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:

Luminaire Tested: EHBR1-36-UNV-ASM-L840-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:	
	REPORT IS A COMBINATION OF REPORTS P1431774 AND P1431635
Test Lab:	INNOVATION CENTER
Issue Date:	3/20/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	METALUX
Catalog Number:	EHBR1-36-UNV-ASM-L840-UPL18
Description:	Elevate Round Highbay at, 36000 lumens, 4000K 80CRI LEDs with ASM lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	37915.9 lumens
Efficiency:	N/A
Efficacy:	186.5 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

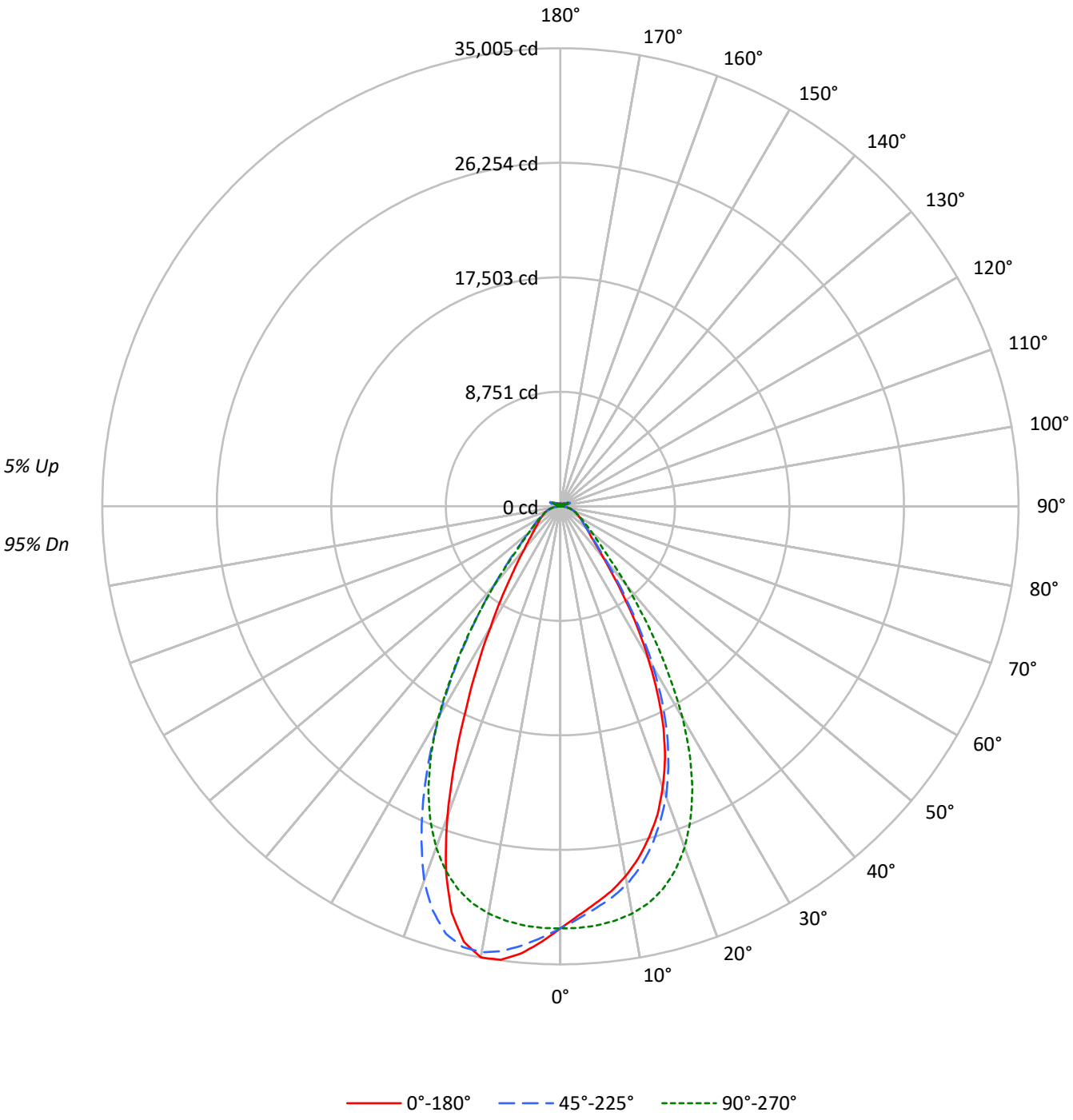
Input Watts (W):	203.3
Input Voltage (V):	NR
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-UPL18

Luminous Intensity Polar Plot



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

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-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	118	118	118	118	115	115	115	115	108	108	108	103	103	103	98	98	98	95
1	111	107	104	101	108	105	102	99	100	97	95	95	93	92	91	89	88	86
2	104	98	93	89	101	96	91	87	91	88	85	88	85	82	84	82	80	77
3	97	90	84	79	95	88	82	78	84	80	76	81	77	74	78	75	72	70
4	91	82	76	71	89	81	75	70	78	73	69	75	71	67	73	69	66	64
5	86	76	69	64	84	75	69	64	72	67	63	70	65	62	68	64	61	59
6	81	71	64	59	79	70	63	59	68	62	58	66	61	57	64	59	56	54
7	77	66	59	54	75	65	59	54	63	57	53	62	56	53	60	55	52	50
8	72	62	55	50	71	61	54	50	59	54	49	58	53	49	56	52	48	47
9	69	58	51	47	67	57	51	47	56	50	46	54	49	46	53	49	45	44
10	65	54	48	44	64	54	48	44	53	47	43	51	46	43	50	46	42	41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	151494	151494	151494	151494	151494
5°	142758	144426	150572	157793	160632
10°	135108	137969	148720	162859	164756
15°	124803	128137	144330	161189	153109
20°	111165	114909	134984	148164	122773
25°	93161	96687	119472	124276	85064
30°	69703	73744	97007	96038	55340
35°	46403	49205	69576	68453	35839
40°	29264	31274	44983	45273	24703
45°	20851	21718	28542	29768	19135
50°	17368	17506	21196	21747	16260
55°	15331	15367	17305	17762	14812
60°	14195	14074	14985	15302	14110
65°	13550	13428	13660	13926	13607
70°	13161	12933	12947	13195	13333
75°	12512	12133	12108	12538	12898
80°	11384	10590	10635	11384	12177
85°	8289	6881	6881	7867	8694

