

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: P837678

Luminaire Tested: HCSQ460D010-HM44560830-41SQC

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837678  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560830-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

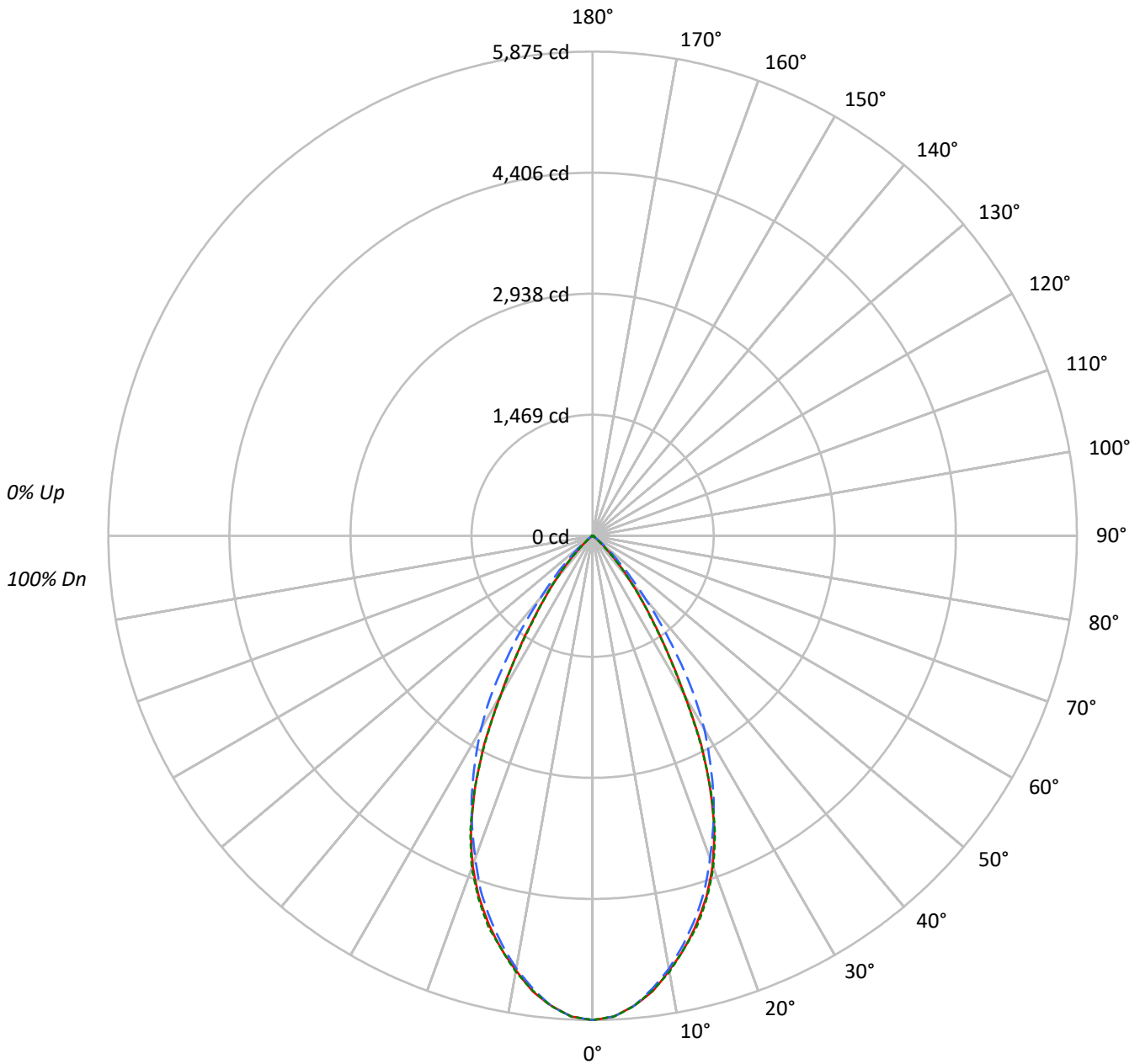
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4748.0 lumens  
Efficiency: N/A  
Efficacy: 84.8 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87  
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									
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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	94																			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	96	91	87	101	95	90	87	92	89	85	90	87	84	88	85	83	81																			
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76																			
5	93	84	79	74	91	83	78	74	82	77	73	80	76	73	78	75	72	71																			
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	70	68	66																			
7	84	75	69	65	82	74	68	64	73	68	64	71	67	64	70	66	63	62																			
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	60	58																			
9	76	67	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55																			
10	73	63	57	53	72	63	57	53	62	57	53	61	56	53	60	56	53	52																			

