

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: P580811

Luminaire Tested: **HC445D010-HM44560935-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580811  
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: HC445D010-HM44560935-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3965.8 lumens  
Efficiency: N/A  
Efficacy: 90.1 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

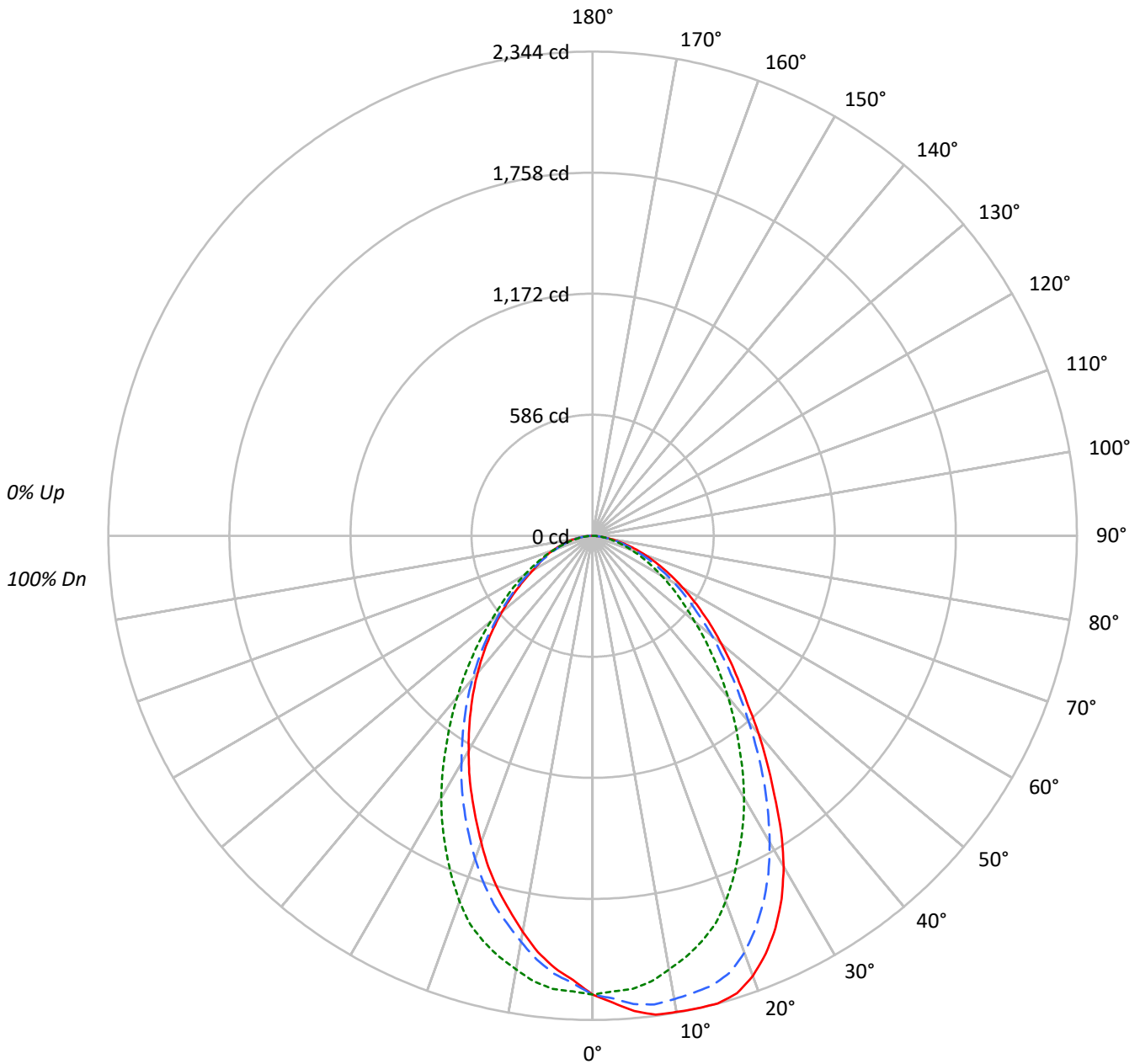
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	273926	273926	273926
5°	285967	272706	260090
10°	293194	267017	243784
15°	299257	259901	226202
20°	297675	247258	207144
25°	285164	228643	188467
30°	263448	208756	170799
35°	230940	185692	154598
40°	201093	164076	139247
45°	175013	143108	124426
50°	155931	123329	109800
55°	139350	108426	94943
60°	124382	94754	81852
65°	110557	83122	77781
70°	97048	71623	72560
75°	82208	61001	67196
80°	63147	51995	61230
85°	36938	40617	51798



