

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P837618

Luminaire Tested: HCSQ450D010-HM44560930-41SQC

Issue Date: 5/17/2024



**Test Information**

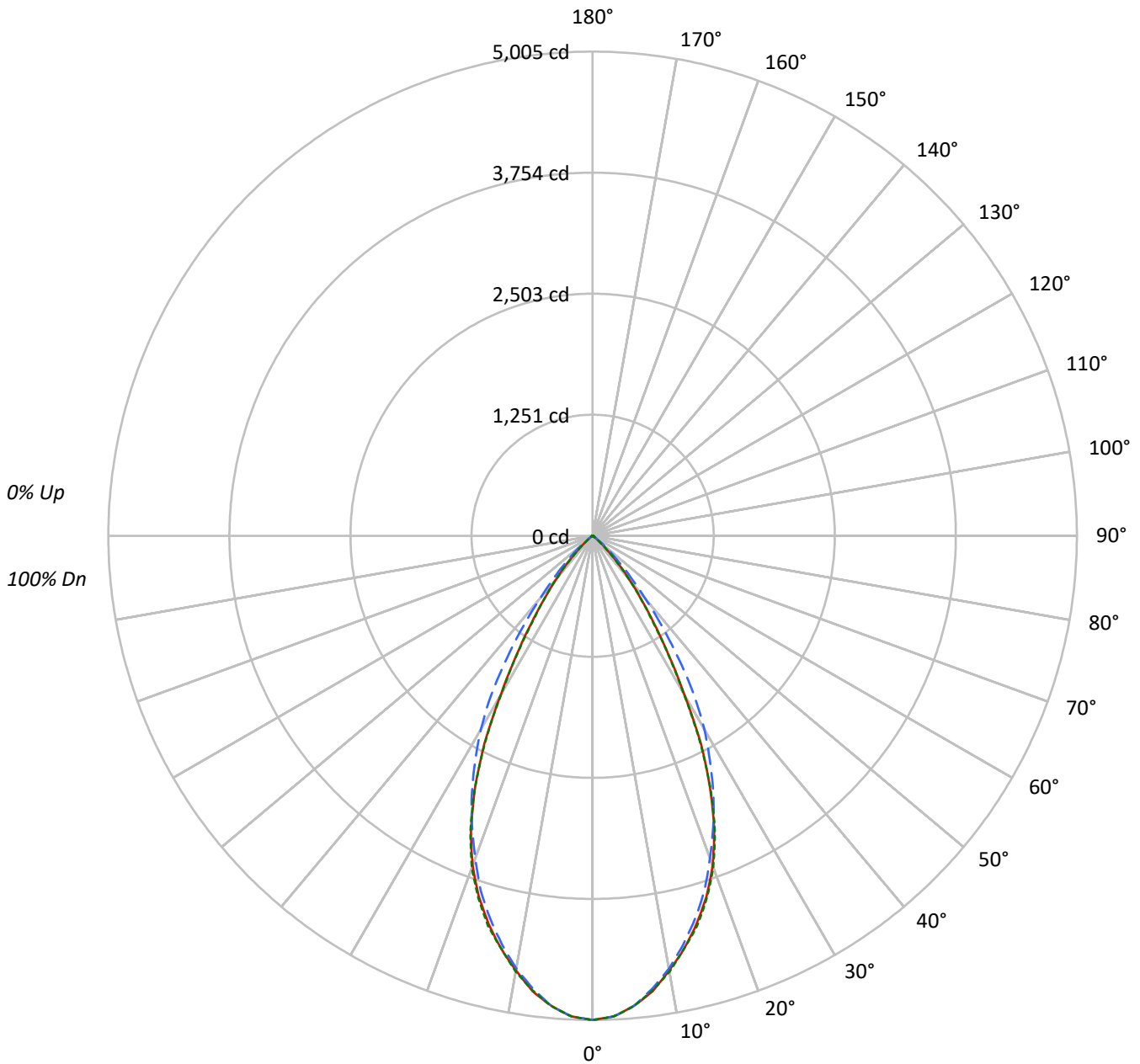
Test Method: LM-79-2019  
Report Number: P837618  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ450D010-HM44560930-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4044.6 lumens  
Efficiency: N/A  
Efficacy: 81.4 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): 49.7  
Input Voltage (V): NR  
Input Current (Ain): 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°	484852	484852	484852
5°	474461	474655	474655
10°	448773	446776	449973
15°	416396	410689	418642
20°	373783	365412	376092
25°	306999	315903	308090
30°	212225	258122	210625
35°	130681	182326	127559
40°	73727	106607	73209
45°	33675	53431	32278
50°	8575	21431	8877
55°	4121	6519	3766
60°	2751	2364	3139
65°	2338	1857	2338
70°	1728	1728	2294
75°	1535	1535	2283
80°	2287	2287	2287
85°	2223	4557	4557

