

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: P580938

Luminaire Tested: **HC450D010-HM44560930-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580938  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC450D010-HM44560930-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4006.5 lumens  
Efficiency: N/A  
Efficacy: 83.5 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

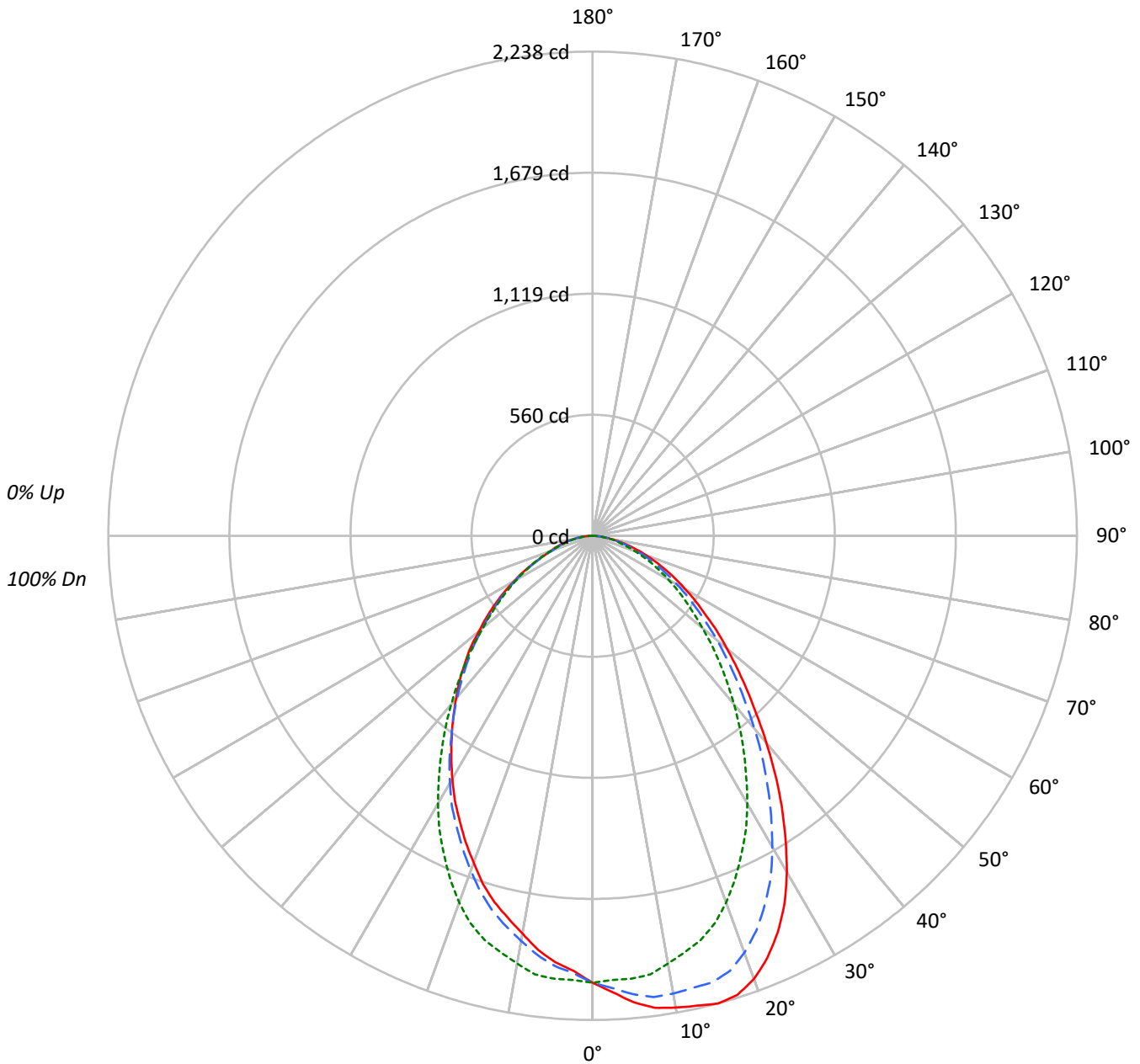
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87																			
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75																			
3	94	85	77	72	92	83	76	71	80	75	70	78	73	69	75	71	68	66																			
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58																			
5	81	69	61	55	79	68	60	55	66	59	54	64	58	53	62	57	53	51																			
6	75	63	55	49	73	62	54	49	60	53	48	59	53	48	57	52	47	46																			
7	70	58	50	44	68	57	49	44	55	48	43	54	48	43	53	47	43	41																			
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37																			
9	61	49	41	36	60	48	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	45	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

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

	0°	90°	180°
0°	254820	254820	254820
5°	267952	254481	244959
10°	277350	251436	233851
15°	285811	246876	223840
20°	286137	236717	210951
25°	275392	221239	197790
30°	255714	203600	184714
35°	229209	183298	170905
40°	201125	163544	157989
45°	175798	144783	145707
50°	155221	126706	131292
55°	136877	112340	118061
60°	122334	99441	103364
65°	108368	87471	87471
70°	94704	74616	74616
75°	80874	63193	70818
80°	64071	56541	64071
85°	41325	48684	60006



