

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: P584039

Luminaire Tested: **HC820D010-HM80520927-81RWWH**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584039
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: HC820D010-HM80520927-81RWWH
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1635.9 lumens
Efficiency: N/A
Efficacy: 81.8 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

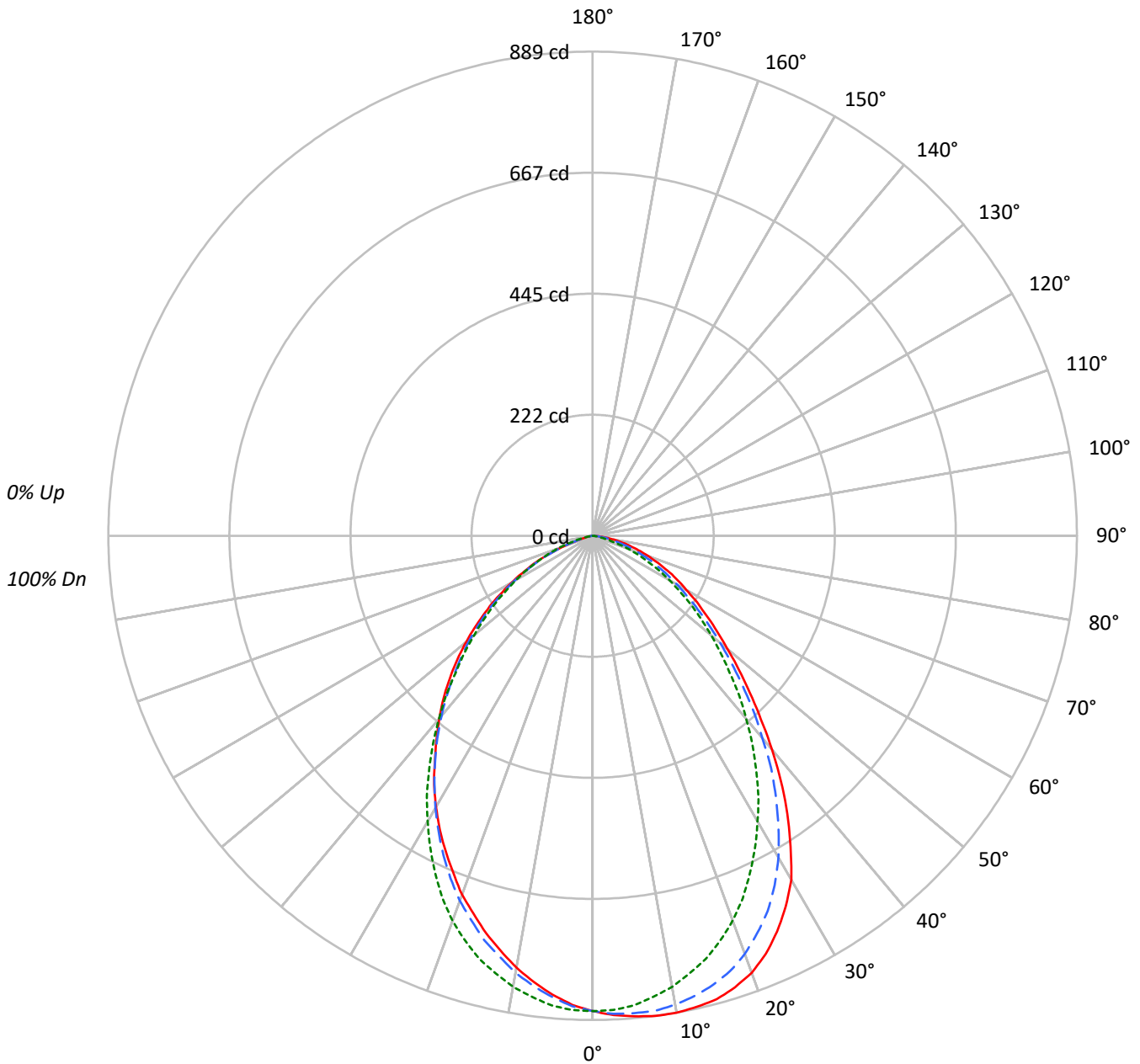
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	26911	26911	26911
5°	27416	26794	26172
10°	27843	26327	25212
15°	28122	25667	24119
20°	28018	24677	23010
25°	27274	23252	21724
30°	25975	21556	20463
35°	23460	19677	19010
40°	20610	17655	17611
45°	17788	15520	16192
50°	15486	13615	14521
55°	13731	11828	12650
60°	12254	9985	10503
65°	11040	8106	8282
70°	9800	6077	4905
75°	8447	3527	2109
80°	6499	1261	622
85°	4175	425	425



