

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P585178

Luminaire Tested: **HC860D010-HM86080940-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585178  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-15)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC860D010-HM86080940-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5273.3 lumens  
Efficiency: N/A  
Efficacy: 94.2 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.16  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

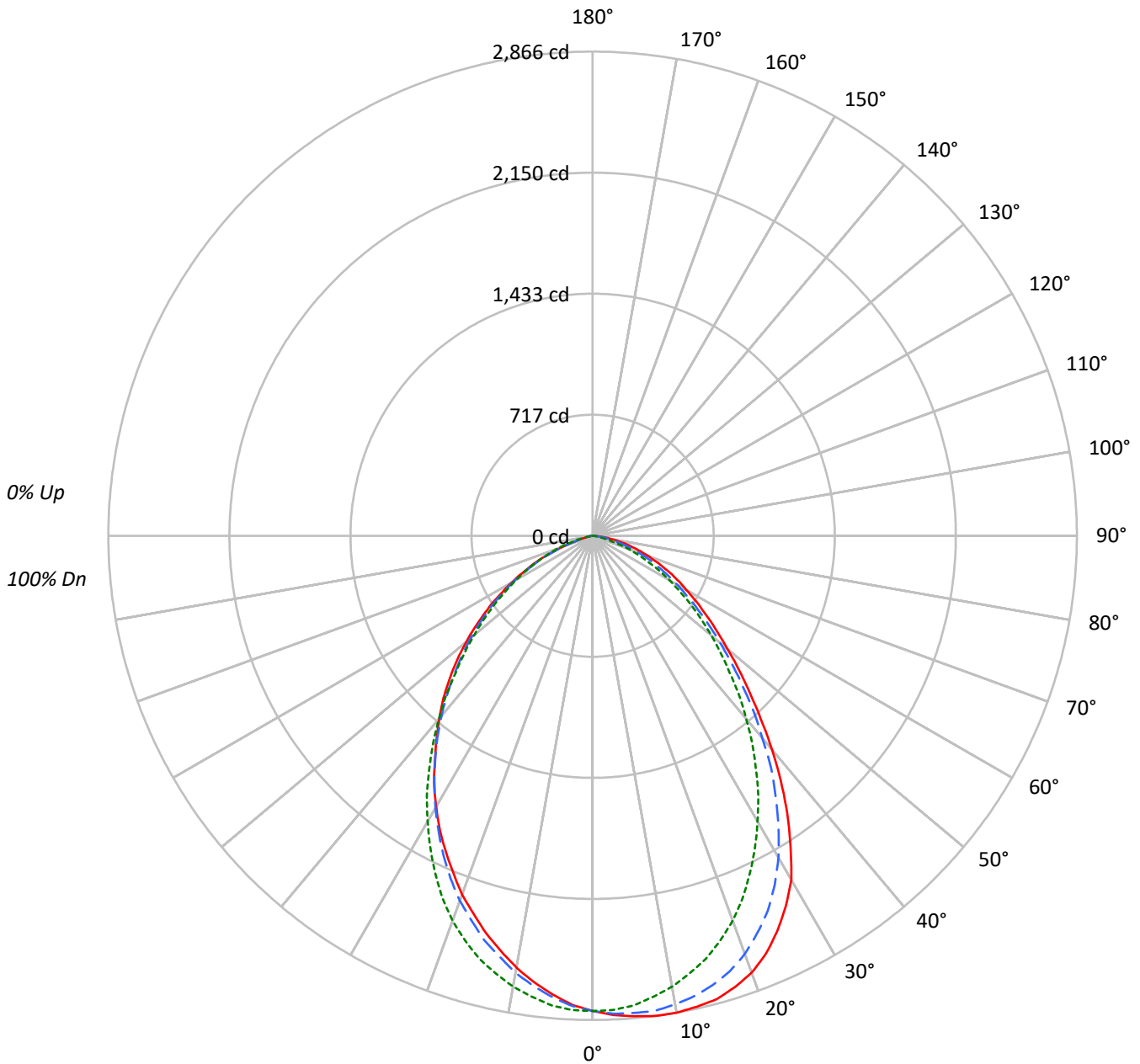
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P585178

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### Luminous Intensity Polar Plot





