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: METALUX

Report Number: P1432589

Luminaire Tested: EHBR1-18-UNV-ASM-L835-UPL18

Issue Date: 3/20/2026

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:	P1432589
	REPORT IS A COMBINATION OF REPORTS P1431678 AND P1431635
Test Lab:	INNOVATION CENTER
Issue Date:	3/20/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	METALUX
Catalog Number:	EHBR1-18-UNV-ASM-L835-UPL18
Description:	Elevate Round Highbay at, 18000 lumens, 3500K 80CRI LEDs with ASM lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	19585.2 lumens
Efficiency:	N/A
Efficacy:	183.7 lumens/watt
Spacing Criteria (0/90/45):	0.84 / 0.99 / 0.92
Luminous Opening:	Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type:	Direct

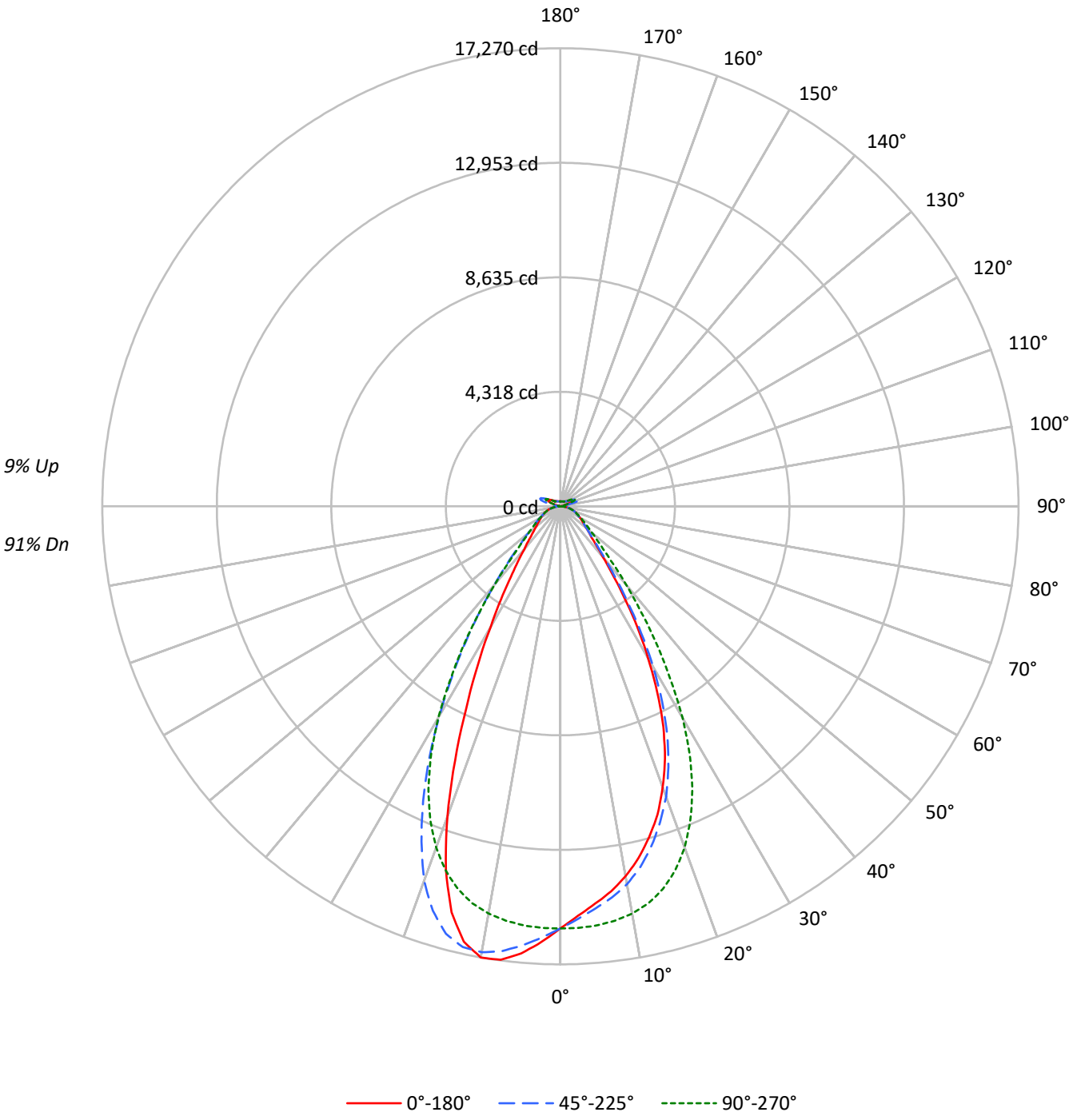
Input Watts (W):	106.6
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

Luminous Intensity Polar Plot



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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			20
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	91
1	110	106	103	100	106	103	100	98	97	95	93	92	90	89	87	86	84	82
2	103	97	92	87	99	94	90	86	89	86	82	85	82	79	81	78	76	74
3	96	88	82	78	93	86	81	76	82	78	74	78	75	72	75	72	69	67
4	90	81	75	70	88	79	73	69	76	71	67	73	69	65	70	66	63	61
5	85	75	68	63	82	73	67	62	71	65	61	68	63	60	65	61	58	56
6	80	70	63	58	78	68	62	57	66	60	56	63	59	55	61	57	54	52
7	75	65	58	53	73	64	57	53	61	56	52	59	54	51	57	53	50	48
8	71	60	54	49	69	59	53	49	58	52	48	56	51	47	54	50	46	45
9	67	57	50	46	66	56	50	45	54	49	45	53	48	44	51	47	43	42
10	64	53	47	43	62	52	46	42	51	46	42	50	45	41	48	44	41	39

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	74742	74742	74742	74742	74742
5°	70432	71255	74287	77849	79250
10°	66657	68069	73373	80349	81284
15°	61574	63218	71207	79525	75539
20°	54845	56692	66596	73099	60571
25°	45962	47701	58943	61313	41968
30°	34389	36383	47859	47381	27303
35°	22894	24275	34326	33772	17682
40°	14438	15430	22193	22336	12187
45°	10287	10715	14081	14686	9440
50°	8568	8637	10457	10730	8022
55°	7564	7582	8538	8763	7308
60°	7003	6943	7393	7550	6962
65°	6685	6625	6739	6871	6713
70°	6493	6381	6388	6511	6578
75°	6172	5986	5974	6185	6364
80°	5617	5226	5248	5617	6007
85°	4091	3395	3395	3881	4289

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
Vertical Angle: 45°
Luminance: 19797 cd/sqm

