

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: P1432621

Luminaire Tested: EHBR1-24-UNV-TASM-L835-UPL18

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1432621
REPORT IS A COMBINATION OF REPORTS P1431710 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-24-UNV-TASM-L835-UPL18
Description: Elevate Round Highbay at, 24000 lumens, 3500K 80CRI LEDs with TASM lens
Light Source: -
Ballast/Driver: -

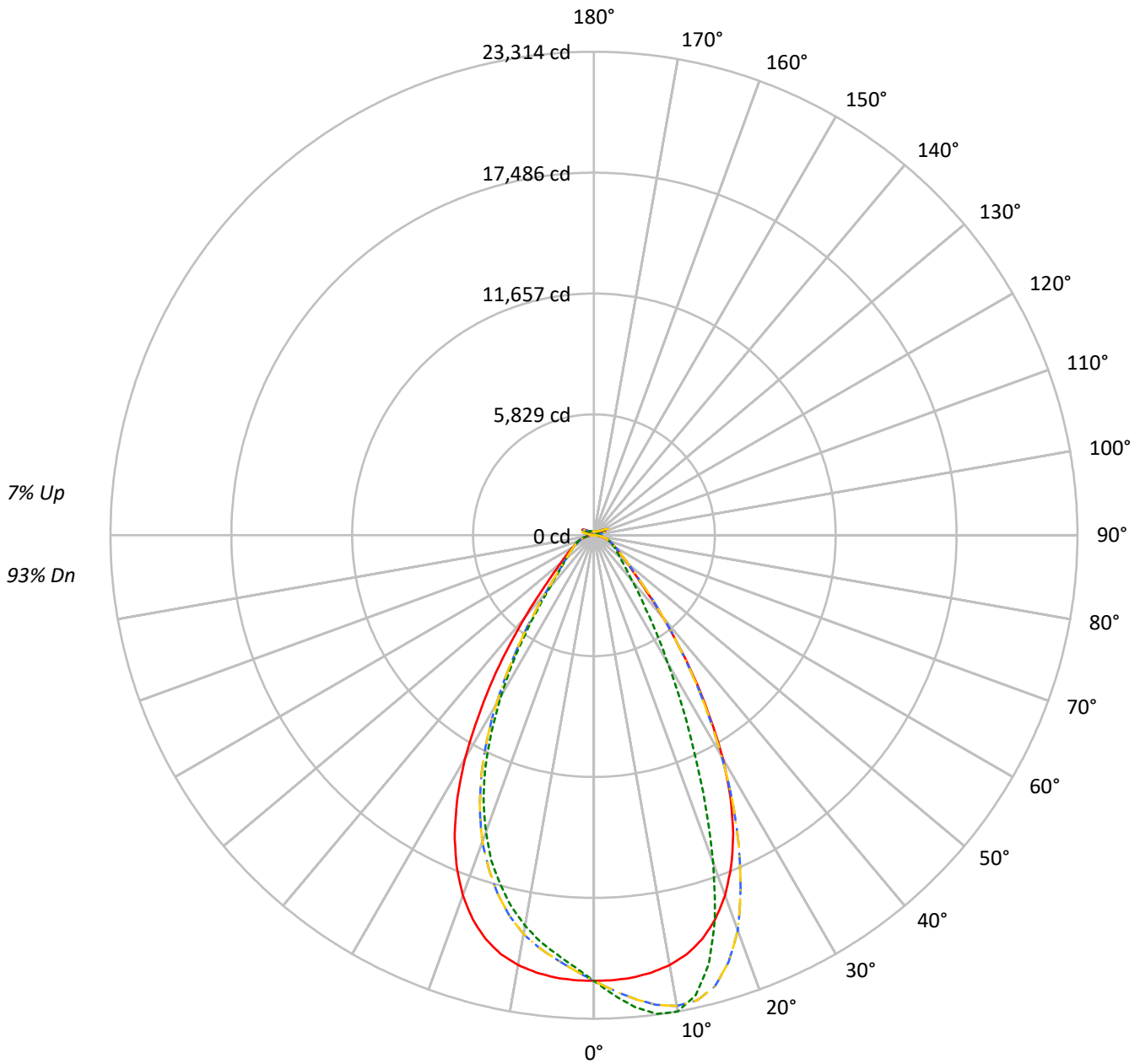
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25813.6 lumens
Efficiency: N/A
Efficacy: 184.1 lumens/watt
Spacing Criteria (0/90/45): 0.99 / 0.84 / 0.9
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Direct

Input Watts (W): 140.2
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

TEST NUMBER: P1432621
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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



