

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: P593546

Luminaire Tested: **HC810D010-HM80520950-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593546  
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-HM80520950-81RWWH  
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: 1053.8 lumens  
Efficiency: N/A  
Efficacy: 106.4 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

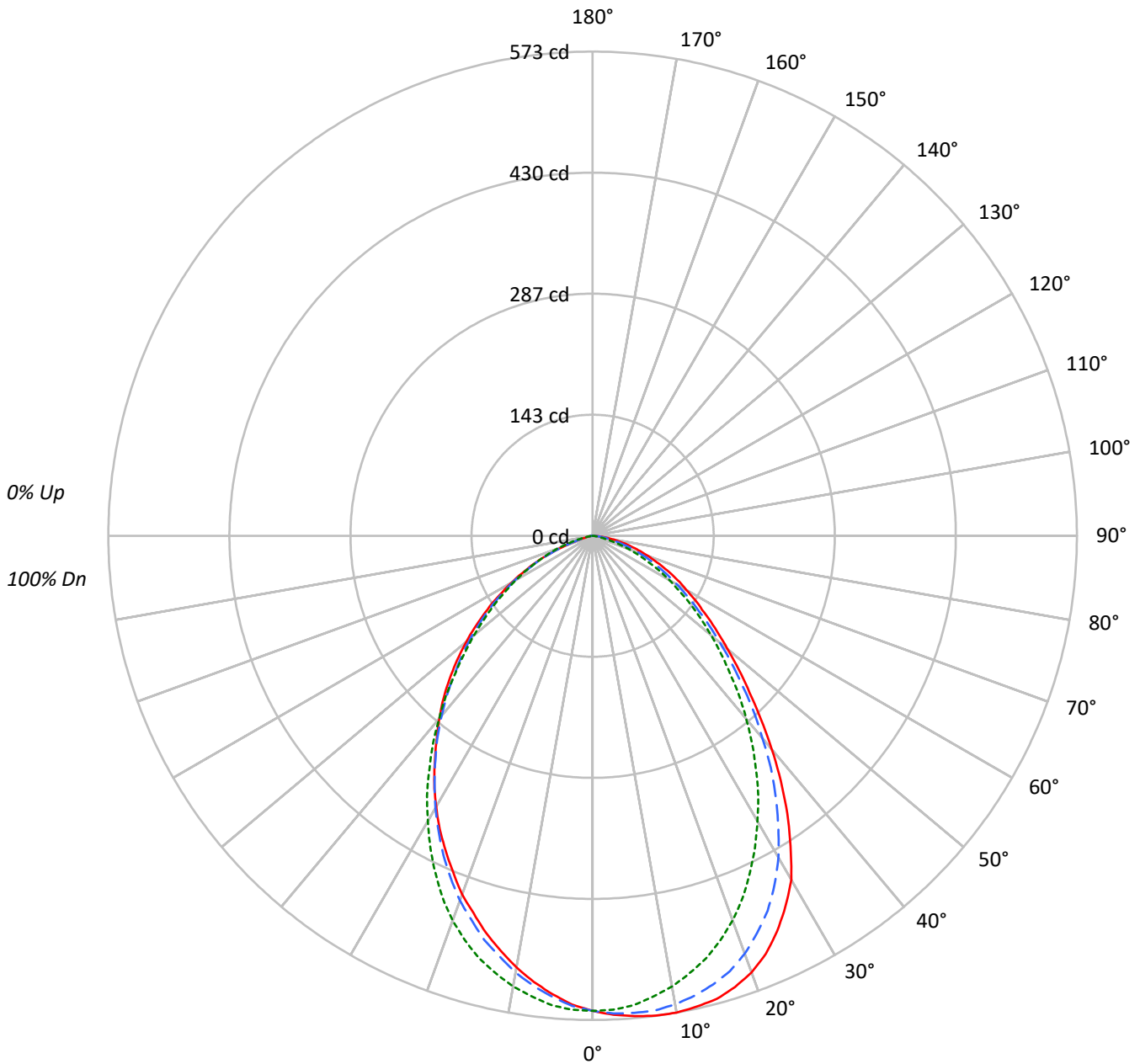
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				20				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°	17336	17336	17336
5°	17662	17260	16858
10°	17939	16959	16245
15°	18117	16533	15537
20°	18045	15896	14823
25°	17573	14981	13994
30°	16735	13887	13182
35°	15114	12675	12246
40°	13276	11376	11348
45°	11460	9995	10431
50°	9974	8769	9355
55°	8849	7618	8150
60°	7894	6432	6765
65°	7114	5224	5334
70°	6320	3913	3165
75°	5445	2264	1358
80°	4191	817	408
85°	2689	248	248



