

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: P837541

Luminaire Tested: HCSQ440D010-HM43040930-41SQMB

Issue Date: 5/17/2024



**Test Information**

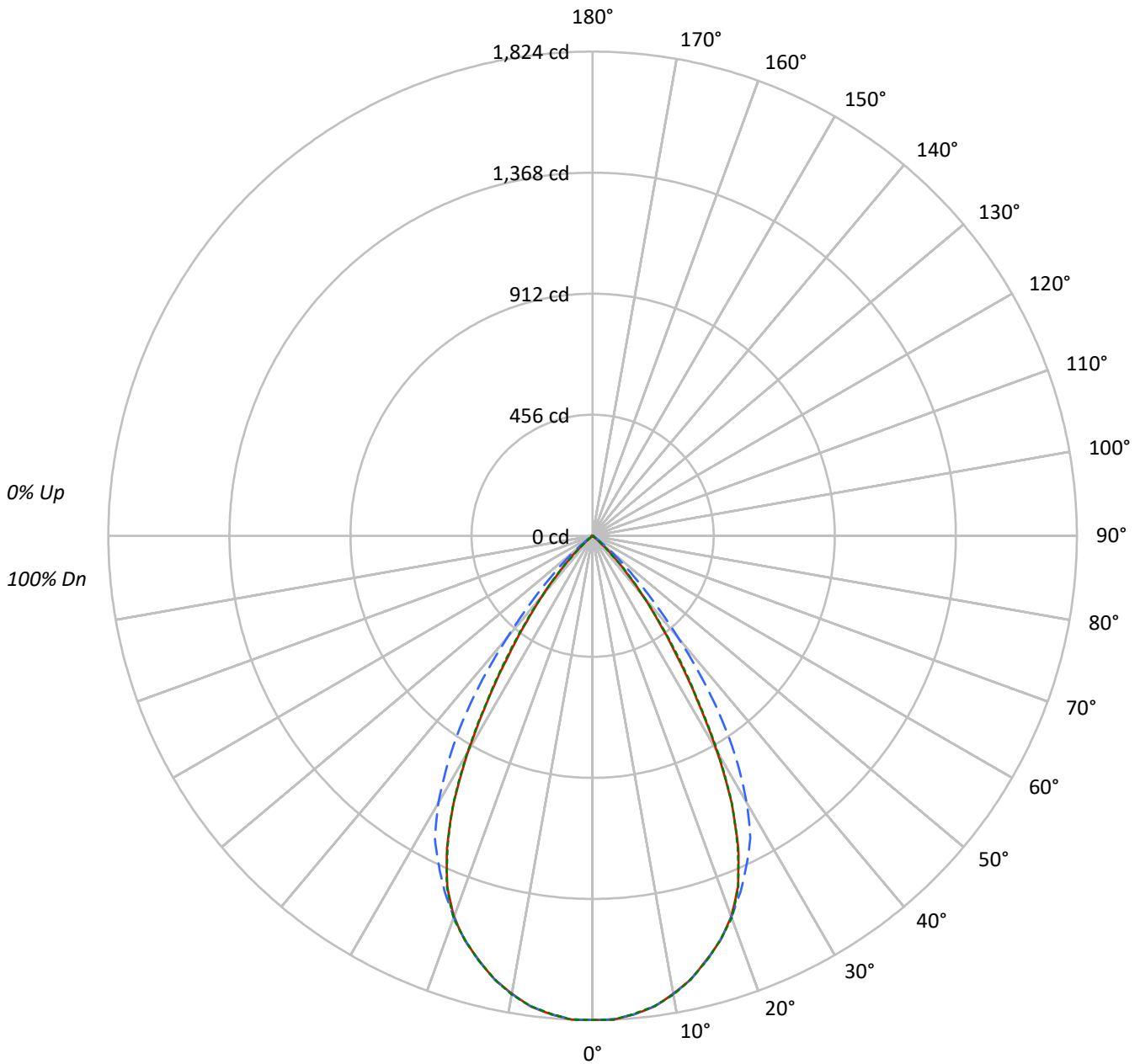
Test Method: LM-79-2019  
Report Number: P837541  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ440D010-HM43040930-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1822.2 lumens  
Efficiency: N/A  
Efficacy: 44.4 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): 41  
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	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°	176720	176720	176720
5°	175917	175917	175752
10°	172285	172452	172619
15°	165985	166155	166155
20°	157361	157536	157876
25°	138733	146514	138188
30°	104681	129850	105620
35°	65636	101068	67848
40°	37028	62915	37028
45°	15536	31757	15303
50°	1281	12238	1537
55°	574	2567	574
60°	659	329	659
65°	390	390	390
70°	482	482	482
75°	636	636	636
80°	0	948	948
85°	0	1890	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 31757 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.0	9.4
10°-20°	465.1	25.5
20°-30°	603.4	33.1
30°-40°	429.0	23.5
40°-50°	139.1	7.6
50°-60°	10.0	0.6
60°-70°	1.7	0.1
70°-80°	1.8	0.1
80°-90°	1.2	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°	1239.4	68.0
0°-40°	1668.4	91.6
0°-60°	1817.5	99.7
0°-90°	1822.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1822.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1824	1824	1824	1824	1824	
5°	1809	1811	1809	1809	1807	171
