

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: P837312

Luminaire Tested: HCSQ410D010-HM40525940-41SQMW

Issue Date: 5/17/2024



**Test Information**

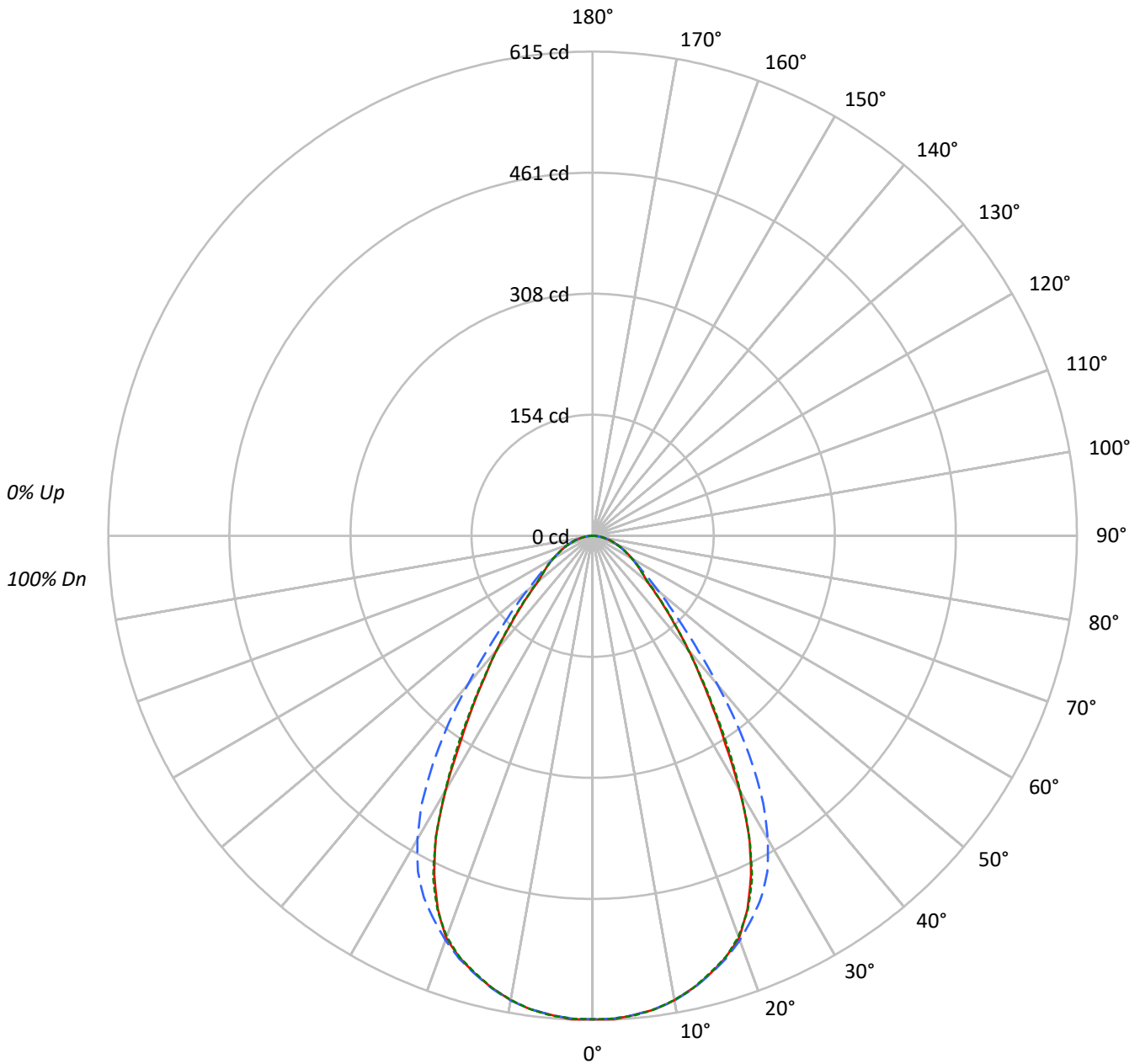
Test Method: LM-79-2019  
Report Number: P837312  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ410D010-HM40525940-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 891.4 lumens  
Efficiency: N/A  
Efficacy: 90.0 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					70					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°	59501	59501	59501
5°	59407	59407	59456
10°	58924	58963	58874
15°	57779	57819	57678
20°	56041	56340	55845
25°	50858	54183	51222
30°	41747	49756	41915
35°	31387	41771	31836
40°	23901	31148	23838
45°	17851	22099	18180
50°	13594	16473	13881
55°	12245	12904	12245
60°	11179	11102	11102
65°	10178	10178	10178
70°	9460	9319	9319
75°	8759	8571	8759
80°	7978	7699	7978
85°	6891	6891	6891

