

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: P593580

Luminaire Tested: **HC815D010-HM80520950-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593580  
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: HC815D010-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: 1446.6 lumens  
Efficiency: N/A  
Efficacy: 103.3 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

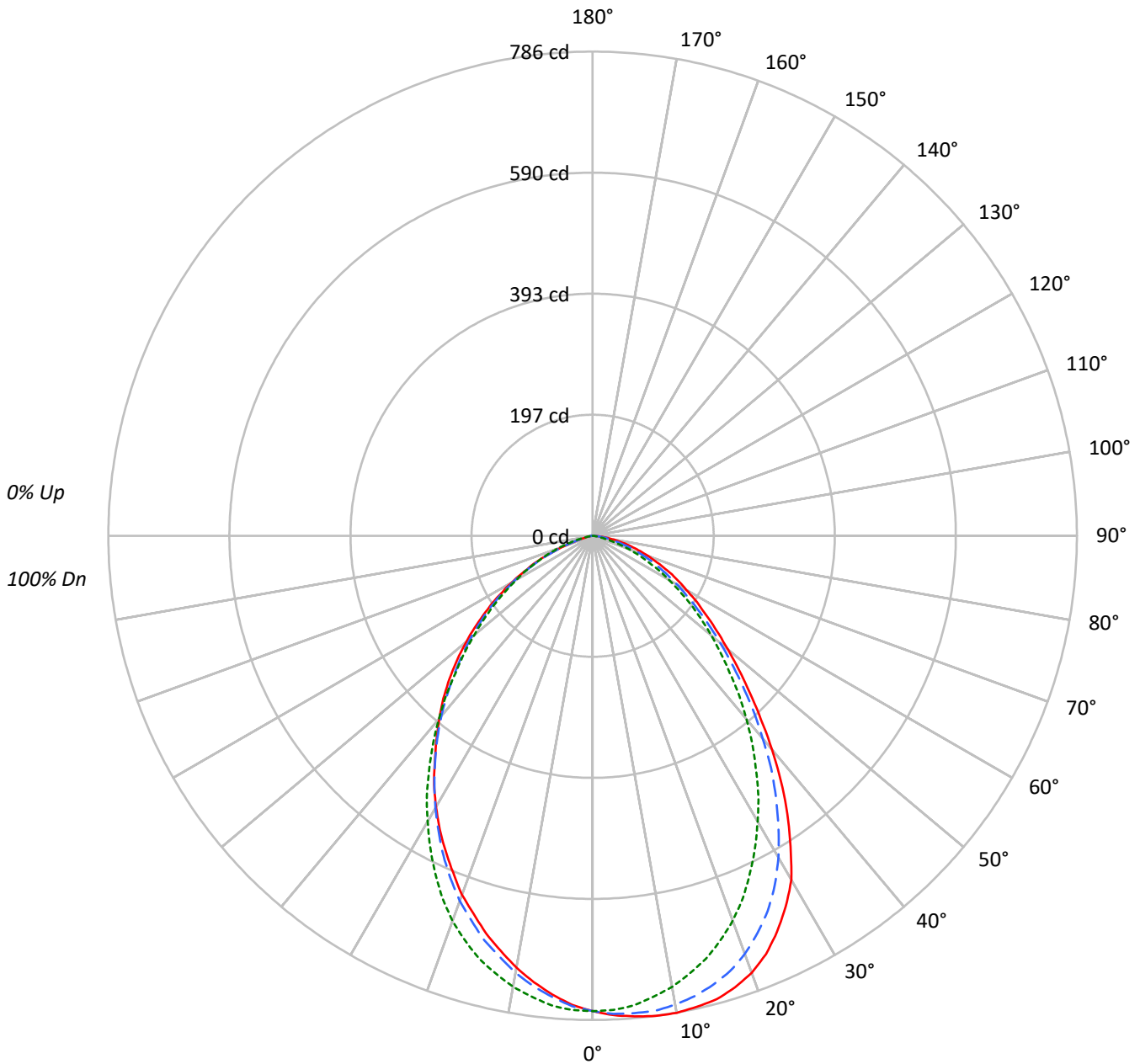
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	23796	23796	23796
5°	24240	23692	23141
10°	24621	23280	22294
15°	24869	22701	21332
20°	24772	21822	20349
25°	24120	20564	19213
30°	22973	19064	18092
35°	20742	17395	16808
40°	18223	15615	15574
45°	15734	13724	14321
50°	13696	12041	12838
55°	12139	10457	11188
60°	10836	8838	9288
65°	9770	7172	7326
70°	8673	5373	4337
75°	7482	3110	1871
80°	5754	1119	550
85°	3715	389	389



