

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: P584549

Luminaire Tested: **HC840D010-HM82555835-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584549  
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: HC840D010-HM82555835-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4432.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 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

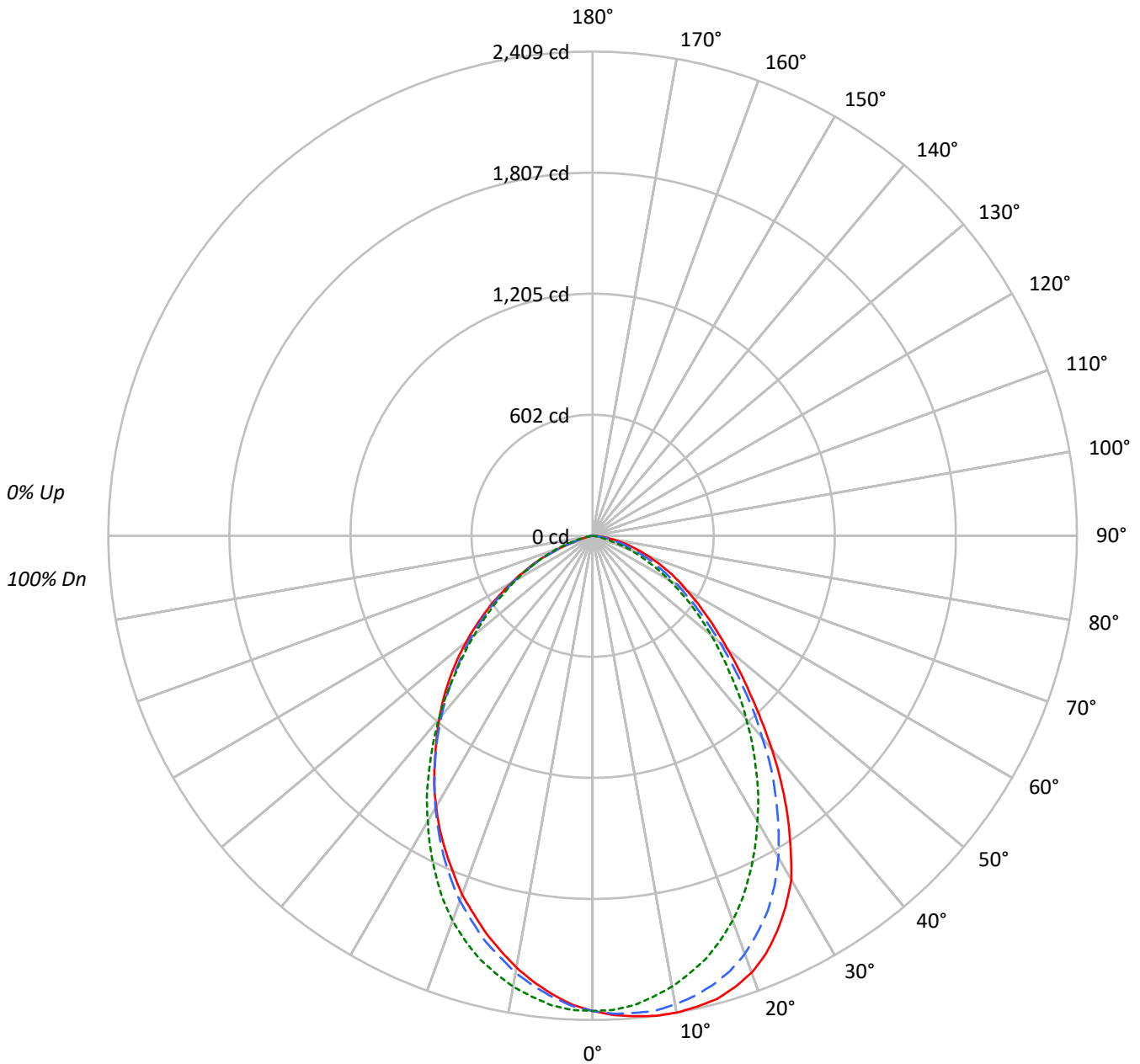
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	72903	72903	72903
5°	74271	72584	70900
10°	75431	71319	68307
15°	76187	69540	65349
20°	75899	66858	62336
25°	73900	62999	58858
30°	70377	58402	55436
35°	63555	53304	51493
40°	55836	47842	47709
45°	48197	42052	43866
50°	41952	36886	39338
55°	37203	32031	34273
60°	33192	27068	28443
65°	29923	21970	22437
70°	26579	16454	13280
75°	22899	9543	5731
80°	17651	3427	1705
85°	11322	1132	1132



