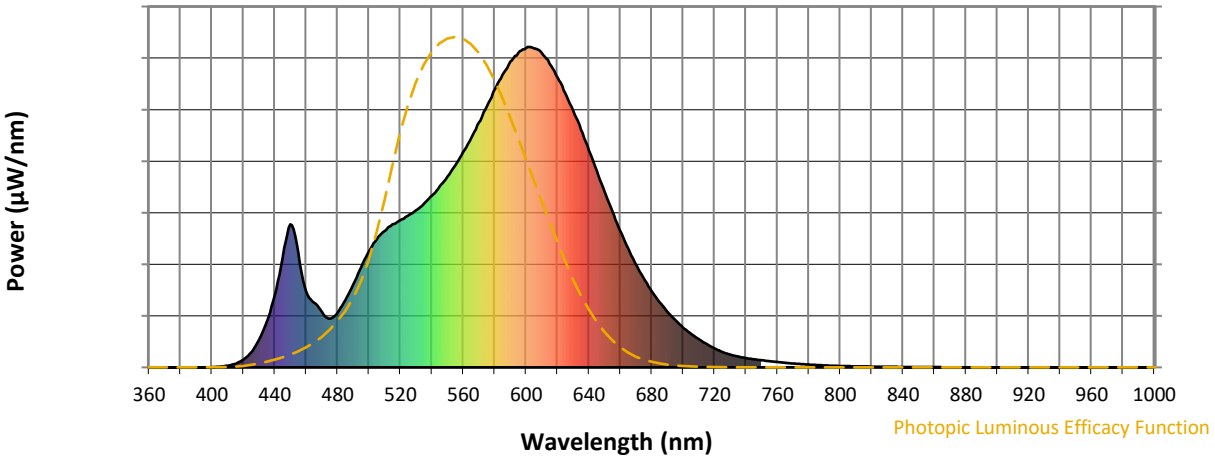


CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

Photopic Flux vs. Wavelength

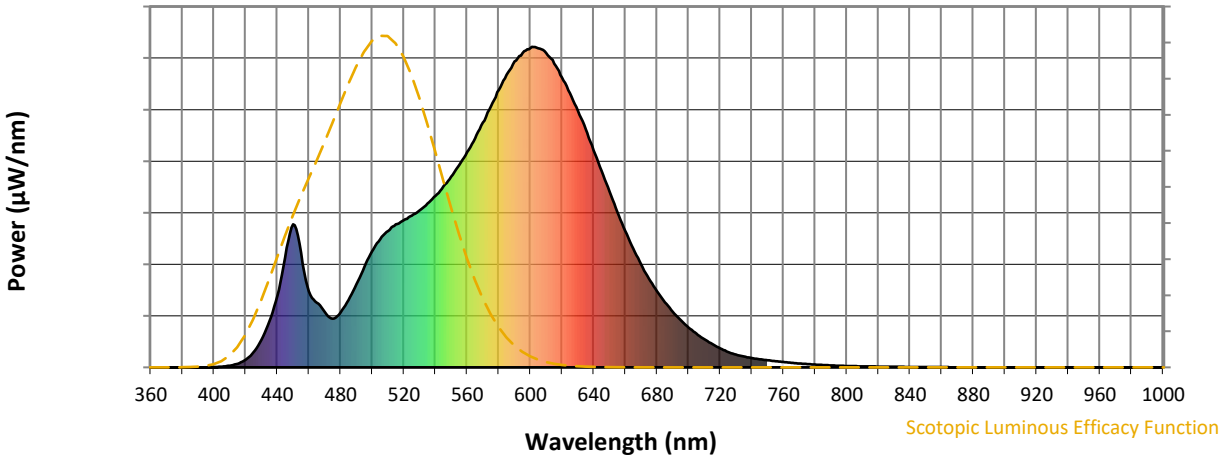


Photopic Lumens: NR

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-7

Scotopic Flux vs. Wavelength

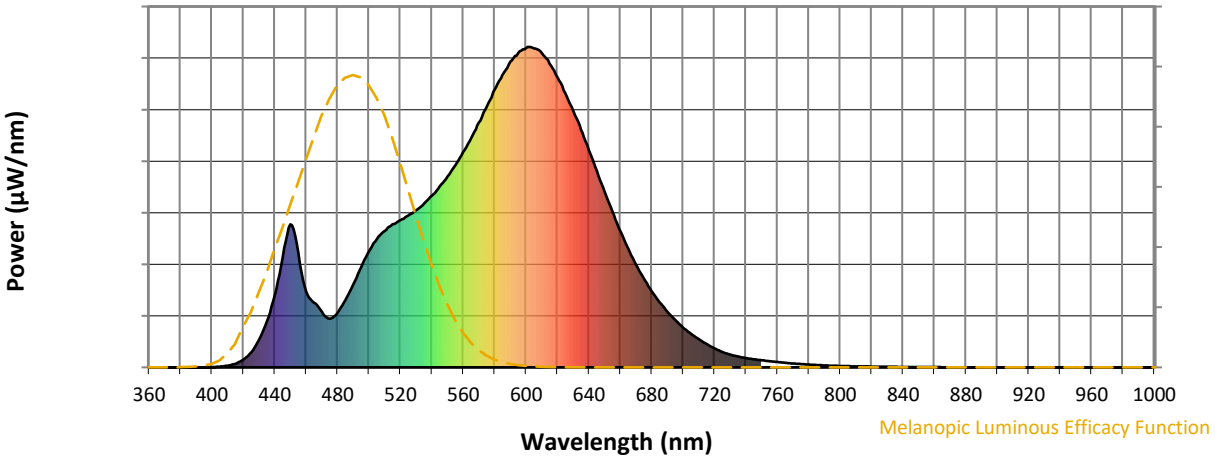


Scotopic Lumens: NR **S/P: 1.32**

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.51**

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	260	NR	620	905	NR	750	22	NR	880	0	NR
365	0	NR	495	312	NR	625	856	NR	755	19	NR	885	0	NR
370	0	NR	500	362	NR	630	801	NR	760	17	NR	890	0	NR
375	0	NR	505	399	NR	635	742	NR	765	14	NR	895	0	NR
380	0	NR	510	425	NR	640	677	NR	770	12	NR	900	0	NR
385	0	NR	515	446	NR	645	613	NR	775	10	NR	905	0	NR
390	0	NR	520	459	NR	650	549	NR	780	9	NR	910	0	NR
395	0	NR	525	473	NR	655	485	NR	785	7	NR	915	0	NR
