

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: P593869

Luminaire Tested: **HC860D010-HM86080850-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593869  
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-HM86080850-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6033.9 lumens  
Efficiency: N/A  
Efficacy: 107.7 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

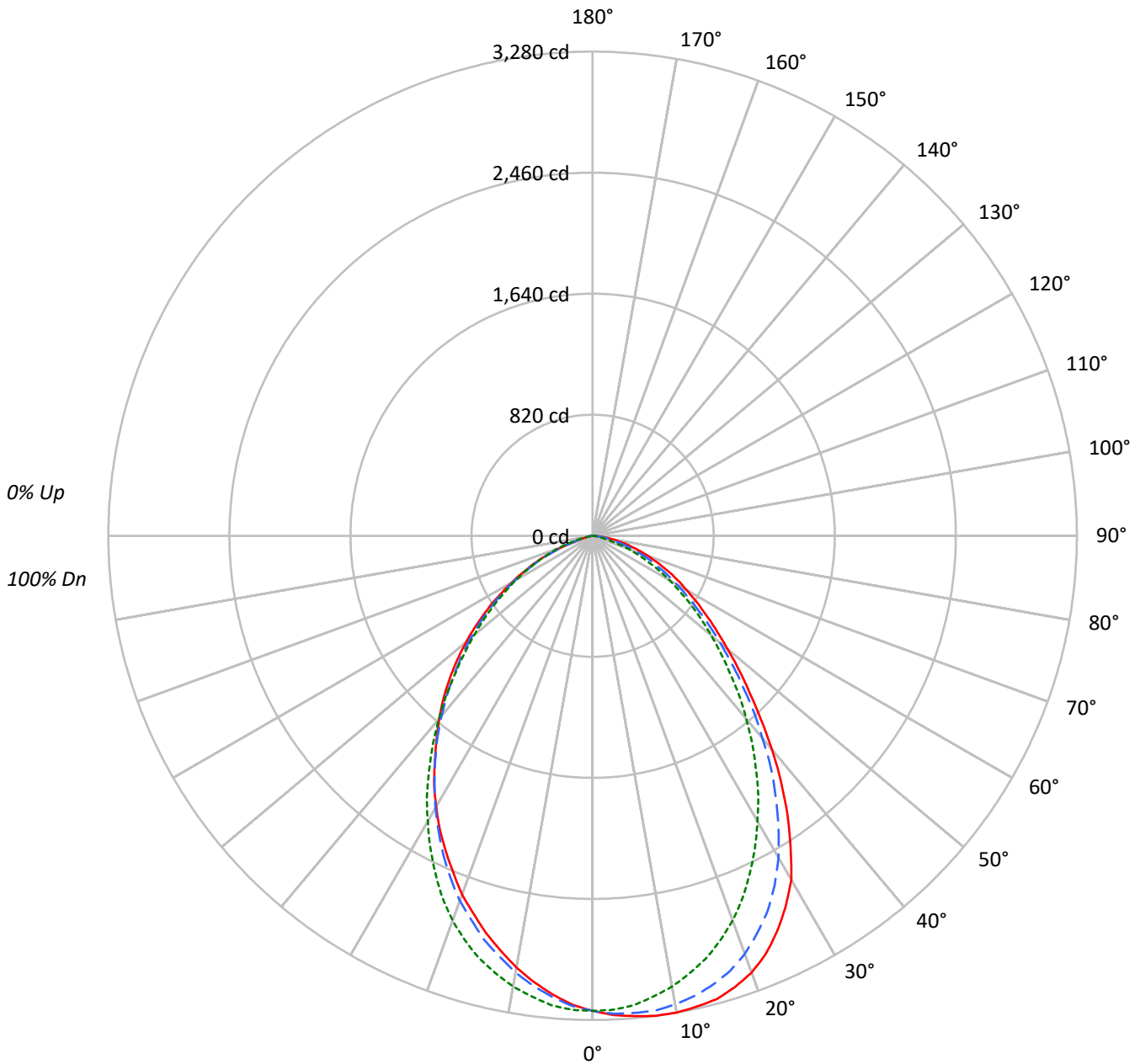
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	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°	99250	99250	99250
5°	101112	98821	96524
10°	102694	97095	92997
15°	103725	94674	88966
20°	103329	91023	84870
25°	100609	85768	80130
30°	95814	79510	75472
35°	86521	72567	70105
40°	76020	65131	64958
45°	65614	57246	59718
50°	57121	50213	53562
55°	50643	43611	46660
60°	45181	36849	38730
65°	40729	29908	30550
70°	36181	22414	18086
75°	31180	12987	7792
80°	24009	4653	2309
85°	15426	1557	1557



