

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: P592906

Luminaire Tested: **HC450D010-HM44560950-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P592906  
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: HC450D010-HM44560950-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4157.0 lumens  
Efficiency: N/A  
Efficacy: 86.6 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

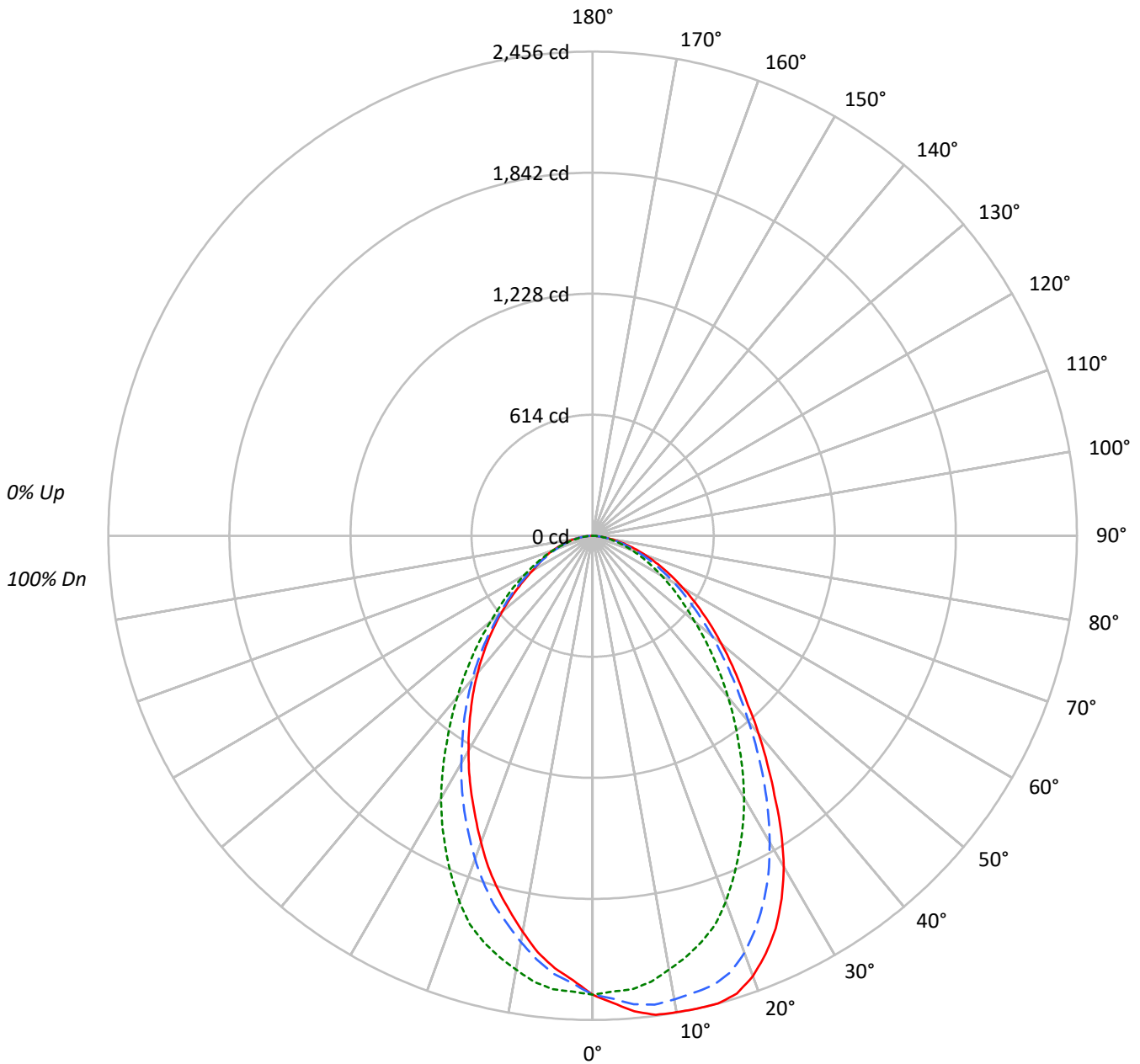
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	287124	287124	287124
5°	299748	285843	272620
10°	307335	279893	255544
15°	313687	272428	237107
20°	312035	259189	217120
25°	298923	239653	197545
30°	276152	218825	179031
35°	242068	194636	162051
40°	210770	171965	145961
45°	183438	149998	130427
50°	163434	129277	115097
55°	146038	113674	99524
60°	130401	99318	85799
65°	115898	87150	81517
70°	101736	75049	76059
75°	86164	63956	70485
80°	66131	54481	64142
85°	38636	42598	54203



