

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: P1433289

Luminaire Tested: EHBR1-48-UNV-TASM-L930

Issue Date: 3/13/2026

Test Information

Test Method: LM-79-2019
Report Number: P1433289
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2601-654-4)
Test Lab: INNOVATION CENTER
Issue Date: 3/13/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-48-UNV-TASM-L930
Description: Elevate Round Highbay at, 48000 lumens, 3000K 90CRI LEDs with TASM lens
Light Source: -
Ballast/Driver: -

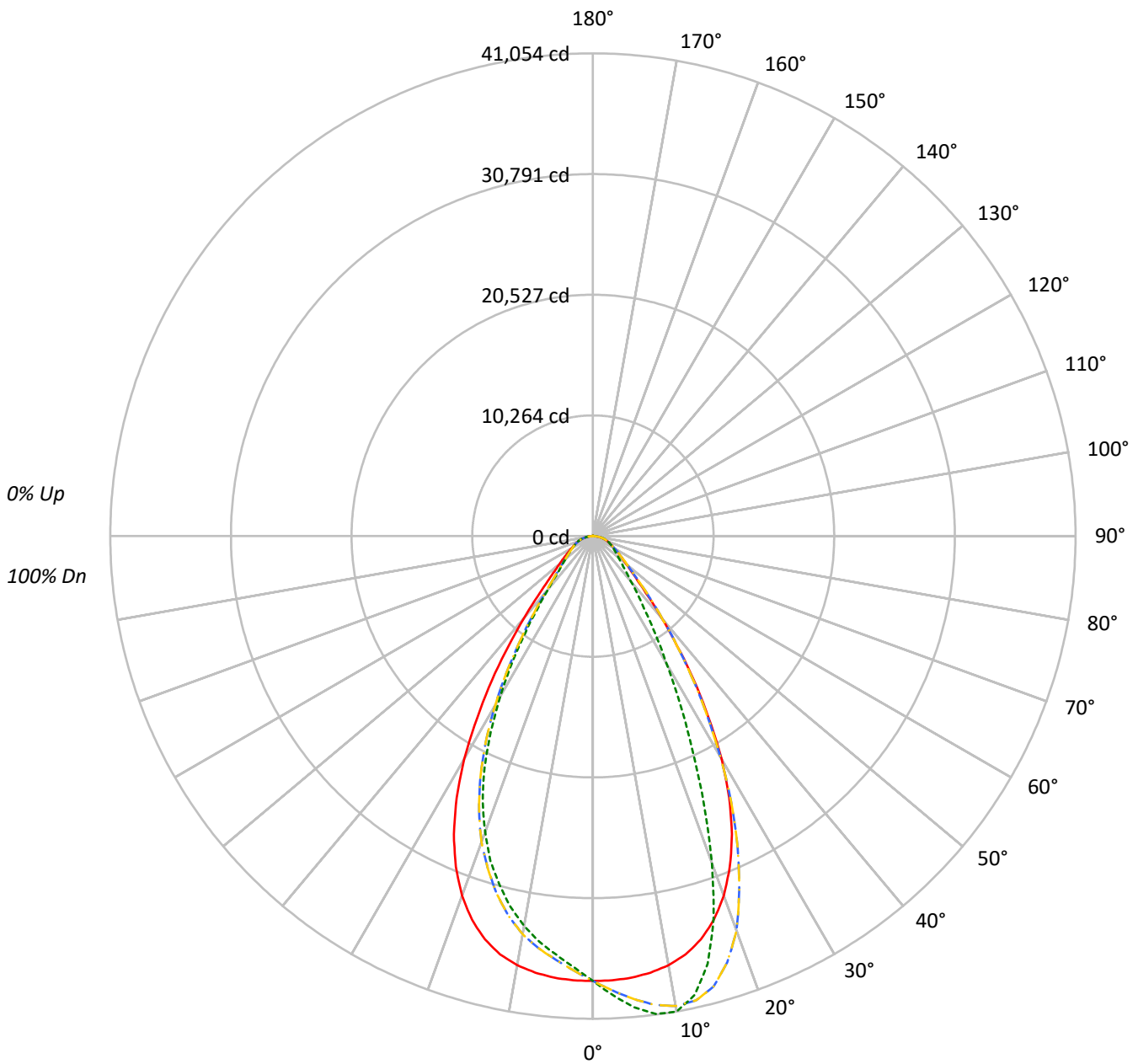
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 42305.1 lumens
Efficiency: N/A
Efficacy: 163.6 lumens/watt
Spacing Criteria (0/90/45): 0.99 / 0.84 / 0.9
Luminous Opening: Circular (Dia: 1.71' x H: 0')
CIE Type: Direct

