

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: P584600

Luminaire Tested: **HC840D010-HM82555930-81RWWH**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584600
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-HM82555930-81RWWH
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: 4111.0 lumens
Efficiency: N/A
Efficacy: 100.3 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

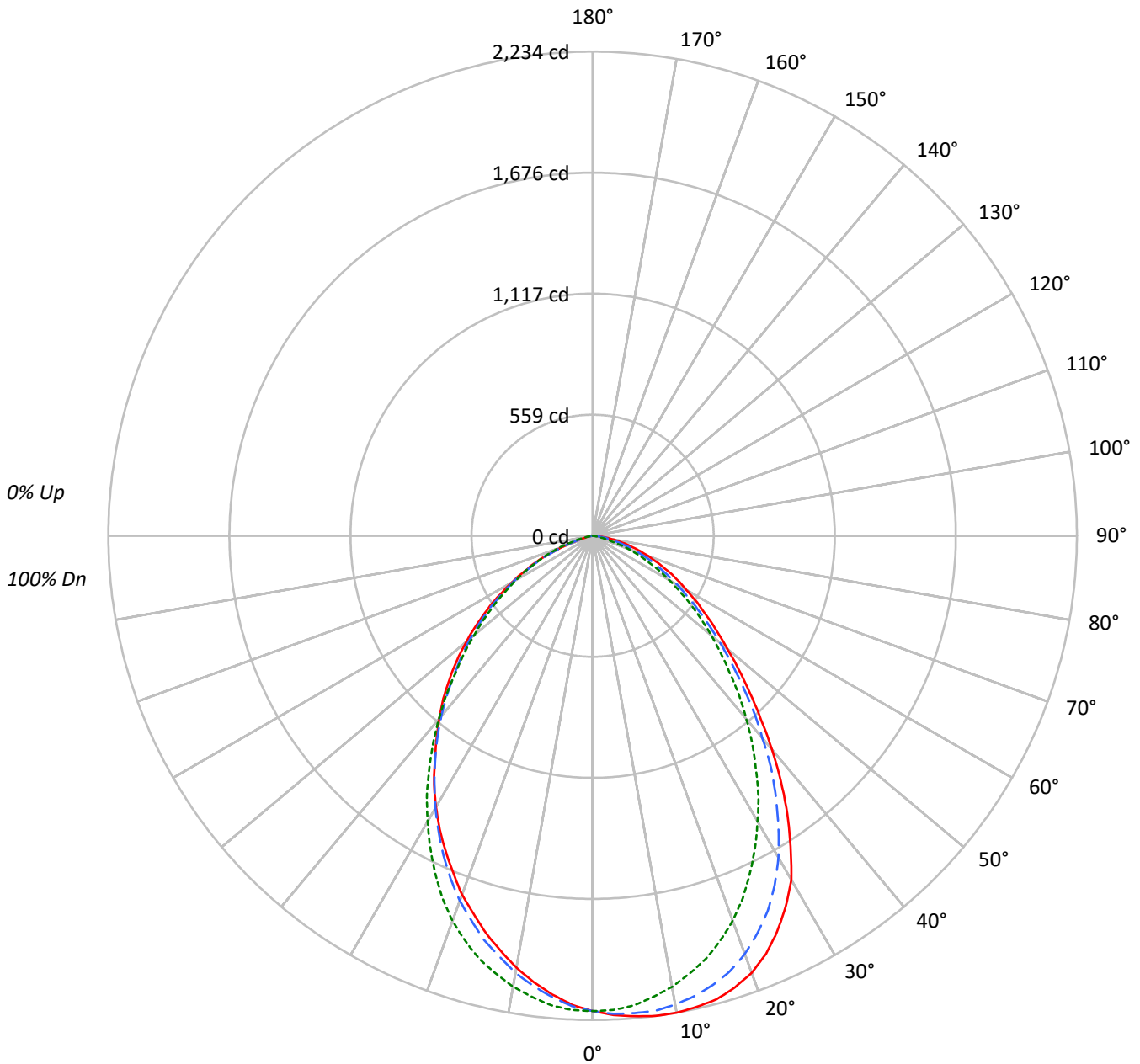
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	67621	67621	67621
5°	68888	67328	65762
10°	69967	66150	63360
15°	70667	64503	60617
20°	70399	62014	57821
25°	68545	58433	54595
30°	65278	54168	51420
35°	58947	49442	47763
40°	51791	44376	44255
45°	44708	39004	40687
50°	38916	34214	36488
55°	34504	29709	31789
60°	30787	25107	26390
65°	27749	20379	20810
70°	24641	15264	12325
75°	21243	8852	5314
80°	16355	3161	1580
85°	10543	1061	1061



