

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: P837554

Luminaire Tested: HCSQ445D010-HM44560827-41SQH

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837554  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ445D010-HM44560827-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

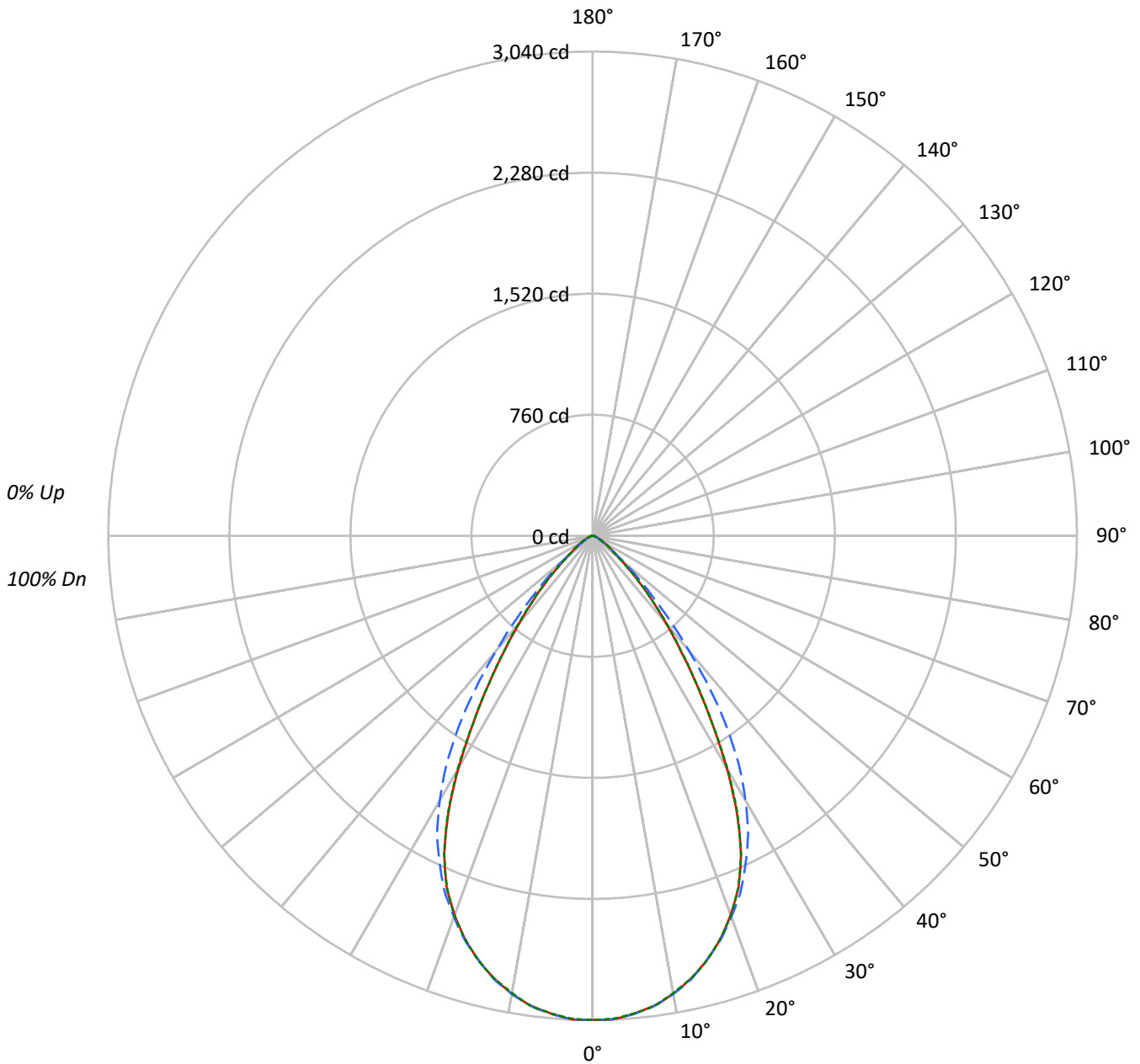
Lumens per Lamp: N/A  
Luminaire Lumens: 3417.4 lumens  
Efficiency: N/A  
Efficacy: 74.5 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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									
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			100																
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92			92																
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85			85																
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77			77																
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71			71																
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65			65																
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60			60																
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56			56																
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52			52																
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48			48																
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45			45																