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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	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	93
1	110	107	104	101	107	104	101	99	98	96	94	93	92	90	89	88	86	86	86	86	84
2	103	97	92	88	100	95	90	86	90	87	84	86	83	81	82	80	78	78	78	78	76
3	97	89	83	78	94	87	81	77	83	79	75	80	76	73	77	74	71	71	71	71	69
4	91	82	75	70	88	80	74	69	77	72	68	74	70	66	71	68	65	65	65	65	63
5	85	76	69	64	83	74	68	63	72	66	62	69	64	61	67	63	60	60	60	60	58
6	80	70	63	58	78	69	63	58	67	61	57	65	60	56	63	58	55	55	55	55	53
7	76	65	59	54	74	64	58	53	62	57	53	60	55	52	59	54	51	51	51	51	49
8	72	61	54	50	70	60	54	49	58	53	49	57	52	48	55	51	47	47	47	47	46
9	68	57	51	46	66	56	50	46	55	49	45	54	48	45	52	48	44	44	44	44	43
10	65	54	47	43	63	53	47	43	52	46	42	51	46	42	49	45	42	42	42	42	40

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	100900	100900	100900	100900
5°	100286	106986	100286	95082
10°	99053	109733	99053	89987
15°	96129	101976	96129	83124
20°	89904	81771	89904	74040
25°	79572	56656	79572	62049
30°	64610	36858	64610	46425
35°	46340	23871	46340	30906
40°	29960	16453	29960	19491
45°	19010	12744	19010	13887
50°	14117	10830	14117	11568
55°	11525	9865	11525	10211
60°	9980	9397	9980	9455
65°	9098	9063	9098	9025
70°	8624	8880	8624	8765
75°	8065	8590	8065	8334
80°	7085	8111	7085	7581
85°	4585	5790	4585	5522

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 26726 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2043.0	7.9
10°-20°	5558.1	21.5
20°-30°	6518.5	25.3
30°-40°	4533.2	17.6
40°-50°	2252.8	8.7
50°-60°	1347.4	5.2
60°-70°	948.4	3.7
70°-80°	610.9	2.4
80°-90°	197.2	0.8
90°-100°	48.2	0.2
100°-110°	313.2	1.2
110°-120°	578.3	2.2
120°-130°	344.0	1.3
130°-140°	208.4	0.8
140°-150°	144.5	0.6
150°-160°	94.7	0.4
160°-170°	54.7	0.2
170°-180°	18.3	0.1
0°-30°	14119.5	54.7
0°-40°	18652.7	72.3
0°-60°	22252.9	86.2
0°-90°	24009.4	93.0
90°-120°	939.7	3.6
90°-150°	1636.5	6.3
90°-180°	1804.0	7.0
0°-180°	25813.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	21486	21486	21486	21486	21486	
5°	21413	22843	21413	20302	21413	2032
15°	20167	21394	20167	17439	20167	5636
25°	15890	11314	15890	12391	15890	7194
35°	8505	4381	8505	5672	8505	5309
45°	3076	2062	3076	2247	3076	2517
55°	1558	1333	1558	1380	1558	1424
65°	950	946	950	942	950	954
75°	568	605	568	587	568	596
85°	158	199	158	190	158	175
90°	13	16	13	13	13	14
95°	26	25	26	22	26	27
105°	144	74	144	109	144	194
115°	615	526	615	500	615	561
125°	394	414	394	361	394	363
135°	250	289	250	264	250	198
145°	226	237	226	220	226	142
155°	202	211	202	196	202	94
165°	192	198	192	188	192	55
175°	192	196	192	189	192	18
180°	192	192	192	192	192	