400	1	NR	530	490	NR	660	425	NR	790	6	NR	920	0	NR
405	2	NR	535	511	NR	665	371	NR	795	5	NR	925	0	NR
410	5	NR	540	535	NR	670	321	NR	800	4	NR	930	0	NR
415	11	NR	545	565	NR	675	276	NR	805	4	NR	935	0	NR
420	24	NR	550	595	NR	680	238	NR	810	3	NR	940	0	NR
425	47	NR	555	631	NR	685	203	NR	815	3	NR	945	0	NR
430	86	NR	560	672	NR	690	174	NR	820	2	NR	950	0	NR
435	144	NR	565	715	NR	695	148	NR	825	2	NR	955	0	NR
440	224	NR	570	763	NR	700	124	NR	830	2	NR	960	0	NR
445	342	NR	575	814	NR	705	105	NR	835	2	NR	965	0	NR
450	446	NR	580	866	NR	710	88	NR	840	1	NR	970	0	NR
455	357	NR	585	912	NR	715	73	NR	845	1	NR	975	0	NR
460	237	NR	590	954	NR	720	59	NR	850	1	NR	980	0	NR
465	202	NR	595	981	NR	725	48	NR	855	1	NR	985	0	NR
470	172	NR	600	996	NR	730	40	NR	860	1	NR	990	0	NR
475	152	NR	605	996	NR	735	34	NR	865	1	NR	995	0	NR
480	171	NR	610	980	NR	740	29	NR	870	0	NR	1000	0	NR
485	210	NR	615	947	NR	745	25	NR	875	0	NR			

