

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: P580827

Luminaire Tested: **HC445D010-HM44560940-41RWWH**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580827  
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: HC445D010-HM44560940-41RWWH  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3976.4 lumens  
Efficiency: N/A  
Efficacy: 90.4 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

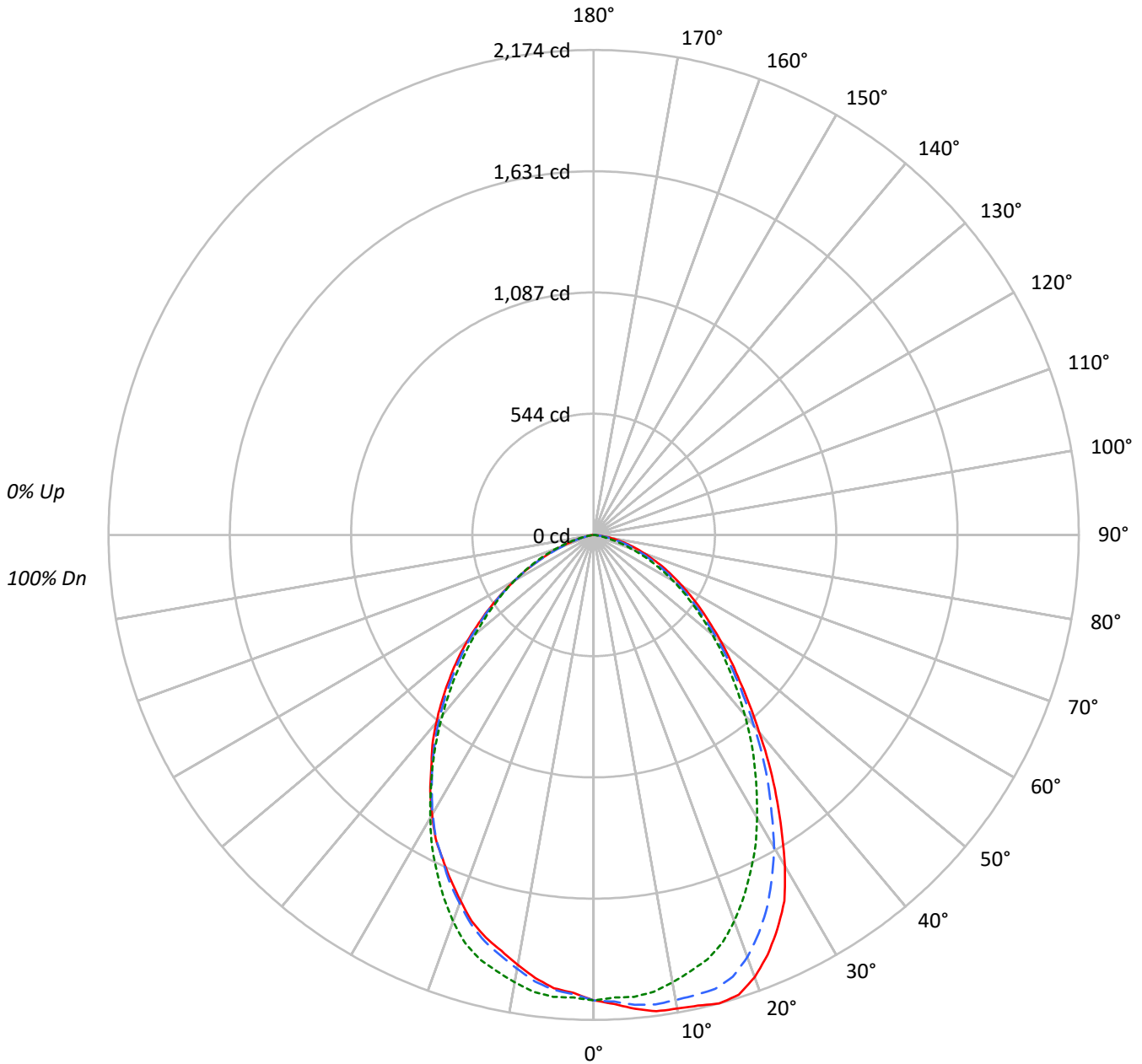
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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				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°	257324	257324	257324
5°	264089	257353	252537
10°	270048	255131	245074
15°	277651	251512	238614
20°	276910	241876	228933
25°	265239	226438	217986
30°	243992	208542	206334
35°	214633	189276	190826
40°	185700	169421	176506
45°	161389	150539	159592
50°	143228	132770	141731
55°	127049	116469	121480
60°	113157	100995	100995
65°	100604	83968	78656
70°	86914	63581	56079
75°	72868	41986	34599
80°	55263	20244	18397
85°	29437	7359	7359