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
Vertical Angle: 45°
Luminance: 40128 cd/sqm

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

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-UPL18

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3067.4	8.1
10°-20°	8345.0	22.0
20°-30°	9787.0	25.8
30°-40°	6806.2	18.0
40°-50°	3382.4	8.9
50°-60°	2023.0	5.3
60°-70°	1423.9	3.8
70°-80°	917.2	2.4
80°-90°	294.6	0.8
90°-100°	50.2	0.1
100°-110°	323.6	0.9
110°-120°	597.0	1.6
120°-130°	355.5	0.9
130°-140°	216.0	0.6
140°-150°	150.3	0.4
150°-160°	99.1	0.3
160°-170°	57.9	0.2
170°-180°	19.5	0.1
0°-30°	21199.4	55.9
0°-40°	28005.6	73.9
0°-60°	33411.0	88.1
0°-90°	36046.7	95.1
90°-120°	970.9	2.6
90°-150°	1692.7	4.5
90°-180°	1869.0	4.9
0°-180°	37915.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	32260	32260	32260	32260	32260	
5°	30481	30837	32149	33691	34297	2859
15°	26183	26882	30280	33816	32122	7302
25°	18604	19308	23858	24818	16987	8394
35°	8517	9031	12770	12564	6578	5425
45°	3374	3514	4618	4816	3096	2727
55°	2072	2077	2339	2400	2002	1880
65°	1414	1402	1426	1454	1420	1404
75°	881	855	853	883	909	930
85°	285	236	236	270	299	293
90°	14	38	14	41	18	21
95°	23	84	27	72	27	22
105°	113	563	149	602	78	151
115°	516	666	635	738	544	475
125°	373	358	407	397	428	340
135°	273	276	259	289	300	214
145°	229	240	236	241	247	145
155°	206	212	212	212	221	96
165°	199	203	203	203	211	57
175°	201	204	205	204	210	19
180°	205	205	205	205	205	

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

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-UPL18

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	32259.5	32259.5	32259.5	32259.5	32259.5	32259.5	32259.5	32259.5	*32259.5*
2.5°	31301.9	31322.5	31541.4	31826.3	32240.7	32657.5	32995.0	33217.7	*33327.7*
5°	30481.0	30594.7	30837.3	31360.6	32149.4	32984.2	33691.3	34154.1	*34297.4*
7.5°	29681.3	29747.3	30153.2	30814.3	31931.0	33231.6	34282.3	34822.5	*34954.4*
10°	*28705.6*	*28855.0*	*29313.5*	*30093.3*	*31597.7*	*33387.6*	*34601.7*	*34988.8*	*35004.6*
12.5°	27557.5	27755.3	28228.9	29212.5	31066.0	33332.0	34494.6	34367.6	*34079.0*
15°	26183.1	26356.7	26882.4	28023.3	30279.6	33002.3	33816.5	32782.7	*32121.5*
17.5°	24698.6	24855.9	25312.6	26569.0	29171.4	32385.3	32401.0	30355.8	*29108.5*
20°	22847.6	22971.0	23617.1	24849.9	27743.2	31395.7	30452.0	26711.2	*25233.4*
22.5°	20878.0	20993.5	21567.6	22850.6	25952.6	30061.2	27737.7	23044.8	*21028.6*
25°	18604.1	18667.0	19308.3	20468.5	23858.4	28426.1	24817.8	19050.0	*16987.2*
27.5°	16046.0	16153.0	16823.9	18008.9	21395.2	26353.7	21708.6	15566.9	*13663.8*
30°	13407.3	13584.6	14184.6	15245.7	18659.2	23696.9	18472.9	12397.1	*10644.7*
32.5°	10944.7	11072.3	11500.0	12608.8	15595.9	21092.8	15365.4	9933.3	*8448.8*
35°	8516.6	8644.2	9030.8	10119.6	12769.7	17834.7	12563.5	7805.2	*6577.8*
37.5°	6510.1	6735.7	6983.7	7867.5	10021.6	14756.3	10015.0	6285.1	*5335.3*
40°	5072.2	5108.5	5420.6	5986.2	7796.7	11538.1	7846.9	5017.2	*4281.6*
42.5°	4060.2	4158.8	4293.1	4716.5	5907.6	8822.7	6167.7	4117.7	*3636.7*
45°	3373.6	3412.3	3513.9	3798.3	4617.9	6492.5	4816.3	3474.0	*3096.0*
47.5°	2951.4	2934.4	2999.8	3212.7	3760.8	5017.8	3903.5	2979.8	*2714.9*
50°	2588.4	2578.1	2609.0	2751.1	3158.9	3850.3	3241.1	2601.1	*2423.3*
52.5°	2306.5	2315.6	2318.6	2407.0	2713.6	3140.1	2760.2	2318.0	*2198.3*
55°	2071.8	2083.3	2076.7	2142.0	2338.6	2639.8	2400.3	2084.5	*2001.7*
57.5°	1888.5	1880.1	1871.0	1906.1	2053.7	2239.4	2084.5	1885.5	*1830.5*
60°	1706.5	1698.6	1691.9	1714.9	1801.4	1939.4	1839.5	1711.9	*1696.2*
62.5°	1550.4	1545.6	1545.0	1540.7	1607.3	1694.4	1626.6	1555.8	*1541.9*
65°	1414.3	1408.8	1401.6	1394.9	1425.8	1506.8	1453.6	1415.5	*1420.3*
67.5°	1278.2	1278.2	1265.5	1255.2	1285.4	1327.8	1304.8	1283.0	*1288.5*
70°	1154.8	1155.4	1134.8	1127.0	1136.0	1181.4	1157.8	1160.8	*1169.9*
72.5°	1022.3	1007.8	992.7	992.1	993.3	1028.4	1020.5	1027.7	*1037.4*
75°	881.4	864.4	854.7	843.9	852.9	879.5	883.2	893.5	*908.6*
77.5°	745.3	719.2	711.4	705.9	699.9	730.1	741.6	755.5	*777.9*
80°	598.9	570.4	557.1	549.3	559.5	573.5	598.9	609.1	*640.6*
82.5°	442.8	421.6	405.3	404.7	409.5	422.2	444.0	463.4	*481.5*
85°	284.9	251.0	236.5	242.0	236.5	255.9	270.4	293.4	*298.8*
87.5°	102.8	80.5	76.8	84.7	82.9	88.9	101.6	110.7	*111.3*
90°	13.9	22.1	37.5	24.2	13.9	23.7	40.7	24.1	*18.1*
92.5°	20.1	33.4	60.0	31.3	18.0	31.9	57.1	31.3	*23.2*
95°	23.1	38.5	83.6	41.6	26.8	39.1	72.5	34.3	*27.3*
97.5°	29.9	42.6	95.9	50.8	41.2	48.3	81.7	36.4	*32.5*
100°	39.1	49.8	149.2	62.7	54.5	54.5	148.4	41.5	*36.6*
102.5°	65.8	105.1	316.3	117.0	82.2	106.3	342.7	81.1	*43.7*
105°	112.9	221.0	563.3	244.1	148.8	241.6	602.0	205.1	*78.2*
107.5°	194.9	395.2	743.2	431.7	281.0	449.7	775.2	401.9	*177.6*
110°	363.0	524.3	779.1	592.6	449.1	628.0	845.9	549.5	*355.9*

