

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: P837638

Luminaire Tested: HCSQ455D010-HM44560830-41SQC

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837638  
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: HCSQ455D010-HM44560830-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

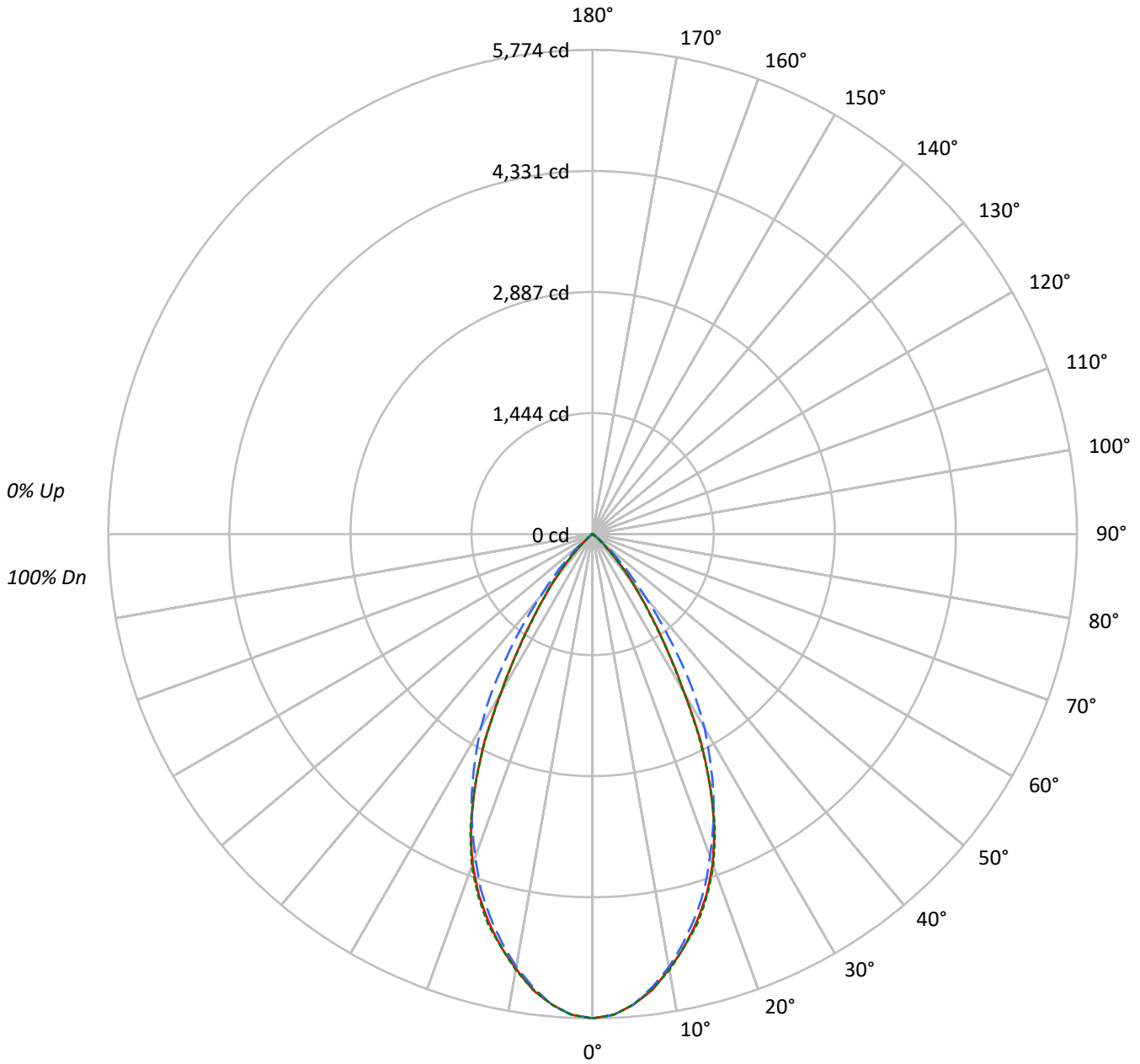
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4665.7 lumens  
Efficiency: N/A  
Efficacy: 86.4 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): 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	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°	559320	559320	559320
5°	547327	547560	547560
10°	517701	515399	519088
15°	480352	473773	482930
20°	431195	421536	433855
25°	354159	364421	355410
30°	244810	297766	242976
35°	150750	210331	147143
40°	85046	122972	84451
45°	38840	61637	37237
50°	9887	24717	10248
55°	4746	7516	4358
60°	3178	2732	3623
65°	2682	2155	2682
70°	1983	1983	2663
75°	1759	1759	2620
80°	2622	2622	2622
85°	2556	5224	5224