TEST NUMBER: P1432621
 CATALOG NUMBER: EHBR1-24-UNV-TASM-L835-UPL18

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0
2.5°	21473.5	21751.1	21975.9	22124.1	22197.4	22124.1	21975.9	21751.1	21473.5	21197.5	21007.7
5°	21412.7	21968.6	22439.6	22747.8	22843.3	22747.8	22439.6	21968.6	21412.7	20887.3	20538.7
7.5°	21267.2	22133.4	22833.2	23193.0	23280.8	23193.0	22833.2	22133.4	21267.2	20523.4	20083.1
10°	21045.2	22237.4	23045.9	23303.8	23314.3	23303.8	23045.9	22237.4	21045.2	20043.2	19523.9
12.5°	20691.0	22200.2	22974.7	22890.0	22697.8	22890.0	22974.7	22200.2	20691.0	19456.6	18801.5
15°	20167.3	21980.7	22523.0	21834.5	21394.1	21834.5	22523.0	21980.7	20167.3	18664.5	17904.6
17.5°	19429.2	21569.7	21580.2	20218.1	19387.3	20218.1	21580.2	21569.7	19429.2	17695.9	16859.1
20°	18477.9	20910.6	20282.1	17790.6	16806.3	17790.6	20282.1	20910.6	18477.9	16550.9	15729.8
22.5°	17285.4	20021.8	18474.3	15348.7	14005.8	15348.7	18474.3	20021.8	17285.4	15219.3	14364.8
25°	15890.5	18932.8	16529.6	12688.0	11314.1	12688.0	16529.6	18932.8	15890.5	13632.8	12860.0
27.5°	14250.0	17552.5	14458.7	10368.0	9100.5	10368.0	14458.7	17552.5	14250.0	11994.5	11205.3
30°	12427.7	15783.0	12303.6	8256.9	7089.7	8256.9	12303.6	15783.0	12427.7	10154.1	9447.5
32.5°	10387.4	14048.5	10233.9	6615.9	5627.2	6615.9	10233.9	14048.5	10387.4	8397.9	7659.4
35°	8505.1	11878.6	8367.7	5198.5	4381.1	5198.5	8367.7	11878.6	8505.1	6740.1	6014.8
37.5°	6674.7	9828.2	6670.3	4186.0	3553.5	4186.0	6670.3	9828.2	6674.7	5240.0	4651.4
40°	5192.9	7684.8	5226.3	3341.6	2851.7	3341.6	5226.3	7684.8	5192.9	3987.1	3610.3
42.5°	3934.7	5876.2	4107.9	2742.5	2422.2	2742.5	4107.9	5876.2	3934.7	3141.4	2859.4
45°	3075.7	4324.2	3207.8	2313.8	2062.0	2313.8	3207.8	4324.2	3075.7	2529.8	2340.4
47.5°	2504.8	3342.0	2599.9	1984.7	1808.2	1984.7	2599.9	3342.0	2504.8	2139.8	1998.0
50°	2103.9	2564.4	2158.7	1732.5	1614.0	1732.5	2158.7	2564.4	2103.9	1832.4	1737.7
52.5°	1807.3	2091.5	1838.4	1543.9	1464.2	1543.9	1838.4	2091.5	1807.3	1603.1	1544.3
55°	1557.5	1758.3	1598.7	1388.3	1333.2	1388.3	1598.7	1758.3	1557.5	1426.6	1383.1
57.5°	1367.9	1491.5	1388.3	1255.8	1219.1	1255.8	1388.3	1491.5	1367.9	1269.5	1246.2
60°	1199.8	1291.7	1225.2	1140.2	1129.7	1140.2	1225.2	1291.7	1199.8	1142.2	1126.9
62.5°	1070.5	1128.5	1083.4	1036.2	1027.0	1036.2	1083.4	1128.5	1070.5	1026.1	1029.0
65°	949.6	1003.6	968.2	942.8	946.0	942.8	968.2	1003.6	949.6	929.1	933.5
67.5°	856.2	884.4	869.1	854.5	858.2	854.5	869.1	884.4	856.2	836.0	842.9
70°	756.7	786.8	771.1	773.1	779.2	773.1	771.1	786.8	756.7	750.6	755.8
72.5°	661.5	684.9	679.7	684.5	690.9	684.5	679.7	684.9	661.5	660.8	661.1
75°	568.1	585.8	588.2	595.1	605.1	595.1	588.2	585.8	568.1	562.0	569.3
77.5°	466.1	486.3	494.0	503.2	518.1	503.2	494.0	486.3	466.1	470.2	473.8
80°	372.7	382.0	398.8	405.7	426.7	405.7	398.8	382.0	372.7	365.9	371.1
82.5°	272.8	281.2	295.8	308.7	320.7	308.7	295.8	281.2	272.8	269.6	270.0
85°	157.6	170.4	180.1	195.4	199.0	195.4	180.1	170.4	157.6	161.2	157.6
87.5°	55.2	59.2	67.7	73.7	74.1	73.7	67.7	59.2	55.2	56.4	51.2
90°	13.3	22.6	38.9	22.3	16.1	22.3	38.9	22.6	13.3	23.3	36.2
92.5°	17.3	30.5	54.8	29.3	21.0	29.3	54.8	30.5	17.3	30.2	58.0
95°	25.6	37.5	69.7	32.2	25.0	32.2	69.7	37.5	25.6	40.1	80.9
97.5°	39.6	46.4	78.6	34.2	30.1	34.2	78.6	46.4	39.6	49.1	92.8
100°	52.5	52.5	143.3	39.2	34.0	39.2	143.3	52.5	52.5	60.4	144.5
102.5°	79.3	102.5	331.6	77.4	40.9	77.4	331.6	102.5	79.3	113.1	306.5
105°	143.9	233.7	583.1	197.6	74.2	197.6	583.1	233.7	143.9	236.3	546.0
107.5°	272.1	435.5	751.0	388.5	170.6	388.5	751.0	435.5	272.1	418.2	720.3
110°	435.1	608.4	819.6	531.6	343.5	531.6	819.6	608.4	435.1	574.3	755.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	566.3	678.0	800.7	589.2	474.7	589.2	800.7	678.0	566.3	633.9	723.3
115°	615.4	668.0	715.3	587.3	526.4	587.3	715.3	668.0	615.4	619.0	645.8
117.5°	594.5	611.4	617.9	551.5	529.4	551.5	617.9	611.4	594.5	556.7	548.4