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

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-UPL18

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	490.1	563.3	746.3	654.1	584.4	699.8	826.4	608.9	*491.2*
115°	515.7	541.8	666.4	638.7	635.2	689.5	738.3	606.9	*544.5*
117.5°	498.3	494.6	565.9	574.7	613.7	631.1	637.9	570.0	*547.6*
120°	461.4	440.3	472.7	502.0	554.2	547.1	538.0	515.6	*516.8*
122.5°	415.3	390.7	405.6	427.7	480.0	464.6	455.0	460.9	*474.8*
125°	372.8	347.6	358.0	363.8	407.2	391.9	397.2	413.7	*428.3*
127.5°	334.9	317.9	324.2	318.7	346.3	339.2	355.1	373.8	*386.2*
130°	309.3	294.9	303.3	289.6	302.9	304.3	325.4	341.6	*349.3*
132.5°	288.4	279.1	289.1	272.3	275.8	283.4	303.5	317.6	*322.4*
135°	273.0	265.4	275.8	260.6	259.0	270.1	288.7	297.5	*299.8*
137.5°	260.3	253.7	264.7	253.0	249.3	260.4	274.4	281.7	*280.4*
140°	249.2	243.6	255.1	245.8	243.8	254.9	261.0	269.4	*268.7*
142.5°	237.0	232.9	246.5	240.4	238.3	248.3	251.4	257.8	*256.4*
145°	229.1	226.0	240.0	236.3	235.9	243.5	240.7	248.6	*246.7*
147.5°	222.1	220.1	232.4	230.7	230.7	236.3	233.2	240.0	*238.1*
150°	216.1	214.1	225.8	224.2	225.2	229.3	224.6	232.4	*232.5*
152.5°	210.2	207.5	218.2	216.6	217.6	221.7	217.6	226.4	*226.0*
155°	206.2	203.6	212.2	211.0	211.6	213.7	211.6	220.4	*221.0*
157.5°	203.9	201.7	208.3	207.7	207.7	209.3	208.3	216.1	*216.7*
160°	202.1	200.4	206.0	205.4	205.0	207.0	206.6	213.3	*213.9*
162.5°	200.2	198.6	205.1	204.1	204.1	204.1	204.3	211.0	*212.2*
165°	199.3	198.7	203.3	203.3	202.8	203.9	203.0	208.4	*210.6*
167.5°	199.3	198.3	203.4	203.4	203.0	202.0	203.3	208.2	*210.4*
170°	199.5	198.9	203.0	202.6	201.6	202.3	202.4	207.3	*209.5*
172.5°	200.8	200.2	204.9	203.9	203.5	203.5	203.2	207.1	*210.3*
175°	201.0	200.4	204.1	204.1	204.7	204.2	204.4	207.2	*210.5*
177.5°	202.6	202.0	204.1	204.1	203.6	204.8	206.0	208.9	*213.1*
180°	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	*204.8*

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

Scaled Data Report

TEST NUMBER: CATALOG
CATALOG NUMBER: EHBR1-36-UNV-ASM-L840-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	17.54	18.67	18.00	19.09	19.53	18.31	19.44	18.76	19.86	20.30
	3H	19.36	20.36	19.83	20.80	21.29	19.87	20.87	20.34	21.31	21.80
	4H	20.10	21.03	20.59	21.49	21.99	20.52	21.45	21.01	21.91	22.41
	6H	20.66	21.53	21.17	22.00	22.51	21.01	21.87	21.52	22.34	22.86
	8H	20.85	21.66	21.37	22.15	22.68	21.17	21.98	21.69	22.47	23.00
	12H	20.95	21.73	21.47	22.21	22.76	21.25	22.03	21.77	22.51	23.06
4H	2H	18.06	19.00	18.55	19.45	19.96	18.69	19.63	19.18	20.08	20.59
	3H	20.10	20.87	20.60	21.38	21.90	20.50	21.27	21.00	21.77	22.30
	4H	20.96	21.66	21.49	22.17	22.73	21.28	21.98	21.81	22.49	23.05
	6H	21.66	22.26	22.21	22.80	23.38	21.92	22.52	22.47	23.06	23.64
	8H	21.88	22.45	22.44	22.98	23.57	22.12	22.68	22.68	23.22	23.81
	12H	22.02	22.51	22.59	23.09	23.68	22.24	22.73	22.81	23.30	23.89
8H	4H	21.22	21.78	21.78	22.32	22.91	21.53	22.09	22.08	22.63	23.21
	6H	22.04	22.50	22.63	23.08	23.68	22.29	22.75	22.88	23.33	23.93
	8H	22.34	22.75	22.95	23.35	23.95	22.57	22.98	23.18	23.58	24.19
	12H	22.54	22.90	23.14	23.48	24.16	22.76	23.11	23.36	23.69	24.38
12H	4H	21.23	21.73	21.80	22.30	22.89	21.54	22.03	22.11	22.60	23.19
	6H	22.08	22.48	22.68	23.08	23.69	22.33	22.74	22.94	23.34	23.95
	8H	22.43	22.78	23.02	23.36	24.04	22.67	23.02	23.26	23.60	24.28