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 61637 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	525.2	11.3
10°-20°	1326.4	28.4
20°-30°	1516.3	32.5
30°-40°	941.3	20.2
40°-50°	296.6	6.4
50°-60°	38.4	0.8
60°-70°	11.4	0.2
70°-80°	6.1	0.1
80°-90°	4.1	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°	3367.9	72.2
0°-40°	4309.2	92.4
0°-60°	4644.2	99.5
0°-90°	4665.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4665.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5774	5774	5774	5774	5774	
5°	5628	5624	5631	5626	5631	526
15°	4790	4754	4724	4754	4815	1336
25°	3313	3360	3409	3360	3325	1486
35°	1275	1472	1778	1436	1244	819
45°	284	340	450	342	272	239
55°	28	28	44	28	26	28
65°	12	12	9	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°	5773.6	5773.6	5773.6	5773.6	5773.6
2.5°	5738.5	5743.1	5738.5	5747.8	5738.5
5°	5628.3	5623.6	5630.7	5626.0	5630.7
7.5°	5478.4	5450.3	5447.9	5466.7	5469.0
10°	5262.8	5255.8	5239.4	5255.8	5276.9
12.5°	5042.5	5014.4	4991.0	5023.8	5042.5
15°	4789.5	4754.3	4723.9	4754.3	4815.2
17.5°	4510.6	4461.4	4435.7	4470.8	4529.4
20°	4182.6	4131.0	4088.9	4119.3	4208.4
22.5°	3788.9	3784.2	3756.1	3772.5	3805.3
25°	3313.3	3360.1	3409.3	3360.1	3325.0
27.5°	2790.7	2917.3	3029.7	2882.1	2769.6
30°	2188.5	2380.7	2661.9	2366.6	2172.1
32.5°	1691.8	1893.3	2251.8	1867.5	1677.7
35°	1274.7	1471.5	1778.5	1436.4	1244.2
37.5°	937.3	1084.9	1352.0	1075.5	937.3
40°	672.5	768.6	972.4	766.2	667.8
42.5°	466.3	529.6	679.5	524.9	452.2
45°	283.5	339.8	449.9	342.1	271.8
47.5°	150.0	215.6	283.5	206.2	150.0
50°	65.6	114.8	164.0	112.5	68.0
52.5°	35.1	49.2	89.0	49.2	35.1
55°	28.1	28.1	44.5	28.1	25.8
57.5°	21.1	21.1	23.4	21.1	21.1
60°	16.4	16.4	14.1	16.4	18.7
62.5°	14.1	14.1	11.7	14.1	14.1
65°	11.7	11.7	9.4	11.7	11.7
67.5°	9.4	9.4	9.4	9.4	9.4
70°	7.0	7.0	7.0	9.4	9.4
72.5°	7.0	7.0	7.0	7.0	7.0
75°	4.7	4.7	4.7	4.7	7.0
77.5°	4.7	4.7	4.7	4.7	4.7
80°	4.7	4.7	4.7	4.7	4.7
82.5°	2.3	4.7	4.7	4.7	4.7
85°	2.3	4.7	4.7	4.7	4.7
87.5°	2.3	2.3	4.7	4.7	4.7
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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