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.9	5.0
10°-20°	573.1	13.9
20°-30°	810.5	19.7
30°-40°	854.1	20.8
40°-50°	725.9	17.7
50°-60°	522.7	12.7
60°-70°	301.5	7.3
70°-80°	103.2	2.5
80°-90°	14.2	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°	1589.4	38.7
0°-40°	2443.5	59.4
0°-60°	3692.1	89.8
0°-90°	4111.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4111.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2193	2193	2193	2193	2193	
5°	2226	2211	2175	2136	2124	213
15°	2214	2145	2020	1931	1899	623
25°	2015	1910	1717	1628	1605	924
35°	1566	1474	1313	1266	1269	975
45°	1025	978	894	900	933	796
55°	642	591	553	574	591	578
65°	380	327	279	273	285	378
75°	178	134	74	48	45	188
85°	30	18	3	3	3	40
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°	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9
2.5°	2213.6	2216.6	2213.6	2213.6	2210.7	2207.7	2204.7	2201.9	2195.9	2190.0	2190.0
5°	2225.5	2231.5	2225.5	2225.5	2216.6	2210.7	2204.7	2195.9	2184.0	2175.1	2175.1
7.5°	2234.5	2234.5	2234.5	2225.5	2219.6	2210.7	2195.9	2181.0	2166.2	2151.3	2145.3
10°	2234.5	2234.5	2231.5	2219.6	2213.6	2195.9	2181.0	2160.2	2139.4	2118.6	2112.6
12.5°	2225.5	2228.5	2222.6	2210.7	2195.9	2175.1	2154.3	2127.5	2103.8	2080.0	2068.1
15°	2213.6	2210.7	2204.7	2190.0	2172.1	2145.3	2124.5	2094.9	2062.2	2032.4	2020.5
17.5°	2184.0	2184.0	2175.1	2160.2	2136.4	2106.7	2074.1	2041.3	2005.7	1973.0	1958.1
20°	2145.3	2145.3	2133.4	2115.6	2091.9	2053.2	2017.5	1979.0	1937.3	1904.7	1889.8
22.5°	2088.9	2091.9	2077.0	2056.2	2029.4	1984.9	1949.2	1901.7	1860.1	1821.4	1809.6
25°	2014.6	2020.5	2005.7	1984.9	1949.2	1910.5	1866.0	1821.4	1773.9	1735.3	1717.4
27.5°	1928.4	1931.4	1916.5	1895.8	1860.1	1818.4	1773.9	1726.3	1681.8	1640.2	1622.3
30°	1833.3	1821.4	1815.5	1788.8	1750.1	1714.6	1664.0	1625.3	1577.8	1542.1	1521.3
32.5°	1699.7	1705.6	1687.8	1667.0	1637.2	1595.7	1554.0	1509.5	1464.9	1438.1	1423.2
35°	1565.9	1571.9	1562.9	1542.1	1509.5	1473.8	1432.2	1399.6	1360.9	1328.2	1313.4
37.5°	1426.2	1426.2	1420.4	1408.5	1384.7	1352.0	1310.4	1277.7	1245.0	1218.3	1209.4
40°	1286.6	1280.7	1277.7	1268.8	1248.0	1218.3	1191.5	1164.8	1132.0	1114.3	1102.4
42.5°	1149.9	1149.9	1143.9	1135.0	1114.3	1099.4	1072.7	1042.9	1019.2	1001.4	1001.4
45°	1025.2	1028.2	1019.2	1013.3	1001.4	977.6	953.8	933.0	912.3	900.4	894.4
47.5°	915.2	915.2	906.3	900.4	888.5	867.6	846.8	829.1	814.2	805.3	802.3
50°	811.2	811.2	811.2	796.3	781.5	766.6	751.7	731.0	722.1	716.1	713.2
52.5°	722.1	719.1	719.1	707.2	692.3	674.5	659.6	641.8	633.0	627.0	630.0
55°	641.8	641.8	638.8	624.0	609.2	591.3	576.4	561.6	555.6	549.7	552.6
