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: P821188

Luminaire Tested: **TT-D1-735-24VDC-CQ-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:	P821188
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-3)
Test Lab:	INNOVATION CENTER
Issue Date:	12/2/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TT-D1-735-24VDC-CQ-HSS
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3500K, 70 CRI LEDS AND CONCENTRATED DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3062.1 lumens
Efficiency:	N/A
Efficacy:	109.4 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B1 - U1 - G1

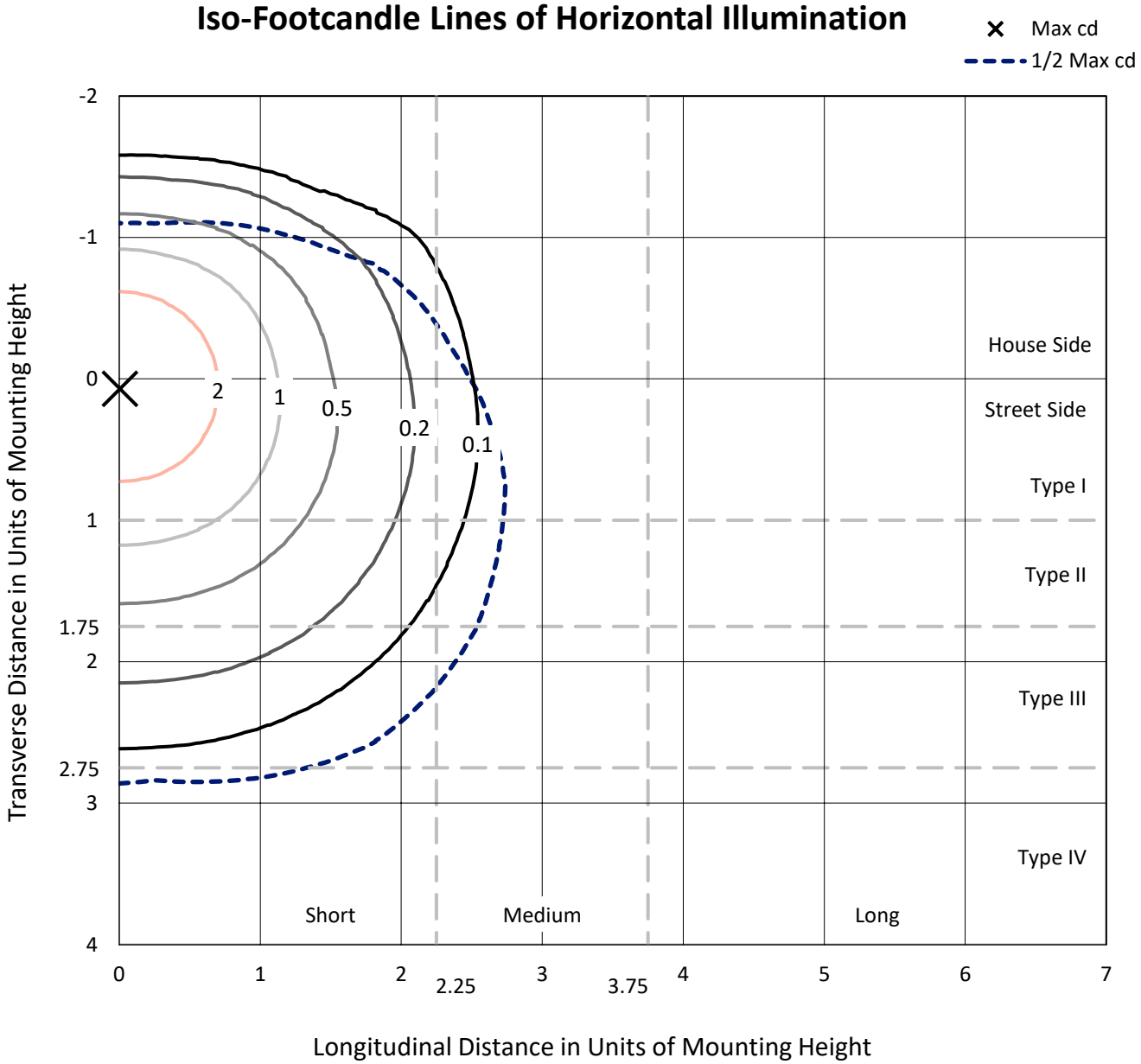
Input Watts (W):	28
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

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Iso-Footcandle Lines of Horizontal Illumination



