

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: P837655

Luminaire Tested: HCSQ455D010-HM44560927-41SQLWW

Issue Date: 5/17/2024



**Test Information**

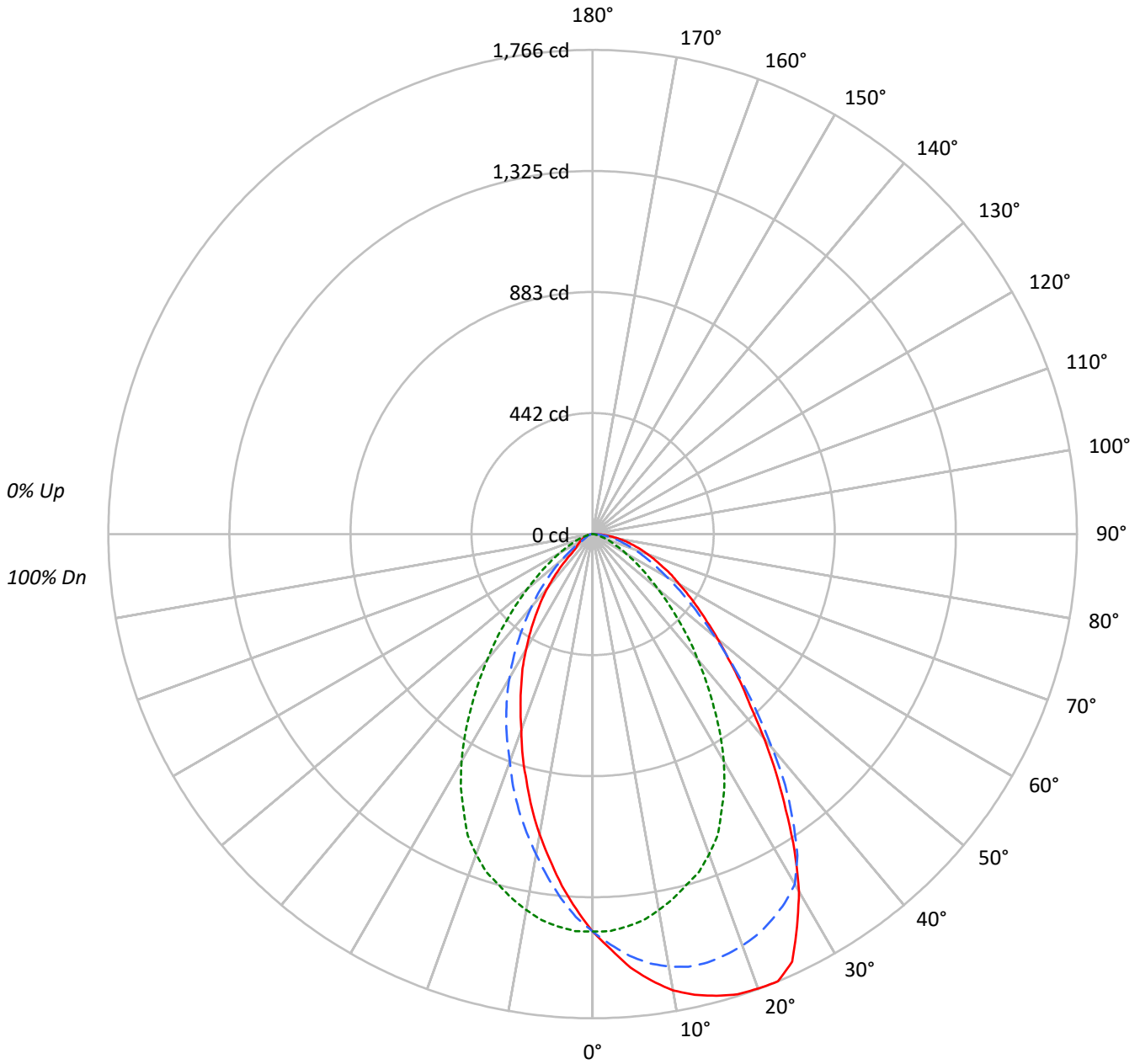
Test Method: LM-79-2019  
Report Number: P837655  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560927-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2344.6 lumens  
Efficiency: N/A  
Efficacy: 43.4 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): 54  
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					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								
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78								
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69								
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62								
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55								
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50								
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45								
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42								
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38								
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35								

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

	0°	45°	90°	135°	180°
0°	140421	140421	140421	140421	140421
5°	154358	150157	139761	129560	125165
10°	166255	157559	136921	116696	109417
15°	174861	162284	132798	104345	93413
20°	181866	164691	128031	90928	78423
25°	183947	165712	118894	79772	65930
30°	168352	164907	106951	67844	54052
35°	145168	150513	91181	55678	42799
40°	122984	128700	75409	43946	31982
45°	104218	106752	60281	32675	20564
50°	89869	87699	46796	22004	12388
55°	79179	72237	35772	12161	11113
60°	70506	60547	26699	6781	9959
65°	64573	51851	19805	6120	8963
70°	59991	44838	14559	5835	8724
75°	56182	39264	9994	5390	7711
80°	53892	34421	6862	5746	6862
85°	52575	29678	4557	4557	4557

