

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: P585161

Luminaire Tested: **HC860D010-HM86080935-81RWWH**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585161
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-HM86080935-81RWWH
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5112.4 lumens
Efficiency: N/A
Efficacy: 91.3 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

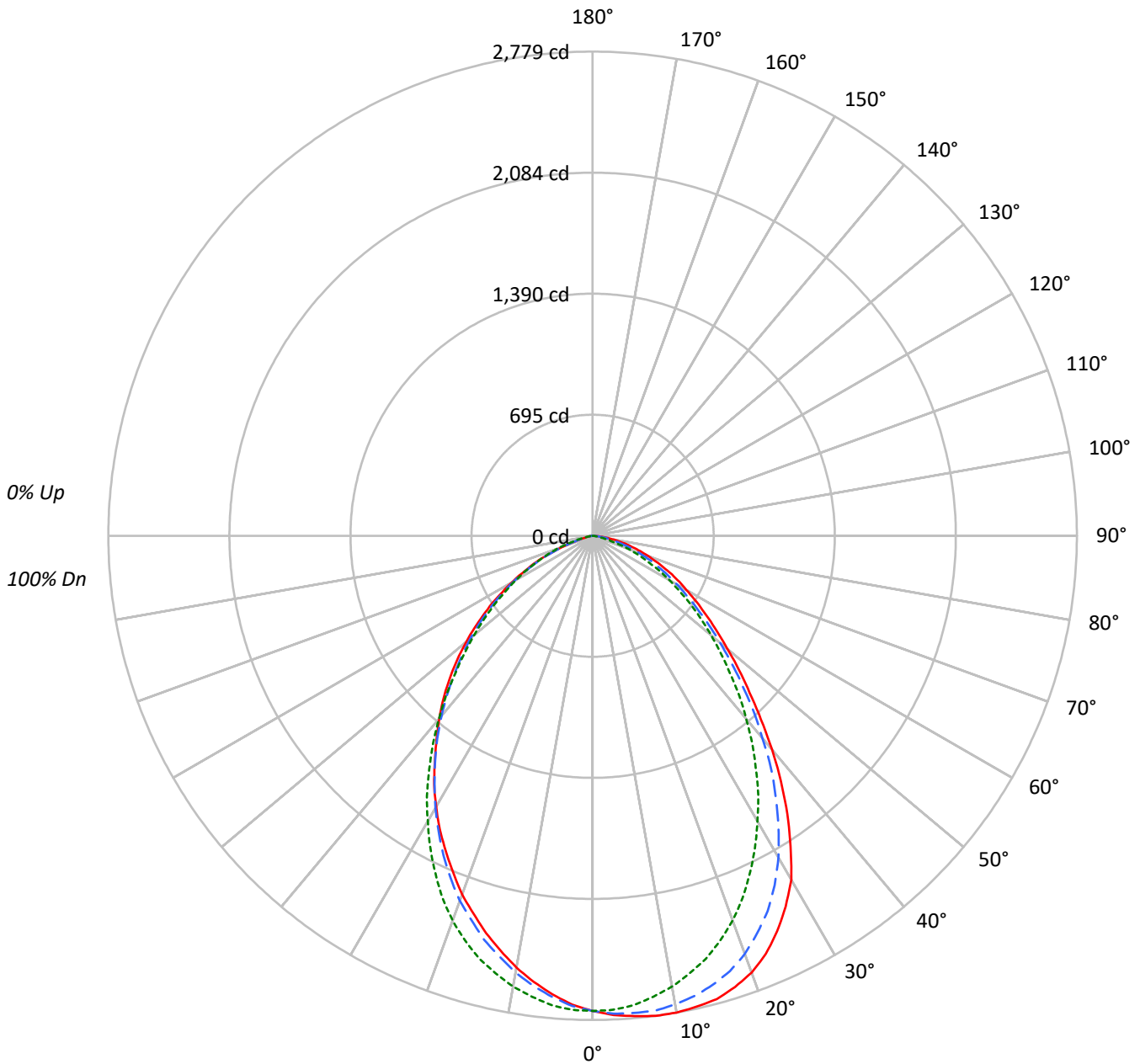
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	84094	84094	84094
5°	85672	83725	81784
10°	87010	82266	78797
15°	87884	80219	75379
20°	87548	77123	71905
25°	85241	72672	67892
30°	81180	67364	63943
35°	73308	61484	59399
40°	64406	55184	55035
45°	55597	48502	50600
50°	48395	42542	45382
55°	42912	36950	39531
60°	38286	31219	32816
65°	34512	25348	25888
70°	30645	18988	15327
75°	26414	11009	6612
80°	20333	3925	1971
85°	13055	1309	1309