120°	536.8	529.9	520.8	498.7	499.5	498.7	520.8	529.9	536.8	486.2	458.0
122.5°	464.8	449.8	440.3	445.5	458.8	445.5	440.3	449.8	464.8	414.1	392.7
125°	394.2	379.4	384.1	399.7	413.6	399.7	384.1	379.4	394.2	351.9	346.5
127.5°	334.9	328.1	343.3	361.0	372.8	361.0	343.3	328.1	334.9	308.2	313.7
130°	292.7	294.2	314.5	329.6	337.0	329.6	314.5	294.2	292.7	279.8	293.2
132.5°	266.2	273.7	293.0	306.2	310.6	306.2	293.0	273.7	266.2	262.6	279.1
135°	249.7	260.9	278.5	286.8	288.7	286.8	278.5	260.9	249.7	251.1	266.2
137.5°	240.1	251.3	264.6	271.4	269.9	271.4	264.6	251.3	240.1	243.6	255.0
140°	234.7	245.7	251.6	259.5	258.3	259.5	251.6	245.7	234.7	236.6	245.6
142.5°	229.0	239.1	242.1	248.0	246.4	248.0	242.1	239.1	229.0	231.1	237.0
145°	226.5	234.1	231.7	239.0	236.8	239.0	231.7	234.1	226.5	227.1	230.5
147.5°	221.5	227.1	224.1	230.5	228.3	230.5	224.1	227.1	221.5	221.5	222.9
150°	216.0	219.9	215.6	222.9	222.6	222.9	215.6	219.9	216.0	215.0	216.3
152.5°	208.4	212.4	208.4	216.7	216.1	216.7	208.4	212.4	208.4	207.4	208.8
155°	202.2	204.2	202.2	210.6	211.0	210.6	202.2	204.2	202.2	201.8	202.7
157.5°	198.1	199.5	198.5	205.9	206.3	205.9	198.5	199.5	198.1	198.1	198.5
160°	194.7	196.7	196.2	202.5	202.9	202.5	196.2	196.7	194.7	195.3	195.7
162.5°	193.6	193.6	193.4	199.7	200.4	199.7	193.4	193.6	193.6	193.6	194.5
165°	191.7	192.8	191.5	196.4	198.1	196.4	191.5	192.8	191.7	192.4	192.4
167.5°	191.5	190.5	191.4	195.6	197.4	195.6	191.4	190.5	191.5	192.1	192.1
170°	190.1	190.5	190.2	194.4	196.2	194.4	190.2	190.5	190.1	191.0	191.5
172.5°	191.2	191.2	190.5	193.7	196.4	193.7	190.5	191.2	191.2	191.8	192.8
175°	192.0	191.4	191.2	193.4	196.3	193.4	191.2	191.4	192.0	191.6	191.6
177.5°	190.9	191.8	192.6	194.9	198.6	194.9	192.6	191.8	190.9	191.6	191.6
180°	191.8	191.8	191.8	191.8	191.8	191.8	191.8	191.8	191.8	191.8	191.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	21486.0	21486.0	21486.0	21486.0	21486.0	21486.0
2.5°	20861.9	20848.2	20861.9	21007.7	21197.5	21473.5
5°	20377.2	20301.5	20377.2	20538.7	20887.3	21412.7
7.5°	19812.7	19768.8	19812.7	20083.1	20523.4	21267.2
10°	19218.5	19118.9	19218.5	19523.9	20043.2	21045.2
12.5°	18486.0	18354.3	18486.0	18801.5	19456.6	20691.0
15°	17554.5	17438.9	17554.5	17904.6	18664.5	20167.3
17.5°	16554.9	16450.2	16554.9	16859.1	17695.9	19429.2
20°	15299.5	15217.3	15299.5	15729.8	16550.9	18477.9
22.5°	13982.4	13905.4	13982.4	14364.8	15219.3	17285.4
25°	12432.9	12391.1	12432.9	12860.0	13632.8	15890.5
27.5°	10758.4	10687.2	10758.4	11205.3	11994.5	14250.0
30°	9047.8	8929.8	9047.8	9447.5	10154.1	12427.7
32.5°	7374.5	7289.6	7374.5	7659.4	8397.9	10387.4
35°	5757.4	5672.3	5757.4	6014.8	6740.1	8505.1
37.5°	4486.3	4336.0	4486.3	4651.4	5240.0	6674.7
40°	3402.4	3378.3	3402.4	3610.3	3987.1	5192.9
42.5°	2769.9	2704.2	2769.9	2859.4	3141.4	3934.7
45°	2272.7	2246.9	2272.7	2340.4	2529.8	3075.7
47.5°	1954.5	1965.7	1954.5	1998.0	2139.8	2504.8
50°	1717.2	1724.0	1717.2	1737.7	1832.4	2103.9
52.5°	1542.3	1536.2	1542.3	1544.3	1603.1	1807.3
55°	1387.6	1379.9	1387.6	1383.1	1426.6	1557.5
57.5°	1252.2	1257.8	1252.2	1246.2	1269.5	1367.9
60°	1131.4	1136.6	1131.4	1126.9	1142.2	1199.8
62.5°	1029.3	1032.6	1029.3	1029.0	1026.1	1070.5
65°	938.4	942.0	938.4	933.5	929.1	949.6
67.5°	851.3	851.3	851.3	842.9	836.0	856.2
70°	769.6	769.1	769.6	755.8	750.6	756.7
72.5°	671.2	680.9	671.2	661.1	660.8	661.5
75°	575.7	587.1	575.7	569.3	562.0	568.1
77.5°	479.0	496.4	479.0	473.8	470.2	466.1
80°	379.9	398.8	379.9	371.1	365.9	372.7
82.5°	280.8	294.9	280.8	270.0	269.6	272.8
85°	167.2	189.8	167.2	157.6	161.2	157.6
87.5°	53.6	68.5	53.6	51.2	56.4	55.2
90°	21.2	13.3	21.2	36.2	23.3	13.3
92.5°	32.2	19.3	32.2	58.0	30.2	17.3
95°	37.1	22.2	37.1	80.9	40.1	25.6
97.5°	41.1	28.6	41.1	92.8	49.1	39.6
100°	48.1	37.5	48.1	144.5	60.4	52.5
102.5°	101.7	63.4	101.7	306.5	113.1	79.3
105°	214.1	109.1	214.1	546.0	236.3	143.9
107.5°	383.0	188.6	383.0	720.3	418.2	272.1
110°	508.2	351.6	508.2	755.1	574.3	435.1



