

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: P593529

Luminaire Tested: **HC810D010-HM80520850-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593529  
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-HM80520850-81RWWH  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1198.1 lumens  
Efficiency: N/A  
Efficacy: 121.0 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

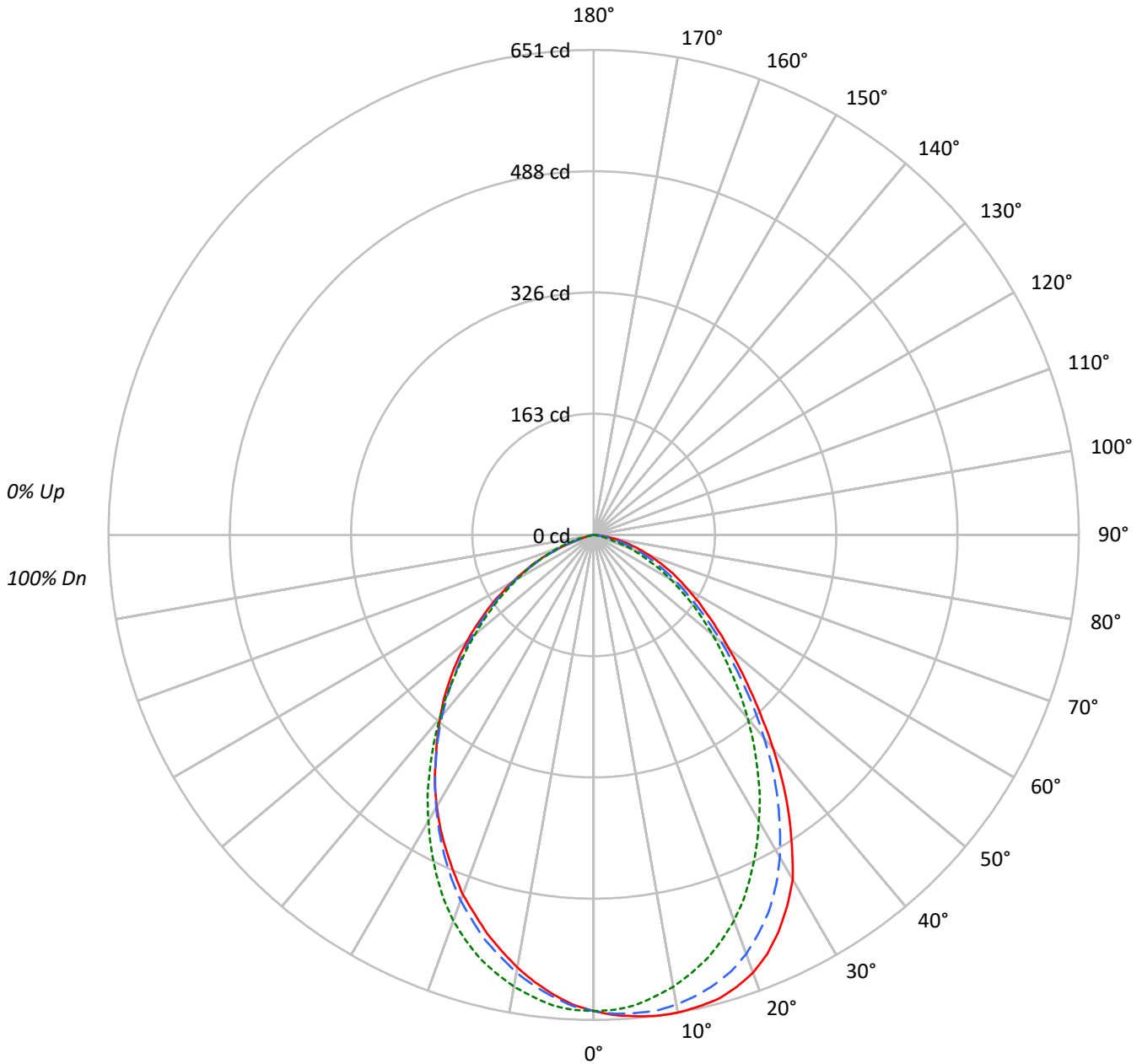
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	19707	19707	19707
5°	20077	19622	19167
10°	20390	19282	18465
15°	20597	18800	17667
20°	20519	18075	16851
25°	19979	17029	15913
30°	19025	15788	14987
35°	17181	14410	13917
40°	15095	12934	12901
45°	13030	11369	11857
50°	11341	9969	10631
55°	10053	8661	9268
60°	8967	7314	7684
65°	8085	5939	6071
70°	7186	4454	3588
75°	6183	2573	1549
80°	4759	923	462
85°	3078	283	283



