

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: P837496

Luminaire Tested: HCSQ435D010-HM43040927-41SQMB

Issue Date: 5/17/2024



**Test Information**

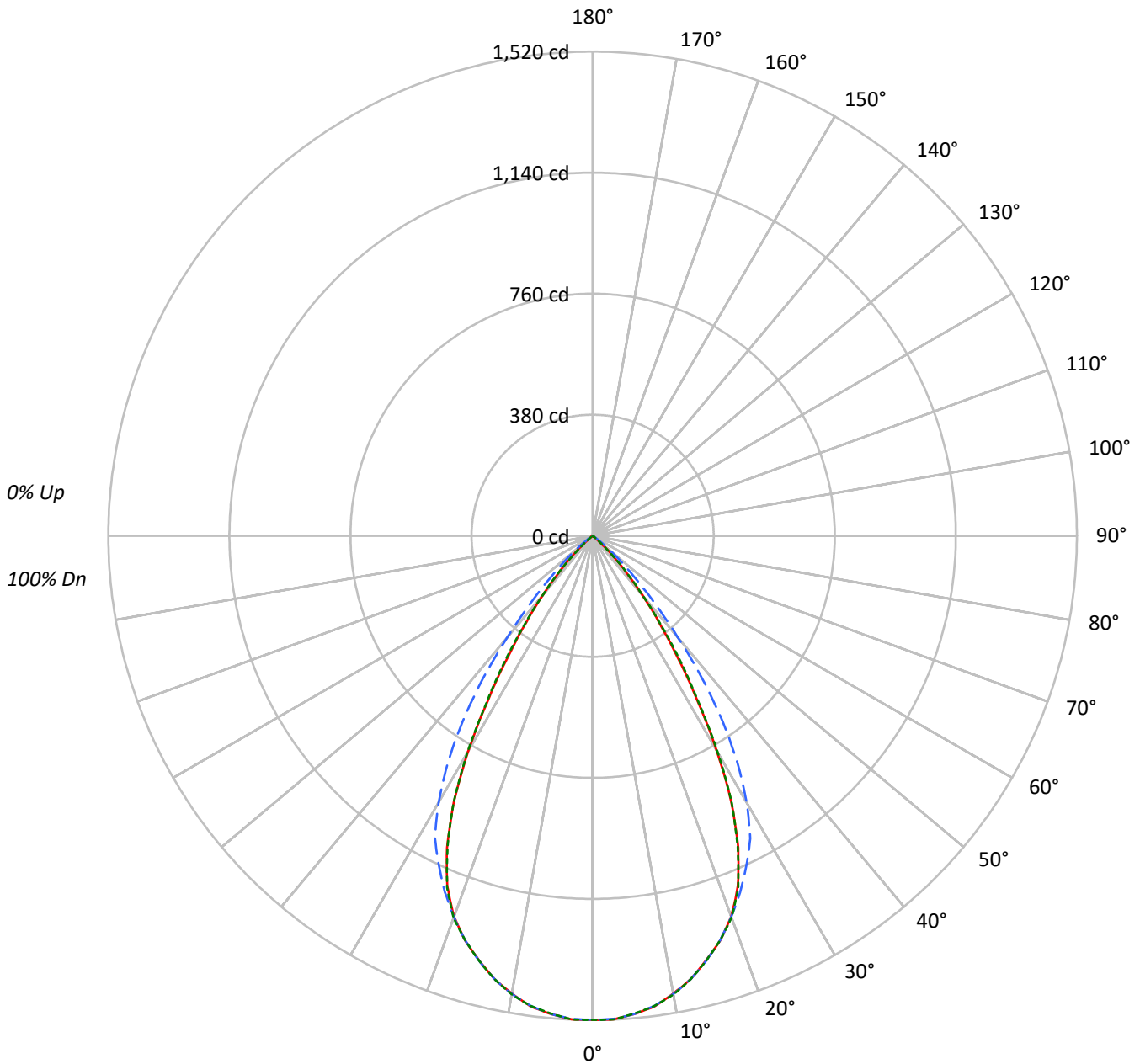
Test Method: LM-79-2019  
Report Number: P837496  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ435D010-HM43040927-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1518.0 lumens  
Efficiency: N/A  
Efficacy: 44.6 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34  
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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93																			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87																			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80																			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74																			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69																			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64																			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60																			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56																			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52																			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49																			