56°	609.2	609.2	606.2	594.3	576.4	561.6	543.7	529.0	520.0	523.0	523.0
57°	585.4	579.4	579.4	564.5	549.7	529.0	514.1	499.2	493.3	490.3	490.3
58°	555.6	552.6	549.7	534.9	520.0	502.2	487.3	472.4	463.5	463.5	460.5
59°	526.0	526.0	520.0	508.1	493.3	475.4	460.5	445.7	436.8	433.9	433.9
60°	499.2	502.2	493.3	481.4	469.5	448.6	430.9	419.0	410.1	407.1	407.1
61°	475.4	475.4	469.5	454.6	439.8	424.9	407.1	392.2	386.3	380.3	380.3
62°	454.6	448.6	445.7	430.9	416.0	398.2	383.3	368.4	359.5	353.5	356.5
63°	427.9	424.9	419.0	407.1	392.2	374.4	356.5	344.6	335.8	326.9	329.9
64°	407.1	404.1	395.2	383.3	368.4	350.6	332.8	320.9	315.0	306.1	303.1
65°	380.3	377.3	374.4	359.5	344.6	326.9	312.0	300.1	291.2	285.2	279.3
66°	356.5	359.5	353.5	341.8	323.9	309.0	288.2	276.3	270.4	261.4	255.5
67°	335.8	335.8	329.9	318.0	300.1	285.2	270.4	255.5	246.6	237.8	234.8
67.5°	323.9	323.9	318.0	303.1	291.2	273.3	258.5	246.6	234.8	228.8	222.9
68°	312.0	312.0	309.0	297.1	282.3	264.4	249.5	234.8	222.9	214.0	211.0
69°	291.2	294.2	288.2	276.3	261.4	243.7	228.8	216.9	205.0	196.1	190.2
70°	273.3	270.4	264.4	252.5	237.8	225.9	211.0	196.1	184.2	172.3	169.3
71°	249.5	249.5	243.7	234.8	219.9	205.0	190.2	178.3	166.4	151.5	148.5
72°	231.8	231.8	225.9	214.0	202.1	187.2	172.3	157.4	148.5	133.8	127.8
72.5°	219.9	222.9	216.9	205.0	193.1	175.3	163.4	151.5	136.7	124.8	118.9
73°	214.0	211.0	208.0	196.1	181.2	169.3	154.5	142.7	127.8	115.9	110.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	133.8	133.8	130.8	118.9	107.0	95.1	83.2	71.3	59.4	47.6	41.6
80°	92.1	95.1	89.1	83.2	74.3	62.4	50.5	41.6	29.8	23.8	17.8
82.5°	59.4	59.4	56.4	50.5	44.6	35.7	29.8	20.8	14.9	11.9	8.9
85°	29.8	32.7	29.8	26.8	20.8	17.8	14.9	8.9	5.9	3.0	3.0
87.5°	11.9	11.9	11.9	8.9	8.9	5.9	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°	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9	2192.9
2.5°	2184.0	2184.0	2178.1	2175.1	2172.1	2169.1	2166.2	2163.2	2163.2	2166.2
5°	2166.2	2160.2	2148.3	2145.3	2136.4	2133.4	2127.5	2124.5	2127.5	2124.5
7.5°	2139.4	2127.5	2112.6	2106.7	2094.9	2088.9	2080.0	2080.0	2074.1	2077.0
10°	2103.8	2086.0	2068.1	2056.2	2047.3	2038.4	2032.4	2026.5	2023.5	2023.5
12.5°	2059.2	2038.4	2020.5	2002.8	1987.9	1981.9	1970.0	1970.0	1964.1	1961.1
15°	2008.6	1981.9	1961.1	1943.3	1931.4	1919.5	1910.5	1904.7	1898.8	1898.8
17.5°	1943.3	1919.5	1898.8	1877.9	1860.1	1851.2	1842.2	1833.3	1833.3	1827.4
20°	1872.0	1845.2	1827.4	1806.7	1791.8	1776.9	1765.0	1765.0	1759.1	1762.0
22.5°	1791.8	1759.1	1741.2	1726.3	1711.6	1699.7	1687.8	1687.8	1684.8	1681.8
25°	1702.7	1675.9	1655.1	1637.2	1628.3	1616.5	1613.5	1607.6	1604.6	1604.6
27.5°	1607.6	1586.7	1560.0	1551.0	1539.1	1533.2	1533.2	1530.2	1524.3	1527.2
