

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: P837604

Luminaire Tested: HCSQ450D010-HM44560835-41SQH

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837604  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ450D010-HM44560835-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

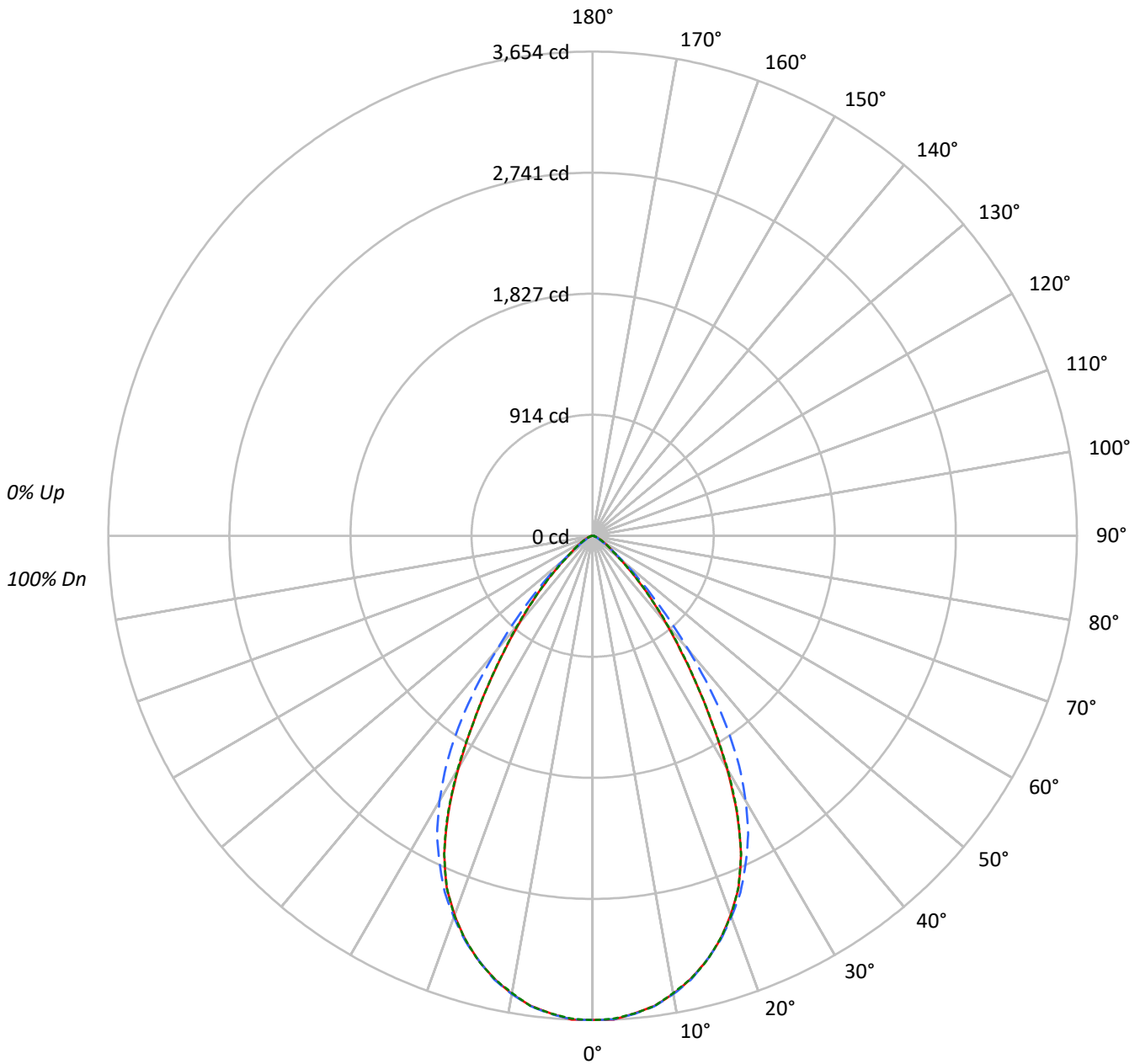
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4108.0 lumens  
Efficiency: N/A  
Efficacy: 82.7 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 49.7  
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				100															
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92				92															
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85				85															
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77				77															
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71				71															
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65				65															
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60				60															
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56				56															
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52				52															
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48				48															
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45				45															