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1513.3	7.7
10°-20°	4117.1	21.0
20°-30°	4828.5	24.7
30°-40°	3358.0	17.1
40°-50°	1668.7	8.5
50°-60°	998.1	5.1
60°-70°	702.5	3.6
70°-80°	452.5	2.3
80°-90°	146.9	0.8
90°-100°	47.9	0.2
100°-110°	312.9	1.6
110°-120°	578.0	3.0
120°-130°	343.5	1.8
130°-140°	207.8	1.1
140°-150°	143.8	0.7
150°-160°	93.9	0.5
160°-170°	53.9	0.3
170°-180°	17.9	0.1
0°-30°	10459.0	53.4
0°-40°	13817.0	70.5
0°-60°	16483.8	84.2
0°-90°	17785.7	90.8
90°-120°	938.7	4.8
90°-150°	1633.8	8.3
90°-180°	1799.0	9.2
0°-180°	19585.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	15916	15916	15916	15916	15916	
5°	15038	15214	15861	16622	16921	1411
15°	12918	13263	14939	16684	15848	3602
25°	9179	9526	11771	12244	8381	4141
35°	4202	4455	6300	6198	3245	2677
45°	1664	1734	2278	2376	1527	1345
55°	1022	1025	1154	1184	988	927
65°	698	692	703	717	701	693
75°	435	422	421	436	448	459
85°	141	117	117	133	147	145
90°	13	36	13	39	15	13
95°	22	81	25	69	24	21
105°	109	546	144	583	73	146
115°	500	646	615	715	526	460
125°	361	346	394	383	412	329
135°	264	266	249	278	288	206
145°	219	229	225	231	235	139
155°	194	201	200	200	209	91
165°	185	190	189	188	195	53
175°	185	188	188	187	192	18
180°	188	188	188	188	188	

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	15915.7	15915.7	15915.7	15915.7	15915.7	15915.7	15915.7	15915.7	*15915.7*
2.5°	15443.2	15453.4	15561.4	15701.9	15906.3	16112.0	16278.5	16388.4	*16442.7*
5°	15038.3	15094.3	15214.0	15472.2	15861.4	16273.2	16622.1	16850.4	*16921.1*
7.5°	14643.7	14676.2	14876.5	15202.6	15753.6	16395.3	16913.7	17180.2	*17245.2*
10°	*14162.3*	*14236.0*	*14462.3*	*14846.9*	*15589.2*	*16472.3*	*17071.3*	*17262.2*	*17270.0*
12.5°	13595.8	13693.5	13927.2	14412.4	15326.8	16444.8	17018.4	16955.8	*16813.3*
15°	12917.8	13003.4	13262.8	13825.6	14938.9	16282.1	16683.9	16173.8	*15847.6*
17.5°	12185.4	12263.0	12488.3	13108.2	14392.1	15977.7	15985.5	14976.5	*14361.0*
20°	11272.2	11333.1	11651.8	12260.0	13687.5	15489.5	15023.9	13178.4	*12449.2*
22.5°	10300.5	10357.5	10640.6	11273.7	12804.1	14831.1	13684.7	11369.5	*10374.7*
25°	9178.6	9209.6	9525.9	10098.4	11770.9	14024.4	12244.2	9398.5	*8380.9*
27.5°	7916.5	7969.3	8300.3	8885.0	10555.6	13002.0	10710.3	7680.1	*6741.2*
30°	6614.7	6702.2	6998.2	7521.7	9205.7	11691.2	9113.8	6116.3	*5251.7*
32.5°	5399.7	5462.7	5673.7	6220.7	7694.5	10406.4	7580.7	4900.7	*4168.4*
35°	4201.8	4264.8	4455.4	4992.6	6300.1	8799.0	6198.4	3850.8	*3245.2*
37.5°	3211.9	3323.2	3445.5	3881.6	4944.3	7280.2	4941.1	3100.8	*2632.3*
40°	2502.4	2520.4	2674.4	2953.3	3846.6	5692.5	3871.4	2475.3	*2112.4*
42.5°	2003.1	2051.8	2118.0	2326.9	2914.6	4352.7	3042.9	2031.5	*1794.3*
45°	1664.4	1683.5	1733.6	1874.0	2278.3	3203.1	2376.2	1714.0	*1527.4*
47.5°	1456.1	1447.8	1480.0	1585.0	1855.4	2475.6	1925.8	1470.1	*1339.4*
50°	1277.0	1272.0	1287.2	1357.3	1558.4	1899.6	1599.1	1283.3	*1195.6*
52.5°	1138.0	1142.4	1144.0	1187.5	1338.8	1549.2	1361.8	1143.7	*1084.5*
55°	1022.2	1027.8	1024.6	1056.8	1153.8	1302.4	1184.2	1028.5	*987.6*
57.5°	931.7	927.5	923.1	940.4	1013.2	1104.8	1028.5	930.2	*903.1*
60°	841.9	838.0	834.7	846.1	888.7	956.8	907.6	844.6	*836.9*
62.5°	764.9	762.5	762.2	760.2	792.9	835.9	802.5	767.6	*760.7*
65°	697.8	695.1	691.5	688.2	703.4	743.4	717.2	698.4	*700.7*
67.5°	630.6	630.6	624.3	619.3	634.2	655.0	643.7	633.0	*635.6*
70°	569.7	570.0	559.9	556.0	560.5	582.9	571.3	572.7	*577.2*
72.5°	504.3	497.2	489.7	489.4	490.0	507.4	503.5	507.1	*511.8*
75°	434.8	426.5	421.7	416.3	420.8	433.9	435.7	440.8	*448.3*
77.5°	367.7	354.8	350.9	348.3	345.3	360.2	365.9	372.8	*383.8*
80°	295.5	281.4	274.9	271.0	276.1	283.0	295.5	300.5	*316.0*
82.5°	218.5	208.0	200.0	199.7	202.1	208.3	219.1	228.6	*237.6*
85°	140.6	123.8	116.7	119.4	116.7	126.3	133.4	144.8	*147.4*
87.5°	50.7	39.7	37.9	41.8	40.9	43.8	50.1	54.6	*54.9*
90°	13.2	21.1	36.1	23.2	13.2	22.4	38.6	21.6	*15.3*
92.5°	19.2	32.1	57.9	30.1	17.2	30.4	54.5	28.6	*20.3*
95°	22.1	37.0	80.8	40.0	25.4	37.3	69.4	31.5	*24.2*
97.5°	28.4	41.0	92.7	49.0	39.4	46.3	78.4	33.6	*29.3*
100°	37.3	48.0	144.4	60.2	52.3	52.3	143.0	38.5	*33.3*
102.5°	63.2	101.6	306.4	112.9	79.1	102.2	331.2	76.7	*40.1*
105°	108.9	214.0	545.9	236.1	143.7	233.4	582.6	196.9	*73.3*
107.5°	188.4	382.9	720.1	418.0	271.9	435.2	750.6	387.8	*169.7*
110°	351.4	508.1	754.9	574.1	434.9	608.1	819.1	530.9	*342.6*

