

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: P580971

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

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580971  
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-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: 4200.8 lumens  
Efficiency: N/A  
Efficacy: 87.5 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

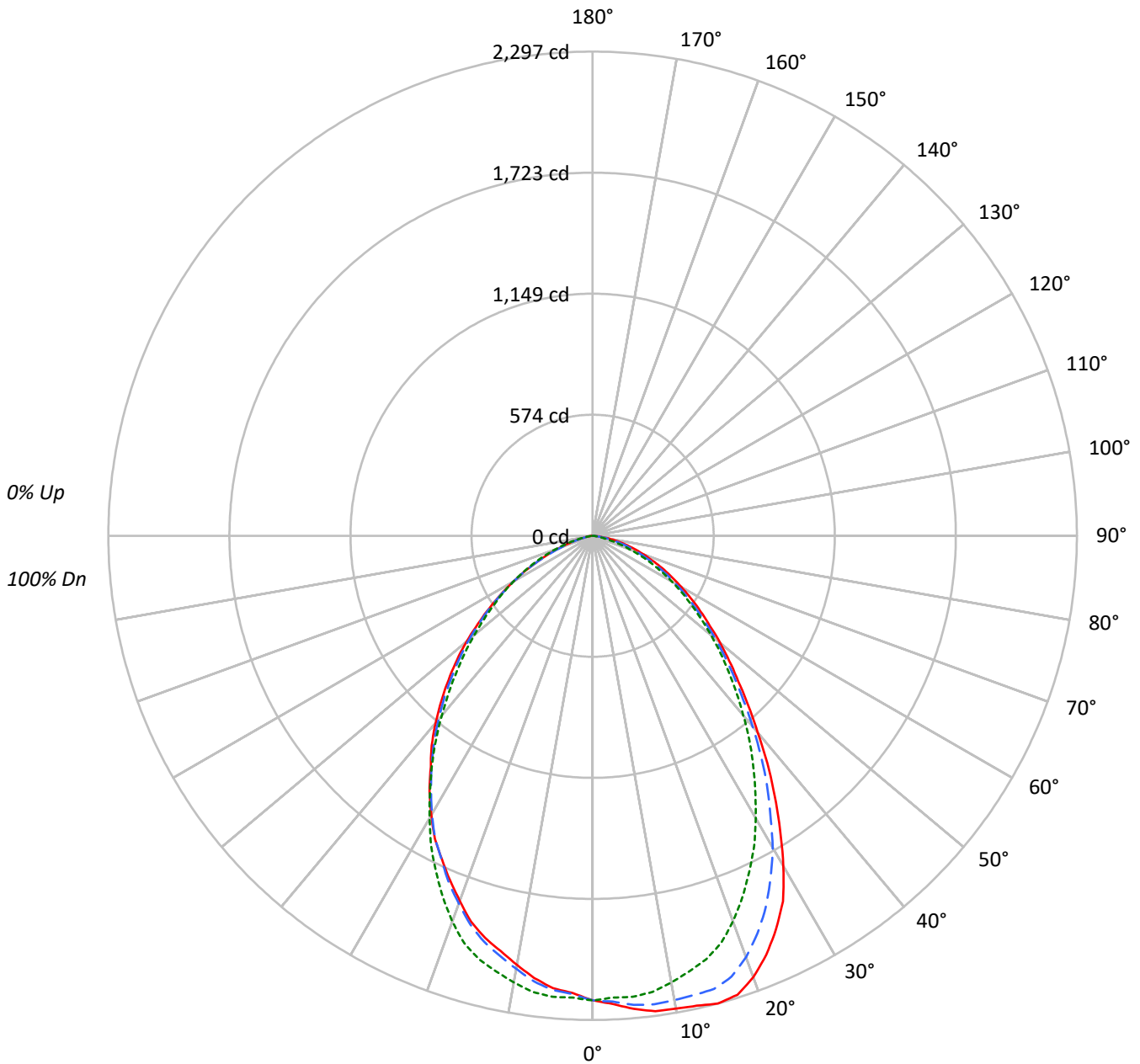
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67																			
4	88	77	70	64	86	76	69	63	74	67	62	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	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	41	37	47	41	37	46	41	37	35																			
10	58	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°	271854	271854	271854
5°	278996	271865	266788
10°	285303	269535	258901
15°	293320	265711	252073
20°	292530	255527	241863
25°	280210	239217	230276
30°	257751	220321	217971
35°	226754	199936	201593
40°	196182	178970	186473
45°	170495	159034	168593
50°	151307	140292	149733
55°	134232	123050	128361
60°	119547	106719	106719
65°	106266	88696	83093
70°	91819	67151	59253
75°	76966	44369	36553
80°	58317	21381	19392
85°	30994	7642	7642