15°	1655	1660	1657	1660	1657	465
25°	1298	1332	1371	1338	1293	581
35°	555	657	855	663	574	355
45°	113	161	232	164	112	94
55°	3	3	15	3	3	4
65°	2	2	2	2	2	2
75°	2	2	2	2	2	2
85°	0	0	2	2	2	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1824.2	1824.2	1824.2	1824.2	1824.2
2.5°	1824.2	1824.2	1822.5	1822.5	1824.2
5°	1809.0	1810.7	1809.0	1809.0	1807.3
7.5°	1788.7	1788.7	1787.0	1787.0	1787.0
10°	1751.4	1753.1	1753.1	1753.1	1754.8
12.5°	1710.8	1710.8	1710.8	1710.8	1710.8
15°	1655.0	1660.0	1656.7	1660.0	1656.7
17.5°	1599.1	1599.1	1597.4	1600.8	1597.4
20°	1526.4	1526.4	1528.1	1531.4	1531.4
22.5°	1429.9	1446.8	1453.6	1450.2	1433.3
25°	1297.9	1331.8	1370.7	1338.5	1292.8
27.5°	1132.1	1196.4	1286.1	1206.5	1135.5
30°	935.8	1032.2	1160.8	1035.6	944.2
32.5°	732.7	844.4	1015.3	852.9	739.5
35°	555.0	656.6	854.6	663.3	573.7
37.5°	409.5	502.6	678.6	506.0	421.4
40°	292.8	360.4	497.5	367.2	292.8
42.5°	187.8	255.5	350.3	257.2	196.3
45°	113.4	160.8	231.8	164.1	111.7
47.5°	50.8	91.4	143.8	94.8	50.8
50°	8.5	37.2	81.2	38.9	10.2
52.5°	5.1	6.8	38.9	6.8	5.1
55°	3.4	3.4	15.2	3.4	3.4
57.5°	3.4	3.4	3.4	3.4	3.4
60°	3.4	1.7	1.7	1.7	3.4
62.5°	1.7	1.7	1.7	1.7	1.7
65°	1.7	1.7	1.7	1.7	1.7
67.5°	1.7	1.7	1.7	1.7	1.7
70°	1.7	1.7	1.7	1.7	1.7
72.5°	1.7	1.7	1.7	1.7	1.7
75°	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7
80°	0.0	1.7	1.7	1.7	1.7
82.5°	0.0	1.7	1.7	1.7	1.7
85°	0.0	0.0	1.7	1.7	1.7
87.5°	0.0	0.0	1.7	1.7	1.7
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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