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	474.7	545.9	723.1	633.7	566.1	677.7	800.2	588.5	*473.8*
115°	499.5	525.1	645.6	618.8	615.1	667.7	714.8	586.6	*525.5*
117.5°	482.6	479.3	548.2	556.4	594.2	611.1	617.4	550.8	*528.5*
120°	446.8	426.7	457.8	485.9	536.5	529.7	520.2	498.0	*498.6*
122.5°	402.1	378.3	392.4	413.6	464.3	449.4	439.8	444.7	*457.9*
125°	360.6	336.5	346.0	351.3	393.7	378.9	383.4	398.9	*412.5*
127.5°	323.9	307.7	313.2	307.6	334.4	327.5	342.6	360.2	*371.7*
130°	299.1	285.1	292.7	279.1	292.0	293.6	313.8	328.7	*335.9*
132.5°	278.5	269.5	278.4	261.8	265.5	273.1	292.4	305.2	*309.4*
135°	263.6	255.9	265.5	250.2	248.9	260.2	277.7	286.0	*287.5*
137.5°	251.0	244.3	254.2	242.5	239.2	250.6	263.9	270.4	*268.7*
140°	239.7	234.0	244.6	235.5	233.6	244.9	250.9	258.4	*257.1*
142.5°	227.3	223.3	235.8	229.9	227.9	238.3	241.3	246.8	*245.1*
145°	219.0	216.0	229.2	225.9	225.3	232.9	230.6	237.9	*235.4*
147.5°	211.6	209.7	221.6	220.2	220.2	225.9	222.9	229.2	*226.8*
150°	205.2	203.3	214.9	213.6	214.6	218.6	214.3	221.6	*221.1*
152.5°	198.9	196.6	207.2	206.0	206.9	210.9	206.9	215.2	*214.5*
155°	194.4	192.2	200.8	200.2	200.5	202.6	200.5	208.8	*209.1*
157.5°	191.4	189.9	196.5	196.2	196.2	197.4	196.5	203.8	*204.1*
160°	189.1	187.7	193.5	193.2	192.5	194.4	193.7	200.0	*200.2*
162.5°	186.7	185.4	192.0	191.0	191.0	191.0	190.6	196.9	*197.4*
165°	185.2	184.9	189.7	189.7	188.9	190.0	188.5	193.1	*194.7*
167.5°	185.2	184.2	189.2	189.2	188.5	187.5	188.1	192.1	*193.7*
170°	184.8	184.5	188.5	187.8	186.9	187.2	186.8	190.6	*192.2*
172.5°	185.4	185.1	189.4	188.4	187.8	187.8	186.7	189.6	*192.1*
175°	185.1	184.8	188.1	188.1	188.4	187.6	187.3	189.1	*191.7*
177.5°	186.4	186.1	188.1	188.1	187.3	187.9	188.5	190.5	*193.9*
180°	187.9	187.9	187.9	187.9	187.9	187.9	187.9	187.9	*187.9*

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-ASM-L835-UPL18

CIE UGR TABLE:

Reflectances:											
	Ceiling	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
	Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
	Reference plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	14.75	15.82	15.27	16.32	16.86	15.51	16.58	16.04	17.08	17.63
	3H	16.56	17.51	17.10	18.03	18.62	17.07	18.03	17.61	18.54	19.13
	4H	17.30	18.19	17.86	18.72	19.32	17.72	18.61	18.28	19.14	19.74
	6H	17.86	18.68	18.44	19.23	19.84	18.21	19.03	18.78	19.58	20.19
	8H	18.05	18.82	18.63	19.38	20.01	18.37	19.14	18.95	19.71	20.33
	12H	18.15	18.89	18.73	19.44	20.09	18.45	19.19	19.03	19.74	20.39
4H	2H	15.26	16.15	15.82	16.68	17.29	15.89	16.78	16.45	17.31	17.91
	3H	17.30	18.03	17.87	18.61	19.23	17.70	18.43	18.27	19.01	19.63
	4H	18.16	18.82	18.75	19.41	20.06	18.48	19.14	19.07	19.73	20.38
	6H	18.85	19.43	19.47	20.03	20.71	19.12	19.69	19.73	20.29	20.97
	8H	19.08	19.61	19.70	20.22	20.90	19.32	19.85	19.94	20.46	21.14
	12H	19.21	19.69	19.85	20.32	21.01	19.43	19.90	20.07	20.54	21.23
8H	4H	18.42	18.95	19.04	19.56	20.24	18.72	19.26	19.34	19.86	20.54
	6H	19.24	19.67	19.89	20.32	21.01	19.49	19.92	20.14	20.57	21.26
	8H	19.54	19.92	20.20	20.59	21.29	19.77	20.16	20.44	20.82	21.52
	12H	19.74	20.08	20.40	20.72	21.49	19.95	20.29	20.61	20.94	21.71
12H	4H	18.43	18.90	19.06	19.53	20.22	18.73	19.20	19.37	19.84	20.52
	6H	19.27	19.66	19.94	20.32	21.02	19.53	19.92	20.20	20.58	21.28
	8H	19.62	19.96	20.28	20.60	21.37	19.86	20.20	20.52	20.84	21.61

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

Metalux

Report Number: SP1-2506-472-3

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L835-N

Data in this report applies to families of products including EHBR-60-L835-N

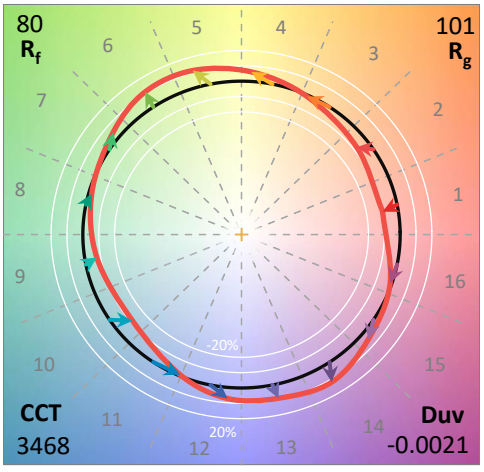
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2506-472-3
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	08/05/2025
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Metalux
Catalog Number:	**EHBR-60-L835-N**
Description:	Elevate Round Highbay at, 60000 lumens, 3500K 80CRI LEDs with N lens

Spectral Parameters

CCT (K):	3468	CRI (Ra):	82.1		
CIE u':	0.2375	R1:	82.9	R9:	27.6
CIE v':	0.5091	R2:	85.6	R10:	63.8
Duv:	-0.0021	R3:	85.9	R11:	81.2
CIE x:	0.4049	R4:	82.8	R12:	57.2
CIE y:	0.3856	R5:	81.0	R13:	82.6
CIE z:	0.2095	R6:	79.7	R14:	91.0
Peak Wavelength (nm):	630	R7:	86.5	R15:	79.4
Dominant Wavelength (nm):	581	R8:	72.1		
Purity:	37.24544				
Rf:	80.1				
Rg:	101				



