

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: P581405

Luminaire Tested: **HC460D010-HM44560940-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P581405  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC460D010-HM44560940-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4533.6 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

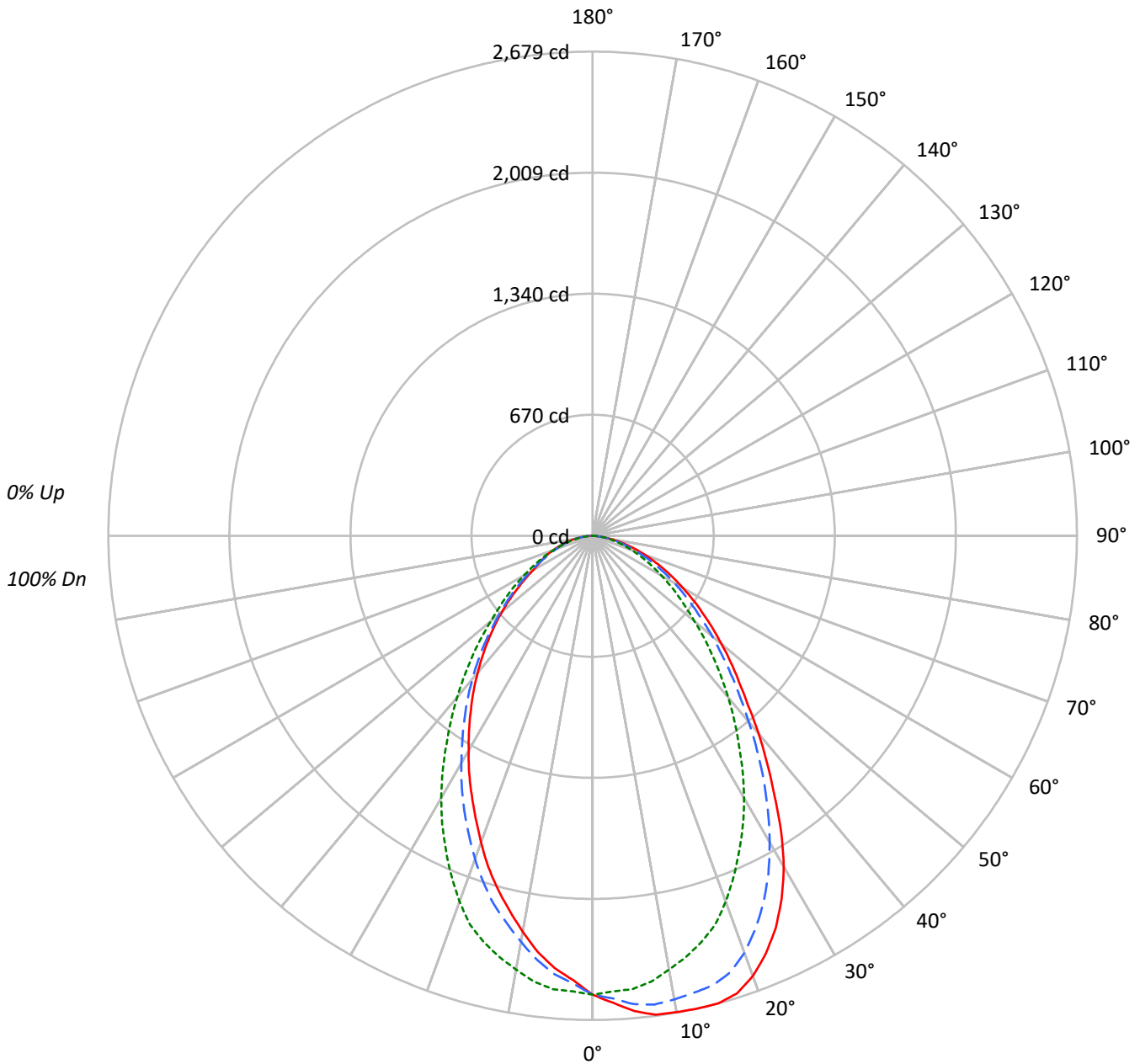
Input Watts (W): 55  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66																			
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47																			
7	71	58	50	45	69	58	50	45	56	49	44	55	49	44	53	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	42	37	47	41	37	46	41	37	35																			
10	59	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°	313138	313138	313138
5°	326901	311746	297321
10°	335177	305255	278690
15°	342112	297099	258586
20°	340296	282659	236796
25°	325993	261360	215428
30°	301162	238637	195254
35°	263977	212284	176748
40°	229867	187552	159181
45°	200044	163587	142219
50°	178248	141002	125516
55°	159263	123953	108555
60°	142193	108297	93570
65°	126376	95001	88930
70°	110932	81865	82947
75°	93980	69722	76871
80°	72097	59383	70037
85°	42315	46420	59157



