

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: P593903

Luminaire Tested: **HC880D010-HM86080850-81RWWH**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593903  
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: HC880D010-HM86080850-81RWWH  
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: 7207.4 lumens  
Efficiency: N/A  
Efficacy: 103.0 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

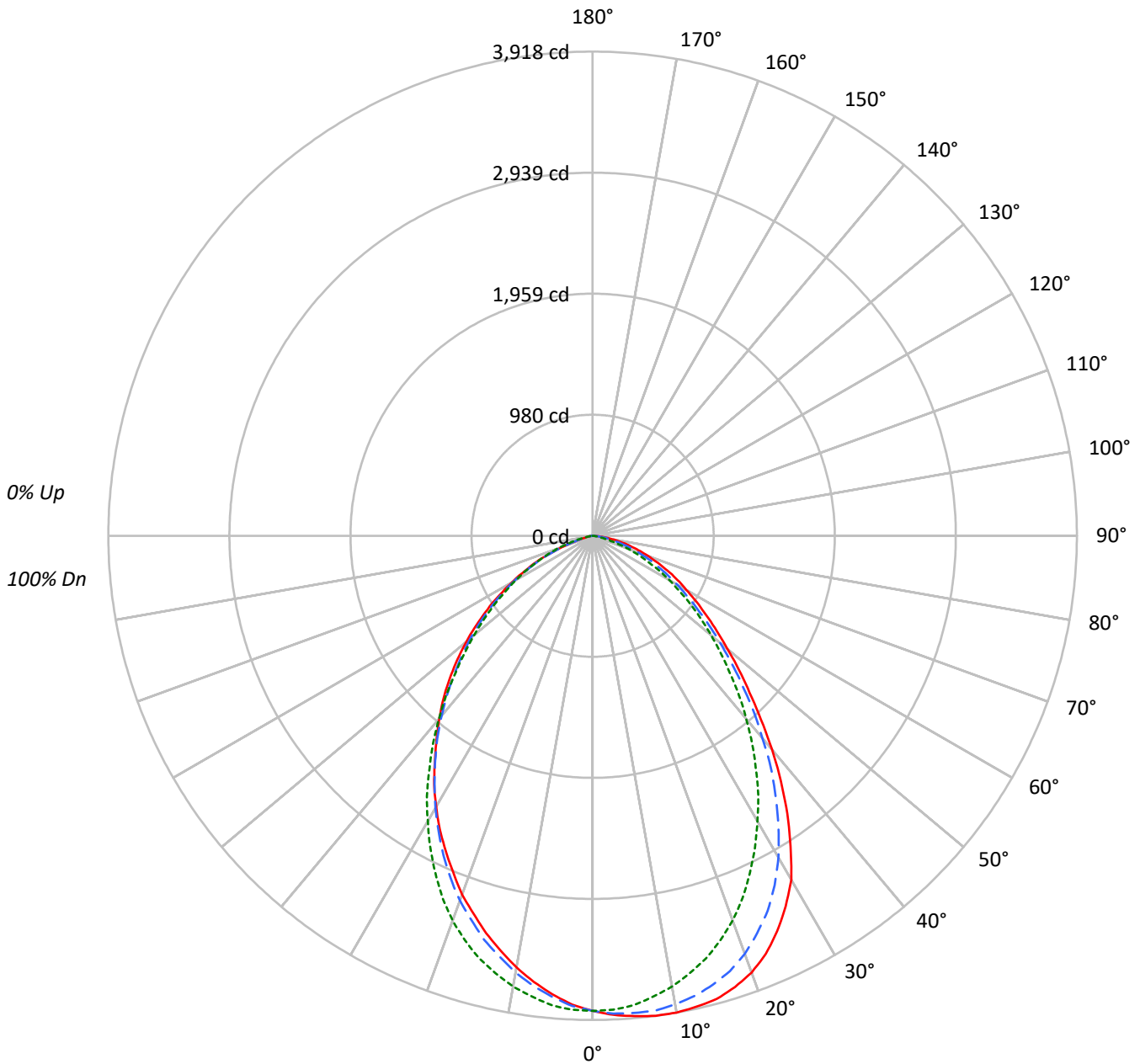
Input Watts (W): 70  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77	77	77	77
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67	67	67	67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59	59	59	59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	36	35	35	35	35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32	32	32	32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	118553	118553	118553
5°	120780	118040	115298
10°	122665	115980	111083
15°	123897	113088	106269
20°	123428	108727	101376
25°	120173	102447	95717
30°	114447	94974	90153
35°	103348	86680	83739
40°	90801	77799	77589
45°	78379	68383	71336
50°	68227	59976	63977
55°	60498	52089	55735
60°	53976	44022	46261
65°	48653	35731	36490
70°	43213	26768	21602
75°	37244	15512	9305
80°	28679	5558	2770
85°	18433	1840	1840