Test Conditions

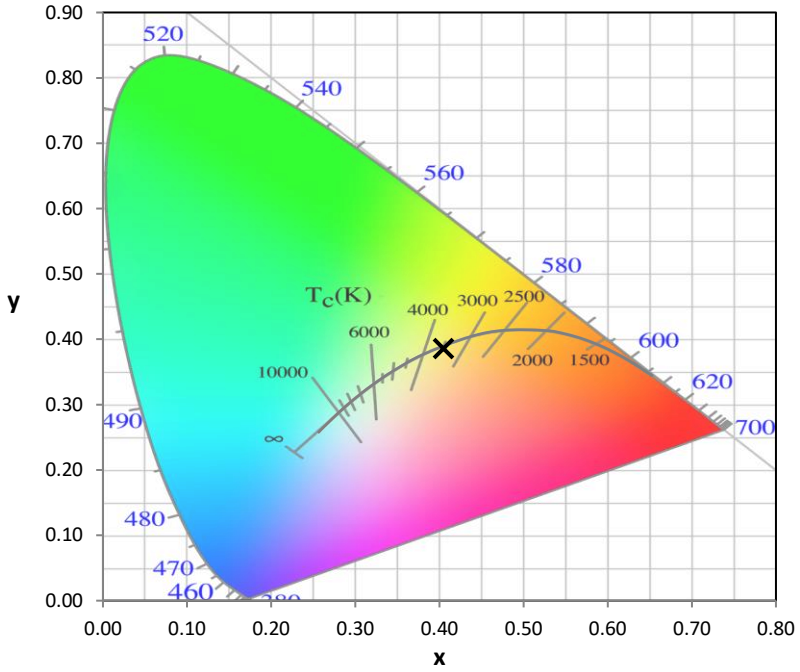
Stabilization Time:	39M
Operation Time:	1H 39M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2506-472-3

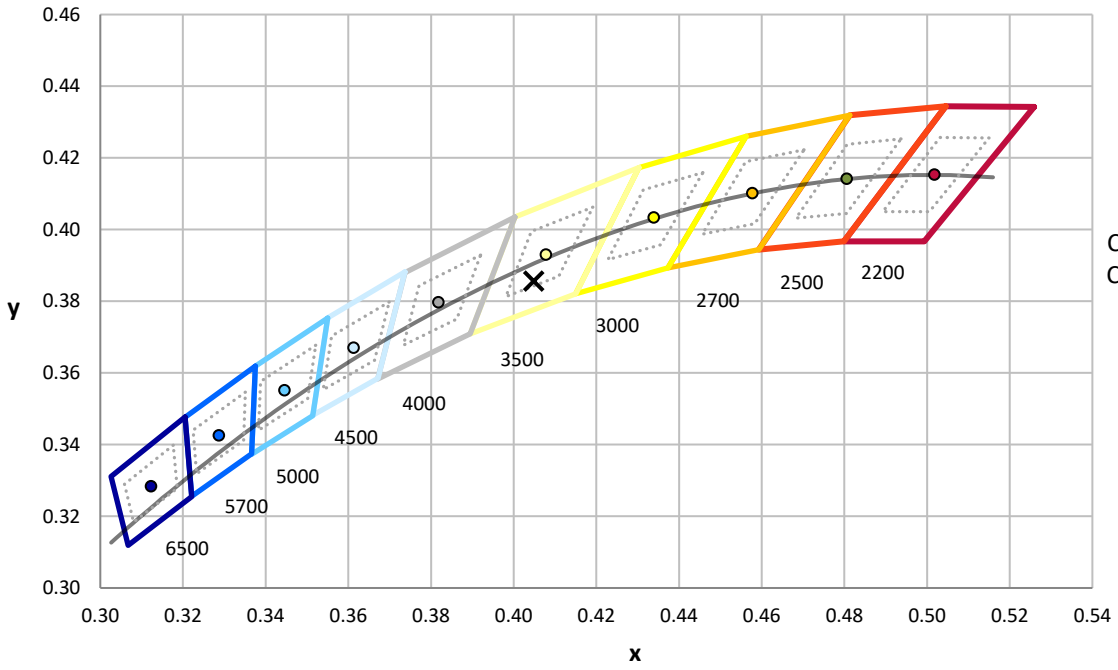
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2506-472-3