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.9	5.0
10°-20°	617.8	13.9
20°-30°	873.8	19.7
30°-40°	920.8	20.8
40°-50°	782.5	17.7
50°-60°	563.5	12.7
60°-70°	325.1	7.3
70°-80°	111.2	2.5
80°-90°	15.3	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°	1713.6	38.7
0°-40°	2634.4	59.4
0°-60°	3980.4	89.8
0°-90°	4432.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4432.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2364	2364	2364	2364	2364	
5°	2399	2383	2345	2303	2290	229
15°	2386	2313	2178	2082	2047	672
25°	2172	2060	1852	1756	1730	996
35°	1688	1589	1416	1365	1368	1051
45°	1105	1054	964	971	1006	859
55°	692	638	596	618	638	623
65°	410	352	301	295	308	408
75°	192	144	80	51	48	203
85°	32	19	3	3	3	43
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°	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2
2.5°	2386.5	2389.8	2386.5	2386.5	2383.3	2380.1	2376.9	2373.8	2367.4	2361.0	2361.0
5°	2399.4	2405.8	2399.4	2399.4	2389.8	2383.3	2376.9	2367.4	2354.5	2344.9	2344.9
7.5°	2409.0	2409.0	2409.0	2399.4	2393.0	2383.3	2367.4	2351.3	2335.3	2319.3	2312.9
10°	2409.0	2409.0	2405.8	2393.0	2386.5	2367.4	2351.3	2328.9	2306.5	2284.1	2277.7
12.5°	2399.4	2402.6	2396.2	2383.3	2367.4	2344.9	2322.5	2293.7	2268.0	2242.4	2229.6
15°	2386.5	2383.3	2376.9	2361.0	2341.7	2312.9	2290.5	2258.4	2223.2	2191.1	2178.3
17.5°	2354.5	2354.5	2344.9	2328.9	2303.2	2271.2	2236.0	2200.8	2162.3	2127.1	2111.1
20°	2312.9	2312.9	2300.0	2280.9	2255.2	2213.6	2175.1	2133.6	2088.7	2053.5	2037.4
22.5°	2252.1	2255.2	2239.2	2216.7	2187.9	2139.9	2101.4	2050.3	2005.4	1963.7	1950.9
25°	2172.0	2178.3	2162.3	2139.9	2101.4	2059.8	2011.8	1963.7	1912.4	1870.8	1851.6
27.5°	2079.0	2082.3	2066.2	2043.8	2005.4	1960.5	1912.4	1861.2	1813.2	1768.3	1749.1
30°	1976.5	1963.7	1957.3	1928.5	1886.9	1848.4	1793.9	1752.3	1701.0	1662.5	1640.2
32.5°	1832.4	1838.8	1819.5	1797.1	1765.1	1720.3	1675.4	1627.3	1579.2	1550.5	1534.5
35°	1688.3	1694.7	1685.0	1662.5	1627.3	1588.9	1544.0	1508.8	1467.2	1431.9	1416.0
37.5°	1537.6	1537.6	1531.3	1518.4	1492.9	1457.5	1412.8	1377.4	1342.2	1313.4	1303.8
40°	1387.1	1380.6	1377.4	1367.9	1345.4	1313.4	1284.6	1255.8	1220.5	1201.3	1188.5
42.5°	1239.7	1239.7	1233.3	1223.7	1201.3	1185.2	1156.4	1124.4	1098.7	1079.6	1079.6
45°	1105.2	1108.4	1098.7	1092.4	1079.6	1054.0	1028.3	1005.9	983.4	970.7	964.3
47.5°	986.6	986.6	977.1	970.7	957.8	935.5	913.0	893.8	877.7	868.1	864.9
50°	874.5	874.5	874.5	858.5	842.5	826.5	810.5	788.0	778.4	772.1	768.9
52.5°	778.4	775.3	775.3	762.4	746.4	727.2	711.1	692.0	682.3	675.9	679.1
55°	692.0	692.0	688.8	672.7	656.8	637.5	621.4	605.5	599.0	592.6	595.8