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

	0°	45°	90°
0°	294511	294511	294511
5°	292719	293078	292719
10°	287230	287417	286679
15°	277029	276838	277219
20°	261144	262495	261721
25°	235639	242865	235639
30°	188208	214887	189673
35°	134347	173882	134572
40°	90711	118255	92140
45°	57623	69981	57884
50°	32825	37361	31695
55°	21568	18072	21247
60°	14919	10559	14551
65°	10338	7748	10338
70°	7449	5863	7449
75°	4903	4903	4903
80°	3124	4184	4184
85°	4224	4224	4224

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 69981 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	284.8	8.3
10°-20°	774.4	22.7
20°-30°	1014.0	29.7
30°-40°	796.9	23.3
40°-50°	372.2	10.9
50°-60°	115.4	3.4
60°-70°	41.2	1.2
70°-80°	14.5	0.4
80°-90°	4.0	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°	2073.2	60.7
0°-40°	2870.1	84.0
0°-60°	3357.7	98.3
0°-90°	3417.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3417.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3040	3040	3040	3040	3040	
5°	3010	3012	3014	3018	3010	285
15°	2762	2762	2760	2762	2764	774
25°	2204	2234	2272	2236	2204	991
35°	1136	1239	1470	1254	1138	716
45°	421	471	511	462	422	335
55°	128	120	107	118	126	120
65°	45	41	34	39	45	47
75°	13	13	13	13	13	15
85°	4	4	4	4	4	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3040.1	3040.1	3040.1	3040.1	3040.1
2.5°	3040.1	3036.3	3038.2	3034.5	3034.5
5°	3010.1	3011.9	3013.8	3017.6	3010.1
7.5°	2976.3	2980.0	2978.1	2978.1	2978.1
10°	2919.9	2921.8	2921.8	2921.8	2914.3
12.5°	2848.6	2852.3	2854.2	2848.6	2848.6
15°	2762.2	2762.2	2760.3	2762.2	2764.1
17.5°	2658.9	2664.5	2664.5	2658.9	2657.0
20°	2533.1	2542.5	2546.2	2538.7	2538.7
22.5°	2392.3	2401.7	2424.2	2405.4	2390.4
25°	2204.5	2234.5	2272.1	2236.4	2204.5
27.5°	1962.3	2028.0	2114.4	2039.3	1967.9
30°	1682.5	1789.5	1921.0	1795.1	1695.6
32.5°	1397.1	1517.2	1710.6	1526.6	1397.1
35°	1136.0	1239.3	1470.3	1254.3	1137.9
37.5°	903.2	1002.7	1205.5	1014.0	916.3
40°	717.3	798.0	935.1	796.2	728.6
42.5°	559.6	617.8	707.9	615.9	557.7
45°	420.6	471.3	510.8	461.9	422.5
47.5°	309.8	343.6	366.2	338.0	302.3
50°	217.8	242.2	247.9	236.6	210.3
52.5°	163.4	163.4	165.2	161.5	159.6
55°	127.7	120.2	107.0	118.3	125.8
57.5°	99.5	92.0	75.1	88.3	97.6
60°	77.0	69.5	54.5	67.6	75.1
62.5°	60.1	52.6	43.2	52.6	58.2
65°	45.1	41.3	33.8	39.4	45.1
67.5°	33.8	30.0	26.3	30.0	33.8
70°	26.3	24.4	20.7	22.5	26.3
72.5°	18.8	16.9	16.9	16.9	18.8
75°	13.1	13.1	13.1	13.1	13.1
77.5°	9.4	9.4	9.4	9.4	9.4
80°	5.6	5.6	7.5	7.5	7.5
82.5°	3.8	3.8	5.6	5.6	5.6
85°	3.8	3.8	3.8	3.8	3.8
87.5°	1.9	1.9	1.9	3.8	3.8
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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