CIE 1931 Chromaticity Diagram



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

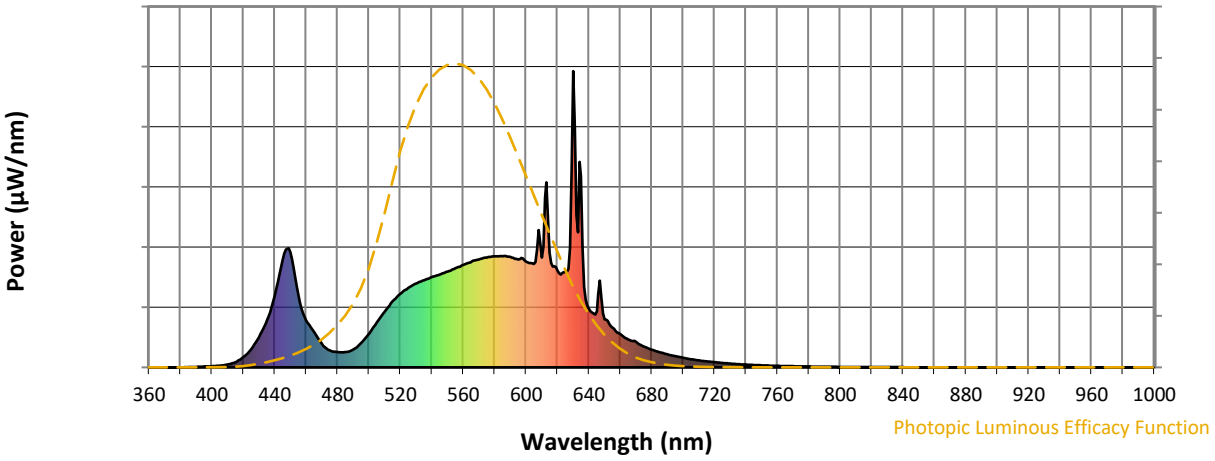


CCT = 3468K
CIE x = 0.4049
CIE y = 0.3856
Duv = -0.0021

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-3

Photopic Flux vs. Wavelength

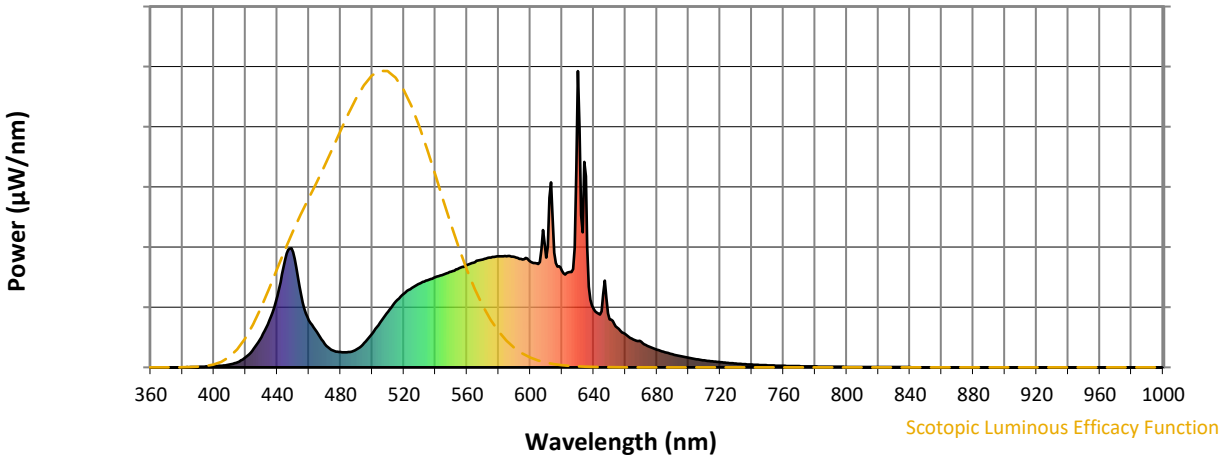


Photopic Lumens: NR

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	60	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	82	NR	625	322	NR	755	6	NR	885	0	NR
370	0	NR	500	114	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	152	NR	635	645	NR	765	4	NR	895	0	NR
380	0	NR	510	189	NR	640	197	NR	770	4	NR	900	0	NR
385	1	NR	515	222	NR	645	189	NR	775	3	NR	905	0	NR
390	2	NR	520	248	NR	650	163	NR	780	3	NR	910	0	NR
395	3	NR	525	268	NR	655	134	NR	785	2	NR	915	0	NR
400	4	NR	530	283	NR	660	113	NR	790	2	NR	920	0	NR
405	6	NR	535	294	NR	665	94	NR	795	2	NR	925	0	NR
410	9	NR	540	305	NR	670	87	NR	800	2	NR	930	0	NR
415	18	NR	545	314	NR	675	70	NR	805	1	NR	935	0	NR
420	34	NR	550	323	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	335	NR	685	51	NR	815	1	NR	945	0	NR
430	102	NR	560	346	NR	690	44	NR	820	1	NR	950	0	NR
435	159	NR	565	356	NR	695	38	NR	825	1	NR	955	0	NR
440	241	NR	570	364	NR	700	32	NR	830	1	NR	960	0	NR
445	363	NR	575	371	NR	705	28	NR	835	1	NR	965	0	NR
450	389	NR	580	375	NR	710	24	NR	840	1	NR	970	0	NR
455	245	NR	585	375	NR	715	20	NR	845	0	NR	975	0	NR
460	158	NR	590	373	NR	720	17	NR	850	0	NR	980	0	NR
465	120	NR	595	364	NR	725	15	NR	855	0	NR	985	0	NR
470	79	NR	600	357	NR	730	13	NR	860	0	NR	990	0	NR
475	57	NR	605	349	NR	735	11	NR	865	0	NR	995	0	NR
480	51	NR	610	371	NR	740	9	NR	870	0	NR	1000	0	NR
485	51	NR	615	387	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-3

Scotopic Flux vs. Wavelength

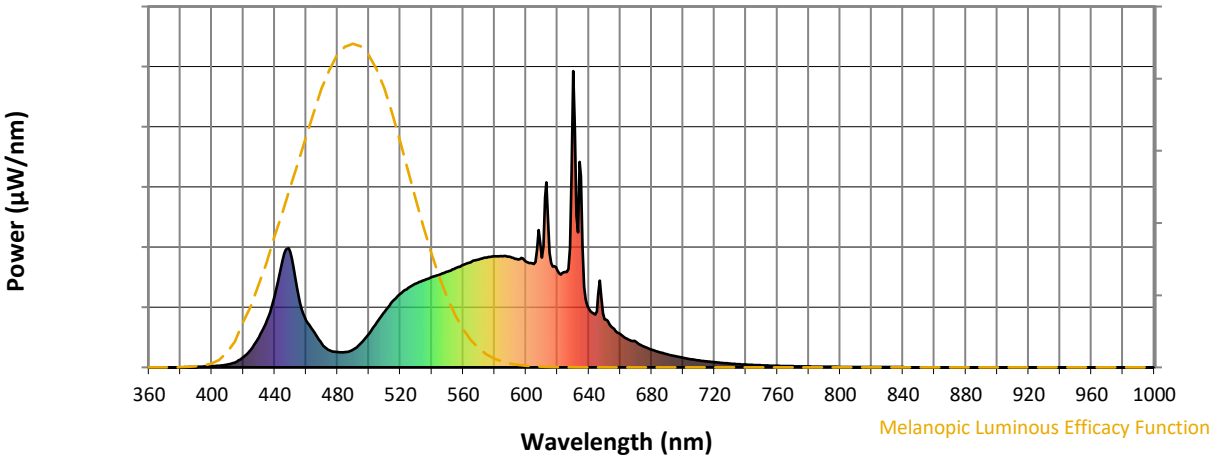


Scotopic Lumens: NR **S/P: 1.43**

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	60	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	82	NR	625	322	NR	755	6	NR	885	0	NR
370	0	NR	500	114	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	152	NR	635	645	NR	765	4	NR	895	0	NR
380	0	NR	510	189	NR	640	197	NR	770	4	NR	900	0	NR
385	1	NR	515	222	NR	645	189	NR	775	3	NR	905	0	NR
390	2	NR	520	248	NR	650	163	NR	780	3	NR	910	0	NR
395	3	NR	525	268	NR	655	134	NR	785	2	NR	915	0	NR
400	4	NR	530	283	NR	660	113	NR	790	2	NR	920	0	NR
405	6	NR	535	294	NR	665	94	NR	795	2	NR	925	0	NR
410	9	NR	540	305	NR	670	87	NR	800	2	NR	930	0	NR
415	18	NR	545	314	NR	675	70	NR	805	1	NR	935	0	NR
420	34	NR	550	323	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	335	NR	685	51	NR	815	1	NR	945	0	NR
430	102	NR	560	346	NR	690	44	NR	820	1	NR	950	0	NR
435	159	NR	565	356	NR	695	38	NR	825	1	NR	955	0	NR
440	241	NR	570	364	NR	700	32	NR	830	1	NR	960	0	NR
445	363	NR	575	371	NR	705	28	NR	835	1	NR	965	0	NR
450	389	NR	580	375	NR	710	24	NR	840	1	NR	970	0	NR
455	245	NR	585	375	NR	715	20	NR	845	0	NR	975	0	NR
460	158	NR	590	373	NR	720	17	NR	850	0	NR	980	0	NR
465	120	NR	595	364	NR	725	15	NR	855	0	NR	985	0	NR
470	79	NR	600	357	NR	730	13	NR	860	0	NR	990	0	NR
475	57	NR	605	349	NR	735	11	NR	865	0	NR	995	0	NR
480	51	NR	610	371	NR	740	9	NR	870	0	NR	1000	0	NR
485	51	NR	615	387	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.75**

