

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: P580917

Luminaire Tested: **HC450D010-HM44560927-41RWWH**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580917  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-15)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC450D010-HM44560927-41RWWH  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3744.5 lumens  
Efficiency: N/A  
Efficacy: 78.0 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

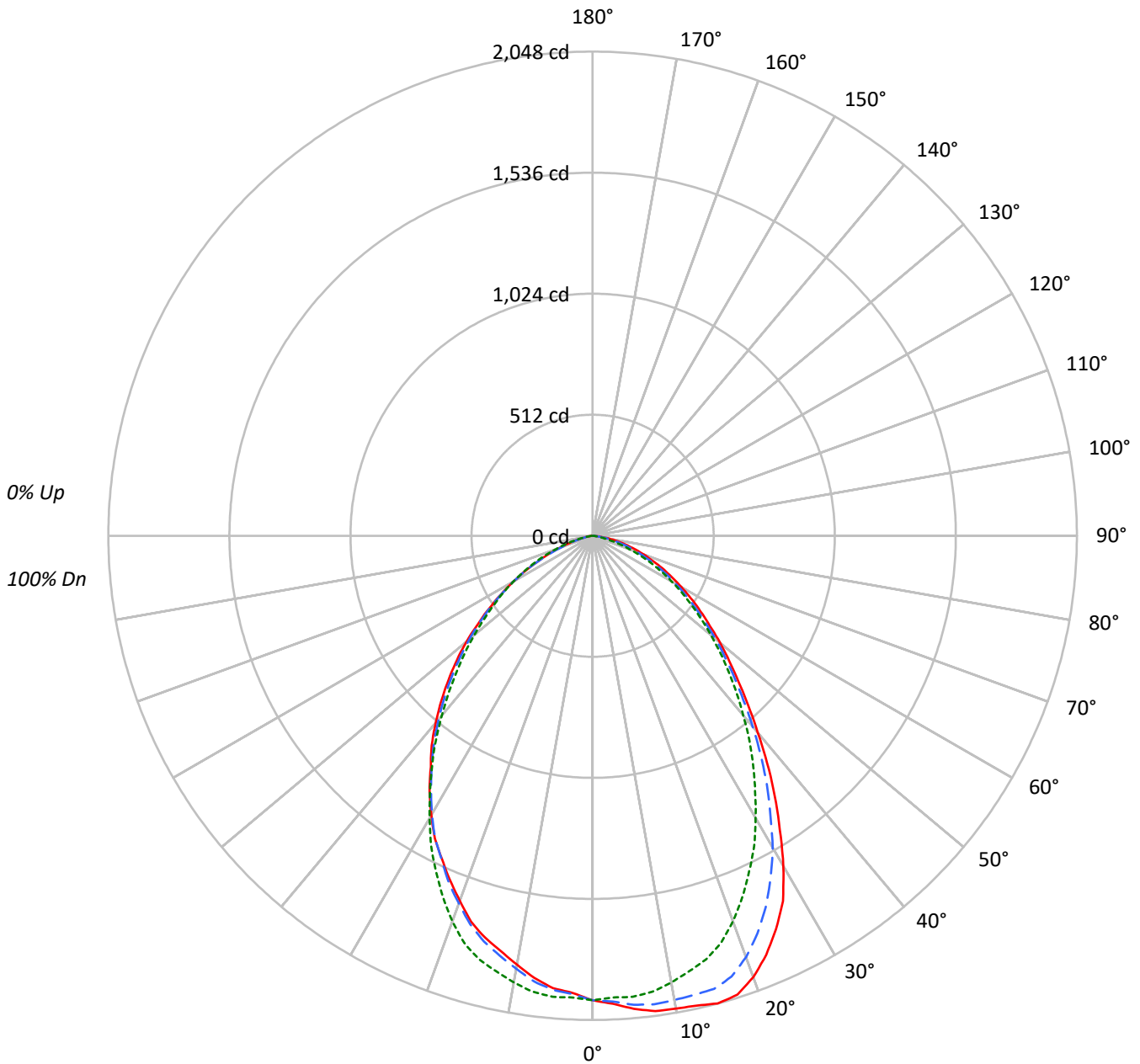
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				20				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				100
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88				88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77				77
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67				67
4	88	77	70	64	86	76	69	63	74	67	62	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42				42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38				38
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	37	35				35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32				32

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

	0°	90°	180°
0°	242325	242325	242325
5°	248686	242347	237803
10°	254317	240252	230783
15°	261472	236852	224695
20°	260751	227765	215597
25°	249779	213223	205261
30°	229749	196393	194314
35°	202105	178223	179684
40°	174864	159551	166217
45°	151970	141748	150278
50°	134862	125037	133461
55°	119652	109695	114405
60°	106571	95124	95124
65°	94738	79065	74074
70°	81829	59830	52834
75°	68626	39555	32550
80°	51995	19108	17332
85°	27597	6935	6935