Input Watts (W): 258.6
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

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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			
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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	112	108	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90	90	90
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81	81	81
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74	74	74
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	72	69	67	67	67
5	87	78	71	66	86	77	70	65	75	69	65	73	68	64	71	67	64	62	62	62
6	82	72	65	60	81	71	65	60	70	64	60	68	63	59	67	62	59	57	57	57
7	78	67	60	56	76	67	60	56	65	59	55	64	59	55	63	58	55	53	53	53
8	74	63	56	52	72	62	56	52	61	55	51	60	55	51	59	54	51	49	49	49
9	70	59	53	48	69	59	52	48	58	52	48	57	51	48	56	51	47	46	46	46
10	66	56	49	45	65	55	49	45	54	49	45	54	48	45	53	48	45	43	43	43

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	177676	177676	177676	177676
5°	177746	189622	177746	168522
10°	176716	195770	176716	160541
15°	172654	183157	172654	149296
20°	162608	147897	162608	133914
25°	144990	103232	144990	113059
30°	118668	67697	118668	85267
35°	85860	44227	85860	57263
40°	56057	30784	56057	36468
45°	35969	24114	35969	26278
50°	27067	20764	27067	22179
55°	22456	19221	22456	19895
60°	19844	18684	19844	18798
65°	18581	18510	18581	18431
70°	18293	18840	18293	18597
75°	18150	19335	18150	18756
80°	17746	20318	17746	18996
85°	14947	18886	14947	18007

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 50571 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3597.5	8.5
10°-20°	9787.3	23.1
20°-30°	11478.5	27.1
30°-40°	7982.5	18.9
40°-50°	3967.0	9.4
50°-60°	2372.6	5.6
60°-70°	1670.0	3.9
70°-80°	1075.7	2.5
80°-90°	341.7	0.8
90°-100°	2.0	0.0
100°-110°	2.4	0.0
110°-120°	2.4	0.0
120°-130°	3.1	0.0
130°-140°	4.2	0.0
140°-150°	5.0	0.0
150°-160°	5.6	0.0
160°-170°	5.4	0.0
170°-180°	2.3	0.0
0°-30°	24863.2	58.8
0°-40°	32845.8	77.6
0°-60°	39185.4	92.6
0°-90°	42272.8	99.9
90°-120°	6.8	0.0
90°-150°	19.0	0.0
90°-180°	32.0	0.1
0°-180°	42305.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	37835	37835	37835	37835	37835	
5°	37706	40225	37706	35749	37706	3578
15°	35513	37673	35513	30708	35513	9925
25°	27982	19923	27982	21820	27982	12668
35°	14977	7715	14977	9988	14977	9349
45°	5416	3631	5416	3957	5416	4432
55°	2743	2348	2743	2430	2743	2508
65°	1672	1666	1672	1659	1672	1679
75°	1000	1066	1000	1034	1000	1050
85°	277	350	277	334	277	308
90°	1	6	1	1	1	14
95°	1	6	1	1	1	1
105°	1	6	1	1	1	1
115°	2	6	2	1	2	2
125°	3	7	3	2	3	3
135°	6	8	6	3	6	4
145°	9	9	9	8	9	5
155°	11	13	11	14	11	5
165°	19	23	19	20	19	5
175°	25	30	25	24	25	2
180°	26	26	26	26	26	