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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88				88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77				77
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67				67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52				52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42				42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38				38
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	36	35				35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32				32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	86739	86739	86739
5°	88371	86365	84359
10°	89750	84856	81273
15°	90652	82741	77751
20°	90304	79548	74169
25°	87925	74959	70028
30°	83736	69490	65958
35°	75612	63419	61270
40°	66435	56923	56770
45°	57346	50033	52191
50°	49920	43886	46812
55°	44262	38117	40778
60°	39495	32199	33852
65°	35600	26136	26698
70°	31610	19592	15805
75°	27248	11354	6815
80°	20972	4049	2024
85°	13480	1344	1344



TEST NUMBER: P585178

CATALOG NUMBER: HC860D010-HM86080940-81RWWH

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	264.1	5.0
10°-20°	735.1	13.9
20°-30°	1039.7	19.7
30°-40°	1095.6	20.8
40°-50°	931.1	17.7
50°-60°	670.5	12.7
60°-70°	386.8	7.3
70°-80°	132.3	2.5
80°-90°	18.2	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2038.9	38.7
0°-40°	3134.4	59.4
0°-60°	4736.0	89.8
0°-90°	5273.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5273.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2813	2813	2813	2813	2813	
5°	2855	2836	2790	2740	2725	273
15°	2840	2752	2592	2478	2436	800
25°	2584	2451	2203	2089	2058	1185
35°	2009	1890	1685	1624	1628	1251
45°	1315	1254	1147	1155	1197	1022
55°	823	758	709	736	758	741
65°	488	419	358	351	366	485
75°	229	172	95	61	57	241
85°	38	23	4	4	4	51
90°	0	0	0	0	0	



TEST NUMBER: P585178

CATALOG NUMBER: HC860D010-HM86080940-81RWWH

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9
2.5°	2839.6	2843.4	2839.6	2839.6	2835.7	2831.9	2828.1	2824.3	2816.7	2809.1	2809.1
5°	2854.9	2862.5	2854.9	2854.9	2843.4	2835.7	2828.1	2816.7	2801.5	2790.1	2790.1
7.5°	2866.3	2866.3	2866.3	2854.9	2847.2	2835.7	2816.7	2797.7	2778.7	2759.5	2751.9
10°	2866.3	2866.3	2862.5	2847.2	2839.6	2816.7	2797.7	2771.0	2744.3	2717.6	2710.0
12.5°	2854.9	2858.7	2851.0	2835.7	2816.7	2790.1	2763.3	2729.1	2698.6	2668.0	2652.8
15°	2839.6	2835.7	2828.1	2809.1	2786.3	2751.9	2725.3	2687.1	2645.2	2607.1	2591.8
17.5°	2801.5	2801.5	2790.1	2771.0	2740.5	2702.4	2660.4	2618.6	2572.8	2530.9	2511.8
20°	2751.9	2751.9	2736.7	2713.8	2683.3	2633.8	2588.0	2538.5	2485.1	2443.2	2424.1
