

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: P837433

Luminaire Tested: HCSQ430D010-HM43040827-41SQC

Issue Date: 5/17/2024

**Test Information**

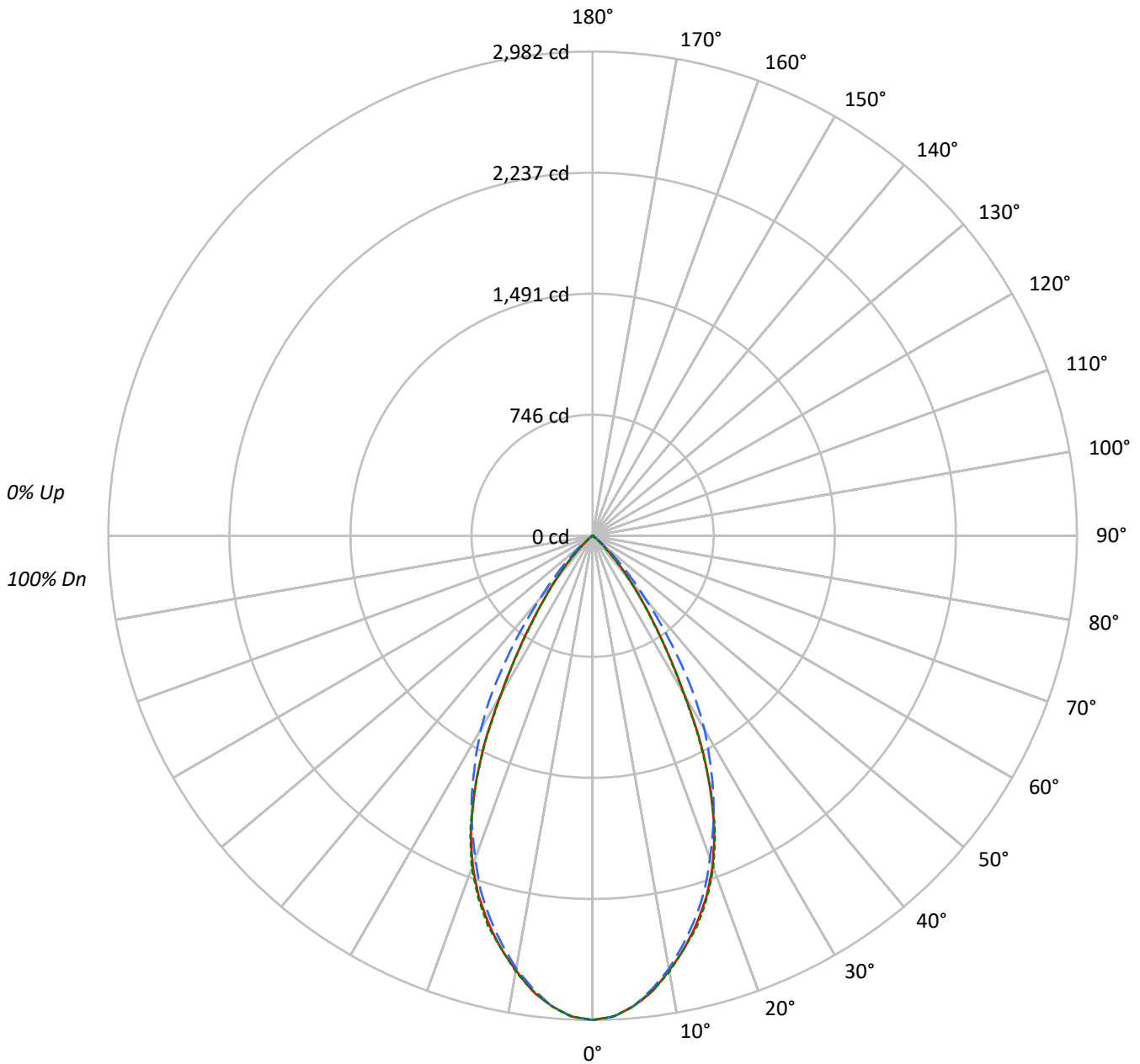
Test Method: LM-79-2019  
Report Number: P837433  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ430D010-HM43040827-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2409.4 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 28.2  
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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	94																			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	96	91	87	101	95	90	87	92	89	85	90	87	84	88	85	83	81																			
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76																			
5	93	84	79	74	91	83	78	74	82	77	73	80	76	73	78	75	72	71																			
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	70	68	66																			
7	84	75	69	65	82	74	68	64	73	68	64	71	67	64	70	66	63	62																			
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	60	58																			
9	76	67	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55																			
10	73	63	57	53	72	63	57	53	62	57	53	61	56	53	60	56	53	52																			

