

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: P580935

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

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580935  
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-HM44560930-41RWWH  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4067.6 lumens  
Efficiency: N/A  
Efficacy: 84.7 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

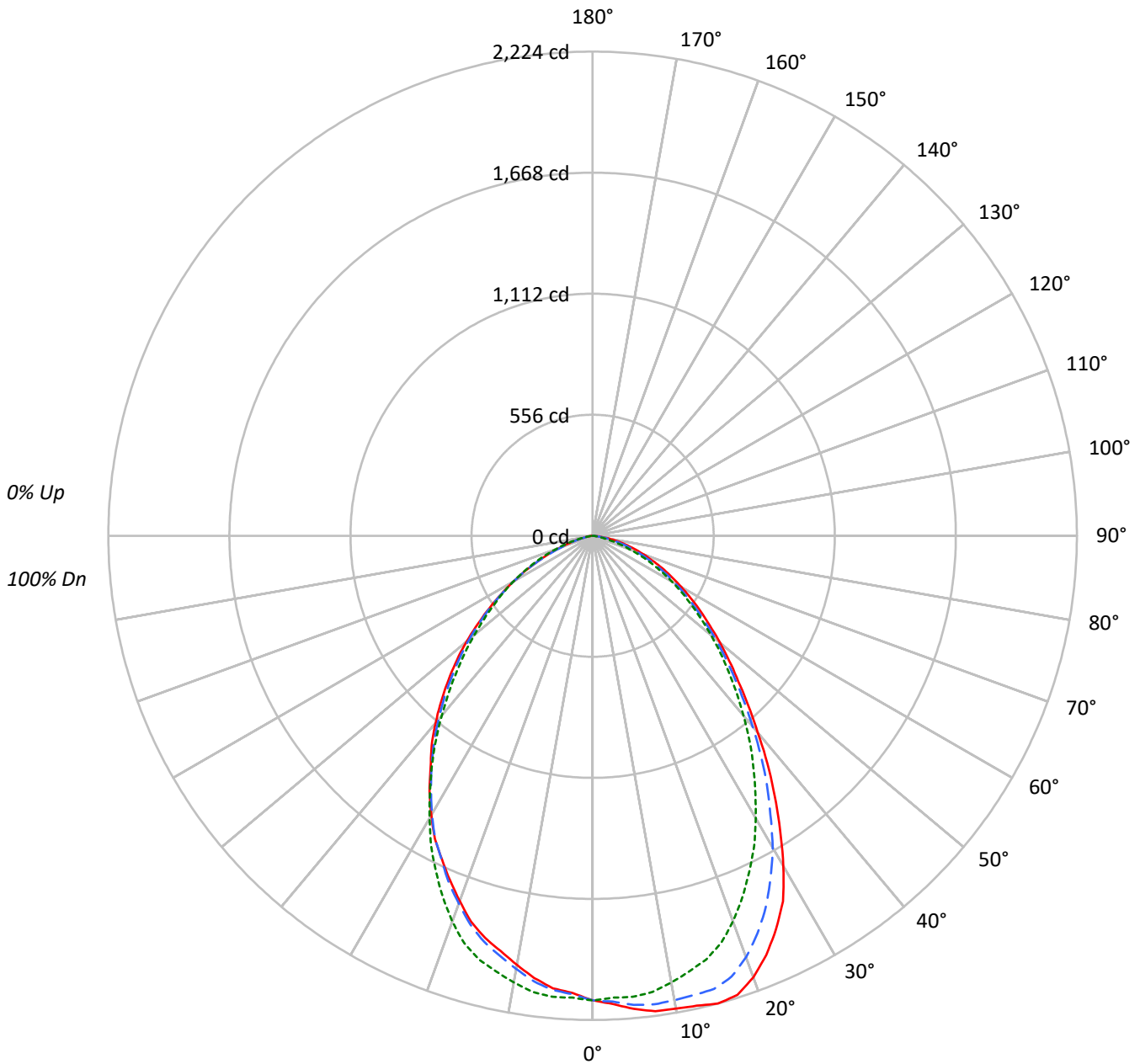
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				20				
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°	263232	263232	263232
5°	270143	263247	258331
10°	276248	260980	250685
15°	284023	257271	244067
20°	283250	247415	234197
25°	271309	231623	222954
30°	249575	213328	211063
35°	219542	193597	195193
40°	189951	173302	180564
45°	165087	153976	163221
50°	146509	135821	144974
55°	129974	119157	124297
60°	115772	103339	103339
65°	102910	85865	80495
70°	88897	64987	57378
75°	74536	42939	35409
80°	56470	20670	18823
85°	30144	7501	7501