56°	656.8	656.8	653.5	640.7	621.4	605.5	586.2	570.2	560.6	563.8	563.8
57°	631.1	624.6	624.6	608.7	592.6	570.2	554.2	538.2	531.8	528.6	528.6
58°	599.0	595.8	592.6	576.7	560.6	541.3	525.4	509.3	499.7	499.7	496.6
59°	567.0	567.0	560.6	547.8	531.8	512.5	496.6	480.5	470.9	467.7	467.7
60°	538.2	541.3	531.8	519.0	506.1	483.7	464.5	451.7	442.1	438.9	438.9
61°	512.5	512.5	506.1	490.2	474.1	458.2	438.9	422.8	416.5	410.1	410.1
62°	490.2	483.7	480.5	464.5	448.5	429.2	413.3	397.2	387.6	381.2	384.4
63°	461.2	458.2	451.7	438.9	422.8	403.6	384.4	371.6	362.0	352.4	355.6
64°	438.9	435.7	426.0	413.3	397.2	378.1	358.8	345.9	339.5	330.0	326.8
65°	410.1	406.9	403.6	387.6	371.6	352.4	336.4	323.6	313.9	307.5	301.1
66°	384.4	387.6	381.2	368.4	349.1	333.2	310.7	298.0	291.6	281.9	275.5
67°	362.0	362.0	355.6	342.7	323.6	307.5	291.6	275.5	265.8	256.3	253.1
67.5°	349.1	349.1	342.7	326.8	313.9	294.8	278.7	265.8	253.1	246.7	240.3
68°	336.4	336.4	333.2	320.3	304.3	285.1	269.1	253.1	240.3	230.6	227.4
69°	313.9	317.1	310.7	298.0	281.9	262.6	246.7	233.8	221.0	211.5	205.0
70°	294.8	291.6	285.1	272.3	256.3	243.5	227.4	211.5	198.6	185.8	182.5
71°	269.1	269.1	262.6	253.1	237.0	221.0	205.0	192.2	179.5	163.4	160.2
72°	249.9	249.9	243.5	230.6	217.9	201.8	185.8	169.8	160.2	144.1	137.8
72.5°	237.0	240.3	233.8	221.0	208.2	189.0	176.2	163.4	147.3	134.6	128.2
73°	230.6	227.4	224.2	211.5	195.4	182.5	166.6	153.7	137.8	125.0	118.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	144.1	144.1	140.9	128.2	115.3	102.5	89.7	76.9	64.0	51.3	44.9
80°	99.4	102.5	96.2	89.7	80.1	67.2	54.5	44.9	32.0	25.6	19.3
82.5°	64.0	64.0	60.8	54.5	48.1	38.4	32.0	22.4	16.1	12.9	9.6
85°	32.0	35.2	32.0	28.8	22.4	19.3	16.1	9.6	6.4	3.2	3.2
87.5°	12.9	12.9	12.9	9.6	9.6	6.4	3.2	3.2	3.2	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°	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2	2364.2
2.5°	2354.5	2354.5	2348.1	2344.9	2341.7	2338.5	2335.3	2332.2	2332.2	2335.3
5°	2335.3	2328.9	2316.1	2312.9	2303.2	2300.0	2293.7	2290.5	2293.7	2290.5
7.5°	2306.5	2293.7	2277.7	2271.2	2258.4	2252.1	2242.4	2242.4	2236.0	2239.2
10°	2268.0	2248.9	2229.6	2216.7	2207.2	2197.6	2191.1	2184.7	2181.5	2181.5
12.5°	2219.9	2197.6	2178.3	2159.1	2143.1	2136.6	2123.9	2123.9	2117.5	2114.3
15°	2165.6	2136.6	2114.3	2095.1	2082.3	2069.4	2059.8	2053.5	2047.0	2047.0
17.5°	2095.1	2069.4	2047.0	2024.5	2005.4	1995.7	1986.1	1976.5	1976.5	1970.2
20°	2018.1	1989.3	1970.2	1947.7	1931.7	1915.7	1902.8	1902.8	1896.4	1899.6
22.5°	1931.7	1896.4	1877.2	1861.2	1845.2	1832.4	1819.5	1819.5	1816.3	1813.2
25°	1835.6	1806.8	1784.3	1765.1	1755.5	1742.6	1739.4	1733.1	1729.9	1729.9
27.5°	1733.1	1710.6	1681.8	1672.2	1659.3	1653.0	1653.0	1649.8	1643.4	1646.6
