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

Scaled data based on original data using

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P363451

Luminaire Tested: NVN-SA3C-727-U-SL2-HSS

Issue Date: 3/3/2020

Report Generated By 670295436 / DESKTOP-CAGE97P

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

Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P363451
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-21)
Test Lab:	INNOVATION CENTER
Issue Date:	3/3/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	STREETWORKS
Catalog Number:	NVN-SA3C-727-U-SL2-HSS
Description:	NAVION ROADWAY AND AREA LUMINAIRE
	(3) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
	SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	14684 lumens
Efficiency:	N/A
Efficacy:	88.5 lumens/watt
Luminous Opening:	Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification:	Type III - Medium
BUG Rating:	B2 - U0 - G3

Input Watts (W):	166
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	28.75 FT

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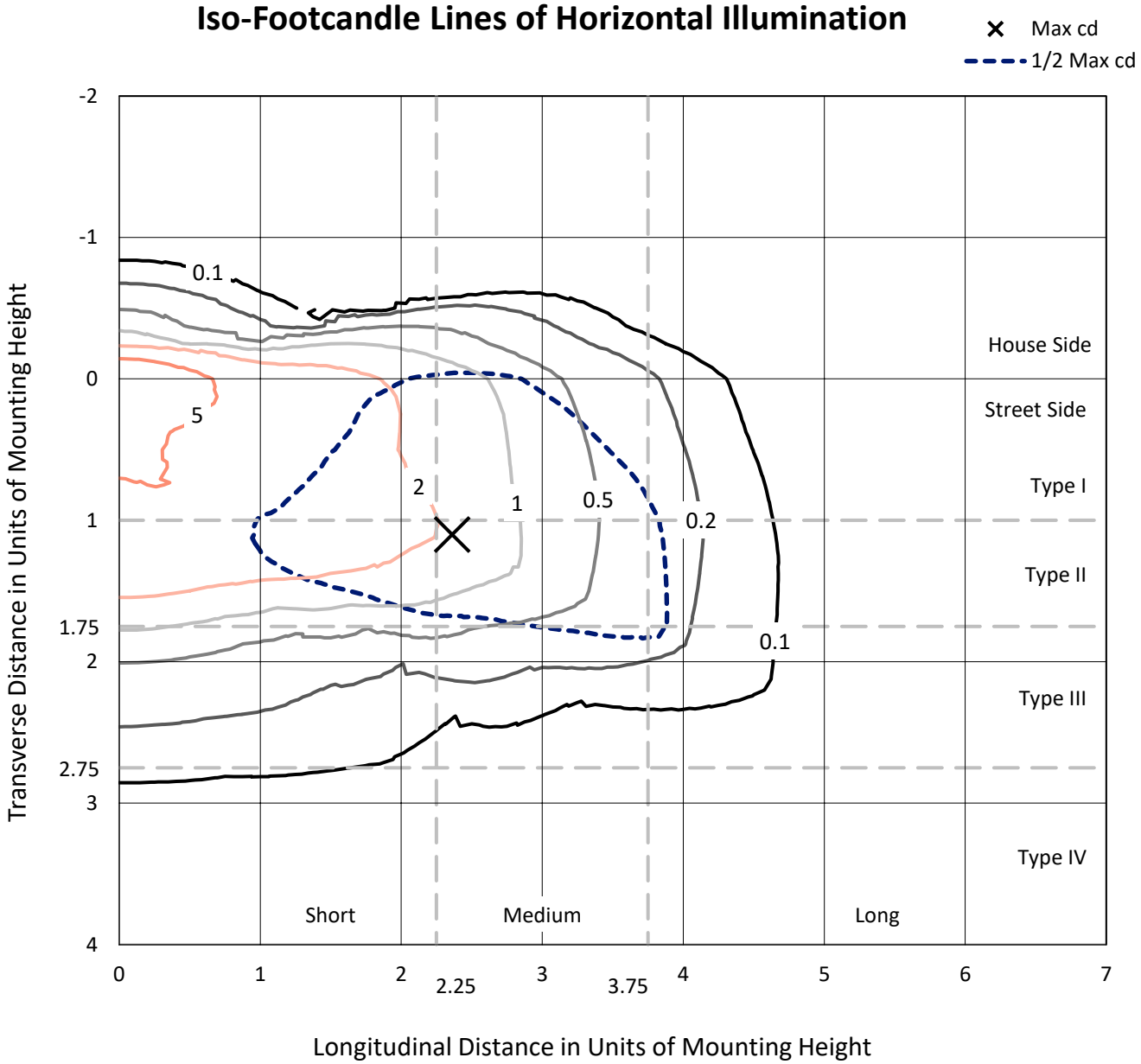
REPORT NUMBER: P363451
CATALOG NUMBER: NVN-SA3C-727-U-SL2-HSS

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 9.3 fc
Type III - Medium - N/A

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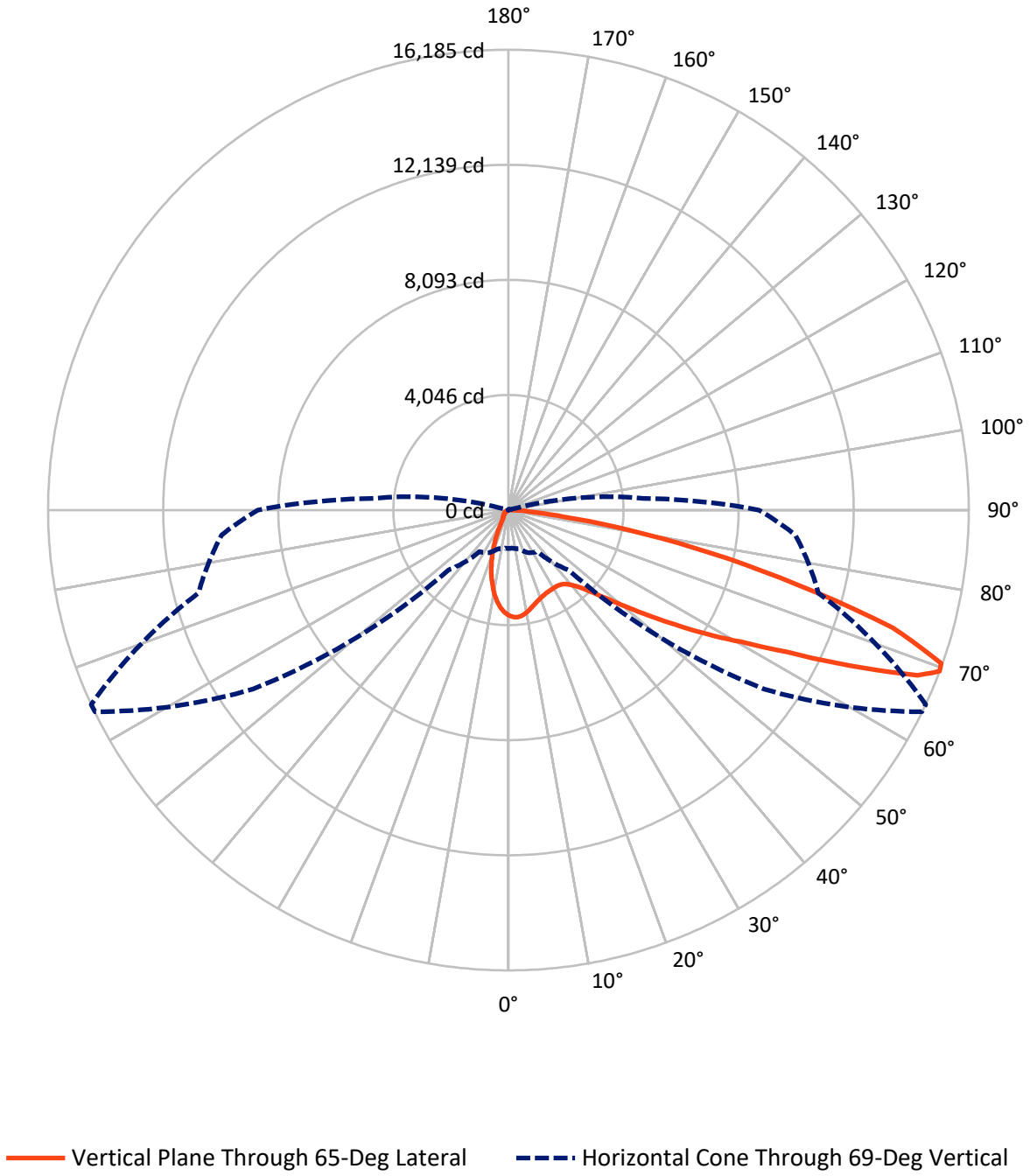
Luminous Intensity Polar Plot