TEST NUMBER: P1433289
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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8
2.5°	37812.9	38301.6	38697.5	38958.6	39087.7	38958.6	38697.5	38301.6	37812.9	37326.8	36992.6
5°	37705.7	38684.7	39514.1	40056.8	40225.0	40056.8	39514.1	38684.7	37705.7	36780.6	36166.9
7.5°	37449.5	38974.9	40207.3	40840.8	40995.5	40840.8	40207.3	38974.9	37449.5	36139.9	35364.4
10°	37058.7	39157.9	40581.8	41035.9	41054.4	41035.9	40581.8	39157.9	37058.7	35294.2	34379.7
12.5°	36435.1	39092.7	40456.2	40307.2	39968.9	40307.2	40456.2	39092.7	36435.1	34261.3	33107.7
15°	35512.7	38706.0	39661.0	38448.5	37673.0	38448.5	39661.0	38706.0	35512.7	32866.5	31528.4
17.5°	34213.0	37982.3	38000.8	35602.1	34139.2	35602.1	38000.8	37982.3	34213.0	31160.9	29687.3
20°	32538.0	36821.7	35714.9	31327.7	29594.4	31327.7	35714.9	36821.7	32538.0	29144.6	27698.8
22.5°	30438.0	35256.6	32531.6	27027.6	24663.0	27027.6	32531.6	35256.6	30438.0	26799.9	25295.1
25°	27981.8	33339.0	29107.0	22342.3	19923.0	22342.3	29107.0	33339.0	27981.8	24006.0	22645.3
27.5°	25092.9	30908.4	25460.4	18257.2	16025.3	18257.2	25460.4	30908.4	25092.9	21121.4	19731.5
30°	21884.0	27792.4	21665.5	14539.7	12484.3	14539.7	21665.5	27792.4	21884.0	17880.5	16636.2
32.5°	18291.3	24738.1	18021.0	11650.1	9909.0	11650.1	18021.0	24738.1	18291.3	14788.0	13487.6
35°	14976.7	20917.0	14734.8	9154.1	7714.7	9154.1	14734.8	20917.0	14976.7	11868.6	10591.6
37.5°	11753.6	17306.6	11745.8	7371.3	6257.4	7371.3	11745.8	17306.6	11753.6	9227.2	8190.7
40°	9144.3	13532.2	9203.2	5884.3	5021.6	5884.3	9203.2	13532.2	9144.3	7020.8	6357.5
42.5°	6928.6	10347.5	7233.7	4829.3	4265.3	4829.3	7233.7	10347.5	6928.6	5531.7	5035.0
45°	5416.0	7614.6	5648.8	4074.5	3631.0	4074.5	5648.8	7614.6	5416.0	4454.7	4121.3
47.5°	4410.7	5885.0	4578.1	3494.8	3184.0	3494.8	4578.1	5885.0	4410.7	3767.9	3518.2
50°	3704.8	4515.7	3801.2	3050.6	2842.1	3050.6	3801.2	4515.7	3704.8	3226.6	3059.9
52.5°	3182.6	3682.8	3237.2	2718.7	2578.2	2718.7	3237.2	3682.8	3182.6	2823.0	2719.4
55°	2742.8	3096.1	2815.1	2444.8	2347.6	2444.8	2815.1	3096.1	2742.8	2512.2	2435.6
57.5°	2408.7	2626.5	2444.8	2211.4	2146.8	2211.4	2444.8	2626.5	2408.7	2235.5	2194.3
60°	2112.8	2274.5	2157.4	2007.7	1989.3	2007.7	2157.4	2274.5	2112.8	2011.3	1984.4
62.5°	1885.0	1987.2	1907.8	1824.7	1808.4	1824.7	1907.8	1987.2	1885.0	1807.0	1812.0
65°	1672.2	1767.3	1704.8	1660.1	1665.8	1660.1	1704.8	1767.3	1672.2	1636.0	1643.8
67.5°	1507.6	1557.3	1530.3	1504.8	1511.2	1504.8	1530.3	1557.3	1507.6	1472.2	1484.2
70°	1332.3	1385.5	1357.9	1361.5	1372.1	1361.5	1357.9	1385.5	1332.3	1321.7	1330.9
72.5°	1164.9	1206.1	1196.9	1205.4	1216.8	1205.4	1196.9	1206.1	1164.9	1163.5	1164.2
75°	1000.3	1031.6	1035.8	1047.9	1065.6	1047.9	1035.8	1031.6	1000.3	989.7	1002.4
77.5°	820.8	856.3	869.8	886.1	912.3	886.1	869.8	856.3	820.8	828.0	834.3
80°	656.2	672.5	702.4	714.4	751.3	714.4	702.4	672.5	656.2	644.2	653.4
82.5°	480.3	495.2	520.8	543.4	564.7	543.4	520.8	495.2	480.3	474.6	475.3
85°	277.4	300.1	317.2	344.1	350.5	344.1	317.2	300.1	277.4	283.8	277.4
87.5°	97.2	104.3	119.1	129.8	130.6	129.8	119.1	104.3	97.2	99.4	90.1
90°	0.7	1.4	2.1	4.3	5.7	4.3	2.1	1.4	0.7	0.7	0.7
92.5°	0.7	1.4	2.1	4.3	5.7	4.3	2.1	1.4	0.7	0.7	0.7
95°	1.4	1.4	2.1	4.3	5.7	4.3	2.1	1.4	1.4	0.7	0.7
97.5°	1.4	1.4	2.1	4.3	5.7	4.3	2.1	1.4	1.4	0.7	0.7
100°	1.4	1.4	2.1	4.3	5.7	4.3	2.1	1.4	1.4	1.4	0.7
102.5°	1.4	2.1	2.9	5.0	5.7	5.0	2.9	2.1	1.4	1.4	0.7
105°	1.4	2.1	2.9	5.0	6.4	5.0	2.9	2.1	1.4	1.4	0.7
107.5°	1.4	2.1	2.9	5.0	6.4	5.0	2.9	2.1	1.4	1.4	1.4
110°	1.4	2.1	2.9	5.0	6.4	5.0	2.9	2.1	1.4	1.4	1.4