TEST NUMBER: P1432621

CATALOG NUMBER: EHBR1-24-UNV-TASM-L835-UPL18

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	546.0	474.9	546.0	723.3	633.9	566.3
115°	525.2	499.7	525.2	645.8	619.0	615.4
117.5°	479.4	482.8	479.4	548.4	556.7	594.5
120°	426.8	447.0	426.8	458.0	486.2	536.8
122.5°	378.5	402.3	378.5	392.7	414.1	464.8
125°	336.7	360.9	336.7	346.5	351.9	394.2
127.5°	307.9	324.2	307.9	313.7	308.2	334.9
130°	285.4	299.3	285.4	293.2	279.8	292.7
132.5°	270.0	279.0	270.0	279.1	262.6	266.2
135°	256.5	264.1	256.5	266.2	251.1	249.7
137.5°	244.9	251.5	244.9	255.0	243.6	240.1
140°	234.8	240.4	234.8	245.6	236.6	234.7
142.5°	224.2	228.2	224.2	237.0	231.1	229.0
145°	217.1	220.1	217.1	230.5	227.1	226.5
147.5°	211.0	212.9	211.0	222.9	221.5	221.5
150°	204.8	206.7	204.8	216.3	215.0	216.0
152.5°	198.2	200.7	198.2	208.8	207.4	208.4
155°	194.1	196.5	194.1	202.7	201.8	202.2
157.5°	191.9	193.7	191.9	198.5	198.1	198.1
160°	190.2	191.6	190.2	195.7	195.3	194.7
162.5°	188.0	189.4	188.0	194.5	193.6	193.6
165°	187.7	188.1	187.7	192.4	192.4	191.7
167.5°	187.2	188.1	187.2	192.1	192.1	191.5
170°	187.5	188.0	187.5	191.5	191.0	190.1
172.5°	188.4	188.8	188.4	192.8	191.8	191.2
175°	188.2	188.6	188.2	191.6	191.6	192.0
177.5°	189.6	190.0	189.6	191.6	191.6	190.9
180°	191.8	191.8	191.8	191.8	191.8	191.8