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.2	5.2
10°-20°	574.2	14.5
20°-30°	784.5	19.8
30°-40°	787.7	19.9
40°-50°	651.7	16.4
50°-60°	472.2	11.9
60°-70°	299.1	7.5
70°-80°	151.2	3.8
80°-90°	37.0	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°	1566.9	39.5
0°-40°	2354.6	59.4
0°-60°	3478.5	87.7
0°-90°	3965.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3965.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2221	2221	2221	2221	2221	
5°	2310	2276	2202	2129	2101	221
15°	2344	2252	2035	1847	1771	659
25°	2095	1957	1680	1468	1385	958
35°	1534	1442	1233	1082	1027	961
45°	1003	946	820	739	713	780
55°	648	590	504	460	442	583
65°	379	337	285	256	266	377
75°	172	149	128	133	141	184
85°	26	26	29	34	37	36
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°	2220.8	2220.8	2220.8	2220.8	2220.8	2220.8	2220.8	2220.8	2220.8
2.5°	2262.6	2254.8	2241.6	2226.0	2207.8	2186.8	2168.5	2158.1	2152.9
5°	2309.6	2299.2	2275.6	2241.6	2202.5	2163.3	2129.3	2108.5	2100.6
7.5°	2338.4	2322.7	2288.7	2236.5	2176.3	2118.9	2069.2	2040.5	2032.6
10°	2340.9	2322.7	2278.2	2207.8	2131.9	2056.2	1996.0	1954.3	1946.4
12.5°	2343.5	2320.1	2265.2	2181.6	2087.5	1993.5	1920.3	1870.7	1857.6
15°	2343.5	2320.1	2252.1	2152.9	2035.3	1928.2	1847.1	1789.7	1771.4
17.5°	2322.7	2296.5	2215.5	2100.6	1972.6	1852.4	1758.3	1698.3	1680.0
20°	2267.8	2239.1	2147.6	2022.2	1883.7	1758.3	1664.3	1601.5	1578.1
22.5°	2189.5	2155.5	2058.8	1922.9	1784.4	1656.4	1565.0	1499.7	1478.8
25°	2095.3	2061.5	1956.9	1823.7	1680.0	1559.8	1468.4	1408.2	1384.8
27.5°	1980.4	1943.9	1842.0	1708.7	1575.4	1455.2	1371.6	1316.8	1293.3
30°	1849.7	1810.6	1714.0	1585.9	1465.7	1350.8	1269.8	1225.3	1199.2
32.5°	1698.3	1664.3	1578.1	1463.1	1350.8	1241.0	1173.1	1133.9	1113.0
35°	1533.7	1515.4	1442.2	1342.9	1233.2	1141.7	1081.6	1045.0	1026.7
37.5°	1387.4	1369.1	1306.3	1222.8	1126.0	1042.5	992.9	961.4	945.8
40°	1248.9	1233.2	1173.1	1102.6	1019.0	945.8	904.0	880.4	864.8
42.5°	1113.0	1105.2	1055.6	990.2	917.0	854.3	820.4	802.1	789.0
45°	1003.3	992.9	945.8	883.1	820.4	768.1	739.4	726.3	713.3
47.5°	906.6	893.6	843.9	789.0	731.5	684.5	658.4	645.4	640.1
50°	812.6	799.4	755.1	700.2	642.7	608.8	587.8	574.8	572.2
52.5°	729.0	715.8	666.2	614.0	569.5	540.8	522.5	509.5	504.2
55°	648.0	632.2	590.5	540.8	504.2	478.1	459.8	446.8	441.5
57.5°	574.8	559.1	522.5	475.5	441.5	418.1	402.3	389.3	384.1
60°	504.2	491.2	457.2	412.8	384.1	363.2	347.5	337.0	331.8
62.5°	438.9	428.5	394.5	355.3	331.8	313.5	300.5	290.0	295.2
65°	378.8	368.4	337.0	303.1	284.8	266.5	256.0	256.0	266.5
67.5°	321.3	310.9	284.8	256.0	240.3	227.3	219.5	227.3	235.2
70°	269.1	258.6	235.2	211.6	198.6	188.2	188.2	195.9	201.2
72.5°	219.5	209.0	190.7	172.5	162.0	154.2	162.0	167.2	172.5
75°	172.5	164.6	148.9	135.9	128.0	125.4	133.3	138.5	141.0
77.5°	128.0	122.7	112.3	101.9	96.7	99.3	107.2	109.7	112.3
80°	88.9	86.2	78.4	73.2	73.2	75.7	81.0	83.6	86.2
82.5°	54.9	54.9	49.6	47.0	49.6	54.9	57.4	60.1	60.1
85°	26.1	28.7	26.1	26.1	28.7	34.0	34.0	36.6	36.6
87.5°	7.9	7.9	10.4	10.4	13.0	13.0	13.0	13.0	15.7
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)