

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: P585076

Luminaire Tested: **HC860D010-HM86080830-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585076  
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-HM86080830-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4790.5 lumens  
Efficiency: N/A  
Efficacy: 85.5 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

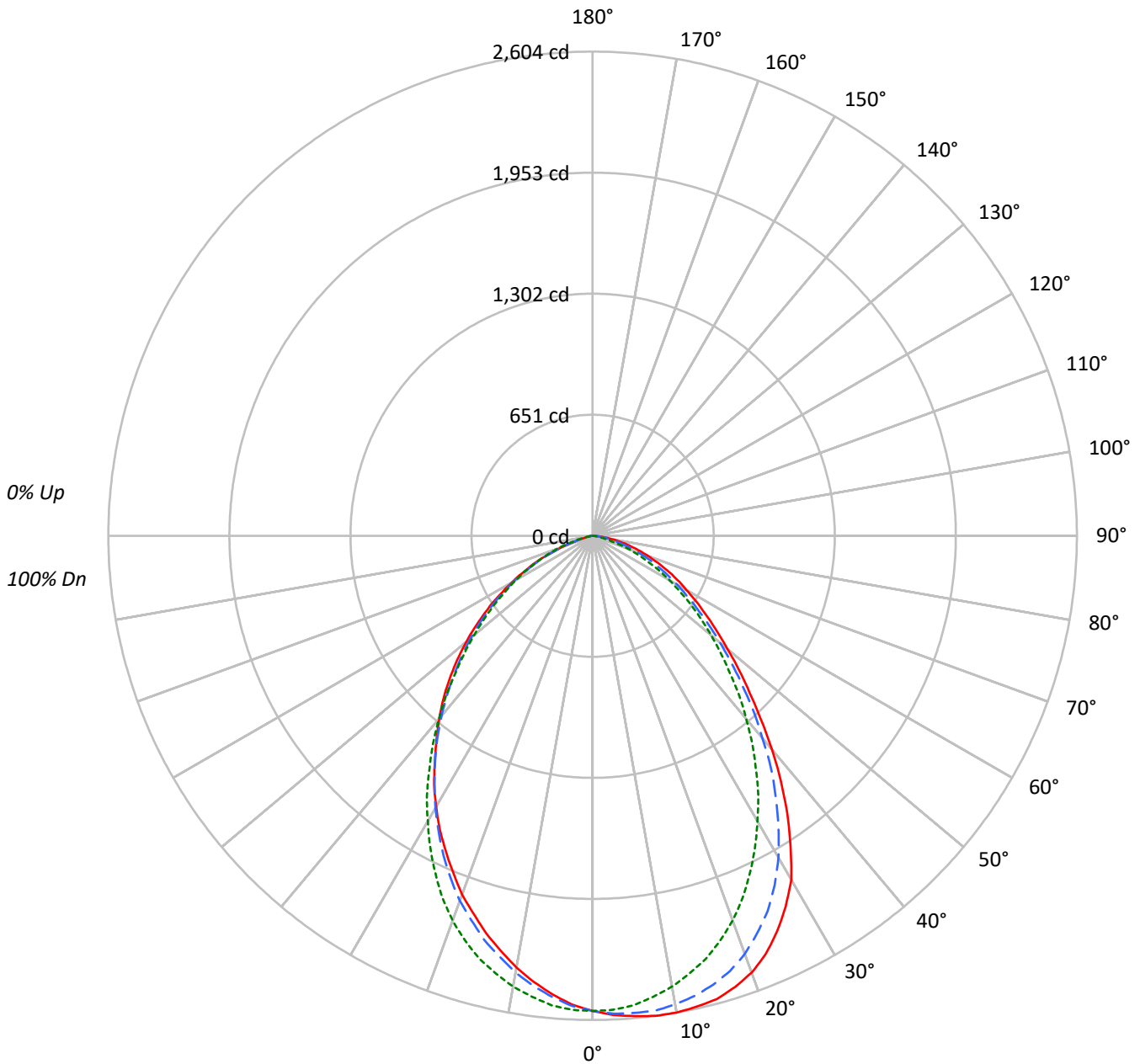
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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																			
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67																			
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	36	35																			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	78799	78799	78799
5°	80276	78456	76636
10°	81530	77087	73834
15°	82351	75168	70635
20°	82038	72266	67380
25°	79875	68096	63618
30°	76070	63124	59919
35°	68693	57611	55657
40°	60353	51714	51573
45°	52095	45449	47412
50°	45349	39865	42523
55°	40208	34628	37042
60°	35875	29257	30750
65°	32345	23750	24254
70°	28725	17788	14362
75°	24746	10318	6183
80°	19072	3694	1847
85°	12242	1238	1238