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 22099 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.9	6.5
10°-20°	162.2	18.2
20°-30°	223.0	25.0
30°-40°	189.9	21.3
40°-50°	114.7	12.9
50°-60°	67.6	7.6
60°-70°	44.3	5.0
70°-80°	24.6	2.8
80°-90°	7.2	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°	443.1	49.7
0°-40°	633.0	71.0
0°-60°	815.3	91.5
0°-90°	891.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	891.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	614	614	614	614	614	
5°	611	611	611	610	611	58
15°	576	578	576	576	575	162
25°	476	491	507	492	479	215
35°	265	292	353	300	269	168
45°	130	144	161	146	133	102
55°	72	74	76	74	72	65
65°	44	45	44	44	44	44
75°	23	23	23	23	23	25
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°	614.2	614.2	614.2	614.2	614.2
2.5°	614.7	613.3	613.8	613.3	613.8
5°	610.9	611.4	610.9	610.4	611.4
7.5°	606.6	606.1	606.1	605.6	606.6
10°	599.0	598.0	599.4	598.5	598.5
12.5°	588.5	589.9	589.4	589.4	588.5
15°	576.1	577.5	576.5	576.1	575.1
17.5°	561.7	562.7	563.2	561.3	561.3
20°	543.6	545.5	546.5	543.1	541.7
22.5°	513.5	522.1	527.4	521.6	514.5
25°	475.8	490.6	506.9	491.6	479.2
27.5°	430.5	451.5	480.6	454.8	430.5
30°	373.2	404.2	444.8	407.6	374.7
32.5°	314.0	347.0	403.8	352.7	320.7
35°	265.4	292.1	353.2	300.2	269.2
37.5°	223.4	246.3	300.2	251.5	225.7
40°	189.0	207.1	246.3	209.5	188.5
42.5°	156.1	173.2	199.5	175.6	158.0
45°	130.3	144.1	161.3	145.6	132.7
47.5°	108.3	119.8	132.2	119.8	109.8
50°	90.2	99.3	109.3	99.3	92.1
52.5°	80.7	83.5	90.2	84.0	80.7
55°	72.5	74.0	76.4	74.0	72.5
57.5°	64.9	65.9	65.4	65.4	64.9
60°	57.7	58.2	57.3	57.7	57.3
62.5°	51.1	51.1	50.1	51.1	50.6
65°	44.4	44.9	44.4	44.4	44.4
67.5°	38.7	38.7	38.2	38.7	38.7
70°	33.4	33.4	32.9	33.4	32.9
72.5°	28.2	28.2	27.7	27.7	27.7
75°	23.4	23.4	22.9	22.9	23.4
77.5°	18.6	18.6	18.1	18.6	18.6
80°	14.3	14.3	13.8	14.3	14.3
82.5°	10.0	10.0	10.0	10.5	10.5
85°	6.2	6.2	6.2	6.2	6.2
87.5°	2.9	2.9	2.9	2.9	3.3
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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(END OF REPORT)