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.0	5.0
10°-20°	167.0	13.9
20°-30°	236.2	19.7
30°-40°	248.9	20.8
40°-50°	211.6	17.7
50°-60°	152.3	12.7
60°-70°	87.9	7.3
70°-80°	30.1	2.5
80°-90°	4.1	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°	463.2	38.7
0°-40°	712.2	59.4
0°-60°	1076.1	89.8
0°-90°	1198.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1198.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	639	639	639	639	639	
5°	649	644	634	623	619	62
15°	645	625	589	563	553	182
25°	587	557	500	474	468	269
35°	456	430	383	369	370	284
45°	299	285	261	262	272	232
55°	187	172	161	167	172	168
65°	111	95	81	80	83	110
75°	52	39	22	14	13	55
85°	9	5	1	1	1	12
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°	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1
2.5°	645.2	646.1	645.2	645.2	644.3	643.4	642.6	641.7	639.9	638.3	638.3
5°	648.6	650.4	648.6	648.6	646.1	644.3	642.6	639.9	636.6	633.9	633.9
7.5°	651.2	651.2	651.2	648.6	646.9	644.3	639.9	635.6	631.3	627.0	625.3
10°	651.2	651.2	650.4	646.9	645.2	639.9	635.6	629.6	623.5	617.5	615.8
12.5°	648.6	649.6	647.8	644.3	639.9	633.9	627.8	620.1	613.1	606.2	602.8
15°	645.2	644.3	642.6	638.3	633.1	625.3	619.2	610.5	601.0	592.3	588.9
17.5°	636.6	636.6	633.9	629.6	622.6	614.0	604.5	595.0	584.5	575.0	570.7
20°	625.3	625.3	621.8	616.6	609.7	598.5	588.0	576.7	564.7	555.1	550.8
22.5°	608.8	609.7	605.3	599.3	591.5	578.5	568.1	554.2	542.1	530.9	527.4
25°	587.2	588.9	584.5	578.5	568.1	556.9	543.9	530.9	517.0	505.8	500.5
27.5°	562.1	562.9	558.6	552.6	542.1	530.0	517.0	503.2	490.2	478.0	472.9
30°	534.3	530.9	529.1	521.3	510.1	499.7	485.0	473.7	459.9	449.4	443.4
32.5°	495.3	497.1	491.9	485.8	477.2	465.1	452.9	439.9	427.0	419.1	414.8
35°	456.4	458.1	455.6	449.4	439.9	429.6	417.5	407.8	396.7	387.2	382.8
37.5°	415.7	415.7	414.0	410.5	403.5	394.0	381.9	372.4	362.9	355.1	352.4
40°	375.0	373.2	372.4	369.7	363.7	355.1	347.3	339.4	329.9	324.8	321.3
42.5°	335.1	335.1	333.4	330.8	324.8	320.5	312.6	304.0	297.0	291.8	291.8
45°	298.8	299.7	297.0	295.3	291.8	284.9	278.0	271.9	265.9	262.4	260.7
47.5°	266.7	266.7	264.1	262.4	258.9	252.9	246.8	241.6	237.3	234.8	233.8
50°	236.4	236.4	236.4	232.1	227.8	223.5	219.1	213.0	210.5	208.7	207.8
52.5°	210.5	209.6	209.6	206.1	201.8	196.5	192.2	187.0	184.5	182.7	183.5
55°	187.0	187.0	186.2	181.9	177.5	172.4	168.0	163.7	161.9	160.2	161.1
