

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: P584532

Luminaire Tested: **HC840D010-HM82555830-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584532  
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-HM82555830-81RWWH  
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: 4181.1 lumens  
Efficiency: N/A  
Efficacy: 102.0 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

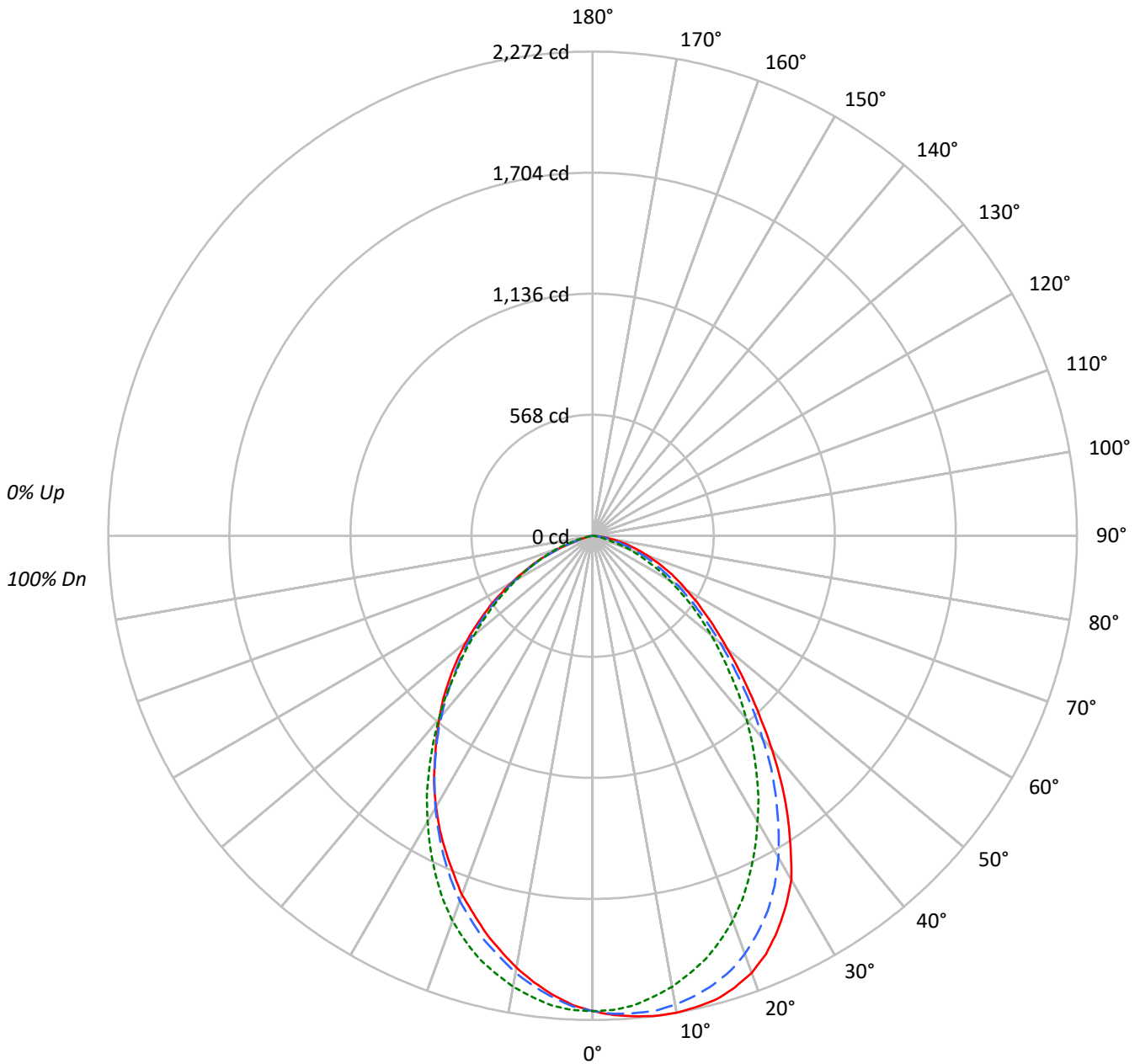
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				20				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°	68774	68774	68774
5°	70065	68477	66886
10°	71157	67280	64440
15°	71877	65604	61649
20°	71603	63074	58808
25°	69712	59433	55527
30°	66392	55098	52296
35°	59952	50285	48576
40°	52672	45133	45008
45°	45467	39667	41381
50°	39578	34795	37112
55°	35090	30225	32332
60°	31311	25532	26840
65°	28230	20729	21167
70°	25064	15534	12532
75°	21612	9007	5397
80°	16639	3214	1598
85°	10685	1061	1061