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.2	5.2
10°-20°	601.9	14.5
20°-30°	822.3	19.8
30°-40°	825.7	19.9
40°-50°	683.1	16.4
50°-60°	495.0	11.9
60°-70°	313.5	7.5
70°-80°	158.5	3.8
80°-90°	38.8	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°	1642.4	39.5
0°-40°	2468.1	59.4
0°-60°	3646.2	87.7
0°-90°	4157.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4157.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2328	2328	2328	2328	2328	
5°	2421	2385	2309	2232	2202	232
15°	2456	2361	2133	1936	1857	691
25°	2196	2051	1761	1539	1452	1004
35°	1608	1512	1293	1134	1076	1008
45°	1052	991	860	775	748	818
55°	679	619	529	482	463	611
65°	397	353	299	268	279	395
75°	181	156	134	140	148	193
85°	27	27	30	36	38	38
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°	2327.8	2327.8	2327.8	2327.8	2327.8	2327.8	2327.8	2327.8	2327.8
2.5°	2371.6	2363.4	2349.7	2333.3	2314.2	2292.3	2273.0	2262.2	2256.6
5°	2420.9	2409.9	2385.4	2349.7	2308.6	2267.6	2231.9	2210.0	2201.8
7.5°	2451.1	2434.6	2399.0	2344.3	2281.3	2221.0	2168.9	2138.8	2130.6
10°	2453.8	2434.6	2388.1	2314.2	2234.7	2155.3	2092.3	2048.5	2040.3
12.5°	2456.5	2431.9	2374.4	2286.7	2188.2	2089.6	2012.9	1960.8	1947.2
15°	2456.5	2431.9	2360.7	2256.6	2133.4	2021.0	1936.3	1875.9	1856.8
17.5°	2434.6	2407.3	2322.4	2201.8	2067.7	1941.7	1843.0	1780.1	1760.9
20°	2377.2	2347.0	2251.2	2119.7	1974.6	1843.0	1744.5	1678.8	1654.1
22.5°	2294.9	2259.4	2158.0	2015.6	1870.5	1736.3	1640.5	1571.9	1550.0
25°	2196.4	2160.8	2051.3	1911.6	1760.9	1634.9	1539.1	1476.1	1451.5
27.5°	2075.8	2037.5	1930.7	1791.0	1651.4	1525.4	1437.8	1380.3	1355.6
30°	1938.9	1897.8	1796.6	1662.4	1536.4	1415.9	1330.9	1284.5	1257.0
32.5°	1780.1	1744.5	1654.1	1533.6	1415.9	1300.8	1229.7	1188.6	1166.7
35°	1607.6	1588.4	1511.7	1407.7	1292.6	1196.8	1133.8	1095.5	1076.2
37.5°	1454.2	1435.0	1369.4	1281.7	1180.4	1092.7	1040.7	1007.8	991.4
40°	1309.0	1292.6	1229.7	1155.7	1068.0	991.4	947.6	922.9	906.5
42.5°	1166.7	1158.5	1106.4	1037.9	961.2	895.6	859.9	840.8	827.0
45°	1051.6	1040.7	991.4	925.7	859.9	805.1	775.0	761.3	747.7
47.5°	950.2	936.6	884.6	827.0	766.8	717.6	690.1	676.5	671.0
50°	851.7	838.0	791.5	733.9	673.7	638.1	616.2	602.5	599.8
52.5°	764.1	750.4	698.3	643.6	597.0	566.9	547.7	534.0	528.6
55°	679.1	662.8	618.9	566.9	528.6	501.1	482.0	468.3	462.8
57.5°	602.5	586.0	547.7	498.5	462.8	438.2	421.8	408.0	402.6
60°	528.6	514.9	479.2	432.7	402.6	380.7	364.2	353.2	347.8
62.5°	460.1	449.1	413.6	372.5	347.8	328.7	314.9	304.0	309.5
65°	397.1	386.1	353.2	317.7	298.6	279.3	268.3	268.3	279.3
67.5°	336.9	325.9	298.6	268.3	252.0	238.2	230.0	238.2	246.5
70°	282.1	271.1	246.5	221.8	208.1	197.2	197.2	205.3	210.9
72.5°	230.0	219.1	199.9	180.8	169.8	161.6	169.8	175.2	180.8
75°	180.8	172.6	156.1	142.4	134.2	131.4	139.7	145.1	147.9
77.5°	134.2	128.7	117.8	106.8	101.3	104.1	112.2	115.0	117.8
80°	93.1	90.3	82.1	76.7	76.7	79.4	84.9	87.7	90.3
82.5°	57.6	57.6	52.0	49.3	52.0	57.6	60.2	63.0	63.0
85°	27.3	30.1	27.3	27.3	30.1	35.6	35.6	38.3	38.3
87.5°	8.2	8.2	11.0	11.0	13.7	13.7	13.7	13.7	16.4
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)