

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: P580686

Luminaire Tested: **HC440D010-HM43040940-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580686  
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: HC440D010-HM43040940-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3669.7 lumens  
Efficiency: N/A  
Efficacy: 89.5 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

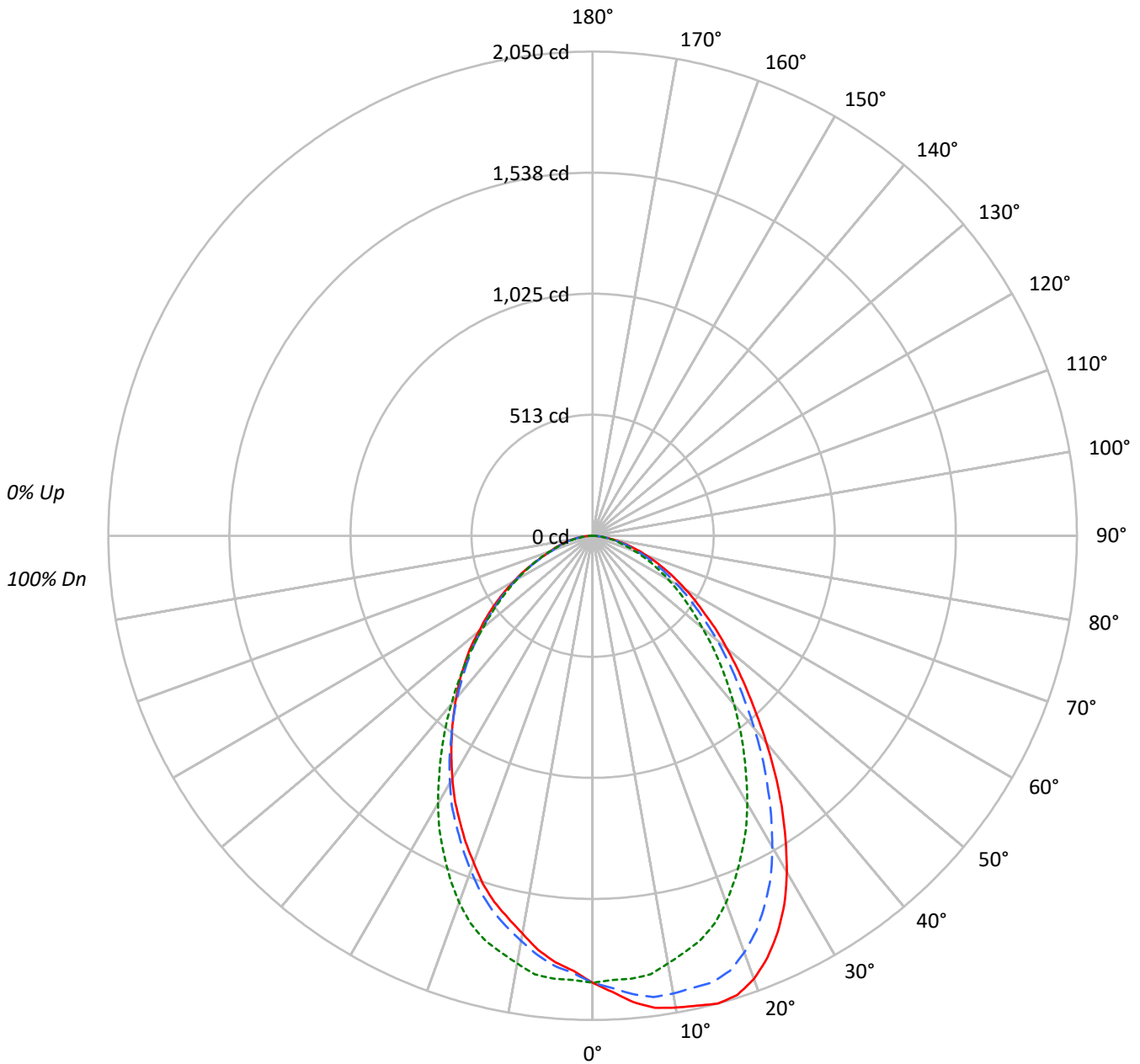
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	233395	233395	233395
5°	245430	233085	224368
10°	254041	230307	214187
15°	261804	226125	205030
20°	262090	216818	193217
25°	252228	202648	181172
30°	234222	186480	169175
35°	209950	167879	156540
40°	184219	149793	144721
45°	161005	132624	133479
50°	142173	116075	120278
55°	125372	102921	108125
60°	112047	91103	94680
65°	99262	80116	80116
70°	86734	68305	68305
75°	74107	57856	64814
80°	58672	51782	58672
85°	37787	44721	55053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	179.3	4.9
10°-20°	504.9	13.8
20°-30°	707.3	19.3
30°-40°	728.7	19.9
40°-50°	620.4	16.9
50°-60°	459.7	12.5
60°-70°	288.5	7.9
70°-80°	143.3	3.9
80°-90°	37.6	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°	1391.5	37.9
0°-40°	2120.2	57.8
0°-60°	3200.3	87.2
0°-90°	3669.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3669.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1892	1892	1892	1892	1892	
5°	1982	1948	1882	1829	1812	191
15°	2050	1958	1771	1642	1606	576
25°	1853	1725	1489	1360	1331	848
35°	1394	1290	1115	1042	1040	869
45°	923	860	760	746	765	716
55°	583	537	479	488	503	527
65°	340	306	274	270	274	339
75°	156	138	121	131	136	166
85°	27	27	32	36	39	34
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°	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2
2.5°	1933.6	1926.3	1916.6	1899.5	1882.5	1867.9	1853.3	1846.1	1843.7
5°	1982.2	1967.6	1948.2	1916.6	1882.5	1853.3	1829.1	1816.9	1812.1
7.5°	2016.1	2001.5	1970.0	1921.4	1872.9	1829.1	1790.2	1773.2	1768.4