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	60	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	82	NR	625	322	NR	755	6	NR	885	0	NR
370	0	NR	500	114	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	152	NR	635	645	NR	765	4	NR	895	0	NR
380	0	NR	510	189	NR	640	197	NR	770	4	NR	900	0	NR
385	1	NR	515	222	NR	645	189	NR	775	3	NR	905	0	NR
390	2	NR	520	248	NR	650	163	NR	780	3	NR	910	0	NR
395	3	NR	525	268	NR	655	134	NR	785	2	NR	915	0	NR
400	4	NR	530	283	NR	660	113	NR	790	2	NR	920	0	NR
405	6	NR	535	294	NR	665	94	NR	795	2	NR	925	0	NR
410	9	NR	540	305	NR	670	87	NR	800	2	NR	930	0	NR
415	18	NR	545	314	NR	675	70	NR	805	1	NR	935	0	NR
420	34	NR	550	323	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	335	NR	685	51	NR	815	1	NR	945	0	NR
430	102	NR	560	346	NR	690	44	NR	820	1	NR	950	0	NR
435	159	NR	565	356	NR	695	38	NR	825	1	NR	955	0	NR
440	241	NR	570	364	NR	700	32	NR	830	1	NR	960	0	NR
445	363	NR	575	371	NR	705	28	NR	835	1	NR	965	0	NR
450	389	NR	580	375	NR	710	24	NR	840	1	NR	970	0	NR
455	245	NR	585	375	NR	715	20	NR	845	0	NR	975	0	NR
460	158	NR	590	373	NR	720	17	NR	850	0	NR	980	0	NR
465	120	NR	595	364	NR	725	15	NR	855	0	NR	985	0	NR
470	79	NR	600	357	NR	730	13	NR	860	0	NR	990	0	NR
475	57	NR	605	349	NR	735	11	NR	865	0	NR	995	0	NR
480	51	NR	610	371	NR	740	9	NR	870	0	NR	1000	0	NR
485	51	NR	615	387	NR	745	8	NR	875	0	NR			

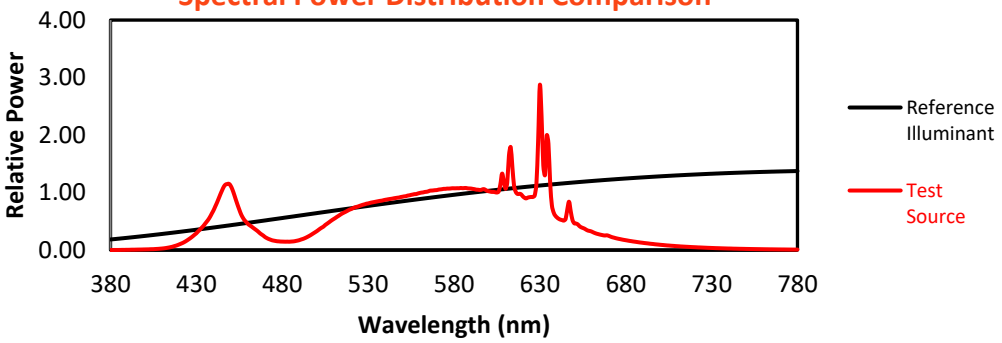
REPORT NUMBER: SP1-2506-472-3

TM-30-18

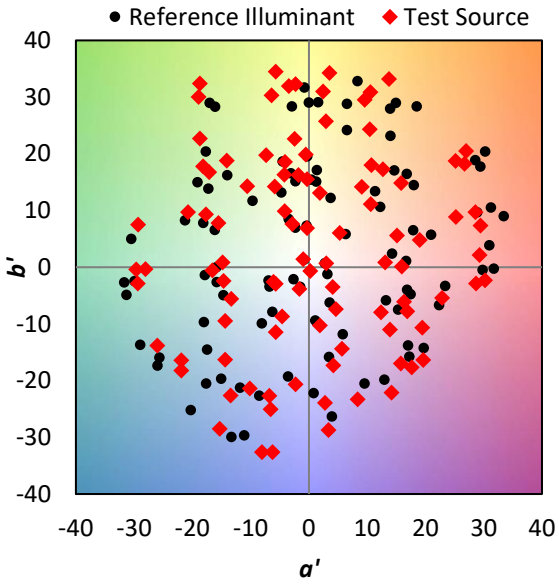
Summary

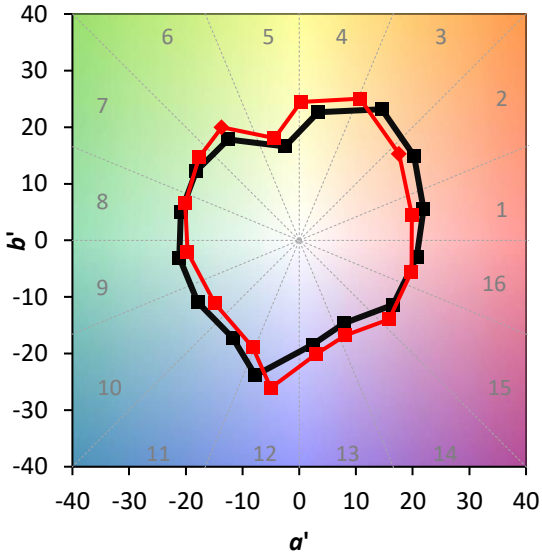
R_f = 80.1
R_g = 101
CIE R_a = 82.1
R_9 = 27.6