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: SP1-2506-472-1

Test Date: 07/30/2025

Luminaire Tested: EHBR-60-L840-N

Data in this report applies to families of products including EHBR-60-L840-N

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

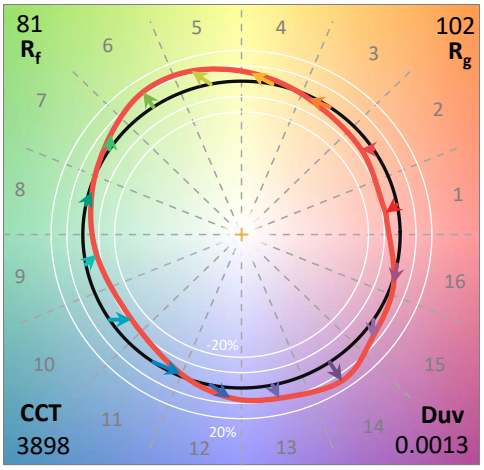
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2506-472-1
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-L840-N**
Description:	Elevate Round Highbay at, 60000 lumens, 4000K 80CRI LEDs with N lens

Spectral Parameters

CCT (K):	3898
CIE u':	0.2263
CIE v':	0.5052
Duv:	0.0013
CIE x:	0.3861
CIE y:	0.3831
CIE z:	0.2308
Peak Wavelength (nm):	630
Dominant Wavelength (nm):	578
Purity:	30.85729
Rf:	80.7
Rg:	102.1

CRI (Ra):	82.1				
R1:	84.4	R9:	38.5		
R2:	83.5	R10:	58.9		
R3:	80.8	R11:	83.6		
R4:	83.9	R12:	54.2		
R5:	82.1	R13:	82.8		
R6:	77.3	R14:	88.2		
R7:	86.4	R15:	81.2		
R8:	78.3				



Test Conditions

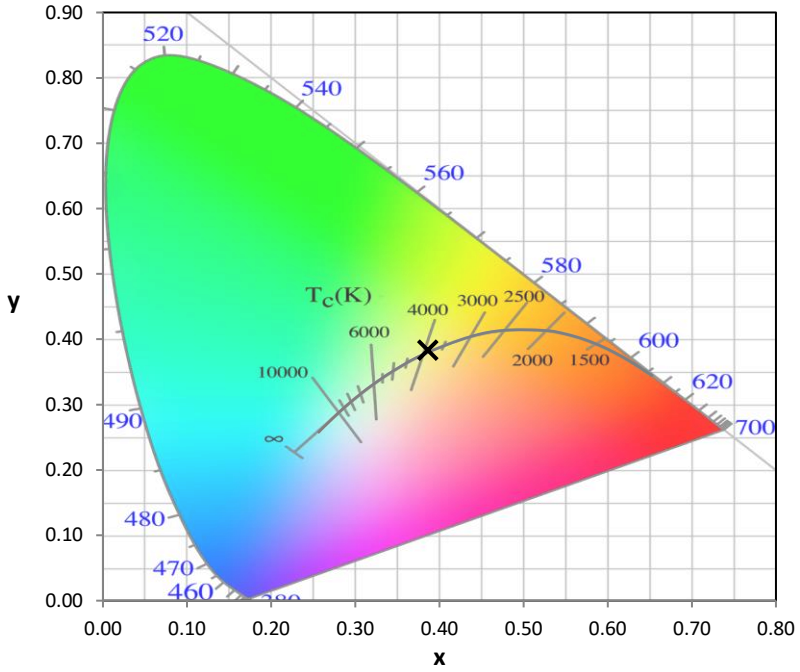
Stabilization Time:	42M
Operation Time:	1H 42M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2506-472-1

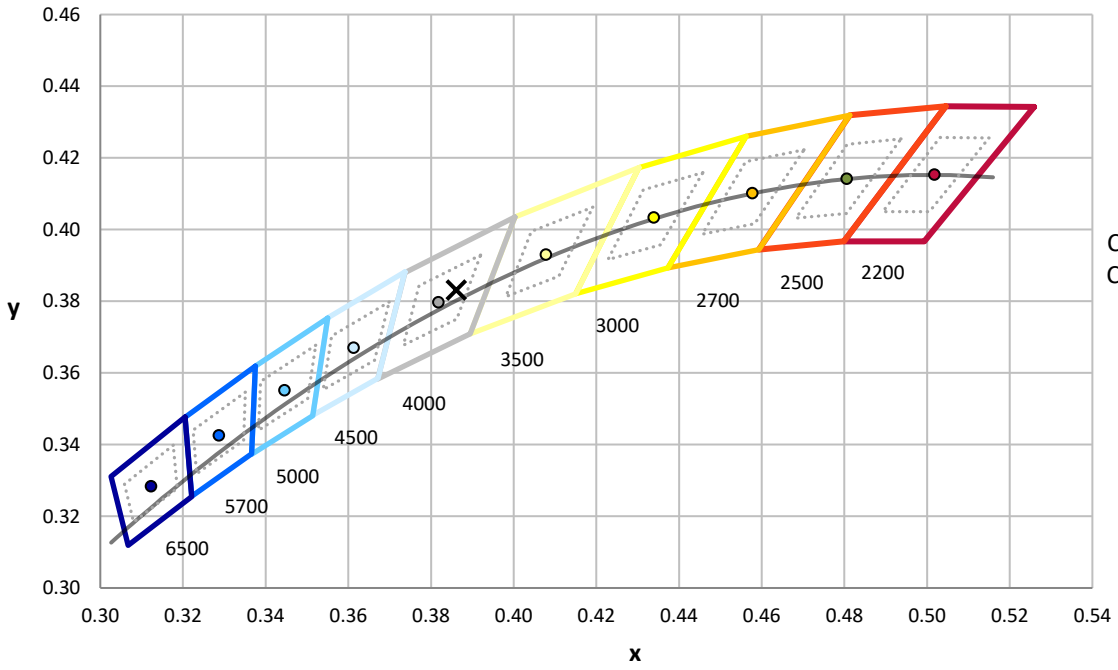
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	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: SP1-2506-472-1

