

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: P837612

Luminaire Tested: HCSQ450D010-HM44560840-41SQMW

Issue Date: 5/17/2024

**Test Information**

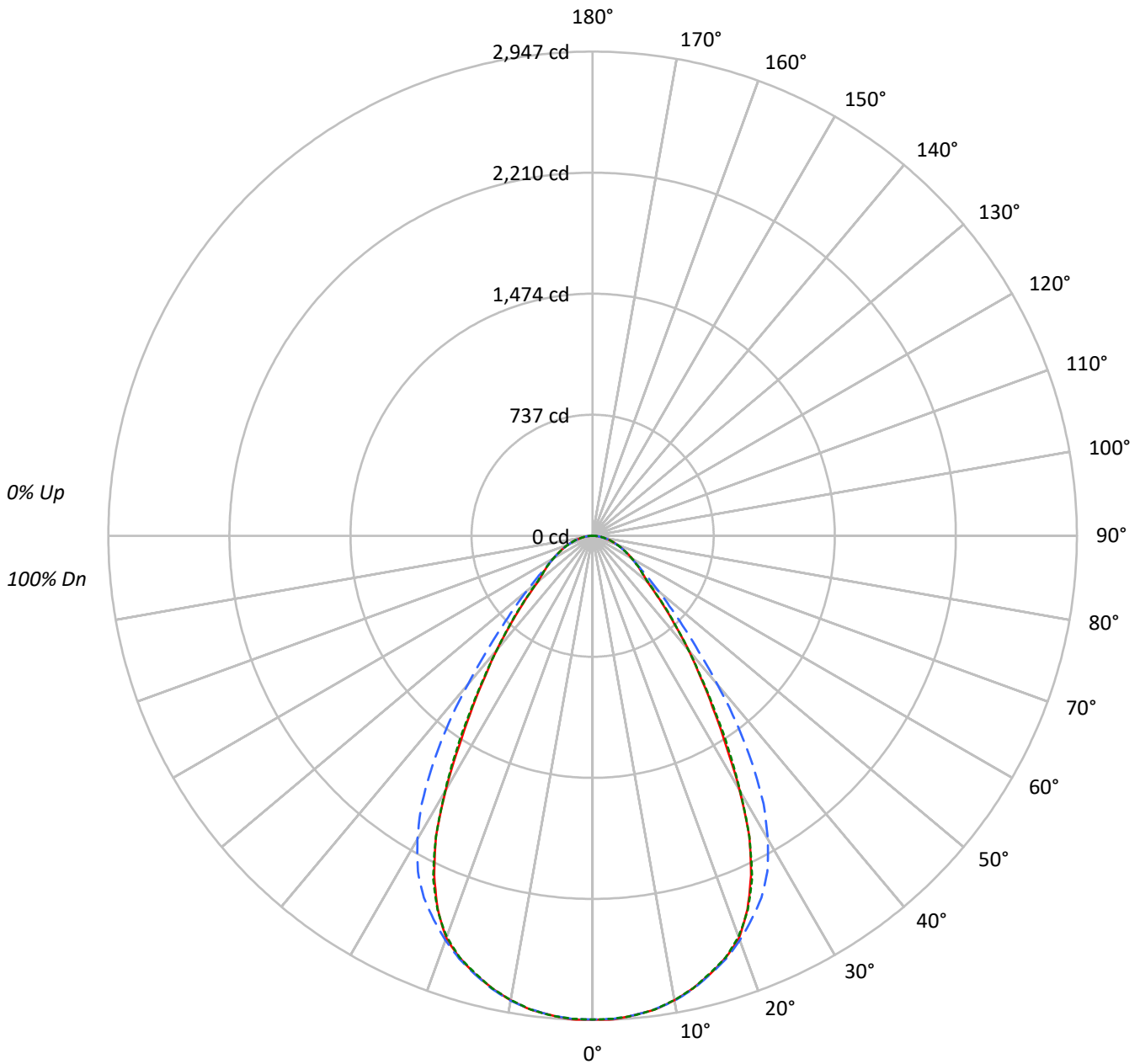
Test Method: LM-79-2019  
Report Number: P837612  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ450D010-HM44560840-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4273.2 lumens  
Efficiency: N/A  
Efficacy: 86.0 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): 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	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°	285259	285259	285259
5°	284783	284783	285007
10°	282449	282676	282233
15°	276959	277189	276497
20°	268649	270072	267711
25°	243827	259722	245538
30°	200144	238524	200904
35°	150442	200231	152607
40°	114574	149301	114284
45°	85572	105944	87134
50°	65168	78958	66554
55°	58742	61833	58742
60°	53630	53204	53204
65°	48779	48779	48779
70°	45376	44724	44724
75°	41959	41098	41959
80°	38271	36988	38271
85°	33012	33012	33012