56°	177.5	177.5	176.7	173.2	168.0	163.7	158.4	154.1	151.6	152.4	152.4
57°	170.6	168.9	168.9	164.6	160.2	154.1	149.8	145.4	143.8	142.9	142.9
58°	161.9	161.1	160.2	155.9	151.6	146.4	142.1	137.7	135.1	135.1	134.3
59°	153.3	153.3	151.6	148.1	143.8	138.6	134.3	129.9	127.3	126.5	126.5
60°	145.4	146.4	143.8	140.3	136.8	130.8	125.6	122.1	119.5	118.6	118.6
61°	138.6	138.6	136.8	132.5	128.1	123.8	118.6	114.3	112.6	110.8	110.8
62°	132.5	130.8	129.9	125.6	121.3	116.0	111.7	107.3	104.8	103.0	104.0
63°	124.6	123.8	122.1	118.6	114.3	109.1	104.0	100.5	97.8	95.3	96.2
64°	118.6	117.8	115.2	111.7	107.3	102.2	97.0	93.5	91.8	89.2	88.3
65°	110.8	110.0	109.1	104.8	100.5	95.3	91.0	87.5	84.9	83.2	81.4
66°	104.0	104.8	103.0	99.6	94.4	90.0	84.0	80.5	78.9	76.2	74.5
67°	97.8	97.8	96.2	92.7	87.5	83.2	78.9	74.5	71.9	69.2	68.4
67.5°	94.4	94.4	92.7	88.3	84.9	79.7	75.4	71.9	68.4	66.7	64.9
68°	91.0	91.0	90.0	86.5	82.2	77.0	72.7	68.4	64.9	62.4	61.5
69°	84.9	85.7	84.0	80.5	76.2	71.0	66.7	63.2	59.7	57.2	55.4
70°	79.7	78.9	77.0	73.6	69.2	65.9	61.5	57.2	53.7	50.2	49.4
71°	72.7	72.7	71.0	68.4	64.1	59.7	55.4	51.9	48.4	44.1	43.3
72°	67.6	67.6	65.9	62.4	58.9	54.6	50.2	45.9	43.3	38.9	37.3
72.5°	64.1	64.9	63.2	59.7	56.3	51.1	47.6	44.1	39.8	36.4	34.6
73°	62.4	61.5	60.6	57.2	52.8	49.4	45.1	41.6	37.3	33.8	32.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	38.9	38.9	38.1	34.6	31.1	27.8	24.3	20.8	17.3	13.8	12.1
80°	26.8	27.8	26.0	24.3	21.6	18.2	14.7	12.1	8.7	7.0	5.2
82.5°	17.3	17.3	16.5	14.7	13.0	10.3	8.7	6.0	4.3	3.5	2.6
85°	8.7	9.5	8.7	7.8	6.0	5.2	4.3	2.6	1.7	0.8	0.8
87.5°	3.5	3.5	3.5	2.6	2.6	1.7	0.8	0.8	0.8	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°	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1	639.1
2.5°	636.6	636.6	634.8	633.9	633.1	632.3	631.3	630.4	630.4	631.3
5°	631.3	629.6	626.1	625.3	622.6	621.8	620.1	619.2	620.1	619.2
7.5°	623.5	620.1	615.8	614.0	610.5	608.8	606.2	606.2	604.5	605.3
10°	613.1	608.0	602.8	599.3	596.7	594.0	592.3	590.7	589.7	589.7
12.5°	600.2	594.0	588.9	583.7	579.4	577.7	574.2	574.2	572.4	571.6
15°	585.4	577.7	571.6	566.4	562.9	559.4	556.9	555.1	553.4	553.4
17.5°	566.4	559.4	553.4	547.3	542.1	539.6	536.9	534.3	534.3	532.6
20°	545.6	537.8	532.6	526.6	522.1	517.8	514.5	514.5	512.7	513.5
22.5°	522.1	512.7	507.5	503.2	498.8	495.3	491.9	491.9	491.0	490.2
25°	496.2	488.5	482.4	477.2	474.5	471.1	470.2	468.5	467.7	467.7
27.5°	468.5	462.4	454.7	452.1	448.6	446.9	446.9	445.9	444.3	445.1