10°	2028.3	2011.3	1967.6	1902.0	1838.8	1785.4	1741.7	1719.8	1710.1
12.5°	2038.0	2016.1	1960.3	1882.5	1804.8	1739.2	1693.0	1663.9	1656.6
15°	2050.2	2025.9	1957.8	1863.1	1770.8	1693.0	1642.0	1615.4	1605.6
17.5°	2038.0	2011.3	1931.1	1824.2	1719.8	1634.8	1578.9	1554.6	1544.9
20°	1996.7	1967.6	1877.7	1763.6	1651.8	1564.4	1508.4	1484.2	1472.0
22.5°	1933.6	1902.0	1809.6	1688.2	1574.1	1489.0	1435.6	1411.3	1404.1
25°	1853.3	1821.8	1724.7	1600.8	1489.0	1406.4	1360.3	1338.5	1331.2
27.5°	1758.6	1727.1	1632.4	1510.9	1404.1	1326.3	1289.8	1268.0	1263.1
30°	1644.5	1612.9	1520.6	1408.9	1309.3	1236.5	1207.2	1190.3	1187.8
32.5°	1518.2	1491.5	1406.4	1304.4	1209.7	1148.9	1127.1	1114.9	1112.5
35°	1394.3	1365.2	1289.8	1197.6	1114.9	1061.5	1042.1	1039.6	1039.6
37.5°	1268.0	1238.8	1178.1	1093.1	1022.7	974.0	966.8	969.2	969.2
40°	1144.1	1117.4	1063.9	993.5	930.3	893.9	891.5	896.4	898.8
42.5°	1027.5	1005.6	957.1	896.4	842.9	813.7	816.2	825.8	833.1
45°	923.0	903.6	859.9	806.4	760.3	738.4	745.7	757.9	765.2
47.5°	828.3	811.3	770.0	721.5	682.6	668.0	677.8	692.3	702.0
50°	740.9	726.3	687.4	636.4	604.9	595.1	607.2	621.8	626.8
52.5°	663.2	648.6	607.2	563.5	539.3	534.4	546.6	558.7	566.0
55°	583.0	570.8	536.8	497.9	478.6	476.1	488.2	497.9	502.8
57.5°	517.3	505.2	473.6	439.7	422.6	420.3	432.4	439.7	442.1
60°	454.2	442.1	413.0	381.4	369.3	369.3	376.5	381.4	383.8
62.5°	395.9	383.8	357.0	330.4	320.6	320.6	320.6	323.1	330.4
65°	340.1	330.4	306.0	281.8	274.5	269.6	269.6	269.6	274.5
67.5°	289.1	279.4	260.0	238.1	230.8	223.5	221.1	225.9	225.9
70°	240.5	233.2	213.8	196.7	189.4	182.2	179.8	189.4	189.4
72.5°	196.7	189.4	177.3	160.3	153.0	150.6	155.5	160.3	162.8
75°	155.5	148.2	138.4	128.7	121.4	123.9	131.2	133.6	136.0
77.5°	116.6	114.1	104.5	97.2	97.2	99.5	104.5	109.3	111.8
80°	82.6	80.2	75.3	70.4	72.9	77.7	80.2	85.0	82.6
82.5°	51.0	51.0	48.5	48.5	51.0	55.8	58.3	60.8	63.1
85°	26.7	26.7	26.7	29.1	31.6	34.0	36.4	38.9	38.9
87.5°	7.3	9.8	9.8	12.1	14.6	14.6	17.0	17.0	17.0
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)