

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: P837613

Luminaire Tested: HCSQ450D010-HM44560927-41SQC

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837613  
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-HM44560927-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

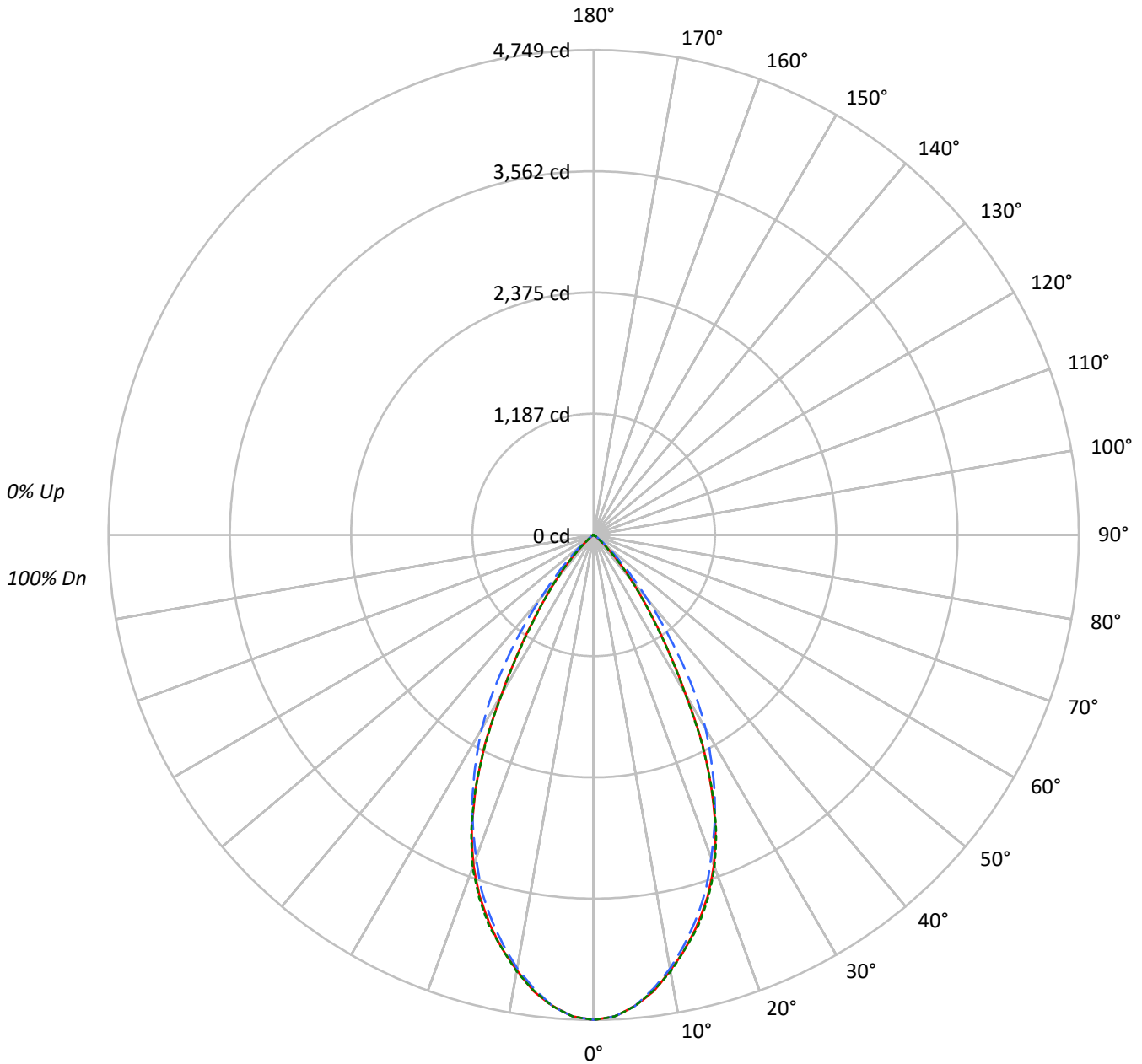
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3837.7 lumens  
Efficiency: N/A  
Efficacy: 77.2 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 (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°	460052	460052	460052
5°	450188	450383	450383
10°	425824	423925	426955
15°	395104	389688	397230
20°	354670	346721	356855
25°	291297	299752	292334
30°	201363	244911	199853
35°	123999	172995	121030
40°	69946	101144	69466
45°	31949	50691	30634
50°	8138	20331	8425
55°	3902	6182	3581
60°	2616	2248	2984
65°	2201	1765	2201
70°	1643	1643	2181
75°	1460	1460	2171
80°	2176	2176	2176
85°	2112	4335	4335