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

	0°	45°	90°
0°	288844	288844	288844
5°	282654	282770	282770
10°	267350	266159	268068
15°	248064	244664	249398
20°	222680	217690	224051
25°	182889	188202	183541
30°	126427	153766	125476
35°	77853	108613	75984
40°	43920	63509	43617
45°	20057	31826	19235
50°	5109	12765	5290
55°	2449	3885	2246
60°	1647	1414	1879
65°	1398	1100	1398
70°	1020	1020	1360
75°	898	898	1347
80°	1339	1339	1339
85°	1334	2668	2668

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 31826 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	271.2	11.3
10°-20°	685.0	28.4
20°-30°	783.1	32.5
30°-40°	486.1	20.2
40°-50°	153.2	6.4
50°-60°	19.8	0.8
60°-70°	5.9	0.2
70°-80°	3.1	0.1
80°-90°	2.1	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°	1739.3	72.2
0°-40°	2225.4	92.4
0°-60°	2398.4	99.5
0°-90°	2409.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2409.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2982	2982	2982	2982	2982	
5°	2907	2904	2908	2905	2908	272
15°	2473	2455	2440	2455	2487	690
25°	1711	1735	1761	1735	1717	768
35°	658	760	918	742	642	423
45°	146	176	232	177	140	123
55°	14	14	23	14	13	14
65°	6	6	5	6	6	6
75°	2	2	2	2	4	3
85°	1	2	2	2	2	1
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2981.6	2981.6	2981.6	2981.6	2981.6
2.5°	2963.5	2965.9	2963.5	2968.3	2963.5
5°	2906.6	2904.2	2907.8	2905.4	2907.8
7.5°	2829.1	2814.6	2813.4	2823.1	2824.3
10°	2717.8	2714.2	2705.7	2714.2	2725.1
12.5°	2604.1	2589.5	2577.4	2594.4	2604.1
15°	2473.4	2455.2	2439.5	2455.2	2486.7
17.5°	2329.4	2304.0	2290.7	2308.8	2339.1
20°	2160.0	2133.4	2111.6	2127.3	2173.3
22.5°	1956.7	1954.3	1939.7	1948.2	1965.2
25°	1711.0	1735.2	1760.7	1735.2	1717.1
27.5°	1441.2	1506.5	1564.6	1488.4	1430.3
30°	1130.2	1229.4	1374.6	1222.2	1121.7
32.5°	873.7	977.7	1162.9	964.4	866.4
35°	658.3	759.9	918.4	741.8	642.5
37.5°	484.0	560.3	698.2	555.4	484.0
40°	347.3	396.9	502.2	395.7	344.9
42.5°	240.8	273.5	350.9	271.1	233.5
45°	146.4	175.5	232.3	176.7	140.4
47.5°	77.4	111.3	146.4	106.5	77.4
50°	33.9	59.3	84.7	58.1	35.1
52.5°	18.2	25.4	46.0	25.4	18.2
55°	14.5	14.5	23.0	14.5	13.3
57.5°	10.9	10.9	12.1	10.9	10.9
60°	8.5	8.5	7.3	8.5	9.7
62.5°	7.3	7.3	6.1	7.3	7.3
65°	6.1	6.1	4.8	6.1	6.1
67.5°	4.8	4.8	4.8	4.8	4.8
70°	3.6	3.6	3.6	4.8	4.8
72.5°	3.6	3.6	3.6	3.6	3.6
75°	2.4	2.4	2.4	2.4	3.6
77.5°	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4
82.5°	1.2	2.4	2.4	2.4	2.4
85°	1.2	2.4	2.4	2.4	2.4
87.5°	1.2	1.2	2.4	2.4	2.4
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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