22.5°	2679.5	2683.3	2664.2	2637.6	2603.2	2546.1	2500.3	2439.4	2386.0	2336.4	2321.2
25°	2584.2	2591.8	2572.8	2546.1	2500.3	2450.9	2393.7	2336.4	2275.5	2225.9	2203.1
27.5°	2473.7	2477.5	2458.5	2431.7	2386.0	2332.6	2275.5	2214.5	2157.3	2103.9	2081.1
30°	2351.7	2336.4	2328.8	2294.6	2245.0	2199.3	2134.5	2084.9	2023.9	1978.2	1951.6
32.5°	2180.2	2187.8	2164.9	2138.3	2100.1	2046.8	1993.4	1936.2	1879.1	1844.7	1825.7
35°	2008.6	2016.3	2004.8	1978.2	1936.2	1890.5	1837.1	1795.3	1745.7	1703.8	1684.7
37.5°	1829.5	1829.5	1821.9	1806.7	1776.1	1734.3	1680.8	1639.0	1597.0	1562.7	1551.3
40°	1650.4	1642.8	1639.0	1627.6	1600.8	1562.7	1528.4	1494.1	1452.2	1429.3	1414.1
42.5°	1475.1	1475.1	1467.5	1456.1	1429.3	1410.3	1376.0	1337.8	1307.4	1284.5	1284.5
45°	1315.0	1318.8	1307.4	1299.8	1284.5	1254.0	1223.5	1196.8	1170.1	1154.9	1147.3
47.5°	1173.9	1173.9	1162.5	1154.9	1139.7	1112.9	1086.3	1063.4	1044.4	1032.9	1029.1
50°	1040.6	1040.6	1040.6	1021.5	1002.4	983.4	964.4	937.6	926.2	918.6	914.8
52.5°	926.2	922.4	922.4	907.1	888.1	865.2	846.1	823.3	811.9	804.3	808.1
55°	823.3	823.3	819.5	800.5	781.3	758.5	739.4	720.4	712.8	705.2	709.0
56°	781.3	781.3	777.5	762.3	739.4	720.4	697.5	678.4	667.0	670.8	670.8
57°	750.9	743.3	743.3	724.2	705.2	678.4	659.4	640.4	632.8	628.9	628.9
58°	712.8	709.0	705.2	686.0	667.0	644.2	625.1	606.0	594.6	594.6	590.8
59°	674.6	674.6	667.0	651.8	632.8	609.8	590.8	571.7	560.3	556.5	556.5
60°	640.4	644.2	632.8	617.4	602.2	575.5	552.7	537.4	526.0	522.1	522.1
61°	609.8	609.8	602.2	583.2	564.1	545.1	522.1	503.1	495.5	487.9	487.9
62°	583.2	575.5	571.7	552.7	533.6	510.7	491.7	472.7	461.2	453.5	457.4
63°	548.9	545.1	537.4	522.1	503.1	480.3	457.4	442.1	430.7	419.3	423.1
64°	522.1	518.3	506.9	491.7	472.7	449.7	426.9	411.6	404.0	392.6	388.8
65°	487.9	484.1	480.3	461.2	442.1	419.3	400.2	385.0	373.6	365.9	358.2
66°	457.4	461.2	453.5	438.3	415.5	396.4	369.7	354.4	346.8	335.4	327.8
67°	430.7	430.7	423.1	407.8	385.0	365.9	346.8	327.8	316.4	305.0	301.2
67.5°	415.5	415.5	407.8	388.8	373.6	350.6	331.6	316.4	301.2	293.5	285.8
68°	400.2	400.2	396.4	381.2	362.1	339.2	320.2	301.2	285.8	274.4	270.6
69°	373.6	377.4	369.7	354.4	335.4	312.6	293.5	278.2	263.0	251.6	243.9
70°	350.6	346.8	339.2	324.0	305.0	289.7	270.6	251.6	236.3	221.1	217.3
71°	320.2	320.2	312.6	301.2	282.0	263.0	243.9	228.7	213.5	194.3	190.5
72°	297.3	297.3	289.7	274.4	259.2	240.1	221.1	202.0	190.5	171.5	163.9
72.5°	282.0	285.8	278.2	263.0	247.8	224.9	209.7	194.3	175.3	160.1	152.5
73°	274.4	270.6	266.8	251.6	232.5	217.3	198.2	182.9	163.9	148.7	141.1



