

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: P837702

Luminaire Tested: HCSQ460D010-HM44560930-41SQMW

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837702  
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: HCSQ460D010-HM44560930-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

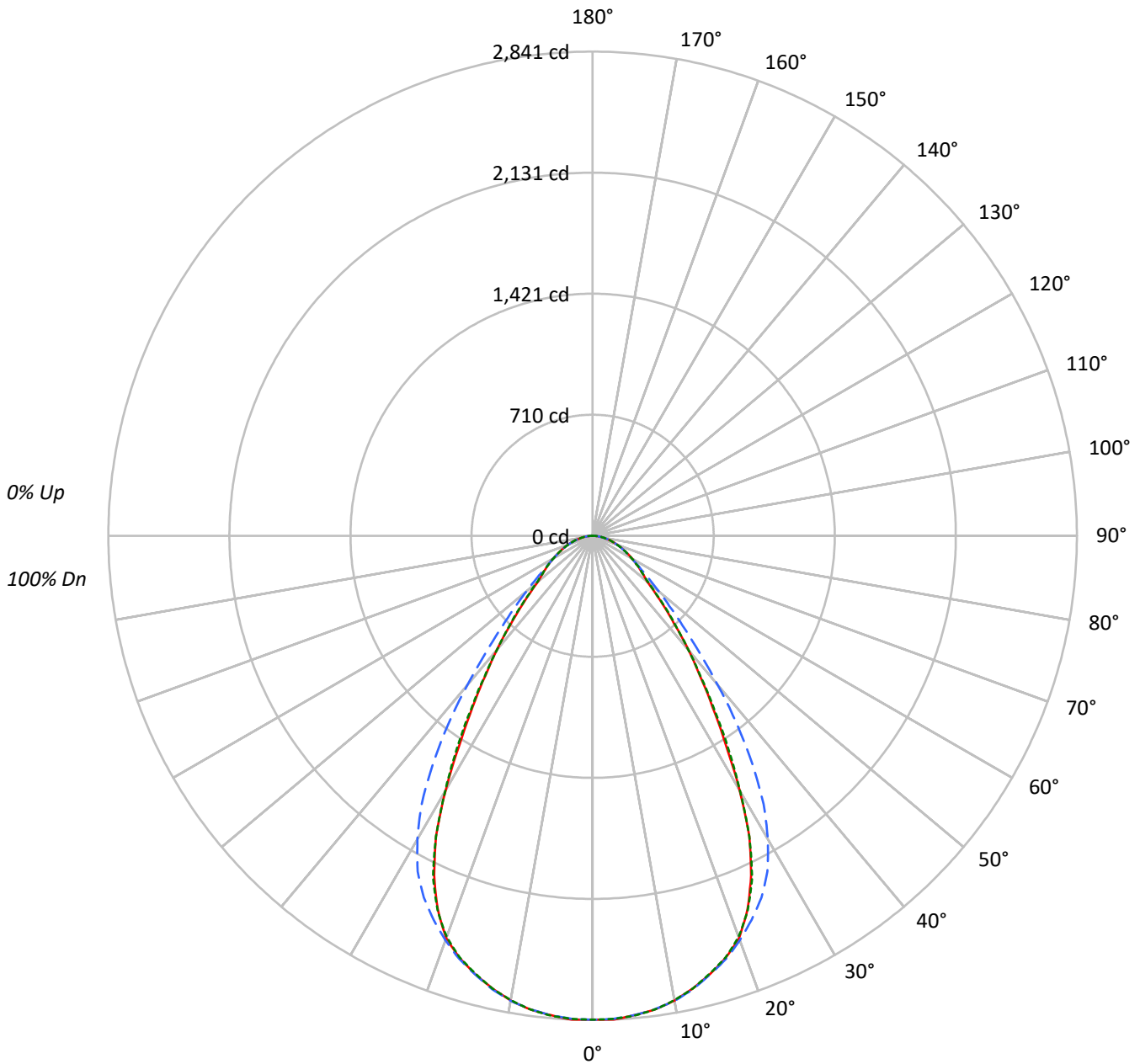
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4120.3 lumens  
Efficiency: N/A  
Efficacy: 73.6 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): 56  
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					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°	275049	275049	275049
5°	274602	274602	274816
10°	272347	272573	272130
15°	267060	267280	266608
20°	259041	260412	258134
25°	235105	250433	236751
30°	192985	230000	193723
35°	145061	193064	147143
40°	110477	143952	110199
45°	82517	102163	84024
50°	62847	76139	64173
55°	56631	59621	56631
60°	51712	51286	51286
65°	47037	47037	47037
70°	43733	43110	43110
75°	40462	39638	40462
80°	36932	35705	36932
85°	31901	31901	31901