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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°	1.4	2.1	2.9	5.0	6.4	5.0	2.9	2.1	1.4	1.4	1.4
115°	2.1	2.1	2.9	5.0	6.4	5.0	2.9	2.1	2.1	1.4	1.4
117.5°	2.1	2.1	2.9	5.0	6.4	5.0	2.9	2.1	2.1	2.1	1.4
120°	2.1	2.1	3.6	5.0	6.4	5.0	3.6	2.1	2.1	2.1	1.4
122.5°	2.9	2.9	3.6	5.7	6.4	5.7	3.6	2.9	2.9	2.9	2.1
125°	2.9	2.9	4.3	5.7	7.1	5.7	4.3	2.9	2.9	3.6	2.9
127.5°	3.6	3.6	4.3	5.7	7.1	5.7	4.3	3.6	3.6	3.6	2.9
130°	4.3	3.6	4.3	6.4	7.1	6.4	4.3	3.6	4.3	4.3	3.6
132.5°	5.0	4.3	5.0	7.1	7.8	7.1	5.0	4.3	5.0	5.7	5.0
135°	5.7	4.3	5.7	6.4	7.8	6.4	5.7	4.3	5.7	6.4	5.0
137.5°	6.4	5.0	5.7	7.1	7.8	7.1	5.7	5.0	6.4	7.1	6.4
140°	7.1	5.7	5.7	7.1	8.6	7.1	5.7	5.7	7.1	7.1	7.1
142.5°	7.8	6.4	6.4	7.8	8.6	7.8	6.4	6.4	7.8	7.8	7.8
145°	8.6	7.8	7.1	7.8	9.2	7.8	7.1	7.8	8.6	7.8	8.6
147.5°	8.6	7.8	7.8	8.6	9.9	8.6	7.8	7.8	8.6	8.6	9.2
150°	9.2	9.2	8.6	9.2	10.6	9.2	8.6	9.2	9.2	9.2	9.9
152.5°	9.9	9.9	9.9	10.6	11.3	10.6	9.9	9.9	9.9	9.9	10.6
155°	11.3	11.3	11.3	12.0	12.7	12.0	11.3	11.3	11.3	10.6	12.0
157.5°	12.7	13.5	13.5	14.2	14.9	14.2	13.5	13.5	12.7	12.7	13.5
160°	15.6	15.6	16.3	17.0	17.7	17.0	16.3	15.6	15.6	14.9	15.6
162.5°	17.0	17.0	18.4	19.2	20.6	19.2	18.4	17.0	17.0	17.0	17.0
165°	19.2	19.2	20.6	22.0	23.4	22.0	20.6	19.2	19.2	18.4	18.4
167.5°	20.6	20.6	22.0	24.1	25.6	24.1	22.0	20.6	20.6	19.9	19.9
170°	21.3	22.0	23.4	25.6	27.0	25.6	23.4	22.0	21.3	21.3	20.6
172.5°	23.4	23.4	25.6	27.6	29.1	27.6	25.6	23.4	23.4	22.7	22.7
175°	24.9	25.6	27.0	29.1	30.5	29.1	27.0	25.6	24.9	24.1	24.1
177.5°	24.9	26.3	27.6	29.8	31.2	29.8	27.6	26.3	24.9	24.1	24.1
180°	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	37834.8	37834.8	37834.8	37834.8	37834.8	37834.8
2.5°	36735.8	36711.8	36735.8	36992.6	37326.8	37812.9
5°	35882.4	35749.0	35882.4	36166.9	36780.6	37705.7
7.5°	34888.4	34811.1	34888.4	35364.4	36139.9	37449.5
10°	33841.9	33666.7	33841.9	34379.7	35294.2	37058.7
12.5°	32552.2	32320.2	32552.2	33107.7	34261.3	36435.1
15°	30911.9	30708.3	30911.9	31528.4	32866.5	35512.7
17.5°	29151.8	28967.3	29151.8	29687.3	31160.9	34213.0
20°	26941.0	26796.3	26941.0	27698.8	29144.6	32538.0
22.5°	24621.8	24486.3	24621.8	25295.1	26799.9	30438.0
25°	21893.3	21819.5	21893.3	22645.3	24006.0	27981.8
27.5°	18944.7	18819.2	18944.7	19731.5	21121.4	25092.9
30°	15932.3	15724.5	15932.3	16636.2	17880.5	21884.0
32.5°	12986.0	12836.2	12986.0	13487.6	14788.0	18291.3
35°	10138.2	9988.5	10138.2	10591.6	11868.6	14976.7
37.5°	7899.9	7635.2	7899.9	8190.7	9227.2	11753.6
40°	5991.4	5948.8	5991.4	6357.5	7020.8	9144.3
42.5°	4877.6	4761.9	4877.6	5035.0	5531.7	6928.6
45°	4002.1	3956.7	4002.1	4121.3	4454.7	5416.0
47.5°	3441.6	3461.5	3441.6	3518.2	3767.9	4410.7
50°	3023.7	3035.8	3023.7	3059.9	3226.6	3704.8
52.5°	2715.8	2705.1	2715.8	2719.4	2823.0	3182.6
55°	2443.4	2429.9	2443.4	2435.6	2512.2	2742.8
57.5°	2205.0	2214.9	2205.0	2194.3	2235.5	2408.7
60°	1992.1	2001.4	1992.1	1984.4	2011.3	2112.8
62.5°	1812.7	1818.4	1812.7	1812.0	1807.0	1885.0
65°	1652.4	1658.7	1652.4	1643.8	1636.0	1672.2
67.5°	1499.1	1499.1	1499.1	1484.2	1472.2	1507.6
70°	1355.1	1354.4	1355.1	1330.9	1321.7	1332.3
72.5°	1181.9	1199.0	1181.9	1164.2	1163.5	1164.9
75°	1013.8	1033.7	1013.8	1002.4	989.7	1000.3
77.5°	843.6	874.0	843.6	834.3	828.0	820.8
80°	669.0	702.4	669.0	653.4	644.2	656.2
82.5°	494.5	519.4	494.5	475.3	474.6	480.3
85°	294.4	334.2	294.4	277.4	283.8	277.4
87.5°	94.4	120.6	94.4	90.1	99.4	97.2
90°	0.7	0.7	0.7	0.7	0.7	0.7
92.5°	0.7	0.7	0.7	0.7	0.7	0.7
95°	0.7	0.7	0.7	0.7	0.7	1.4
97.5°	0.7	1.4	0.7	0.7	0.7	1.4
100°	0.7	1.4	0.7	0.7	1.4	1.4
102.5°	0.7	1.4	0.7	0.7	1.4	1.4
105°	0.7	1.4	0.7	0.7	1.4	1.4
107.5°	0.7	1.4	0.7	1.4	1.4	1.4
110°	0.7	1.4	0.7	1.4	1.4	1.4



