

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: P585144

Luminaire Tested: **HC860D010-HM86080930-81RWWH**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585144
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-HM86080930-81RWWH
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4496.2 lumens
Efficiency: N/A
Efficacy: 80.3 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

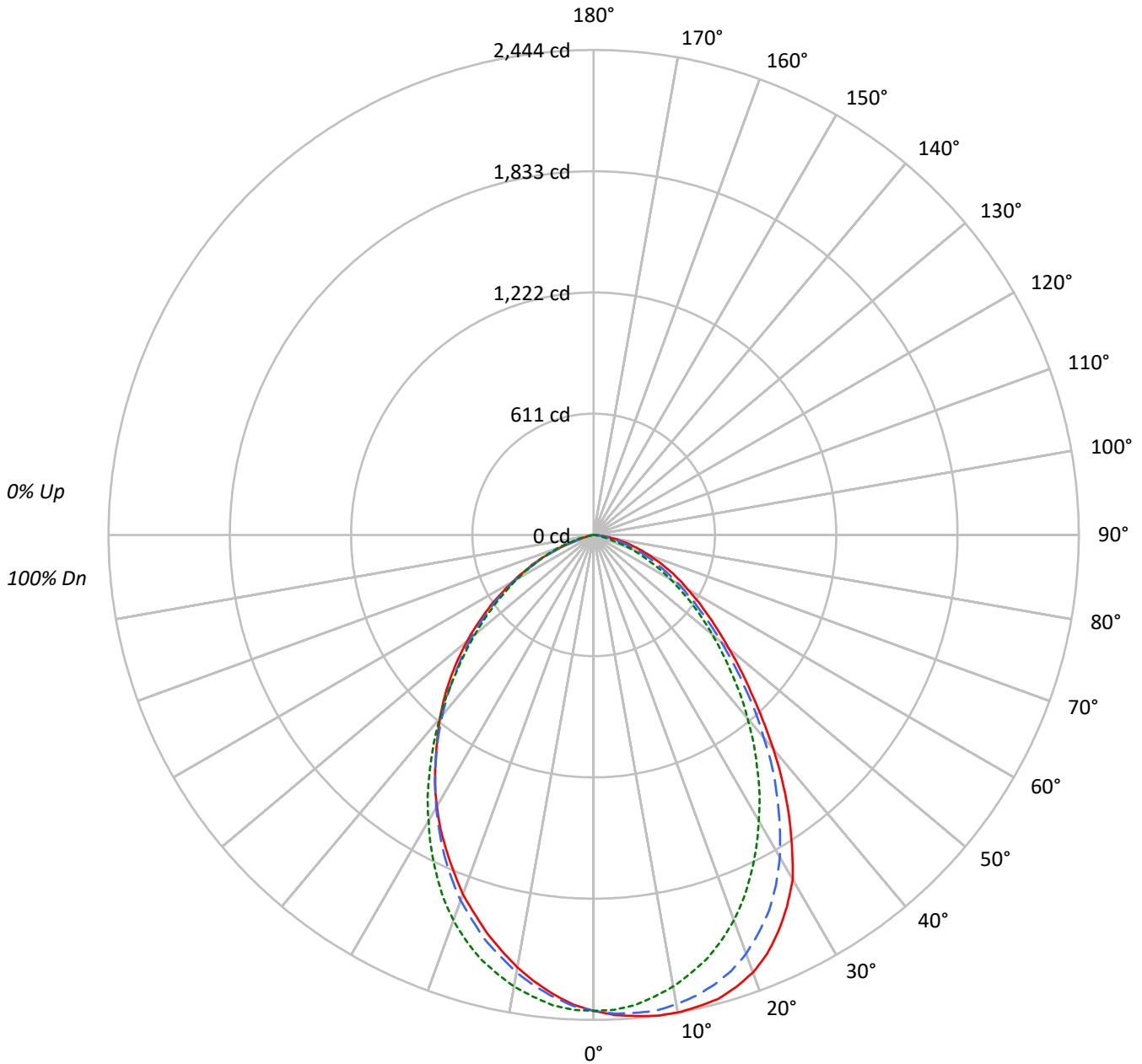
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	73958	73958	73958
5°	75345	73637	71925
10°	76523	72350	69297
15°	77291	70549	66297
20°	76998	67826	63238
25°	74965	63911	59709
30°	71399	59246	56241
35°	64473	54072	52239
40°	56641	48530	48401
45°	48895	42658	44499
50°	42561	37414	39909
55°	37741	32499	34768
60°	33673	27457	28857
65°	30353	22291	22765
70°	26958	16698	13479
75°	23233	9674	5814
80°	17882	3463	1740
85°	11499	1132	1132