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 108451 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.9	5.8
10°-20°	374.2	16.0
20°-30°	523.2	22.3
30°-40°	511.4	21.8
40°-50°	371.1	15.8
50°-60°	223.7	9.5
60°-70°	125.8	5.4
70°-80°	62.3	2.7
80°-90°	17.0	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°	1033.3	44.1
0°-40°	1544.7	65.9
0°-60°	2139.6	91.3
0°-90°	2344.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2344.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1450	1450	1450	1450	1450	
5°	1587	1544	1437	1332	1287	154
15°	1744	1618	1324	1040	931	494
25°	1721	1550	1112	746	617	776
35°	1228	1273	771	471	362	769
45°	761	779	440	238	150	590
55°	469	428	212	72	66	422
65°	282	226	86	27	39	282
75°	150	105	27	14	21	162
85°	47	27	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°	1449.5	1449.5	1449.5	1449.5	1449.5	1449.5	1449.5	1449.5	1449.5
2.5°	1515.3	1511.2	1498.9	1474.2	1449.5	1420.7	1398.1	1381.7	1369.3
5°	1587.3	1579.0	1544.1	1492.7	1437.2	1381.7	1332.3	1303.5	1287.1
7.5°	1642.8	1628.4	1579.0	1507.1	1420.7	1336.4	1260.4	1215.1	1196.6
10°	1690.1	1665.4	1601.7	1505.0	1391.9	1280.9	1186.3	1132.9	1112.3
12.5°	1720.9	1694.2	1616.1	1503.0	1361.1	1225.4	1114.4	1044.5	1023.9
15°	1743.5	1710.6	1618.1	1486.5	1324.1	1167.8	1040.4	958.1	931.4
17.5°	1760.0	1714.7	1609.9	1468.0	1291.2	1108.2	964.3	875.9	849.1
20°	1764.1	1714.7	1597.5	1441.3	1241.9	1048.6	882.0	793.6	760.7
22.5°	1766.1	1708.6	1579.0	1408.4	1190.4	980.7	814.2	721.7	686.7
25°	1720.9	1688.0	1550.3	1352.9	1112.3	906.7	746.3	645.6	616.8
27.5°	1614.0	1611.9	1517.4	1278.9	1040.4	826.5	676.4	579.8	553.1
30°	1505.0	1507.1	1474.2	1196.6	956.1	750.5	606.5	512.0	483.2
32.5°	1371.4	1391.9	1389.9	1104.1	865.6	678.5	538.7	450.3	421.5
35°	1227.5	1264.5	1272.7	999.2	771.0	596.3	470.8	390.6	361.9
37.5°	1097.9	1134.9	1153.4	906.7	682.6	524.3	407.1	337.2	308.4
40°	972.5	1003.3	1017.7	799.8	596.3	450.3	347.5	281.7	252.9
42.5°	851.2	896.4	892.3	709.3	520.2	390.6	294.0	228.2	199.4
45°	760.7	791.6	779.2	614.8	440.0	329.0	238.5	176.8	150.1
47.5°	670.3	692.9	674.4	534.6	372.1	271.4	193.3	129.5	100.7
50°	596.3	606.5	581.9	454.4	310.5	222.1	146.0	86.4	82.2
52.5°	526.3	532.5	497.6	386.5	257.0	178.9	106.9	67.8	72.0
55°	468.8	466.7	427.7	326.9	211.8	137.8	72.0	61.7	65.8
57.5°	413.3	407.1	368.0	271.4	172.7	106.9	43.2	53.5	57.6
60°	363.9	357.8	312.5	224.1	137.8	80.2	35.0	47.3	51.4
62.5°	324.9	310.5	265.2	185.0	111.0	57.6	30.8	41.1	45.2
65°	281.7	269.3	226.2	150.1	86.4	41.1	26.7	35.0	39.1
67.5°	246.7	232.3	191.2	123.4	69.9	28.8	24.7	30.8	35.0
70°	211.8	199.4	158.3	98.7	51.4	18.5	20.6	26.7	30.8
72.5°	183.0	168.6	131.6	78.1	39.1	14.4	18.5	22.6	24.7
75°	150.1	137.8	104.9	59.6	26.7	12.3	14.4	18.5	20.6
77.5°	125.4	113.1	82.2	45.2	18.5	10.3	12.3	16.4	16.4
80°	96.6	86.4	61.7	30.8	12.3	6.2	10.3	12.3	12.3
82.5°	69.9	61.7	43.2	20.6	6.2	6.2	6.2	8.2	8.2
85°	47.3	41.1	26.7	12.3	4.1	4.1	4.1	4.1	4.1
87.5°	26.7	20.6	12.3	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

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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