TEST NUMBER: P1433289
 CATALOG NUMBER: EHBR1-48-UNV-TASM-L930

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	0.7	1.4	0.7	1.4	1.4	1.4
115°	0.7	1.4	0.7	1.4	1.4	2.1
117.5°	0.7	1.4	0.7	1.4	2.1	2.1
120°	0.7	1.4	0.7	1.4	2.1	2.1
122.5°	1.4	1.4	1.4	2.1	2.9	2.9
125°	1.4	2.1	1.4	2.9	3.6	2.9
127.5°	1.4	2.1	1.4	2.9	3.6	3.6
130°	2.1	2.1	2.1	3.6	4.3	4.3
132.5°	2.9	2.9	2.9	5.0	5.7	5.0
135°	3.6	2.9	3.6	5.0	6.4	5.7
137.5°	4.3	3.6	4.3	6.4	7.1	6.4
140°	5.7	5.0	5.7	7.1	7.1	7.1
142.5°	6.4	6.4	6.4	7.8	7.8	7.8
145°	7.8	7.8	7.8	8.6	7.8	8.6
147.5°	9.2	9.2	9.2	9.2	8.6	8.6
150°	10.6	10.6	10.6	9.9	9.2	9.2
152.5°	11.3	12.0	11.3	10.6	9.9	9.9
155°	12.7	13.5	12.7	12.0	10.6	11.3
157.5°	14.2	15.6	14.2	13.5	12.7	12.7
160°	16.3	17.0	16.3	15.6	14.9	15.6
162.5°	17.7	18.4	17.7	17.0	17.0	17.0
165°	19.2	19.9	19.2	18.4	18.4	19.2
167.5°	19.9	19.9	19.9	19.9	19.9	20.6
170°	20.6	21.3	20.6	20.6	21.3	21.3
172.5°	22.0	22.7	22.0	22.7	22.7	23.4
175°	23.4	24.1	23.4	24.1	24.1	24.9
177.5°	24.1	24.9	24.1	24.1	24.1	24.9
180°	26.3	26.3	26.3	26.3	26.3	26.3



TEST NUMBER: P1433289
 CATALOG NUMBER: EHBR1-48-UNV-TASM-L930

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	19.65	20.86	20.01	21.17	21.49	18.97	20.17	19.33	20.49	20.80
	3H	21.29	22.36	21.67	22.69	23.06	20.92	21.99	21.30	22.32	22.69
	4H	21.99	22.99	22.40	23.35	23.73	21.78	22.78	22.18	23.13	23.52
	6H	22.56	23.48	22.98	23.86	24.25	22.53	23.45	22.94	23.82	24.22
	8H	22.77	23.64	23.20	24.03	24.44	22.82	23.68	23.25	24.08	24.49
	12H	22.89	23.72	23.32	24.11	24.54	23.01	23.84	23.45	24.23	24.66
4H	2H	20.11	21.11	20.52	21.46	21.85	19.60	20.60	20.00	20.95	21.34
	3H	22.02	22.84	22.44	23.25	23.66	21.77	22.60	22.19	23.01	23.41
	4H	22.88	23.62	23.31	24.04	24.49	22.77	23.51	23.21	23.93	24.38
	6H	23.60	24.24	24.07	24.69	25.16	23.67	24.30	24.13	24.75	25.22
	8H	23.86	24.45	24.33	24.90	25.38	24.01	24.61	24.48	25.06	25.53
	12H	24.03	24.55	24.52	25.04	25.51	24.26	24.78	24.75	25.27	25.75
8H	4H	23.19	23.78	23.66	24.23	24.71	23.11	23.71	23.58	24.16	24.63
	6H	24.06	24.55	24.57	25.05	25.53	24.16	24.65	24.67	25.15	25.63
	8H	24.41	24.85	24.94	25.36	25.86	24.61	25.04	25.14	25.56	26.06
	12H	24.67	25.05	25.19	25.55	26.12	24.97	25.35	25.49	25.84	26.42
12H	4H	23.22	23.74	23.70	24.23	24.70	23.14	23.66	23.63	24.15	24.63
	6H	24.13	24.57	24.66	25.08	25.58	24.24	24.67	24.76	25.19	25.68
	8H	24.55	24.93	25.07	25.42	26.00	24.75	25.13	25.27	25.63	26.20