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	225.1	5.0
10°-20°	626.8	13.9
20°-30°	886.5	19.7
30°-40°	934.1	20.8
40°-50°	793.9	17.7
50°-60°	571.7	12.7
60°-70°	329.8	7.3
70°-80°	112.8	2.5
80°-90°	15.5	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°	1738.4	38.7
0°-40°	2672.5	59.4
0°-60°	4038.1	89.8
0°-90°	4496.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4496.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2398	2398	2398	2398	2398	
5°	2434	2418	2379	2337	2324	233
15°	2421	2346	2210	2112	2077	682
25°	2203	2090	1878	1781	1755	1010
35°	1713	1612	1436	1384	1388	1067
45°	1121	1069	978	985	1020	871
55°	702	647	604	627	647	632
65°	416	357	306	299	312	414
75°	195	146	81	52	49	206
85°	32	20	3	3	3	44
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°	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4
2.5°	2421.1	2424.3	2421.1	2421.1	2417.9	2414.6	2411.4	2408.2	2401.6	2395.2	2395.2
5°	2434.1	2440.6	2434.1	2434.1	2424.3	2417.9	2411.4	2401.6	2388.7	2378.9	2378.9
7.5°	2443.9	2443.9	2443.9	2434.1	2427.7	2417.9	2401.6	2385.3	2369.1	2352.9	2346.4
10°	2443.9	2443.9	2440.6	2427.7	2421.1	2401.6	2385.3	2362.6	2339.9	2317.2	2310.6
12.5°	2434.1	2437.4	2430.9	2417.9	2401.6	2378.9	2356.2	2326.9	2300.9	2274.9	2261.9
15°	2421.1	2417.9	2411.4	2395.2	2375.7	2346.4	2323.6	2291.1	2255.4	2222.9	2209.9
17.5°	2388.7	2388.7	2378.9	2362.6	2336.7	2304.1	2268.4	2232.6	2193.7	2157.9	2141.6
20°	2346.4	2346.4	2333.4	2313.8	2287.9	2245.7	2206.7	2164.4	2118.9	2083.2	2066.9
22.5°	2284.7	2287.9	2271.6	2248.9	2219.6	2170.9	2131.9	2079.9	2034.4	1992.2	1979.1
25°	2203.3	2209.9	2193.7	2170.9	2131.9	2089.6	2040.9	1992.2	1940.1	1897.9	1878.4
27.5°	2109.1	2112.5	2096.2	2073.4	2034.4	1988.9	1940.1	1888.1	1839.4	1793.9	1774.4
30°	2005.2	1992.2	1985.7	1956.4	1914.2	1875.2	1819.9	1777.6	1725.7	1686.6	1663.9
32.5°	1858.9	1865.4	1845.9	1823.2	1790.7	1745.2	1699.7	1651.0	1602.2	1572.9	1556.6
35°	1712.7	1719.1	1709.5	1686.6	1651.0	1611.9	1566.4	1530.7	1488.5	1452.7	1436.4
37.5°	1560.0	1560.0	1553.4	1540.5	1514.4	1478.7	1433.2	1397.5	1361.7	1332.4	1322.7
40°	1407.1	1400.7	1397.5	1387.7	1364.9	1332.4	1303.2	1273.9	1238.2	1218.7	1205.6
42.5°	1257.7	1257.7	1251.2	1241.4	1218.7	1202.4	1173.2	1140.7	1114.6	1095.2	1095.2
45°	1121.2	1124.4	1114.6	1108.2	1095.2	1069.2	1043.3	1020.4	997.7	984.7	978.2
47.5°	1000.9	1000.9	991.2	984.7	971.7	948.9	926.2	906.7	890.4	880.7	877.5
50°	887.2	887.2	887.2	870.9	854.7	838.4	822.3	799.4	789.7	783.2	779.9
52.5°	789.7	786.5	786.5	773.5	757.2	737.7	721.5	702.0	692.3	685.7	688.9
55°	702.0	702.0	698.7	682.5	666.2	646.7	630.4	614.2	607.7	601.3	604.5
