

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: P837657

Luminaire Tested: HCSQ455D010-HM44560927-41SQMW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837657  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560927-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

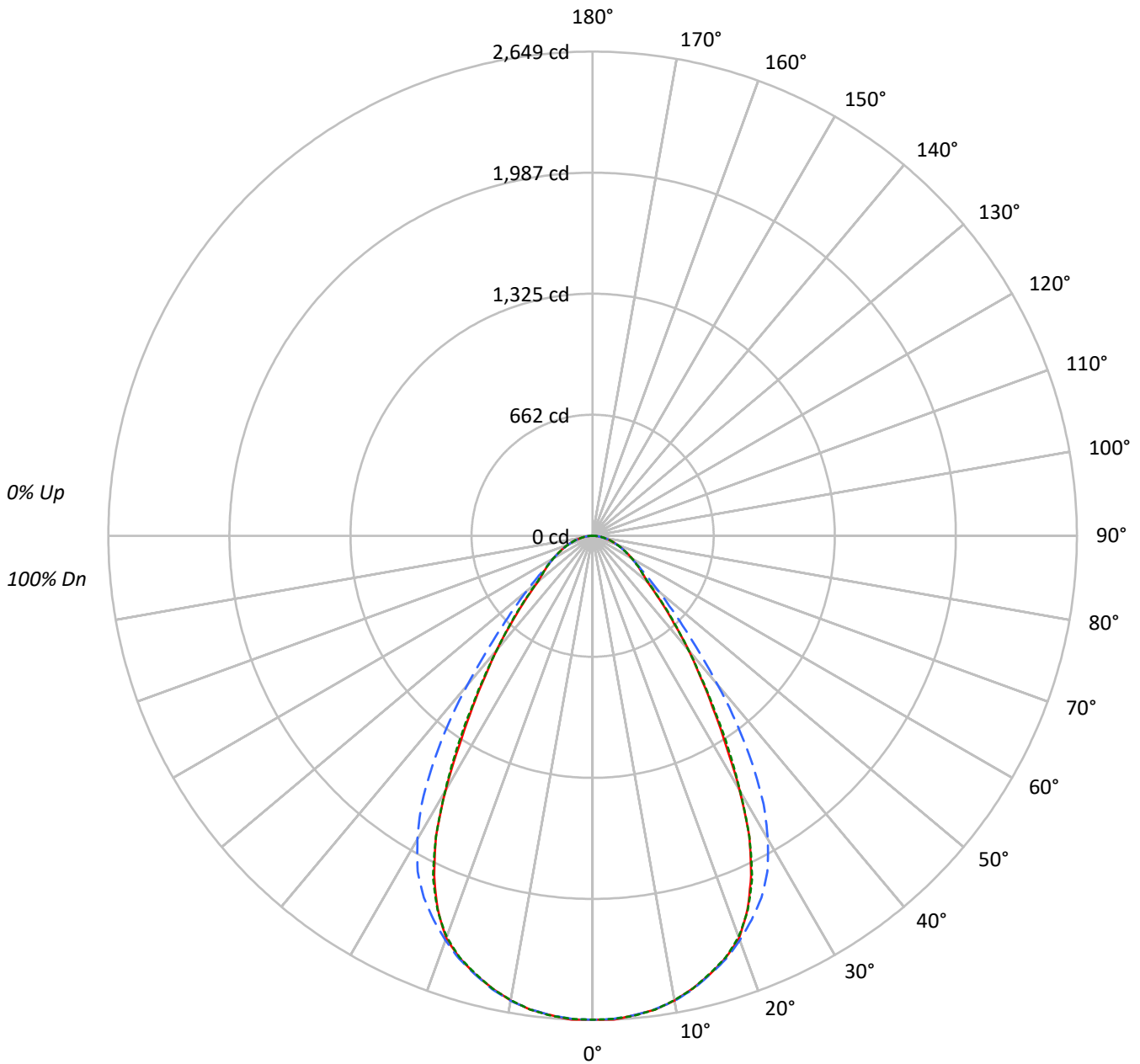
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3841.9 lumens  
Efficiency: N/A  
Efficacy: 71.1 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
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					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								
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