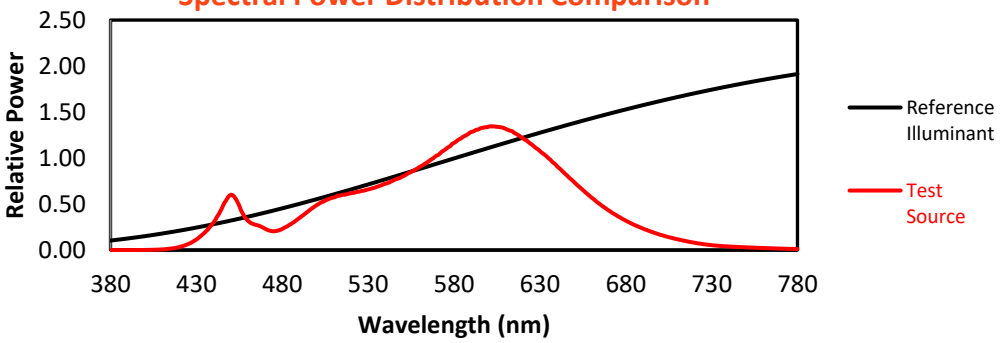
REPORT NUMBER: SP1-2407-176-7

TM-30-18

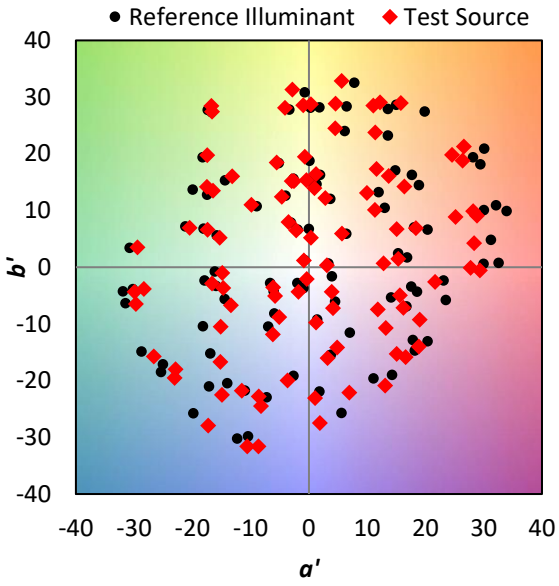
Summary

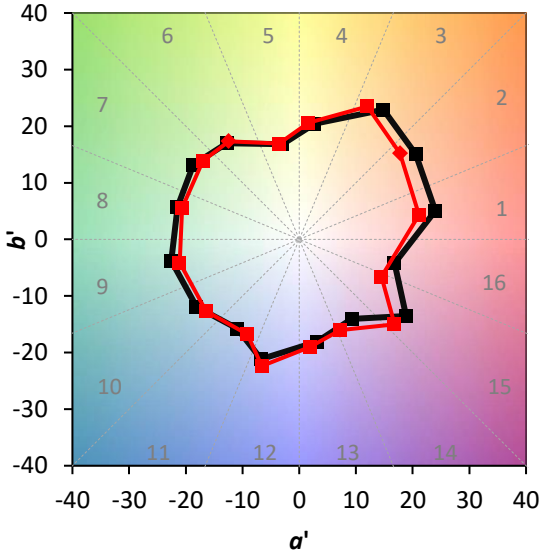
R_f = 85.8
R_g = 94.1
CIE R_a = 81.8
R_9 = -1.1