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	302.1	5.0
10°-20°	841.1	13.9
20°-30°	1189.7	19.7
30°-40°	1253.6	20.8
40°-50°	1065.4	17.7
50°-60°	767.2	12.7
60°-70°	442.5	7.3
70°-80°	151.4	2.5
80°-90°	20.8	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°	2332.9	38.7
0°-40°	3586.5	59.4
0°-60°	5419.1	89.8
0°-90°	6033.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6033.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3219	3219	3219	3219	3219	
5°	3266	3245	3192	3136	3118	312
15°	3249	3149	2966	2835	2787	915
25°	2957	2804	2521	2390	2355	1356
35°	2298	2163	1928	1858	1862	1431
45°	1505	1435	1313	1322	1369	1169
55°	942	868	811	842	868	848
65°	558	480	410	401	419	555
75°	262	196	109	70	65	276
85°	44	26	4	4	4	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6
2.5°	3249.1	3253.5	3249.1	3249.1	3244.7	3240.5	3236.1	3231.7	3222.9	3214.3	3214.3
5°	3266.5	3275.3	3266.5	3266.5	3253.5	3244.7	3236.1	3222.9	3205.5	3192.5	3192.5
7.5°	3279.7	3279.7	3279.7	3266.5	3257.9	3244.7	3222.9	3201.1	3179.3	3157.5	3148.8
10°	3279.7	3279.7	3275.3	3257.9	3249.1	3222.9	3201.1	3170.7	3140.1	3109.6	3100.9
12.5°	3266.5	3270.9	3262.3	3244.7	3222.9	3192.5	3161.9	3122.7	3087.8	3052.9	3035.4
15°	3249.1	3244.7	3236.1	3214.3	3188.1	3148.8	3118.3	3074.7	3026.8	2983.2	2965.6
17.5°	3205.5	3205.5	3192.5	3170.7	3135.7	3092.2	3044.2	2996.2	2943.8	2895.8	2874.0
20°	3148.8	3148.8	3131.4	3105.2	3070.4	3013.6	2961.4	2904.6	2843.6	2795.6	2773.8
22.5°	3066.0	3070.4	3048.6	3018.0	2978.8	2913.4	2861.0	2791.2	2730.1	2673.5	2656.0
25°	2957.0	2965.6	2943.8	2913.4	2861.0	2804.3	2738.9	2673.5	2603.7	2546.9	2520.8
27.5°	2830.4	2834.8	2813.0	2782.5	2730.1	2669.1	2603.7	2533.9	2468.5	2407.4	2381.2
30°	2690.9	2673.5	2664.7	2625.5	2568.7	2516.5	2442.3	2385.6	2315.8	2263.5	2233.0
32.5°	2494.7	2503.3	2477.2	2446.7	2403.1	2342.0	2281.0	2215.6	2150.1	2110.8	2089.0
35°	2298.4	2307.1	2294.0	2263.5	2215.6	2163.2	2102.2	2054.2	1997.5	1949.5	1927.7
37.5°	2093.4	2093.4	2084.7	2067.2	2032.4	1984.4	1923.3	1875.3	1827.3	1788.1	1775.1
40°	1888.5	1879.7	1875.3	1862.3	1831.7	1788.1	1748.9	1709.6	1661.6	1635.5	1618.0
42.5°	1687.8	1687.8	1679.1	1666.0	1635.5	1613.7	1574.4	1530.8	1496.0	1469.8	1469.8
45°	1504.6	1509.0	1496.0	1487.2	1469.8	1434.8	1400.0	1369.4	1338.9	1321.5	1312.7
47.5°	1343.2	1343.2	1330.2	1321.5	1304.0	1273.5	1242.9	1216.8	1195.0	1181.9	1177.5
50°	1190.7	1190.7	1190.7	1168.9	1147.1	1125.3	1103.3	1072.9	1059.7	1051.1	1046.7
52.5°	1059.7	1055.5	1055.5	1037.9	1016.1	990.0	968.2	942.0	928.9	920.2	924.6
55°	942.0	942.0	937.7	915.9	894.1	867.9	846.1	824.3	815.6	806.8	811.2
56°	894.1	894.1	889.7	872.2	846.1	824.3	798.2	776.4	763.2	767.6	767.6