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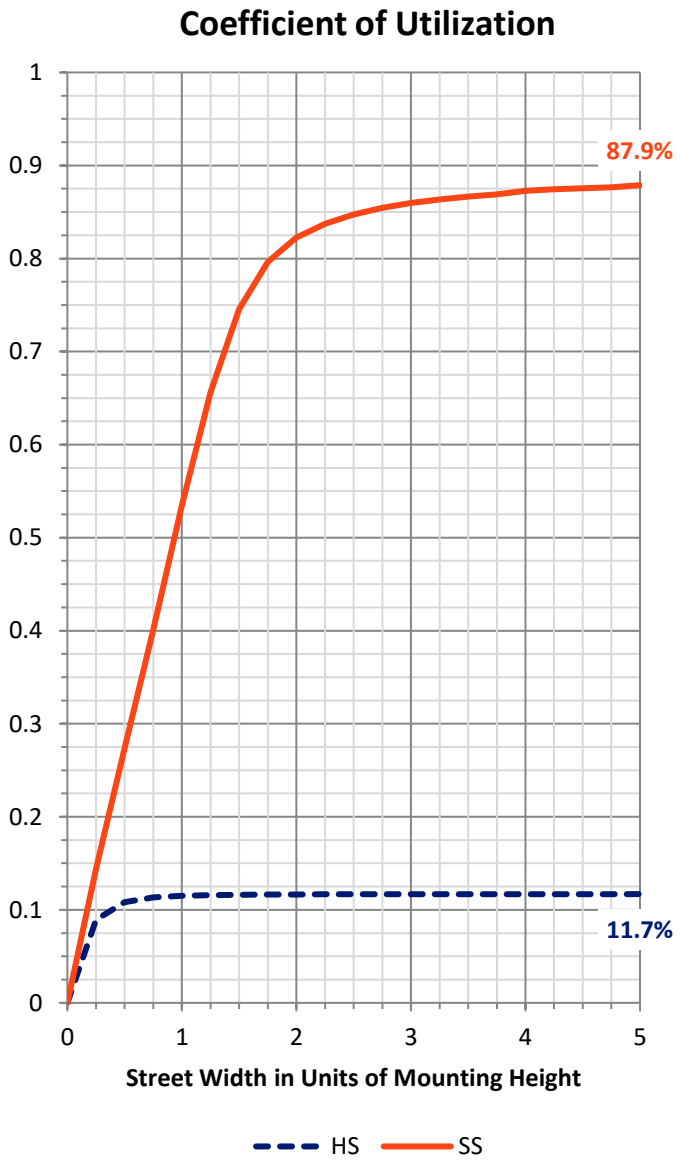
CATALOG NUMBER: NVN-SA3C-727-U-SL2-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1730.9	0.0	1730.9
	% Fixture	11.8	0.0	11.8
Street Side	Lumens	12953.1	0.0	12953.1
	% Fixture	88.2	0.0	88.2
Total	Lumens	14684.0	0.0	14684.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.3	2.1
10°-20°	679.2	4.6
20°-30°	940.8	6.4
30°-40°	1311.7	8.9
40°-50°	2038.9	13.9
50°-60°	3273.2	22.3
60°-70°	3702.5	25.2
70°-80°	2174.5	14.8
80°-90°	253.0	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	14684.0	100.0
0°-180°	14684.0	100.0



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REPORT NUMBER: P363451
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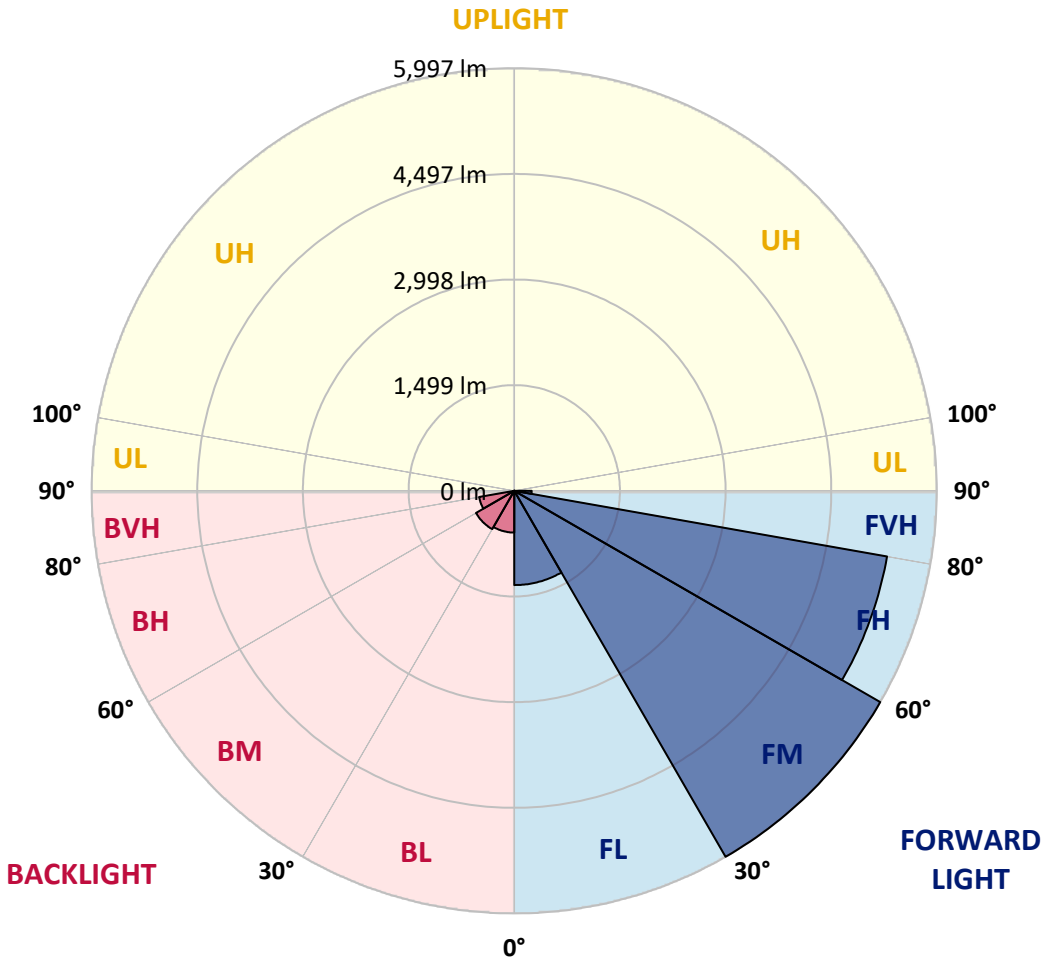
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1338.1	9.1			
FM	(30°-60°)	5996.5	40.8			
FH	(60°-80°)	5371.3	36.6			G3/7500
FVH	(80°-90°)	247.3	1.7			G3/500
BL	(0°-30°)	592.2	4.0	B2/1000		
BM	(30°-60°)	627.2	4.3	B1/1000		
BH	(60°-80°)	505.7	3.4	B2/1000		G2/1000
BVH	(80°-90°)	5.7	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3
Type III Medium



