

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: P837620

Luminaire Tested: HCSQ450D010-HM44560930-41SQLWW

Issue Date: 5/17/2024



**Test Information**

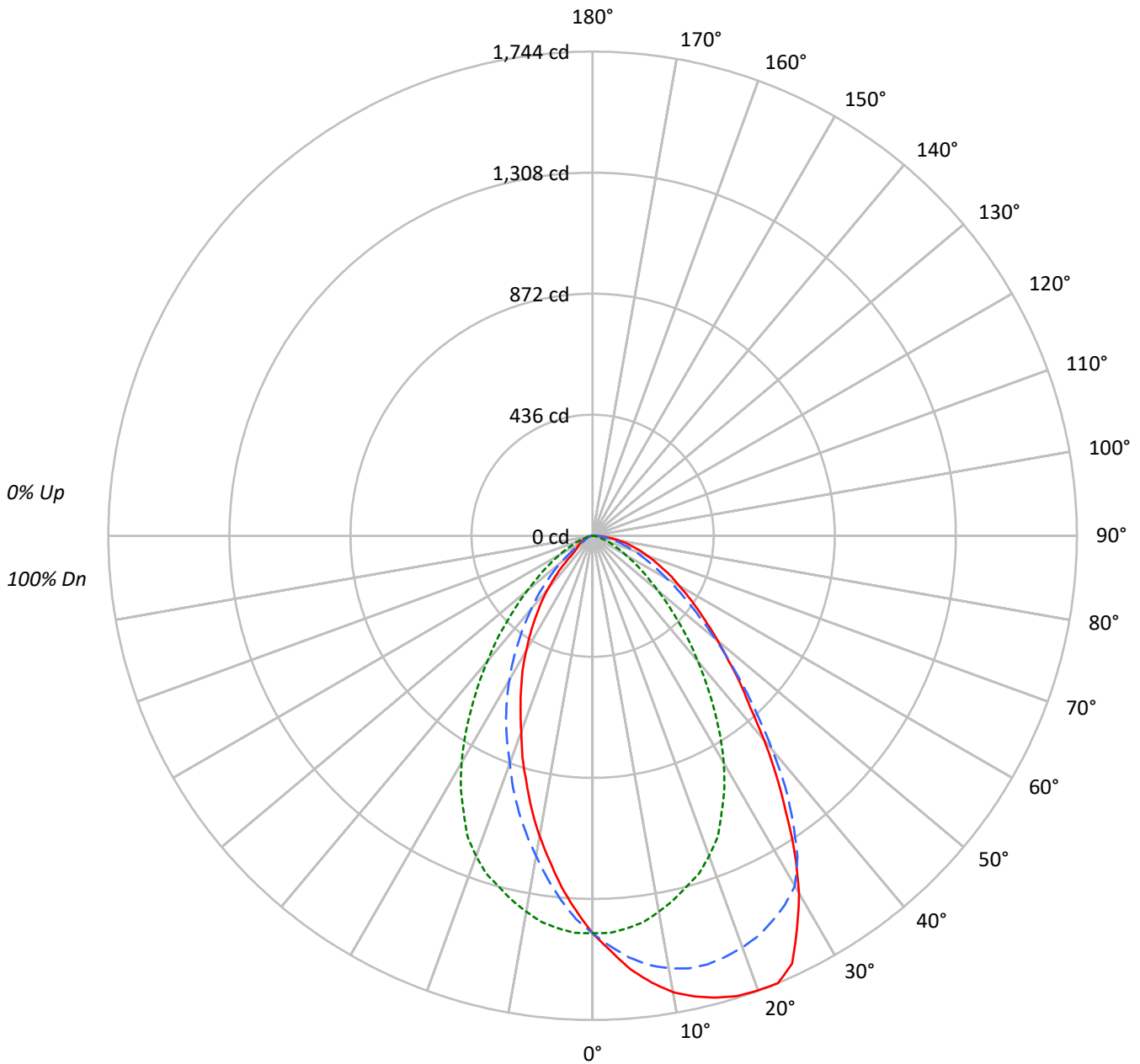
Test Method: LM-79-2019  
Report Number: P837620  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ450D010-HM44560930-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2315.8 lumens  
Efficiency: N/A  
Efficacy: 46.6 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12  
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					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	100					100			
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89					89			
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78					78			
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69					69			
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55					55			
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35					35			

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

	0°	45°	90°	135°	180°
0°	138697	138697	138697	138697	138697
5°	152461	148309	138040	127965	123628
10°	164209	155621	135239	115270	108069
15°	172714	160288	131163	103061	92259
20°	179629	162670	126453	89814	77464
25°	181692	163670	117430	78799	65118
30°	166283	162882	105631	67017	53381
35°	143382	148657	90057	54992	42267
40°	121479	127119	74473	43402	31590
45°	102944	105451	59541	32278	20304
50°	88754	86614	46208	21733	12238
55°	78199	71342	35333	12009	10978
60°	69634	59811	26369	6684	9843
65°	63771	51209	19553	6052	8848
70°	59255	44299	14389	5750	8639
75°	55471	38777	9881	5315	7598
80°	53222	33975	6806	5690	6806
85°	51908	29344	4557	4557	4557