TEST NUMBER: P1432621
 CATALOG NUMBER: EHBR1-24-UNV-TASM-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	16.65	17.75	17.13	18.20	18.70	15.96	17.06	16.45	17.52	18.01
	3H	18.19	19.17	18.70	19.65	20.18	17.81	18.79	18.31	19.26	19.80
	4H	18.83	19.74	19.35	20.23	20.79	18.59	19.51	19.12	20.00	20.55
	6H	19.31	20.15	19.85	20.66	21.22	19.23	20.08	19.77	20.58	21.15
	8H	19.46	20.26	20.01	20.78	21.35	19.46	20.25	20.01	20.78	21.35
	12H	19.53	20.29	20.09	20.81	21.41	19.58	20.34	20.14	20.86	21.46
4H	2H	17.06	17.97	17.59	18.46	19.02	16.54	17.45	17.06	17.94	18.50
	3H	18.86	19.61	19.39	20.15	20.72	18.59	19.35	19.13	19.89	20.46
	4H	19.63	20.31	20.19	20.86	21.47	19.50	20.18	20.06	20.73	21.34
	6H	20.25	20.83	20.83	21.40	22.03	20.27	20.86	20.85	21.43	22.06
	8H	20.44	20.99	21.03	21.56	22.19	20.54	21.09	21.13	21.66	22.29
	12H	20.55	21.03	21.15	21.63	22.27	20.71	21.19	21.31	21.80	22.43
8H	4H	19.88	20.43	20.47	21.00	21.63	19.78	20.33	20.37	20.90	21.53
	6H	20.62	21.07	21.24	21.68	22.32	20.69	21.13	21.30	21.75	22.39
	8H	20.89	21.29	21.53	21.92	22.57	21.04	21.44	21.67	22.07	22.72
	12H	21.06	21.41	21.69	22.02	22.75	21.29	21.63	21.92	22.25	22.97
12H	4H	19.89	20.37	20.49	20.97	21.61	19.79	20.27	20.40	20.88	21.51
	6H	20.66	21.06	21.30	21.69	22.34	20.73	21.13	21.37	21.76	22.41
	8H	20.98	21.33	21.61	21.94	22.67	21.13	21.48	21.76	22.09	22.82

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

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
 CIE u': 0.2375
 CIE v': 0.5091
 Duv: -0.0021
 CIE x: 0.4049
 CIE y: 0.3856
 CIE z: 0.2095
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 581
 Purity: 37.24544
 R_f: 80.1
 R_g: 101

CRI (Ra):	82.1		
R1:	82.9	R9:	27.6
R2:	85.6	R10:	63.8
R3:	85.9	R11:	81.2
R4:	82.8	R12:	57.2
R5:	81.0	R13:	82.6
R6:	79.7	R14:	91.0
R7:	86.5	R15:	79.4
R8:	72.1		



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

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CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-3

