

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: P837622

Luminaire Tested: HCSQ450D010-HM44560930-41SQMW

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837622
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-HM44560930-41SQMW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

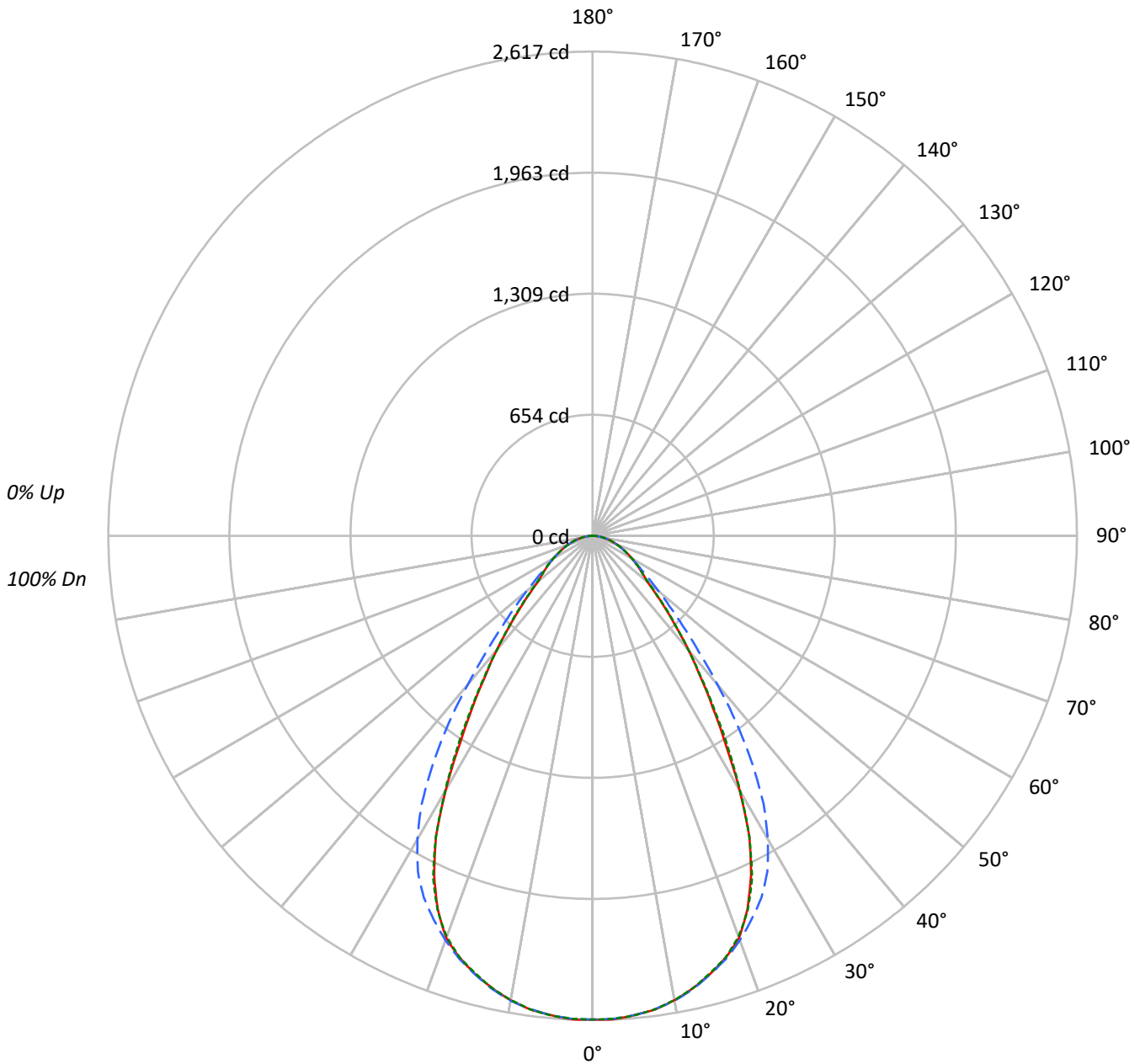
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3794.7 lumens
Efficiency: N/A
Efficacy: 76.4 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 (Ain): 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°	253310	253310	253310
5°	252897	252897	253091
10°	250824	251020	250627
15°	245948	246149	245537
20°	238567	239824	237732
25°	216517	230637	218035
30°	177727	211822	178409
35°	133590	177809	135518
40°	101751	132583	101486
45°	75995	94080	77379
50°	57873	70126	59094
55°	52155	54908	52155
60°	47624	47236	47236
65°	43301	43301	43301
70°	40277	39711	39711
75°	37280	36494	37280
80°	34031	32859	34031
85°	29344	29344	29344