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 102163 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.8	6.5
10°-20°	749.6	18.2
20°-30°	1031.0	25.0
30°-40°	877.6	21.3
40°-50°	530.1	12.9
50°-60°	312.4	7.6
60°-70°	204.9	5.0
70°-80°	113.6	2.8
80°-90°	33.2	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°	2048.4	49.7
0°-40°	2926.0	71.0
0°-60°	3768.6	91.5
0°-90°	4120.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4120.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2839	2839	2839	2839	2839	
5°	2824	2826	2824	2822	2826	268
15°	2663	2669	2665	2663	2658	749
25°	2200	2268	2343	2272	2215	994
35°	1227	1350	1632	1388	1244	776
45°	602	666	746	673	613	473
55°	335	342	353	342	335	302
65°	205	207	205	205	205	205
75°	108	108	106	106	108	115
85°	29	29	29	29	29	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2839.2	2839.2	2839.2	2839.2	2839.2
2.5°	2841.4	2834.8	2837.0	2834.8	2837.0
5°	2823.8	2826.0	2823.8	2821.6	2826.0
7.5°	2803.9	2801.7	2801.7	2799.5	2803.9
10°	2768.6	2764.2	2770.9	2766.4	2766.4
12.5°	2720.1	2726.7	2724.5	2724.5	2720.1
15°	2662.8	2669.4	2665.0	2662.8	2658.3
17.5°	2596.6	2601.0	2603.2	2594.4	2594.4
20°	2512.7	2521.6	2526.0	2510.5	2503.9
22.5°	2373.8	2413.5	2437.7	2411.3	2378.2
25°	2199.5	2267.9	2342.9	2272.3	2214.9
27.5°	1989.9	2087.0	2221.5	2102.4	1989.9
30°	1725.2	1868.6	2056.1	1884.0	1731.8
32.5°	1451.6	1603.8	1866.4	1630.3	1482.5
35°	1226.6	1350.1	1632.5	1387.6	1244.2
37.5°	1032.5	1138.3	1387.6	1162.6	1043.5
40°	873.6	957.4	1138.3	968.5	871.4
42.5°	721.4	800.8	922.1	811.8	730.2
45°	602.3	666.2	745.7	672.9	613.3
47.5°	500.8	553.7	611.1	553.7	507.4
50°	417.0	458.9	505.2	458.9	425.8
52.5°	372.8	386.1	417.0	388.3	372.8
55°	335.3	341.9	353.0	341.9	335.3
57.5°	300.0	304.4	302.2	302.2	300.0
60°	266.9	269.1	264.7	266.9	264.7
62.5°	236.1	236.1	231.6	236.1	233.8
65°	205.2	207.4	205.2	205.2	205.2
67.5°	178.7	178.7	176.5	178.7	178.7
70°	154.4	154.4	152.2	154.4	152.2
72.5°	130.2	130.2	128.0	128.0	128.0
75°	108.1	108.1	105.9	105.9	108.1
77.5°	86.0	86.0	83.8	86.0	86.0
80°	66.2	66.2	64.0	66.2	66.2
82.5°	46.3	46.3	46.3	48.5	48.5
85°	28.7	28.7	28.7	28.7	28.7
87.5°	13.2	13.2	13.2	13.2	15.4
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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