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.0	5.0
10°-20°	712.7	13.9
20°-30°	1008.0	19.7
30°-40°	1062.1	20.8
40°-50°	902.7	17.7
50°-60°	650.0	12.7
60°-70°	375.0	7.3
70°-80°	128.3	2.5
80°-90°	17.6	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°	1976.6	38.7
0°-40°	3038.8	59.4
0°-60°	4591.5	89.8
0°-90°	5112.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5112.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2727	2727	2727	2727	2727	
5°	2768	2749	2705	2657	2642	265
15°	2753	2668	2513	2402	2361	775
25°	2505	2376	2136	2025	1995	1149
35°	1947	1833	1633	1574	1578	1213
45°	1275	1216	1112	1120	1160	990
55°	798	735	687	713	735	718
65°	473	406	347	340	355	471
75°	222	166	92	59	56	234
85°	37	22	4	4	4	50
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°	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1
2.5°	2752.9	2756.6	2752.9	2752.9	2749.2	2745.6	2741.9	2738.2	2730.8	2723.4	2723.4
5°	2767.7	2775.1	2767.7	2767.7	2756.6	2749.2	2741.9	2730.8	2716.0	2704.8	2704.8
7.5°	2778.8	2778.8	2778.8	2767.7	2760.3	2749.2	2730.8	2712.3	2693.8	2675.3	2667.9
10°	2778.8	2778.8	2775.1	2760.3	2752.9	2730.8	2712.3	2686.4	2660.5	2634.7	2627.3
12.5°	2767.7	2771.4	2764.0	2749.2	2730.8	2704.8	2679.0	2645.8	2616.3	2586.6	2571.9
15°	2752.9	2749.2	2741.9	2723.4	2701.1	2667.9	2642.1	2605.1	2564.5	2527.6	2512.8
17.5°	2716.0	2716.0	2704.8	2686.4	2656.9	2619.9	2579.2	2538.6	2494.2	2453.6	2435.2
20°	2667.9	2667.9	2653.2	2631.0	2601.4	2553.4	2509.0	2461.0	2409.2	2368.6	2350.2
22.5°	2597.7	2601.4	2582.9	2557.1	2523.9	2468.4	2424.1	2364.9	2313.1	2265.2	2250.4
25°	2505.3	2512.8	2494.2	2468.4	2424.1	2376.0	2320.6	2265.2	2206.0	2158.0	2135.9
27.5°	2398.1	2401.8	2383.4	2357.5	2313.1	2261.5	2206.0	2146.9	2091.5	2039.8	2017.5
30°	2279.9	2265.2	2257.8	2224.6	2176.5	2132.2	2069.3	2021.3	1962.2	1917.8	1891.9
32.5°	2113.6	2121.1	2098.8	2073.0	2036.1	1984.3	1932.6	1877.2	1821.8	1788.5	1770.0
35°	1947.4	1954.8	1943.7	1917.8	1877.2	1832.9	1781.1	1740.5	1692.4	1651.8	1633.3
37.5°	1773.7	1773.7	1766.3	1751.6	1721.9	1681.3	1629.6	1588.9	1548.3	1515.0	1503.9
40°	1600.0	1592.6	1588.9	1577.9	1552.0	1515.0	1481.8	1448.6	1407.8	1385.7	1370.9
42.5°	1430.1	1430.1	1422.6	1411.5	1385.7	1367.2	1334.0	1297.0	1267.5	1245.3	1245.3
45°	1274.9	1278.5	1267.5	1260.1	1245.3	1215.7	1186.2	1160.3	1134.5	1119.6	1112.2
47.5°	1138.2	1138.2	1127.0	1119.6	1104.8	1079.0	1053.2	1030.9	1012.5	1001.4	997.7
50°	1008.8	1008.8	1008.8	990.3	971.9	953.4	934.8	909.0	897.9	890.5	886.8
52.5°	897.9	894.2	894.2	879.5	861.0	838.9	820.3	798.2	787.1	779.7	783.4
55°	798.2	798.2	794.5	776.0	757.6	735.3	716.8	698.4	691.0	683.6	687.3
56°	757.6	757.6	753.9	739.1	716.8	698.4	676.2	657.8	646.7	650.4	650.4
