

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: P837672

Luminaire Tested: HCSQ455D010-HM44560940-41SQMW

Issue Date: 5/17/2024

**Test Information**

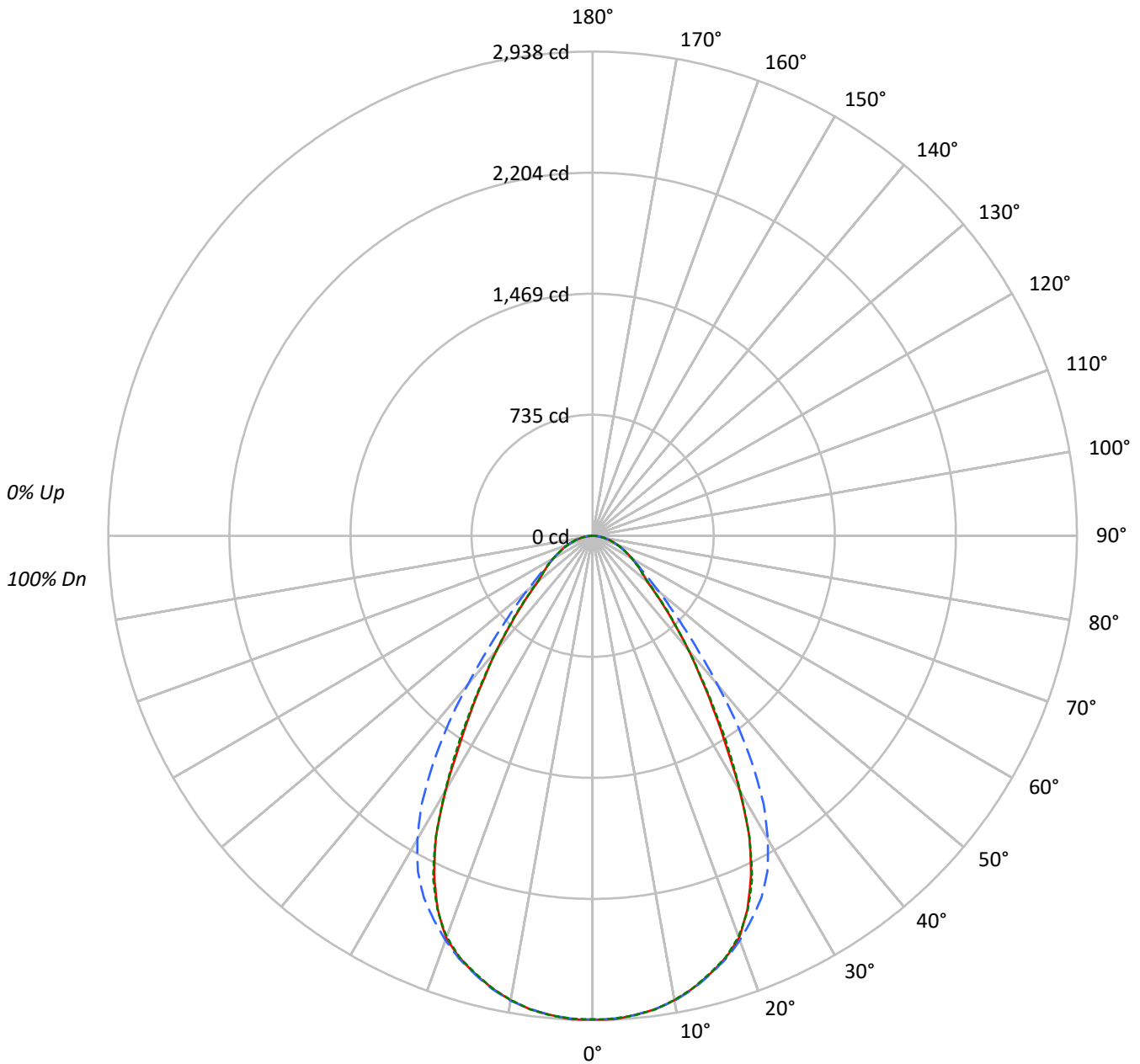
Test Method: LM-79-2019  
Report Number: P837672  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560940-41SQMW  
Description: 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: 4259.7 lumens  
Efficiency: N/A  
Efficacy: 78.9 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): 54  
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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	102	100			
	1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	91	91	91	91	89			
	2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	81	81	81	81	79			
	3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	73	73	73	73	71			
	4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	66	66	66	66	64			
	5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	60	60	60	60	58			
	6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	54	54	54	54	53			
	7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	50	50	50	50	48			
	8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	46	46	46	46	44			
	9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	43	43	43	43	41			
	10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	40	40	40	40	38			