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	360.9	5.0
10°-20°	1004.7	13.9
20°-30°	1421.0	19.7
30°-40°	1497.4	20.8
40°-50°	1272.6	17.7
50°-60°	916.4	12.7
60°-70°	528.6	7.3
70°-80°	180.9	2.5
80°-90°	24.9	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°	2786.6	38.7
0°-40°	4284.0	59.4
0°-60°	6473.0	89.8
0°-90°	7207.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7207.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3845	3845	3845	3845	3845	
5°	3902	3876	3813	3746	3725	373
15°	3881	3761	3542	3386	3329	1093
25°	3532	3350	3011	2855	2813	1620
35°	2745	2584	2303	2219	2224	1710
45°	1797	1714	1568	1578	1636	1396
55°	1125	1037	969	1005	1037	1013
65°	667	573	490	479	500	663
75°	313	234	130	83	78	330
85°	52	31	5	5	5	70
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°	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6
2.5°	3881.0	3886.2	3881.0	3881.0	3875.9	3870.7	3865.4	3860.2	3849.7	3839.4	3839.4
5°	3901.9	3912.3	3901.9	3901.9	3886.2	3875.9	3865.4	3849.7	3828.9	3813.4	3813.4
7.5°	3917.5	3917.5	3917.5	3901.9	3891.5	3875.9	3849.7	3823.7	3797.7	3771.6	3761.3
10°	3917.5	3917.5	3912.3	3891.5	3881.0	3849.7	3823.7	3787.3	3750.8	3714.3	3704.0
12.5°	3901.9	3907.1	3896.7	3875.9	3849.7	3813.4	3776.9	3730.0	3688.3	3646.7	3625.7
15°	3881.0	3875.9	3865.4	3839.4	3808.1	3761.3	3724.8	3672.7	3615.4	3563.3	3542.4
17.5°	3828.9	3828.9	3813.4	3787.3	3745.6	3693.5	3636.2	3578.9	3516.3	3459.0	3433.0
20°	3761.3	3761.3	3740.4	3709.1	3667.5	3599.7	3537.3	3469.5	3396.6	3339.3	3313.3
22.5°	3662.2	3667.5	3641.4	3604.9	3558.1	3480.0	3417.4	3334.1	3261.1	3193.4	3172.6
25°	3532.0	3542.4	3516.3	3480.0	3417.4	3349.7	3271.5	3193.4	3110.1	3042.3	3011.0
27.5°	3380.9	3386.2	3360.1	3323.6	3261.1	3188.2	3110.1	3026.7	2948.6	2875.6	2844.3
30°	3214.2	3193.4	3183.0	3136.1	3068.3	3005.9	2917.3	2849.6	2766.2	2703.7	2667.3
32.5°	2979.9	2990.2	2958.9	2922.6	2870.4	2797.5	2724.6	2646.4	2568.2	2521.4	2495.4
35°	2745.4	2755.9	2740.2	2703.7	2646.4	2583.9	2510.9	2453.6	2386.0	2328.7	2302.6
37.5°	2500.6	2500.6	2490.1	2469.3	2427.6	2370.3	2297.4	2240.1	2182.8	2135.9	2120.2
40°	2255.7	2245.3	2240.1	2224.5	2188.0	2135.9	2089.0	2042.1	1984.8	1953.5	1932.7
42.5°	2016.1	2016.1	2005.6	1990.0	1953.5	1927.5	1880.6	1828.6	1786.8	1755.6	1755.6
45°	1797.3	1802.5	1786.8	1776.5	1755.6	1713.9	1672.2	1635.8	1599.3	1578.5	1568.1
47.5°	1604.6	1604.6	1588.9	1578.5	1557.6	1521.2	1484.7	1453.4	1427.4	1411.8	1406.6
50°	1422.2	1422.2	1422.2	1396.1	1370.1	1344.0	1318.0	1281.5	1265.9	1255.5	1250.2
52.5°	1265.9	1260.7	1260.7	1239.9	1213.9	1182.6	1156.5	1125.3	1109.6	1099.2	1104.5
55°	1125.3	1125.3	1120.0	1094.0	1068.0	1036.7	1010.6	984.6	974.1	963.8	968.9
56°	1068.0	1068.0	1062.7	1041.9	1010.6	984.6	953.3	927.3	911.6	916.8	916.8