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-5

Test Date: 08/01/2025

Luminaire Tested: EHBR-60-L930-N

Data in this report applies to families of products including EHBR-60-L930-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-5
 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-L930-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with N lens

Spectral Parameters

CCT (K): 2996
 CIE u': 0.2519
 CIE v': 0.5169
 Duv: -0.0033
 CIE x: 0.4325
 CIE y: 0.3945
 CIE z: 0.1730
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 584
 Purity: 48.21818
 Rf: 91.3
 Rg: 102

CRI (Ra):	94.4		
R1:	96.8	R9:	61.4
R2:	98.1	R10:	94.4
R3:	97.8	R11:	95.7
R4:	95.6	R12:	88.5
R5:	96.9	R13:	97.3
R6:	95.7	R14:	97.8
R7:	90.9	R15:	92.3
R8:	83.0		



Test Conditions

Stabilization Time: 40M
 Operation Time: 1H 40M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-5

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 3000K 7-step quadrangle

REPORT NUMBER: SP1-2506-472-5

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	101	NR	620	317	NR	750	7	NR	880	0	NR
365	0	NR	495	121	NR	625	320	NR	755	6	NR	885	0	NR
370	0	NR	500	141	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	158	NR	635	651	NR	765	4	NR	895	0	NR
380	0	NR	510	171	NR	640	207	NR	770	4	NR	900	0	NR
385	0	NR	515	182	NR	645	201	NR	775	3	NR	905	0	NR
390	0	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	146	NR	785	2	NR	915	0	NR
400	1	NR	530	199	NR	660	124	NR	790	2	NR	920	0	NR
405	3	NR	535	205	NR	665	105	NR	795	2	NR	925	0	NR
410	4	NR	540	210	NR	670	96	NR	800	1	NR	930	0	NR
415	7	NR	545	216	NR	675	79	NR	805	1	NR	935	0	NR
420	13	NR	550	222	NR	680	67	NR	810	1	NR	940	0	NR
425	22	NR	555	230	NR	685	58	NR	815	1	NR	945	0	NR
430	37	NR	560	240	NR	690	49	NR	820	1	NR	950	0	NR
435	60	NR	565	248	NR	695	42	NR	825	1	NR	955	0	NR
440	101	NR	570	258	NR	700	36	NR	830	1	NR	960	0	NR
445	172	NR	575	268	NR	705	30	NR	835	1	NR	965	0	NR
450	223	NR	580	278	NR	710	26	NR	840	1	NR	970	0	NR
455	167	NR	585	287	NR	715	22	NR	845	0	NR	975	0	NR
460	126	NR	590	295	NR	720	19	NR	850	0	NR	980	0	NR
465	111	NR	595	298	NR	725	16	NR	855	0	NR	985	0	NR
470	86	NR	600	303	NR	730	14	NR	860	0	NR	990	0	NR
475	74	NR	605	307	NR	735	12	NR	865	0	NR	995	0	NR
480	77	NR	610	341	NR	740	10	NR	870	0	NR	1000	0	NR
485	86	NR	615	368	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-5

