

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: P593682

Luminaire Tested: **HC830D010-HM82555950-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593682  
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: HC830D010-HM82555950-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3281.1 lumens  
Efficiency: N/A  
Efficacy: 117.2 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

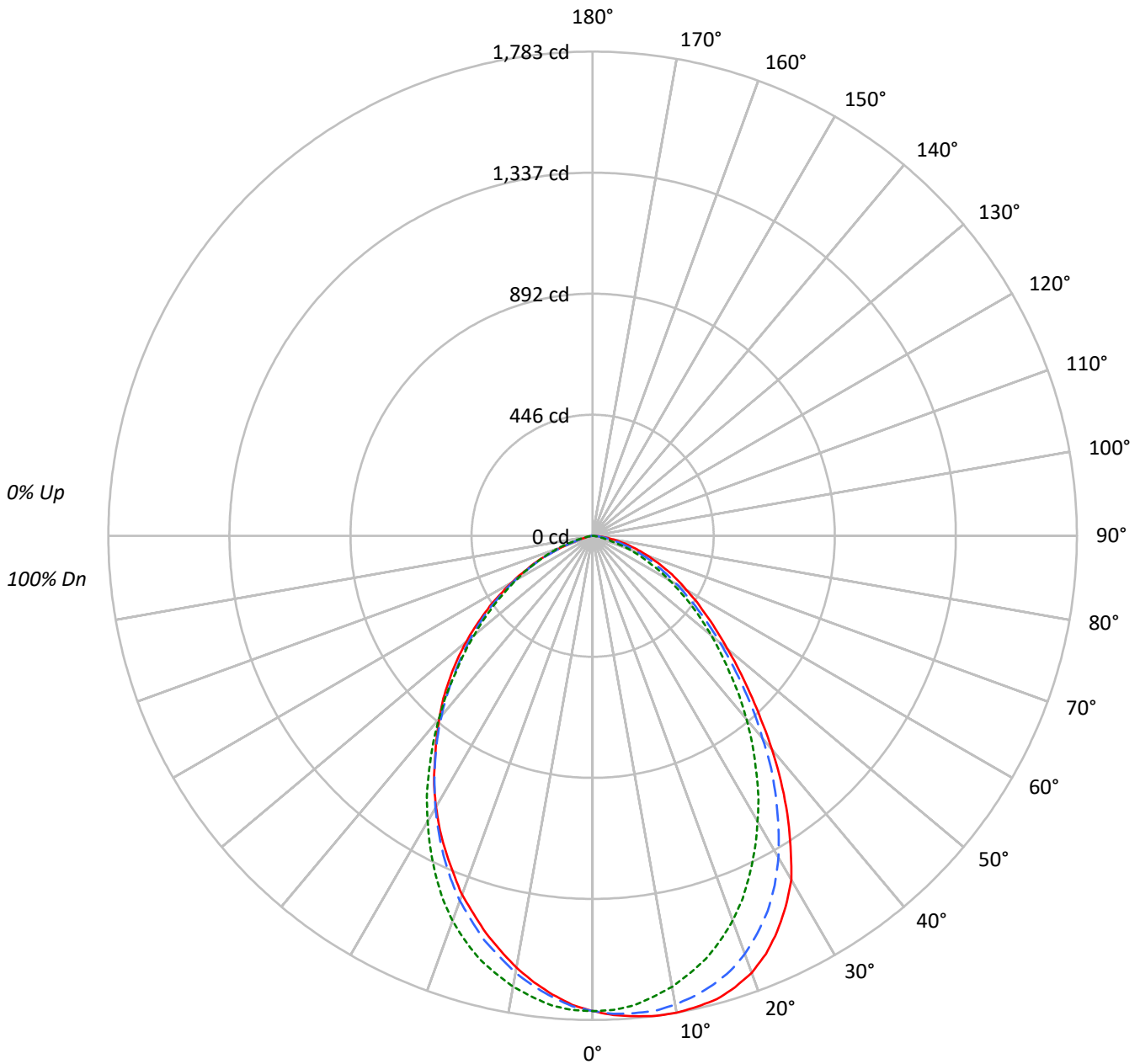
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	53970	53970	53970
5°	54981	53733	52486
10°	55842	52795	50569
15°	56407	51481	48378
20°	56190	49492	46148
25°	54707	46640	43575
30°	52103	43234	41040
35°	47048	39459	38122
40°	41337	35419	35323
45°	35681	31133	32476
50°	31058	27306	29124
55°	27537	23714	25370
60°	24570	20044	21061
65°	22152	16264	16614
70°	19673	12190	9845
75°	16954	7065	4241
80°	13052	2539	1261
85°	8385	849	849



