

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: P837522

Luminaire Tested: HCSQ440D010-HM43040830-41SQMW

Issue Date: 5/17/2024

**Test Information**

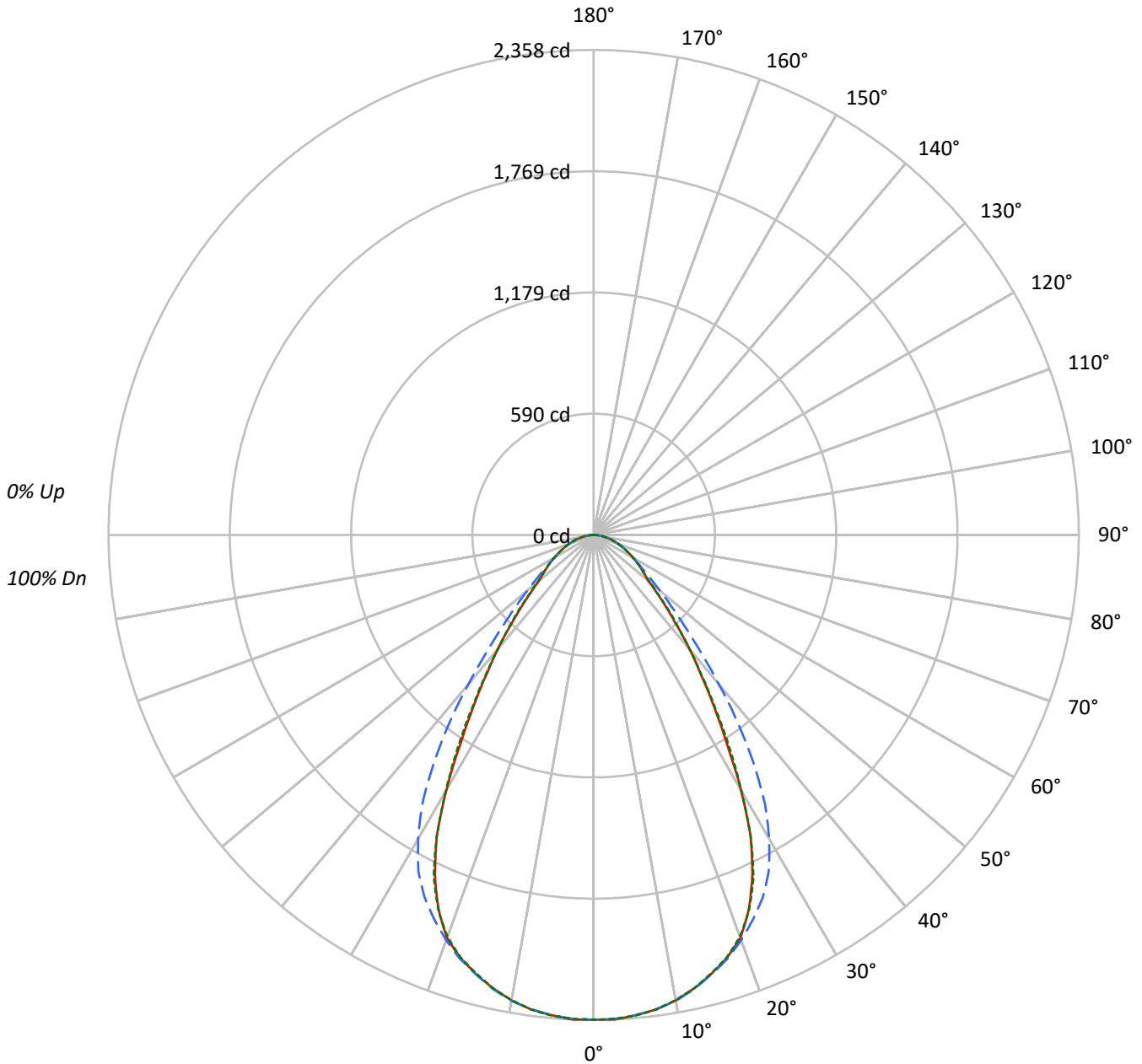
Test Method: LM-79-2019  
Report Number: P837522  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ440D010-HM43040830-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3420.1 lumens  
Efficiency: N/A  
Efficacy: 83.4 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
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									
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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79																			
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71																			
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64																			
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41																			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38																			

