

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: P583805

Luminaire Tested: **HC810D010-HM80520935-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583805  
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: HC810D010-HM80520935-81RWWH  
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: 1023.5 lumens  
Efficiency: N/A  
Efficacy: 103.4 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

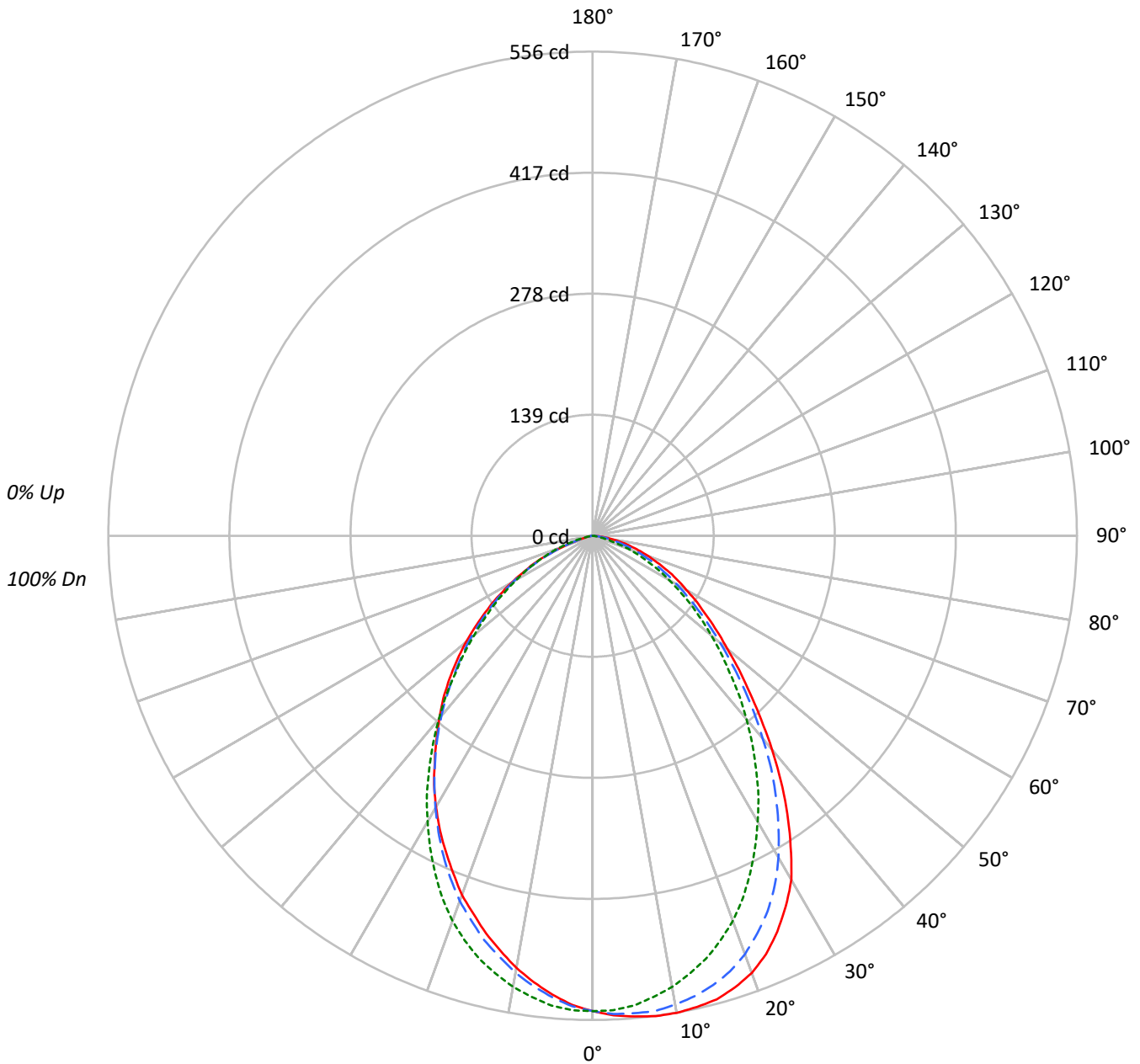
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20					20					20					20					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°	16834	16834	16834
5°	17152	16762	16372
10°	17419	16470	15775
15°	17593	16058	15091
20°	17530	15440	14396
25°	17066	14549	13589
30°	16251	13488	12801
35°	14674	12306	11892
40°	12893	11046	11018
45°	11129	9707	10130
50°	9686	8515	9086
55°	8586	7398	7914
60°	7666	6247	6568
65°	6910	5078	5181
70°	6131	3805	3065
75°	5290	2204	1322
80°	4084	781	391
85°	2654	248	248