Scotopic Flux vs. Wavelength



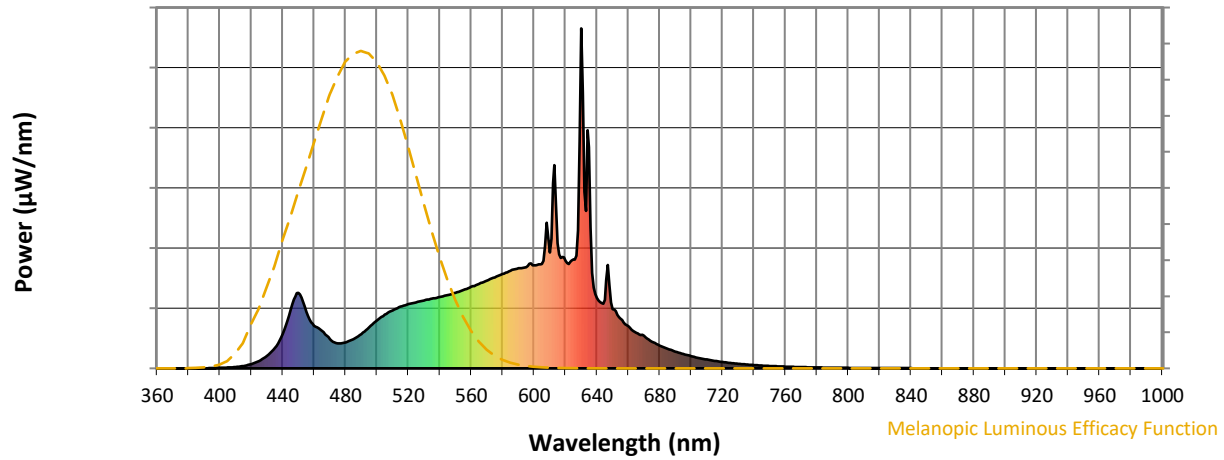
Scotopic Lumens: NR

S/P: 1.44

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	101	NR	620	317	NR	750	7	NR	880	0	NR
365	0	NR	495	121	NR	625	320	NR	755	6	NR	885	0	NR
370	0	NR	500	141	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	158	NR	635	651	NR	765	4	NR	895	0	NR
380	0	NR	510	171	NR	640	207	NR	770	4	NR	900	0	NR
385	0	NR	515	182	NR	645	201	NR	775	3	NR	905	0	NR
390	0	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	146	NR	785	2	NR	915	0	NR
400	1	NR	530	199	NR	660	124	NR	790	2	NR	920	0	NR
405	3	NR	535	205	NR	665	105	NR	795	2	NR	925	0	NR
410	4	NR	540	210	NR	670	96	NR	800	1	NR	930	0	NR
415	7	NR	545	216	NR	675	79	NR	805	1	NR	935	0	NR
420	13	NR	550	222	NR	680	67	NR	810	1	NR	940	0	NR
425	22	NR	555	230	NR	685	58	NR	815	1	NR	945	0	NR
430	37	NR	560	240	NR	690	49	NR	820	1	NR	950	0	NR
435	60	NR	565	248	NR	695	42	NR	825	1	NR	955	0	NR
440	101	NR	570	258	NR	700	36	NR	830	1	NR	960	0	NR
445	172	NR	575	268	NR	705	30	NR	835	1	NR	965	0	NR
450	223	NR	580	278	NR	710	26	NR	840	1	NR	970	0	NR
455	167	NR	585	287	NR	715	22	NR	845	0	NR	975	0	NR
460	126	NR	590	295	NR	720	19	NR	850	0	NR	980	0	NR
465	111	NR	595	298	NR	725	16	NR	855	0	NR	985	0	NR
470	86	NR	600	303	NR	730	14	NR	860	0	NR	990	0	NR
475	74	NR	605	307	NR	735	12	NR	865	0	NR	995	0	NR
480	77	NR	610	341	NR	740	10	NR	870	0	NR	1000	0	NR
485	86	NR	615	368	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-5