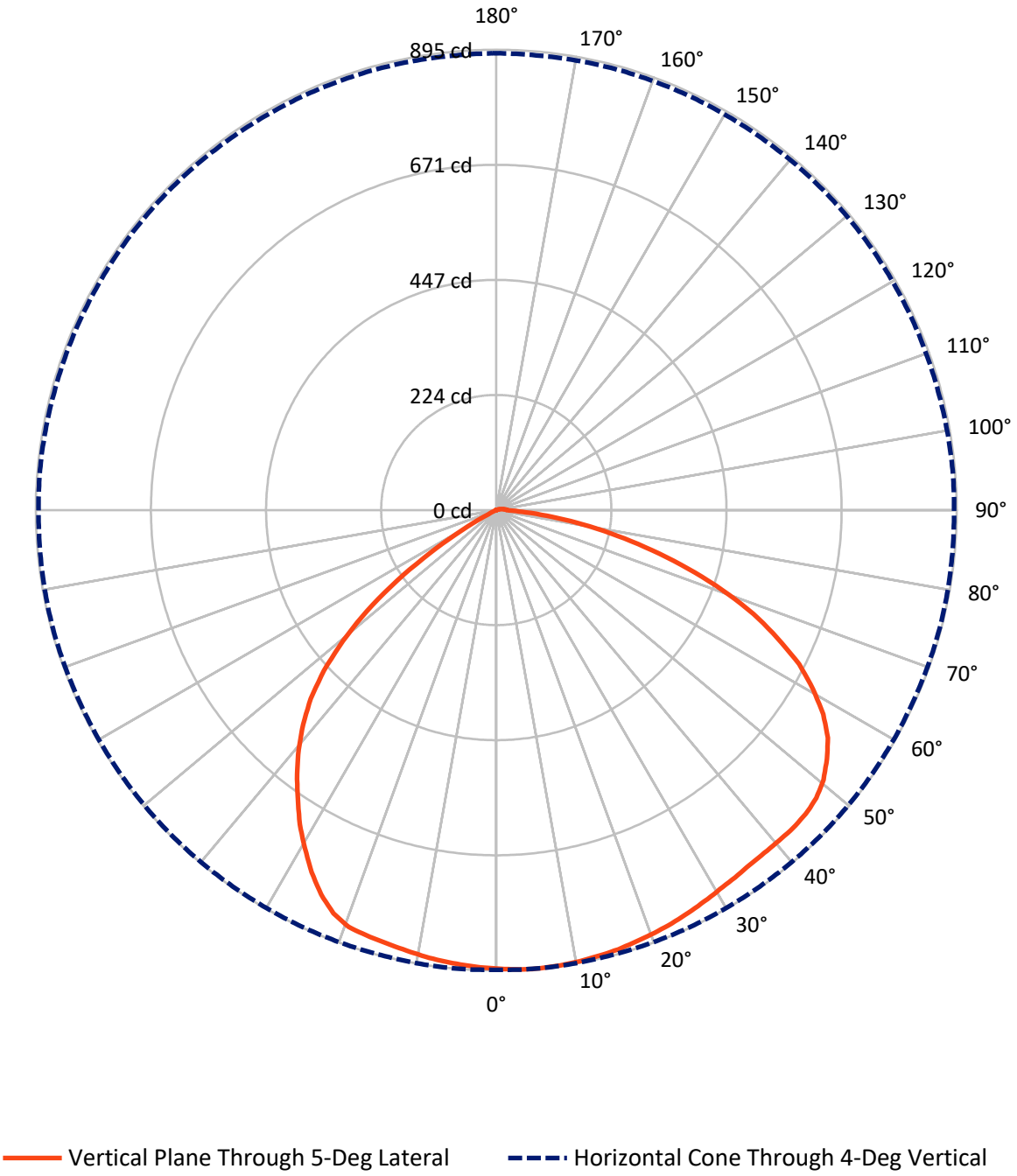
Based on 15 foot mounting height. Maximum calculated value = 4 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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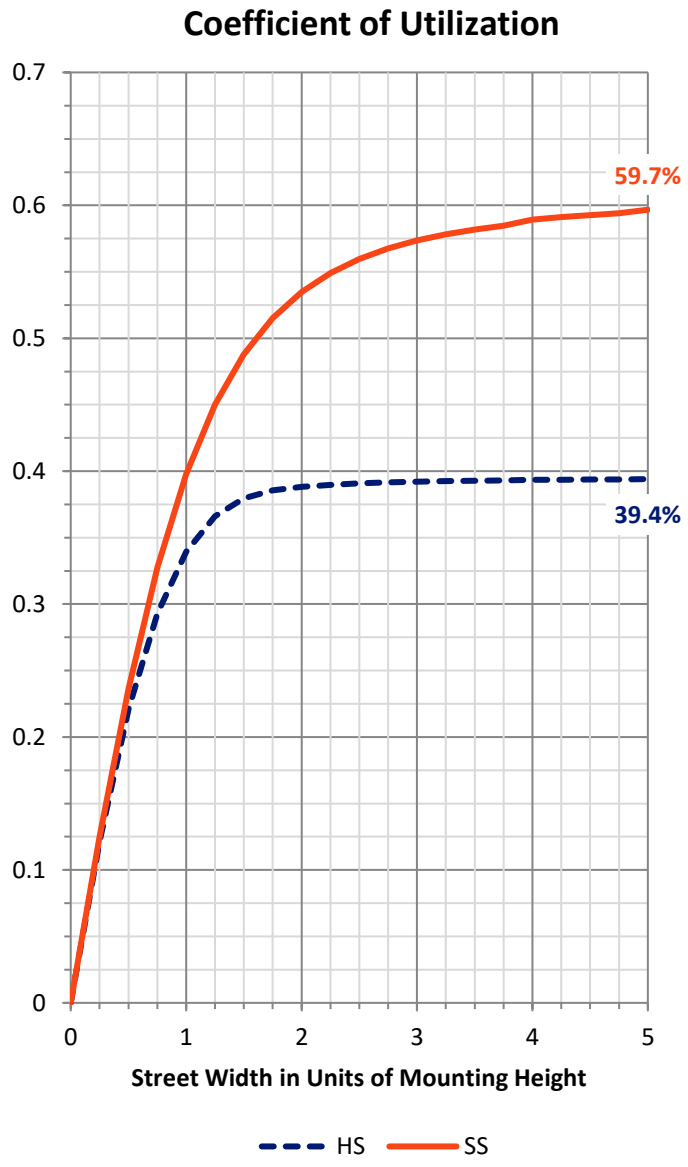
REPORT NUMBER: P821188
CATALOG NUMBER: TT-D1-735-24VDC-CQ-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1213.4	1.6	1215.1
	% Fixture	39.6	0.1	39.7
Street Side	Lumens	1838.5	8.6	1847.0
	% Fixture	60.0	0.3	60.3
Total	Lumens	3051.9	10.2	3062.1
	% Fixture	99.7	0.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.8	2.8
10°-20°	248.2	8.1
20°-30°	391.1	12.8
30°-40°	497.7	16.3
40°-50°	574.9	18.8
50°-60°	562.9	18.4
60°-70°	419.2	13.7
70°-80°	227.1	7.4
80°-90°	46.0	1.5
90°-100°	5.8	0.2
100°-110°	2.3	0.1
110°-120°	0.7	0.0
120°-130°	0.5	0.0
130°-140°	0.4	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°	3051.9	99.7
0°-180°	3062.1	100.0