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REPORT NUMBER: P363451
CATALOG NUMBER: NVN-SA3C-727-U-SL2-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	64°	65°	75°	85°
0°	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	*3710.7*	3710.7	3710.7
2.5°	3743.6	3734.3	3741.7	3757.9	3766.0	3766.0	3772.2	3764.7	*3767.2*	3749.2	3723.1
5°	3509.4	3495.1	3515.6	3560.9	3616.8	3664.7	3735.5	3772.8	*3776.5*	3777.2	3746.7
7.5°	3257.1	3244.0	3274.5	3327.9	3400.0	3488.9	3612.5	3720.6	*3726.8*	3785.2	3762.9
10°	3052.0	3042.7	3078.1	3135.3	3219.8	3319.2	3470.8	3621.2	*3639.2*	3768.5	3760.4
12.5°	2889.3	2881.8	2915.4	2981.2	3067.6	3177.6	3336.0	3510.6	*3534.8*	3730.6	3748.0
15°	2770.6	2769.3	2797.3	2860.7	2956.4	3058.9	3221.1	3408.1	*3436.0*	3689.5	3746.1
17.5°	2708.4	2710.3	2730.8	2784.9	2866.9	2968.8	3124.1	3321.7	*3352.2*	3652.9	3755.4
20°	2702.2	2704.1	2715.3	2745.7	2812.2	2902.3	3045.2	3249.0	*3280.7*	3625.5	3770.3
22.5°	2756.9	2755.7	2758.8	2755.7	2792.9	2861.3	2993.0	3193.1	*3229.8*	3607.5	3782.1
25°	2861.9	2860.1	2858.8	2835.8	2811.0	2847.6	2971.3	3161.4	*3196.2*	3594.5	3789.0
27.5°	3007.9	3006.7	3004.8	2966.9	2892.4	2869.4	2973.8	3149.6	*3178.8*	3583.9	3787.7
30°	3199.9	3208.6	3206.1	3153.3	3037.1	2935.9	2999.9	3143.4	*3168.9*	3563.4	3774.7
32.5°	3425.5	3442.9	3456.5	3400.0	3254.6	3067.6	3060.1	3150.2	*3168.9*	3547.9	3751.1
35°	3659.7	3682.1	3732.4	3712.5	3521.2	3265.8	3163.9	3191.2	*3206.8*	3556.6	3739.9
37.5°	3890.2	3917.0	4026.3	4084.1	3870.4	3528.0	3325.4	3292.5	*3300.6*	3609.4	3752.3
40°	4158.0	4198.4	4364.3	4457.5	4287.3	3879.1	3567.1	3466.5	*3469.6*	3725.6	3810.1
42.5°	4509.7	4551.4	4730.9	4876.9	4757.0	4322.7	3895.2	3732.4	*3729.3*	3943.1	3946.2
45°	4938.5	4981.9	5167.7	5329.9	5275.8	4848.4	4315.2	4120.8	*4117.0*	4286.0	4204.0
47.5°	5424.3	5467.2	5633.1	5800.3	5858.7	5462.2	4850.2	4650.8	*4642.1*	4762.6	4602.3
50°	5841.3	5869.2	6022.1	6247.0	6510.5	6216.6	5515.7	5323.7	*5314.4*	5395.8	5187.0
52.5°	5992.9	6009.0	6164.4	6479.4	7136.8	7238.0	6389.9	6142.6	*6135.8*	6171.2	5965.5
55°	5685.9	5715.1	5905.9	6373.1	7476.0	8392.5	7493.4	7156.7	*7105.1*	7028.7	6779.5
57.5°	4849.6	4896.2	5101.2	5722.6	7317.6	9308.4	9115.1	8303.7	*8227.9*	7760.6	7441.2
60°	3633.6	3690.8	3861.0	4531.5	6471.9	9634.6	10887.2	9581.8	*9410.9*	8343.4	8049.5
62.5°	2493.5	2522.0	2637.6	3074.4	4766.3	9100.2	12369.7	11293.6	*10981.7*	8977.2	8707.5
65°	1904.4	1914.4	1961.6	2112.0	2838.3	7392.1	12959.4	13552.2	*13175.0*	9735.2	9390.4
67.5°	1534.7	1526.6	1591.9	1806.9	1900.7	4509.7	12271.6	15689.0	*15512.5*	10748.6	10077.6
69°	*1353.3*	*1342.1*	*1408.6*	*1658.4*	*1785.1*	*2981.2*	*10970.5*	*16174.2*	*16185.4*	*11283.6*	*10124.8*
70°	1217.8	1225.3	1291.2	1570.1	1746.0	2340.0	9727.8	16050.6	*16138.8*	11483.7	9841.5
72.5°	813.3	833.2	965.6	1303.6	1678.9	1770.8	5873.6	13773.4	*14112.6*	11033.2	8443.5
75°	458.6	473.5	630.7	983.0	1581.9	1686.3	3102.4	10147.2	*10475.3*	9226.4	6511.1
77.5°	224.9	233.0	356.7	634.4	1322.8	1606.8	1759.6	6892.6	*7267.3*	6022.1	3682.7
80°	95.1	99.4	178.3	391.4	945.7	1533.5	1306.7	4241.9	*4288.5*	2359.2	981.1
82.5°	36.7	37.9	75.2	244.2	600.8	1195.5	1092.9	2011.3	*1962.8*	444.3	223.7
85°	4.3	5.0	27.3	146.6	334.3	615.1	887.9	866.8	*802.2*	88.2	114.9
87.5°	0.0	0.0	1.9	44.7	99.4	288.3	461.7	359.8	*324.3*	28.6	59.6
90°	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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REPORT NUMBER: P363451
CATALOG NUMBER: NVN-SA3C-727-U-SL2-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7	3710.7
2.5°	3701.4	3695.1	3661.6	3613.1	3567.1	3510.0	3455.3	3422.4	3396.3	3378.9	3399.4
5°	3711.3	3684.0	3582.1	3451.6	3323.6	3179.4	3045.2	2931.5	2886.8	2837.1	2859.4
7.5°	3708.2	3656.6	3473.3	3240.9	3006.1	2763.1	2533.2	2356.1	2264.2	2174.1	2197.1
10°	3692.7	3605.7	3327.9	2983.7	2632.0	2282.8	1956.6	1708.7	1570.1	1444.6	1462.6
12.5°	3658.5	3537.3	3156.4	2689.2	2218.8	1758.4	1376.3	1058.8	888.5	813.3	822.7
15°	3638.0	3470.8	2975.0	2390.9	1777.7	1224.7	841.3	625.7	548.0	523.2	526.3
17.5°	3628.0	3406.8	2787.4	2049.8	1326.6	779.8	543.7	479.7	462.9	458.6	459.8
20°	3618.1	3342.2	2594.1	1712.4	914.0	524.4	446.7	428.1	421.9	416.3	417.5
22.5°	3601.3	3280.1	2386.6	1370.7	616.4	425.6	402.6	384.6	371.6	364.7	366.0
25°	3580.8	3214.8	2174.7	1020.9	449.9	379.6	357.9	332.4	316.9	304.5	305.1
27.5°	3547.9	3134.7	1956.0	743.1	377.8	339.9	310.7	282.7	256.6	242.3	242.3
30°	3501.9	3044.0	1713.0	531.9	338.6	300.7	265.3	230.5	202.6	189.5	188.3
32.5°	3451.0	2949.5	1467.6	403.3	307.6	264.1	223.7	187.0	162.2	151.6	151.0
35°	3407.5	2847.6	1222.8	338.0	276.5	228.7	184.5	153.5	133.6	124.9	124.3
37.5°	3379.5	2745.7	984.2	302.0	248.5	195.7	154.7	126.8	112.5	105.6	105.0
40°	3375.1	2669.9	766.1	274.6	222.4	166.5	129.2	107.5	94.4	87.0	86.4
42.5°	3431.7	2626.4	587.8	251.6	195.7	141.0	110.0	92.0	78.3	70.8	70.2
45°	3580.2	2640.1	452.3	231.1	169.0	119.3	93.2	76.4	64.0	58.4	57.2
47.5°	3851.1	2734.5	359.8	210.6	143.5	101.3	79.5	63.4	52.8	47.2	46.6
50°	4333.3	2956.4	300.7	188.3	119.9	86.4	65.9	51.6	42.9	37.9	37.3
52.5°	4973.2	3351.5	268.4	166.5	99.4	73.3	54.1	41.0	33.6	29.8	29.2
55°	5679.1	3830.0	247.3	142.9	81.4	60.9	42.9	32.3	26.1	23.0	21.7
57.5°	6368.2	4244.4	227.4	119.9	67.7	49.7	34.2	25.5	20.5	17.4	16.8
60°	7001.3	4625.3	204.4	96.3	55.3	39.1	26.7	19.9	16.2	13.0	13.0
62.5°	7679.2	4919.8	172.7	75.2	45.4	29.8	21.7	18.0	13.0	11.2	10.6
65°	8397.5	5138.5	135.5	58.4	35.4	22.4	18.0	18.6	10.6	8.1	7.5
67.5°	8928.1	5095.0	100.0	46.0	27.3	17.4	17.4	19.9	9.3	6.2	5.6
69°	*8811.3*	*4741.5*	*83.9*	*39.8*	*23.6*	*14.9*	*16.2*	*19.9*	*8.7*	*5.6*	*5.0*
70°	8472.7	4350.0	73.9	35.4	21.1	13.7	15.5	19.3	8.1	5.6	5.0
72.5°	7056.0	3276.4	57.8	26.7	16.8	11.2	13.0	16.8	8.1	5.6	4.3
75°	5307.5	2097.0	44.1	19.3	12.4	8.7	9.9	12.4	8.1	5.0	4.3
77.5°	2888.0	756.2	31.7	13.0	8.7	6.8	6.8	9.3	7.5	3.7	2.5
80°	742.5	190.1	19.9	8.7	6.8	5.0	4.3	6.2	4.3	0.6	0.0
82.5°	183.3	42.9	10.6	6.2	5.0	1.9	1.9	3.1	1.9	0.0	0.0
85°	100.7	21.1	6.8	4.3	2.5	0.0	0.0	0.6	0.0	0.0	0.0
87.5°	51.6	6.2	1.9	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0
90°	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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LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-1-R4