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.9	5.0
10°-20°	228.0	13.9
20°-30°	322.5	19.7
30°-40°	339.9	20.8
40°-50°	288.8	17.7
50°-60°	208.0	12.7
60°-70°	120.0	7.3
70°-80°	41.0	2.5
80°-90°	5.6	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°	632.5	38.7
0°-40°	972.4	59.4
0°-60°	1469.2	89.8
0°-90°	1635.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1635.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	873	873	873	873	873	
5°	886	880	866	850	846	85
15°	881	854	804	768	756	248
25°	802	760	683	648	638	368
35°	623	586	523	504	505	388
45°	408	389	356	358	371	317
55°	255	235	220	228	235	230
65°	151	130	111	109	114	151
75°	71	53	30	19	18	75
85°	12	7	1	1	1	16
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°	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7
2.5°	880.9	882.1	880.9	880.9	879.8	878.6	877.4	876.2	873.9	871.5	871.5
5°	885.7	888.0	885.7	885.7	882.1	879.8	877.4	873.9	869.1	865.6	865.6
7.5°	889.2	889.2	889.2	885.7	883.3	879.8	873.9	867.9	862.0	856.1	853.8
10°	889.2	889.2	888.0	883.3	880.9	873.9	867.9	859.7	851.4	843.1	840.8
12.5°	885.7	886.9	884.5	879.8	873.9	865.6	857.3	846.7	837.2	827.6	822.9
15°	880.9	879.8	877.4	871.5	864.4	853.8	845.5	833.5	820.5	808.7	804.0
17.5°	869.1	869.1	865.6	859.7	850.2	838.4	825.3	812.3	798.1	785.1	779.2
20°	853.8	853.8	849.0	841.9	832.4	817.0	802.8	787.4	770.9	757.9	752.0
22.5°	831.2	832.4	826.5	818.2	807.5	789.8	775.6	756.7	740.2	724.8	720.1
25°	801.6	804.0	798.1	789.8	775.6	760.3	742.5	724.8	705.9	690.5	683.4
27.5°	767.4	768.5	762.6	754.4	740.2	723.6	705.9	687.0	669.2	652.7	645.6
30°	729.5	724.8	722.4	711.8	696.4	682.3	662.2	646.8	627.9	613.7	605.4
32.5°	676.3	678.7	671.6	663.3	651.5	635.0	618.4	600.7	583.0	572.3	566.4
35°	623.2	625.5	622.0	613.7	600.7	586.5	570.0	557.0	541.6	528.6	522.7
37.5°	567.6	567.6	565.2	560.5	551.0	538.0	521.5	508.5	495.4	484.7	481.2
40°	512.0	509.7	508.5	505.0	496.6	484.7	474.1	463.5	450.5	443.4	438.6
42.5°	457.6	457.6	455.2	451.6	443.4	437.5	426.8	415.0	405.5	398.5	398.5
45°	407.9	409.1	405.5	403.2	398.5	389.0	379.5	371.3	363.0	358.3	355.9
47.5°	364.2	364.2	360.6	358.3	353.5	345.3	337.0	329.9	324.0	320.4	319.3
50°	322.8	322.8	322.8	316.9	311.0	305.1	299.2	290.9	287.3	285.0	283.8
52.5°	287.3	286.2	286.2	281.4	275.5	268.4	262.5	255.4	251.9	249.5	250.7
55°	255.4	255.4	254.2	248.3	242.4	235.3	229.4	223.5	221.2	218.8	220.0