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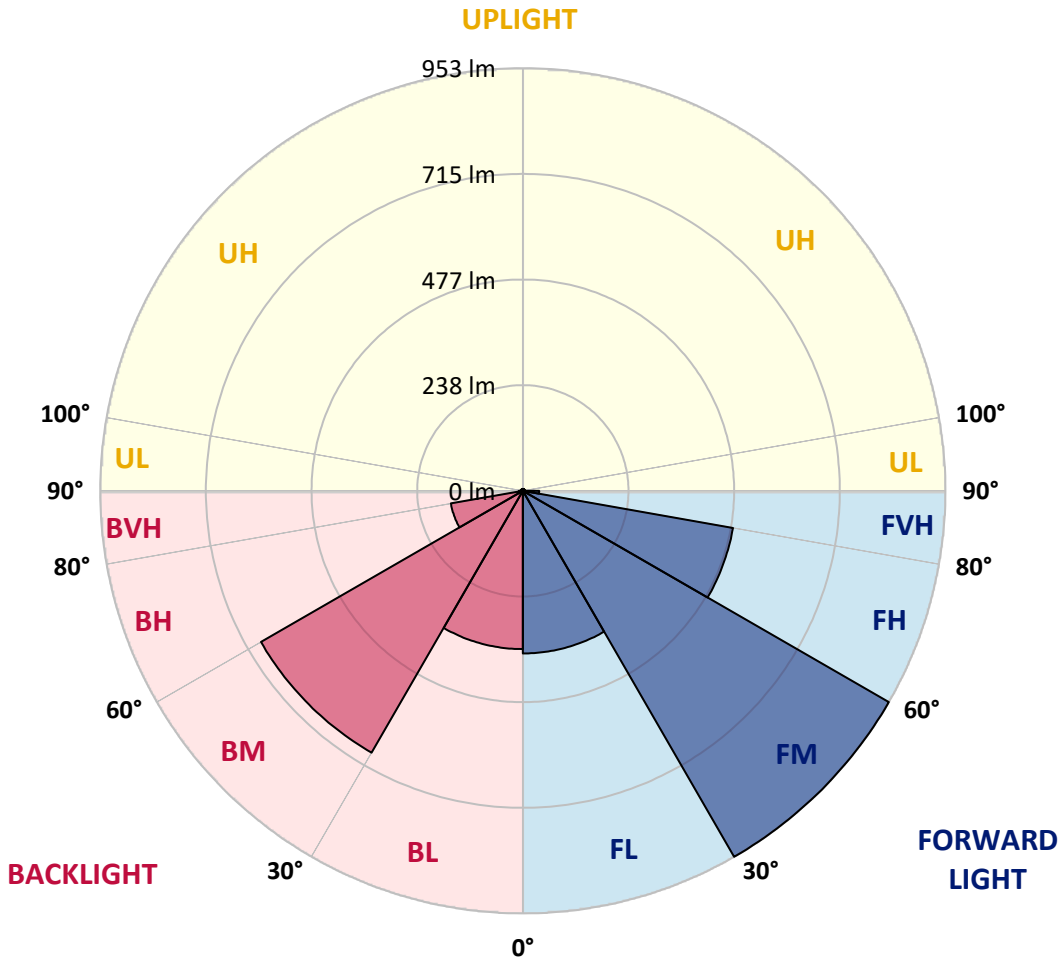
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	366.9	12.0			
FM	(30°-60°)	953.4	31.1			
FH	(60°-80°)	481.4	15.7			G0/660
FVH	(80°-90°)	36.8	1.2			G1/100
BL	(0°-30°)	357.1	11.7	B1/500		
BM	(30°-60°)	682.1	22.3	B1/1000		
BH	(60°-80°)	164.9	5.4	B1/500		G1/500
BVH	(80°-90°)	9.3	0.3			G0/10
UL	(90°-100°)	5.8	0.2		U1/10	
UH	(100°-180°)	4.4	0.1		U1/10	

BUG Rating: B1-U1-G1
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8
2.5°	893.0	894.1	893.6	893.6	892.4	893.0	892.4	892.4	891.8	891.3	891.3
4°	893.6	894.7	893.6	893.6	893.0	893.0	892.4	891.3	891.8	890.1	889.5
5°	894.1	894.7	894.1	894.1	893.0	892.4	891.3	891.3	890.7	889.5	889.5
7.5°	893.0	893.6	893.6	893.0	891.8	890.7	890.1	889.5	889.0	887.2	887.2
10°	890.7	891.8	890.7	890.7	890.1	889.0	887.2	886.6	884.9	883.8	883.2
12.5°	888.4	889.0	888.4	888.4	887.2	885.5	884.9	883.8	881.5	879.7	879.7
15°	884.9	886.1	885.5	884.9	884.3	882.6	880.9	879.2	877.4	875.7	875.7
17.5°	880.9	881.5	882.0	881.5	880.3	879.2	877.4	875.1	873.4	871.7	871.1
20°	876.3	877.4	877.4	877.4	876.3	875.1	872.8	870.5	869.4	867.1	866.5
22.5°	871.7	872.8	872.3	872.8	872.3	870.5	868.2	865.9	863.6	861.9	860.7
25°	867.1	867.1	867.1	867.1	867.1	864.8	862.5	859.6	857.3	854.4	854.4
27.5°	861.3	861.3	861.9	861.9	861.3	859.6	856.7	853.3	849.8	846.9	845.8
30°	856.1	855.6	856.7	857.9	857.3	855.6	852.1	848.1	842.9	838.9	835.4
32.5°	849.8	851.5	852.7	855.0	855.6	853.3	849.2	844.0	838.9	831.4	825.0
35°	847.5	847.5	850.4	853.8	855.0	853.8	848.1	842.3	834.8	823.9	816.4
37.5°	845.2	845.8	850.4	855.6	857.3	857.3	851.0	843.5	833.1	817.6	808.3
40°	844.0	845.2	851.0	858.4	863.0	862.5	855.0	845.8	833.1	813.0	801.4
42.5°	842.9	845.2	851.5	861.9	868.8	868.2	860.2	848.1	832.0	807.2	794.0
45°	841.2	842.9	851.5	864.8	874.0	875.7	866.5	851.0	832.0	802.0	784.7
47.5°	836.0	836.6	848.1	863.6	877.4	879.7	870.5	852.1	829.6	793.4	773.2
50°	822.2	823.9	837.1	857.9	874.0	877.4	869.4	849.2	823.9	779.0	754.8
52.5°	804.3	804.3	820.4	843.5	863.0	868.8	861.3	838.9	809.5	757.7	730.0
55°	777.8	781.9	798.6	822.7	844.0	852.1	841.7	819.9	785.9	730.6	700.1
57.5°	747.9	749.0	766.3	795.1	817.0	822.2	813.5	787.6	754.8	698.4	662.1
60°	704.7	707.0	728.9	754.2	777.8	784.7	773.8	747.9	713.3	656.9	620.1
62.5°	656.9	660.4	680.0	705.9	728.3	739.3	726.0	699.0	665.0	607.4	575.2
65°	599.4	600.5	621.8	651.2	673.6	677.7	666.1	639.7	605.7	550.4	521.6
67.5°	533.1	538.9	559.6	581.5	601.1	605.7	597.6	567.1	540.0	491.1	462.9
70°	469.2	466.4	483.6	505.5	523.4	527.4	518.2	490.0	464.6	418.6	396.7
72.5°	392.1	389.8	408.2	424.9	442.2	439.9	430.7	408.2	386.3	347.2	327.0
75°	314.4	312.1	326.4	340.8	349.5	350.6	344.3	327.6	304.0	273.5	257.9
77.5°	238.4	240.7	247.0	259.1	267.1	270.6	259.7	243.0	228.0	204.4	192.9
80°	169.8	170.4	172.7	181.4	187.1	187.1	181.9	168.7	152.0	135.3	129.5
82.5°	107.1	109.4	109.4	118.0	118.0	113.4	111.1	102.5	93.8	80.6	72.5
85°	58.7	57.6	61.0	61.6	61.0	57.6	54.1	48.9	43.2	34.0	30.5
87.5°	25.9	25.3	25.3	25.3	24.8	22.5	19.0	15.0	10.4	6.3	4.6
90°	20.2	20.2	19.6	18.4	16.7	15.0	12.1	9.2	5.8	2.3	1.2
92.5°	18.4	18.4	17.8	17.3	15.5	13.8	10.9	8.1	5.2	2.3	1.2
95°	16.1	15.5	15.5	14.4	13.2	11.5	9.8	6.9	4.6	1.7	1.2
97.5°	13.2	12.7	12.7	12.1	10.9	9.2	8.1	5.8	4.0	1.7	1.2
100°	9.8	10.4	9.8	9.2	8.6	7.5	6.3	4.6	2.9	1.2	1.2
102.5°	7.5	7.5	6.9	6.9	6.3	5.8	4.6	3.5	2.3	1.2	0.6
105°	5.2	5.2	5.2	4.6	4.6	4.0	3.5	2.3	1.7	1.2	0.6
107.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.3	1.7	1.2	0.6	0.6