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	239.9	5.0
10°-20°	667.8	13.9
20°-30°	944.5	19.7
30°-40°	995.3	20.8
40°-50°	845.8	17.7
50°-60°	609.1	12.7
60°-70°	351.4	7.3
70°-80°	120.2	2.5
80°-90°	16.5	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°	1852.2	38.7
0°-40°	2847.5	59.4
0°-60°	4302.4	89.8
0°-90°	4790.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4790.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2555	2555	2555	2555	2555	
5°	2593	2576	2535	2490	2476	248
15°	2580	2500	2355	2251	2213	726
25°	2348	2226	2001	1898	1870	1077
35°	1825	1717	1530	1475	1478	1136
45°	1195	1139	1042	1049	1087	928
55°	748	689	644	668	689	673
65°	443	381	326	319	332	441
75°	208	156	87	55	52	219
85°	35	21	4	4	4	47
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°	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4
2.5°	2579.6	2583.0	2579.6	2579.6	2576.1	2572.7	2569.2	2565.7	2558.8	2551.9	2551.9
5°	2593.4	2600.3	2593.4	2593.4	2583.0	2576.1	2569.2	2558.8	2545.0	2534.6	2534.6
7.5°	2603.8	2603.8	2603.8	2593.4	2586.5	2576.1	2558.8	2541.5	2524.2	2506.9	2500.0
10°	2603.8	2603.8	2600.3	2586.5	2579.6	2558.8	2541.5	2517.3	2493.1	2468.9	2461.9
12.5°	2593.4	2596.9	2590.0	2576.1	2558.8	2534.6	2510.4	2479.2	2451.4	2423.8	2409.9
15°	2579.6	2576.1	2569.2	2551.9	2531.1	2500.0	2475.8	2441.1	2403.0	2368.4	2354.6
17.5°	2545.0	2545.0	2534.6	2517.3	2489.6	2454.9	2416.8	2378.8	2337.2	2299.2	2281.8
20°	2500.0	2500.0	2486.2	2465.4	2437.6	2392.6	2351.1	2306.1	2257.5	2219.5	2202.2
22.5°	2434.1	2437.6	2420.3	2396.1	2364.9	2313.0	2271.4	2216.0	2167.6	2122.6	2108.6
25°	2347.6	2354.6	2337.2	2313.0	2271.4	2226.4	2174.5	2122.6	2067.1	2022.1	2001.4
27.5°	2247.2	2250.6	2233.3	2209.1	2167.6	2119.1	2067.1	2011.8	1959.9	1911.3	1890.5
30°	2136.4	2122.6	2115.6	2084.4	2039.4	1997.9	1939.0	1894.0	1838.6	1797.1	1772.8
32.5°	1980.6	1987.5	1966.8	1942.4	1907.8	1859.4	1811.0	1758.9	1707.0	1675.9	1658.6
35°	1824.8	1831.7	1821.3	1797.1	1758.9	1717.4	1669.0	1630.9	1585.8	1547.7	1530.4
37.5°	1662.0	1662.0	1655.1	1641.3	1613.6	1575.4	1527.0	1488.9	1450.9	1419.6	1409.2
40°	1499.3	1492.4	1488.9	1478.5	1454.3	1419.6	1388.5	1357.3	1319.3	1298.5	1284.7
42.5°	1340.0	1340.0	1333.1	1322.7	1298.5	1281.2	1249.9	1215.3	1187.7	1166.9	1166.9
45°	1194.6	1198.0	1187.7	1180.7	1166.9	1139.2	1111.5	1087.2	1063.0	1049.1	1042.2
47.5°	1066.4	1066.4	1056.1	1049.1	1035.3	1011.1	986.8	966.1	948.8	938.4	934.9
50°	945.3	945.3	945.3	927.9	910.6	893.3	876.0	851.8	841.4	834.5	831.0
52.5°	841.4	837.9	837.9	824.1	806.8	786.0	768.7	747.9	737.5	730.6	734.0
55°	747.9	747.9	744.4	727.1	709.8	689.0	671.7	654.4	647.5	640.6	644.1