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.6	5.0
10°-20°	560.1	14.1
20°-30°	789.9	19.9
30°-40°	816.0	20.5
40°-50°	691.7	17.4
50°-60°	503.3	12.7
60°-70°	294.1	7.4
70°-80°	109.3	2.7
80°-90°	14.3	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°	1547.6	38.9
0°-40°	2363.7	59.4
0°-60°	3558.7	89.5
0°-90°	3976.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3976.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2086	2086	2086	2086	2086	
5°	2133	2115	2078	2047	2040	204
15°	2174	2107	1970	1887	1869	611
25°	1949	1840	1664	1604	1602	891
35°	1425	1363	1257	1260	1267	890
45°	925	899	863	894	915	720
55°	591	562	542	560	565	531
65°	345	316	288	270	270	342
75°	153	127	88	70	73	164
85°	21	13	5	5	5	29
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°	2086.2	2086.2	2086.2	2086.2	2086.2	2086.2	2086.2	2086.2	2086.2
2.5°	2104.4	2099.1	2094.0	2086.2	2075.8	2068.1	2060.3	2055.2	2055.2
5°	2132.9	2125.1	2114.7	2096.6	2078.5	2062.9	2047.3	2039.6	2039.6
7.5°	2153.6	2143.2	2122.5	2096.6	2065.5	2042.2	2018.8	2008.5	2003.3
10°	2156.1	2145.8	2117.3	2078.5	2037.0	2000.8	1974.8	1959.2	1956.7
12.5°	2161.4	2148.4	2112.2	2057.7	2003.3	1959.2	1930.7	1915.1	1910.0
15°	2174.3	2156.1	2107.0	2037.0	1969.6	1917.7	1886.6	1873.7	1868.6
17.5°	2161.4	2135.5	2075.8	1992.9	1917.7	1860.7	1829.6	1816.7	1816.7
20°	2109.6	2083.7	2013.7	1923.0	1842.7	1788.2	1757.1	1749.3	1744.1
22.5°	2037.0	2008.5	1933.3	1837.4	1757.1	1707.9	1687.2	1676.7	1674.1
25°	1948.9	1920.4	1840.1	1741.6	1663.8	1622.3	1604.2	1604.2	1601.7
27.5°	1850.4	1814.2	1731.1	1645.6	1570.5	1539.4	1531.6	1531.6	1534.2
30°	1713.1	1687.2	1617.1	1534.2	1464.2	1443.6	1443.6	1448.7	1448.7
32.5°	1565.3	1547.1	1485.0	1412.4	1358.0	1345.1	1350.2	1360.5	1363.2
35°	1425.4	1404.6	1363.2	1298.4	1257.0	1251.7	1259.6	1267.3	1267.3
37.5°	1288.1	1267.3	1238.8	1187.0	1155.9	1158.5	1168.8	1179.2	1187.0
40°	1153.3	1137.7	1117.0	1075.5	1052.2	1062.5	1075.5	1085.9	1096.2
42.5°	1034.0	1018.4	1003.0	971.9	956.3	969.3	984.8	995.2	1005.5
45°	925.2	914.9	899.3	873.4	863.0	875.9	894.1	904.4	914.9
47.5°	831.9	826.7	805.9	782.7	777.4	790.4	805.9	818.9	826.7
50°	746.4	738.6	720.4	697.1	691.9	712.7	723.0	730.9	738.6
52.5°	663.4	655.7	634.9	614.2	614.2	629.8	637.5	640.1	647.8
55°	590.8	583.1	562.3	546.9	541.6	554.6	559.8	559.8	564.9
57.5°	523.5	515.7	495.0	476.8	474.3	482.0	482.0	482.0	484.6
60°	458.7	450.9	430.2	414.7	409.4	412.1	409.4	406.8	409.4
62.5°	399.1	391.4	370.6	352.4	347.3	347.3	339.5	336.9	339.5
65°	344.7	331.8	316.2	298.0	287.7	279.9	269.5	269.5	269.5
67.5°	290.3	279.9	261.8	243.6	230.7	217.7	202.2	207.3	209.9
70°	241.0	233.3	212.5	194.3	176.3	160.7	147.8	152.9	155.5
72.5°	196.9	186.6	168.4	147.8	132.2	111.4	103.7	108.8	108.8
75°	152.9	142.5	127.0	106.3	88.1	70.0	70.0	72.6	72.6
77.5°	114.0	103.7	88.1	70.0	54.4	41.5	44.1	44.1	44.1
80°	77.8	70.0	57.0	41.5	28.5	23.3	23.3	23.3	25.9
82.5°	44.1	38.8	31.1	20.8	12.9	12.9	12.9	12.9	12.9
85°	20.8	15.6	12.9	7.7	5.2	5.2	5.2	5.2	5.2
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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)