57°	1026.2	1015.9	1015.9	989.8	963.8	927.3	901.3	875.2	864.8	859.5	859.5
58°	974.1	968.9	963.8	937.8	911.6	880.5	854.3	828.3	812.7	812.7	807.4
59°	922.1	922.1	911.6	890.8	864.8	833.5	807.4	781.4	765.8	760.6	760.6
60°	875.2	880.5	864.8	844.0	823.1	786.6	755.4	734.6	718.9	713.8	713.8
61°	833.5	833.5	823.1	797.1	770.9	744.9	713.8	687.6	677.3	666.8	666.8
62°	797.1	786.6	781.4	755.4	729.3	698.1	672.0	646.0	630.3	619.9	625.2
63°	750.1	744.9	734.6	713.8	687.6	656.4	625.2	604.2	588.7	573.1	578.2
64°	713.8	708.5	692.8	672.0	646.0	614.7	583.4	562.6	552.2	536.6	531.4
65°	666.8	661.6	656.4	630.3	604.2	573.1	546.9	526.1	510.6	500.1	489.7
66°	625.2	630.3	619.9	599.1	567.9	541.8	505.3	484.5	474.1	458.5	448.0
67°	588.7	588.7	578.2	557.4	526.1	500.1	474.1	448.0	432.4	416.7	411.5
67.5°	567.9	567.9	557.4	531.4	510.6	479.3	453.2	432.4	411.5	401.2	390.7
68°	546.9	546.9	541.8	520.9	494.9	463.6	437.6	411.5	390.7	375.1	369.9
69°	510.6	515.8	505.3	484.5	458.5	427.2	401.2	380.2	359.4	343.9	333.4
70°	479.3	474.1	463.6	442.8	416.7	395.9	369.9	343.9	322.9	302.1	296.9
71°	437.6	437.6	427.2	411.5	385.5	359.4	333.4	312.6	291.8	265.7	260.5
72°	406.3	406.3	395.9	375.1	354.2	328.2	302.1	276.1	260.5	234.5	224.0
72.5°	385.5	390.7	380.2	359.4	338.6	307.4	286.5	265.7	239.6	218.8	208.4
73°	375.1	369.9	364.7	343.9	317.8	296.9	270.9	250.0	224.0	203.2	192.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	234.5	234.5	229.2	208.4	187.5	166.7	145.9	125.1	104.2	83.3	72.9
80°	161.5	166.7	156.2	145.9	130.2	109.4	88.6	72.9	52.1	41.7	31.3
82.5°	104.2	104.2	98.9	88.6	78.1	62.5	52.1	36.5	26.0	20.8	15.6
85°	52.1	57.3	52.1	46.8	36.5	31.3	26.0	15.6	10.5	5.2	5.2
87.5°	20.8	20.8	20.8	15.6	15.6	10.5	5.2	5.2	5.2	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°	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6	3844.6
2.5°	3828.9	3828.9	3818.6	3813.4	3808.1	3802.9	3797.7	3792.6	3792.6	3797.7
5°	3797.7	3787.3	3766.4	3761.3	3745.6	3740.4	3730.0	3724.8	3730.0	3724.8
7.5°	3750.8	3730.0	3704.0	3693.5	3672.7	3662.2	3646.7	3646.7	3636.2	3641.4
10°	3688.3	3657.0	3625.7	3604.9	3589.4	3573.7	3563.3	3552.9	3547.6	3547.6
12.5°	3610.2	3573.7	3542.4	3511.2	3485.1	3474.7	3453.9	3453.9	3443.5	3438.2
15°	3521.6	3474.7	3438.2	3407.0	3386.2	3365.3	3349.7	3339.3	3328.8	3328.8
17.5°	3407.0	3365.3	3328.8	3292.3	3261.1	3245.5	3229.9	3214.2	3214.2	3203.9
20°	3282.0	3235.0	3203.9	3167.4	3141.3	3115.3	3094.4	3094.4	3084.0	3089.3
22.5°	3141.3	3084.0	3052.8	3026.7	3000.7	2979.9	2958.9	2958.9	2953.7	2948.6
25°	2985.0	2938.1	2901.6	2870.4	2854.8	2834.0	2828.7	2818.3	2813.2	2813.2
27.5°	2818.3	2781.9	2734.9	2719.4	2698.6	2688.1	2688.1	2682.9	2672.5	2677.6