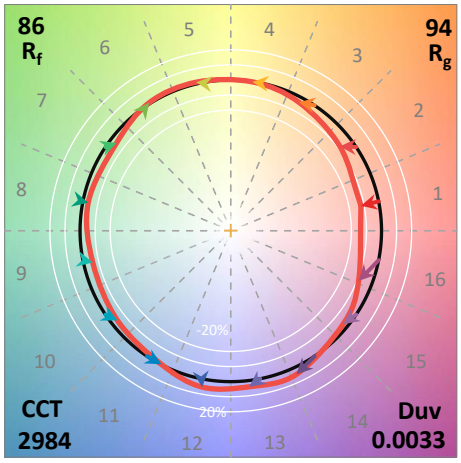
Spectral Power Distribution Comparison

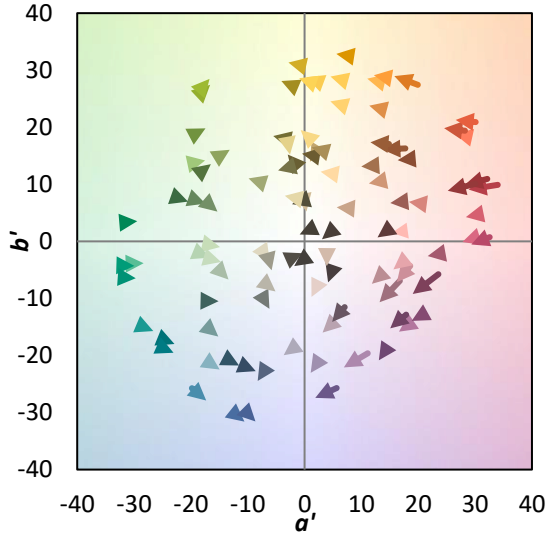


Color Vector Graphics







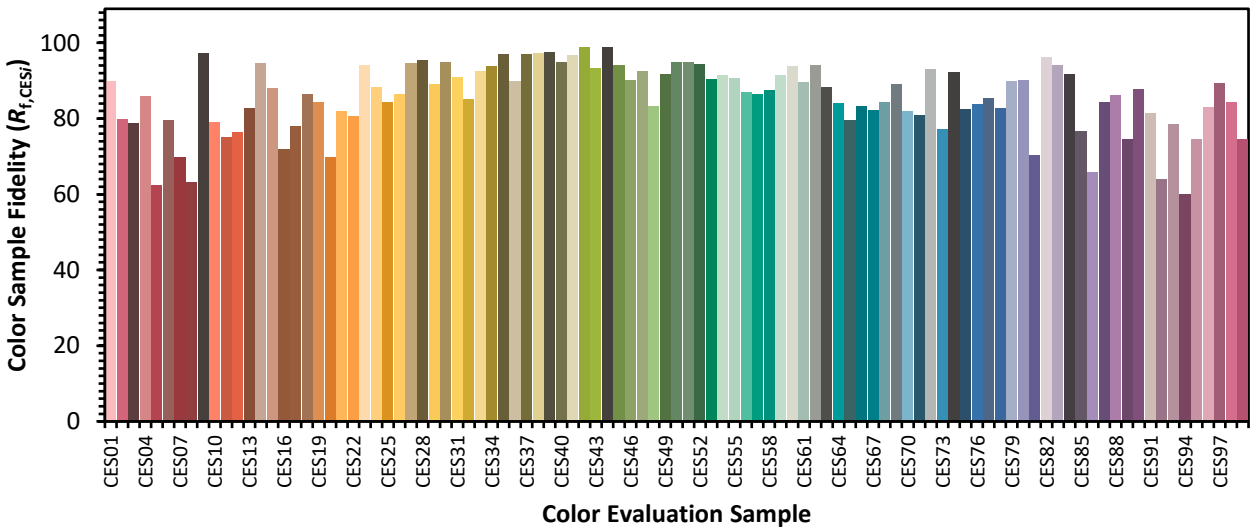


REPORT NUMBER: SP1-2407-176-7

TM-30-18

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

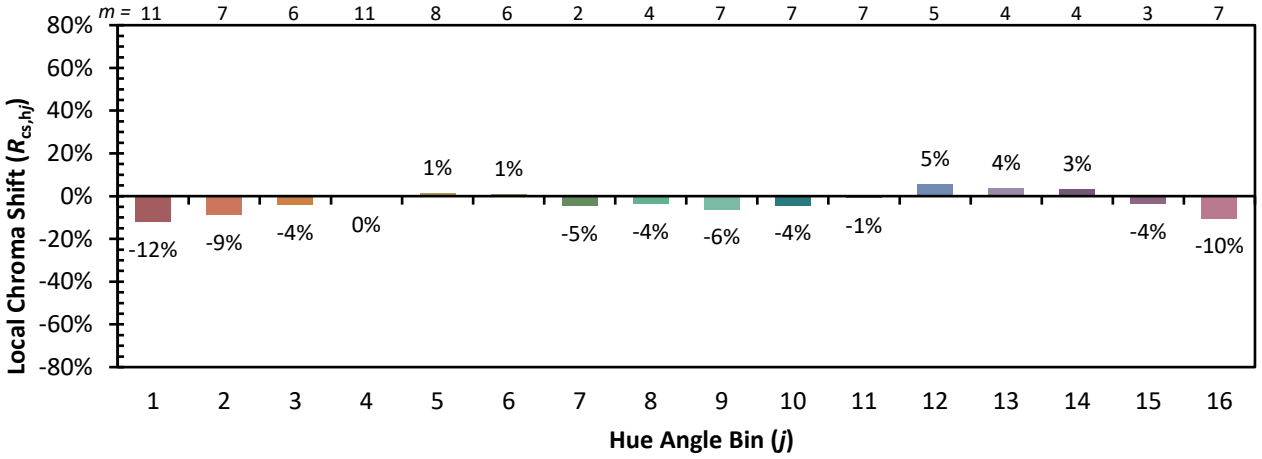
CES01 = 86	CES26 = 86	CES51 = 95	CES76 = 84
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 86
CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 90
CES05 = 50	CES30 = 95	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 87	CES81 = 70
CES07 = 42	CES32 = 85	CES57 = 86	CES82 = 96
CES08 = 41	CES33 = 93	CES58 = 87	CES83 = 94
CES09 = 29	CES34 = 94	CES59 = 92	CES84 = 92
CES10 = 76	CES35 = 97	CES60 = 94	CES85 = 77
CES11 = 59	CES36 = 90	CES61 = 90	CES86 = 66
CES12 = 65	CES37 = 97	CES62 = 94	CES87 = 84
CES13 = 43	CES38 = 97	CES63 = 88	CES88 = 86
CES14 = 74	CES39 = 98	CES64 = 84	CES89 = 75
CES15 = 72	CES40 = 95	CES65 = 80	CES90 = 88
CES16 = 47	CES41 = 97	CES66 = 83	CES91 = 81
CES17 = 50	CES42 = 99	CES67 = 82	CES92 = 64
CES18 = 56	CES43 = 93	CES68 = 84	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 89	CES94 = 60
CES20 = 67	CES45 = 94	CES70 = 82	CES95 = 74
CES21 = 87	CES46 = 90	CES71 = 81	CES96 = 83
CES22 = 79	CES47 = 93	CES72 = 93	CES97 = 89
CES23 = 92	CES48 = 83	CES73 = 77	CES98 = 84
CES24 = 91	CES49 = 92	CES74 = 92	CES99 = 75
CES25 = 72	CES50 = 95	CES75 = 83	