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.3	5.0
10°-20°	457.4	13.9
20°-30°	646.9	19.7
30°-40°	681.7	20.8
40°-50°	579.3	17.7
50°-60°	417.2	12.7
60°-70°	240.6	7.3
70°-80°	82.3	2.5
80°-90°	11.3	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°	1268.6	38.7
0°-40°	1950.3	59.4
0°-60°	2946.8	89.8
0°-90°	3281.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3281.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1750	1750	1750	1750	1750	
5°	1776	1764	1736	1705	1696	170
15°	1767	1712	1613	1542	1515	497
25°	1608	1525	1371	1300	1281	737
35°	1250	1176	1048	1010	1013	778
45°	818	780	714	719	745	636
55°	512	472	441	458	472	461
65°	304	261	223	218	228	302
75°	142	107	59	38	36	150
85°	24	14	2	2	2	32
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°	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2
2.5°	1766.9	1769.2	1766.9	1766.9	1764.5	1762.1	1759.7	1757.3	1752.6	1747.8	1747.8
5°	1776.2	1781.0	1776.2	1776.2	1769.2	1764.5	1759.7	1752.6	1743.1	1735.9	1735.9
7.5°	1783.4	1783.4	1783.4	1776.2	1771.5	1764.5	1752.6	1740.7	1728.8	1717.0	1712.3
10°	1783.4	1783.4	1781.0	1771.5	1766.9	1752.6	1740.7	1724.2	1707.5	1690.9	1686.1
12.5°	1776.2	1778.6	1773.9	1764.5	1752.6	1735.9	1719.4	1698.0	1679.1	1660.1	1650.6
15°	1766.9	1764.5	1759.7	1747.8	1733.6	1712.3	1695.6	1672.0	1645.8	1622.2	1612.6
17.5°	1743.1	1743.1	1735.9	1724.2	1705.1	1681.5	1655.3	1629.3	1600.8	1574.7	1562.8
20°	1712.3	1712.3	1702.8	1688.5	1669.6	1638.8	1610.3	1579.5	1546.3	1520.1	1508.2
22.5°	1667.2	1669.6	1657.7	1641.1	1619.8	1584.2	1555.7	1517.8	1484.6	1453.8	1444.3
25°	1607.9	1612.6	1600.8	1584.2	1555.7	1524.9	1489.3	1453.8	1415.9	1384.9	1370.8
27.5°	1539.2	1541.5	1529.6	1513.0	1484.6	1451.4	1415.9	1377.8	1342.3	1309.1	1294.8
30°	1463.3	1453.8	1449.0	1427.6	1396.8	1368.4	1328.1	1297.2	1259.3	1230.9	1214.2
32.5°	1356.5	1361.3	1347.0	1330.5	1306.7	1273.5	1240.4	1204.7	1169.1	1147.9	1136.0
35°	1249.8	1254.5	1247.4	1230.9	1204.7	1176.3	1143.1	1116.9	1086.2	1060.1	1048.2
37.5°	1138.3	1138.3	1133.6	1124.1	1105.2	1079.0	1045.8	1019.8	993.6	972.4	965.2
40°	1026.9	1022.2	1019.8	1012.7	996.0	972.4	951.0	929.7	903.5	889.4	879.9
42.5°	917.8	917.8	913.0	905.9	889.4	877.5	856.1	832.4	813.4	799.2	799.2
45°	818.2	820.5	813.4	808.6	799.2	780.2	761.3	744.7	728.0	718.6	713.9
47.5°	730.4	730.4	723.3	718.6	709.1	692.5	675.9	661.7	649.8	642.7	640.3
50°	647.4	647.4	647.4	635.5	623.7	611.9	600.0	583.4	576.3	571.6	569.2
52.5°	576.3	573.9	573.9	564.4	552.5	538.4	526.5	512.2	505.1	500.5	502.7
55°	512.2	512.2	509.8	498.1	486.2	471.9	460.0	448.3	443.5	438.7	441.1
56°	486.2	486.2	483.8	474.3	460.0	448.3	434.0	422.1	415.1	417.3	417.3