30°	1624.1	1598.5	1582.5	1576.2	1563.3	1563.3	1560.1	1553.7	1553.7	1556.9
32.5°	1518.4	1492.9	1480.0	1476.8	1463.9	1463.9	1460.7	1463.9	1463.9	1467.2
35°	1403.1	1380.6	1377.4	1367.9	1364.7	1364.7	1364.7	1371.1	1377.4	1367.9
37.5°	1294.2	1278.2	1268.5	1265.3	1268.5	1268.5	1271.8	1281.4	1278.2	1275.0
40°	1182.0	1169.3	1162.9	1162.9	1169.3	1175.7	1175.7	1185.2	1188.5	1185.2
42.5°	1069.9	1060.3	1060.3	1063.5	1069.9	1073.1	1082.8	1092.4	1095.6	1098.7
45°	964.3	964.3	964.3	967.5	970.7	977.1	989.8	999.5	1002.7	1005.9
47.5°	861.7	858.5	868.1	871.3	881.0	884.2	893.8	906.5	909.8	913.0
50°	765.6	772.1	775.3	784.8	791.2	791.2	804.1	810.5	820.0	820.0
52.5°	675.9	685.6	688.8	698.4	701.5	704.7	711.1	720.8	727.2	727.2
55°	595.8	599.0	605.5	608.7	618.3	621.4	627.8	631.1	640.7	637.5
56°	560.6	567.0	570.2	576.7	583.0	586.2	592.6	595.8	602.3	605.5
57°	528.6	531.8	541.3	544.5	551.0	551.0	554.2	563.8	563.8	567.0
58°	496.6	502.9	506.1	509.3	515.7	519.0	525.4	528.6	531.8	528.6
59°	467.7	470.9	474.1	474.1	480.5	480.5	490.2	496.6	499.7	499.7
60°	438.9	438.9	442.1	445.3	451.7	454.9	454.9	461.2	461.2	461.2
61°	410.1	410.1	413.3	416.5	419.6	419.6	426.0	426.0	429.2	432.4
62°	384.4	381.2	381.2	384.4	384.4	390.8	394.0	397.2	400.4	397.2
63°	355.6	352.4	352.4	352.4	352.4	358.8	358.8	362.0	368.4	365.2
64°	323.6	323.6	323.6	323.6	326.8	326.8	333.2	336.4	339.5	342.7
65°	301.1	294.8	291.6	291.6	294.8	298.0	301.1	304.3	307.5	307.5
66°	275.5	269.1	265.8	265.8	265.8	265.8	272.3	272.3	278.7	278.7
67°	246.7	240.3	237.0	233.8	233.8	233.8	243.5	240.3	240.3	240.3
67.5°	237.0	227.4	224.2	221.0	217.9	224.2	221.0	224.2	224.2	221.0
68°	224.2	217.9	211.5	205.0	205.0	205.0	208.2	211.5	208.2	205.0
69°	198.6	195.4	185.8	179.5	176.2	179.5	176.2	179.5	176.2	179.5
70°	176.2	166.6	157.0	153.7	150.5	150.5	150.5	147.3	150.5	147.3
71°	153.7	144.1	134.6	128.2	125.0	125.0	121.7	125.0	121.7	125.0
72°	131.4	121.7	108.9	102.5	102.5	102.5	102.5	99.4	102.5	99.4
72.5°	121.7	108.9	99.4	92.9	89.7	89.7	89.7	89.7	86.5	89.7
73°	112.1	99.4	86.5	83.3	83.3	83.3	80.1	76.9	80.1	80.1





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	38.4	28.8	25.6	25.6	25.6	25.6	25.6	25.6	22.4	22.4
80°	16.1	12.9	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
82.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
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°	208.2	208.2	201.8	192.2	176.2	160.2	147.3	134.6	118.5	102.5	96.2
75°	192.2	189.0	182.5	173.0	160.2	144.1	131.4	115.3	102.5	86.5	80.1







74°	92.9	76.9	70.4	64.0	64.0	64.0	60.8	60.8	60.8	64.0
75°	73.7	60.8	54.5	48.1	51.3	48.1	51.3	48.1	48.1	48.1



(END OF REPORT)