Test Date: 08/20/2019

Luminaire Tested: SA1C-727-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

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

Test Information

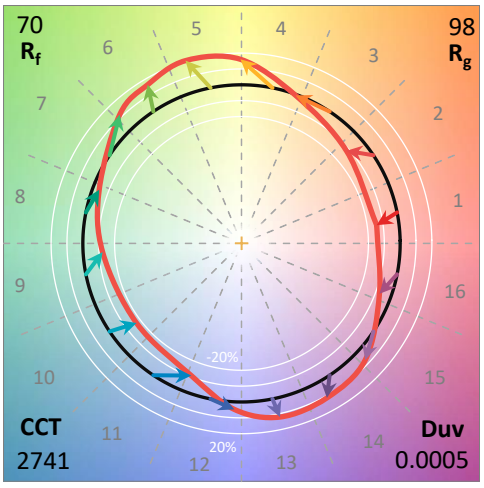
Test Method:	LM-79-2008
Report Number:	SP1-1908-441-1-R4
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	10/28/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	McGRAW-EDISON
Catalog Number:	**SA1C-727-U-5WQ**
Description:	McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-1-R3. TO UPDATE THE CATALOG NUMBER.TESTED IN SITU. (1) 70 CRI, 2700K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K):	2741	CRI (Ra):	71.5		
CIE u':	0.2605	R1:	69.2	R9:	-16.1
CIE v':	0.5272	R2:	79.4	R10:	51.4
Duv:	0.0005	R3:	87.8	R11:	63.1
CIE x:	0.4573	R4:	69.4	R12:	42.0
CIE y:	0.4113	R5:	66.4	R13:	70.2
CIE z:	0.1313	R6:	69.8	R14:	92.4
Peak Wavelength (nm):	602	R7:	79.8		
Dominant Wavelength (nm):	583	R8:	50.1		
Purity:	61.2				

Rf:	69.9
Rg:	98.3



Test Conditions

Stabilization Time:	56M
Operation Time:	12H
Room Temperature (°C) / RH%:	25.3./42%
Sphere Temperature (°C):	25.7

Cooper Lighting Solutions Photometric Lab
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REPORT NUMBER: SP1-1908-441-1-R4

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/28/2019	12/28/2019
Power Meter	IN0071	12/5/2018	12/5/2019
AC Power Source	IN0063	12/5/2018	12/5/2019
DC Power Source	IN0208	12/5/2018	12/5/2019
Sphere Thermometer	IN0085	12/5/2018	12/5/2019
Room Thermometer	IN0046	12/5/2018	12/5/2019

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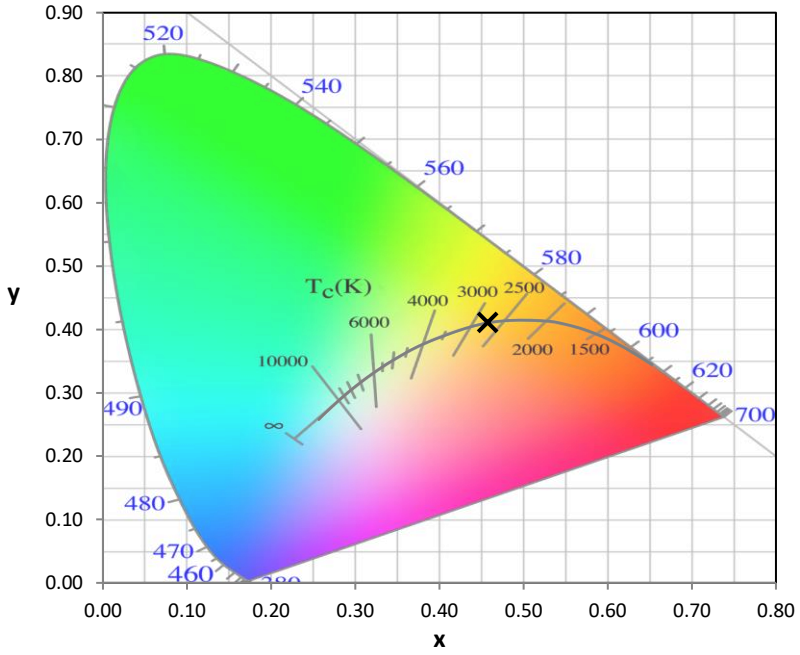
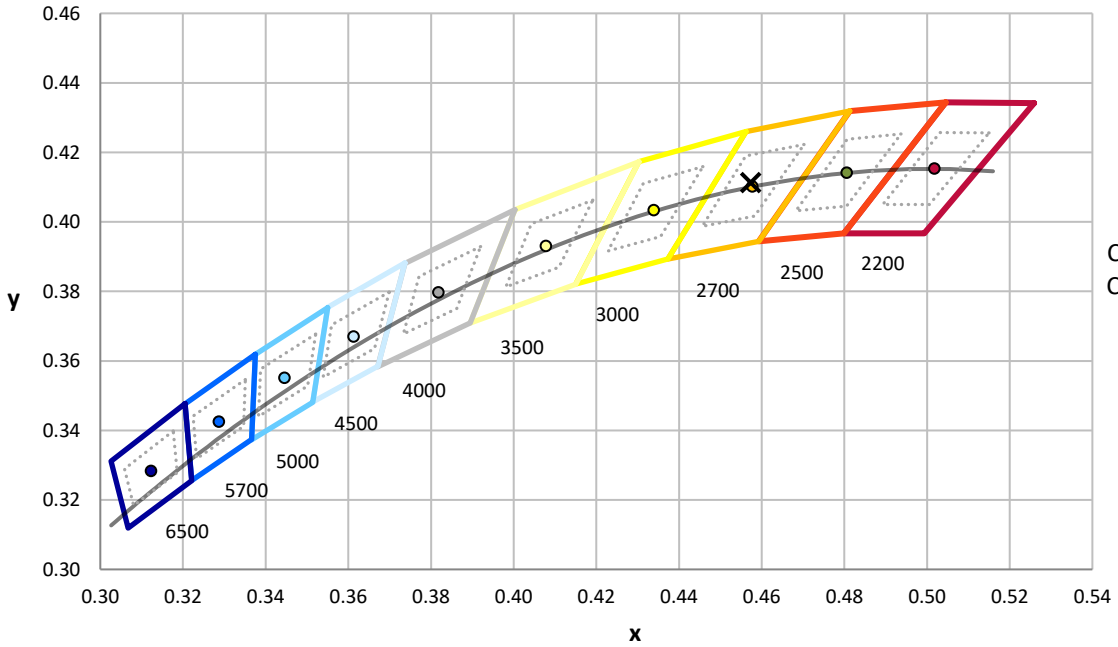
REPORT NUMBER: SP1-1908-441-1-R4