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 107109 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.3	5.8
10°-20°	369.6	16.0
20°-30°	516.8	22.3
30°-40°	505.1	21.8
40°-50°	366.5	15.8
50°-60°	221.0	9.5
60°-70°	124.2	5.4
70°-80°	61.5	2.7
80°-90°	16.8	0.7
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°	1020.6	44.1
0°-40°	1525.7	65.9
0°-60°	2113.3	91.3
0°-90°	2315.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2315.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1432	1432	1432	1432	1432	
5°	1568	1525	1420	1316	1271	152
15°	1722	1598	1308	1028	920	488
25°	1700	1531	1099	737	609	766
35°	1212	1257	762	465	357	759
45°	751	770	435	236	148	583
55°	463	422	209	71	65	416
65°	278	223	85	26	39	279
75°	148	104	26	14	20	160
85°	47	26	4	4	4	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1431.7	1431.7	1431.7	1431.7	1431.7	1431.7	1431.7	1431.7	1431.7
2.5°	1496.7	1492.6	1480.4	1456.1	1431.7	1403.3	1380.9	1364.7	1352.5
5°	1567.8	1559.6	1525.1	1474.3	1419.5	1364.7	1315.9	1287.5	1271.3
7.5°	1622.6	1608.4	1559.6	1488.6	1403.3	1320.0	1244.9	1200.2	1181.9
10°	1669.3	1644.9	1582.0	1486.5	1374.8	1265.2	1171.8	1119.0	1098.6
12.5°	1699.8	1673.4	1596.2	1484.5	1344.4	1210.3	1100.7	1031.6	1011.3
15°	1722.1	1689.6	1598.2	1468.2	1307.8	1153.5	1027.6	946.3	919.9
17.5°	1738.3	1693.7	1590.1	1450.0	1275.3	1094.6	952.4	865.1	838.7
20°	1742.4	1693.7	1577.9	1423.6	1226.6	1035.7	871.2	783.9	751.4
22.5°	1744.4	1687.6	1559.6	1391.1	1175.8	968.7	804.2	712.8	678.3
25°	1699.8	1667.3	1531.2	1336.2	1098.6	895.6	737.2	637.7	609.2
27.5°	1594.2	1592.1	1498.7	1263.1	1027.6	816.4	668.1	572.7	546.3
30°	1486.5	1488.6	1456.1	1181.9	944.3	741.2	599.1	505.7	477.2
32.5°	1354.5	1374.8	1372.8	1090.5	855.0	670.2	532.1	444.7	416.3
35°	1212.4	1248.9	1257.0	987.0	761.5	588.9	465.0	385.8	357.4
37.5°	1084.4	1121.0	1139.3	895.6	674.2	517.8	402.1	333.0	304.6
40°	960.6	991.0	1005.2	790.0	588.9	444.7	343.2	278.2	249.8
42.5°	840.7	885.4	881.4	700.6	513.8	385.8	290.4	225.4	197.0
45°	751.4	781.8	769.7	607.2	434.6	324.9	235.6	174.6	148.2
47.5°	662.0	684.4	666.1	528.0	367.6	268.1	190.9	127.9	99.5
50°	588.9	599.1	574.7	448.8	306.6	219.3	144.2	85.3	81.2
52.5°	519.9	526.0	491.4	381.8	253.8	176.7	105.6	67.0	71.1
55°	463.0	461.0	422.4	322.9	209.2	136.1	71.1	60.9	65.0
57.5°	408.2	402.1	363.5	268.1	170.6	105.6	42.6	52.8	56.9
60°	359.4	353.4	308.7	221.4	136.1	79.2	34.5	46.7	50.8
62.5°	320.9	306.6	262.0	182.8	109.7	56.9	30.5	40.6	44.7
65°	278.2	266.0	223.4	148.2	85.3	40.6	26.4	34.5	38.6
67.5°	243.7	229.5	188.9	121.8	69.0	28.4	24.4	30.5	34.5
70°	209.2	197.0	156.4	97.5	50.8	18.3	20.3	26.4	30.5
72.5°	180.7	166.5	130.0	77.2	38.6	14.2	18.3	22.3	24.4
75°	148.2	136.1	103.6	58.9	26.4	12.2	14.2	18.3	20.3
77.5°	123.9	111.7	81.2	44.7	18.3	10.2	12.2	16.2	16.2
80°	95.4	85.3	60.9	30.5	12.2	6.1	10.2	12.2	12.2
82.5°	69.0	60.9	42.6	20.3	6.1	6.1	6.1	8.1	8.1
85°	46.7	40.6	26.4	12.2	4.1	4.1	4.1	4.1	4.1
87.5°	26.4	20.3	12.2	4.1	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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