

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: P837566

Luminaire Tested: HCSQ445D010-HM44560835-41SQMB

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837566  
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: HCSQ445D010-HM44560835-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

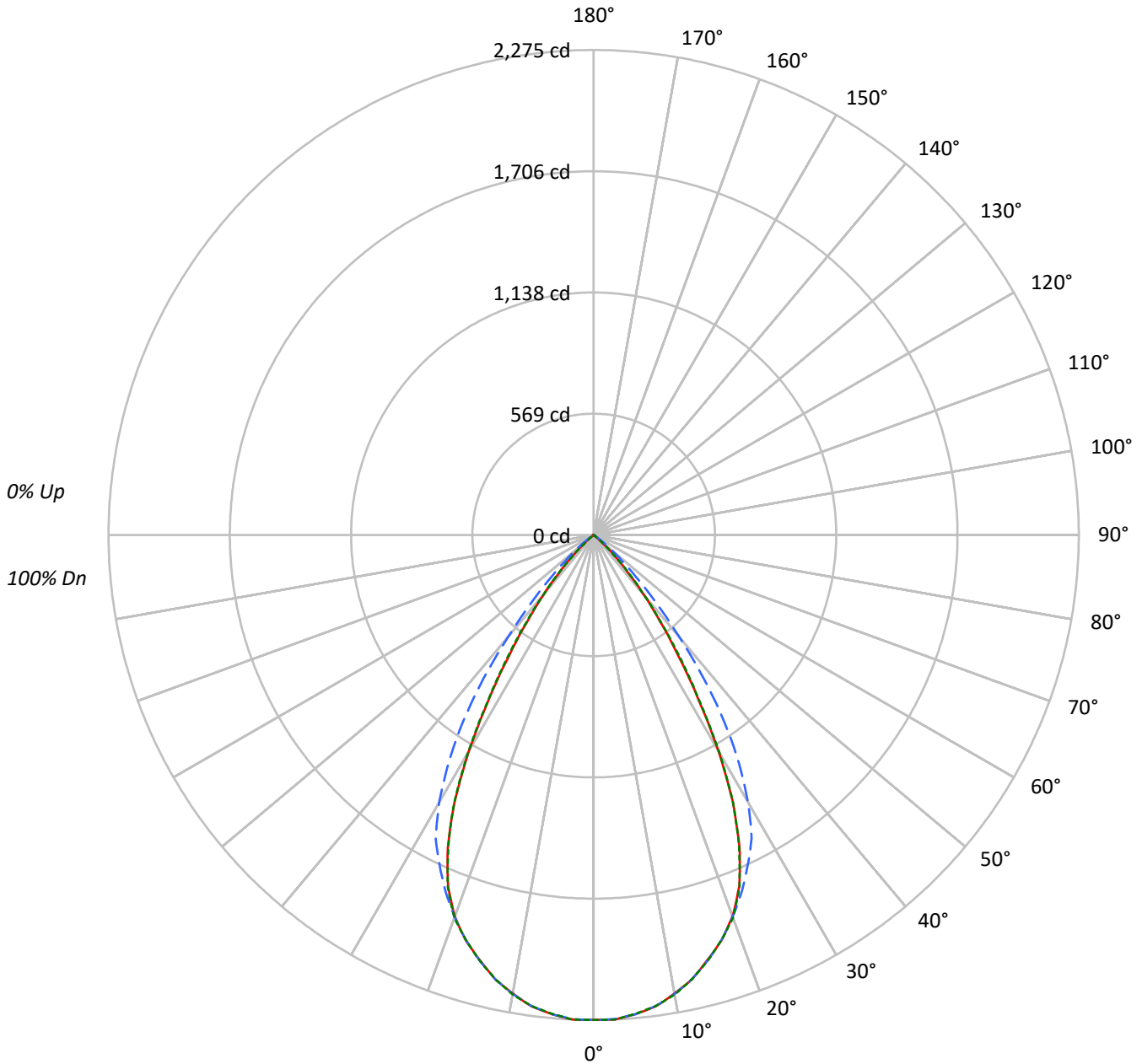
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2272.9 lumens  
Efficiency: N/A  
Efficacy: 49.5 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): 45.9  
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°	220430	220430	220430
5°	219425	219425	219220
10°	214899	215105	215322
15°	207034	207245	207245
20°	196278	196495	196928
25°	173055	182750	172371
30°	130577	161976	131751
35°	81874	126057	84617
40°	46184	78482	46184
45°	19372	39621	19084
50°	1598	15267	1914
55°	709	3209	709
60°	814	407	814
65°	481	481	481
70°	595	595	595
75°	786	786	786
80°	0	1172	1172
85°	0	2334	2334

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 39621 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	213.3	9.4
10°-20°	580.2	25.5
20°-30°	752.6	33.1
30°-40°	535.1	23.5
40°-50°	173.5	7.6
50°-60°	12.5	0.5
60°-70°	2.1	0.1
70°-80°	2.2	0.1
80°-90°	1.5	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°	1546.0	68.0
0°-40°	2081.1	91.6
0°-60°	2267.1	99.7
0°-90°	2272.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2272.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2275	2275	2275	2275	2275	
5°	2256	2258	2256	2256	2254	213
15°	2064	2071	2066	2071	2066	580
25°	1619	1661	1710	1670	1613	725
35°	692	819	1066	827	716	443
45°	141	200	289	205	139	118
55°	4	4	19	4	4	5
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°	2275.4	2275.4	2275.4	2275.4	2275.4
2.5°	2275.4	2275.4	2273.3	2273.3	2275.4
5°	2256.4	2258.5	2256.4	2256.4	2254.3
7.5°	2231.1	2231.1	2229.0	2229.0	2229.0
10°	2184.6	2186.7	2186.7	2186.7	2188.9
12.5°	2134.0	2134.0	2134.0	2134.0	2134.0
15°	2064.3	2070.7	2066.4	2070.7	2066.4
17.5°	1994.7	1994.7	1992.6	1996.8	1992.6
20°	1903.9	1903.9	1906.0	1910.2	1910.2
22.5°	1783.6	1804.7	1813.1	1808.9	1787.8
25°	1619.0	1661.2	1709.7	1669.6	1612.6
27.5°	1412.1	1492.3	1604.2	1505.0	1416.3
30°	1167.3	1287.6	1448.0	1291.8	1177.8
32.5°	914.0	1053.3	1266.5	1063.8	922.4
35°	692.3	819.0	1065.9	827.4	715.5
37.5°	510.8	626.9	846.4	631.1	525.6
40°	365.2	449.6	620.6	458.0	365.2
42.5°	234.3	318.7	436.9	320.8	244.8
45°	141.4	200.5	289.2	204.7	139.3
47.5°	63.3	114.0	179.4	118.2	63.3
50°	10.6	46.4	101.3	48.5	12.7
52.5°	6.3	8.4	48.5	8.4	6.3
55°	4.2	4.2	19.0	4.2	4.2
57.5°	4.2	4.2	4.2	4.2	4.2
60°	4.2	2.1	2.1	2.1	4.2
62.5°	2.1	2.1	2.1	2.1	2.1
65°	2.1	2.1	2.1	2.1	2.1
67.5°	2.1	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	2.1	2.1
72.5°	2.1	2.1	2.1	2.1	2.1
75°	2.1	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1
80°	0.0	2.1	2.1	2.1	2.1
82.5°	0.0	2.1	2.1	2.1	2.1
85°	0.0	0.0	2.1	2.1	2.1
87.5°	0.0	0.0	2.1	2.1	2.1
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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