57°	467.2	462.4	462.4	450.6	438.7	422.1	410.3	398.4	393.7	391.3	391.3
58°	443.5	441.1	438.7	426.9	415.1	400.8	388.9	377.0	370.0	370.0	367.6
59°	419.7	419.7	415.1	405.6	393.7	379.4	367.6	355.7	348.6	346.2	346.2
60°	398.4	400.8	393.7	384.2	374.7	358.1	343.9	334.3	327.3	325.0	325.0
61°	379.4	379.4	374.7	362.9	351.0	339.1	325.0	313.1	308.3	303.6	303.6
62°	362.9	358.1	355.7	343.9	332.0	317.8	305.9	294.0	286.9	282.3	284.5
63°	341.5	339.1	334.3	325.0	313.1	298.8	284.5	275.1	268.0	260.9	263.2
64°	325.0	322.6	315.4	305.9	294.0	279.9	265.6	256.1	251.4	244.2	241.8
65°	303.6	301.2	298.8	286.9	275.1	260.9	249.0	239.6	232.4	227.7	222.9
66°	284.5	286.9	282.3	272.8	258.5	246.6	230.1	220.6	215.8	208.7	203.9
67°	268.0	268.0	263.2	253.7	239.6	227.7	215.8	203.9	196.8	189.8	187.4
67.5°	258.5	258.5	253.7	241.8	232.4	218.2	206.3	196.8	187.4	182.6	177.9
68°	249.0	249.0	246.6	237.2	225.3	211.0	199.2	187.4	177.9	170.7	168.4
69°	232.4	234.8	230.1	220.6	208.7	194.5	182.6	173.1	163.6	156.5	151.8
70°	218.2	215.8	211.0	201.5	189.8	180.3	168.4	156.5	147.1	137.6	135.2
71°	199.2	199.2	194.5	187.4	175.5	163.6	151.8	142.3	132.8	120.9	118.5
72°	185.0	185.0	180.3	170.7	161.2	149.5	137.6	125.7	118.5	106.8	102.0
72.5°	175.5	177.9	173.1	163.6	154.1	139.9	130.4	120.9	109.2	99.6	94.9
73°	170.7	168.4	166.0	156.5	144.7	135.2	123.3	113.8	102.0	92.5	87.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	106.8	106.8	104.4	94.9	85.4	75.9	66.3	57.0	47.4	37.9	33.2
80°	73.5	75.9	71.1	66.3	59.3	49.8	40.3	33.2	23.7	19.0	14.3
82.5°	47.4	47.4	45.1	40.3	35.6	28.4	23.7	16.6	11.9	9.5	7.1
85°	23.7	26.0	23.7	21.4	16.6	14.3	11.9	7.1	4.8	2.4	2.4
87.5°	9.5	9.5	9.5	7.1	7.1	4.8	2.4	2.4	2.4	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°	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2	1750.2
2.5°	1743.1	1743.1	1738.3	1735.9	1733.6	1731.2	1728.8	1726.4	1726.4	1728.8
5°	1728.8	1724.2	1714.7	1712.3	1705.1	1702.8	1698.0	1695.6	1698.0	1695.6
7.5°	1707.5	1698.0	1686.1	1681.5	1672.0	1667.2	1660.1	1660.1	1655.3	1657.7
10°	1679.1	1664.8	1650.6	1641.1	1634.0	1626.9	1622.2	1617.4	1615.0	1615.0
12.5°	1643.4	1626.9	1612.6	1598.4	1586.6	1581.8	1572.3	1572.3	1567.6	1565.2
15°	1603.1	1581.8	1565.2	1551.1	1541.5	1532.0	1524.9	1520.1	1515.4	1515.4
17.5°	1551.1	1532.0	1515.4	1498.9	1484.6	1477.5	1470.3	1463.3	1463.3	1458.5
20°	1494.1	1472.7	1458.5	1441.9	1430.0	1418.2	1408.7	1408.7	1404.0	1406.3
22.5°	1430.0	1404.0	1389.7	1377.8	1366.0	1356.5	1347.0	1347.0	1344.6	1342.3
25°	1358.9	1337.5	1321.0	1306.7	1299.6	1290.1	1287.8	1283.0	1280.7	1280.7
27.5°	1283.0	1266.4	1245.1	1238.0	1228.5	1223.7	1223.7	1221.3	1216.6	1219.0