30°	2641.2	2599.5	2573.5	2563.0	2542.2	2542.2	2537.0	2526.6	2526.6	2531.9
32.5°	2469.3	2427.6	2406.8	2401.5	2380.7	2380.7	2375.5	2380.7	2380.7	2386.0
35°	2281.7	2245.3	2240.1	2224.5	2219.3	2219.3	2219.3	2229.6	2240.1	2224.5
37.5°	2104.6	2078.6	2062.9	2057.7	2062.9	2062.9	2068.1	2083.8	2078.6	2073.4
40°	1922.3	1901.4	1891.0	1891.0	1901.4	1911.9	1911.9	1927.5	1932.7	1927.5
42.5°	1740.0	1724.3	1724.3	1729.5	1740.0	1745.2	1760.8	1776.5	1781.6	1786.8
45°	1568.1	1568.1	1568.1	1573.3	1578.5	1588.9	1609.7	1625.4	1630.6	1635.8
47.5°	1401.4	1396.1	1411.8	1416.9	1432.6	1437.9	1453.4	1474.2	1479.5	1484.7
50°	1245.1	1255.5	1260.7	1276.3	1286.7	1286.7	1307.5	1318.0	1333.6	1333.6
52.5°	1099.2	1114.8	1120.0	1135.6	1140.8	1146.1	1156.5	1172.1	1182.6	1182.6
55°	968.9	974.1	984.6	989.8	1005.4	1010.6	1021.1	1026.2	1041.9	1036.7
56°	911.6	922.1	927.3	937.8	948.1	953.3	963.8	968.9	979.4	984.6
57°	859.5	864.8	880.5	885.6	896.0	896.0	901.3	916.8	916.8	922.1
58°	807.4	817.9	823.1	828.3	838.7	844.0	854.3	859.5	864.8	859.5
59°	760.6	765.8	770.9	770.9	781.4	781.4	797.1	807.4	812.7	812.7
60°	713.8	713.8	718.9	724.1	734.6	739.8	739.8	750.1	750.1	750.1
61°	666.8	666.8	672.0	677.3	682.5	682.5	692.8	692.8	698.1	703.3
62°	625.2	619.9	619.9	625.2	625.2	635.5	640.8	646.0	651.2	646.0
63°	578.2	573.1	573.1	573.1	573.1	583.4	583.4	588.7	599.1	593.9
64°	526.1	526.1	526.1	526.1	531.4	531.4	541.8	546.9	552.2	557.4
65°	489.7	479.3	474.1	474.1	479.3	484.5	489.7	494.9	500.1	500.1
66°	448.0	437.6	432.4	432.4	432.4	432.4	442.8	442.8	453.2	453.2
67°	401.2	390.7	385.5	380.2	380.2	380.2	395.9	390.7	390.7	390.7
67.5°	385.5	369.9	364.7	359.4	354.2	364.7	359.4	364.7	364.7	359.4
68°	364.7	354.2	343.9	333.4	333.4	333.4	338.6	343.9	338.6	333.4
69°	322.9	317.8	302.1	291.8	286.5	291.8	286.5	291.8	286.5	291.8
70°	286.5	270.9	255.3	250.0	244.8	244.8	244.8	239.6	244.8	239.6
71°	250.0	234.5	218.8	208.4	203.2	203.2	198.0	203.2	198.0	203.2
72°	213.5	198.0	177.2	166.7	166.7	166.7	166.7	161.5	166.7	161.5
72.5°	198.0	177.2	161.5	151.1	145.9	145.9	145.9	145.9	140.7	145.9
73°	182.3	161.5	140.7	135.4	135.4	135.4	130.2	125.1	130.2	130.2





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	62.5	46.8	41.7	41.7	41.7	41.7	41.7	41.7	36.5	36.5
80°	26.0	20.8	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
82.5°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
85°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
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°	338.6	338.6	328.2	312.6	286.5	260.5	239.6	218.8	192.7	166.7	156.2
75°	312.6	307.4	296.9	281.3	260.5	234.5	213.5	187.5	166.7	140.7	130.2







74°	151.1	125.1	114.6	104.2	104.2	104.2	98.9	98.9	98.9	104.2
75°	119.9	98.9	88.6	78.1	83.3	78.1	83.3	78.1	78.1	78.1



(END OF REPORT)