56°	709.8	709.8	706.3	692.5	671.7	654.4	633.7	616.4	606.0	609.5	609.5
57°	682.1	675.2	675.2	657.9	640.6	616.4	599.1	581.7	574.7	571.3	571.3
58°	647.5	644.1	640.6	623.3	606.0	585.1	567.8	550.5	540.1	540.1	536.7
59°	612.9	612.9	606.0	592.0	574.7	554.0	536.7	519.4	509.0	505.5	505.5
60°	581.7	585.1	574.7	560.9	547.1	522.8	502.1	488.2	477.9	474.4	474.4
61°	554.0	554.0	547.1	529.8	512.5	495.2	474.4	457.1	450.2	443.3	443.3
62°	529.8	522.8	519.4	502.1	484.8	464.0	446.7	429.4	418.9	412.0	415.5
63°	498.6	495.2	488.2	474.4	457.1	436.3	415.5	401.6	391.2	380.9	384.3
64°	474.4	470.9	460.6	446.7	429.4	408.5	387.8	373.9	367.0	356.6	353.2
65°	443.3	439.8	436.3	418.9	401.6	380.9	363.6	349.7	339.3	332.4	325.5
66°	415.5	418.9	412.0	398.2	377.4	360.1	335.9	322.0	315.1	304.7	297.8
67°	391.2	391.2	384.3	370.5	349.7	332.4	315.1	297.8	287.4	277.0	273.6
67.5°	377.4	377.4	370.5	353.2	339.3	318.6	301.3	287.4	273.6	266.7	259.7
68°	363.6	363.6	360.1	346.3	328.9	308.2	290.9	273.6	259.7	249.2	245.8
69°	339.3	342.8	335.9	322.0	304.7	284.0	266.7	252.7	238.9	228.5	221.6
70°	318.6	315.1	308.2	294.3	277.0	263.2	245.8	228.5	214.6	200.8	197.3
71°	290.9	290.9	284.0	273.6	256.3	238.9	221.6	207.7	193.9	176.6	173.1
72°	270.1	270.1	263.2	249.2	235.4	218.1	200.8	183.5	173.1	155.8	148.9
72.5°	256.3	259.7	252.7	238.9	225.0	204.3	190.4	176.6	159.3	145.4	138.5
73°	249.2	245.8	242.3	228.5	211.2	197.3	180.0	166.2	148.9	135.1	128.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	155.8	155.8	152.4	138.5	124.7	110.8	97.0	83.0	69.2	55.4	48.4
80°	107.4	110.8	103.9	97.0	86.6	72.7	58.8	48.4	34.6	27.7	20.8
82.5°	69.2	69.2	65.7	58.8	51.9	41.5	34.6	24.2	17.3	13.8	10.4
85°	34.6	38.1	34.6	31.1	24.2	20.8	17.3	10.4	6.9	3.5	3.5
87.5°	13.8	13.8	13.8	10.4	10.4	6.9	3.5	3.5	3.5	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°	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4	2555.4
2.5°	2545.0	2545.0	2538.1	2534.6	2531.1	2527.7	2524.2	2520.8	2520.8	2524.2
5°	2524.2	2517.3	2503.5	2500.0	2489.6	2486.2	2479.2	2475.8	2479.2	2475.8
7.5°	2493.1	2479.2	2461.9	2454.9	2441.1	2434.1	2423.8	2423.8	2416.8	2420.3
10°	2451.4	2430.7	2409.9	2396.1	2385.7	2375.3	2368.4	2361.5	2358.0	2358.0
12.5°	2399.5	2375.3	2354.6	2333.8	2316.5	2309.6	2295.7	2295.7	2288.8	2285.2
15°	2340.7	2309.6	2285.2	2264.5	2250.6	2236.8	2226.4	2219.5	2212.6	2212.6
17.5°	2264.5	2236.8	2212.6	2188.3	2167.6	2157.2	2146.8	2136.4	2136.4	2129.5
20°	2181.4	2150.3	2129.5	2105.2	2087.9	2070.6	2056.7	2056.7	2049.8	2053.3
22.5°	2087.9	2049.8	2029.1	2011.8	1994.5	1980.6	1966.8	1966.8	1963.3	1959.9
25°	1984.1	1952.9	1928.6	1907.8	1897.5	1883.6	1880.2	1873.2	1869.8	1869.8
27.5°	1873.2	1849.0	1817.9	1807.5	1793.7	1786.7	1786.7	1783.3	1776.2	1779.7