56°	666.2	666.2	663.0	649.9	630.4	614.2	594.7	578.4	568.7	572.0	572.0
57°	640.3	633.7	633.7	617.4	601.3	578.4	562.2	546.0	539.4	536.2	536.2
58°	607.7	604.5	601.3	585.0	568.7	549.2	533.0	516.7	506.9	506.9	503.7
59°	575.2	575.2	568.7	555.7	539.4	520.0	503.7	487.4	477.7	474.5	474.5
60°	546.0	549.2	539.4	526.5	513.5	490.8	471.3	458.2	448.4	445.2	445.2
61°	520.0	520.0	513.5	497.2	481.0	464.7	445.2	428.9	422.5	416.0	416.0
62°	497.2	490.8	487.4	471.3	455.0	435.5	419.3	403.0	393.2	386.7	390.0
63°	467.9	464.7	458.2	445.2	428.9	409.5	390.0	376.9	367.2	357.4	360.8
64°	445.2	442.0	432.2	419.3	403.0	383.5	364.0	351.0	344.5	334.7	331.5
65°	416.0	412.7	409.5	393.2	376.9	357.4	341.3	328.3	318.5	312.0	305.5
66°	390.0	393.2	386.7	373.7	354.2	337.9	315.2	302.2	295.7	286.0	279.5
67°	367.2	367.2	360.8	347.8	328.3	312.0	295.7	279.5	269.8	260.0	256.7
67.5°	354.2	354.2	347.8	331.5	318.5	299.0	282.7	269.8	256.7	250.3	243.7
68°	341.3	341.3	337.9	325.0	308.8	289.3	273.0	256.7	243.7	234.0	230.8
69°	318.5	321.7	315.2	302.2	286.0	266.4	250.3	237.3	224.2	214.5	208.0
70°	299.0	295.7	289.3	276.2	260.0	246.9	230.8	214.5	201.5	188.5	185.2
71°	273.0	273.0	266.4	256.7	240.5	224.2	208.0	195.0	182.0	165.7	162.5
72°	253.5	253.5	246.9	234.0	221.0	204.7	188.5	172.2	162.5	146.3	139.8
72.5°	240.5	243.7	237.3	224.2	211.2	191.7	178.8	165.7	149.5	136.4	130.0
73°	234.0	230.8	227.5	214.5	198.3	185.2	169.0	155.9	139.8	126.8	120.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	146.3	146.3	143.0	130.0	117.0	104.0	91.0	78.0	65.1	52.0	45.4
80°	100.7	104.0	97.5	91.0	81.2	68.3	55.2	45.4	32.5	26.0	19.5
82.5°	65.1	65.1	61.7	55.2	48.8	39.0	32.5	22.7	16.3	13.0	9.8
85°	32.5	35.8	32.5	29.3	22.7	19.5	16.3	9.8	6.5	3.2	3.2
87.5°	13.0	13.0	13.0	9.8	9.8	6.5	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°	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4	2398.4
2.5°	2388.7	2388.7	2382.1	2378.9	2375.7	2372.4	2369.1	2365.9	2365.9	2369.1
5°	2369.1	2362.6	2349.6	2346.4	2336.7	2333.4	2326.9	2323.6	2326.9	2323.6
7.5°	2339.9	2326.9	2310.6	2304.1	2291.1	2284.7	2274.9	2274.9	2268.4	2271.6
10°	2300.9	2281.4	2261.9	2248.9	2239.1	2229.4	2222.9	2216.4	2213.1	2213.1
12.5°	2252.1	2229.4	2209.9	2190.4	2174.2	2167.7	2154.7	2154.7	2148.1	2144.9
15°	2196.9	2167.7	2144.9	2125.4	2112.5	2099.4	2089.6	2083.2	2076.7	2076.7
17.5°	2125.4	2099.4	2076.7	2053.9	2034.4	2024.7	2014.9	2005.2	2005.2	1998.6
20°	2047.4	2018.1	1998.6	1975.9	1959.6	1943.4	1930.4	1930.4	1923.9	1927.1
22.5°	1959.6	1923.9	1904.4	1888.1	1871.9	1858.9	1845.9	1845.9	1842.7	1839.4
25°	1862.2	1832.9	1810.1	1790.7	1781.0	1767.9	1764.7	1758.1	1754.9	1754.9
27.5°	1758.1	1735.4	1706.2	1696.4	1683.4	1676.9	1676.9	1673.7	1667.1	1670.5
