

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: P837546

Luminaire Tested: HCSQ440D010-HM43040935-41SQMB

Issue Date: 5/17/2024

**Test Information**

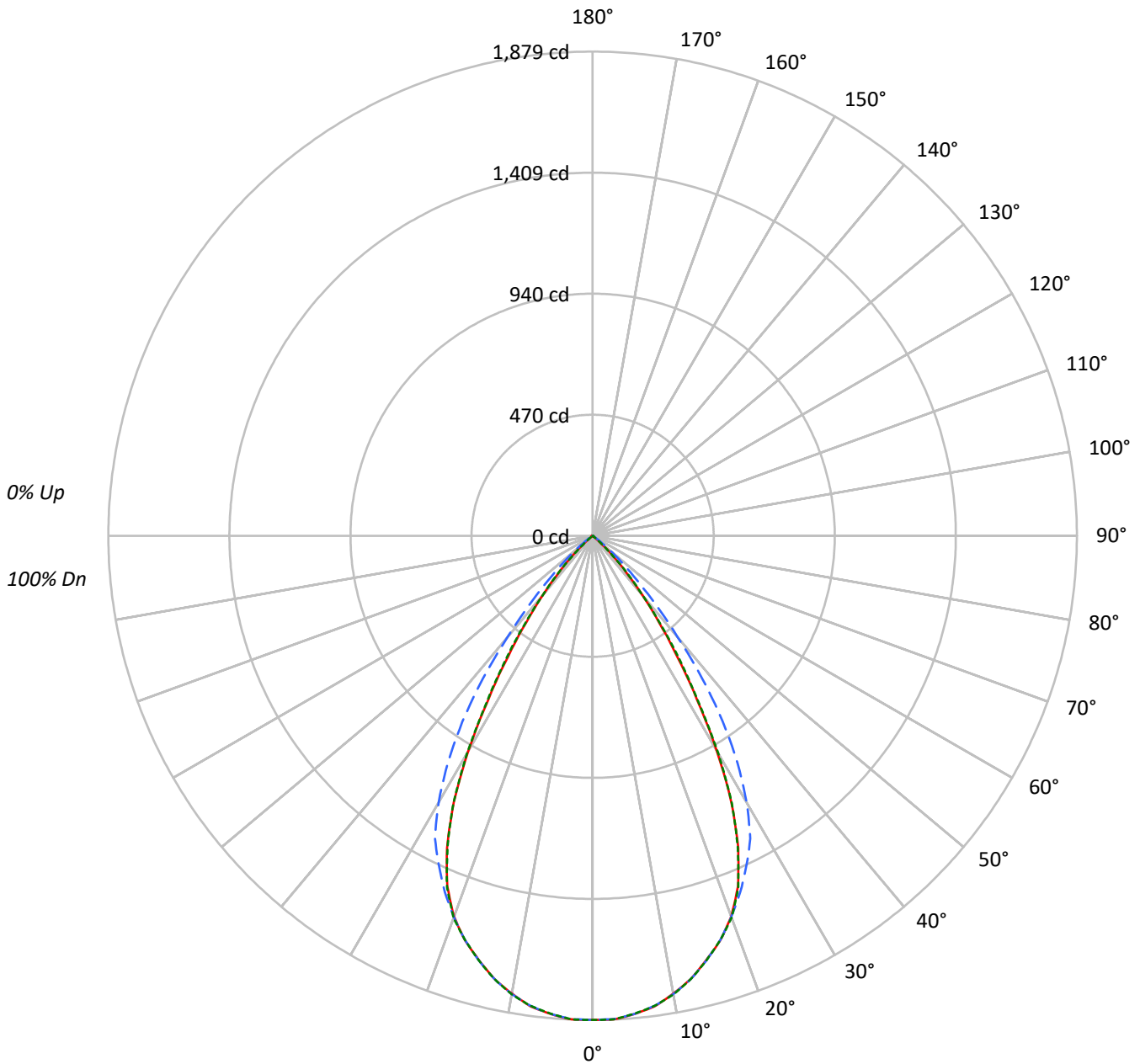
Test Method: LM-79-2019  
Report Number: P837546  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ440D010-HM43040935-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1876.7 lumens  
Efficiency: N/A  
Efficacy: 45.8 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 (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					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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87					87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80					80			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74					74			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69					69			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64					64			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60					60			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56					56			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52					52			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49					49			

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

	0°	45°	90°
0°	182019	182019	182019
5°	181188	181188	181022
10°	177449	177627	177794
15°	170959	171130	171130
20°	162072	162258	162618
25°	142891	150908	142335
30°	107813	133754	108797
35°	67611	104095	69882
40°	38128	64799	38128
45°	16002	32716	15755
50°	1311	12615	1582
55°	591	2652	591
60°	678	329	678
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: 32716 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.1	9.4
10°-20°	479.1	25.5
20°-30°	621.5	33.1
30°-40°	441.8	23.5
40°-50°	143.3	7.6
50°-60°	10.3	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°	1276.6	68.0
0°-40°	1718.4	91.6
0°-60°	1872.0	99.7
0°-90°	1876.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1876.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1879	1879	1879	1879	1879	
5°	1863	1865	1863	1863	1862	176
15°	1705	1710	1706	1710	1706	479
25°	1337	1372	1412	1379	1332	599
35°	572	676	880	683	591	366
45°	117	166	239	169	115	97
55°	4	4	16	4	4	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°	1878.9	1878.9	1878.9	1878.9	1878.9
2.5°	1878.9	1878.9	1877.1	1877.1	1878.9
5°	1863.2	1864.9	1863.2	1863.2	1861.5
7.5°	1842.3	1842.3	1840.5	1840.5	1840.5
10°	1803.9	1805.7	1805.7	1805.7	1807.4
12.5°	1762.1	1762.1	1762.1	1762.1	1762.1
15°	1704.6	1709.8	1706.3	1709.8	1706.3
17.5°	1647.1	1647.1	1645.3	1648.8	1645.3
20°	1572.1	1572.1	1573.9	1577.4	1577.4
22.5°	1472.8	1490.2	1497.2	1493.7	1476.3
25°	1336.8	1371.7	1411.8	1378.7	1331.6
27.5°	1166.0	1232.3	1324.6	1242.7	1169.5
30°	963.8	1063.2	1195.7	1066.7	972.6
32.5°	754.7	869.7	1045.8	878.4	761.7
35°	571.7	676.3	880.2	683.2	590.9
37.5°	421.8	517.7	698.9	521.1	434.0
40°	301.5	371.2	512.4	378.2	301.5
42.5°	193.5	263.2	360.8	264.9	202.2
45°	116.8	165.6	238.8	169.1	115.0
47.5°	52.3	94.1	148.1	97.6	52.3
50°	8.7	38.3	83.7	40.1	10.5
52.5°	5.2	7.0	40.1	7.0	5.2
55°	3.5	3.5	15.7	3.5	3.5
57.5°	3.5	3.5	3.5	3.5	3.5
60°	3.5	1.7	1.7	1.7	3.5
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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