56°	242.4	242.4	241.2	236.5	229.4	223.5	216.4	210.5	207.0	208.2	208.2
57°	233.0	230.6	230.6	224.7	218.8	210.5	204.6	198.7	196.3	195.1	195.1
58°	221.2	220.0	218.8	212.9	207.0	199.9	194.0	188.1	184.5	184.5	183.3
59°	209.3	209.3	207.0	202.2	196.3	189.2	183.3	177.4	173.9	172.7	172.7
60°	198.7	199.9	196.3	191.6	186.9	178.6	171.5	166.7	163.1	161.9	161.9
61°	189.2	189.2	186.9	181.0	175.1	169.1	161.9	156.0	153.7	151.3	151.3
62°	181.0	178.6	177.4	171.5	165.5	158.4	152.5	146.6	143.0	140.7	141.8
63°	170.3	169.1	166.7	161.9	156.0	148.9	141.8	137.1	133.6	130.0	131.2
64°	161.9	160.8	157.2	152.5	146.6	139.5	132.4	127.7	125.3	121.7	120.6
65°	151.3	150.1	148.9	143.0	137.1	130.0	124.1	119.4	115.8	113.5	111.1
66°	141.8	143.0	140.7	135.9	128.8	122.9	114.7	109.9	107.6	104.0	101.7
67°	133.6	133.6	131.2	126.5	119.4	113.5	107.6	101.7	98.1	94.6	93.4
67.5°	128.8	128.8	126.5	120.6	115.8	108.7	102.8	98.1	93.4	91.0	88.6
68°	124.1	124.1	122.9	118.2	112.3	105.2	99.3	93.4	88.6	85.1	83.9
69°	115.8	117.0	114.7	109.9	104.0	96.9	91.0	86.3	81.6	78.0	75.6
70°	108.7	107.6	105.2	100.5	94.6	89.8	83.9	78.0	73.3	68.6	67.4
71°	99.3	99.3	96.9	93.4	87.5	81.6	75.6	70.9	66.2	60.3	59.1
72°	92.2	92.2	89.8	85.1	80.4	74.5	68.6	62.6	59.1	53.2	50.8
72.5°	87.5	88.6	86.3	81.6	76.8	69.7	65.0	60.3	54.4	49.6	47.3
73°	85.1	83.9	82.7	78.0	72.1	67.4	61.5	56.7	50.8	46.1	43.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	53.2	53.2	52.0	47.3	42.6	37.8	33.1	28.4	23.6	18.9	16.5
80°	36.6	37.8	35.5	33.1	29.6	24.8	20.1	16.5	11.8	9.5	7.1
82.5°	23.6	23.6	22.5	20.1	17.7	14.2	11.8	8.3	5.9	4.7	3.5
85°	11.8	13.0	11.8	10.6	8.3	7.1	5.9	3.5	2.4	1.2	1.2
87.5°	4.7	4.7	4.7	3.5	3.5	2.4	1.2	1.2	1.2	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°	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7	872.7
2.5°	869.1	869.1	866.8	865.6	864.4	863.2	862.0	860.9	860.9	862.0
5°	862.0	859.7	854.9	853.8	850.2	849.0	846.7	845.5	846.7	845.5
7.5°	851.4	846.7	840.8	838.4	833.5	831.2	827.6	827.6	825.3	826.5
10°	837.2	830.0	822.9	818.2	814.6	811.1	808.7	806.4	805.2	805.2
12.5°	819.4	811.1	804.0	796.9	791.0	788.6	783.9	783.9	781.5	780.4
15°	799.3	788.6	780.4	773.3	768.5	763.8	760.3	757.9	755.5	755.5
17.5°	773.3	763.8	755.5	747.3	740.2	736.6	733.1	729.5	729.5	727.2
20°	744.9	734.3	727.2	718.9	713.0	707.1	702.3	702.3	700.0	701.2
22.5°	713.0	700.0	692.9	687.0	681.1	676.3	671.6	671.6	670.4	669.2
25°	677.5	666.9	658.6	651.5	648.0	643.2	642.1	639.7	638.5	638.5