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	1.7	*1.7*	1.7	1.7	1.7	1.7	1.2	1.2	0.6	0.6	0.6
112.5°	0.6	*0.6*	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
115°	0.6	*0.6*	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
117.5°	0.0	*0.0*	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
120°	0.0	*0.0*	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
122.5°	0.0	*0.0*	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
125°	0.0	*0.0*	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
127.5°	0.0	*0.0*	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
130°	0.0	*0.0*	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
132.5°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
135°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
137.5°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
140°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
142.5°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
145°	0.6	*0.6*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
147.5°	0.6	*0.6*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
150°	0.6	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
152.5°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
155°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
157.5°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
160°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
162.5°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
165°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
167.5°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
170°	0.0	*0.0*	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
172.5°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
175°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
177.5°	0.0	*0.0*	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
180°	0.6	*0.6*	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8	891.8
2.5°	890.7	889.0	890.1	889.5	890.1	889.0	889.0	889.0	889.5	888.4
4°	*890.1*	*889.0*	*889.0*	*889.0*	*889.0*	*887.8*	*887.8*	*887.8*	*887.2*	*887.8*
5°	889.0	888.4	887.8	887.2	887.8	886.6	886.1	886.1	886.1	886.6
7.5°	886.6	884.9	884.9	883.2	883.8	883.2	882.6	883.2	882.6	882.6
10°	882.6	881.5	880.9	879.7	879.7	878.6	878.0	878.0	878.0	877.4
12.5°	878.6	877.4	876.9	875.7	875.1	874.0	873.4	874.0	872.8	872.8
15°	874.0	872.8	872.3	872.3	871.1	870.0	869.4	868.2	868.2	868.2
17.5°	870.0	868.8	869.4	868.2	867.6	866.5	866.5	864.2	864.2	863.6
20°	865.9	864.8	864.8	864.2	864.2	863.0	861.3	860.2	859.6	859.6
22.5°	860.7	859.0	856.1	852.1	849.8	848.1	847.5	845.8	845.2	844.0
25°	852.7	848.1	841.7	834.8	827.9	824.5	823.3	821.0	821.0	821.0
27.5°	842.9	834.3	825.6	815.3	804.9	798.0	793.4	791.1	789.9	789.9
30°	830.2	819.3	807.2	794.0	782.4	769.8	761.7	757.1	754.8	755.4
32.5°	818.7	804.9	791.1	774.4	758.8	743.9	730.0	723.1	720.3	719.1
35°	807.2	791.6	775.0	757.1	737.0	715.1	696.7	686.3	680.5	681.1
37.5°	798.6	780.1	761.7	739.8	716.8	690.3	666.7	650.0	643.1	644.3
40°	789.3	768.6	748.5	723.1	696.1	664.4	633.9	611.4	603.4	601.7
42.5°	780.7	756.5	733.5	706.4	672.5	636.8	599.4	572.9	560.8	559.0
45°	769.8	742.7	718.0	686.9	649.4	605.1	561.4	526.8	514.1	509.0
47.5°	755.4	725.4	697.8	662.1	621.2	571.1	516.4	473.8	457.7	453.7
50°	734.1	699.5	671.3	631.0	581.5	526.2	465.2	412.8	391.5	388.6
52.5°	705.9	670.7	639.1	593.0	532.6	467.5	398.4	344.3	319.5	317.8
55°	671.9	633.9	599.4	547.5	476.7	401.3	329.3	260.8	236.6	233.8
57.5°	632.2	593.0	555.6	491.7	409.9	325.9	242.4	176.8	153.7	148.0
60°	588.4	548.1	506.1	428.4	320.1	230.9	146.8	93.8	76.6	70.8
62.5°	545.8	502.0	457.7	352.9	219.4	131.8	66.8	27.1	17.3	16.7
65°	495.7	454.3	408.8	284.4	138.8	59.3	19.6	0.6	0.0	0.0
67.5°	437.6	402.4	362.1	254.5	122.6	51.8	16.7	0.6	0.0	0.0
70°	375.4	347.8	312.1	218.8	105.4	43.8	14.4	0.0	0.0	0.0
72.5°	309.8	286.1	259.7	181.9	87.5	36.3	11.5	0.0	0.0	0.0
75°	243.0	228.0	204.4	143.9	67.9	27.6	8.6	0.0	0.0	0.0
77.5°	180.2	168.1	150.8	105.9	51.2	20.2	6.3	0.0	0.0	0.0
80°	121.5	112.3	102.5	72.0	34.5	13.2	4.0	0.0	0.0	0.0
82.5°	70.8	63.9	57.6	40.9	19.0	7.5	1.7	0.0	0.0	0.0
85°	28.8	26.5	25.3	17.3	7.5	2.3	0.6	0.0	0.0	0.0
87.5°	3.5	2.9	2.9	1.7	0.6	0.0	0.0	0.0	0.0	0.0
90°	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
95°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
97.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0
100°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
102.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
105°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
107.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

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

Scaled Data Report

REPORT NUMBER: P821188
CATALOG NUMBER: TT-D1-735-24VDC-CQ-HSS

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
112.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
115°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
117.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
120°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
122.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
125°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
127.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
130°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
132.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
135°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
137.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0
140°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0
142.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0
145°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0
147.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.6
150°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
152.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
155°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
157.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
160°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
162.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
165°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
167.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
170°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
172.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
175°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
177.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0
180°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

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: SP1-2407-176-4

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

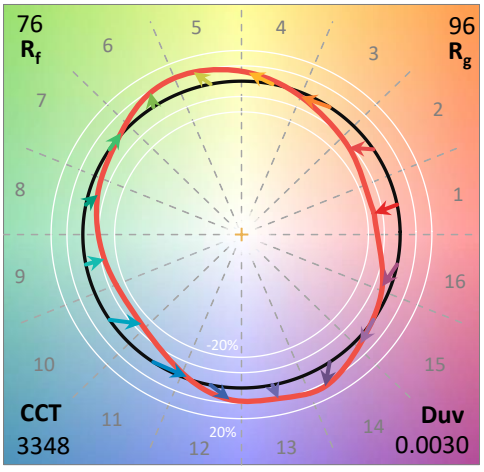
Test Information

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	CRI (Ra):	73.4		
CIE u':	0.2384	R1:	70.8	R9:	-19.2
CIE v':	0.5184	R2:	79.9	R10:	52.5
Duv:	0.0030	R3:	87.6	R11:	68.0
CIE x:	0.4177	R4:	72.6	R12:	42.6
CIE y:	0.4036	R5:	69.3	R13:	72.0
CIE z:	0.1787	R6:	71.3	R14:	92.6
Peak Wavelength (nm):	593	R7:	82.1	R15:	63.8
Dominant Wavelength (nm):	580	R8:	53.3		
Purity:	46.5223				