CIE 1931 Chromaticity Diagram



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

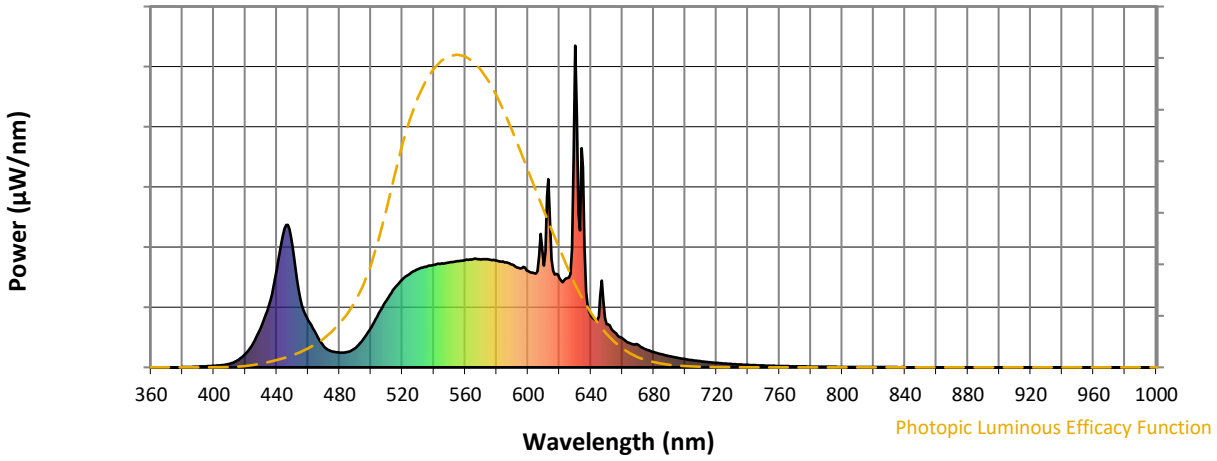


CCT = 3898K
CIE x = 0.3861
CIE y = 0.3831
Duv = 0.0013

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-1

Photopic Flux vs. Wavelength

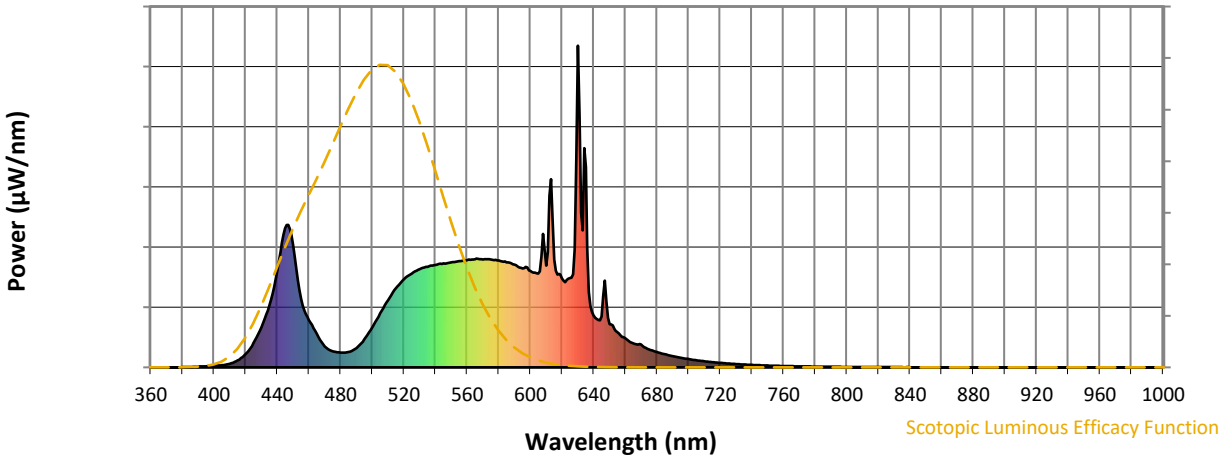


Photopic Lumens: NR

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	60	NR	620	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-1

Scotopic Flux vs. Wavelength

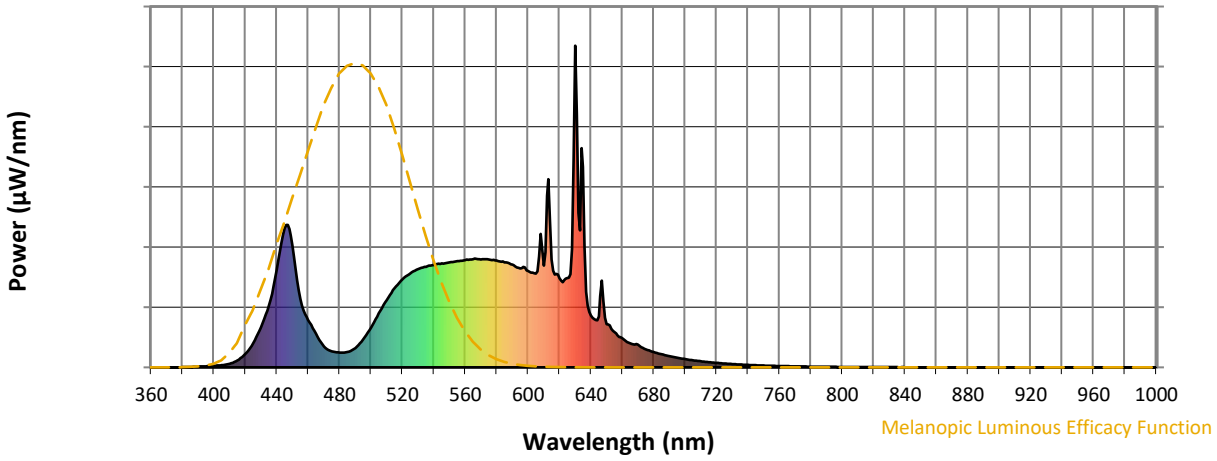


Scotopic Lumens: NR **S/P: 1.55**

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	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.99**