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	5.0
10°-20°	146.9	13.9
20°-30°	207.8	19.7
30°-40°	218.9	20.8
40°-50°	186.1	17.7
50°-60°	134.0	12.7
60°-70°	77.3	7.3
70°-80°	26.4	2.5
80°-90°	3.6	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°	407.5	38.7
0°-40°	626.4	59.4
0°-60°	946.5	89.8
0°-90°	1053.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1053.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	562	562	562	562	562	
5°	571	567	558	548	545	55
15°	568	550	518	495	487	160
25°	516	490	440	418	411	237
35°	402	378	337	324	325	250
45°	263	251	229	231	239	204
55°	165	152	142	147	152	148
65°	98	84	72	70	73	97
75°	46	34	19	12	11	48
85°	8	5	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°	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2
2.5°	567.5	568.3	567.5	567.5	566.7	565.9	565.2	564.5	562.9	561.3	561.3
5°	570.6	572.0	570.6	570.6	568.3	566.7	565.2	562.9	559.9	557.6	557.6
7.5°	572.9	572.9	572.9	570.6	569.0	566.7	562.9	559.1	555.3	551.5	549.9
10°	572.9	572.9	572.0	569.0	567.5	562.9	559.1	553.8	548.5	543.1	541.6
12.5°	570.6	571.3	569.7	566.7	562.9	557.6	552.2	545.3	539.3	533.2	530.2
15°	567.5	566.7	565.2	561.3	556.8	549.9	544.6	537.1	528.6	521.1	517.9
17.5°	559.9	559.9	557.6	553.8	547.6	540.1	531.6	523.4	514.2	505.8	502.0
20°	549.9	549.9	546.9	542.3	536.2	526.4	517.2	507.4	496.7	488.3	484.4
22.5°	535.5	536.2	532.5	527.1	520.2	508.8	499.7	487.5	476.8	467.0	463.9
25°	516.5	517.9	514.2	508.8	499.7	489.8	478.4	467.0	454.7	444.9	440.3
27.5°	494.4	495.1	491.3	486.0	476.8	466.1	454.7	442.6	431.2	420.5	415.9
30°	470.0	467.0	465.4	458.6	448.7	439.6	426.6	416.6	404.5	395.3	390.0
32.5°	435.7	437.3	432.6	427.3	419.7	409.0	398.3	386.9	375.5	368.7	364.8
35°	401.5	402.9	400.6	395.3	386.9	377.8	367.1	358.8	348.8	340.5	336.7
37.5°	365.6	365.6	364.1	361.1	355.0	346.5	336.0	327.5	319.1	312.3	310.0
40°	329.8	328.3	327.5	325.3	320.0	312.3	305.4	298.6	290.2	285.6	282.6
42.5°	294.7	294.7	293.3	291.0	285.6	281.9	275.0	267.3	261.3	256.7	256.7
45°	262.8	263.6	261.3	259.8	256.7	250.6	244.5	239.2	233.8	230.8	229.2
47.5°	234.6	234.6	232.3	230.8	227.8	222.4	217.1	212.5	208.7	206.4	205.7
50°	207.9	207.9	207.9	204.1	200.4	196.5	192.7	187.4	185.1	183.5	182.8
52.5°	185.1	184.4	184.4	181.3	177.5	173.0	169.1	164.6	162.3	160.7	161.4
55°	164.6	164.6	163.7	160.0	156.1	151.6	147.7	144.0	142.4	140.9	141.7