Rf:	75.8
Rg:	95.8



Test Conditions

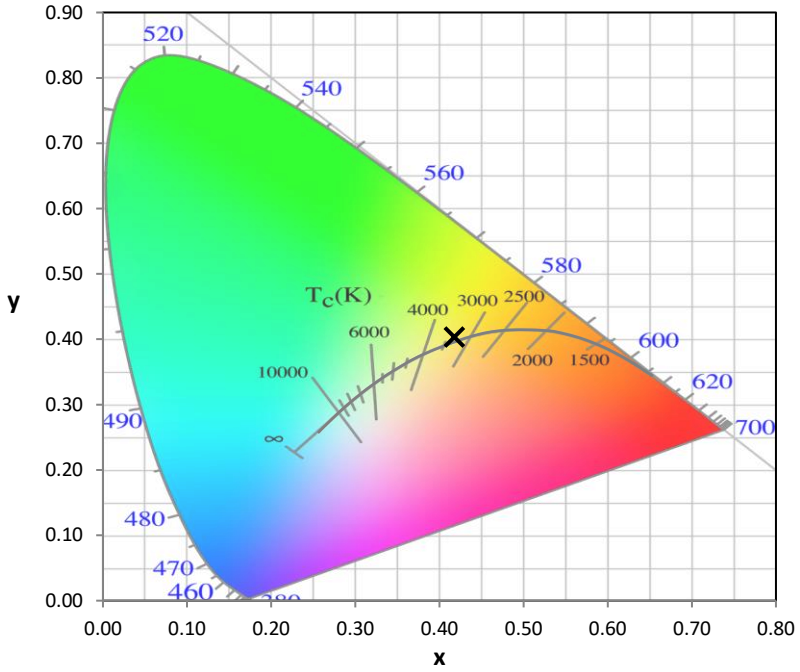
Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-4

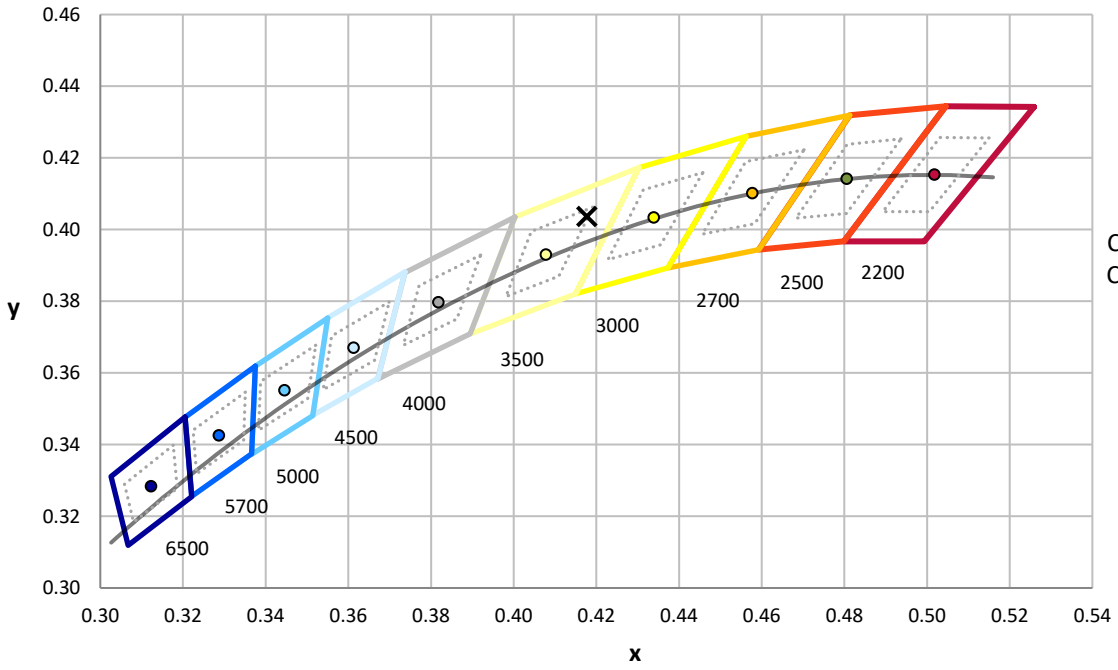
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-4