CIE 1931 Chromaticity Diagram



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



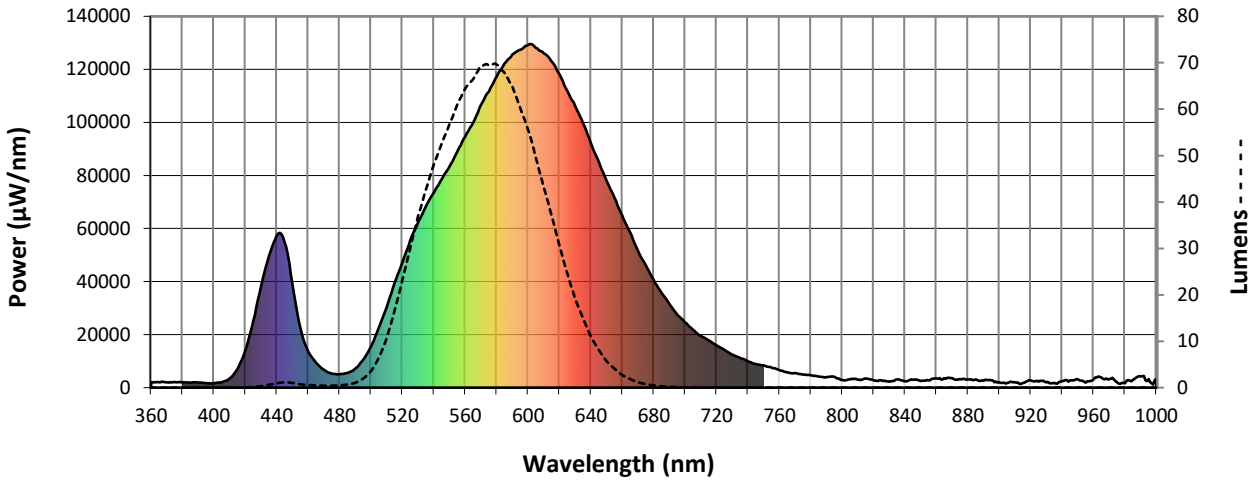
CCT = 2741K
CIE x = 0.4573
CIE y = 0.4113
Duv = 0.0005

Point lies inside the ANSI 2700K 4-step quadrangle

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

REPORT NUMBER: SP1-1908-441-1-R4

Photopic Flux vs. Wavelength



Photopic Lumens: 6211.7

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	2044	0.0	490	7179	1.0	620	118034	30.7	750	8362	0.0	880	3128	0.0
365	2016	0.0	495	10476	1.9	625	111884	24.7	755	7635	0.0	885	3110	0.0
370	2020	0.0	500	15549	3.4	630	106119	19.2	760	6582	0.0	890	2632	0.0
375	2137	0.0	505	22477	6.3	635	99706	15.0	765	5777	0.0	895	2709	0.0
380	2046	0.0	510	30417	10.4	640	92142	11.0	770	5474	0.0	900	2016	0.0
385	1925	0.0	515	39274	16.3	645	84987	8.2	775	4977	0.0	905	1748	0.0
390	1893	0.0	520	47282	22.9	650	78016	5.7	780	4723	0.0	910	2046	0.0
395	1695	0.0	525	55413	29.7	655	71541	4.1	785	4219	0.0	915	1844	0.0
400	1633	0.0	530	62377	36.7	660	64863	2.7	790	3969	0.0	920	2734	0.0
405	2065	0.0	535	68520	42.5	665	58485	1.9	795	4122	0.0	925	2307	0.0
410	3449	0.0	540	73435	47.8	670	51641	1.1	800	2864	0.0	930	2039	0.0
415	7117	0.0	545	78677	52.4	675	46030	0.8	805	3151	0.0	935	1784	0.0
420	13992	0.0	550	83331	56.6	680	40590	0.5	810	3022	0.0	940	2464	0.0
425	25176	0.1	555	89120	60.9	685	35691	0.3	815	3471	0.0	945	2794	0.0
430	38151	0.3	560	94613	64.3	690	31631	0.2	820	2749	0.0	950	3090	0.0
435	49673	0.6	565	99818	66.4	695	27437	0.1	825	2729	0.0	955	1866	0.0
440	57273	0.9	570	106526	69.3	700	24589	0.1	830	2282	0.0	960	3110	0.0
445	54802	1.1	575	111610	69.4	705	21832	0.0	835	3140	0.0	965	3880	0.0
450	39184	1.0	580	117163	69.6	710	19500	0.0	840	2365	0.0	970	3243	0.0
455	22506	0.8	585	122201	67.9	715	17870	0.0	845	3024	0.0	975	2014	0.0
460	13692	0.6	590	125662	65.0	720	15924	0.0	850	2510	0.0	980	1688	0.0
465	9446	0.5	595	127415	60.4	725	14268	0.0	855	2739	0.0	985	2827	0.0
470	6698	0.4	600	129155	55.7	730	12438	0.0	860	3515	0.0	990	4172	0.0
475	5328	0.4	605	128057	49.6	735	11255	0.0	865	3600	0.0	995	3177	0.0
480	5081	0.5	610	126031	43.3	740	9951	0.0	870	3609	0.0	1000	3241	0.0
485	5579	0.7	615	123059	37.1	745	8870	0.0	875	3208	0.0			

Cooper Lighting Solutions Photometric Lab
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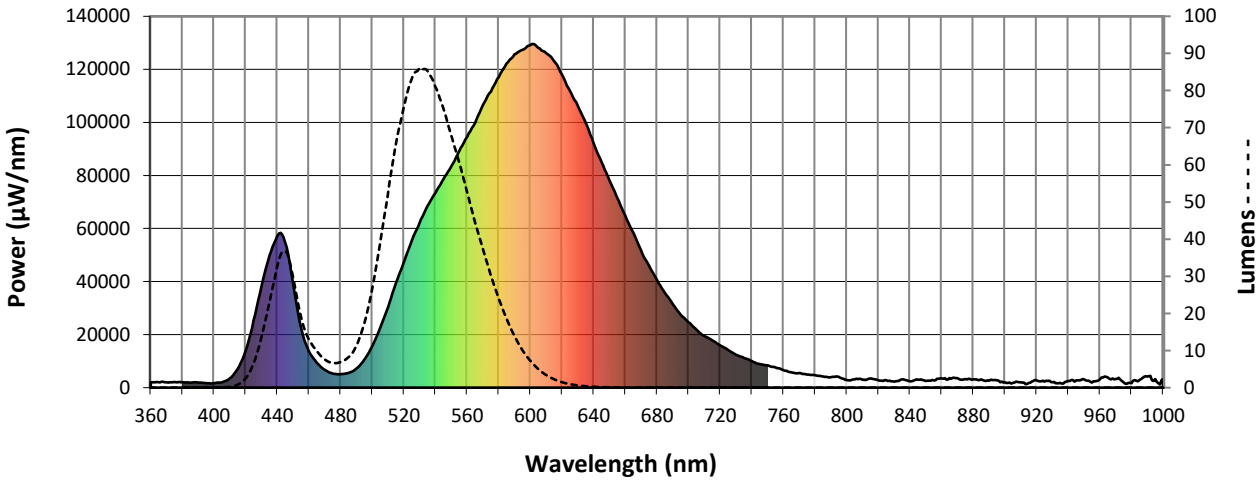
Scotopic Flux vs. Wavelength



