

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P837666

Luminaire Tested: HCSQ455D010-HM44560935-41SQMB

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837666  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560935-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

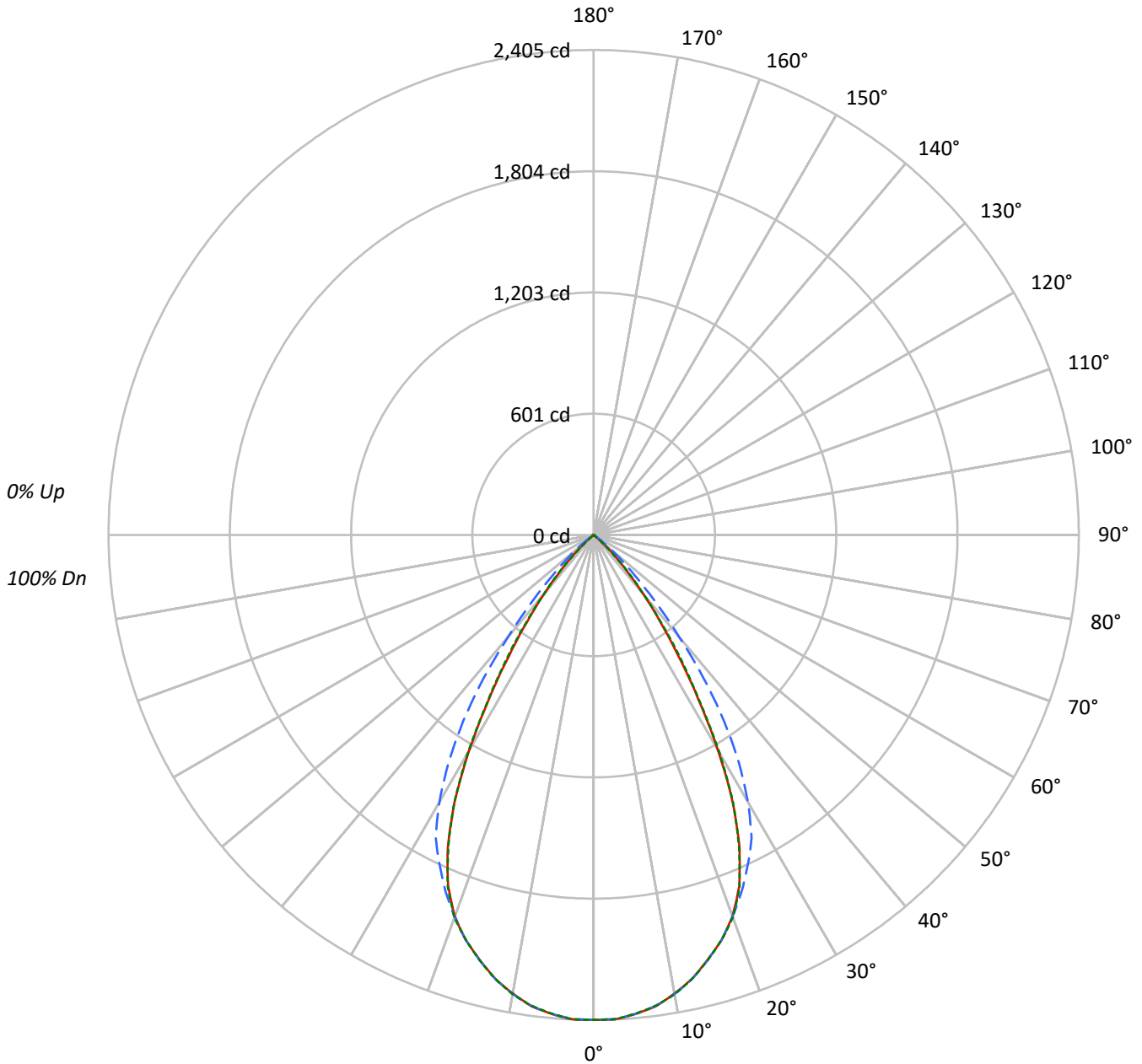
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2402.2 lumens  
Efficiency: N/A  
Efficacy: 44.5 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 54  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: 24 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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93																			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87																			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80																			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74																			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69																			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64																			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60																			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56																			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52																			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49																			