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

	0°	45°	90°
0°	228306	228306	228306
5°	227934	227934	228109
10°	226064	226241	225887
15°	221667	221848	221306
20°	215020	216154	214268
25°	195149	207869	196518
30°	160187	190904	160802
35°	120404	160258	122142
40°	91698	119494	91470
45°	68488	84791	69748
50°	52161	63193	53261
55°	47004	49487	47004
60°	42935	42567	42567
65°	39037	39037	39037
70°	36312	35802	35802
75°	33575	32901	33575
80°	30628	29624	30628
85°	26454	26454	26454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 84791 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	222.3	6.5
10°-20°	622.2	18.2
20°-30°	855.8	25.0
30°-40°	728.5	21.3
40°-50°	440.0	12.9
50°-60°	259.3	7.6
60°-70°	170.1	5.0
70°-80°	94.3	2.8
80°-90°	27.6	0.8
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°	1700.2	49.7
0°-40°	2428.7	71.0
0°-60°	3128.1	91.5
0°-90°	3420.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3420.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2357	2357	2357	2357	2357	
5°	2344	2346	2344	2342	2346	222
15°	2210	2216	2212	2210	2207	622
25°	1826	1882	1945	1886	1838	825
35°	1018	1121	1355	1152	1033	644
45°	500	553	619	558	509	393
55°	278	284	293	284	278	250
65°	170	172	170	170	170	170
75°	90	90	88	88	90	95
85°	24	24	24	24	24	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2356.7	2356.7	2356.7	2356.7	2356.7
2.5°	2358.5	2353.0	2354.9	2353.0	2354.9
5°	2343.9	2345.7	2343.9	2342.1	2345.7
7.5°	2327.4	2325.6	2325.6	2323.7	2327.4
10°	2298.1	2294.4	2299.9	2296.3	2296.3
12.5°	2257.8	2263.3	2261.5	2261.5	2257.8
15°	2210.2	2215.7	2212.0	2210.2	2206.6
17.5°	2155.3	2158.9	2160.8	2153.4	2153.4
20°	2085.7	2093.0	2096.7	2083.9	2078.4
22.5°	1970.3	2003.3	2023.4	2001.5	1974.0
25°	1825.7	1882.4	1944.7	1886.1	1838.5
27.5°	1651.7	1732.3	1844.0	1745.1	1651.7
30°	1432.0	1551.0	1706.6	1563.8	1437.5
32.5°	1204.9	1331.3	1549.2	1353.2	1230.5
35°	1018.1	1120.7	1355.1	1151.8	1032.8
37.5°	857.0	944.9	1151.8	965.0	866.1
40°	725.1	794.7	944.9	803.9	723.3
42.5°	598.8	664.7	765.4	673.9	606.1
45°	499.9	553.0	618.9	558.5	509.1
47.5°	415.7	459.6	507.2	459.6	421.2
50°	346.1	380.9	419.3	380.9	353.4
52.5°	309.5	320.5	346.1	322.3	309.5
55°	278.3	283.8	293.0	283.8	278.3
57.5°	249.0	252.7	250.9	250.9	249.0
60°	221.6	223.4	219.7	221.6	219.7
62.5°	195.9	195.9	192.3	195.9	194.1
65°	170.3	172.1	170.3	170.3	170.3
67.5°	148.3	148.3	146.5	148.3	148.3
70°	128.2	128.2	126.4	128.2	126.4
72.5°	108.0	108.0	106.2	106.2	106.2
75°	89.7	89.7	87.9	87.9	89.7
77.5°	71.4	71.4	69.6	71.4	71.4
80°	54.9	54.9	53.1	54.9	54.9
82.5°	38.5	38.5	38.5	40.3	40.3
85°	23.8	23.8	23.8	23.8	23.8
87.5°	11.0	11.0	11.0	11.0	12.8
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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