Photopic Flux vs. Wavelength

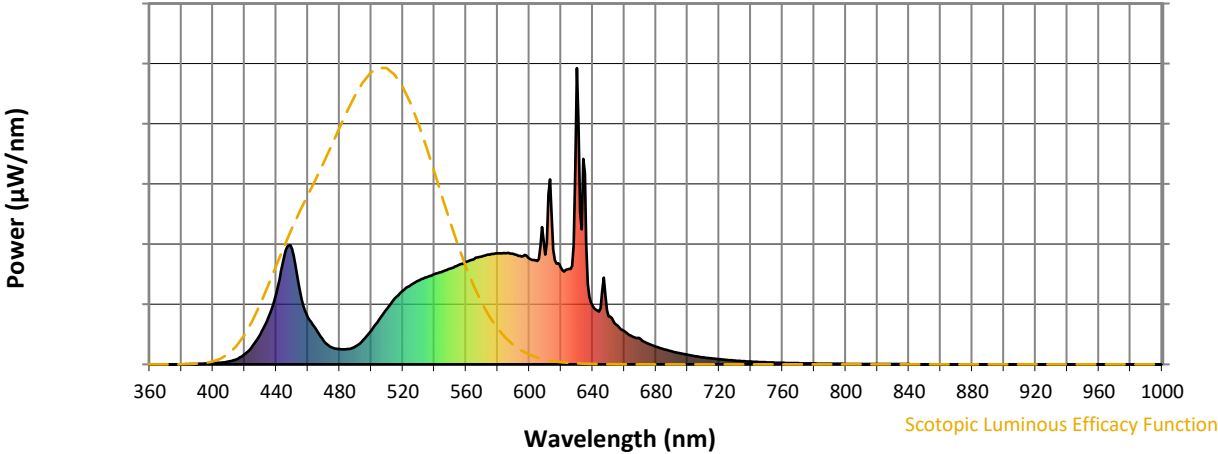


Photopic Lumens: NR

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			

Summary

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

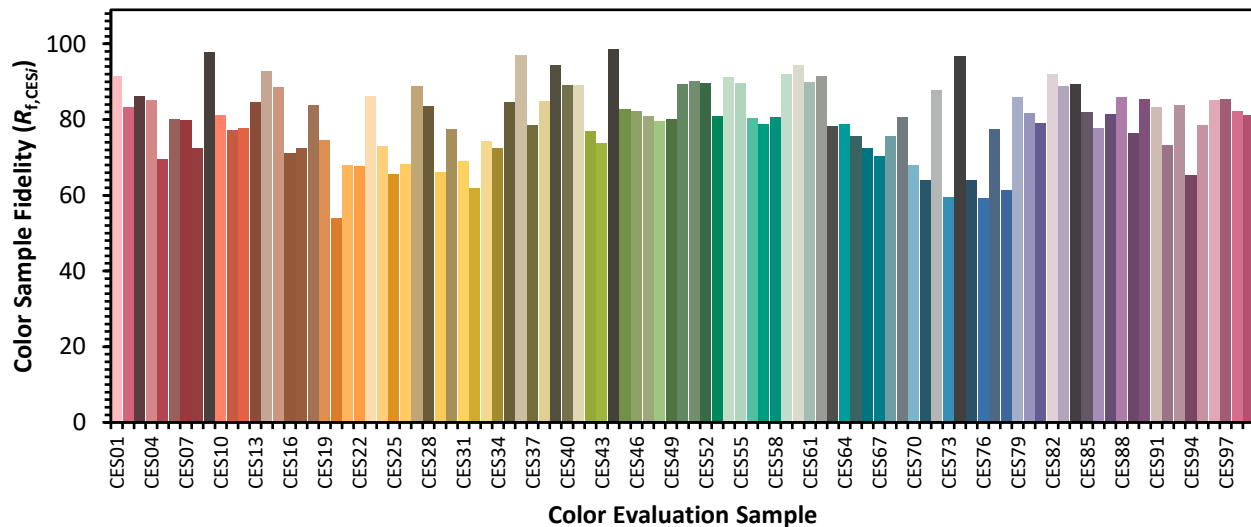


Color Vector Graphics

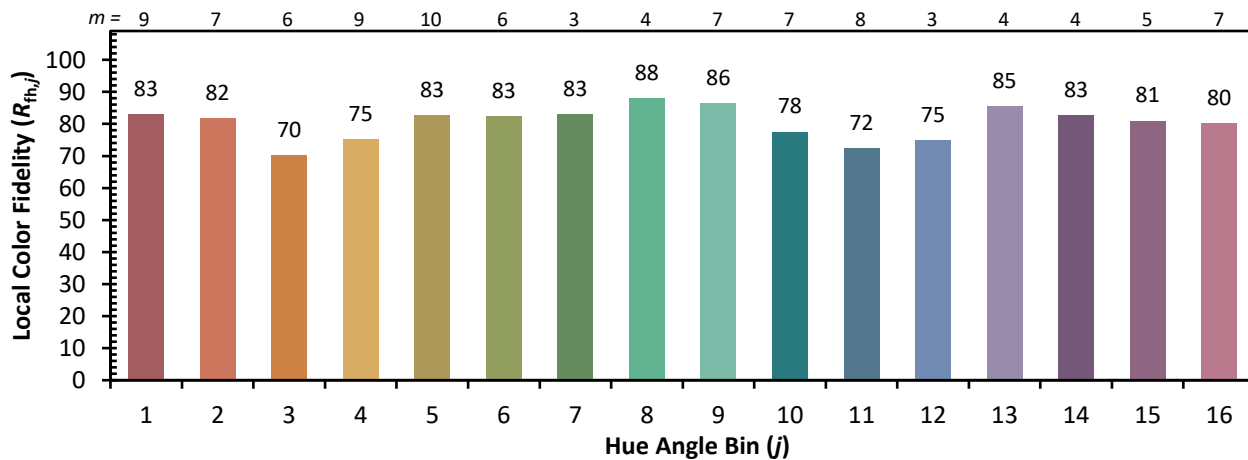
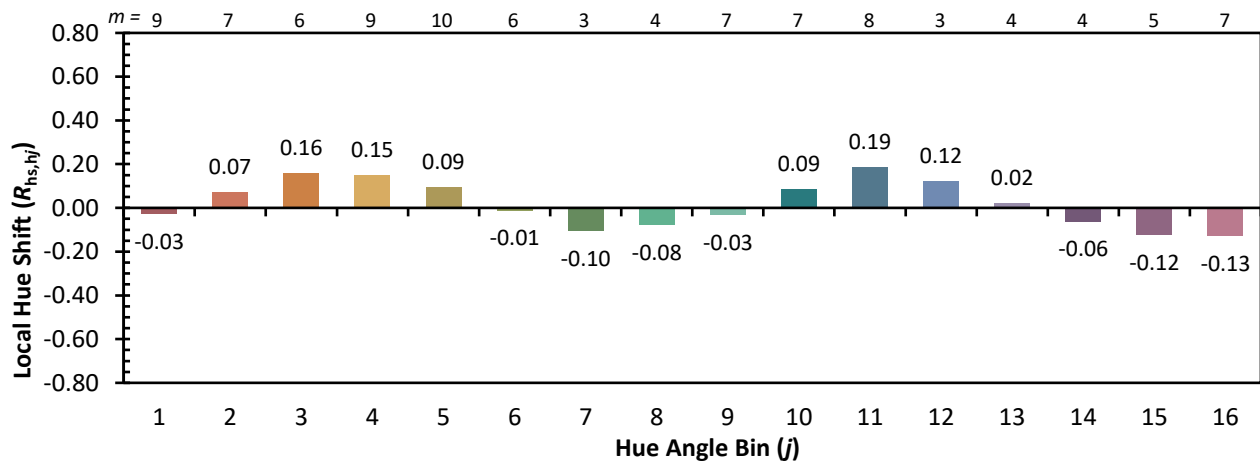
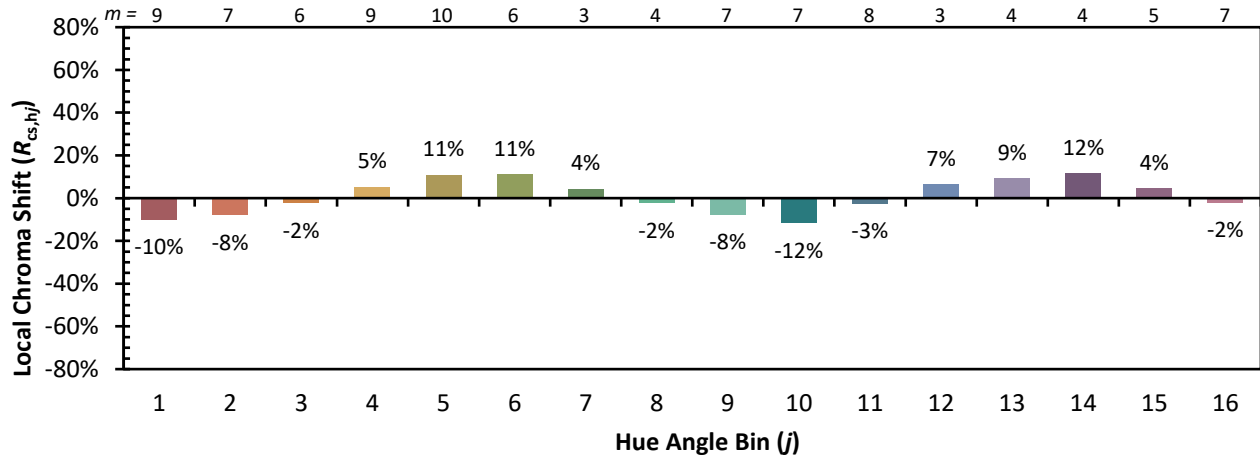