CIE 1931 Chromaticity Diagram



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

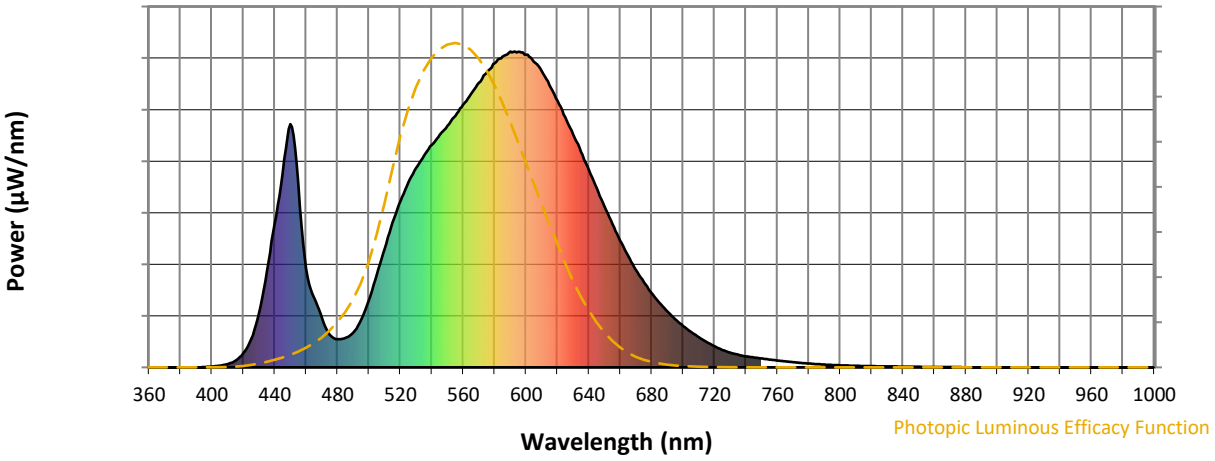


CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

Photopic Flux vs. Wavelength

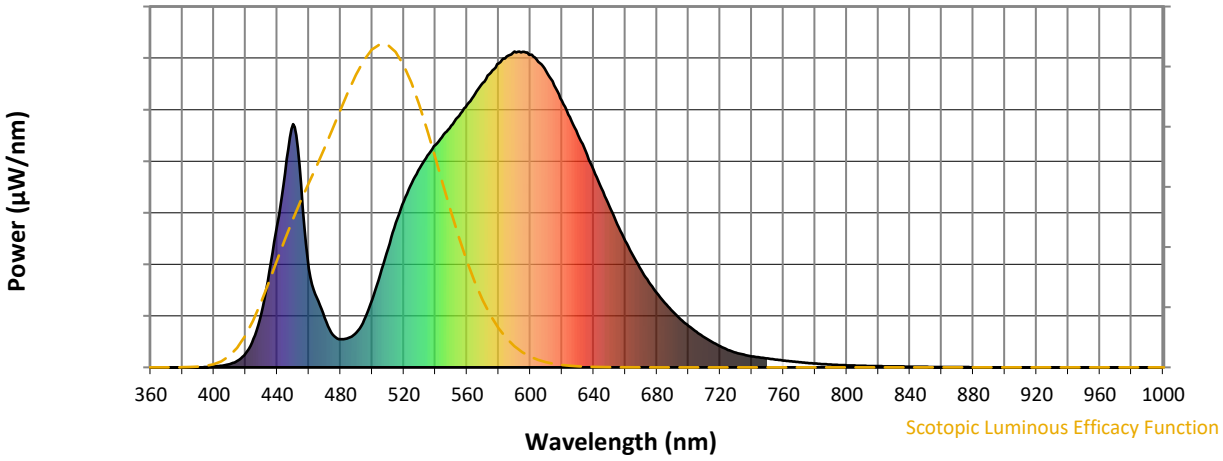


Photopic Lumens: NR

λ (nm)	Power W^/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			

REPORT NUMBER: SP1-2407-176-4

Scotopic Flux vs. Wavelength

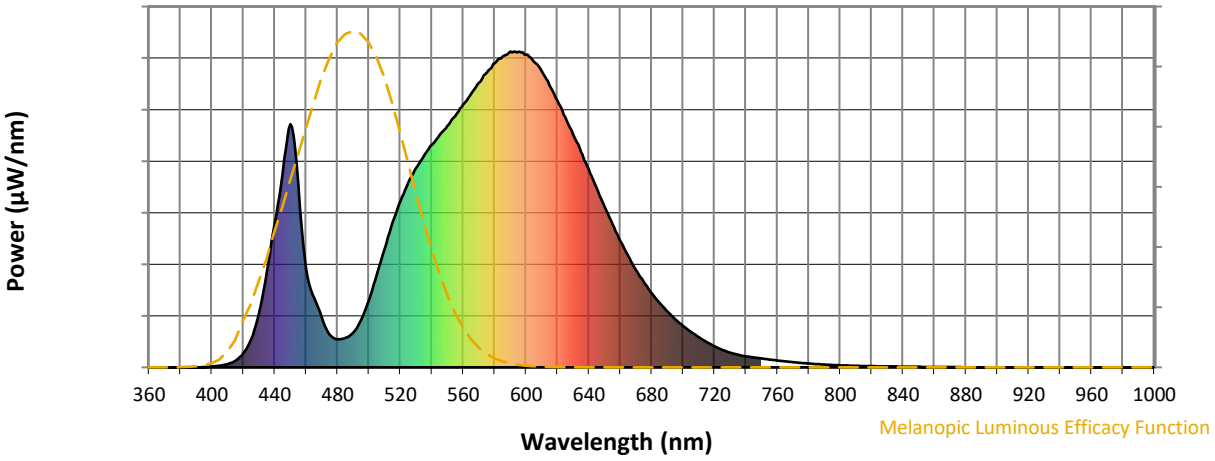


Scotopic Lumens: NR **S/P: 1.31**

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			

REPORT NUMBER: SP1-2407-176-4

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			

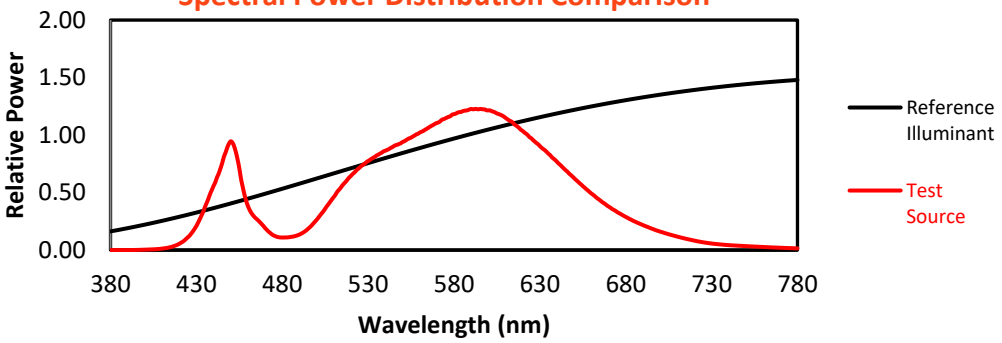
REPORT NUMBER: SP1-2407-176-4

TM-30-18

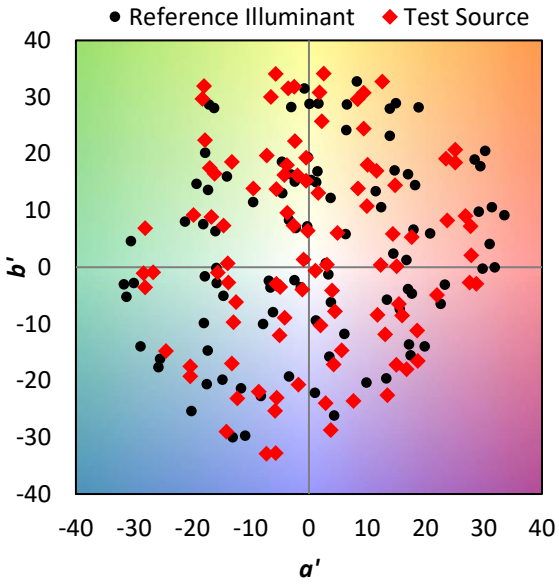
Summary

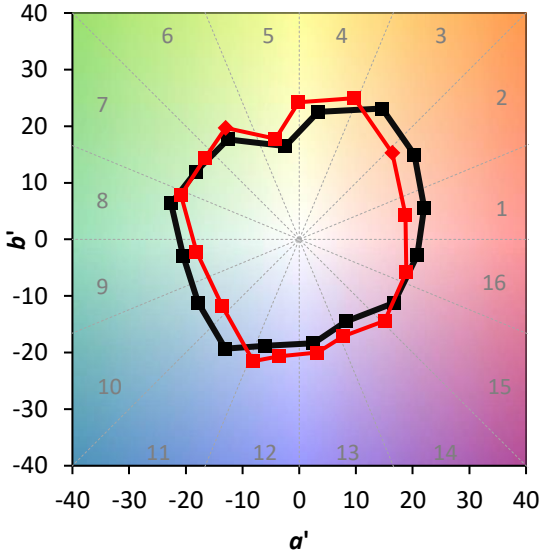
R_f = 75.8
R_g = 95.8
CIE R_a = 73.4
R_9 = -19.2