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.3	5.0
10°-20°	142.7	13.9
20°-30°	201.8	19.7
30°-40°	212.6	20.8
40°-50°	180.7	17.7
50°-60°	130.1	12.7
60°-70°	75.1	7.3
70°-80°	25.7	2.5
80°-90°	3.5	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°	395.7	38.7
0°-40°	608.3	59.4
0°-60°	919.2	89.8
0°-90°	1023.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1023.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	546	546	546	546	546	
5°	554	550	542	532	529	53
15°	551	534	503	481	473	155
25°	502	476	428	405	399	230
35°	390	367	327	315	316	243
45°	255	243	223	224	232	198
55°	160	147	138	143	147	144
65°	95	81	70	68	71	94
75°	44	33	18	12	11	47
85°	8	4	1	1	1	10
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°	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9
2.5°	551.1	551.8	551.1	551.1	550.4	549.7	549.0	548.1	546.7	545.2	545.2
5°	554.1	555.6	554.1	554.1	551.8	550.4	549.0	546.7	543.8	541.5	541.5
7.5°	556.3	556.3	556.3	554.1	552.6	550.4	546.7	542.9	539.3	535.6	534.2
10°	556.3	556.3	555.6	552.6	551.1	546.7	542.9	537.8	532.6	527.4	526.0
12.5°	554.1	554.8	553.4	550.4	546.7	541.5	536.3	529.7	523.7	517.8	514.9
15°	551.1	550.4	549.0	545.2	540.8	534.2	528.9	521.5	513.4	506.0	503.0
17.5°	543.8	543.8	541.5	537.8	531.9	524.6	516.4	508.2	499.3	491.3	487.5
20°	534.2	534.2	531.2	526.7	520.8	511.2	502.3	492.7	482.4	474.2	470.5
22.5°	520.1	520.8	517.1	511.9	505.2	494.1	485.2	473.5	463.1	453.5	450.5
25°	501.6	503.0	499.3	494.1	485.2	475.6	464.6	453.5	441.6	432.0	427.6
27.5°	480.1	480.8	477.2	472.0	463.1	452.8	441.6	429.8	418.7	408.3	403.9
30°	456.4	453.5	452.0	445.3	435.7	426.8	414.3	404.6	392.8	383.9	378.8
32.5°	423.1	424.7	420.2	415.1	407.6	397.3	386.9	375.7	364.7	358.1	354.3
35°	389.8	391.4	389.1	383.9	375.7	367.0	356.5	348.5	338.8	330.7	326.9
37.5°	355.1	355.1	353.6	350.6	344.7	336.6	326.2	318.0	310.0	303.3	301.1
40°	320.3	318.9	318.0	315.9	310.7	303.3	296.7	290.0	281.9	277.4	274.4
42.5°	286.3	286.3	284.8	282.6	277.4	273.7	267.1	259.6	253.7	249.3	249.3
45°	255.2	255.9	253.7	252.3	249.3	243.4	237.5	232.3	227.1	224.2	222.6
47.5°	227.9	227.9	225.6	224.2	221.2	216.0	210.8	206.4	202.7	200.5	199.8
50°	201.9	201.9	201.9	198.2	194.6	190.9	187.2	182.0	179.8	178.3	177.5
52.5°	179.8	179.0	179.0	176.1	172.4	167.9	164.2	159.7	157.6	156.1	156.9
55°	159.7	159.7	159.0	155.3	151.7	147.2	143.5	139.8	138.4	136.9	137.6