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.7	5.0
10°-20°	591.7	14.1
20°-30°	834.5	19.9
30°-40°	862.1	20.5
40°-50°	730.8	17.4
50°-60°	531.7	12.7
60°-70°	310.7	7.4
70°-80°	115.5	2.7
80°-90°	15.1	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°	1635.0	38.9
0°-40°	2497.1	59.4
0°-60°	3759.6	89.5
0°-90°	4200.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4200.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2204	2204	2204	2204	2204	
5°	2253	2234	2196	2163	2155	216
15°	2297	2226	2081	1993	1974	646
25°	2059	1944	1758	1695	1692	942
35°	1506	1440	1328	1331	1339	940
45°	977	950	912	945	966	761
55°	624	594	572	591	597	561
65°	364	334	304	285	285	361
75°	162	134	93	74	77	173
85°	22	14	5	5	5	31
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°	2204.0	2204.0	2204.0	2204.0	2204.0	2204.0	2204.0	2204.0	2204.0
2.5°	2223.2	2217.7	2212.2	2204.0	2193.1	2184.8	2176.6	2171.2	2171.2
5°	2253.3	2245.1	2234.1	2214.9	2195.7	2179.4	2163.0	2154.7	2154.7
7.5°	2275.2	2264.3	2242.3	2214.9	2182.1	2157.4	2132.9	2121.9	2116.4
10°	2277.9	2266.9	2236.8	2195.7	2152.0	2113.6	2086.3	2069.9	2067.1
12.5°	2283.4	2269.7	2231.4	2173.8	2116.4	2069.9	2039.8	2023.3	2017.8
15°	2297.0	2277.9	2225.8	2152.0	2080.8	2026.0	1993.2	1979.4	1974.0
17.5°	2283.4	2256.0	2193.1	2105.4	2026.0	1965.8	1932.9	1919.2	1919.2
20°	2228.6	2201.3	2127.3	2031.5	1946.7	1889.1	1856.3	1848.0	1842.6
22.5°	2152.0	2121.9	2042.4	1941.1	1856.3	1804.3	1782.4	1771.4	1768.7
25°	2058.9	2028.8	1943.9	1839.8	1757.7	1713.9	1694.7	1694.7	1692.0
27.5°	1954.9	1916.5	1828.9	1738.5	1659.2	1626.3	1618.1	1618.1	1620.9
30°	1809.7	1782.4	1708.4	1620.9	1546.9	1525.0	1525.0	1530.4	1530.4
32.5°	1653.6	1634.5	1568.8	1492.1	1434.7	1420.9	1426.5	1437.3	1440.1
35°	1505.9	1483.9	1440.1	1371.7	1327.8	1322.4	1330.6	1338.8	1338.8
37.5°	1360.7	1338.8	1308.7	1253.9	1221.1	1223.8	1234.7	1245.7	1253.9
40°	1218.4	1202.0	1180.1	1136.2	1111.5	1122.5	1136.2	1147.2	1158.1
42.5°	1092.4	1076.0	1059.5	1026.7	1010.2	1024.0	1040.4	1051.3	1062.3
45°	977.4	966.5	950.0	922.7	911.7	925.5	944.6	955.6	966.5
47.5°	878.8	873.4	851.5	826.8	821.4	835.0	851.5	865.1	873.4
50°	788.5	780.3	761.2	736.5	731.1	752.9	763.8	772.1	780.3
52.5°	700.8	692.6	670.7	648.9	648.9	665.3	673.5	676.3	684.5
55°	624.2	616.0	594.1	577.7	572.2	585.9	591.4	591.4	596.9
57.5°	553.1	544.9	522.9	503.8	501.0	509.2	509.2	509.2	512.0
60°	484.6	476.3	454.5	438.0	432.6	435.3	432.6	429.8	432.6
62.5°	421.7	413.5	391.5	372.4	366.9	366.9	358.7	355.9	358.7
65°	364.1	350.5	334.0	314.8	303.9	295.7	284.7	284.7	284.7
67.5°	306.6	295.7	276.5	257.4	243.7	230.0	213.5	219.1	221.7
70°	254.6	246.4	224.5	205.3	186.2	169.7	156.1	161.5	164.3
72.5°	208.1	197.2	178.0	156.1	139.6	117.7	109.5	115.0	115.0
75°	161.5	150.6	134.2	112.2	93.1	73.9	73.9	76.7	76.7
77.5°	120.4	109.5	93.1	73.9	57.5	43.8	46.5	46.5	46.5
80°	82.1	73.9	60.2	43.8	30.1	24.7	24.7	24.7	27.3
82.5°	46.5	41.1	32.9	21.9	13.7	13.7	13.7	13.7	13.7
85°	21.9	16.4	13.7	8.2	5.4	5.4	5.4	5.4	5.4
87.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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)