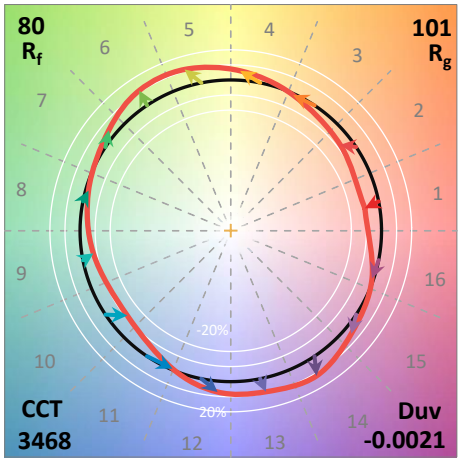
Spectral Power Distribution Comparison

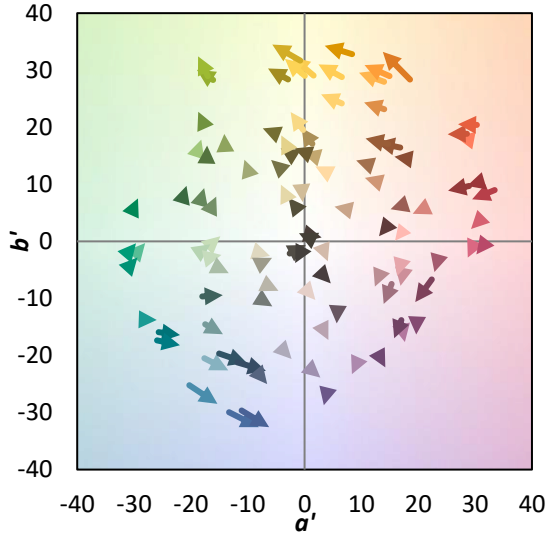


Color Vector Graphics







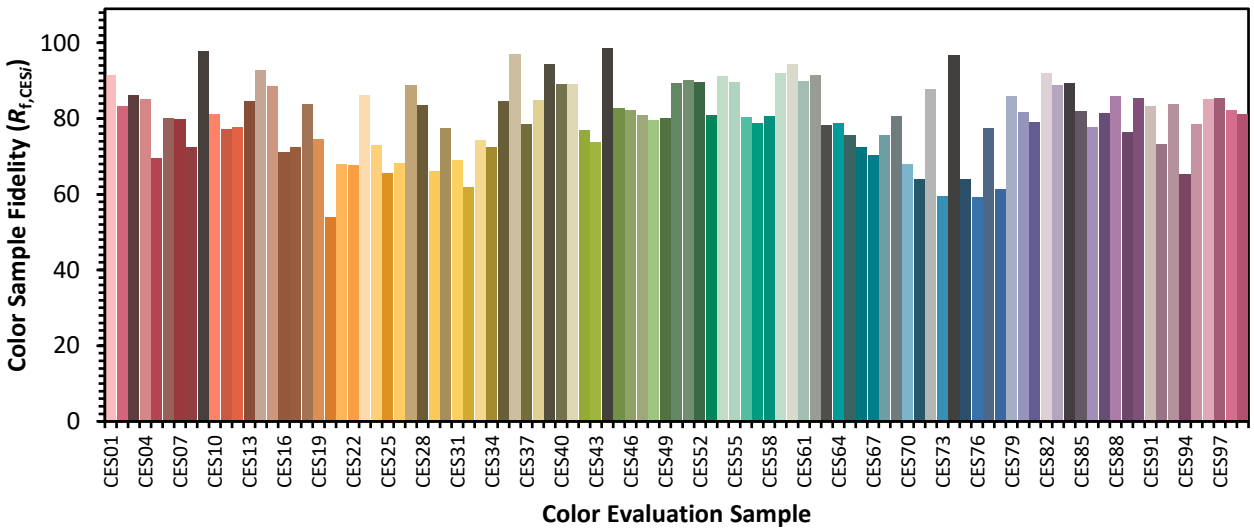


REPORT NUMBER: SP1-2506-472-3

TM-30-18

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

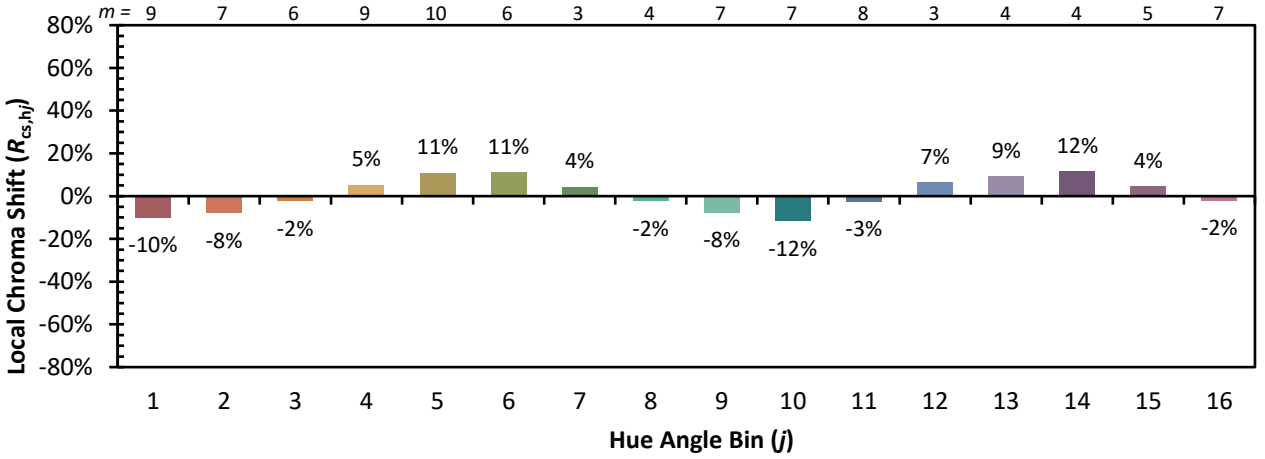
CES01 = 86	CES26 = 68	CES51 = 90	CES76 = 59
CES02 = 62	CES27 = 89	CES52 = 90	CES77 = 78
CES03 = 31	CES28 = 84	CES53 = 81	CES78 = 61
CES04 = 70	CES29 = 66	CES54 = 91	CES79 = 86
CES05 = 49	CES30 = 77	CES55 = 90	CES80 = 82
CES06 = 51	CES31 = 69	CES56 = 80	CES81 = 79
CES07 = 42	CES32 = 62	CES57 = 79	CES82 = 92
CES08 = 41	CES33 = 74	CES58 = 81	CES83 = 89
CES09 = 29	CES34 = 72	CES59 = 92	CES84 = 89
CES10 = 75	CES35 = 85	CES60 = 94	CES85 = 82
CES11 = 58	CES36 = 97	CES61 = 90	CES86 = 78
CES12 = 64	CES37 = 79	CES62 = 92	CES87 = 82
CES13 = 43	CES38 = 85	CES63 = 78	CES88 = 86
CES14 = 74	CES39 = 94	CES64 = 79	CES89 = 76
CES15 = 71	CES40 = 89	CES65 = 76	CES90 = 85
CES16 = 47	CES41 = 89	CES66 = 73	CES91 = 83
CES17 = 49	CES42 = 77	CES67 = 70	CES92 = 73
CES18 = 56	CES43 = 74	CES68 = 76	CES93 = 84
CES19 = 72	CES44 = 99	CES69 = 81	CES94 = 65
CES20 = 66	CES45 = 83	CES70 = 68	CES95 = 79
CES21 = 86	CES46 = 82	CES71 = 64	CES96 = 85
CES22 = 78	CES47 = 81	CES72 = 88	CES97 = 85
CES23 = 92	CES48 = 80	CES73 = 60	CES98 = 82
CES24 = 91	CES49 = 80	CES74 = 97	CES99 = 81
CES25 = 72	CES50 = 89	CES75 = 64	