57°	727.9	720.5	720.5	702.1	683.6	657.8	639.2	620.8	613.4	609.7	609.7
58°	691.0	687.3	683.6	665.2	646.7	624.5	606.0	587.5	576.5	576.5	572.8
59°	654.1	654.1	646.7	631.8	613.4	591.2	572.8	554.3	543.3	539.4	539.4
60°	620.8	624.5	613.4	598.6	583.9	558.0	535.8	521.0	509.9	506.2	506.2
61°	591.2	591.2	583.9	565.4	546.9	528.4	506.2	487.8	480.4	473.0	473.0
62°	565.4	558.0	554.3	535.8	517.3	495.2	476.7	458.2	447.2	439.7	443.5
63°	532.1	528.4	521.0	506.2	487.8	465.6	443.5	428.6	417.5	406.5	410.1
64°	506.2	502.5	491.5	476.7	458.2	436.0	413.8	399.1	391.7	380.6	376.9
65°	473.0	469.3	465.6	447.2	428.6	406.5	388.0	373.2	362.2	354.8	347.4
66°	443.5	447.2	439.7	424.9	402.8	384.3	358.5	343.6	336.2	325.1	317.8
67°	417.5	417.5	410.1	395.4	373.2	354.8	336.2	317.8	306.7	295.6	291.9
67.5°	402.8	402.8	395.4	376.9	362.2	339.9	321.5	306.7	291.9	284.5	277.2
68°	388.0	388.0	384.3	369.5	351.1	328.8	310.4	291.9	277.2	266.1	262.4
69°	362.2	365.9	358.5	343.6	325.1	303.0	284.5	269.8	255.0	243.8	236.4
70°	339.9	336.2	328.8	314.1	295.6	280.9	262.4	243.8	229.1	214.3	210.6
71°	310.4	310.4	303.0	291.9	273.5	255.0	236.4	221.7	206.9	188.5	184.8
72°	288.2	288.2	280.9	266.1	251.3	232.8	214.3	195.8	184.8	166.3	158.9
72.5°	273.5	277.2	269.8	255.0	240.1	218.0	203.2	188.5	170.0	155.2	147.9
73°	266.1	262.4	258.7	243.8	225.4	210.6	192.2	177.4	158.9	144.1	136.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	166.3	166.3	162.6	147.9	133.0	118.2	103.5	88.7	73.9	59.2	51.8
80°	114.5	118.2	110.8	103.5	92.4	77.6	62.9	51.8	36.9	29.5	22.1
82.5°	73.9	73.9	70.2	62.9	55.5	44.3	36.9	25.8	18.5	14.8	11.1
85°	36.9	40.6	36.9	33.2	25.8	22.1	18.5	11.1	7.4	3.7	3.7
87.5°	14.8	14.8	14.8	11.1	11.1	7.4	3.7	3.7	3.7	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°	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1	2727.1
2.5°	2716.0	2716.0	2708.6	2704.8	2701.1	2697.5	2693.8	2690.1	2690.1	2693.8
5°	2693.8	2686.4	2671.6	2667.9	2656.9	2653.2	2645.8	2642.1	2645.8	2642.1
7.5°	2660.5	2645.8	2627.3	2619.9	2605.1	2597.7	2586.6	2586.6	2579.2	2582.9
10°	2616.3	2594.0	2571.9	2557.1	2546.0	2534.9	2527.6	2520.2	2516.5	2516.5
12.5°	2560.8	2534.9	2512.8	2490.5	2472.1	2464.7	2449.9	2449.9	2442.6	2438.9
15°	2497.9	2464.7	2438.9	2416.7	2401.8	2387.1	2376.0	2368.6	2361.2	2361.2
17.5°	2416.7	2387.1	2361.2	2335.4	2313.1	2302.1	2291.0	2279.9	2279.9	2272.5
20°	2328.0	2294.7	2272.5	2246.7	2228.3	2209.7	2194.9	2194.9	2187.5	2191.2
22.5°	2228.3	2187.5	2165.4	2146.9	2128.5	2113.6	2098.8	2098.8	2095.2	2091.5
25°	2117.4	2084.1	2058.2	2036.1	2025.0	2010.1	2006.5	1999.1	1995.4	1995.4
27.5°	1999.1	1973.2	1940.0	1928.9	1914.1	1906.7	1906.7	1903.0	1895.6	1899.3