56°	151.7	151.7	151.0	148.0	143.5	139.8	135.3	131.6	129.5	130.2	130.2
57°	145.7	144.2	144.2	140.5	136.9	131.6	128.0	124.3	122.8	122.0	122.0
58°	138.4	137.6	136.9	133.2	129.5	125.0	121.3	117.7	115.4	115.4	114.7
59°	130.9	130.9	129.5	126.5	122.8	118.4	114.7	110.9	108.8	108.1	108.1
60°	124.3	125.0	122.8	119.8	116.8	111.7	107.2	104.3	102.0	101.3	101.3
61°	118.4	118.4	116.8	113.2	109.5	105.8	101.3	97.6	96.2	94.7	94.7
62°	113.2	111.7	110.9	107.2	103.6	99.2	95.4	91.7	89.5	88.0	88.8
63°	106.5	105.8	104.3	101.3	97.6	93.2	88.8	85.8	83.5	81.4	82.1
64°	101.3	100.6	98.4	95.4	91.7	87.3	82.8	79.9	78.4	76.2	75.5
65°	94.7	94.0	93.2	89.5	85.8	81.4	77.6	74.8	72.5	71.0	69.6
66°	88.8	89.5	88.0	85.1	80.7	76.9	71.8	68.8	67.3	65.1	63.6
67°	83.5	83.5	82.1	79.2	74.8	71.0	67.3	63.6	61.4	59.1	58.4
67.5°	80.7	80.7	79.2	75.5	72.5	68.0	64.3	61.4	58.4	57.0	55.5
68°	77.6	77.6	76.9	73.9	70.3	65.9	62.1	58.4	55.5	53.2	52.5
69°	72.5	73.2	71.8	68.8	65.1	60.7	57.0	54.0	51.1	48.8	47.4
70°	68.0	67.3	65.9	62.9	59.1	56.3	52.5	48.8	45.9	42.9	42.2
71°	62.1	62.1	60.7	58.4	54.7	51.1	47.4	44.4	41.5	37.7	37.0
72°	57.7	57.7	56.3	53.2	50.4	46.6	42.9	39.2	37.0	33.3	31.9
72.5°	54.7	55.5	54.0	51.1	48.1	43.6	40.6	37.7	34.0	31.0	29.6
73°	53.2	52.5	51.8	48.8	45.1	42.2	38.5	35.5	31.9	28.8	27.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	33.3	33.3	32.6	29.6	26.7	23.7	20.7	17.8	14.8	11.8	10.3
80°	23.0	23.7	22.2	20.7	18.5	15.5	12.6	10.3	7.5	5.9	4.4
82.5°	14.8	14.8	14.1	12.6	11.1	8.9	7.5	5.2	3.7	3.0	2.2
85°	7.5	8.2	7.5	6.6	5.2	4.4	3.7	2.2	1.4	0.7	0.7
87.5°	3.0	3.0	3.0	2.2	2.2	1.4	0.7	0.7	0.7	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°	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9	545.9
2.5°	543.8	543.8	542.2	541.5	540.8	540.1	539.3	538.5	538.5	539.3
5°	539.3	537.8	534.9	534.2	531.9	531.2	529.7	528.9	529.7	528.9
7.5°	532.6	529.7	526.0	524.6	521.5	520.1	517.8	517.8	516.4	517.1
10°	523.7	519.3	514.9	511.9	509.6	507.5	506.0	504.5	503.8	503.8
12.5°	512.7	507.5	503.0	498.6	494.9	493.4	490.4	490.4	489.0	488.3
15°	500.0	493.4	488.3	483.8	480.8	477.9	475.6	474.2	472.7	472.7
17.5°	483.8	477.9	472.7	467.6	463.1	460.8	458.7	456.4	456.4	455.0
20°	466.0	459.4	455.0	449.8	446.1	442.3	439.5	439.5	437.9	438.7
22.5°	446.1	437.9	433.6	429.8	426.1	423.1	420.2	420.2	419.5	418.7
25°	423.9	417.2	412.0	407.6	405.4	402.4	401.7	400.3	399.4	399.4
