

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: P837277

Luminaire Tested: HCSQ410D010-HM40525827-41SQMW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837277  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ410D010-HM40525827-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

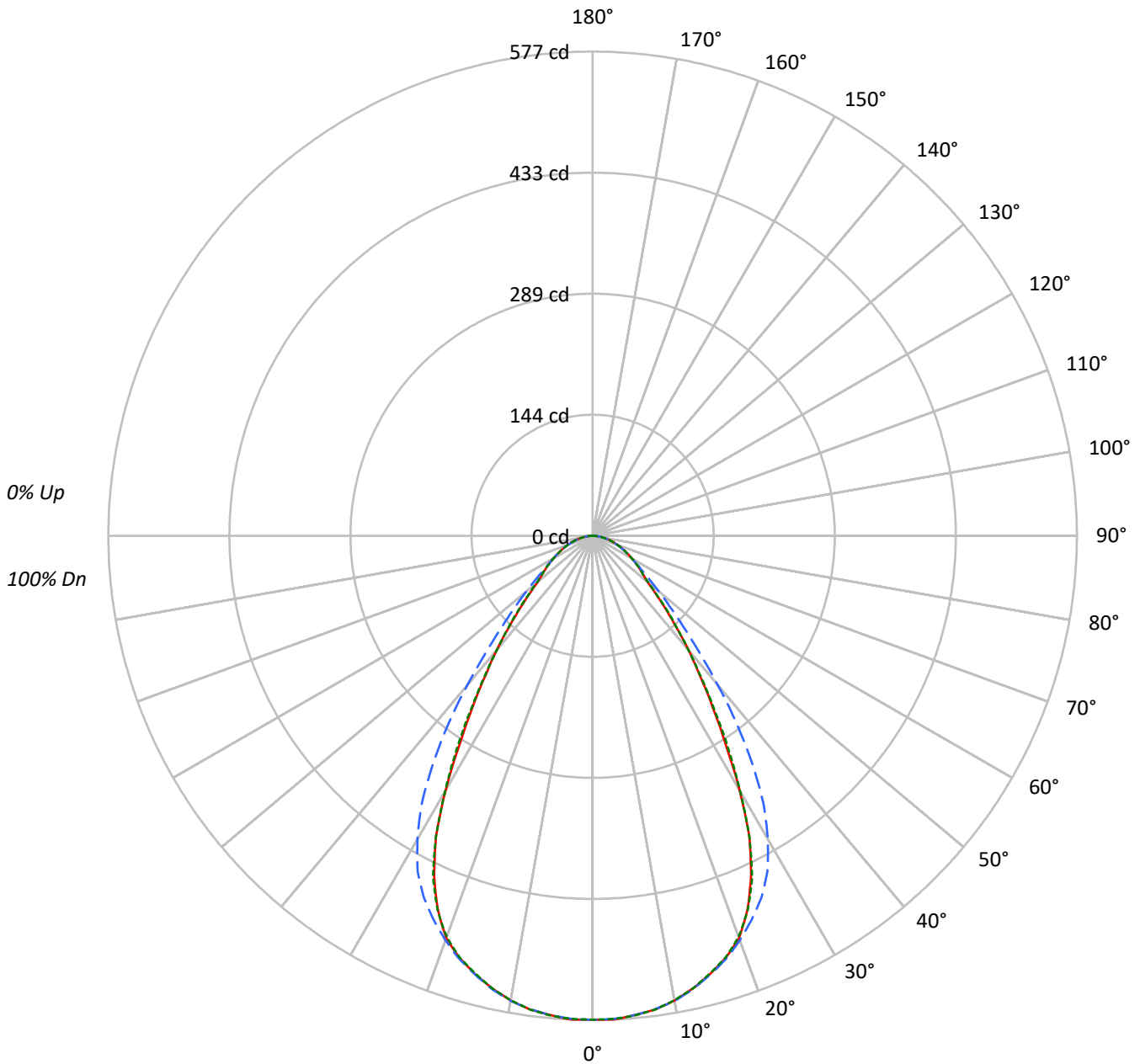
Lumens per Lamp: N/A  
Luminaire Lumens: 836.8 lumens  
Efficiency: N/A  
Efficacy: 84.5 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79																			
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71																			
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64																			
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41																			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38																			