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	186.1	5.0
10°-20°	527.5	14.1
20°-30°	743.9	19.9
30°-40°	768.4	20.5
40°-50°	651.4	17.4
50°-60°	474.0	12.7
60°-70°	276.9	7.4
70°-80°	102.9	2.7
80°-90°	13.5	0.4
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°	1457.4	38.9
0°-40°	2225.8	59.4
0°-60°	3351.2	89.5
0°-90°	3744.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3744.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1965	1965	1965	1965	1965	
5°	2008	1991	1957	1928	1921	192
15°	2048	1984	1855	1777	1760	576
25°	1835	1733	1567	1511	1508	839
35°	1342	1284	1184	1186	1193	838
45°	871	847	813	842	862	678
55°	556	530	510	527	532	500
65°	325	298	271	254	254	322
75°	144	120	83	66	68	155
85°	20	12	5	5	5	27
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°	1964.6	1964.6	1964.6	1964.6	1964.6	1964.6	1964.6	1964.6	1964.6
2.5°	1981.6	1976.8	1971.9	1964.6	1954.9	1947.5	1940.2	1935.3	1935.3
5°	2008.5	2001.2	1991.4	1974.3	1957.3	1942.7	1928.0	1920.6	1920.6
7.5°	2028.0	2018.3	1998.8	1974.3	1945.1	1923.1	1901.2	1891.4	1886.5
10°	2030.5	2020.7	1993.9	1957.3	1918.2	1884.0	1859.6	1845.0	1842.6
12.5°	2035.3	2023.2	1988.9	1937.7	1886.5	1845.0	1818.1	1803.5	1798.7
15°	2047.6	2030.5	1984.1	1918.2	1854.8	1806.0	1776.6	1764.4	1759.6
17.5°	2035.3	2011.0	1954.9	1876.7	1806.0	1752.3	1722.9	1710.8	1710.8
20°	1986.5	1962.2	1896.3	1810.8	1735.2	1684.0	1654.6	1647.3	1642.5
22.5°	1918.2	1891.4	1820.6	1730.4	1654.6	1608.2	1588.8	1579.0	1576.6
25°	1835.3	1808.4	1732.8	1640.0	1566.7	1527.8	1510.6	1510.6	1508.2
27.5°	1742.5	1708.3	1630.3	1549.7	1479.0	1449.6	1442.3	1442.3	1444.7
30°	1613.1	1588.8	1522.9	1444.7	1378.9	1359.4	1359.4	1364.3	1364.3
32.5°	1474.1	1456.9	1398.4	1330.1	1278.8	1266.6	1271.5	1281.2	1283.7
35°	1342.2	1322.8	1283.7	1222.7	1183.6	1178.7	1186.0	1193.3	1193.3
37.5°	1212.9	1193.3	1166.6	1117.7	1088.4	1090.9	1100.7	1110.4	1117.7
40°	1086.0	1071.4	1051.9	1012.8	990.9	1000.6	1012.8	1022.5	1032.3
42.5°	973.7	959.1	944.5	915.2	900.5	912.7	927.3	937.2	946.9
45°	871.2	861.5	846.9	822.4	812.6	824.9	842.0	851.7	861.5
47.5°	783.4	778.6	759.0	737.0	732.2	744.3	759.0	771.2	778.6
50°	702.8	695.5	678.5	656.5	651.6	671.2	680.9	688.2	695.5
52.5°	624.8	617.5	597.9	578.4	578.4	593.0	600.3	602.8	610.1
55°	556.4	549.1	529.6	515.0	510.1	522.3	527.2	527.2	532.0
57.5°	492.9	485.6	466.2	449.0	446.6	454.0	454.0	454.0	456.4
60°	432.0	424.6	405.2	390.4	385.6	388.0	385.6	383.1	385.6
62.5°	375.8	368.5	349.0	331.9	327.0	327.0	319.7	317.3	319.7
65°	324.6	312.4	297.8	280.6	270.9	263.6	253.8	253.8	253.8
67.5°	273.3	263.6	246.5	229.4	217.2	205.0	190.4	195.3	197.7
70°	226.9	219.6	200.1	183.0	165.9	151.3	139.1	144.0	146.5
72.5°	185.4	175.7	158.6	139.1	124.4	104.9	97.6	102.5	102.5
75°	144.0	134.3	119.6	100.1	83.0	65.9	65.9	68.3	68.3
77.5°	107.4	97.6	83.0	65.9	51.3	39.1	41.5	41.5	41.5
80°	73.2	65.9	53.7	39.1	26.9	21.9	21.9	21.9	24.4
82.5°	41.5	36.6	29.3	19.5	12.2	12.2	12.2	12.2	12.2
85°	19.5	14.6	12.2	7.3	4.9	4.9	4.9	4.9	4.9
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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)