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 50691 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	432.0	11.3
10°-20°	1091.0	28.4
20°-30°	1247.2	32.5
30°-40°	774.2	20.2
40°-50°	244.0	6.4
50°-60°	31.6	0.8
60°-70°	9.3	0.2
70°-80°	5.0	0.1
80°-90°	3.4	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°	2770.2	72.2
0°-40°	3544.4	92.4
0°-60°	3820.0	99.5
0°-90°	3837.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3837.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4749	4749	4749	4749	4749	
5°	4629	4626	4631	4628	4631	433
15°	3940	3911	3886	3911	3961	1099
25°	2725	2764	2804	2764	2735	1223
35°	1048	1210	1463	1182	1023	674
45°	233	280	370	281	224	197
55°	23	23	37	23	21	23
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°	4748.9	4748.9	4748.9	4748.9	4748.9
2.5°	4720.0	4723.9	4720.0	4727.7	4720.0
5°	4629.4	4625.6	4631.4	4627.5	4631.4
7.5°	4506.1	4483.0	4481.0	4496.5	4498.4
10°	4328.8	4323.0	4309.5	4323.0	4340.3
12.5°	4147.6	4124.5	4105.2	4132.2	4147.6
15°	3939.5	3910.6	3885.5	3910.6	3960.7
17.5°	3710.1	3669.6	3648.4	3677.3	3725.5
20°	3440.3	3397.9	3363.2	3388.2	3461.5
22.5°	3116.5	3112.6	3089.5	3103.0	3130.0
25°	2725.2	2763.8	2804.3	2763.8	2734.9
27.5°	2295.4	2399.5	2492.0	2370.6	2278.1
30°	1800.1	1958.2	2189.4	1946.6	1786.6
32.5°	1391.5	1557.3	1852.2	1536.1	1380.0
35°	1048.5	1210.4	1462.8	1181.5	1023.4
37.5°	770.9	892.4	1112.1	884.6	770.9
40°	553.1	632.2	799.8	630.2	549.3
42.5°	383.5	435.6	558.9	431.7	372.0
45°	233.2	279.5	370.0	281.4	223.6
47.5°	123.3	177.3	233.2	169.6	123.3
50°	54.0	94.4	134.9	92.5	55.9
52.5°	28.9	40.5	73.2	40.5	28.9
55°	23.1	23.1	36.6	23.1	21.2
57.5°	17.3	17.3	19.3	17.3	17.3
60°	13.5	13.5	11.6	13.5	15.4
62.5°	11.6	11.6	9.6	11.6	11.6
65°	9.6	9.6	7.7	9.6	9.6
67.5°	7.7	7.7	7.7	7.7	7.7
70°	5.8	5.8	5.8	7.7	7.7
72.5°	5.8	5.8	5.8	5.8	5.8
75°	3.9	3.9	3.9	3.9	5.8
77.5°	3.9	3.9	3.9	3.9	3.9
80°	3.9	3.9	3.9	3.9	3.9
82.5°	1.9	3.9	3.9	3.9	3.9
85°	1.9	3.9	3.9	3.9	3.9
87.5°	1.9	1.9	3.9	3.9	3.9
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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