

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: P580970

Luminaire Tested: **HC450D010-HM44560940-41RWWC**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580970  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC450D010-HM44560940-41RWWC  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4222.7 lumens  
Efficiency: N/A  
Efficacy: 88.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.15 / 1.21  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

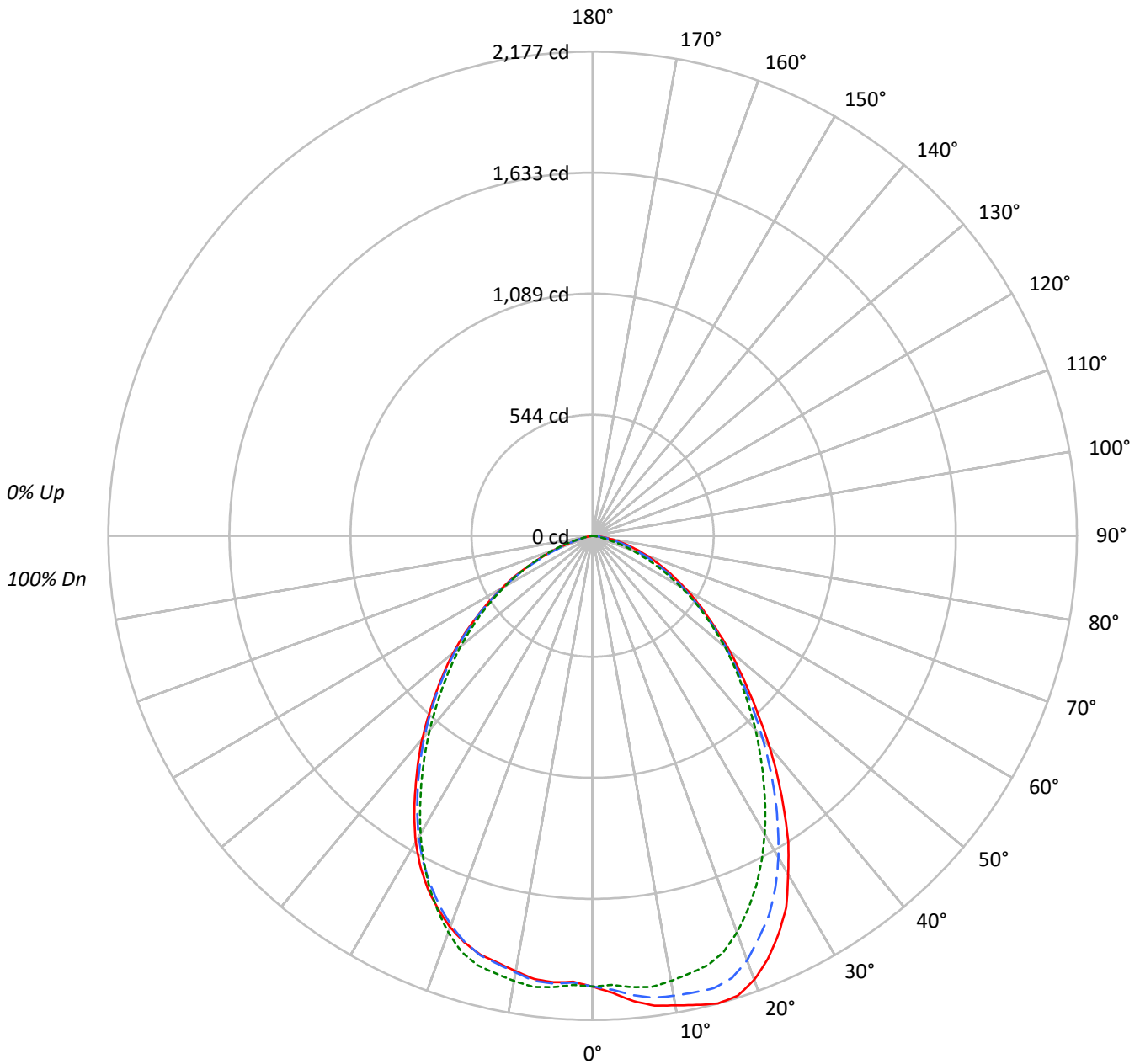
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	102	95	90	85	100	94	88	84	90	86	82	87	83	80	84	81	78	76								
3	95	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67								
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58								
5	81	70	61	56	79	68	61	55	66	60	55	65	59	54	63	58	54	52								
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46								
7	70	58	50	44	69	57	49	44	56	49	44	54	48	44	53	47	43	41								
8	66	53	45	40	64	53	45	40	51	44	40	50	44	39	49	43	39	37								
9	62	49	42	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34								
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31								

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

	0°	90°	180°
0°	249948	249948	249948
5°	260052	252252	249553
10°	268545	254492	249006
15°	277996	255266	248983
20°	278931	249095	245853
25°	269077	236659	238523
30°	250387	220349	226602
35°	225550	201623	209061
40°	198855	183430	191803
45°	173861	165279	173408
50°	153974	148716	156603
55°	135458	131307	136619
60°	120928	112121	115526
65°	106296	91119	89514
70°	92828	67151	61236
75°	76966	40461	32597
80°	58317	15556	9731
85°	27172	3963	3963



