

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: P580955

Luminaire Tested: **HC450D010-HM44560935-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580955  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC450D010-HM44560935-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4189.7 lumens  
Efficiency: N/A  
Efficacy: 87.3 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

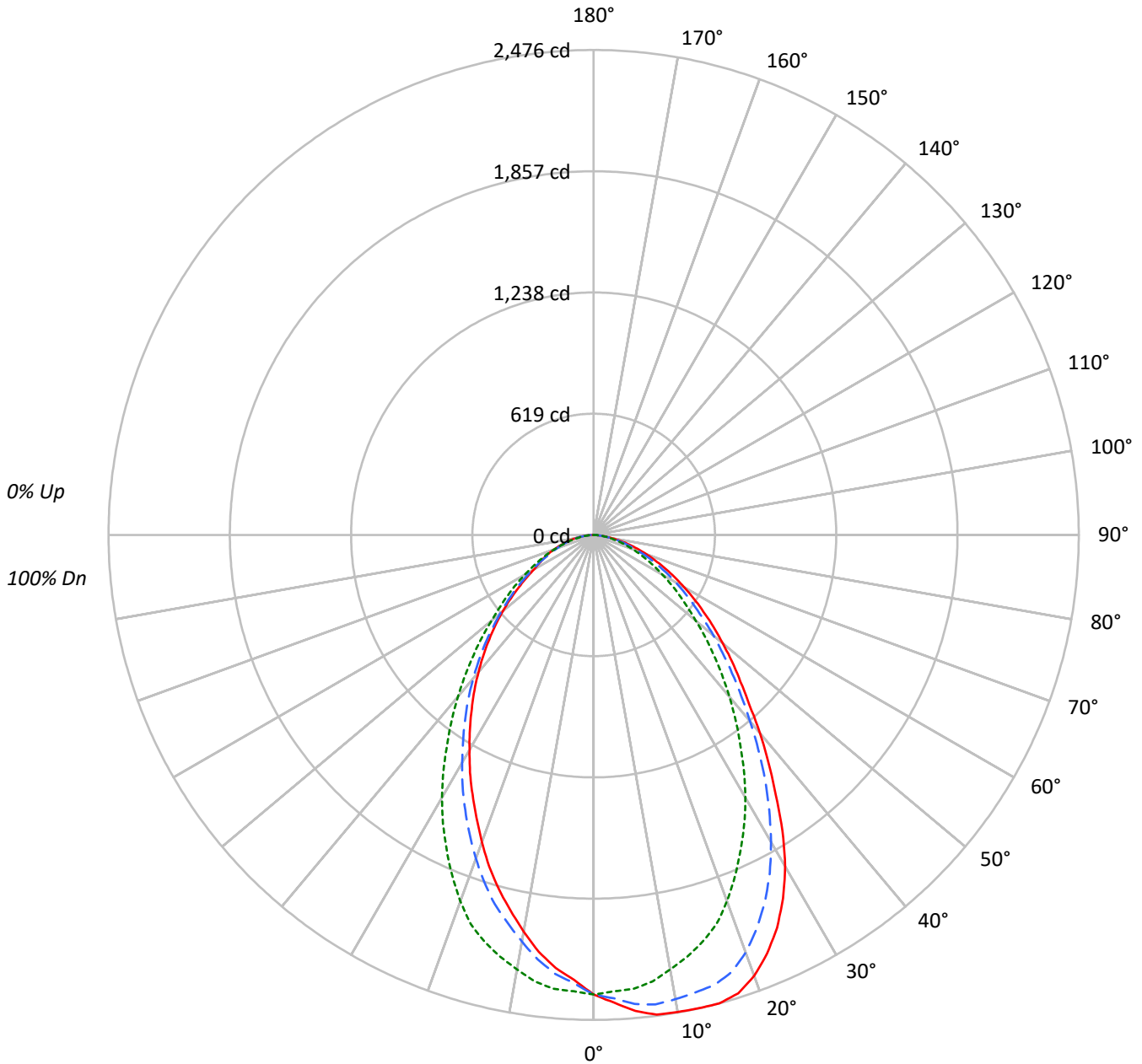
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66																			
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47																			
7	71	58	50	45	69	58	50	45	56	49	44	55	49	44	53	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	289394	289394	289394
5°	302101	288097	274774
10°	309752	282097	257561
15°	316152	274561	238972
20°	314477	261224	218826
25°	301278	241531	199096
30°	278331	220549	180455
35°	243965	196172	163331
40°	212429	173318	147104
45°	184903	151185	131438
50°	164720	130294	115979
55°	147221	114555	100319
60°	131412	100083	86490
65°	116803	87821	82159
70°	102530	75662	76636
75°	86831	64480	71009
80°	66699	54908	64710
85°	39060	42882	54628