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.4	5.0
10°-20°	582.8	13.9
20°-30°	824.4	19.7
30°-40°	868.7	20.8
40°-50°	738.2	17.7
50°-60°	531.6	12.7
60°-70°	306.7	7.3
70°-80°	104.9	2.5
80°-90°	14.4	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°	1616.6	38.7
0°-40°	2485.2	59.4
0°-60°	3755.0	89.8
0°-90°	4181.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4181.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2230	2230	2230	2230	2230	
5°	2264	2248	2212	2173	2161	216
15°	2252	2182	2055	1964	1931	634
25°	2049	1943	1747	1656	1632	940
35°	1593	1499	1336	1288	1290	992
45°	1043	994	910	916	949	810
55°	653	601	562	583	601	587
65°	387	332	284	278	290	385
75°	181	136	76	48	45	191
85°	30	18	3	3	3	41
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°	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3
2.5°	2251.5	2254.5	2251.5	2251.5	2248.4	2245.4	2242.3	2239.3	2233.3	2227.3	2227.3
5°	2263.5	2269.6	2263.5	2263.5	2254.5	2248.4	2242.3	2233.3	2221.3	2212.2	2212.2
7.5°	2272.5	2272.5	2272.5	2263.5	2257.4	2248.4	2233.3	2218.2	2203.0	2187.9	2182.0
10°	2272.5	2272.5	2269.6	2257.4	2251.5	2233.3	2218.2	2197.1	2175.9	2154.7	2148.7
12.5°	2263.5	2266.6	2260.5	2248.4	2233.3	2212.2	2191.0	2163.8	2139.6	2115.5	2103.3
15°	2251.5	2248.4	2242.3	2227.3	2209.1	2182.0	2160.8	2130.6	2097.4	2067.1	2055.0
17.5°	2221.3	2221.3	2212.2	2197.1	2172.8	2142.6	2109.4	2076.2	2039.9	2006.7	1991.6
20°	2182.0	2182.0	2169.8	2151.8	2127.5	2088.2	2052.0	2012.6	1970.4	1937.2	1922.1
22.5°	2124.5	2127.5	2112.4	2091.3	2064.1	2018.7	1982.4	1934.1	1891.9	1852.5	1840.5
25°	2048.9	2055.0	2039.9	2018.7	1982.4	1943.2	1897.8	1852.5	1804.2	1764.9	1746.8
27.5°	1961.4	1964.3	1949.2	1928.0	1891.9	1849.5	1804.2	1755.8	1710.5	1668.1	1650.1
30°	1864.6	1852.5	1846.5	1819.3	1780.0	1743.7	1692.4	1653.0	1604.7	1568.4	1547.4
32.5°	1728.6	1734.7	1716.6	1695.4	1665.2	1622.8	1580.6	1535.2	1489.9	1462.6	1447.5
35°	1592.6	1598.6	1589.6	1568.4	1535.2	1498.9	1456.7	1423.4	1384.1	1350.9	1335.8
37.5°	1450.6	1450.6	1444.5	1432.4	1408.2	1375.0	1332.7	1299.5	1266.3	1239.0	1230.0
40°	1308.5	1302.5	1299.5	1290.4	1269.3	1239.0	1211.9	1184.6	1151.4	1133.2	1121.2
42.5°	1169.5	1169.5	1163.5	1154.4	1133.2	1118.1	1091.0	1060.8	1036.6	1018.4	1018.4