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.4	5.0
10°-20°	201.7	13.9
20°-30°	285.2	19.7
30°-40°	300.6	20.8
40°-50°	255.4	17.7
50°-60°	183.9	12.7
60°-70°	106.1	7.3
70°-80°	36.3	2.5
80°-90°	5.0	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°	559.3	38.7
0°-40°	859.9	59.4
0°-60°	1299.2	89.8
0°-90°	1446.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1446.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	772	772	772	772	772	
5°	783	778	765	752	748	75
15°	779	755	711	680	668	219
25°	709	672	604	573	565	325
35°	551	519	462	446	446	343
45°	361	344	315	317	328	280
55°	226	208	194	202	208	203
65°	134	115	98	96	100	133
75°	63	47	26	17	16	66
85°	10	6	1	1	1	14
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°	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7
2.5°	779.0	780.0	779.0	779.0	777.9	776.9	775.9	774.8	772.8	770.6	770.6
5°	783.1	785.3	783.1	783.1	780.0	777.9	775.9	772.8	768.5	765.4	765.4
7.5°	786.3	786.3	786.3	783.1	781.1	777.9	772.8	767.5	762.3	757.0	754.9
10°	786.3	786.3	785.3	781.1	779.0	772.8	767.5	760.1	752.9	745.5	743.5
12.5°	783.1	784.2	782.2	777.9	772.8	765.4	758.1	748.7	740.4	731.9	727.7
15°	779.0	777.9	775.9	770.6	764.3	754.9	747.6	737.2	725.7	715.2	711.1
17.5°	768.5	768.5	765.4	760.1	751.8	741.3	729.9	718.3	705.8	694.3	689.0
20°	754.9	754.9	750.7	744.4	736.1	722.5	710.0	696.4	681.8	670.2	665.0
22.5°	735.1	736.1	730.8	723.6	714.2	698.4	685.9	669.3	654.6	640.9	636.8
25°	708.9	711.1	705.8	698.4	685.9	672.4	656.6	640.9	624.2	610.7	604.4
27.5°	678.7	679.6	674.4	667.1	654.6	640.0	624.2	607.6	591.8	577.2	570.9
30°	645.2	640.9	638.9	629.5	615.9	603.3	585.5	572.0	555.3	542.7	535.4
32.5°	598.0	600.2	593.9	586.6	576.1	561.5	546.8	531.2	515.5	506.1	500.8
35°	551.0	553.1	550.0	542.7	531.2	518.6	503.9	492.5	478.9	467.4	462.1
37.5°	501.9	501.9	499.8	495.6	487.3	475.7	461.2	449.6	438.1	428.7	425.6
40°	452.7	450.7	449.6	446.5	439.1	428.7	419.3	409.9	398.4	392.1	387.9
42.5°	404.6	404.6	402.6	399.5	392.1	386.9	377.5	367.0	358.6	352.3	352.3
45°	360.8	361.7	358.6	356.6	352.3	344.0	335.6	328.4	321.0	316.8	314.7
47.5°	322.1	322.1	319.0	316.8	312.7	305.3	298.0	291.7	286.5	283.4	282.3
50°	285.5	285.5	285.5	280.3	275.0	269.8	264.5	257.3	254.1	252.0	251.0
52.5°	254.1	253.0	253.0	248.8	243.7	237.4	232.1	225.8	222.7	220.6	221.7
55°	225.8	225.8	224.9	219.6	214.4	208.1	202.8	197.6	195.6	193.4	194.5