56°	156.1	156.1	155.4	152.3	147.7	144.0	139.4	135.6	133.3	134.0	134.0
57°	150.0	148.6	148.6	144.7	140.9	135.6	131.7	128.0	126.5	125.7	125.7
58°	142.4	141.7	140.9	137.1	133.3	128.7	124.9	121.2	118.9	118.9	118.0
59°	134.9	134.9	133.3	130.3	126.5	121.9	118.0	114.3	112.0	111.2	111.2
60°	128.0	128.7	126.5	123.4	120.3	115.0	110.5	107.5	105.2	104.3	104.3
61°	121.9	121.9	120.3	116.6	112.7	108.9	104.3	100.6	99.0	97.5	97.5
62°	116.6	115.0	114.3	110.5	106.6	102.0	98.2	94.5	92.2	90.6	91.4
63°	109.7	108.9	107.5	104.3	100.6	95.9	91.4	88.3	86.1	83.8	84.5
64°	104.3	103.6	101.3	98.2	94.5	89.9	85.3	82.2	80.8	78.5	77.6
65°	97.5	96.8	95.9	92.2	88.3	83.8	79.9	76.9	74.6	73.1	71.6
66°	91.4	92.2	90.6	87.6	83.1	79.2	73.9	70.8	69.4	67.1	65.5
67°	86.1	86.1	84.5	81.5	76.9	73.1	69.4	65.5	63.2	60.9	60.2
67.5°	83.1	83.1	81.5	77.6	74.6	70.1	66.2	63.2	60.2	58.7	57.1
68°	79.9	79.9	79.2	76.2	72.4	67.8	63.9	60.2	57.1	54.8	54.1
69°	74.6	75.4	73.9	70.8	67.1	62.5	58.7	55.7	52.5	50.2	48.8
70°	70.1	69.4	67.8	64.8	60.9	57.9	54.1	50.2	47.2	44.2	43.4
71°	63.9	63.9	62.5	60.2	56.4	52.5	48.8	45.7	42.7	38.8	38.1
72°	59.4	59.4	57.9	54.8	51.8	48.0	44.2	40.4	38.1	34.3	32.7
72.5°	56.4	57.1	55.7	52.5	49.5	45.0	41.9	38.8	35.1	32.0	30.4
73°	54.8	54.1	53.4	50.2	46.5	43.4	39.7	36.5	32.7	29.7	28.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	34.3	34.3	33.5	30.4	27.4	24.4	21.3	18.3	15.3	12.1	10.7
80°	23.6	24.4	22.8	21.3	19.0	16.0	13.0	10.7	7.6	6.1	4.6
82.5°	15.3	15.3	14.4	13.0	11.4	9.1	7.6	5.3	3.8	3.0	2.3
85°	7.6	8.4	7.6	6.9	5.3	4.6	3.8	2.3	1.6	0.7	0.7
87.5°	3.0	3.0	3.0	2.3	2.3	1.6	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°	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2	562.2
2.5°	559.9	559.9	558.3	557.6	556.8	556.0	555.3	554.5	554.5	555.3
5°	555.3	553.8	550.8	549.9	547.6	546.9	545.3	544.6	545.3	544.6
7.5°	548.5	545.3	541.6	540.1	537.1	535.5	533.2	533.2	531.6	532.5
10°	539.3	534.8	530.2	527.1	524.8	522.5	521.1	519.5	518.8	518.8
12.5°	527.9	522.5	517.9	513.4	509.6	508.1	505.1	505.1	503.5	502.8
15°	514.9	508.1	502.8	498.1	495.1	492.1	489.8	488.3	486.7	486.7
17.5°	498.1	492.1	486.7	481.4	476.8	474.5	472.3	470.0	470.0	468.4
20°	479.8	473.0	468.4	463.1	459.3	455.6	452.4	452.4	451.0	451.7
22.5°	459.3	451.0	446.4	442.6	438.7	435.7	432.6	432.6	431.9	431.2
25°	436.4	429.6	424.3	419.7	417.5	414.3	413.6	412.0	411.3	411.3