30°	1506.5	1482.7	1467.9	1461.9	1450.0	1450.0	1447.0	1441.1	1441.1	1444.1
32.5°	1408.5	1384.7	1372.8	1369.8	1357.9	1357.9	1354.9	1357.9	1357.9	1360.9
35°	1301.5	1280.7	1277.7	1268.8	1265.8	1265.8	1265.8	1271.8	1277.7	1268.8
37.5°	1200.5	1185.6	1176.7	1173.7	1176.7	1176.7	1179.6	1188.6	1185.6	1182.6
40°	1096.5	1084.6	1078.6	1078.6	1084.6	1090.5	1090.5	1099.4	1102.4	1099.4
42.5°	992.5	983.5	983.5	986.5	992.5	995.4	1004.4	1013.3	1016.3	1019.2
45°	894.4	894.4	894.4	897.4	900.4	906.3	918.2	927.1	930.1	933.0
47.5°	799.3	796.3	805.3	808.2	817.2	820.1	829.1	840.9	843.8	846.8
50°	710.2	716.1	719.1	728.0	734.0	734.0	745.8	751.7	760.6	760.6
52.5°	627.0	635.9	638.8	647.7	650.7	653.7	659.6	668.5	674.5	674.5
55°	552.6	555.6	561.6	564.5	573.5	576.4	582.4	585.4	594.3	591.3
56°	520.0	526.0	529.0	534.9	540.7	543.7	549.7	552.6	558.6	561.6
57°	490.3	493.3	502.2	505.2	511.1	511.1	514.1	523.0	523.0	526.0
58°	460.5	466.5	469.5	472.4	478.4	481.4	487.3	490.3	493.3	490.3
59°	433.9	436.8	439.8	439.8	445.7	445.7	454.6	460.5	463.5	463.5
60°	407.1	407.1	410.1	413.0	419.0	422.0	422.0	427.9	427.9	427.9
61°	380.3	380.3	383.3	386.3	389.2	389.2	395.2	395.2	398.2	401.1
62°	356.5	353.5	353.5	356.5	356.5	362.5	365.4	368.4	371.4	368.4
63°	329.9	326.9	326.9	326.9	326.9	332.8	332.8	335.8	341.8	338.8
64°	300.1	300.1	300.1	300.1	303.1	303.1	309.0	312.0	315.0	318.0
65°	279.3	273.3	270.4	270.4	273.3	276.3	279.3	282.3	285.2	285.2
66°	255.5	249.5	246.6	246.6	246.6	246.6	252.5	252.5	258.5	258.5
67°	228.8	222.9	219.9	216.9	216.9	216.9	225.9	222.9	222.9	222.9
67.5°	219.9	211.0	208.0	205.0	202.1	208.0	205.0	208.0	208.0	205.0
68°	208.0	202.1	196.1	190.2	190.2	190.2	193.1	196.1	193.1	190.2
69°	184.2	181.2	172.3	166.4	163.4	166.4	163.4	166.4	163.4	166.4
70°	163.4	154.5	145.7	142.7	139.7	139.7	139.7	136.7	139.7	136.7
71°	142.7	133.8	124.8	118.9	115.9	115.9	112.9	115.9	112.9	115.9
72°	121.9	112.9	101.0	95.1	95.1	95.1	95.1	92.1	95.1	92.1
72.5°	112.9	101.0	92.1	86.2	83.2	83.2	83.2	83.2	80.2	83.2
73°	104.0	92.1	80.2	77.2	77.2	77.2	74.3	71.3	74.3	74.3



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	35.7	26.8	23.8	23.8	23.8	23.8	23.8	23.8	20.8	20.8
80°	14.9	11.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
82.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
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°	193.1	193.1	187.2	178.3	163.4	148.5	136.7	124.8	110.0	95.1	89.1
75°	178.3	175.3	169.3	160.4	148.5	133.8	121.9	107.0	95.1	80.2	74.3





74°	86.2	71.3	65.3	59.4	59.4	59.4	56.4	56.4	56.4	59.4
75°	68.3	56.4	50.5	44.6	47.6	44.6	47.6	44.6	44.6	44.6



(END OF REPORT)