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

	0°	45°	90°
0°	284349	284349	284349
5°	283889	283889	284103
10°	281564	281781	281338
15°	276086	276317	275625
20°	267804	269216	266866
25°	243047	258899	244757
30°	199506	237774	200267
35°	149969	199593	152122
40°	114208	148820	113930
45°	85298	105615	86860
50°	64957	78717	66343
55°	58557	61631	58557
60°	53475	53030	53030
65°	48619	48619	48619
70°	45206	44583	44583
75°	41847	40986	41847
80°	38159	36876	38159
85°	32901	32901	32901

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 105615 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	276.8	6.5
10°-20°	775.0	18.2
20°-30°	1065.8	25.0
30°-40°	907.3	21.3
40°-50°	548.1	12.9
50°-60°	323.0	7.6
60°-70°	211.8	5.0
70°-80°	117.5	2.8
80°-90°	34.3	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°	2117.6	49.7
0°-40°	3024.9	71.0
0°-60°	3896.0	91.5
0°-90°	4259.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4259.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2935	2935	2935	2935	2935	
5°	2919	2922	2919	2917	2922	277
15°	2753	2760	2755	2753	2748	774
25°	2274	2344	2422	2349	2290	1028
35°	1268	1396	1688	1434	1286	803
45°	623	689	771	696	634	489
55°	347	354	365	354	347	312
65°	212	214	212	212	212	212
75°	112	112	110	110	112	118
85°	30	30	30	30	30	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2935.2	2935.2	2935.2	2935.2	2935.2
2.5°	2937.5	2930.7	2933.0	2930.7	2933.0
5°	2919.3	2921.5	2919.3	2917.0	2921.5
7.5°	2898.7	2896.5	2896.5	2894.2	2898.7
10°	2862.3	2857.7	2864.5	2860.0	2860.0
12.5°	2812.1	2818.9	2816.6	2816.6	2812.1
15°	2752.8	2759.6	2755.1	2752.8	2748.2
17.5°	2684.4	2688.9	2691.2	2682.1	2682.1
20°	2597.7	2606.8	2611.4	2595.4	2588.6
22.5°	2454.0	2495.1	2520.1	2492.8	2458.6
25°	2273.8	2344.5	2422.1	2349.1	2289.8
27.5°	2057.2	2157.5	2296.6	2173.5	2057.2
30°	1783.5	1931.7	2125.6	1947.7	1790.3
32.5°	1500.7	1658.1	1929.5	1685.4	1532.6
35°	1268.1	1395.8	1687.7	1434.5	1286.3
37.5°	1067.4	1176.8	1434.5	1201.9	1078.8
40°	903.1	989.8	1176.8	1001.2	900.9
42.5°	745.8	827.9	953.3	839.3	754.9
45°	622.6	688.8	770.9	695.6	634.0
47.5°	517.7	572.5	631.7	572.5	524.6
50°	431.0	474.4	522.3	474.4	440.2
52.5°	385.4	399.1	431.0	401.4	385.4
55°	346.7	353.5	364.9	353.5	346.7
57.5°	310.2	314.7	312.5	312.5	310.2
60°	276.0	278.2	273.7	276.0	273.7
62.5°	244.0	244.0	239.5	244.0	241.8
65°	212.1	214.4	212.1	212.1	212.1
67.5°	184.7	184.7	182.5	184.7	184.7
70°	159.6	159.6	157.4	159.6	157.4
72.5°	134.6	134.6	132.3	132.3	132.3
75°	111.8	111.8	109.5	109.5	111.8
77.5°	88.9	88.9	86.7	88.9	88.9
80°	68.4	68.4	66.1	68.4	68.4
82.5°	47.9	47.9	47.9	50.2	50.2
85°	29.6	29.6	29.6	29.6	29.6
87.5°	13.7	13.7	13.7	13.7	16.0
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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