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.0	5.2
10°-20°	656.4	14.5
20°-30°	896.8	19.8
30°-40°	900.5	19.9
40°-50°	744.9	16.4
50°-60°	539.9	11.9
60°-70°	341.9	7.5
70°-80°	172.9	3.8
80°-90°	42.3	0.9
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°	1791.1	39.5
0°-40°	2691.7	59.4
0°-60°	3976.5	87.7
0°-90°	4533.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4533.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2539	2539	2539	2539	2539	
5°	2640	2601	2518	2434	2401	253
15°	2679	2574	2327	2112	2025	754
25°	2395	2237	1920	1679	1583	1095
35°	1753	1649	1410	1236	1174	1099
45°	1147	1081	938	845	815	892
55°	741	675	576	526	505	666
65°	433	385	326	293	305	431
75°	197	170	146	152	161	211
85°	30	30	33	39	42	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2538.7	2538.7	2538.7	2538.7	2538.7	2538.7	2538.7	2538.7	2538.7
2.5°	2586.5	2577.5	2562.6	2544.7	2523.8	2499.9	2479.0	2467.0	2461.1
5°	2640.2	2628.2	2601.4	2562.6	2517.8	2473.0	2434.1	2410.3	2401.3
7.5°	2673.1	2655.2	2616.4	2556.6	2487.9	2422.2	2365.4	2332.6	2323.7
10°	2676.1	2655.2	2604.4	2523.8	2437.2	2350.5	2281.8	2234.0	2225.1
12.5°	2679.1	2652.2	2589.4	2493.9	2386.4	2278.9	2195.2	2138.5	2123.6
15°	2679.1	2652.2	2574.5	2461.1	2326.6	2204.2	2111.6	2045.9	2025.0
17.5°	2655.2	2625.3	2532.7	2401.3	2255.0	2117.6	2010.1	1941.4	1920.4
20°	2592.5	2559.5	2455.1	2311.7	2153.4	2010.1	1902.5	1830.9	1804.0
22.5°	2502.8	2464.0	2353.5	2198.2	2039.9	1893.6	1789.0	1714.3	1690.4
25°	2395.3	2356.5	2237.0	2084.7	1920.4	1783.0	1678.6	1609.9	1582.9
27.5°	2263.9	2222.0	2105.6	1953.2	1801.0	1663.6	1568.0	1505.3	1478.5
30°	2114.5	2069.8	1959.2	1812.9	1675.5	1544.1	1451.5	1400.8	1370.9
32.5°	1941.4	1902.5	1804.0	1672.6	1544.1	1418.7	1341.1	1296.2	1272.4
35°	1753.1	1732.3	1648.7	1535.2	1409.8	1305.2	1236.5	1194.7	1173.8
37.5°	1586.0	1565.0	1493.4	1397.8	1287.3	1191.7	1135.0	1099.1	1081.2
40°	1427.6	1409.8	1341.1	1260.4	1164.8	1081.2	1033.4	1006.5	988.6
42.5°	1272.4	1263.4	1206.6	1131.9	1048.4	976.6	937.8	917.0	901.9
45°	1146.8	1135.0	1081.2	1009.4	937.8	878.0	845.2	830.3	815.3
47.5°	1036.4	1021.4	964.7	901.9	836.3	782.5	752.6	737.7	731.7
50°	928.9	913.9	863.1	800.4	734.8	695.9	672.1	657.1	654.1
52.5°	833.3	818.4	761.6	701.8	651.1	618.3	597.4	582.4	576.4
55°	740.6	722.8	675.0	618.3	576.4	546.5	525.6	510.8	504.8
57.5°	657.1	639.1	597.4	543.6	504.8	477.8	460.0	445.0	439.0
60°	576.4	561.5	522.7	471.8	439.0	415.1	397.3	385.3	379.3
62.5°	501.7	489.8	451.0	406.2	379.3	358.4	343.5	331.5	337.5
65°	433.0	421.1	385.3	346.4	325.5	304.7	292.7	292.7	304.7
67.5°	367.4	355.4	325.5	292.7	274.8	259.9	250.9	259.9	268.8
70°	307.6	295.6	268.8	242.0	227.0	215.0	215.0	224.0	230.0
72.5°	250.9	238.9	218.0	197.2	185.2	176.2	185.2	191.2	197.2
75°	197.2	188.2	170.2	155.3	146.3	143.4	152.3	158.3	161.3
77.5°	146.3	140.3	128.5	116.5	110.5	113.5	122.5	125.4	128.5
80°	101.5	98.6	89.6	83.6	83.6	86.6	92.6	95.5	98.6
82.5°	62.7	62.7	56.7	53.8	56.7	62.7	65.8	68.7	68.7
85°	29.9	32.8	29.9	29.9	32.8	38.8	38.8	41.8	41.8
87.5°	8.9	8.9	12.0	12.0	14.9	14.9	14.9	14.9	17.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)