Melanopic Flux vs. Wavelength



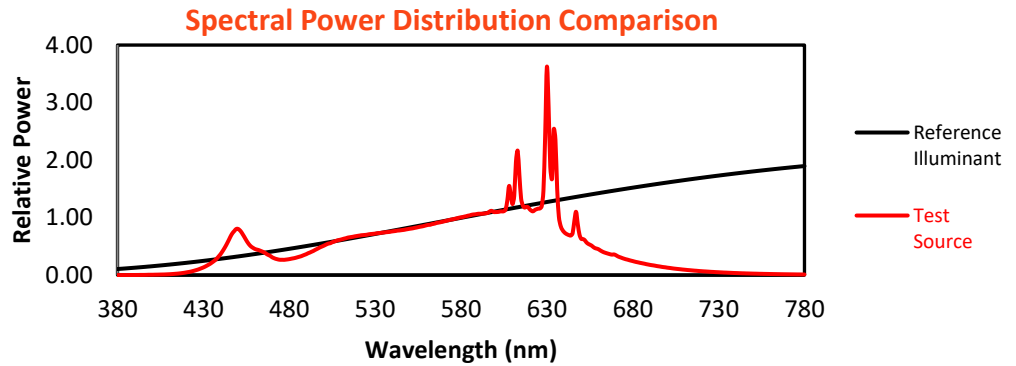
Melanopic Lumens: NR

M/P: 2.85

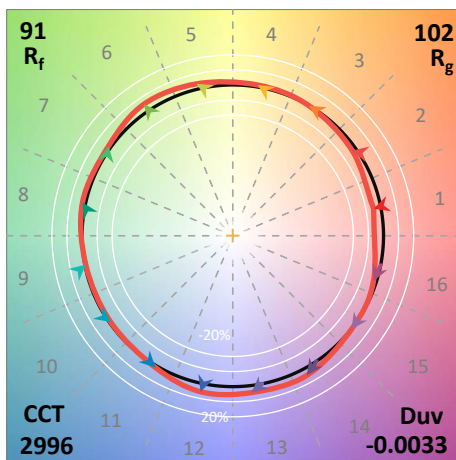
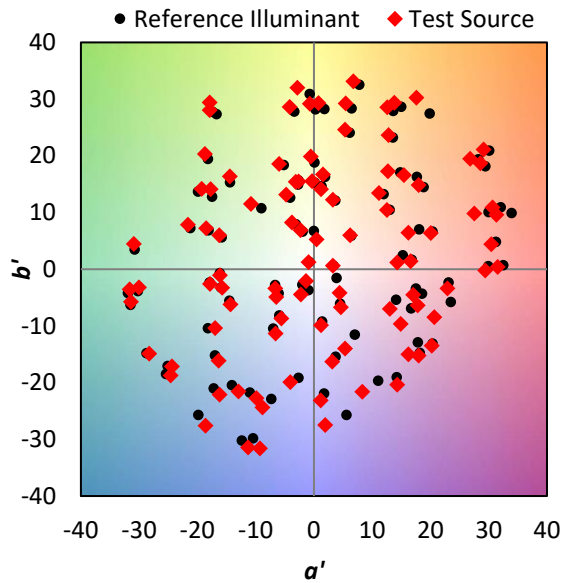
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	101	NR	620	317	NR	750	7	NR	880	0	NR
365	0	NR	495	121	NR	625	320	NR	755	6	NR	885	0	NR
370	0	NR	500	141	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	158	NR	635	651	NR	765	4	NR	895	0	NR
380	0	NR	510	171	NR	640	207	NR	770	4	NR	900	0	NR
385	0	NR	515	182	NR	645	201	NR	775	3	NR	905	0	NR
390	0	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	146	NR	785	2	NR	915	0	NR
400	1	NR	530	199	NR	660	124	NR	790	2	NR	920	0	NR
405	3	NR	535	205	NR	665	105	NR	795	2	NR	925	0	NR
410	4	NR	540	210	NR	670	96	NR	800	1	NR	930	0	NR
415	7	NR	545	216	NR	675	79	NR	805	1	NR	935	0	NR
420	13	NR	550	222	NR	680	67	NR	810	1	NR	940	0	NR
425	22	NR	555	230	NR	685	58	NR	815	1	NR	945	0	NR
430	37	NR	560	240	NR	690	49	NR	820	1	NR	950	0	NR
435	60	NR	565	248	NR	695	42	NR	825	1	NR	955	0	NR
440	101	NR	570	258	NR	700	36	NR	830	1	NR	960	0	NR
445	172	NR	575	268	NR	705	30	NR	835	1	NR	965	0	NR
450	223	NR	580	278	NR	710	26	NR	840	1	NR	970	0	NR
455	167	NR	585	287	NR	715	22	NR	845	0	NR	975	0	NR
460	126	NR	590	295	NR	720	19	NR	850	0	NR	980	0	NR
465	111	NR	595	298	NR	725	16	NR	855	0	NR	985	0	NR
470	86	NR	600	303	NR	730	14	NR	860	0	NR	990	0	NR
475	74	NR	605	307	NR	735	12	NR	865	0	NR	995	0	NR
480	77	NR	610	341	NR	740	10	NR	870	0	NR	1000	0	NR
485	86	NR	615	368	NR	745	8	NR	875	0	NR			

Summary

$R_f = 91.3$
 $R_g = 102$
 CIE $R_a = 94.4$
 $R_9 = 61.4$



Color Vector Graphics



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

CES01 = 86	CES26 = 91	CES51 = 96	CES76 = 89
CES02 = 63	CES27 = 96	CES52 = 95	CES77 = 85
CES03 = 32	CES28 = 96	CES53 = 93	CES78 = 86
CES04 = 70	CES29 = 90	CES54 = 98	CES79 = 89
CES05 = 51	CES30 = 96	CES55 = 98	CES80 = 91
CES06 = 51	CES31 = 90	CES56 = 95	CES81 = 72
CES07 = 44	CES32 = 84	CES57 = 95	CES82 = 95
CES08 = 42	CES33 = 91	CES58 = 95	CES83 = 93
CES09 = 29	CES34 = 92	CES59 = 99	CES84 = 96
CES10 = 76	CES35 = 96	CES60 = 96	CES85 = 80
CES11 = 59	CES36 = 90	CES61 = 96	CES86 = 77
CES12 = 65	CES37 = 94	CES62 = 95	CES87 = 91
CES13 = 44	CES38 = 99	CES63 = 94	CES88 = 96
CES14 = 74	CES39 = 97	CES64 = 96	CES89 = 82
CES15 = 72	CES40 = 94	CES65 = 92	CES90 = 97
CES16 = 48	CES41 = 94	CES66 = 95	CES91 = 82
CES17 = 50	CES42 = 91	CES67 = 94	CES92 = 78
CES18 = 57	CES43 = 88	CES68 = 93	CES93 = 87
CES19 = 72	CES44 = 99	CES69 = 94	CES94 = 73
CES20 = 67	CES45 = 93	CES70 = 90	CES95 = 85
CES21 = 86	CES46 = 93	CES71 = 90	CES96 = 92
CES22 = 79	CES47 = 86	CES72 = 96	CES97 = 93
CES23 = 92	CES48 = 95	CES73 = 85	CES98 = 94
CES24 = 91	CES49 = 91	CES74 = 90	CES99 = 93
CES25 = 72	CES50 = 96	CES75 = 90	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)