56°	214.4	214.4	213.3	209.1	202.8	197.6	191.4	186.2	183.0	184.0	184.0
57°	205.9	203.9	203.9	198.7	193.4	186.2	180.9	175.7	173.5	172.6	172.6
58°	195.6	194.5	193.4	188.2	183.0	176.7	171.5	166.3	163.2	163.2	162.1
59°	185.1	185.1	183.0	178.8	173.5	167.3	162.1	156.9	153.8	152.7	152.7
60°	175.7	176.7	173.5	169.4	165.2	157.9	151.6	147.5	144.2	143.3	143.3
61°	167.3	167.3	165.2	160.0	154.7	149.5	143.3	138.0	135.9	133.9	133.9
62°	160.0	157.9	156.9	151.6	146.4	140.1	134.8	129.7	126.5	124.5	125.4
63°	150.6	149.5	147.5	143.3	138.0	131.7	125.4	121.3	118.2	115.1	116.0
64°	143.3	142.2	139.1	134.8	129.7	123.4	117.1	112.9	110.9	107.7	106.6
65°	133.9	132.8	131.7	126.5	121.3	115.1	109.8	105.6	102.4	100.4	98.3
66°	125.4	126.5	124.5	120.3	114.0	108.7	101.5	97.2	95.2	92.1	89.9
67°	118.2	118.2	116.0	111.8	105.6	100.4	95.2	89.9	86.8	83.6	82.7
67.5°	114.0	114.0	111.8	106.6	102.4	96.2	91.0	86.8	82.7	80.5	78.4
68°	109.8	109.8	108.7	104.6	99.3	93.0	87.8	82.7	78.4	75.3	74.2
69°	102.4	103.5	101.5	97.2	92.1	85.8	80.5	76.3	72.2	69.0	66.9
70°	96.2	95.2	93.0	88.9	83.6	79.4	74.2	69.0	64.8	60.6	59.6
71°	87.8	87.8	85.8	82.7	77.4	72.2	66.9	62.8	58.6	53.4	52.3
72°	81.6	81.6	79.4	75.3	71.1	65.9	60.6	55.4	52.3	47.0	44.9
72.5°	77.4	78.4	76.3	72.2	68.0	61.7	57.5	53.4	48.1	43.9	41.8
73°	75.3	74.2	73.1	69.0	63.7	59.6	54.3	50.2	44.9	40.7	38.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	47.0	47.0	46.0	41.8	37.6	33.5	29.3	25.1	21.0	16.7	14.6
80°	32.4	33.5	31.3	29.3	26.1	21.9	17.8	14.6	10.5	8.3	6.3
82.5°	21.0	21.0	19.9	17.8	15.7	12.5	10.5	7.4	5.2	4.2	3.1
85°	10.5	11.4	10.5	9.4	7.4	6.3	5.2	3.1	2.0	1.1	1.1
87.5°	4.2	4.2	4.2	3.1	3.1	2.0	1.1	1.1	1.1	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°	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7	771.7
2.5°	768.5	768.5	766.5	765.4	764.3	763.2	762.3	761.2	761.2	762.3
5°	762.3	760.1	756.0	754.9	751.8	750.7	748.7	747.6	748.7	747.6
7.5°	752.9	748.7	743.5	741.3	737.2	735.1	731.9	731.9	729.9	730.8
10°	740.4	734.1	727.7	723.6	720.5	717.3	715.2	713.1	712.0	712.0
12.5°	724.6	717.3	711.1	704.8	699.5	697.5	693.2	693.2	691.2	690.1
15°	706.9	697.5	690.1	683.8	679.6	675.5	672.4	670.2	668.2	668.2
17.5°	683.8	675.5	668.2	660.8	654.6	651.4	648.3	645.2	645.2	643.1
20°	658.8	649.4	643.1	635.8	630.5	625.3	621.1	621.1	619.0	620.1
22.5°	630.5	619.0	612.7	607.6	602.3	598.0	593.9	593.9	592.9	591.8
25°	599.1	589.7	582.4	576.1	573.0	568.8	567.8	565.6	564.7	564.7