Scotopic Lumens: 6474.3 **S/P: 1.04**

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	2044	0.0	490	7179	6.0	620	118034	0.1	750	8362	0.0	880	3128	0.0
365	2016	0.0	495	10476	8.6	625	111884	0.1	755	7635	0.0	885	3110	0.0
370	2020	0.0	500	15549	12.5	630	106119	0.0	760	6582	0.0	890	2632	0.0
375	2137	0.0	505	22477	17.3	635	99706	0.0	765	5777	0.0	895	2709	0.0
380	2046	0.0	510	30417	21.8	640	92142	0.0	770	5474	0.0	900	2016	0.0
385	1925	0.0	515	39274	25.7	645	84987	0.0	775	4977	0.0	905	1748	0.0
390	1893	0.0	520	47282	27.5	650	78016	0.0	780	4723	0.0	910	2046	0.0
395	1695	0.0	525	55413	28.1	655	71541	0.0	785	4219	0.0	915	1844	0.0
400	1633	0.0	530	62377	27.0	660	64863	0.0	790	3969	0.0	920	2734	0.0
405	2065	0.0	535	68520	24.7	665	58485	0.0	795	4122	0.0	925	2307	0.0
410	3449	0.1	540	73435	21.5	670	51641	0.0	800	2864	0.0	930	2039	0.0
415	7117	0.5	545	78677	18.3	675	46030	0.0	805	3151	0.0	935	1784	0.0
420	13992	1.6	550	83331	15.0	680	40590	0.0	810	3022	0.0	940	2464	0.0
425	25176	3.9	555	89120	12.0	685	35691	0.0	815	3471	0.0	945	2794	0.0
430	38151	8.1	560	94613	9.3	690	31631	0.0	820	2749	0.0	950	3090	0.0
435	49673	13.3	565	99818	7.0	695	27437	0.0	825	2729	0.0	955	1866	0.0
440	57273	19.1	570	106526	5.2	700	24589	0.0	830	2282	0.0	960	3110	0.0
445	54802	21.6	575	111610	3.7	705	21832	0.0	835	3140	0.0	965	3880	0.0
450	39184	18.1	580	117163	2.6	710	19500	0.0	840	2365	0.0	970	3243	0.0
455	22506	11.8	585	122201	1.8	715	17870	0.0	845	3024	0.0	975	2014	0.0
460	13692	8.1	590	125662	1.2	720	15924	0.0	850	2510	0.0	980	1688	0.0
465	9446	6.2	595	127415	0.8	725	14268	0.0	855	2739	0.0	985	2827	0.0
470	6698	4.8	600	129155	0.5	730	12438	0.0	860	3515	0.0	990	4172	0.0
475	5328	4.1	605	128057	0.4	735	11255	0.0	865	3600	0.0	995	3177	0.0
480	5081	4.1	610	126031	0.2	740	9951	0.0	870	3609	0.0	1000	3241	0.0
485	5579	4.6	615	123059	0.1	745	8870	0.0	875	3208	0.0			

Cooper Lighting Solutions Photometric Lab
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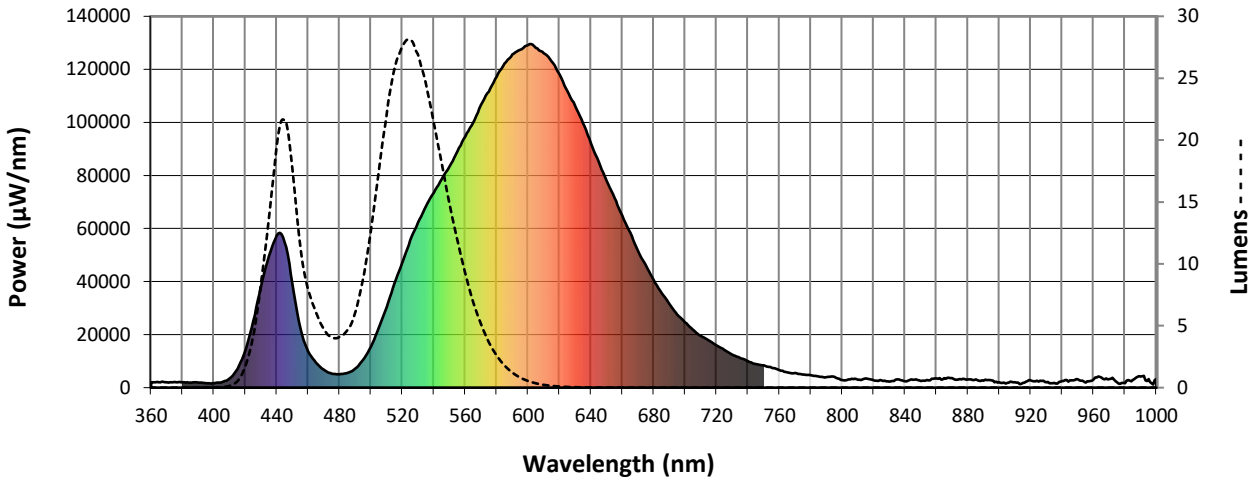
Melanopic Flux vs. Wavelength



Melanopic Lumens: 2145.7 **M/P: 0.35**

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	2044	0.0	490	7179	11.1	620	118034	1.5	750	8362	0.0	880	3128	0.0
365	2016	0.0	495	10476	16.9	625	111884	0.9	755	7635	0.0	885	3110	0.0
370	2020	0.0	500	15549	26.0	630	106119	0.6	760	6582	0.0	890	2632	0.0
375	2137	0.0	505	22477	38.2	635	99706	0.4	765	5777	0.0	895	2709	0.0
380	2046	0.0	510	30417	51.6	640	92142	0.2	770	5474	0.0	900	2016	0.0
385	1925	0.0	515	39274	65.1	645	84987	0.1	775	4977	0.0	905	1748	0.0
390	1893	0.0	520	47282	75.2	650	78016	0.1	780	4723	0.0	910	2046	0.0
395	1695	0.0	525	55413	82.9	655	71541	0.1	785	4219	0.0	915	1844	0.0
400	1633	0.0	530	62377	86.0	660	64863	0.0	790	3969	0.0	920	2734	0.0
405	2065	0.1	535	68520	85.4	665	58485	0.0	795	4122	0.0	925	2307	0.0
410	3449	0.2	540	73435	81.1	670	51641	0.0	800	2864	0.0	930	2039	0.0
415	7117	0.7	545	78677	75.4	675	46030	0.0	805	3151	0.0	935	1784	0.0
420	13992	2.3	550	83331	68.1	680	40590	0.0	810	3022	0.0	940	2464	0.0
425	25176	6.2	555	89120	60.9	685	35691	0.0	815	3471	0.0	945	2794	0.0
430	38151	13.0	560	94613	52.9	690	31631	0.0	820	2749	0.0	950	3090	0.0
435	49673	22.2	565	99818	44.8	695	27437	0.0	825	2729	0.0	955	1866	0.0
440	57273	32.0	570	106526	37.6	700	24589	0.0	830	2282	0.0	960	3110	0.0
445	54802	36.7	575	111610	30.4	705	21832	0.0	835	3140	0.0	965	3880	0.0
450	39184	30.4	580	117163	24.1	710	19500	0.0	840	2365	0.0	970	3243	0.0
455	22506	19.7	585	122201	18.7	715	17870	0.0	845	3024	0.0	975	2014	0.0
460	13692	13.2	590	125662	14.0	720	15924	0.0	850	2510	0.0	980	1688	0.0
465	9446	10.0	595	127415	10.2	725	14268	0.0	855	2739	0.0	985	2827	0.0
470	6698	7.7	600	129155	7.3	730	12438	0.0	860	3515	0.0	990	4172	0.0
475	5328	6.7	605	128057	5.0	735	11255	0.0	865	3600	0.0	995	3177	0.0
480	5081	6.9	610	126031	3.4	740	9951	0.0	870	3609	0.0	1000	3241	0.0
485	5579	8.1	615	123059	2.3	745	8870	0.0	875	3208	0.0			

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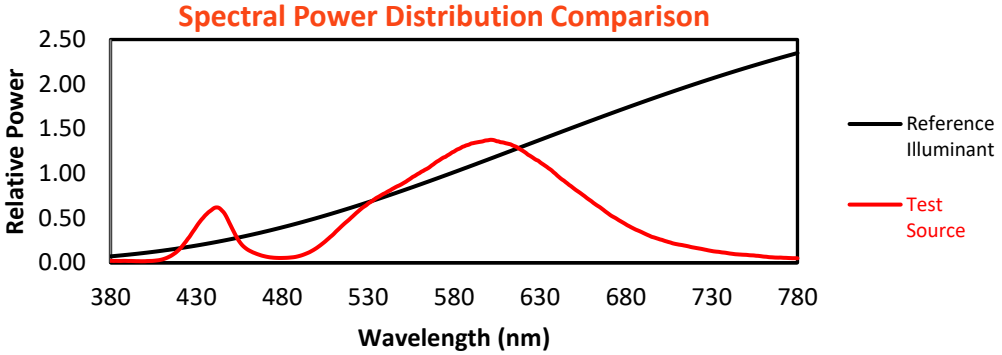
TM-30-18