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

	0°	45°	90°
0°	256468	256468	256468
5°	256047	256047	256242
10°	253942	254148	253745
15°	249007	249218	248596
20°	241536	242814	240690
25°	219210	233502	220750
30°	179941	214451	180635
35°	135257	180020	137209
40°	103016	134227	102750
45°	76941	95258	78338
50°	58597	71000	59832
55°	52814	55584	52814
60°	48225	47818	47818
65°	43851	43851	43851
70°	40787	40192	40192
75°	37729	36943	37729
80°	34421	33306	34421
85°	29678	29678	29678

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 95258 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	249.7	6.5
10°-20°	699.0	18.2
20°-30°	961.3	25.0
30°-40°	818.3	21.3
40°-50°	494.3	12.9
50°-60°	291.3	7.6
60°-70°	191.1	5.0
70°-80°	105.9	2.8
80°-90°	31.0	0.8
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°	1909.9	49.7
0°-40°	2728.3	71.0
0°-60°	3513.9	91.5
0°-90°	3841.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3841.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2647	2647	2647	2647	2647	
5°	2633	2635	2633	2631	2635	250
15°	2483	2489	2485	2483	2479	698
25°	2051	2115	2184	2119	2065	927
35°	1144	1259	1522	1294	1160	724
45°	562	621	695	627	572	441
55°	313	319	329	319	313	281
65°	191	193	191	191	191	192
75°	101	101	99	99	101	107
85°	27	27	27	27	27	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2647.4	2647.4	2647.4	2647.4	2647.4
2.5°	2649.4	2643.3	2645.3	2643.3	2645.3
5°	2633.0	2635.0	2633.0	2630.9	2635.0
7.5°	2614.5	2612.4	2612.4	2610.3	2614.5
10°	2581.5	2577.4	2583.6	2579.5	2579.5
12.5°	2536.3	2542.5	2540.4	2540.4	2536.3
15°	2482.8	2489.0	2484.9	2482.8	2478.7
17.5°	2421.1	2425.2	2427.3	2419.0	2419.0
20°	2342.9	2351.2	2355.3	2340.9	2334.7
22.5°	2213.3	2250.4	2273.0	2248.3	2217.5
25°	2050.8	2114.6	2184.5	2118.7	2065.2
27.5°	1855.4	1945.9	2071.4	1960.3	1855.4
30°	1608.6	1742.3	1917.1	1756.7	1614.8
32.5°	1353.5	1495.4	1740.2	1520.1	1382.3
35°	1143.7	1258.9	1522.2	1293.9	1160.2
37.5°	962.7	1061.4	1293.9	1084.0	973.0
40°	814.6	892.7	1061.4	903.0	812.5
42.5°	672.6	746.7	859.8	757.0	680.9
45°	561.6	621.2	695.3	627.4	571.8
47.5°	466.9	516.3	569.8	516.3	473.1
50°	388.8	427.9	471.1	427.9	397.0
52.5°	347.6	360.0	388.8	362.0	347.6
55°	312.7	318.8	329.1	318.8	312.7
57.5°	279.8	283.9	281.8	281.8	279.8
60°	248.9	251.0	246.8	248.9	246.8
62.5°	220.1	220.1	216.0	220.1	218.0
65°	191.3	193.4	191.3	191.3	191.3
67.5°	166.6	166.6	164.6	166.6	166.6
70°	144.0	144.0	141.9	144.0	141.9
72.5°	121.4	121.4	119.3	119.3	119.3
75°	100.8	100.8	98.7	98.7	100.8
77.5°	80.2	80.2	78.2	80.2	80.2
80°	61.7	61.7	59.7	61.7	61.7
82.5°	43.2	43.2	43.2	45.3	45.3
85°	26.7	26.7	26.7	26.7	26.7
87.5°	12.3	12.3	12.3	12.3	14.4
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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