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 94080 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	246.6	6.5
10°-20°	690.4	18.2
20°-30°	949.5	25.0
30°-40°	808.3	21.3
40°-50°	488.2	12.9
50°-60°	287.7	7.6
60°-70°	188.7	5.0
70°-80°	104.6	2.8
80°-90°	30.6	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°	1886.5	49.7
0°-40°	2694.7	71.0
0°-60°	3470.7	91.5
0°-90°	3794.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3794.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2615	2615	2615	2615	2615	
5°	2601	2603	2601	2599	2603	247
15°	2452	2458	2454	2452	2448	690
25°	2026	2089	2158	2093	2040	916
35°	1130	1243	1504	1278	1146	715
45°	555	614	687	620	565	436
55°	309	315	325	315	309	278
65°	189	191	189	189	189	189
75°	100	100	98	98	100	106
85°	26	26	26	26	26	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2614.8	2614.8	2614.8	2614.8	2614.8
2.5°	2616.9	2610.8	2612.8	2610.8	2612.8
5°	2600.6	2602.6	2600.6	2598.6	2602.6
7.5°	2582.3	2580.3	2580.3	2578.3	2582.3
10°	2549.8	2545.7	2551.8	2547.8	2547.8
12.5°	2505.1	2511.2	2509.2	2509.2	2505.1
15°	2452.3	2458.4	2454.3	2452.3	2448.2
17.5°	2391.3	2395.4	2397.4	2389.3	2389.3
20°	2314.1	2322.3	2326.3	2312.1	2306.0
22.5°	2186.1	2222.7	2245.1	2220.7	2190.2
25°	2025.6	2088.6	2157.7	2092.7	2039.8
27.5°	1832.6	1922.0	2045.9	1936.2	1832.6
30°	1588.8	1720.9	1893.6	1735.1	1594.9
32.5°	1336.9	1477.1	1718.8	1501.4	1365.3
35°	1129.6	1243.4	1503.5	1278.0	1145.9
37.5°	950.8	1048.4	1278.0	1070.7	961.0
40°	804.6	881.8	1048.4	891.9	802.5
42.5°	664.4	737.5	849.3	747.7	672.5
45°	554.7	613.6	686.7	619.7	564.8
47.5°	461.2	510.0	562.8	510.0	467.3
50°	384.0	422.6	465.3	422.6	392.1
52.5°	343.4	355.6	384.0	357.6	343.4
55°	308.8	314.9	325.1	314.9	308.8
57.5°	276.3	280.4	278.3	278.3	276.3
60°	245.8	247.9	243.8	245.8	243.8
62.5°	217.4	217.4	213.3	217.4	215.4
65°	188.9	191.0	188.9	188.9	188.9
67.5°	164.6	164.6	162.5	164.6	164.6
70°	142.2	142.2	140.2	142.2	140.2
72.5°	119.9	119.9	117.8	117.8	117.8
75°	99.6	99.6	97.5	97.5	99.6
77.5°	79.2	79.2	77.2	79.2	79.2
80°	61.0	61.0	58.9	61.0	61.0
82.5°	42.7	42.7	42.7	44.7	44.7
85°	26.4	26.4	26.4	26.4	26.4
87.5°	12.2	12.2	12.2	12.2	14.2
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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