30°	1202.3	1183.4	1171.5	1166.8	1157.4	1157.4	1155.0	1150.2	1150.2	1152.6
32.5°	1124.1	1105.2	1095.7	1093.3	1083.8	1083.8	1081.4	1083.8	1083.8	1086.2
35°	1038.7	1022.2	1019.8	1012.7	1010.3	1010.3	1010.3	1015.0	1019.8	1012.7
37.5°	958.1	946.2	939.2	936.8	939.2	939.2	941.5	948.6	946.2	943.8
40°	875.1	865.6	860.8	860.8	865.6	870.3	870.3	877.5	879.9	877.5
42.5°	792.1	785.0	785.0	787.4	792.1	794.5	801.6	808.6	811.0	813.4
45°	713.9	713.9	713.9	716.3	718.6	723.3	732.8	739.9	742.3	744.7
47.5°	637.9	635.5	642.7	645.0	652.2	654.5	661.7	671.2	673.6	675.9
50°	566.8	571.6	573.9	581.1	585.8	585.8	595.2	600.0	607.1	607.1
52.5°	500.5	507.5	509.8	517.0	519.4	521.7	526.5	533.6	538.4	538.4
55°	441.1	443.5	448.3	450.6	457.8	460.0	464.8	467.2	474.3	471.9
56°	415.1	419.7	422.1	426.9	431.6	434.0	438.7	441.1	445.9	448.3
57°	391.3	393.7	400.8	403.2	407.9	407.9	410.3	417.3	417.3	419.7
58°	367.6	372.3	374.7	377.0	381.8	384.2	388.9	391.3	393.7	391.3
59°	346.2	348.6	351.0	351.0	355.7	355.7	362.9	367.6	370.0	370.0
60°	325.0	325.0	327.3	329.6	334.3	336.7	336.7	341.5	341.5	341.5
61°	303.6	303.6	305.9	308.3	310.7	310.7	315.4	315.4	317.8	320.2
62°	284.5	282.3	282.3	284.5	284.5	289.3	291.7	294.0	296.4	294.0
63°	263.2	260.9	260.9	260.9	260.9	265.6	265.6	268.0	272.8	270.4
64°	239.6	239.6	239.6	239.6	241.8	241.8	246.6	249.0	251.4	253.7
65°	222.9	218.2	215.8	215.8	218.2	220.6	222.9	225.3	227.7	227.7
66°	203.9	199.2	196.8	196.8	196.8	196.8	201.5	201.5	206.3	206.3
67°	182.6	177.9	175.5	173.1	173.1	173.1	180.3	177.9	177.9	177.9
67.5°	175.5	168.4	166.0	163.6	161.2	166.0	163.6	166.0	166.0	163.6
68°	166.0	161.2	156.5	151.8	151.8	151.8	154.1	156.5	154.1	151.8
69°	147.1	144.7	137.6	132.8	130.4	132.8	130.4	132.8	130.4	132.8
70°	130.4	123.3	116.2	113.8	111.4	111.4	111.4	109.2	111.4	109.2
71°	113.8	106.8	99.6	94.9	92.5	92.5	90.1	92.5	90.1	92.5
72°	97.3	90.1	80.6	75.9	75.9	75.9	75.9	73.5	75.9	73.5
72.5°	90.1	80.6	73.5	68.7	66.3	66.3	66.3	66.3	64.1	66.3
73°	83.0	73.5	64.1	61.7	61.7	61.7	59.3	57.0	59.3	59.3





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	28.4	21.4	19.0	19.0	19.0	19.0	19.0	19.0	16.6	16.6
80°	11.9	9.5	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
82.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
85°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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°	154.1	154.1	149.5	142.3	130.4	118.5	109.2	99.6	87.7	75.9	71.1
75°	142.3	139.9	135.2	128.1	118.5	106.8	97.3	85.4	75.9	64.1	59.3







74°	68.7	57.0	52.2	47.4	47.4	47.4	45.1	45.1	45.1	47.4
75°	54.6	45.1	40.3	35.6	37.9	35.6	37.9	35.6	35.6	35.6



(END OF REPORT)