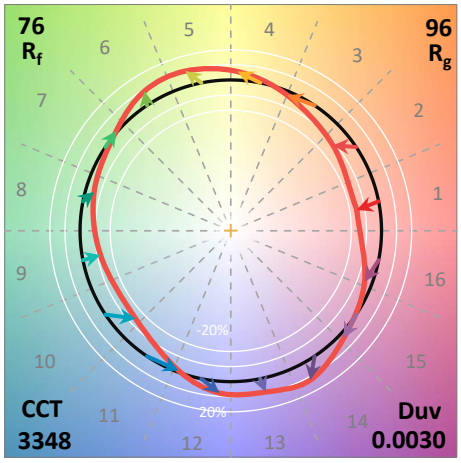
Spectral Power Distribution Comparison

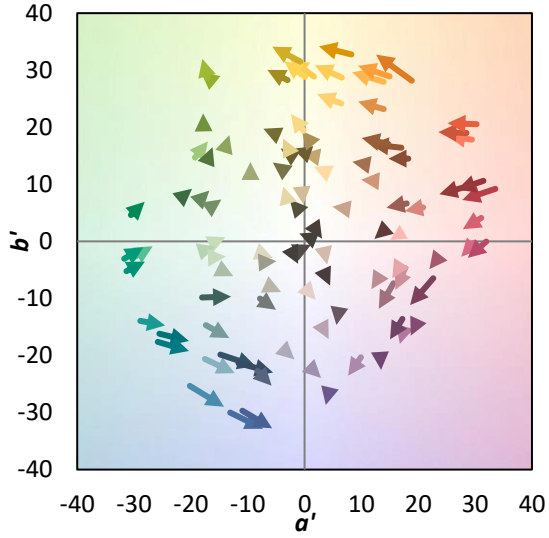


Color Vector Graphics







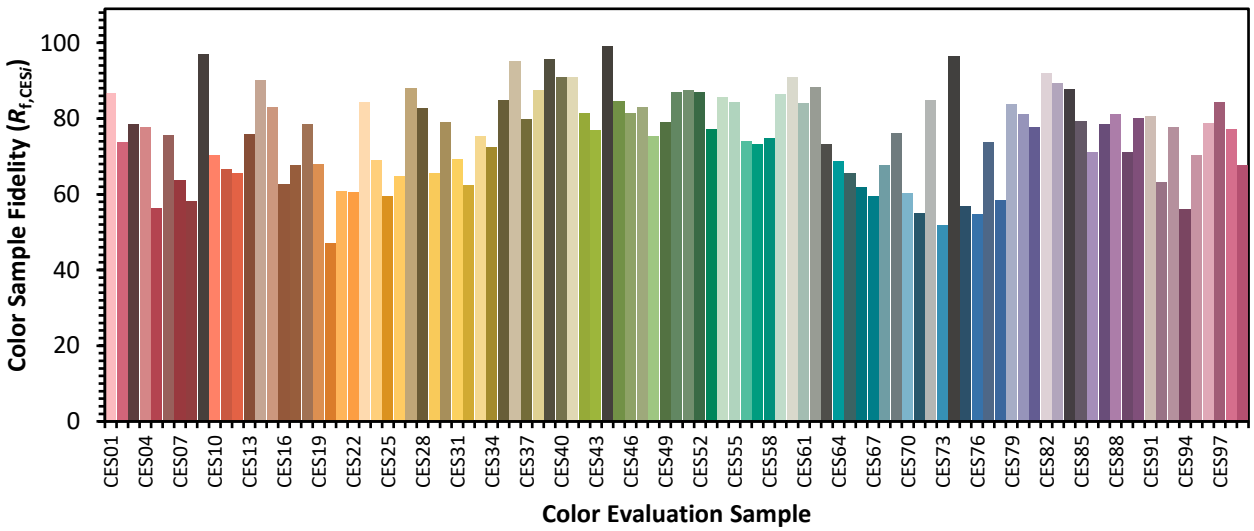


REPORT NUMBER: SP1-2407-176-4

TM-30-18

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

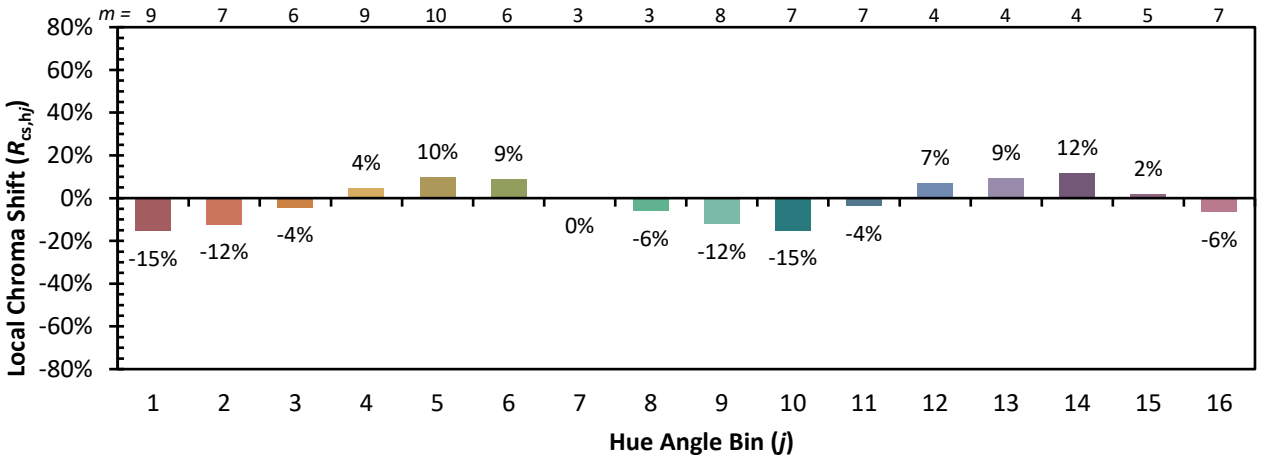
CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 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	