45°	1042.6	1045.7	1036.6	1030.5	1018.4	994.2	970.1	948.9	927.7	915.7	909.6
47.5°	930.8	930.8	921.8	915.7	903.6	882.4	861.3	843.1	828.0	819.0	816.0
50°	825.0	825.0	825.0	809.9	794.8	779.7	764.6	743.4	734.3	728.3	725.3
52.5°	734.3	731.4	731.4	719.2	704.1	686.0	670.9	652.7	643.7	637.6	640.7
55°	652.7	652.7	649.7	634.6	619.5	601.4	586.3	571.2	565.1	559.1	562.2
56°	619.5	619.5	616.5	604.4	586.3	571.2	553.0	537.9	528.8	531.9	531.9
57°	595.4	589.3	589.3	574.2	559.1	537.9	522.8	507.7	501.7	498.6	498.6
58°	565.1	562.2	559.1	543.9	528.8	510.7	495.6	480.5	471.5	471.5	468.4
59°	534.9	534.9	528.8	516.8	501.7	483.5	468.4	453.3	444.2	441.3	441.3
60°	507.7	510.7	501.7	489.6	477.4	456.4	438.2	426.1	417.1	414.0	414.0
61°	483.5	483.5	477.4	462.4	447.3	432.2	414.0	398.9	392.8	386.9	386.9
62°	462.4	456.4	453.3	438.2	423.0	405.0	389.8	374.7	365.7	359.6	362.6
63°	435.2	432.2	426.1	414.0	398.9	380.8	362.6	350.6	341.5	332.5	335.5
64°	414.0	411.0	402.0	389.8	374.7	356.6	338.4	326.4	320.3	311.3	308.2
65°	386.9	383.8	380.8	365.7	350.6	332.5	317.4	305.2	296.2	290.1	284.1
66°	362.6	365.7	359.6	347.5	329.4	314.3	293.1	281.1	275.0	266.0	259.9
67°	341.5	341.5	335.5	323.3	305.2	290.1	275.0	259.9	250.9	241.8	238.7
67.5°	329.4	329.4	323.3	308.2	296.2	278.0	262.9	250.9	238.7	232.6	226.7
68°	317.4	317.4	314.3	302.3	287.1	268.9	253.8	238.7	226.7	217.5	214.6
69°	296.2	299.2	293.1	281.1	266.0	247.8	232.6	220.6	208.5	199.4	193.4
70°	278.0	275.0	268.9	256.9	241.8	229.7	214.6	199.4	187.4	175.3	172.3
71°	253.8	253.8	247.8	238.7	223.6	208.5	193.4	181.4	169.2	154.1	151.1
72°	235.7	235.7	229.7	217.5	205.5	190.4	175.3	160.2	151.1	136.0	129.9
72.5°	223.6	226.7	220.6	208.5	196.5	178.3	166.2	154.1	139.0	127.0	120.9
73°	217.5	214.6	211.6	199.4	184.3	172.3	157.2	145.1	129.9	117.8	111.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	136.0	136.0	132.9	120.9	108.8	96.7	84.6	72.5	60.5	48.3	42.4
80°	93.7	96.7	90.7	84.6	75.6	63.4	51.4	42.4	30.2	24.2	18.1
82.5°	60.5	60.5	57.5	51.4	45.3	36.3	30.2	21.2	15.1	12.1	9.0
85°	30.2	33.2	30.2	27.3	21.2	18.1	15.1	9.0	6.1	3.0	3.0
87.5°	12.1	12.1	12.1	9.0	9.0	6.1	3.0	3.0	3.0	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	0.0