27.5°	639.7	631.4	620.8	617.2	612.5	610.1	610.1	609.0	606.6	607.8
30°	599.5	590.1	584.1	581.8	577.1	577.1	575.9	573.5	573.5	574.7
32.5°	560.5	551.0	546.3	545.1	540.4	540.4	539.2	540.4	540.4	541.6
35°	518.0	509.7	508.5	505.0	503.8	503.8	503.8	506.1	508.5	505.0
37.5°	477.6	471.7	468.2	467.0	468.2	468.2	469.4	472.9	471.7	470.6
40°	436.3	431.5	429.2	429.2	431.5	433.9	433.9	437.5	438.6	437.5
42.5°	394.9	391.4	391.4	392.5	394.9	396.1	399.6	403.2	404.4	405.5
45°	355.9	355.9	355.9	357.1	358.3	360.6	365.4	368.9	370.1	371.3
47.5°	318.1	316.9	320.4	321.6	325.2	326.4	329.9	334.6	335.8	337.0
50°	282.6	285.0	286.2	289.7	292.1	292.1	296.8	299.2	302.7	302.7
52.5°	249.5	253.1	254.2	257.8	259.0	260.2	262.5	266.1	268.4	268.4
55°	220.0	221.2	223.5	224.7	228.2	229.4	231.8	233.0	236.5	235.3
56°	207.0	209.3	210.5	212.9	215.2	216.4	218.8	220.0	222.3	223.5
57°	195.1	196.3	199.9	201.1	203.4	203.4	204.6	208.2	208.2	209.3
58°	183.3	185.7	186.9	188.1	190.4	191.6	194.0	195.1	196.3	195.1
59°	172.7	173.9	175.1	175.1	177.4	177.4	181.0	183.3	184.5	184.5
60°	161.9	161.9	163.1	164.3	166.7	168.0	168.0	170.3	170.3	170.3
61°	151.3	151.3	152.5	153.7	154.8	154.8	157.2	157.2	158.4	159.6
62°	141.8	140.7	140.7	141.8	141.8	144.2	145.4	146.6	147.8	146.6
63°	131.2	130.0	130.0	130.0	130.0	132.4	132.4	133.6	135.9	134.7
64°	119.4	119.4	119.4	119.4	120.6	120.6	122.9	124.1	125.3	126.5
65°	111.1	108.7	107.6	107.6	108.7	109.9	111.1	112.3	113.5	113.5
66°	101.7	99.3	98.1	98.1	98.1	98.1	100.5	100.5	102.8	102.8
67°	91.0	88.6	87.5	86.3	86.3	86.3	89.8	88.6	88.6	88.6
67.5°	87.5	83.9	82.7	81.6	80.4	82.7	81.6	82.7	82.7	81.6
68°	82.7	80.4	78.0	75.6	75.6	75.6	76.8	78.0	76.8	75.6
69°	73.3	72.1	68.6	66.2	65.0	66.2	65.0	66.2	65.0	66.2
70°	65.0	61.5	57.9	56.7	55.6	55.6	55.6	54.4	55.6	54.4
71°	56.7	53.2	49.6	47.3	46.1	46.1	44.9	46.1	44.9	46.1
72°	48.5	44.9	40.2	37.8	37.8	37.8	37.8	36.6	37.8	36.6
72.5°	44.9	40.2	36.6	34.3	33.1	33.1	33.1	33.1	31.9	33.1
73°	41.4	36.6	31.9	30.7	30.7	30.7	29.6	28.4	29.6	29.6



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	14.2	10.6	9.5	9.5	9.5	9.5	9.5	9.5	8.3	8.3
80°	5.9	4.7	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	76.8	76.8	74.5	70.9	65.0	59.1	54.4	49.6	43.7	37.8	35.5
75°	70.9	69.7	67.4	63.8	59.1	53.2	48.5	42.6	37.8	31.9	29.6





74°	34.3	28.4	26.0	23.6	23.6	23.6	22.5	22.5	22.5	23.6
75°	27.2	22.5	20.1	17.7	18.9	17.7	18.9	17.7	17.7	17.7



(END OF REPORT)