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

	0°	45°	90°
0°	354031	354031	354031
5°	351863	352311	351863
10°	345278	345505	344609
15°	333012	332782	333233
20°	313917	315546	314618
25°	283259	291949	283259
30°	226241	258301	228009
35°	161500	209018	161772
40°	109048	142156	110755
45°	69268	84120	69584
50°	39456	44912	38100
55°	25926	21737	25537
60°	17922	12691	17496
65°	12424	9307	12424
70°	8951	7024	8951
75°	5914	5914	5914
80°	3794	5021	5021
85°	5002	5002	5002

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 84120 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	342.4	8.3
10°-20°	930.9	22.7
20°-30°	1218.9	29.7
30°-40°	958.0	23.3
40°-50°	447.5	10.9
50°-60°	138.7	3.4
60°-70°	49.5	1.2
70°-80°	17.4	0.4
80°-90°	4.8	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°	2492.1	60.7
0°-40°	3450.1	84.0
0°-60°	4036.3	98.3
0°-90°	4108.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4108.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3654	3654	3654	3654	3654	
5°	3618	3621	3623	3627	3618	342
15°	3320	3320	3318	3320	3323	930
25°	2650	2686	2731	2688	2650	1192
35°	1366	1490	1767	1508	1368	861
45°	506	567	614	555	508	403
55°	154	144	129	142	151	144
65°	54	50	41	47	54	56
75°	16	16	16	16	16	18
85°	4	4	4	4	4	4
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3654.5	3654.5	3654.5	3654.5	3654.5
2.5°	3654.5	3649.9	3652.2	3647.7	3647.7
5°	3618.3	3620.6	3622.9	3627.4	3618.3
7.5°	3577.7	3582.2	3580.0	3580.0	3580.0
10°	3510.0	3512.3	3512.3	3512.3	3503.2
12.5°	3424.2	3428.7	3431.0	3424.2	3424.2
15°	3320.4	3320.4	3318.1	3320.4	3322.6
17.5°	3196.2	3203.0	3203.0	3196.2	3194.0
20°	3045.0	3056.3	3060.8	3051.8	3051.8
22.5°	2875.7	2887.0	2914.1	2891.5	2873.5
25°	2650.0	2686.1	2731.3	2688.4	2650.0
27.5°	2358.8	2437.8	2541.6	2451.4	2365.6
30°	2022.5	2151.1	2309.1	2157.9	2038.3
32.5°	1679.4	1823.8	2056.3	1835.1	1679.4
35°	1365.6	1489.8	1767.4	1507.8	1367.9
37.5°	1085.7	1205.4	1449.1	1218.9	1101.5
40°	862.3	959.3	1124.1	957.1	875.8
42.5°	672.7	742.6	851.0	740.4	670.4
45°	505.6	566.6	614.0	555.3	507.9
47.5°	372.4	413.1	440.2	406.3	363.4
50°	261.8	291.2	298.0	284.4	252.8
52.5°	196.4	196.4	198.6	194.1	191.9
55°	153.5	144.5	128.7	142.2	151.2
57.5°	119.6	110.6	90.3	106.1	117.4
60°	92.5	83.5	65.5	81.3	90.3
62.5°	72.2	63.2	51.9	63.2	70.0
65°	54.2	49.7	40.6	47.4	54.2
67.5°	40.6	36.1	31.6	36.1	40.6
70°	31.6	29.3	24.8	27.1	31.6
72.5°	22.6	20.3	20.3	20.3	22.6
75°	15.8	15.8	15.8	15.8	15.8
77.5°	11.3	11.3	11.3	11.3	11.3
80°	6.8	6.8	9.0	9.0	9.0
82.5°	4.5	4.5	6.8	6.8	6.8
85°	4.5	4.5	4.5	4.5	4.5
87.5°	2.3	2.3	2.3	4.5	4.5
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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