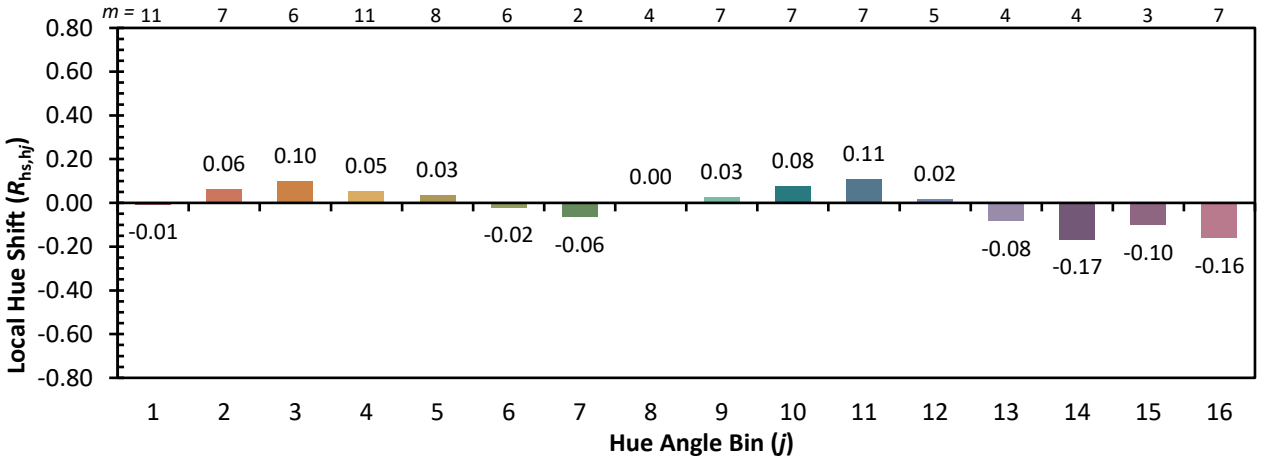


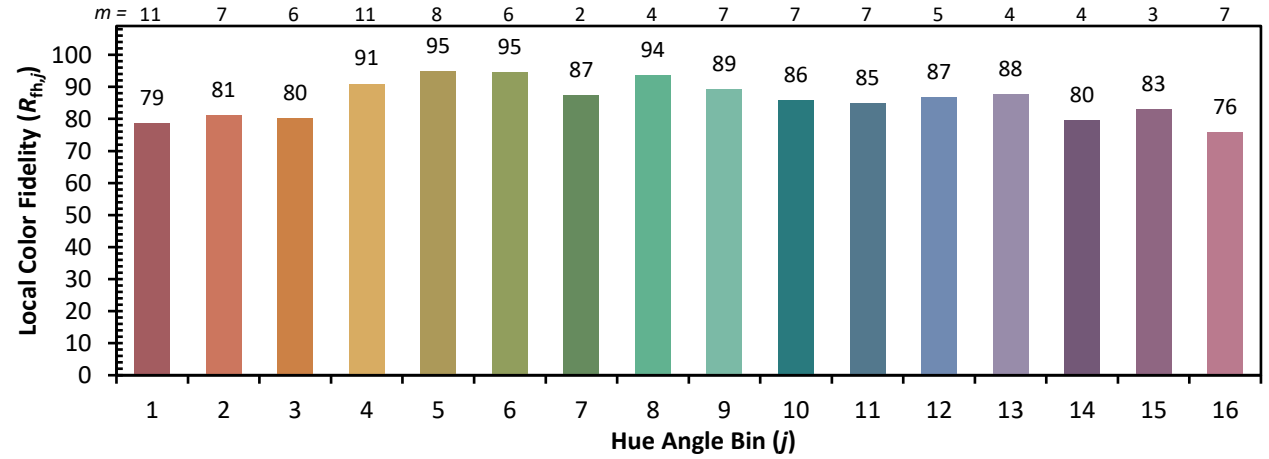
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Color Rendition by Hue-Angle Bin



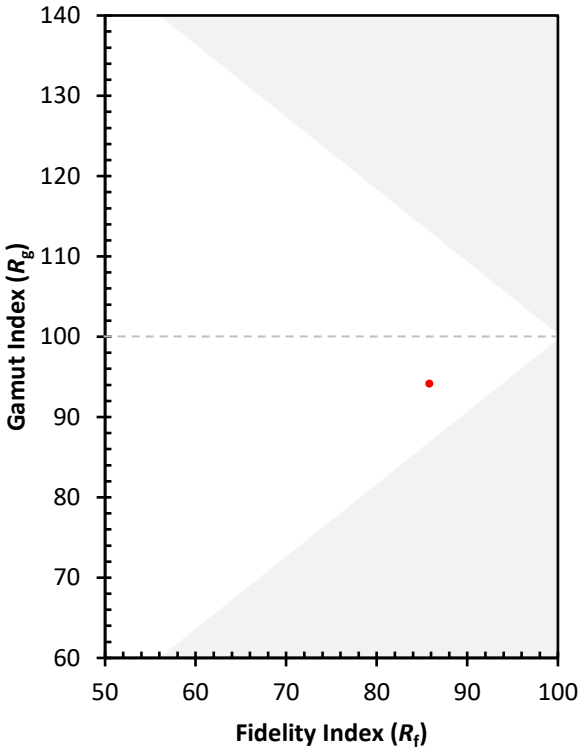


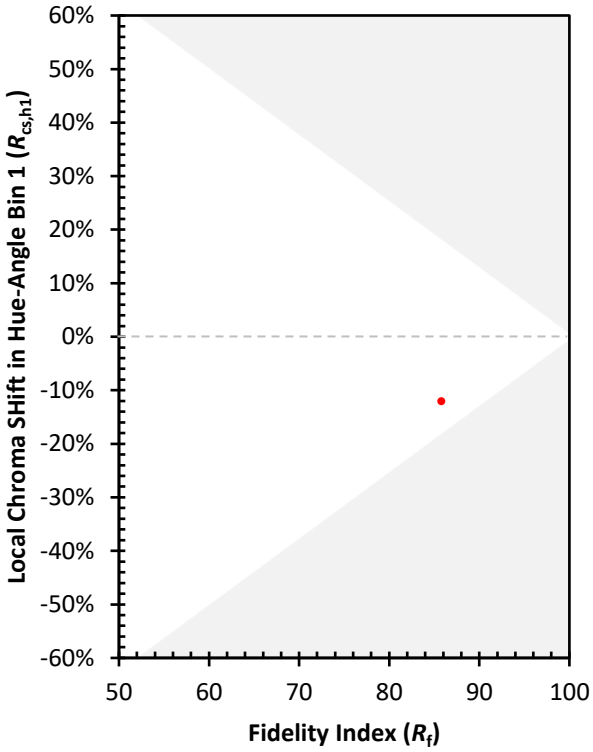


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Measure Comparisons





(END OF REPORT)