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3
2.5°	2221.3	2221.3	2215.2	2212.2	2209.1	2206.1	2203.0	2200.1	2200.1	2203.0
5°	2203.0	2197.1	2185.0	2182.0	2172.8	2169.8	2163.8	2160.8	2163.8	2160.8
7.5°	2175.9	2163.8	2148.7	2142.6	2130.6	2124.5	2115.5	2115.5	2109.4	2112.4
10°	2139.6	2121.5	2103.3	2091.3	2082.3	2073.1	2067.1	2061.1	2058.0	2058.0
12.5°	2094.3	2073.1	2055.0	2036.9	2021.8	2015.7	2003.6	2003.6	1997.5	1994.6
15°	2042.9	2015.7	1994.6	1976.5	1964.3	1952.3	1943.2	1937.2	1931.1	1931.1
17.5°	1976.5	1952.3	1931.1	1910.0	1891.9	1882.7	1873.7	1864.6	1864.6	1858.5
20°	1903.9	1876.7	1858.5	1837.4	1822.4	1807.3	1795.1	1795.1	1789.0	1792.1
22.5°	1822.4	1789.0	1771.0	1755.8	1740.7	1728.6	1716.6	1716.6	1713.5	1710.5
25°	1731.7	1704.4	1683.3	1665.2	1656.1	1644.0	1641.0	1634.9	1632.0	1632.0
27.5°	1634.9	1613.8	1586.6	1577.5	1565.4	1559.4	1559.4	1556.4	1550.3	1553.3
30°	1532.2	1508.0	1492.9	1486.9	1474.8	1474.8	1471.8	1465.7	1465.7	1468.7
32.5°	1432.4	1408.2	1396.2	1393.1	1381.1	1381.1	1378.0	1381.1	1381.1	1384.1
35°	1323.6	1302.5	1299.5	1290.4	1287.5	1287.5	1287.5	1293.4	1299.5	1290.4
37.5°	1220.9	1205.8	1196.8	1193.7	1196.8	1196.8	1199.8	1208.8	1205.8	1202.7
40°	1115.1	1103.0	1097.1	1097.1	1103.0	1109.1	1109.1	1118.1	1121.2	1118.1
42.5°	1009.4	1000.3	1000.3	1003.3	1009.4	1012.5	1021.5	1030.5	1033.5	1036.6
45°	909.6	909.6	909.6	912.6	915.7	921.8	933.8	942.8	945.9	948.9
47.5°	812.9	809.9	819.0	822.1	831.1	834.1	843.1	855.3	858.2	861.3
50°	722.3	728.3	731.4	740.4	746.5	746.5	758.5	764.6	773.6	773.6
52.5°	637.6	646.8	649.7	658.8	661.9	664.9	670.9	680.0	686.0	686.0
55°	562.2	565.1	571.2	574.2	583.2	586.3	592.4	595.4	604.4	601.4
56°	528.8	534.9	537.9	543.9	550.0	553.0	559.1	562.2	568.1	571.2
57°	498.6	501.7	510.7	513.7	519.8	519.8	522.8	531.9	531.9	534.9
58°	468.4	474.5	477.4	480.5	486.6	489.6	495.6	498.6	501.7	498.6
59°	441.3	444.2	447.3	447.3	453.3	453.3	462.4	468.4	471.5	471.5
60°	414.0	414.0	417.1	420.1	426.1	429.1	429.1	435.2	435.2	435.2
61°	386.9	386.9	389.8	392.8	395.9	395.9	402.0	402.0	405.0	407.9
62°	362.6	359.6	359.6	362.6	362.6	368.7	371.8	374.7	377.7	374.7
63°	335.5	332.5	332.5	332.5	332.5	338.4	338.4	341.5	347.5	344.5
64°	305.2	305.2	305.2	305.2	308.2	308.2	314.3	317.4	320.3	323.3
65°	284.1	278.0	275.0	275.0	278.0	281.1	284.1	287.1	290.1	290.1
66°	259.9	253.8	250.9	250.9	250.9	250.9	256.9	256.9	262.9	262.9
67°	232.6	226.7	223.6	220.6	220.6	220.6	229.7	226.7	226.7	226.7
67.5°	223.6	214.6	211.6	208.5	205.5	211.6	208.5	211.6	211.6	208.5
68°	211.6	205.5	199.4	193.4	193.4	193.4	196.5	199.4	196.5	193.4
69°	187.4	184.3	175.3	169.2	166.2	169.2	166.2	169.2	166.2	169.2
70°	166.2	157.2	148.0	145.1	142.1	142.1	142.1	139.0	142.1	139.0
71°	145.1	136.0	127.0	120.9	117.8	117.8	114.8	117.8	114.8	117.8
72°	123.9	114.8	102.7	96.7	96.7	96.7	96.7	93.7	96.7	93.7
72.5°	114.8	102.7	93.7	87.6	84.6	84.6	84.6	84.6	81.6	84.6
73°	105.8	93.7	81.6	78.5	78.5	78.5	75.6	72.5	75.6	75.6





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	36.3	27.3	24.2	24.2	24.2	24.2	24.2	24.2	21.2	21.2
80°	15.1	12.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
82.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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°	196.5	196.5	190.4	181.4	166.2	151.1	139.0	127.0	111.9	96.7	90.7
75°	181.4	178.3	172.3	163.1	151.1	136.0	123.9	108.8	96.7	81.6	75.6







74°	87.6	72.5	66.5	60.5	60.5	60.5	57.5	57.5	57.5	60.5
75°	69.5	57.5	51.4	45.3	48.3	45.3	48.3	45.3	45.3	45.3



(END OF REPORT)