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.7	4.9
10°-20°	551.2	13.8
20°-30°	772.2	19.3
30°-40°	795.6	19.9
40°-50°	677.3	16.9
50°-60°	501.9	12.5
60°-70°	315.0	7.9
70°-80°	156.5	3.9
80°-90°	41.1	1.0
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°	1519.2	37.9
0°-40°	2314.8	57.8
0°-60°	3494.0	87.2
0°-90°	4006.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4006.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2066	2066	2066	2066	2066	
5°	2164	2127	2055	1997	1978	208
15°	2238	2138	1933	1793	1753	629
25°	2024	1883	1626	1485	1453	925
35°	1522	1408	1217	1138	1135	949
45°	1008	939	830	814	835	782
55°	636	586	522	533	549	575
65°	371	334	300	294	300	370
75°	170	151	133	143	149	181
85°	29	29	34	40	42	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°	2065.9	2065.9	2065.9	2065.9	2065.9	2065.9	2065.9	2065.9	2065.9
2.5°	2111.0	2103.1	2092.5	2073.9	2055.3	2039.4	2023.5	2015.5	2012.9
5°	2164.1	2148.1	2126.9	2092.5	2055.3	2023.5	1996.9	1983.7	1978.4
7.5°	2201.2	2185.2	2150.8	2097.8	2044.7	1996.9	1954.5	1935.9	1930.6
10°	2214.4	2195.8	2148.1	2076.5	2007.5	1949.2	1901.5	1877.6	1867.1
12.5°	2225.1	2201.2	2140.2	2055.3	1970.5	1898.8	1848.5	1816.6	1808.6
15°	2238.2	2211.8	2137.5	2034.1	1933.3	1848.5	1792.8	1763.6	1752.9
17.5°	2225.1	2195.8	2108.4	1991.6	1877.6	1784.8	1723.8	1697.3	1686.6
20°	2179.9	2148.1	2050.1	1925.4	1803.4	1707.9	1646.9	1620.4	1607.1
22.5°	2111.0	2076.5	1975.8	1843.2	1718.5	1625.6	1567.3	1540.8	1532.9
25°	2023.5	1989.1	1882.9	1747.6	1625.6	1535.5	1485.2	1461.2	1453.3
27.5°	1920.1	1885.6	1782.2	1649.5	1532.9	1448.0	1408.2	1384.3	1379.0
30°	1795.4	1760.9	1660.2	1538.2	1429.5	1349.9	1318.0	1299.5	1296.9
32.5°	1657.5	1628.3	1535.5	1424.2	1320.7	1254.5	1230.5	1217.3	1214.6
35°	1522.2	1490.5	1408.2	1307.5	1217.3	1158.9	1137.7	1135.0	1135.0
37.5°	1384.3	1352.5	1286.2	1193.5	1116.5	1063.5	1055.5	1058.2	1058.2
40°	1249.1	1219.9	1161.6	1084.6	1015.7	975.9	973.3	978.6	981.2
42.5°	1121.8	1097.9	1044.9	978.6	920.2	888.4	891.0	901.7	909.6
45°	1007.8	986.6	938.8	880.5	830.0	806.2	814.2	827.4	835.3
47.5°	904.3	885.8	840.7	787.6	745.2	729.3	739.9	755.9	766.4
50°	808.9	792.9	750.5	694.9	660.3	649.7	663.0	678.9	684.2
52.5°	724.0	708.0	663.0	615.3	588.7	583.4	596.7	610.0	617.9
55°	636.5	623.2	586.0	543.6	522.4	519.8	533.0	543.6	549.0
57.5°	564.9	551.6	517.2	480.0	461.4	458.9	472.0	480.0	482.7
60°	495.9	482.7	450.9	416.3	403.1	403.1	411.0	416.3	419.0
62.5°	432.3	419.0	389.9	360.7	350.0	350.0	350.0	352.7	360.7
65°	371.3	360.7	334.2	307.6	299.7	294.4	294.4	294.4	299.7
67.5°	315.6	305.0	283.7	259.9	252.0	244.0	241.3	246.6	246.6
70°	262.6	254.6	233.4	214.8	206.9	198.9	196.3	206.9	206.9
72.5°	214.8	206.9	193.6	175.0	167.0	164.4	169.7	175.0	177.7
75°	169.7	161.7	151.2	140.6	132.6	135.3	143.2	145.9	148.6
77.5°	127.3	124.6	114.0	106.1	106.1	108.7	114.0	119.3	122.0
80°	90.2	87.6	82.3	76.9	79.6	84.9	87.6	92.8	90.2
82.5°	55.7	55.7	53.0	53.0	55.7	61.0	63.7	66.3	69.0
85°	29.2	29.2	29.2	31.8	34.4	37.1	39.7	42.4	42.4
87.5°	8.0	10.6	10.6	13.3	15.9	15.9	18.6	18.6	18.6
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)