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.1	5.0
10°-20°	573.0	14.1
20°-30°	808.0	19.9
30°-40°	834.7	20.5
40°-50°	707.6	17.4
50°-60°	514.9	12.7
60°-70°	300.8	7.4
70°-80°	111.8	2.7
80°-90°	14.7	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°	1583.1	38.9
0°-40°	2417.8	59.4
0°-60°	3640.3	89.5
0°-90°	4067.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4067.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2134	2134	2134	2134	2134	
5°	2182	2163	2126	2094	2086	209
15°	2224	2155	2015	1930	1911	625
25°	1994	1882	1702	1641	1638	912
35°	1458	1394	1286	1288	1296	911
45°	946	920	883	915	936	737
55°	604	575	554	573	578	544
65°	353	324	294	276	276	350
75°	156	130	90	72	74	168
85°	21	13	5	5	5	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°	2134.1	2134.1	2134.1	2134.1	2134.1	2134.1	2134.1	2134.1	2134.1
2.5°	2152.6	2147.2	2141.9	2134.1	2123.4	2115.5	2107.5	2102.2	2102.2
5°	2181.8	2173.8	2163.2	2144.6	2126.1	2110.2	2094.2	2086.4	2086.4
7.5°	2202.9	2192.3	2171.2	2144.6	2112.8	2088.9	2065.1	2054.5	2049.2
10°	2205.6	2195.0	2165.8	2126.1	2083.7	2046.5	2020.1	2004.1	2001.5
12.5°	2210.9	2197.6	2160.5	2104.8	2049.2	2004.1	1975.0	1959.1	1953.7
15°	2224.2	2205.6	2155.2	2083.7	2014.7	1961.7	1929.9	1916.7	1911.3
17.5°	2210.9	2184.4	2123.4	2038.5	1961.7	1903.4	1871.6	1858.3	1858.3
20°	2157.9	2131.4	2059.8	1967.0	1884.9	1829.2	1797.3	1789.4	1784.2
22.5°	2083.7	2054.5	1977.7	1879.6	1797.3	1747.0	1725.8	1715.2	1712.5
25°	1993.5	1964.4	1882.2	1781.5	1701.9	1659.5	1640.9	1640.9	1638.2
27.5°	1892.7	1855.7	1770.9	1683.4	1606.5	1574.7	1566.7	1566.7	1569.4
30°	1752.3	1725.8	1654.2	1569.4	1497.8	1476.6	1476.6	1481.9	1481.9
32.5°	1601.2	1582.7	1519.0	1444.7	1389.1	1375.9	1381.2	1391.7	1394.4
35°	1458.0	1436.8	1394.4	1328.2	1285.7	1280.5	1288.3	1296.3	1296.3
37.5°	1317.6	1296.3	1267.2	1214.2	1182.4	1184.9	1195.6	1206.2	1214.2
40°	1179.7	1163.8	1142.5	1100.1	1076.3	1086.9	1100.1	1110.8	1121.4
42.5°	1057.7	1041.8	1026.0	994.1	978.3	991.4	1007.4	1018.0	1028.6
45°	946.4	935.7	919.9	893.3	882.7	896.0	914.6	925.2	935.7
47.5°	851.0	845.6	824.5	800.6	795.3	808.6	824.5	837.7	845.6
50°	763.5	755.5	736.9	713.1	707.8	729.1	739.6	747.6	755.5
52.5°	678.7	670.7	649.5	628.3	628.3	644.2	652.1	654.8	662.8
55°	604.4	596.5	575.3	559.4	554.1	567.3	572.7	572.7	578.0
57.5°	535.5	527.6	506.3	487.7	485.1	493.1	493.1	493.1	495.7
60°	469.3	461.3	440.0	424.2	418.9	421.5	418.9	416.2	418.9
62.5°	408.3	400.3	379.0	360.5	355.2	355.2	347.3	344.6	347.3
65°	352.6	339.3	323.5	304.9	294.2	286.3	275.8	275.8	275.8
67.5°	296.9	286.3	267.8	249.2	235.9	222.7	206.8	212.1	214.8
70°	246.5	238.6	217.4	198.8	180.2	164.4	151.1	156.4	159.1
72.5°	201.5	190.8	172.4	151.1	135.2	114.0	106.1	111.4	111.4
75°	156.4	145.8	129.9	108.7	90.1	71.6	71.6	74.3	74.3
77.5°	116.7	106.1	90.1	71.6	55.7	42.4	45.1	45.1	45.1
80°	79.5	71.6	58.3	42.4	29.1	23.9	23.9	23.9	26.5
82.5°	45.1	39.7	31.8	21.3	13.3	13.3	13.3	13.3	13.3
85°	21.3	15.9	13.3	8.0	5.3	5.3	5.3	5.3	5.3
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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)