27.5°	400.3	395.0	388.4	386.2	383.2	381.8	381.8	381.0	379.5	380.2
30°	375.0	369.1	365.4	364.0	361.0	361.0	360.2	358.8	358.8	359.5
32.5°	350.6	344.7	341.7	341.0	338.1	338.1	337.3	338.1	338.1	338.8
35°	324.1	318.9	318.0	315.9	315.2	315.2	315.2	316.6	318.0	315.9
37.5°	298.8	295.2	292.9	292.2	292.9	292.9	293.6	295.9	295.2	294.4
40°	273.0	270.0	268.5	268.5	270.0	271.5	271.5	273.7	274.4	273.7
42.5°	247.1	244.8	244.8	245.6	247.1	247.9	250.0	252.3	253.0	253.7
45°	222.6	222.6	222.6	223.5	224.2	225.6	228.6	230.8	231.5	232.3
47.5°	199.1	198.2	200.5	201.2	203.4	204.2	206.4	209.4	210.1	210.8
50°	176.8	178.3	179.0	181.3	182.7	182.7	185.7	187.2	189.4	189.4
52.5°	156.1	158.3	159.0	161.3	162.0	162.8	164.2	166.5	167.9	167.9
55°	137.6	138.4	139.8	140.5	142.8	143.5	145.0	145.7	148.0	147.2
56°	129.5	130.9	131.6	133.2	134.6	135.3	136.9	137.6	139.1	139.8
57°	122.0	122.8	125.0	125.7	127.3	127.3	128.0	130.2	130.2	130.9
58°	114.7	116.1	116.8	117.7	119.1	119.8	121.3	122.0	122.8	122.0
59°	108.1	108.8	109.5	109.5	110.9	110.9	113.2	114.7	115.4	115.4
60°	101.3	101.3	102.0	102.8	104.3	105.1	105.1	106.5	106.5	106.5
61°	94.7	94.7	95.4	96.2	96.9	96.9	98.4	98.4	99.2	99.9
62°	88.8	88.0	88.0	88.8	88.8	90.3	91.0	91.7	92.4	91.7
63°	82.1	81.4	81.4	81.4	81.4	82.8	82.8	83.5	85.1	84.4
64°	74.8	74.8	74.8	74.8	75.5	75.5	76.9	77.6	78.4	79.2
65°	69.6	68.0	67.3	67.3	68.0	68.8	69.6	70.3	71.0	71.0
66°	63.6	62.1	61.4	61.4	61.4	61.4	62.9	62.9	64.3	64.3
67°	57.0	55.5	54.7	54.0	54.0	54.0	56.3	55.5	55.5	55.5
67.5°	54.7	52.5	51.8	51.1	50.4	51.8	51.1	51.8	51.8	51.1
68°	51.8	50.4	48.8	47.4	47.4	47.4	48.1	48.8	48.1	47.4
69°	45.9	45.1	42.9	41.5	40.6	41.5	40.6	41.5	40.6	41.5
70°	40.6	38.5	36.3	35.5	34.7	34.7	34.7	34.0	34.7	34.0
71°	35.5	33.3	31.0	29.6	28.8	28.8	28.1	28.8	28.1	28.8
72°	30.3	28.1	25.1	23.7	23.7	23.7	23.7	23.0	23.7	23.0
72.5°	28.1	25.1	23.0	21.4	20.7	20.7	20.7	20.7	20.0	20.7
73°	25.8	23.0	20.0	19.2	19.2	19.2	18.5	17.8	18.5	18.5





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	8.9	6.6	5.9	5.9	5.9	5.9	5.9	5.9	5.2	5.2
80°	3.7	3.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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°	48.1	48.1	46.6	44.4	40.6	37.0	34.0	31.0	27.4	23.7	22.2
75°	44.4	43.6	42.2	39.9	37.0	33.3	30.3	26.7	23.7	20.0	18.5







74°	21.4	17.8	16.2	14.8	14.8	14.8	14.1	14.1	14.1	14.8
75°	17.1	14.1	12.6	11.1	11.8	11.1	11.8	11.1	11.1	11.1



(END OF REPORT)