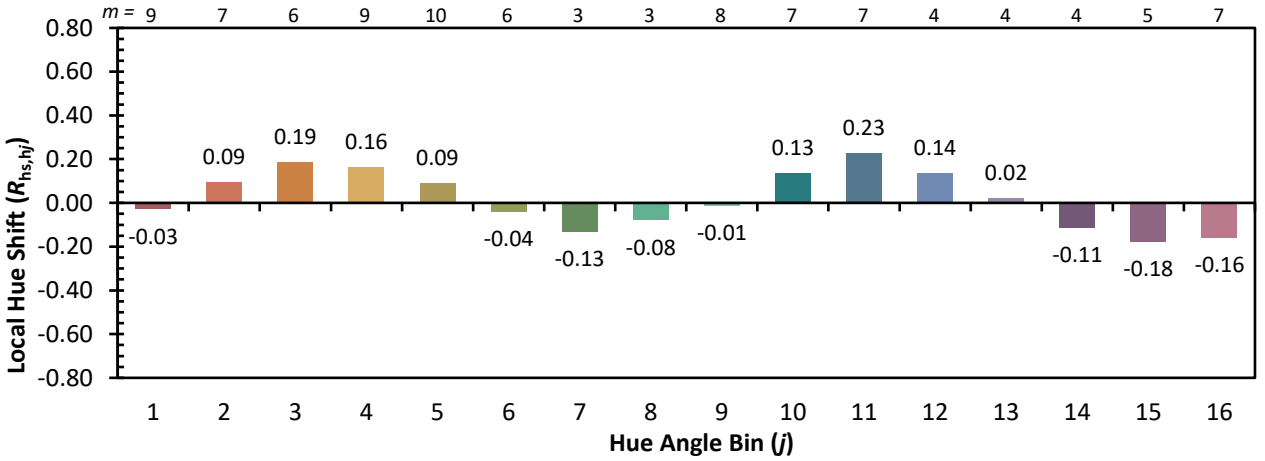


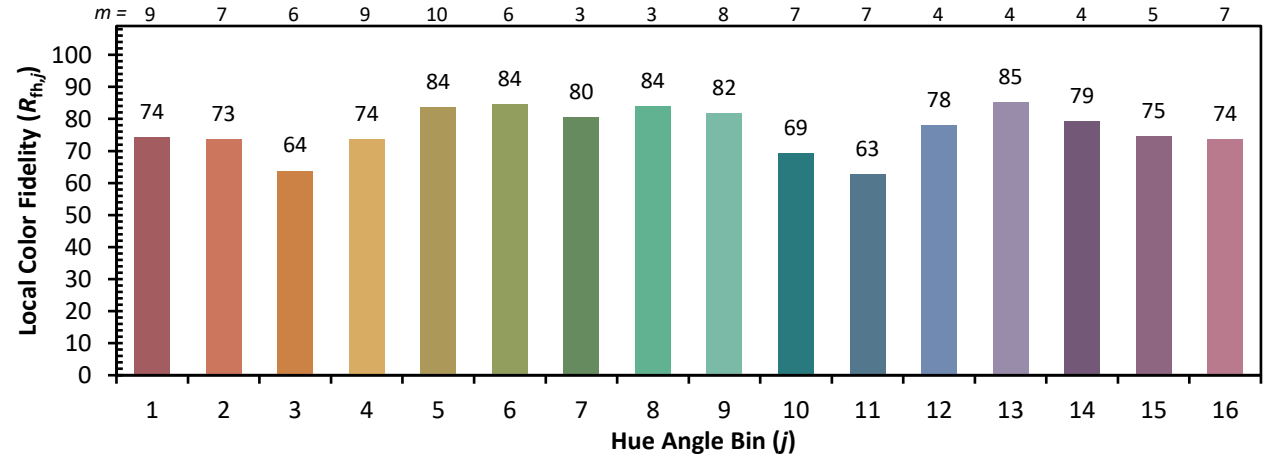
REPORT NUMBER: SP1-2407-176-4

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Color Rendition by Hue-Angle Bin



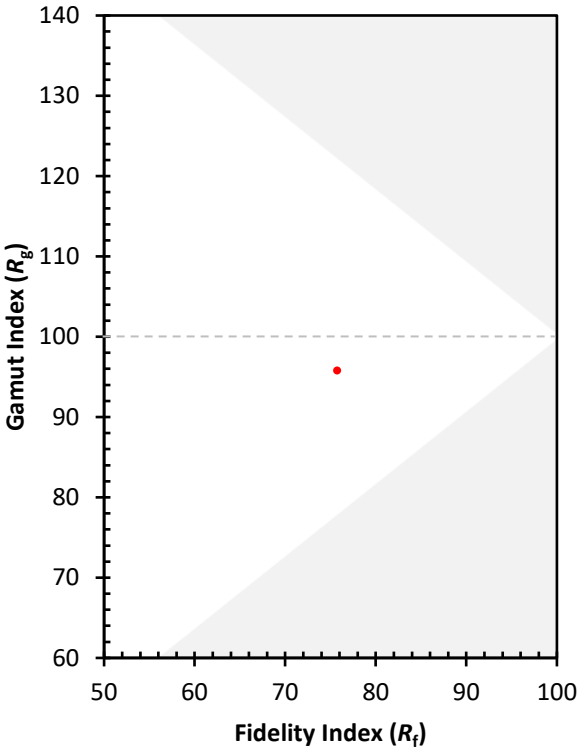


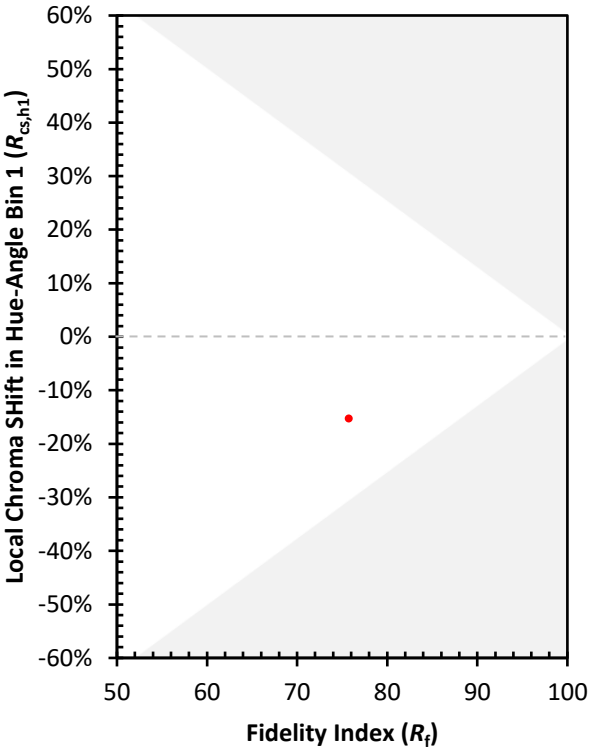


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Measure Comparisons





(END OF REPORT)