30°	1647.6	1621.7	1605.4	1599.0	1585.9	1585.9	1582.7	1576.1	1576.1	1579.5
32.5°	1540.5	1514.4	1501.4	1498.2	1485.2	1485.2	1481.9	1485.2	1485.2	1488.5
35°	1423.4	1400.7	1397.5	1387.7	1384.4	1384.4	1384.4	1390.9	1397.5	1387.7
37.5°	1312.9	1296.7	1287.0	1283.7	1287.0	1287.0	1290.2	1299.9	1296.7	1293.4
40°	1199.2	1186.2	1179.7	1179.7	1186.2	1192.7	1192.7	1202.4	1205.6	1202.4
42.5°	1085.5	1075.7	1075.7	1079.0	1085.5	1088.7	1098.5	1108.2	1111.4	1114.6
45°	978.2	978.2	978.2	981.4	984.7	991.2	1004.2	1014.0	1017.2	1020.4
47.5°	874.2	870.9	880.7	884.0	893.7	897.0	906.7	919.7	923.0	926.2
50°	776.7	783.2	786.5	796.2	802.8	802.8	815.7	822.3	831.9	831.9
52.5°	685.7	695.5	698.7	708.4	711.8	715.0	721.5	731.3	737.7	737.7
55°	604.5	607.7	614.2	617.4	627.2	630.4	637.0	640.3	649.9	646.7
56°	568.7	575.2	578.4	585.0	591.5	594.7	601.3	604.5	611.0	614.2
57°	536.2	539.4	549.2	552.5	558.9	558.9	562.2	572.0	572.0	575.2
58°	503.7	510.3	513.5	516.7	523.2	526.5	533.0	536.2	539.4	536.2
59°	474.5	477.7	481.0	481.0	487.4	487.4	497.2	503.7	506.9	506.9
60°	445.2	445.2	448.4	451.7	458.2	461.5	461.5	467.9	467.9	467.9
61°	416.0	416.0	419.3	422.5	425.7	425.7	432.2	432.2	435.5	438.8
62°	390.0	386.7	386.7	390.0	390.0	396.4	399.8	403.0	406.2	403.0
63°	360.8	357.4	357.4	357.4	357.4	364.0	364.0	367.2	373.7	370.5
64°	328.3	328.3	328.3	328.3	331.5	331.5	337.9	341.3	344.5	347.8
65°	305.5	299.0	295.7	295.7	299.0	302.2	305.5	308.8	312.0	312.0
66°	279.5	273.0	269.8	269.8	269.8	269.8	276.2	276.2	282.7	282.7
67°	250.3	243.7	240.5	237.3	237.3	237.3	246.9	243.7	243.7	243.7
67.5°	240.5	230.8	227.5	224.2	221.0	227.5	224.2	227.5	227.5	224.2
68°	227.5	221.0	214.5	208.0	208.0	208.0	211.2	214.5	211.2	208.0
69°	201.5	198.3	188.5	182.0	178.8	182.0	178.8	182.0	178.8	182.0
70°	178.8	169.0	159.3	155.9	152.7	152.7	152.7	149.5	152.7	149.5
71°	155.9	146.3	136.4	130.0	126.8	126.8	123.5	126.8	123.5	126.8
72°	133.2	123.5	110.5	104.0	104.0	104.0	104.0	100.7	104.0	100.7
72.5°	123.5	110.5	100.7	94.2	91.0	91.0	91.0	91.0	87.8	91.0
73°	113.7	100.7	87.8	84.5	84.5	84.5	81.2	78.0	81.2	81.2



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	39.0	29.3	26.0	26.0	26.0	26.0	26.0	26.0	22.7	22.7
80°	16.3	13.0	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
82.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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°	211.2	211.2	204.7	195.0	178.8	162.5	149.5	136.4	120.3	104.0	97.5
75°	195.0	191.7	185.2	175.5	162.5	146.3	133.2	117.0	104.0	87.8	81.2





74°	94.2	78.0	71.5	65.1	65.1	65.1	61.7	61.7	61.7	65.1
75°	74.7	61.7	55.2	48.8	52.0	48.8	52.0	48.8	48.8	48.8



(END OF REPORT)