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	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

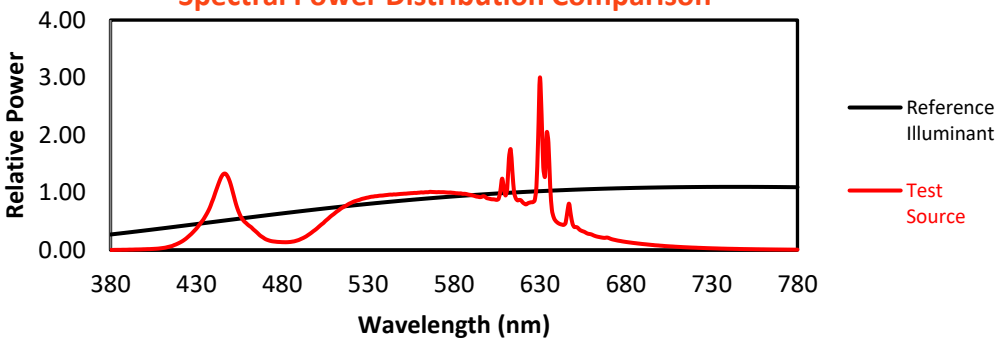
REPORT NUMBER: SP1-2506-472-1

TM-30-18

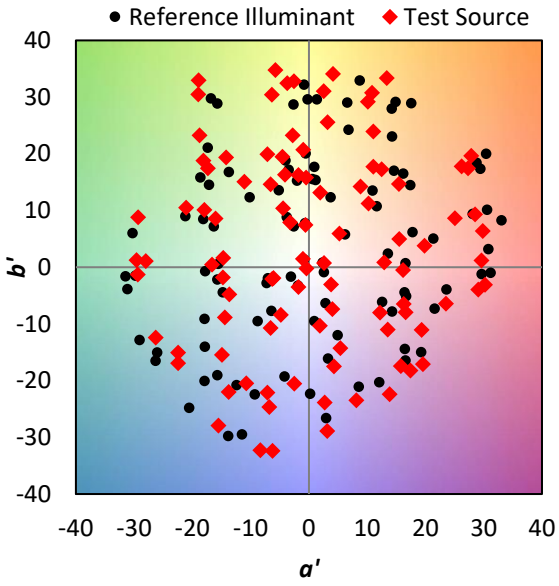
Summary

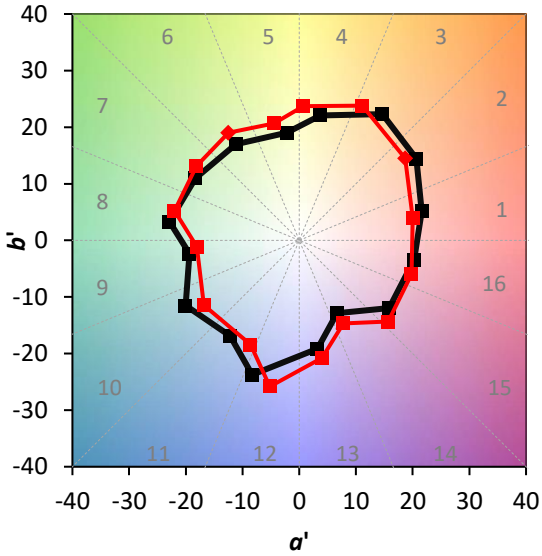
R_f = 80.7
R_g = 102.1
CIE R_a = 82.1
R_9 = 38.5