27.5°	412.0	406.8	399.9	397.6	394.6	393.1	393.1	392.3	390.8	391.5
30°	386.2	380.1	376.3	374.8	371.8	371.8	370.9	369.5	369.5	370.2
32.5°	361.1	355.0	351.9	351.1	348.1	348.1	347.4	348.1	348.1	348.8
35°	333.7	328.3	327.5	325.3	324.5	324.5	324.5	326.0	327.5	325.3
37.5°	307.7	304.0	301.7	300.9	301.7	301.7	302.4	304.7	304.0	303.1
40°	281.0	278.0	276.5	276.5	278.0	279.6	279.6	281.9	282.6	281.9
42.5°	254.5	252.2	252.2	252.9	254.5	255.2	257.5	259.8	260.5	261.3
45°	229.2	229.2	229.2	230.1	230.8	232.3	235.4	237.6	238.5	239.2
47.5°	204.9	204.1	206.4	207.2	209.5	210.2	212.5	215.5	216.4	217.1
50°	182.1	183.5	184.4	186.7	188.1	188.1	191.2	192.7	195.0	195.0
52.5°	160.7	163.0	163.7	166.0	166.8	167.6	169.1	171.4	173.0	173.0
55°	141.7	142.4	144.0	144.7	147.0	147.7	149.3	150.0	152.3	151.6
56°	133.3	134.9	135.6	137.1	138.6	139.4	140.9	141.7	143.2	144.0
57°	125.7	126.5	128.7	129.5	131.0	131.0	131.7	134.0	134.0	134.9
58°	118.0	119.6	120.3	121.2	122.6	123.4	124.9	125.7	126.5	125.7
59°	111.2	112.0	112.7	112.7	114.3	114.3	116.6	118.0	118.9	118.9
60°	104.3	104.3	105.2	105.9	107.5	108.2	108.2	109.7	109.7	109.7
61°	97.5	97.5	98.2	99.0	99.8	99.8	101.3	101.3	102.0	102.9
62°	91.4	90.6	90.6	91.4	91.4	92.9	93.6	94.5	95.2	94.5
63°	84.5	83.8	83.8	83.8	83.8	85.3	85.3	86.1	87.6	86.8
64°	76.9	76.9	76.9	76.9	77.6	77.6	79.2	79.9	80.8	81.5
65°	71.6	70.1	69.4	69.4	70.1	70.8	71.6	72.4	73.1	73.1
66°	65.5	63.9	63.2	63.2	63.2	63.2	64.8	64.8	66.2	66.2
67°	58.7	57.1	56.4	55.7	55.7	55.7	57.9	57.1	57.1	57.1
67.5°	56.4	54.1	53.4	52.5	51.8	53.4	52.5	53.4	53.4	52.5
68°	53.4	51.8	50.2	48.8	48.8	48.8	49.5	50.2	49.5	48.8
69°	47.2	46.5	44.2	42.7	41.9	42.7	41.9	42.7	41.9	42.7
70°	41.9	39.7	37.4	36.5	35.8	35.8	35.8	35.1	35.8	35.1
71°	36.5	34.3	32.0	30.4	29.7	29.7	29.0	29.7	29.0	29.7
72°	31.3	29.0	25.8	24.4	24.4	24.4	24.4	23.6	24.4	23.6
72.5°	29.0	25.8	23.6	22.1	21.3	21.3	21.3	21.3	20.6	21.3
73°	26.7	23.6	20.6	19.8	19.8	19.8	19.0	18.3	19.0	19.0





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	9.1	6.9	6.1	6.1	6.1	6.1	6.1	6.1	5.3	5.3
80°	3.8	3.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	49.5	49.5	48.0	45.7	41.9	38.1	35.1	32.0	28.1	24.4	22.8
75°	45.7	45.0	43.4	41.1	38.1	34.3	31.3	27.4	24.4	20.6	19.0







74°	22.1	18.3	16.7	15.3	15.3	15.3	14.4	14.4	14.4	15.3
75°	17.5	14.4	13.0	11.4	12.1	11.4	12.1	11.4	11.4	11.4



(END OF REPORT)