

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: P837281

Luminaire Tested: HCSQ410D010-HM40525830-41SQMB

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837281  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ410D010-HM40525830-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

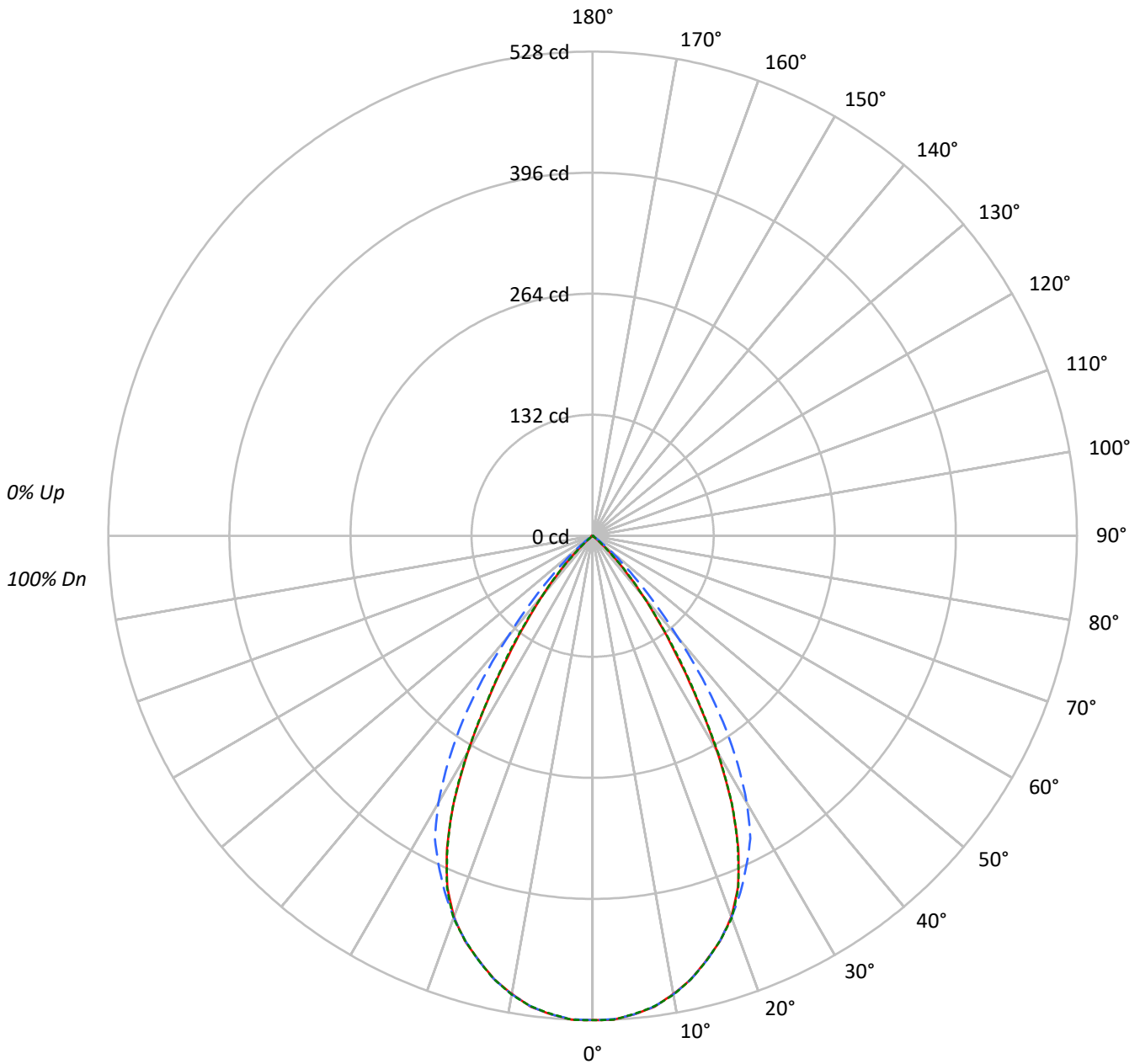
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 527.7 lumens  
Efficiency: N/A  
Efficacy: 53.3 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.9  
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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93																			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87																			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80																			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74																			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69																			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64																			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60																			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56																			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52																			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49																			

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

	0°	45°	90°
0°	51170	51170	51170
5°	50937	50937	50889
10°	49893	49942	49982
15°	48060	48110	48110
20°	45567	45619	45722
25°	40169	42425	40020
30°	30315	37597	30583
35°	19005	29270	19643
40°	10724	18223	10724
45°	4494	9193	4425
50°	377	3542	437
55°	169	743	169
60°	194	97	194
65°	115	115	115
70°	142	142	142
75°	187	187	187
80°	0	279	279
85°	0	556	556

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 9193 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.5	9.4
10°-20°	134.7	25.5
20°-30°	174.7	33.1
30°-40°	124.2	23.5
40°-50°	40.3	7.6
50°-60°	2.9	0.6
60°-70°	0.5	0.1
70°-80°	0.5	0.1
80°-90°	0.3	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°	358.9	68.0
0°-40°	483.1	91.6
0°-60°	526.3	99.7
0°-90°	527.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	527.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	528	528	528	528	528	
5°	524	524	524	524	523	50
15°	479	481	480	481	480	135
25°	376	386	397	388	374	168
35°	161	190	248	192	166	103
45°	33	47	67	48	32	27
55°	1	1	4	1	1	1
65°	0	0	0	0	0	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	528.2	528.2	528.2	528.2	528.2
2.5°	528.2	528.2	527.7	527.7	528.2
5°	523.8	524.3	523.8	523.8	523.3
7.5°	517.9	517.9	517.5	517.5	517.5
10°	507.2	507.7	507.7	507.7	508.1
12.5°	495.4	495.4	495.4	495.4	495.4
15°	479.2	480.7	479.7	480.7	479.7
17.5°	463.1	463.1	462.6	463.6	462.6
20°	442.0	442.0	442.5	443.5	443.5
22.5°	414.1	419.0	420.9	419.9	415.0
25°	375.8	385.6	396.9	387.6	374.4
27.5°	327.8	346.4	372.4	349.4	328.8
30°	271.0	298.9	336.1	299.9	273.4
32.5°	212.2	244.5	294.0	247.0	214.1
35°	160.7	190.1	247.5	192.1	166.1
37.5°	118.6	145.5	196.5	146.5	122.0
40°	84.8	104.4	144.1	106.3	84.8
42.5°	54.4	74.0	101.4	74.5	56.8
45°	32.8	46.6	67.1	47.5	32.3
47.5°	14.7	26.5	41.7	27.4	14.7
50°	2.5	10.8	23.5	11.3	2.9
52.5°	1.5	2.0	11.3	2.0	1.5
55°	1.0	1.0	4.4	1.0	1.0
57.5°	1.0	1.0	1.0	1.0	1.0
60°	1.0	0.5	0.5	0.5	1.0
62.5°	0.5	0.5	0.5	0.5	0.5
65°	0.5	0.5	0.5	0.5	0.5
67.5°	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.5	0.5	0.5	0.5
82.5°	0.0	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.5	0.5	0.5
87.5°	0.0	0.0	0.5	0.5	0.5
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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