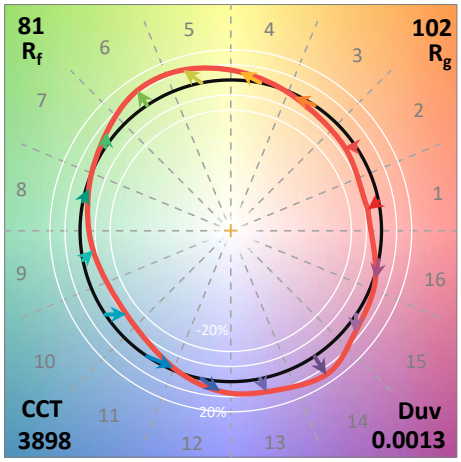
Spectral Power Distribution Comparison

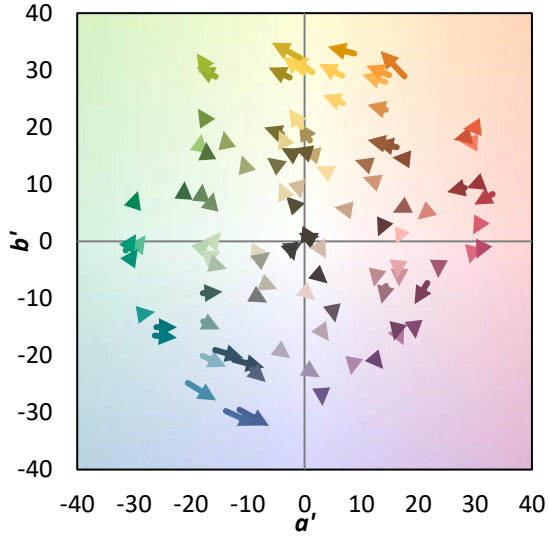


Color Vector Graphics







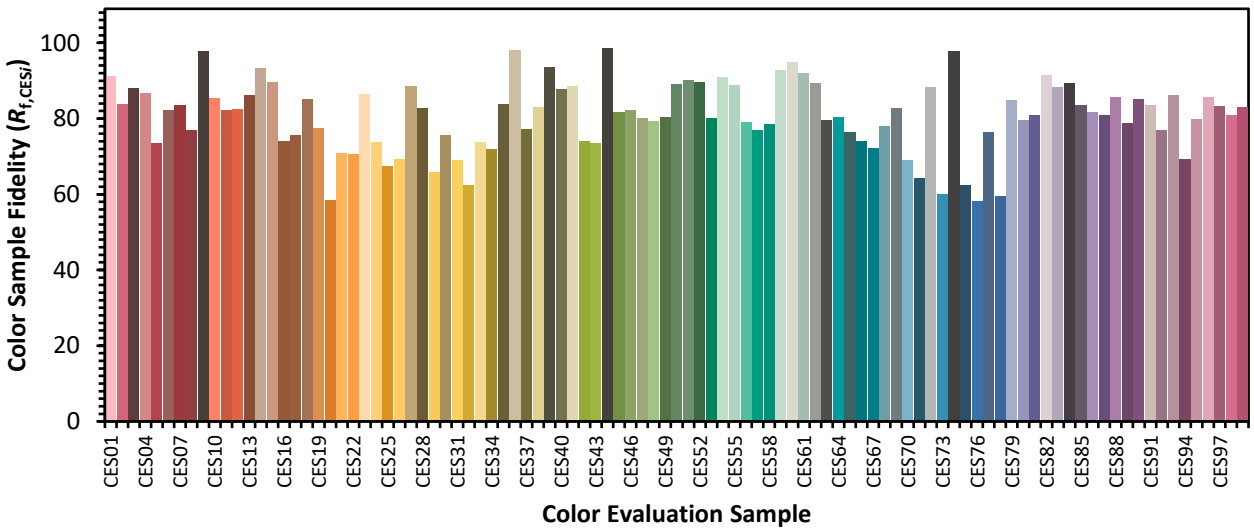


REPORT NUMBER: SP1-2506-472-1

TM-30-18

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

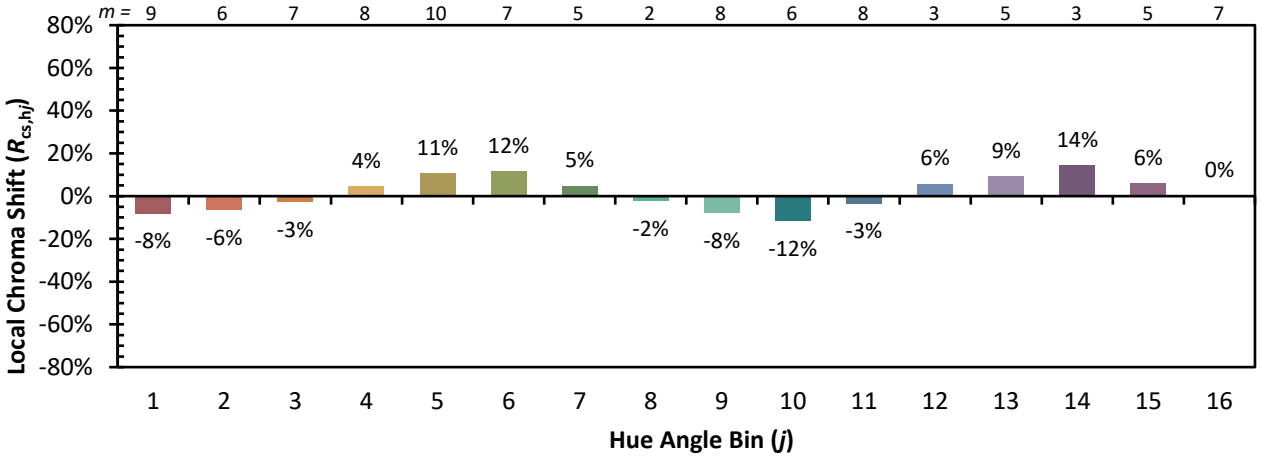
CES01 = 85	CES26 = 69	CES51 = 90	CES76 = 58
CES02 = 61	CES27 = 89	CES52 = 90	CES77 = 76
CES03 = 31	CES28 = 83	CES53 = 80	CES78 = 60
CES04 = 69	CES29 = 66	CES54 = 91	CES79 = 85
CES05 = 48	CES30 = 76	CES55 = 89	CES80 = 79
CES06 = 50	CES31 = 69	CES56 = 79	CES81 = 81
CES07 = 41	CES32 = 62	CES57 = 77	CES82 = 91
CES08 = 40	CES33 = 74	CES58 = 79	CES83 = 88
CES09 = 29	CES34 = 72	CES59 = 93	CES84 = 89
CES10 = 74	CES35 = 84	CES60 = 95	CES85 = 84
CES11 = 57	CES36 = 98	CES61 = 92	CES86 = 82
CES12 = 63	CES37 = 77	CES62 = 89	CES87 = 81
CES13 = 43	CES38 = 83	CES63 = 80	CES88 = 86
CES14 = 74	CES39 = 94	CES64 = 80	CES89 = 79
CES15 = 71	CES40 = 88	CES65 = 77	CES90 = 85
CES16 = 47	CES41 = 89	CES66 = 74	CES91 = 83
CES17 = 49	CES42 = 74	CES67 = 72	CES92 = 77
CES18 = 56	CES43 = 73	CES68 = 78	CES93 = 86
CES19 = 71	CES44 = 98	CES69 = 83	CES94 = 69
CES20 = 65	CES45 = 82	CES70 = 69	CES95 = 80
CES21 = 86	CES46 = 82	CES71 = 64	CES96 = 86
CES22 = 78	CES47 = 80	CES72 = 88	CES97 = 83
CES23 = 91	CES48 = 79	CES73 = 60	CES98 = 81
CES24 = 90	CES49 = 80	CES74 = 98	CES99 = 83
CES25 = 71	CES50 = 89	CES75 = 62	