57°	859.2	850.4	850.4	828.6	806.8	776.4	754.6	732.6	724.0	719.6	719.6
58°	815.6	811.2	806.8	785.0	763.2	737.0	715.2	693.4	680.4	680.4	676.0
59°	772.0	772.0	763.2	745.8	724.0	697.8	676.0	654.2	641.1	636.8	636.8
60°	732.6	737.0	724.0	706.6	689.0	658.6	632.4	615.0	601.8	597.5	597.5
61°	697.8	697.8	689.0	667.2	645.4	623.6	597.5	575.7	567.0	558.2	558.2
62°	667.2	658.6	654.2	632.4	610.6	584.4	562.6	540.8	527.7	519.0	523.3
63°	628.0	623.6	615.0	597.5	575.7	549.5	523.3	505.9	492.8	479.7	484.1
64°	597.5	593.1	580.0	562.6	540.8	514.6	488.5	471.0	462.3	449.2	444.9
65°	558.2	553.9	549.5	527.7	505.9	479.7	457.9	440.5	427.5	418.7	409.9
66°	523.3	527.7	519.0	501.5	475.4	453.5	423.1	405.7	396.9	383.7	375.1
67°	492.8	492.8	484.1	466.7	440.5	418.7	396.9	375.1	361.9	348.9	344.5
67.5°	475.4	475.4	466.7	444.9	427.5	401.3	379.5	361.9	344.5	335.9	327.1
68°	457.9	457.9	453.5	436.1	414.3	388.1	366.3	344.5	327.1	314.0	309.7
69°	427.5	431.7	423.1	405.7	383.7	357.7	335.9	318.3	300.9	287.9	279.1
70°	401.3	396.9	388.1	370.7	348.9	331.5	309.7	287.9	270.4	252.9	248.6
71°	366.3	366.3	357.7	344.5	322.7	300.9	279.1	261.7	244.2	222.4	218.1
72°	340.1	340.1	331.5	314.0	296.5	274.7	252.9	231.1	218.1	196.3	187.5
72.5°	322.7	327.1	318.3	300.9	283.5	257.3	239.9	222.4	200.6	183.2	174.4
73°	314.0	309.7	305.3	287.9	266.1	248.6	226.8	209.3	187.5	170.1	161.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	196.3	196.3	191.9	174.4	157.0	139.6	122.1	104.6	87.2	69.8	61.0
80°	135.2	139.6	130.8	122.1	109.0	91.6	74.2	61.0	43.6	34.8	26.2
82.5°	87.2	87.2	82.8	74.2	65.4	52.4	43.6	30.6	21.8	17.4	13.0
85°	43.6	48.0	43.6	39.2	30.6	26.2	21.8	13.0	8.8	4.4	4.4
87.5°	17.4	17.4	17.4	13.0	13.0	8.8	4.4	4.4	4.4	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°	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6	3218.6
2.5°	3205.5	3205.5	3196.8	3192.5	3188.1	3183.7	3179.3	3175.0	3175.0	3179.3
5°	3179.3	3170.7	3153.2	3148.8	3135.7	3131.4	3122.7	3118.3	3122.7	3118.3
7.5°	3140.1	3122.7	3100.9	3092.2	3074.7	3066.0	3052.9	3052.9	3044.2	3048.6
10°	3087.8	3061.6	3035.4	3018.0	3005.0	2991.8	2983.2	2974.4	2970.0	2970.0
12.5°	3022.4	2991.8	2965.6	2939.4	2917.6	2909.0	2891.6	2891.6	2882.8	2878.4
15°	2948.2	2909.0	2878.4	2852.2	2834.8	2817.4	2804.3	2795.6	2786.8	2786.8
17.5°	2852.2	2817.4	2786.8	2756.3	2730.1	2717.1	2704.0	2690.9	2690.9	2682.2
20°	2747.6	2708.3	2682.2	2651.7	2629.9	2608.1	2590.5	2590.5	2581.9	2586.3
22.5°	2629.9	2581.9	2555.7	2533.9	2512.1	2494.7	2477.2	2477.2	2472.9	2468.5
25°	2499.0	2459.7	2429.2	2403.1	2390.0	2372.5	2368.2	2359.4	2355.1	2355.1
27.5°	2359.4	2328.9	2289.6	2276.6	2259.2	2250.4	2250.4	2246.0	2237.4	2241.6
30°	2211.2	2176.2	2154.4	2145.8	2128.3	2128.3	2124.0	2115.2	2115.2	2119.6