30°	1873.5	1843.9	1825.5	1818.0	1803.2	1803.2	1799.5	1792.2	1792.2	1795.8
32.5°	1751.6	1721.9	1707.1	1703.5	1688.7	1688.7	1685.0	1688.7	1688.7	1692.4
35°	1618.5	1592.6	1588.9	1577.9	1574.2	1574.2	1574.2	1581.5	1588.9	1577.9
37.5°	1492.8	1474.4	1463.3	1459.6	1463.3	1463.3	1467.0	1478.1	1474.4	1470.7
40°	1363.5	1348.8	1341.4	1341.4	1348.8	1356.2	1356.2	1367.2	1370.9	1367.2
42.5°	1234.3	1223.1	1223.1	1226.8	1234.3	1237.9	1249.0	1260.1	1263.8	1267.5
45°	1112.2	1112.2	1112.2	1115.9	1119.6	1127.0	1141.9	1152.9	1156.6	1160.3
47.5°	994.0	990.3	1001.4	1005.1	1016.1	1019.8	1030.9	1045.8	1049.5	1053.2
50°	883.2	890.5	894.2	905.3	912.7	912.7	927.4	934.8	946.0	946.0
52.5°	779.7	790.8	794.5	805.5	809.2	812.9	820.3	831.4	838.9	838.9
55°	687.3	691.0	698.4	702.1	713.1	716.8	724.2	727.9	739.1	735.3
56°	646.7	654.1	657.8	665.2	672.5	676.2	683.6	687.3	694.7	698.4
57°	609.7	613.4	624.5	628.1	635.5	635.5	639.2	650.4	650.4	654.1
58°	572.8	580.2	583.9	587.5	594.9	598.6	606.0	609.7	613.4	609.7
59°	539.4	543.3	546.9	546.9	554.3	554.3	565.4	572.8	576.5	576.5
60°	506.2	506.2	509.9	513.6	521.0	524.7	524.7	532.1	532.1	532.1
61°	473.0	473.0	476.7	480.4	484.1	484.1	491.5	491.5	495.2	498.8
62°	443.5	439.7	439.7	443.5	443.5	450.9	454.6	458.2	461.9	458.2
63°	410.1	406.5	406.5	406.5	406.5	413.8	413.8	417.5	424.9	421.2
64°	373.2	373.2	373.2	373.2	376.9	376.9	384.3	388.0	391.7	395.4
65°	347.4	339.9	336.2	336.2	339.9	343.6	347.4	351.1	354.8	354.8
66°	317.8	310.4	306.7	306.7	306.7	306.7	314.1	314.1	321.5	321.5
67°	284.5	277.2	273.5	269.8	269.8	269.8	280.9	277.2	277.2	277.2
67.5°	273.5	262.4	258.7	255.0	251.3	258.7	255.0	258.7	258.7	255.0
68°	258.7	251.3	243.8	236.4	236.4	236.4	240.1	243.8	240.1	236.4
69°	229.1	225.4	214.3	206.9	203.2	206.9	203.2	206.9	203.2	206.9
70°	203.2	192.2	181.1	177.4	173.7	173.7	173.7	170.0	173.7	170.0
71°	177.4	166.3	155.2	147.9	144.1	144.1	140.4	144.1	140.4	144.1
72°	151.6	140.4	125.6	118.2	118.2	118.2	118.2	114.5	118.2	114.5
72.5°	140.4	125.6	114.5	107.2	103.5	103.5	103.5	103.5	99.8	103.5
73°	129.3	114.5	99.8	96.1	96.1	96.1	92.4	88.7	92.4	92.4



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	44.3	33.2	29.5	29.5	29.5	29.5	29.5	29.5	25.8	25.8
80°	18.5	14.8	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
82.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
85°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
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°	240.1	240.1	232.8	221.7	203.2	184.8	170.0	155.2	136.7	118.2	110.8
75°	221.7	218.0	210.6	199.5	184.8	166.3	151.6	133.0	118.2	99.8	92.4





74°	107.2	88.7	81.3	73.9	73.9	73.9	70.2	70.2	70.2	73.9
75°	85.0	70.2	62.9	55.5	59.2	55.5	59.2	55.5	55.5	55.5



(END OF REPORT)