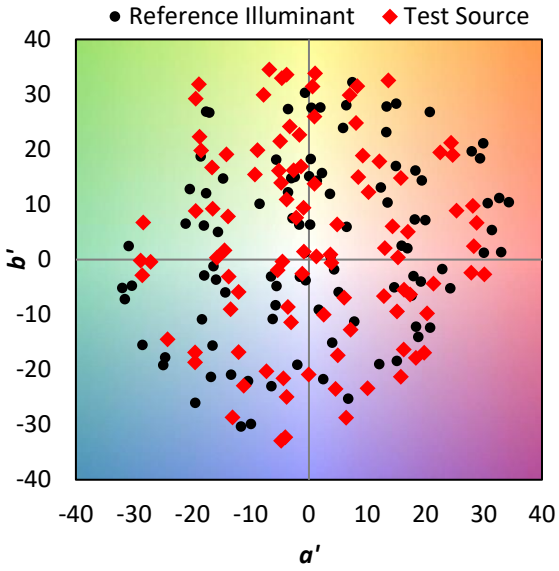
Summary

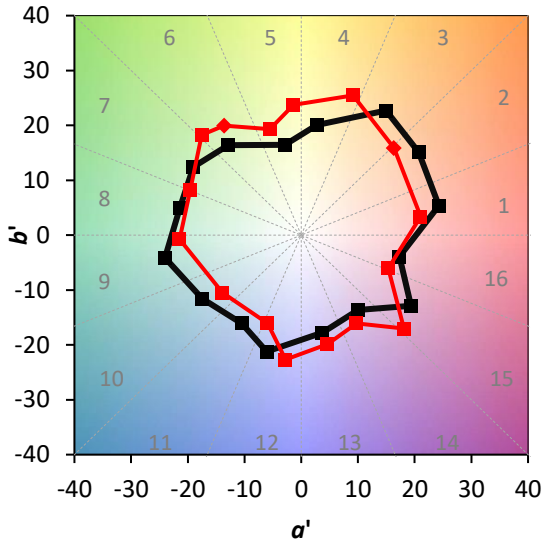
R_f = 69.9
R_g = 98.3
CIE R_a = 71.5
R_9 = -16.1

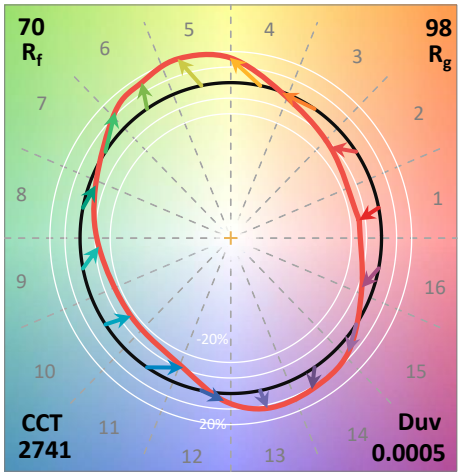
Spectral Power Distribution Comparison

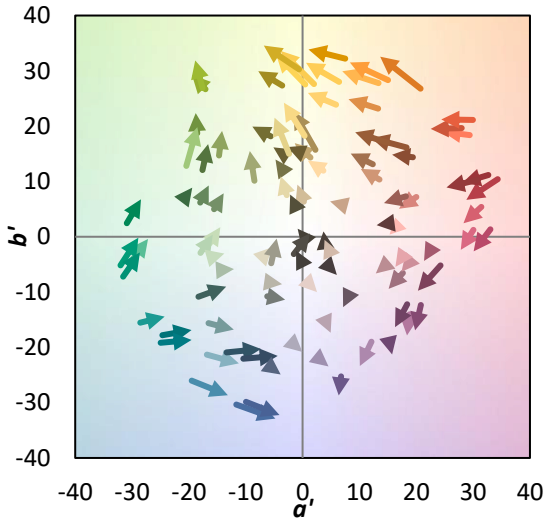


Color Vector Graphics









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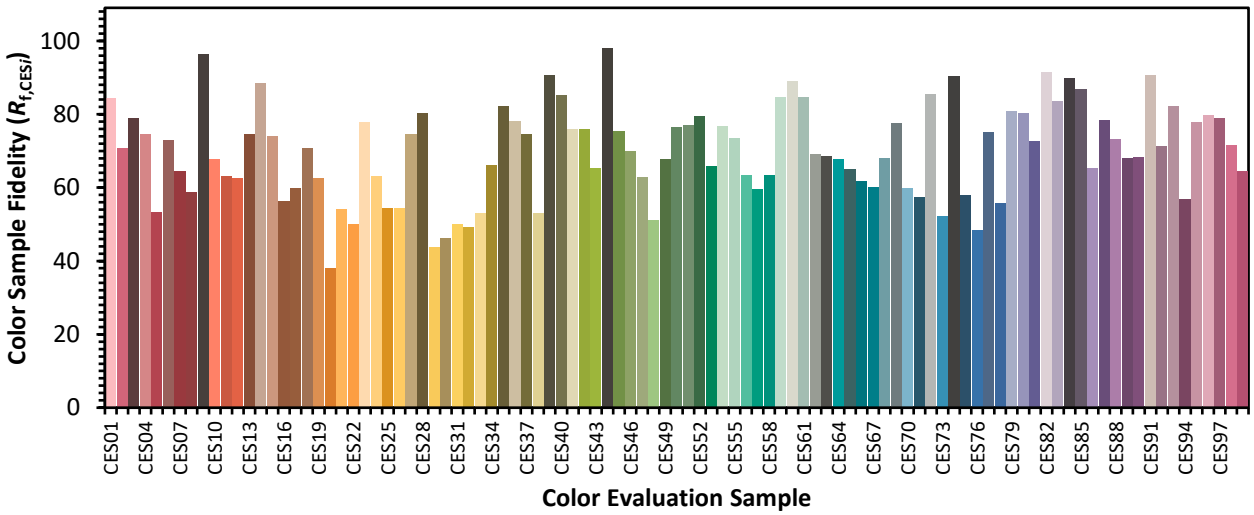
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 54	CES51 = 77	CES76 = 48
CES02 = 63	CES27 = 74	CES52 = 80	CES77 = 75
CES03 = 31	CES28 = 80	CES53 = 66	CES78 = 56
CES04 = 71	CES29 = 44	CES54 = 77	CES79 = 81
CES05 = 50	CES30 = 46	CES55 = 74	CES80 = 80
CES06 = 52	CES31 = 50	CES56 = 63	CES81 = 73
CES07 = 42	CES32 = 49	CES57 = 60	CES82 = 91
CES08 = 41	CES33 = 53	CES58 = 63	CES83 = 84
CES09 = 29	CES34 = 66	CES59 = 85	CES84 = 90
CES10 = 77	CES35 = 82	CES60 = 89	CES85 = 87
CES11 = 60	CES36 = 78	CES61 = 85	CES86 = 65
CES12 = 66	CES37 = 75	CES62 = 69	CES87 = 78
CES13 = 43	CES38 = 53	CES63 = 68	CES88 = 73
CES14 = 74	CES39 = 91	CES64 = 68	CES89 = 68
CES15 = 71	CES40 = 85	CES65 = 65	CES90 = 68
CES16 = 48	CES41 = 76	CES66 = 62	CES91 = 91
CES17 = 50	CES42 = 76	CES67 = 60	CES92 = 71
CES18 = 57	CES43 = 65	CES68 = 68	CES93 = 82
CES19 = 73	CES44 = 98	CES69 = 77	CES94 = 57
CES20 = 67	CES45 = 75	CES70 = 60	CES95 = 78
CES21 = 88	CES46 = 70	CES71 = 57	CES96 = 80
CES22 = 80	CES47 = 63	CES72 = 86	CES97 = 79
CES23 = 92	CES48 = 51	CES73 = 52	CES98 = 71
CES24 = 91	CES49 = 68	CES74 = 90	CES99 = 64
CES25 = 73	CES50 = 77	CES75 = 58	