32.5°	2067.2	2032.4	2014.9	2010.5	1993.1	1993.1	1988.7	1993.1	1993.1	1997.5
35°	1910.3	1879.7	1875.3	1862.3	1857.9	1857.9	1857.9	1866.7	1875.3	1862.3
37.5°	1761.9	1740.1	1727.1	1722.7	1727.1	1727.1	1731.4	1744.5	1740.1	1735.8
40°	1609.3	1591.8	1583.2	1583.2	1591.8	1600.6	1600.6	1613.7	1618.0	1613.7
42.5°	1456.6	1443.6	1443.6	1448.0	1456.6	1461.0	1474.2	1487.2	1491.6	1496.0
45°	1312.7	1312.7	1312.7	1317.1	1321.5	1330.2	1347.6	1360.7	1365.0	1369.4
47.5°	1173.1	1168.9	1181.9	1186.3	1199.3	1203.7	1216.8	1234.3	1238.6	1242.9
50°	1042.3	1051.1	1055.5	1068.5	1077.3	1077.3	1094.7	1103.3	1116.5	1116.5
52.5°	920.2	933.3	937.7	950.7	955.1	959.5	968.2	981.3	990.0	990.0
55°	811.2	815.6	824.3	828.6	841.8	846.1	854.8	859.2	872.2	867.9
56°	763.2	772.0	776.4	785.0	793.8	798.2	806.8	811.2	820.0	824.3
57°	719.6	724.0	737.0	741.4	750.2	750.2	754.6	767.6	767.6	772.0
58°	676.0	684.8	689.0	693.4	702.2	706.6	715.2	719.6	724.0	719.6
59°	636.8	641.1	645.4	645.4	654.2	654.2	667.2	676.0	680.4	680.4
60°	597.5	597.5	601.8	606.2	615.0	619.3	619.3	628.0	628.0	628.0
61°	558.2	558.2	562.6	567.0	571.3	571.3	580.0	580.0	584.4	588.8
62°	523.3	519.0	519.0	523.3	523.3	532.1	536.4	540.8	545.2	540.8
63°	484.1	479.7	479.7	479.7	479.7	488.5	488.5	492.8	501.5	497.2
64°	440.5	440.5	440.5	440.5	444.9	444.9	453.5	457.9	462.3	466.7
65°	409.9	401.3	396.9	396.9	401.3	405.7	409.9	414.3	418.7	418.7
66°	375.1	366.3	361.9	361.9	361.9	361.9	370.7	370.7	379.5	379.5
67°	335.9	327.1	322.7	318.3	318.3	318.3	331.5	327.1	327.1	327.1
67.5°	322.7	309.7	305.3	300.9	296.5	305.3	300.9	305.3	305.3	300.9
68°	305.3	296.5	287.9	279.1	279.1	279.1	283.5	287.9	283.5	279.1
69°	270.4	266.1	252.9	244.2	239.9	244.2	239.9	244.2	239.9	244.2
70°	239.9	226.8	213.7	209.3	205.0	205.0	205.0	200.6	205.0	200.6
71°	209.3	196.3	183.2	174.4	170.1	170.1	165.7	170.1	165.7	170.1
72°	178.8	165.7	148.3	139.6	139.6	139.6	139.6	135.2	139.6	135.2
72.5°	165.7	148.3	135.2	126.5	122.1	122.1	122.1	122.1	117.8	122.1
73°	152.6	135.2	117.8	113.4	113.4	113.4	109.0	104.6	109.0	109.0





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	52.4	39.2	34.8	34.8	34.8	34.8	34.8	34.8	30.6	30.6
80°	21.8	17.4	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
82.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
85°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
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°	283.5	283.5	274.7	261.7	239.9	218.1	200.6	183.2	161.4	139.6	130.8
75°	261.7	257.3	248.6	235.5	218.1	196.3	178.8	157.0	139.6	117.8	109.0







74°	126.5	104.6	96.0	87.2	87.2	87.2	82.8	82.8	82.8	87.2
75°	100.3	82.8	74.2	65.4	69.8	65.4	69.8	65.4	65.4	65.4



(END OF REPORT)