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.9	5.2
10°-20°	606.6	14.5
20°-30°	828.8	19.8
30°-40°	832.2	19.9
40°-50°	688.4	16.4
50°-60°	498.9	11.9
60°-70°	316.0	7.5
70°-80°	159.7	3.8
80°-90°	39.1	0.9
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°	1655.3	39.5
0°-40°	2487.5	59.4
0°-60°	3674.9	87.7
0°-90°	4189.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4189.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2346	2346	2346	2346	2346	
5°	2440	2404	2327	2250	2219	234
15°	2476	2379	2150	1951	1871	696
25°	2214	2067	1775	1551	1463	1012
35°	1620	1524	1303	1143	1085	1016
45°	1060	999	867	781	754	824
55°	685	624	533	486	466	616
65°	400	356	301	270	282	398
75°	182	157	135	141	149	195
85°	28	28	30	36	39	38
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°	2346.2	2346.2	2346.2	2346.2	2346.2	2346.2	2346.2	2346.2	2346.2
2.5°	2390.3	2382.0	2368.2	2351.6	2332.3	2310.2	2290.9	2279.9	2274.3
5°	2439.9	2429.0	2404.1	2368.2	2326.8	2285.4	2249.5	2227.4	2219.2
7.5°	2470.4	2453.8	2417.9	2362.7	2299.2	2238.5	2186.0	2155.7	2147.4
10°	2473.1	2453.8	2406.8	2332.3	2252.3	2172.3	2108.7	2064.6	2056.4
12.5°	2475.8	2451.0	2393.0	2304.8	2205.4	2106.0	2028.7	1976.2	1962.5
15°	2475.8	2451.0	2379.3	2274.3	2150.1	2037.0	1951.4	1890.8	1871.4
17.5°	2453.8	2426.2	2340.6	2219.2	2083.9	1957.0	1857.5	1794.1	1774.7
20°	2395.8	2365.4	2268.8	2136.4	1990.1	1857.5	1758.2	1691.9	1667.1
22.5°	2313.0	2277.1	2175.0	2031.5	1885.2	1749.9	1653.3	1584.3	1562.2
25°	2213.7	2177.8	2067.3	1926.6	1774.7	1647.8	1551.2	1487.7	1462.9
27.5°	2092.2	2053.6	1945.9	1805.2	1664.4	1537.4	1449.1	1391.2	1366.3
30°	1954.2	1912.8	1810.6	1675.4	1548.5	1427.0	1341.5	1294.5	1267.0
32.5°	1794.1	1758.2	1667.1	1545.7	1427.0	1311.0	1239.3	1197.9	1175.9
35°	1620.2	1600.9	1523.6	1418.7	1302.8	1206.2	1142.8	1104.0	1084.7
37.5°	1465.7	1446.3	1380.1	1291.8	1189.6	1101.4	1048.9	1015.8	999.2
40°	1319.3	1302.8	1239.3	1164.8	1076.4	999.2	955.0	930.2	913.6
42.5°	1175.9	1167.6	1115.1	1046.1	968.8	902.5	866.7	847.4	833.6
45°	1060.0	1048.9	999.2	933.0	866.7	811.4	781.1	767.4	753.5
47.5°	957.8	943.9	891.6	833.6	772.8	723.2	695.5	681.8	676.3
50°	858.4	844.6	797.7	739.7	679.0	643.2	621.0	607.2	604.4
52.5°	770.0	756.3	703.8	648.6	601.8	571.3	552.1	538.2	532.7
55°	684.6	668.0	623.8	571.3	532.7	505.1	485.8	472.0	466.5
57.5°	607.2	590.7	552.1	502.4	466.5	441.6	425.1	411.3	405.7
60°	532.7	519.0	483.0	436.2	405.7	383.7	367.1	356.0	350.6
62.5°	463.7	452.7	416.8	375.4	350.6	331.2	317.4	306.4	312.0
65°	400.2	389.2	356.0	320.1	300.9	281.5	270.4	270.4	281.5
67.5°	339.5	328.4	300.9	270.4	253.9	240.1	231.8	240.1	248.4
70°	284.3	273.2	248.4	223.6	209.8	198.7	198.7	207.0	212.5
72.5°	231.8	220.8	201.5	182.2	171.1	162.8	171.1	176.7	182.2
75°	182.2	173.9	157.3	143.6	135.3	132.5	140.8	146.2	149.0
77.5°	135.3	129.7	118.7	107.6	102.2	104.8	113.1	115.9	118.7
80°	93.9	91.1	82.8	77.3	77.3	80.0	85.6	88.3	91.1
82.5°	58.0	58.0	52.5	49.7	52.5	58.0	60.8	63.4	63.4
85°	27.6	30.3	27.6	27.6	30.3	35.9	35.9	38.6	38.6
87.5°	8.3	8.3	11.1	11.1	13.8	13.8	13.8	13.8	16.6
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)