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.4	4.6
10°-20°	570.4	13.5
20°-30°	826.1	19.6
30°-40°	871.5	20.6
40°-50°	754.2	17.9
50°-60°	558.7	13.2
60°-70°	322.1	7.6
70°-80°	112.5	2.7
80°-90°	11.8	0.3
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°	1591.9	37.7
0°-40°	2463.4	58.3
0°-60°	3776.4	89.4
0°-90°	4222.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4222.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2026	2026	2026	2026	2026	
5°	2100	2073	2037	2021	2016	202
15°	2177	2106	1999	1952	1950	612
25°	1977	1879	1739	1728	1753	905
35°	1498	1430	1339	1369	1388	936
45°	997	969	948	983	994	774
55°	630	616	611	632	635	568
65°	364	342	312	296	307	364
75°	162	137	85	68	68	174
85°	19	11	3	3	3	30
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°	2026.4	2026.4	2026.4	2026.4	2026.4	2026.4	2026.4	2026.4	2026.4
2.5°	2056.6	2051.0	2042.9	2031.9	2020.9	2012.7	2010.0	2007.2	2007.2
5°	2100.3	2089.4	2073.0	2051.0	2037.3	2029.1	2020.9	2015.5	2015.5
7.5°	2130.4	2119.6	2094.9	2064.8	2045.6	2029.1	2018.2	2010.0	2010.0
10°	2144.1	2130.4	2100.3	2062.0	2031.9	2010.0	1993.6	1988.1	1988.1
12.5°	2160.6	2144.1	2103.1	2053.8	2015.5	1988.1	1971.7	1966.1	1966.1
15°	2177.0	2157.9	2105.8	2048.3	1999.0	1966.1	1952.5	1949.8	1949.8
17.5°	2168.8	2144.1	2083.9	2015.5	1960.7	1927.8	1914.1	1914.1	1916.9
20°	2125.0	2100.3	2031.9	1955.2	1897.7	1873.0	1862.1	1867.6	1873.0
22.5°	2059.2	2029.1	1955.2	1881.2	1821.0	1799.1	1799.1	1807.3	1815.6
25°	1977.1	1949.8	1878.6	1796.4	1738.9	1722.5	1727.9	1741.6	1752.6
27.5°	1884.0	1853.9	1779.9	1703.2	1645.8	1637.6	1651.2	1670.5	1675.9
30°	1758.0	1733.5	1670.5	1596.5	1547.1	1544.5	1563.6	1577.4	1591.0
32.5°	1637.6	1610.1	1549.9	1478.7	1443.1	1445.9	1467.8	1484.3	1492.5
35°	1497.9	1473.3	1429.5	1371.9	1339.0	1344.6	1369.2	1385.6	1388.4
37.5°	1366.5	1350.0	1306.3	1262.4	1237.7	1248.7	1270.6	1289.8	1289.8
40°	1235.0	1221.4	1188.5	1152.8	1139.2	1152.8	1174.7	1191.2	1191.2
42.5°	1109.1	1100.8	1073.5	1048.8	1040.6	1059.7	1078.9	1092.6	1089.8
45°	996.7	988.6	969.4	950.2	947.5	966.6	983.1	991.3	994.1
47.5°	895.5	890.0	873.5	859.8	859.8	879.1	892.7	901.0	903.6
50°	802.4	796.8	783.2	772.2	775.0	794.2	805.1	813.3	816.1
52.5°	709.3	706.5	695.5	681.9	690.1	703.7	717.4	723.0	725.6
55°	629.9	629.9	616.2	605.2	610.6	624.3	632.5	635.3	635.3
57.5°	558.6	555.9	539.4	528.5	531.2	545.0	550.4	553.2	553.2
60°	490.2	487.4	471.0	454.5	454.5	462.8	465.5	468.3	468.3
62.5°	424.4	421.8	402.5	388.9	383.4	380.6	380.6	386.1	397.1
65°	364.2	361.4	342.3	320.4	312.2	304.0	295.8	301.2	306.7
67.5°	309.4	304.0	284.8	265.6	246.4	232.8	219.1	227.3	238.2
70°	257.4	252.0	230.0	208.1	186.2	164.3	153.3	164.3	169.8
72.5°	208.1	202.7	180.8	158.9	131.4	109.5	106.8	109.5	112.2
75°	161.5	158.9	136.9	112.2	84.9	68.4	68.4	68.4	68.4
77.5°	120.4	115.0	93.1	71.2	49.3	38.3	35.6	35.6	35.6
80°	82.1	76.7	57.5	41.1	21.9	16.4	16.4	13.7	13.7
82.5°	46.6	43.8	30.1	16.4	8.2	5.4	5.4	5.4	5.4
85°	19.2	16.4	11.0	5.4	2.8	2.8	2.8	2.8	2.8
87.5°	2.8	2.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0
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)