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 105944 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	277.7	6.5
10°-20°	777.4	18.2
20°-30°	1069.2	25.0
30°-40°	910.2	21.3
40°-50°	549.8	12.9
50°-60°	324.0	7.6
60°-70°	212.5	5.0
70°-80°	117.8	2.8
80°-90°	34.4	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°	2124.4	49.7
0°-40°	3034.6	71.0
0°-60°	3908.4	91.5
0°-90°	4273.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4273.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2945	2945	2945	2945	2945	
5°	2928	2931	2928	2926	2931	278
15°	2762	2768	2764	2762	2757	777
25°	2281	2352	2430	2357	2297	1031
35°	1272	1400	1693	1439	1290	805
45°	625	691	773	698	636	491
55°	348	355	366	355	348	313
65°	213	215	213	213	213	213
75°	112	112	110	110	112	119
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°	2944.6	2944.6	2944.6	2944.6	2944.6
2.5°	2946.8	2940.0	2942.3	2940.0	2942.3
5°	2928.5	2930.8	2928.5	2926.3	2930.8
7.5°	2908.0	2905.7	2905.7	2903.4	2908.0
10°	2871.3	2866.8	2873.6	2869.1	2869.1
12.5°	2821.0	2827.9	2825.6	2825.6	2821.0
15°	2761.5	2768.4	2763.8	2761.5	2756.9
17.5°	2692.9	2697.5	2699.8	2690.6	2690.6
20°	2605.9	2615.1	2619.7	2603.7	2596.8
22.5°	2461.8	2503.0	2528.2	2500.7	2466.4
25°	2281.1	2352.0	2429.8	2356.6	2297.1
27.5°	2063.7	2164.4	2303.9	2180.4	2063.7
30°	1789.2	1937.9	2132.3	1953.9	1796.0
32.5°	1505.5	1663.3	1935.6	1690.8	1537.5
35°	1272.1	1400.2	1693.1	1439.1	1290.4
37.5°	1070.7	1180.6	1439.1	1205.7	1082.2
40°	906.0	993.0	1180.6	1004.4	903.7
42.5°	748.2	830.5	956.4	842.0	757.3
45°	624.6	691.0	773.3	697.8	636.0
47.5°	519.4	574.3	633.8	574.3	526.2
50°	432.4	475.9	523.9	475.9	441.6
52.5°	386.7	400.4	432.4	402.7	386.7
55°	347.8	354.6	366.1	354.6	347.8
57.5°	311.2	315.7	313.4	313.4	311.2
60°	276.8	279.1	274.6	276.8	274.6
62.5°	244.8	244.8	240.2	244.8	242.5
65°	212.8	215.1	212.8	212.8	212.8
67.5°	185.3	185.3	183.0	185.3	185.3
70°	160.2	160.2	157.9	160.2	157.9
72.5°	135.0	135.0	132.7	132.7	132.7
75°	112.1	112.1	109.8	109.8	112.1
77.5°	89.2	89.2	86.9	89.2	89.2
80°	68.6	68.6	66.3	68.6	68.6
82.5°	48.0	48.0	48.0	50.3	50.3
85°	29.7	29.7	29.7	29.7	29.7
87.5°	13.7	13.7	13.7	13.7	16.0
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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