30°	439.1	432.1	427.8	426.1	422.6	422.6	421.8	420.0	420.0	420.9
32.5°	410.5	403.5	400.1	399.2	395.8	395.8	394.9	395.8	395.8	396.7
35°	379.4	373.2	372.4	369.7	368.9	368.9	368.9	370.7	372.4	369.7
37.5°	349.9	345.6	342.9	342.1	342.9	342.9	343.8	346.4	345.6	344.7
40°	319.6	316.1	314.3	314.3	316.1	317.8	317.8	320.5	321.3	320.5
42.5°	289.2	286.7	286.7	287.5	289.2	290.2	292.7	295.3	296.2	297.0
45°	260.7	260.7	260.7	261.6	262.4	264.1	267.6	270.2	271.1	271.9
47.5°	232.9	232.1	234.8	235.6	238.1	239.1	241.6	245.1	245.9	246.8
50°	207.0	208.7	209.6	212.2	214.0	214.0	217.3	219.1	221.6	221.6
52.5°	182.7	185.3	186.2	188.8	189.7	190.5	192.2	194.8	196.5	196.5
55°	161.1	161.9	163.7	164.6	167.2	168.0	169.7	170.6	173.2	172.4
56°	151.6	153.3	154.1	155.9	157.6	158.4	160.2	161.1	162.9	163.7
57°	142.9	143.8	146.4	147.2	148.9	148.9	149.8	152.4	152.4	153.3
58°	134.3	135.9	136.8	137.7	139.4	140.3	142.1	142.9	143.8	142.9
59°	126.5	127.3	128.1	128.1	129.9	129.9	132.5	134.3	135.1	135.1
60°	118.6	118.6	119.5	120.3	122.1	123.0	123.0	124.6	124.6	124.6
61°	110.8	110.8	111.7	112.6	113.5	113.5	115.2	115.2	116.0	117.0
62°	104.0	103.0	103.0	104.0	104.0	105.7	106.5	107.3	108.3	107.3
63°	96.2	95.3	95.3	95.3	95.3	97.0	97.0	97.8	99.6	98.7
64°	87.5	87.5	87.5	87.5	88.3	88.3	90.0	91.0	91.8	92.7
65°	81.4	79.7	78.9	78.9	79.7	80.5	81.4	82.2	83.2	83.2
66°	74.5	72.7	71.9	71.9	71.9	71.9	73.6	73.6	75.4	75.4
67°	66.7	64.9	64.1	63.2	63.2	63.2	65.9	64.9	64.9	64.9
67.5°	64.1	61.5	60.6	59.7	58.9	60.6	59.7	60.6	60.6	59.7
68°	60.6	58.9	57.2	55.4	55.4	55.4	56.3	57.2	56.3	55.4
69°	53.7	52.8	50.2	48.4	47.6	48.4	47.6	48.4	47.6	48.4
70°	47.6	45.1	42.4	41.6	40.7	40.7	40.7	39.8	40.7	39.8
71°	41.6	38.9	36.4	34.6	33.8	33.8	32.9	33.8	32.9	33.8
72°	35.5	32.9	29.4	27.8	27.8	27.8	27.8	26.8	27.8	26.8
72.5°	32.9	29.4	26.8	25.1	24.3	24.3	24.3	24.3	23.4	24.3
73°	30.3	26.8	23.4	22.5	22.5	22.5	21.6	20.8	21.6	21.6





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	10.3	7.8	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0
80°	4.3	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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°	56.3	56.3	54.6	51.9	47.6	43.3	39.8	36.4	32.1	27.8	26.0
75°	51.9	51.1	49.4	46.8	43.3	38.9	35.5	31.1	27.8	23.4	21.6







74°	25.1	20.8	19.1	17.3	17.3	17.3	16.5	16.5	16.5	17.3
75°	20.0	16.5	14.7	13.0	13.8	13.0	13.8	13.0	13.0	13.0



(END OF REPORT)