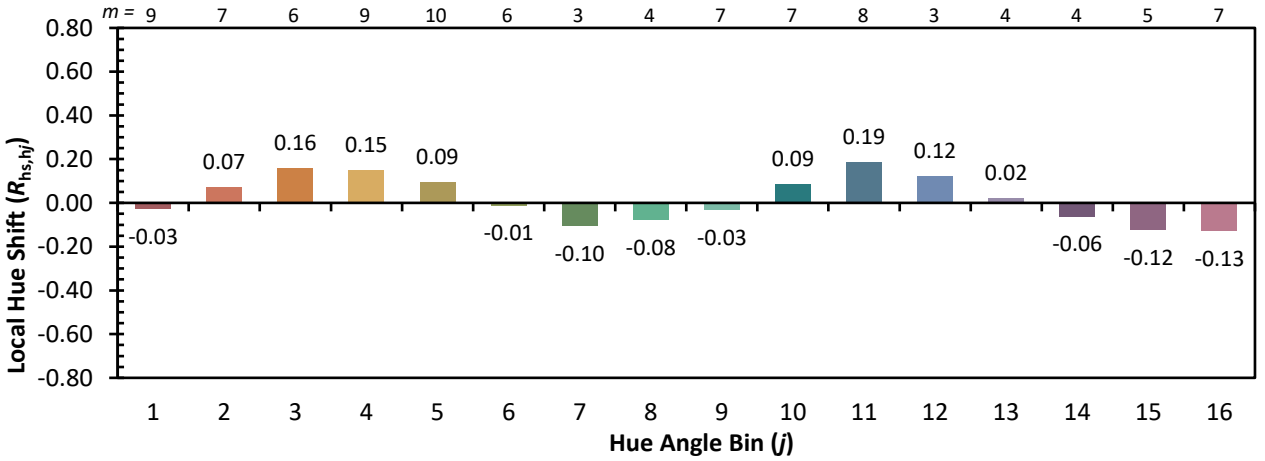


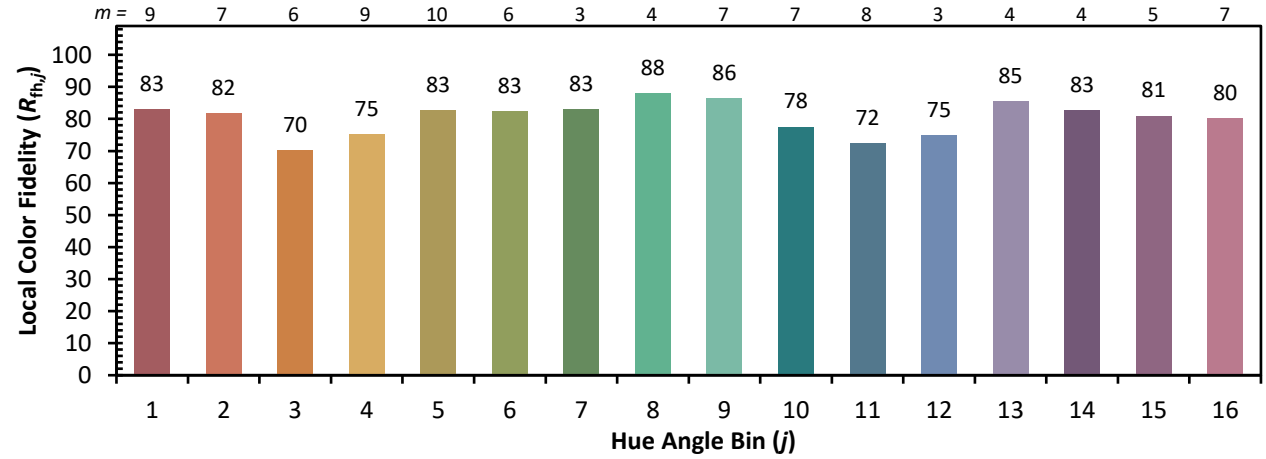
REPORT NUMBER: SP1-2506-472-3

TM-30-18

Color Rendition by Hue-Angle Bin



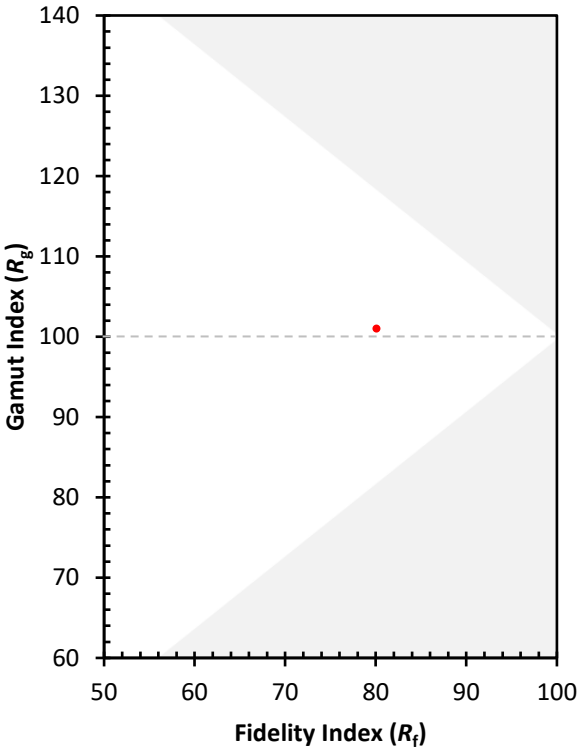


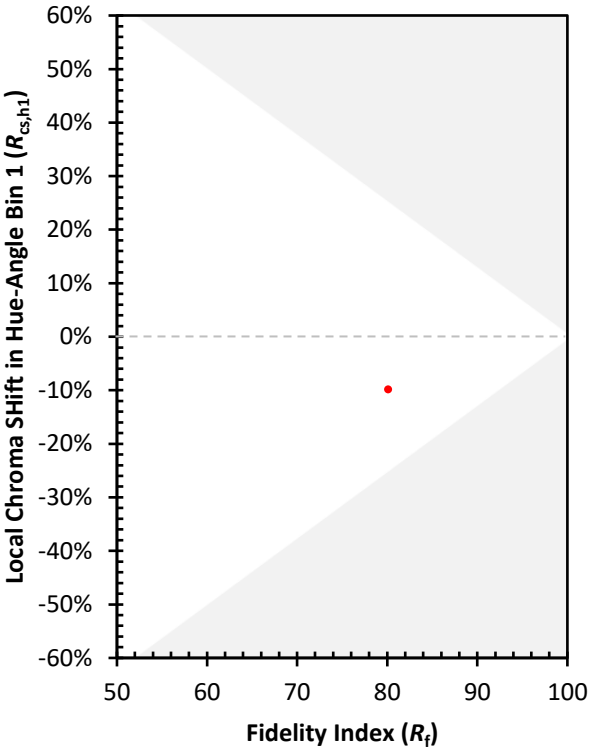


REPORT NUMBER: SP1-2506-472-3

TM-30-18

Measure Comparisons





(END OF REPORT)