27.5°	565.6	558.4	549.0	545.9	541.6	539.6	539.6	538.5	536.3	537.4
30°	530.1	521.8	516.6	514.4	510.3	510.3	509.2	507.2	507.2	508.1
32.5°	495.6	487.3	483.1	482.0	477.9	477.9	476.8	477.9	477.9	478.9
35°	458.0	450.7	449.6	446.5	445.5	445.5	445.5	447.5	449.6	446.5
37.5°	422.5	417.2	414.0	413.1	414.0	414.0	415.1	418.3	417.2	416.2
40°	385.8	381.6	379.6	379.6	381.6	383.8	383.8	386.9	387.9	386.9
42.5°	349.2	346.1	346.1	347.2	349.2	350.3	353.4	356.6	357.6	358.6
45°	314.7	314.7	314.7	315.8	316.8	319.0	323.1	326.2	327.3	328.4
47.5°	281.2	280.3	283.4	284.4	287.5	288.6	291.7	295.9	296.9	298.0
50°	249.9	252.0	253.0	256.2	258.2	258.2	262.4	264.5	267.6	267.6
52.5°	220.6	223.8	224.9	228.0	229.0	230.0	232.1	235.2	237.4	237.4
55°	194.5	195.6	197.6	198.7	201.8	202.8	205.0	205.9	209.1	208.1
56°	183.0	185.1	186.2	188.2	190.3	191.4	193.4	194.5	196.5	197.6
57°	172.6	173.5	176.7	177.7	179.9	179.9	180.9	184.0	184.0	185.1
58°	162.1	164.1	165.2	166.3	168.3	169.4	171.5	172.6	173.5	172.6
59°	152.7	153.8	154.7	154.7	156.9	156.9	160.0	162.1	163.2	163.2
60°	143.3	143.3	144.2	145.3	147.5	148.5	148.5	150.6	150.6	150.6
61°	133.9	133.9	134.8	135.9	137.0	137.0	139.1	139.1	140.1	141.1
62°	125.4	124.5	124.5	125.4	125.4	127.6	128.6	129.7	130.7	129.7
63°	116.0	115.1	115.1	115.1	115.1	117.1	117.1	118.2	120.3	119.2
64°	105.6	105.6	105.6	105.6	106.6	106.6	108.7	109.8	110.9	111.8
65°	98.3	96.2	95.2	95.2	96.2	97.2	98.3	99.3	100.4	100.4
66°	89.9	87.8	86.8	86.8	86.8	86.8	88.9	88.9	91.0	91.0
67°	80.5	78.4	77.4	76.3	76.3	76.3	79.4	78.4	78.4	78.4
67.5°	77.4	74.2	73.1	72.2	71.1	73.1	72.2	73.1	73.1	72.2
68°	73.1	71.1	69.0	66.9	66.9	66.9	68.0	69.0	68.0	66.9
69°	64.8	63.7	60.6	58.6	57.5	58.6	57.5	58.6	57.5	58.6
70°	57.5	54.3	51.2	50.2	49.2	49.2	49.2	48.1	49.2	48.1
71°	50.2	47.0	43.9	41.8	40.7	40.7	39.8	40.7	39.8	40.7
72°	42.9	39.8	35.5	33.5	33.5	33.5	33.5	32.4	33.5	32.4
72.5°	39.8	35.5	32.4	30.4	29.3	29.3	29.3	29.3	28.2	29.3
73°	36.6	32.4	28.2	27.2	27.2	27.2	26.1	25.1	26.1	26.1





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	12.5	9.4	8.3	8.3	8.3	8.3	8.3	8.3	7.4	7.4
80°	5.2	4.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	68.0	68.0	65.9	62.8	57.5	52.3	48.1	43.9	38.7	33.5	31.3
75°	62.8	61.7	59.6	56.5	52.3	47.0	42.9	37.6	33.5	28.2	26.1







74°	30.4	25.1	23.0	21.0	21.0	21.0	19.9	19.9	19.9	21.0
75°	24.1	19.9	17.8	15.7	16.7	15.7	16.7	15.7	15.7	15.7



(END OF REPORT)