Individual Sample Fidelity Index ($R_{f,i}$)

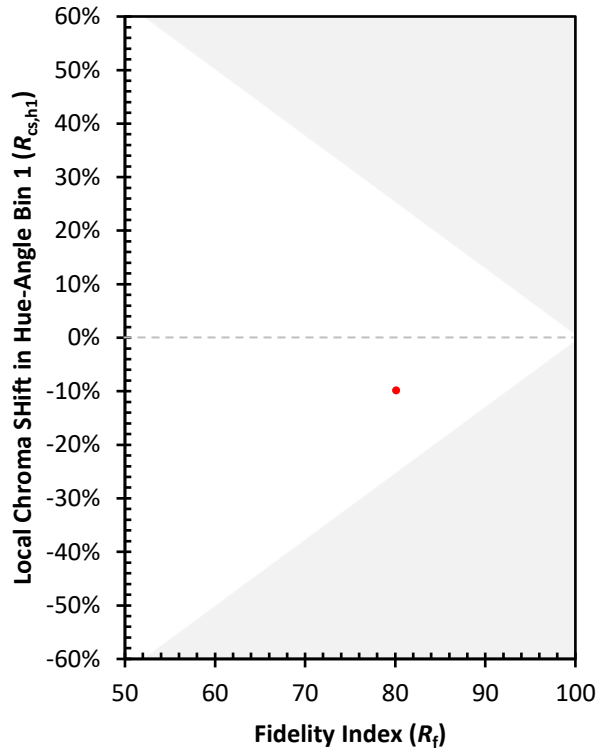
CES01 = 86	CES26 = 68	CES51 = 90	CES76 = 59
CES02 = 62	CES27 = 89	CES52 = 90	CES77 = 78
CES03 = 31	CES28 = 84	CES53 = 81	CES78 = 61
CES04 = 70	CES29 = 66	CES54 = 91	CES79 = 86
CES05 = 49	CES30 = 77	CES55 = 90	CES80 = 82
CES06 = 51	CES31 = 69	CES56 = 80	CES81 = 79
CES07 = 42	CES32 = 62	CES57 = 79	CES82 = 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	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)