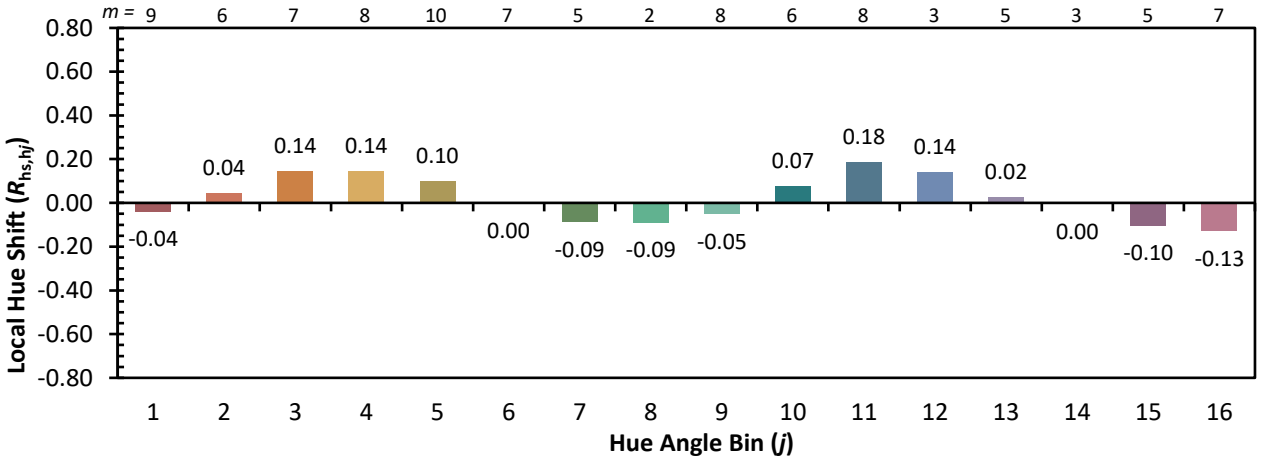


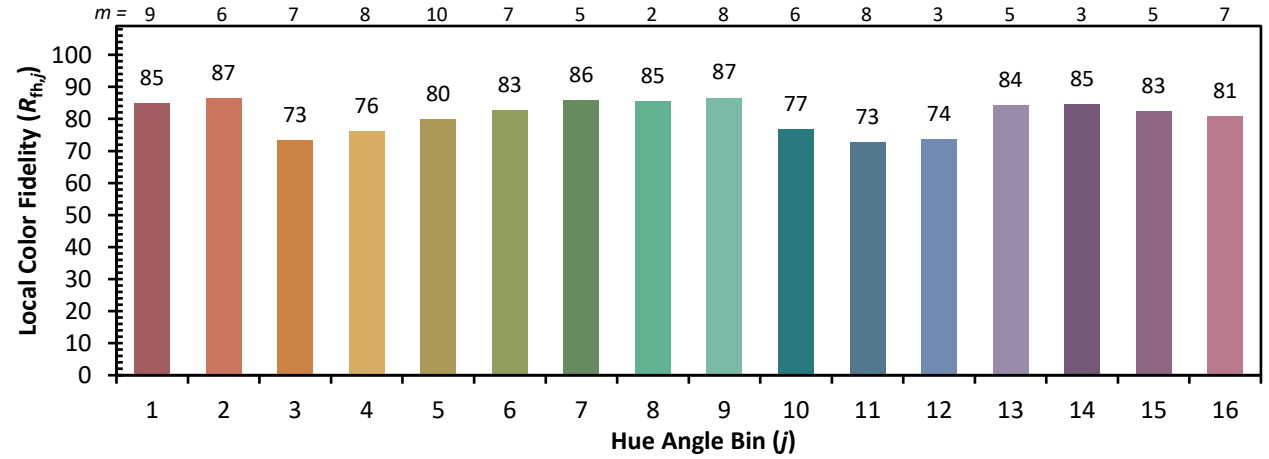
REPORT NUMBER: SP1-2506-472-1

TM-30-18

Color Rendition by Hue-Angle Bin



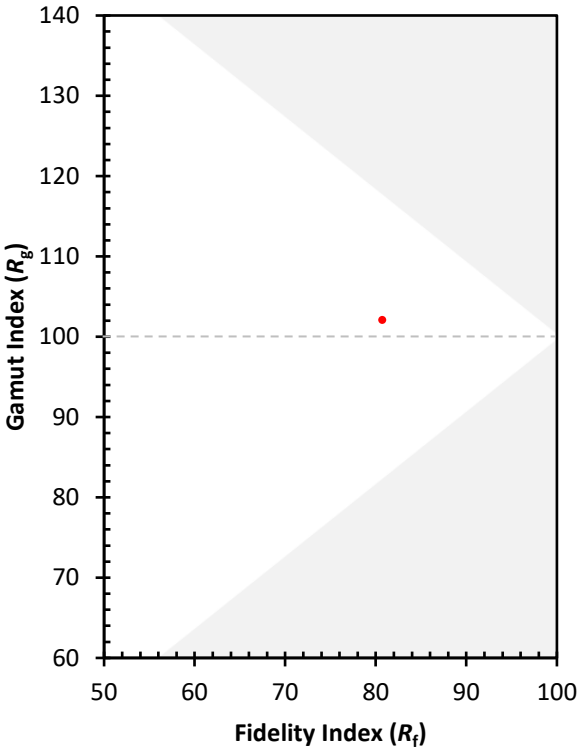


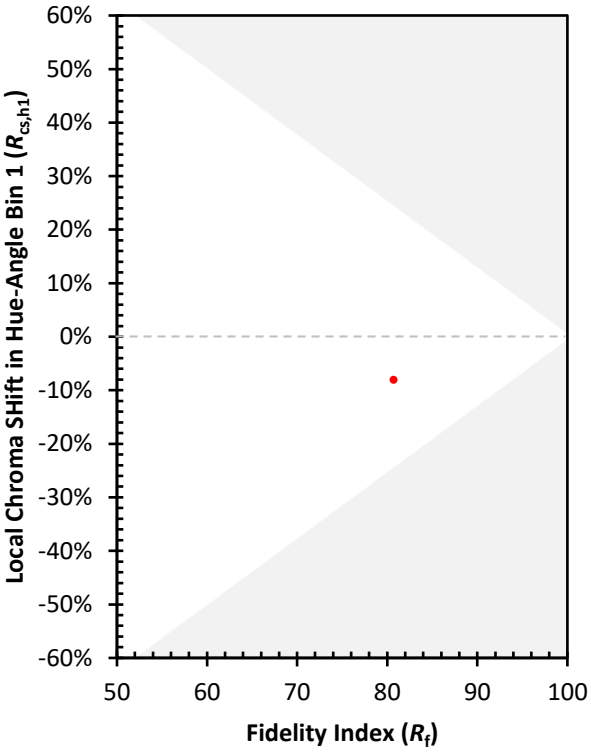


REPORT NUMBER: SP1-2506-472-1

TM-30-18

Measure Comparisons





(END OF REPORT)