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

	0°	45°	90°
0°	569182	569182	569182
5°	556973	557207	557207
10°	526820	524479	528227
15°	488817	482118	491445
20°	438793	428958	441494
25°	360402	370845	361674
30°	249128	303012	247260
35°	153411	214032	149745
40°	86538	125147	85944
45°	39525	62720	37895
50°	10068	25154	10414
55°	4830	7651	4425
60°	3236	2771	3701
65°	2728	2178	2728
70°	2039	2039	2691
75°	1797	1797	2695
80°	2678	2678	2678
85°	2668	5335	5335

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 62720 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	534.5	11.3
10°-20°	1349.8	28.4
20°-30°	1543.0	32.5
30°-40°	957.9	20.2
40°-50°	301.8	6.4
50°-60°	39.1	0.8
60°-70°	11.5	0.2
70°-80°	6.2	0.1
80°-90°	4.2	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°	3427.3	72.2
0°-40°	4385.1	92.4
0°-60°	4726.1	99.5
0°-90°	4748.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4748.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5875	5875	5875	5875	5875	
5°	5728	5723	5730	5725	5730	535
15°	4874	4838	4807	4838	4900	1359
25°	3372	3419	3469	3419	3384	1513
35°	1297	1498	1810	1462	1266	834
45°	288	346	458	348	277	243
55°	29	29	45	29	26	28
65°	12	12	10	12	12	12
75°	5	5	5	5	7	6
85°	2	5	5	5	5	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5875.4	5875.4	5875.4	5875.4	5875.4
2.5°	5839.6	5844.4	5839.6	5849.1	5839.6
5°	5727.5	5722.8	5729.9	5725.1	5729.9
7.5°	5574.9	5546.3	5543.9	5563.0	5565.4
10°	5355.5	5348.4	5331.7	5348.4	5369.8
12.5°	5131.4	5102.8	5078.9	5112.3	5131.4
15°	4873.9	4838.1	4807.1	4838.1	4900.1
17.5°	4590.1	4540.0	4513.8	4549.6	4609.2
20°	4256.3	4203.8	4160.9	4191.9	4282.5
22.5°	3855.7	3850.9	3822.3	3839.0	3872.4
25°	3371.7	3419.3	3469.4	3419.3	3383.6
27.5°	2839.9	2968.7	3083.1	2932.9	2818.5
30°	2227.1	2422.6	2708.8	2408.3	2210.4
32.5°	1721.6	1926.7	2291.5	1900.4	1707.3
35°	1297.2	1497.5	1809.8	1461.7	1266.2
37.5°	953.8	1104.0	1375.8	1094.5	953.8
40°	684.3	782.1	989.6	779.7	679.6
42.5°	474.5	538.9	691.5	534.1	460.2
45°	288.5	345.7	457.8	348.1	276.6
47.5°	152.6	219.4	288.5	209.8	152.6
50°	66.8	116.8	166.9	114.5	69.1
52.5°	35.8	50.1	90.6	50.1	35.8
55°	28.6	28.6	45.3	28.6	26.2
57.5°	21.5	21.5	23.8	21.5	21.5
60°	16.7	16.7	14.3	16.7	19.1
62.5°	14.3	14.3	11.9	14.3	14.3
65°	11.9	11.9	9.5	11.9	11.9
67.5°	9.5	9.5	9.5	9.5	9.5
70°	7.2	7.2	7.2	9.5	9.5
72.5°	7.2	7.2	7.2	7.2	7.2
75°	4.8	4.8	4.8	4.8	7.2
77.5°	4.8	4.8	4.8	4.8	4.8
80°	4.8	4.8	4.8	4.8	4.8
82.5°	2.4	4.8	4.8	4.8	4.8
85°	2.4	4.8	4.8	4.8	4.8
87.5°	2.4	2.4	4.8	4.8	4.8
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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