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 53431 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	455.3	11.3
10°-20°	1149.8	28.4
20°-30°	1314.4	32.5
30°-40°	815.9	20.2
40°-50°	257.1	6.4
50°-60°	33.3	0.8
60°-70°	9.8	0.2
70°-80°	5.3	0.1
80°-90°	3.6	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°	2919.5	72.2
0°-40°	3735.5	92.4
0°-60°	4025.9	99.5
0°-90°	4044.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4044.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5005	5005	5005	5005	5005	
5°	4879	4875	4881	4877	4881	456
15°	4152	4121	4095	4121	4174	1158
25°	2872	2913	2955	2913	2882	1288
35°	1105	1276	1542	1245	1079	710
45°	246	294	390	297	236	207
55°	24	24	39	24	22	24
65°	10	10	8	10	10	10
75°	4	4	4	4	6	5
85°	2	4	4	4	4	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5004.9	5004.9	5004.9	5004.9	5004.9
2.5°	4974.5	4978.5	4974.5	4982.6	4974.5
5°	4879.0	4874.9	4881.0	4877.0	4881.0
7.5°	4749.0	4724.6	4722.6	4738.8	4740.9
10°	4562.1	4556.0	4541.8	4556.0	4574.3
12.5°	4371.2	4346.8	4326.5	4354.9	4371.2
15°	4151.8	4121.3	4094.9	4121.3	4174.2
17.5°	3910.1	3867.4	3845.1	3875.6	3926.3
20°	3625.7	3581.0	3544.5	3570.9	3648.1
22.5°	3284.5	3280.4	3256.0	3270.3	3298.7
25°	2872.1	2912.8	2955.4	2912.8	2882.3
27.5°	2419.2	2528.9	2626.4	2498.4	2400.9
30°	1897.2	2063.7	2307.5	2051.5	1882.9
32.5°	1466.5	1641.2	1952.0	1618.9	1454.4
35°	1105.0	1275.6	1541.7	1245.1	1078.6
37.5°	812.5	940.5	1172.0	932.3	812.5
40°	583.0	666.2	843.0	664.2	578.9
42.5°	404.2	459.1	589.1	455.0	392.0
45°	245.8	294.5	390.0	296.6	235.6
47.5°	130.0	186.9	245.8	178.7	130.0
50°	56.9	99.5	142.2	97.5	58.9
52.5°	30.5	42.7	77.2	42.7	30.5
55°	24.4	24.4	38.6	24.4	22.3
57.5°	18.3	18.3	20.3	18.3	18.3
60°	14.2	14.2	12.2	14.2	16.2
62.5°	12.2	12.2	10.2	12.2	12.2
65°	10.2	10.2	8.1	10.2	10.2
67.5°	8.1	8.1	8.1	8.1	8.1
70°	6.1	6.1	6.1	8.1	8.1
72.5°	6.1	6.1	6.1	6.1	6.1
75°	4.1	4.1	4.1	4.1	6.1
77.5°	4.1	4.1	4.1	4.1	4.1
80°	4.1	4.1	4.1	4.1	4.1
82.5°	2.0	4.1	4.1	4.1	4.1
85°	2.0	4.1	4.1	4.1	4.1
87.5°	2.0	2.0	4.1	4.1	4.1
90°	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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