TEST NUMBER: P585178

CATALOG NUMBER: HC860D010-HM86080940-81RWWH

**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	171.5	171.5	167.7	152.5	137.3	121.9	106.7	91.5	76.2	61.0	53.4
80°	118.1	121.9	114.3	106.7	95.3	80.0	64.8	53.4	38.1	30.4	22.8
82.5°	76.2	76.2	72.4	64.8	57.2	45.8	38.1	26.6	19.0	15.2	11.4
85°	38.1	42.0	38.1	34.3	26.6	22.8	19.0	11.4	7.6	3.8	3.8
87.5°	15.2	15.2	15.2	11.4	11.4	7.6	3.8	3.8	3.8	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9	2812.9
2.5°	2801.5	2801.5	2793.9	2790.1	2786.3	2782.5	2778.7	2774.8	2774.8	2778.7
5°	2778.7	2771.0	2755.7	2751.9	2740.5	2736.7	2729.1	2725.3	2729.1	2725.3
7.5°	2744.3	2729.1	2710.0	2702.4	2687.1	2679.5	2668.0	2668.0	2660.4	2664.2
10°	2698.6	2675.7	2652.8	2637.6	2626.2	2614.8	2607.1	2599.4	2595.6	2595.6
12.5°	2641.4	2614.8	2591.8	2569.0	2549.9	2542.3	2527.1	2527.1	2519.4	2515.6
15°	2576.6	2542.3	2515.6	2492.7	2477.5	2462.3	2450.9	2443.2	2435.5	2435.5
17.5°	2492.7	2462.3	2435.5	2408.9	2386.0	2374.6	2363.2	2351.7	2351.7	2344.1
20°	2401.3	2367.0	2344.1	2317.4	2298.4	2279.3	2264.0	2264.0	2256.4	2260.2
22.5°	2298.4	2256.4	2233.6	2214.5	2195.5	2180.2	2164.9	2164.9	2161.1	2157.3
25°	2184.0	2149.7	2123.1	2100.1	2088.7	2073.5	2069.7	2062.0	2058.2	2058.2
27.5°	2062.0	2035.4	2001.0	1989.6	1974.4	1966.8	1966.8	1963.0	1955.4	1959.2
30°	1932.4	1902.0	1882.9	1875.3	1860.0	1860.0	1856.2	1848.6	1848.6	1852.4
32.5°	1806.7	1776.1	1760.9	1757.1	1741.9	1741.9	1738.1	1741.9	1741.9	1745.7
35°	1669.4	1642.8	1639.0	1627.6	1623.8	1623.8	1623.8	1631.4	1639.0	1627.6
37.5°	1539.9	1520.8	1509.3	1505.5	1509.3	1509.3	1513.1	1524.6	1520.8	1517.0
40°	1406.5	1391.2	1383.6	1383.6	1391.2	1398.8	1398.8	1410.3	1414.1	1410.3
42.5°	1273.0	1261.6	1261.6	1265.4	1273.0	1276.8	1288.3	1299.8	1303.6	1307.4
45°	1147.3	1147.3	1147.3	1151.1	1154.9	1162.5	1177.7	1189.2	1193.0	1196.8
47.5°	1025.3	1021.5	1032.9	1036.8	1048.2	1052.0	1063.4	1078.7	1082.5	1086.3
50°	911.0	918.6	922.4	933.8	941.4	941.4	956.7	964.4	975.8	975.8
52.5°	804.3	815.7	819.5	830.9	834.7	838.5	846.1	857.6	865.2	865.2
55°	709.0	712.8	720.4	724.2	735.6	739.4	747.1	750.9	762.3	758.5
56°	667.0	674.6	678.4	686.0	693.7	697.5	705.2	709.0	716.6	720.4
57°	628.9	632.8	644.2	648.0	655.6	655.6	659.4	670.8	670.8	674.6
58°	590.8	598.4	602.2	606.0	613.6	617.4	625.1	628.9	632.8	628.9
59°	556.5	560.3	564.1	564.1	571.7	571.7	583.2	590.8	594.6	594.6
60°	522.1	522.1	526.0	529.8	537.4	541.3	541.3	548.9	548.9	548.9
61°	487.9	487.9	491.7	495.5	499.3	499.3	506.9	506.9	510.7	514.5
62°	457.4	453.5	453.5	457.4	457.4	465.1	468.9	472.7	476.5	472.7
63°	423.1	419.3	419.3	419.3	419.3	426.9	426.9	430.7	438.3	434.5
64°	385.0	385.0	385.0	385.0	388.8	388.8	396.4	400.2	404.0	407.8
65°	358.2	350.6	346.8	346.8	350.6	354.4	358.2	362.1	365.9	365.9
66°	327.8	320.2	316.4	316.4	316.4	316.4	324.0	324.0	331.6	331.6
67°	293.5	285.8	282.0	278.2	278.2	278.2	289.7	285.8	285.8	285.8
67.5°	282.0	270.6	266.8	263.0	259.2	266.8	263.0	266.8	266.8	263.0
68°	266.8	259.2	251.6	243.9	243.9	243.9	247.8	251.6	247.8	243.9
69°	236.3	232.5	221.1	213.5	209.7	213.5	209.7	213.5	209.7	213.5
70°	209.7	198.2	186.7	182.9	179.1	179.1	179.1	175.3	179.1	175.3
71°	182.9	171.5	160.1	152.5	148.7	148.7	144.9	148.7	144.9	148.7
72°	156.3	144.9	129.6	121.9	121.9	121.9	121.9	118.1	121.9	118.1
72.5°	144.9	129.6	118.1	110.5	106.7	106.7	106.7	106.7	102.9	106.7
73°	133.4	118.1	102.9	99.1	99.1	99.1	95.3	91.5	95.3	95.3





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	45.8	34.3	30.4	30.4	30.4	30.4	30.4	30.4	26.6	26.6
80°	19.0	15.2	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
82.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
85°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180°    - - 45°-225°    - - - - 90°-270°







74°	247.8	247.8	240.1	228.7	209.7	190.5	175.3	160.1	141.1	121.9	114.3
75°	228.7	224.9	217.3	205.8	190.5	171.5	156.3	137.3	121.9	102.9	95.3







74°	110.5	91.5	83.9	76.2	76.2	76.2	72.4	72.4	72.4	76.2
75°	87.7	72.4	64.8	57.2	61.0	57.2	61.0	57.2	57.2	57.2



(END OF REPORT)