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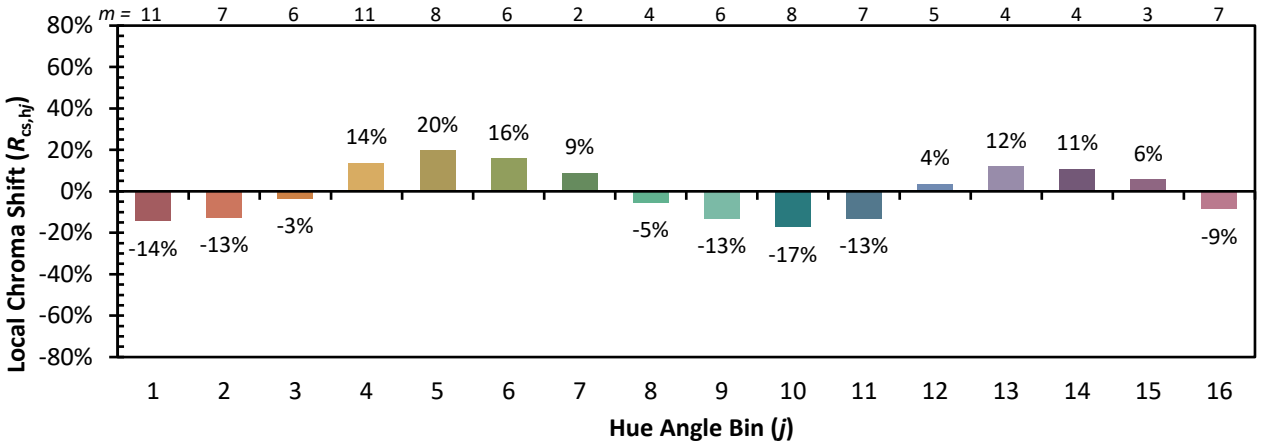
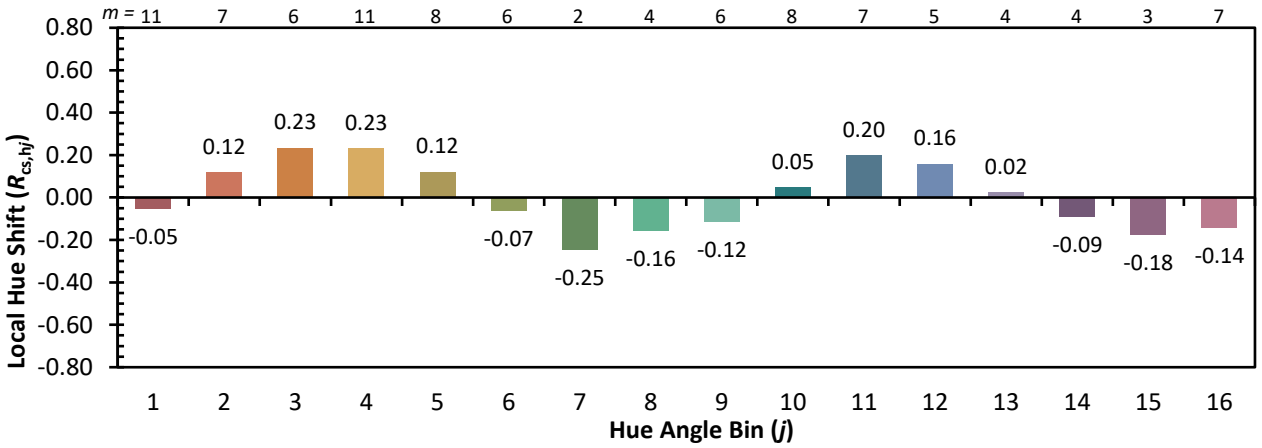
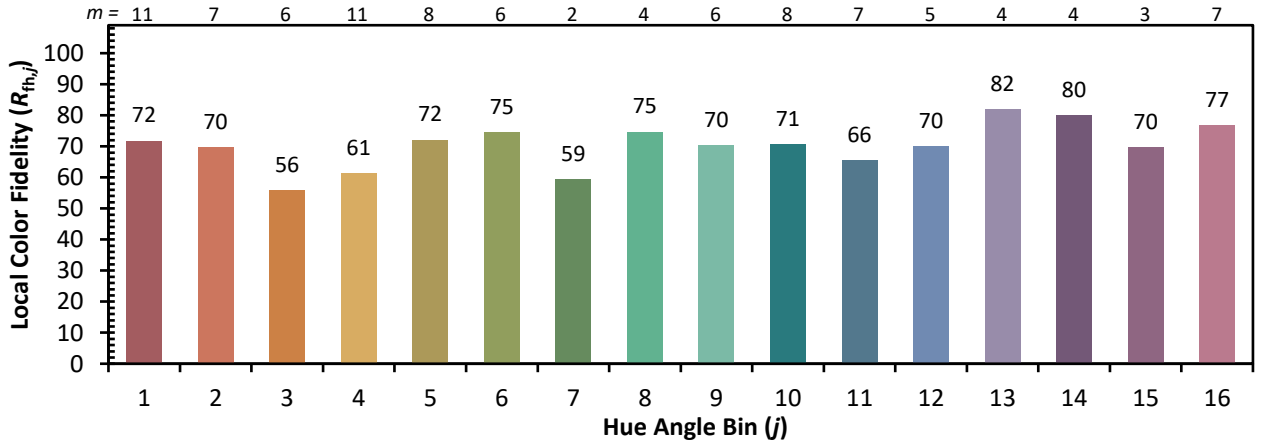
Color Rendition by Hue-Angle Bin







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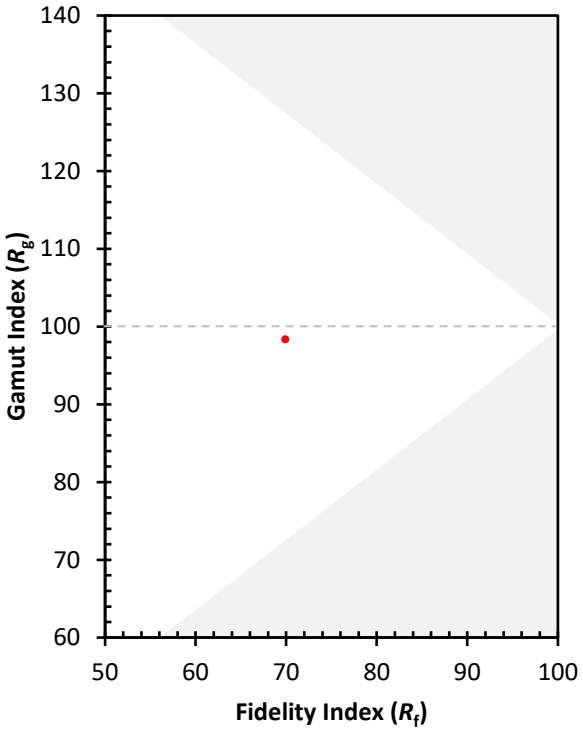
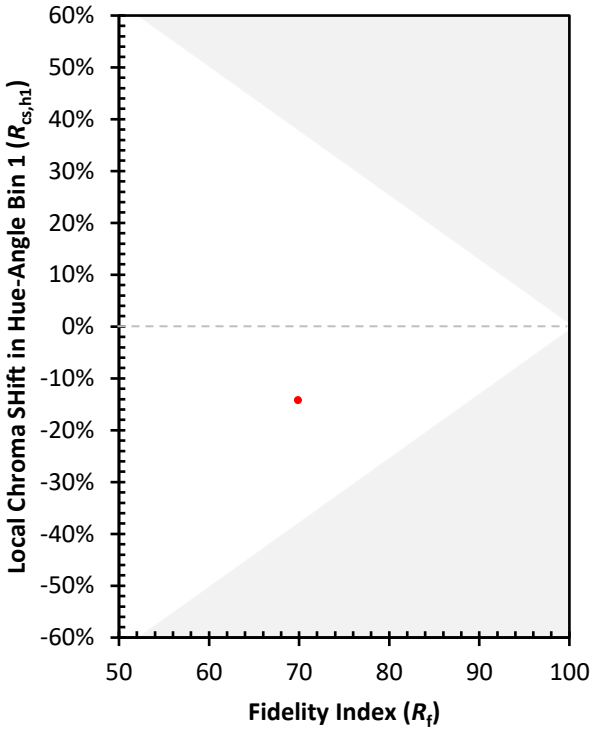
Measure Comparisons





(END OF REPORT)