30°	1755.5	1727.8	1710.5	1703.6	1689.7	1689.7	1686.3	1679.4	1679.4	1682.8
32.5°	1641.3	1613.6	1599.7	1596.2	1582.3	1582.3	1578.9	1582.3	1582.3	1585.8
35°	1516.6	1492.4	1488.9	1478.5	1475.1	1475.1	1475.1	1482.0	1488.9	1478.5
37.5°	1398.8	1381.5	1371.2	1367.7	1371.2	1371.2	1374.6	1385.0	1381.5	1378.1
40°	1277.7	1263.8	1256.9	1256.9	1263.8	1270.7	1270.7	1281.2	1284.7	1281.2
42.5°	1156.5	1146.1	1146.1	1149.6	1156.5	1160.0	1170.4	1180.7	1184.2	1187.7
45°	1042.2	1042.2	1042.2	1045.7	1049.1	1056.1	1069.9	1080.3	1083.7	1087.2
47.5°	931.4	927.9	938.4	941.9	952.2	955.7	966.1	979.9	983.4	986.8
50°	827.6	834.5	837.9	848.3	855.2	855.2	869.1	876.0	886.4	886.4
52.5°	730.6	740.9	744.4	754.8	758.2	761.7	768.7	779.1	786.0	786.0
55°	644.1	647.5	654.4	657.9	668.3	671.7	678.7	682.1	692.5	689.0
56°	606.0	612.9	616.4	623.3	630.2	633.7	640.6	644.1	651.0	654.4
57°	571.3	574.7	585.1	588.6	595.6	595.6	599.1	609.5	609.5	612.9
58°	536.7	543.6	547.1	550.5	557.4	560.9	567.8	571.3	574.7	571.3
59°	505.5	509.0	512.5	512.5	519.4	519.4	529.8	536.7	540.1	540.1
60°	474.4	474.4	477.9	481.3	488.2	491.7	491.7	498.6	498.6	498.6
61°	443.3	443.3	446.7	450.2	453.6	453.6	460.6	460.6	464.0	467.5
62°	415.5	412.0	412.0	415.5	415.5	422.4	426.0	429.4	432.9	429.4
63°	384.3	380.9	380.9	380.9	380.9	387.8	387.8	391.2	398.2	394.7
64°	349.7	349.7	349.7	349.7	353.2	353.2	360.1	363.6	367.0	370.5
65°	325.5	318.6	315.1	315.1	318.6	322.0	325.5	328.9	332.4	332.4
66°	297.8	290.9	287.4	287.4	287.4	287.4	294.3	294.3	301.3	301.3
67°	266.7	259.7	256.3	252.7	252.7	252.7	263.2	259.7	259.7	259.7
67.5°	256.3	245.8	242.3	238.9	235.4	242.3	238.9	242.3	242.3	238.9
68°	242.3	235.4	228.5	221.6	221.6	221.6	225.0	228.5	225.0	221.6
69°	214.6	211.2	200.8	193.9	190.4	193.9	190.4	193.9	190.4	193.9
70°	190.4	180.0	169.7	166.2	162.7	162.7	162.7	159.3	162.7	159.3
71°	166.2	155.8	145.4	138.5	135.1	135.1	131.6	135.1	131.6	135.1
72°	142.0	131.6	117.8	110.8	110.8	110.8	110.8	107.4	110.8	107.4
72.5°	131.6	117.8	107.4	100.5	97.0	97.0	97.0	97.0	93.5	97.0
73°	121.2	107.4	93.5	90.1	90.1	90.1	86.6	83.0	86.6	86.6





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	41.5	31.1	27.7	27.7	27.7	27.7	27.7	27.7	24.2	24.2
80°	17.3	13.8	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
82.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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°	225.0	225.0	218.1	207.7	190.4	173.1	159.3	145.4	128.1	110.8	103.9
75°	207.7	204.3	197.3	187.0	173.1	155.8	142.0	124.7	110.8	93.5	86.6







74°	100.5	83.0	76.1	69.2	69.2	69.2	65.7	65.7	65.7	69.2
75°	79.6	65.7	58.8	51.9	55.4	51.9	55.4	51.9	51.9	51.9



(END OF REPORT)