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

	0°	45°	90°
0°	55868	55868	55868
5°	55770	55770	55819
10°	55313	55363	55274
15°	54238	54289	54148
20°	52608	52887	52423
25°	47748	50858	48090
30°	39196	46714	39342
35°	29459	39216	29885
40°	22434	29238	22384
45°	16755	20742	17071
50°	12765	15463	13037
55°	11502	12110	11502
60°	10501	10424	10424
65°	9559	9559	9559
70°	8894	8752	8752
75°	8235	8047	8235
80°	7476	7252	7476
85°	6447	6447	6447

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 20742 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.4	6.5
10°-20°	152.2	18.2
20°-30°	209.4	25.0
30°-40°	178.2	21.3
40°-50°	107.7	12.9
50°-60°	63.5	7.6
60°-70°	41.6	5.0
70°-80°	23.1	2.8
80°-90°	6.7	0.8
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°	416.0	49.7
0°-40°	594.3	71.0
0°-60°	765.4	91.5
0°-90°	836.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	836.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	577	577	577	577	577	
5°	574	574	574	573	574	54
15°	541	542	541	541	540	152
25°	447	461	476	462	450	202
35°	249	274	332	282	253	158
45°	122	135	151	137	125	96
55°	68	69	72	69	68	61
65°	42	42	42	42	42	42
75°	22	22	22	22	22	23
85°	6	6	6	6	6	7
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	576.7	576.7	576.7	576.7	576.7
2.5°	577.1	575.8	576.2	575.8	576.2
5°	573.5	574.0	573.5	573.1	574.0
7.5°	569.5	569.0	569.0	568.6	569.5
10°	562.3	561.4	562.8	561.9	561.9
12.5°	552.5	553.8	553.4	553.4	552.5
15°	540.8	542.2	541.3	540.8	539.9
17.5°	527.4	528.3	528.7	526.9	526.9
20°	510.3	512.1	513.0	509.9	508.5
22.5°	482.1	490.2	495.1	489.7	483.0
25°	446.7	460.6	475.8	461.5	449.9
27.5°	404.1	423.9	451.2	427.0	404.1
30°	350.4	379.5	417.6	382.6	351.7
32.5°	294.8	325.7	379.1	331.1	301.1
35°	249.1	274.2	331.6	281.8	252.7
37.5°	209.7	231.2	281.8	236.1	211.9
40°	177.4	194.5	231.2	196.7	177.0
42.5°	146.5	162.6	187.3	164.9	148.3
45°	122.3	135.3	151.4	136.7	124.6
47.5°	101.7	112.5	124.1	112.5	103.1
50°	84.7	93.2	102.6	93.2	86.5
52.5°	75.7	78.4	84.7	78.9	75.7
55°	68.1	69.4	71.7	69.4	68.1
57.5°	60.9	61.8	61.4	61.4	60.9
60°	54.2	54.7	53.8	54.2	53.8
62.5°	47.9	47.9	47.0	47.9	47.5
65°	41.7	42.1	41.7	41.7	41.7
67.5°	36.3	36.3	35.8	36.3	36.3
70°	31.4	31.4	30.9	31.4	30.9
72.5°	26.4	26.4	26.0	26.0	26.0
75°	22.0	22.0	21.5	21.5	22.0
77.5°	17.5	17.5	17.0	17.5	17.5
80°	13.4	13.4	13.0	13.4	13.4
82.5°	9.4	9.4	9.4	9.9	9.9
85°	5.8	5.8	5.8	5.8	5.8
87.5°	2.7	2.7	2.7	2.7	3.1
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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