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

	0°	45°	90°
0°	232966	232966	232966
5°	231911	231911	231687
10°	227126	227343	227569
15°	218819	219040	219040
20°	207443	207670	208134
25°	182889	193151	182184
30°	138004	171194	139246
35°	86533	133235	89442
40°	48802	82946	48802
45°	20482	41868	20167
50°	1688	16141	2020
55°	760	3395	760
60°	872	426	872
65°	504	504	504
70°	623	623	623
75°	823	823	823
80°	0	1227	1227
85°	0	2445	2445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 41868 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	225.4	9.4
10°-20°	613.2	25.5
20°-30°	795.4	33.1
30°-40°	565.5	23.5
40°-50°	183.4	7.6
50°-60°	13.2	0.6
60°-70°	2.3	0.1
70°-80°	2.3	0.1
80°-90°	1.5	0.1
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°	1634.0	68.0
0°-40°	2199.5	91.6
0°-60°	2396.1	99.7
0°-90°	2402.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2402.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2405	2405	2405	2405	2405	
5°	2385	2387	2385	2385	2382	225
15°	2182	2188	2184	2188	2184	613
25°	1711	1756	1807	1765	1704	766
35°	732	866	1127	874	756	468
45°	150	212	306	216	147	124
55°	4	4	20	4	4	5
65°	2	2	2	2	2	2
75°	2	2	2	2	2	2
85°	0	0	2	2	2	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2404.8	2404.8	2404.8	2404.8	2404.8
2.5°	2404.8	2404.8	2402.6	2402.6	2404.8
5°	2384.8	2387.0	2384.8	2384.8	2382.5
7.5°	2358.0	2358.0	2355.8	2355.8	2355.8
10°	2308.9	2311.1	2311.1	2311.1	2313.4
12.5°	2255.4	2255.4	2255.4	2255.4	2255.4
15°	2181.8	2188.4	2184.0	2188.4	2184.0
17.5°	2108.1	2108.1	2105.9	2110.4	2105.9
20°	2012.2	2012.2	2014.4	2018.9	2018.9
22.5°	1885.1	1907.4	1916.3	1911.8	1889.5
25°	1711.0	1755.7	1807.0	1764.6	1704.4
27.5°	1492.4	1577.2	1695.4	1590.6	1496.9
30°	1233.7	1360.8	1530.4	1365.3	1244.8
32.5°	966.0	1113.2	1338.5	1124.3	974.9
35°	731.7	865.6	1126.6	874.5	756.3
37.5°	539.9	662.6	894.6	667.0	555.5
40°	385.9	475.2	655.9	484.1	385.9
42.5°	247.6	336.9	461.8	339.1	258.8
45°	149.5	211.9	305.6	216.4	147.2
47.5°	66.9	120.5	189.6	124.9	66.9
50°	11.2	49.1	107.1	51.3	13.4
52.5°	6.7	8.9	51.3	8.9	6.7
55°	4.5	4.5	20.1	4.5	4.5
57.5°	4.5	4.5	4.5	4.5	4.5
60°	4.5	2.2	2.2	2.2	4.5
62.5°	2.2	2.2	2.2	2.2	2.2
65°	2.2	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	2.2	2.2
70°	2.2	2.2	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2
80°	0.0	2.2	2.2	2.2	2.2
82.5°	0.0	2.2	2.2	2.2	2.2
85°	0.0	0.0	2.2	2.2	2.2
87.5°	0.0	0.0	2.2	2.2	2.2
90°	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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