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

	0°	45°	90°
0°	147222	147222	147222
5°	146549	146549	146413
10°	143522	143659	143807
15°	138274	138414	138414
20°	131082	131237	131526
25°	115570	122058	115121
30°	87208	108182	87991
35°	54685	84191	56518
40°	30844	52418	30844
45°	12933	26455	12741
50°	1055	10203	1281
55°	473	2145	473
60°	543	271	543
65°	321	321	321
70°	397	397	397
75°	524	524	524
80°	0	781	781
85°	0	1556	1556

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 26455 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.4	9.4
10°-20°	387.5	25.5
20°-30°	502.6	33.1
30°-40°	357.3	23.5
40°-50°	115.9	7.6
50°-60°	8.3	0.5
60°-70°	1.4	0.1
70°-80°	1.5	0.1
80°-90°	1.0	0.1
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°	1032.5	68.0
0°-40°	1389.9	91.6
0°-60°	1514.1	99.7
0°-90°	1518.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1518.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1520	1520	1520	1520	1520	
5°	1507	1508	1507	1507	1506	142
15°	1379	1383	1380	1383	1380	387
25°	1081	1109	1142	1115	1077	484
35°	462	547	712	553	478	296
45°	94	134	193	137	93	79
55°	3	3	13	3	3	3
65°	1	1	1	1	1	2
75°	1	1	1	1	1	1
85°	0	0	1	1	1	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1519.7	1519.7	1519.7	1519.7	1519.7
2.5°	1519.7	1519.7	1518.2	1518.2	1519.7
5°	1507.0	1508.4	1507.0	1507.0	1505.6
7.5°	1490.1	1490.1	1488.6	1488.6	1488.6
10°	1459.0	1460.4	1460.4	1460.4	1461.9
12.5°	1425.2	1425.2	1425.2	1425.2	1425.2
15°	1378.7	1382.9	1380.1	1382.9	1380.1
17.5°	1332.2	1332.2	1330.8	1333.6	1330.8
20°	1271.5	1271.5	1273.0	1275.8	1275.8
22.5°	1191.2	1205.3	1210.9	1208.1	1194.0
25°	1081.2	1109.4	1141.9	1115.1	1077.0
27.5°	943.1	996.7	1071.4	1005.1	945.9
30°	779.6	859.9	967.1	862.7	786.6
32.5°	610.4	703.4	845.8	710.5	616.0
35°	462.4	547.0	711.9	552.6	477.9
37.5°	341.1	418.7	565.3	421.5	351.0
40°	243.9	300.3	414.5	305.9	243.9
42.5°	156.5	212.9	291.8	214.3	163.5
45°	94.4	133.9	193.1	136.7	93.0
47.5°	42.3	76.1	119.8	78.9	42.3
50°	7.0	31.0	67.7	32.4	8.5
52.5°	4.2	5.6	32.4	5.6	4.2
55°	2.8	2.8	12.7	2.8	2.8
57.5°	2.8	2.8	2.8	2.8	2.8
60°	2.8	1.4	1.4	1.4	2.8
62.5°	1.4	1.4	1.4	1.4	1.4
65°	1.4	1.4	1.4	1.4	1.4
67.5°	1.4	1.4	1.4	1.4	1.4
70°	1.4	1.4	1.4	1.4	1.4
72.5°	1.4	1.4	1.4	1.4	1.4
75°	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4
80°	0.0	1.4	1.4	1.4	1.4
82.5°	0.0	1.4	1.4	1.4	1.4
85°	0.0	0.0	1.4	1.4	1.4
87.5°	0.0	0.0	1.4	1.4	1.4
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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