

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: P837294

Luminaire Tested: HCSQ410D010-HM40525927-41SQH

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837294  
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: HCSQ410D010-HM40525927-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

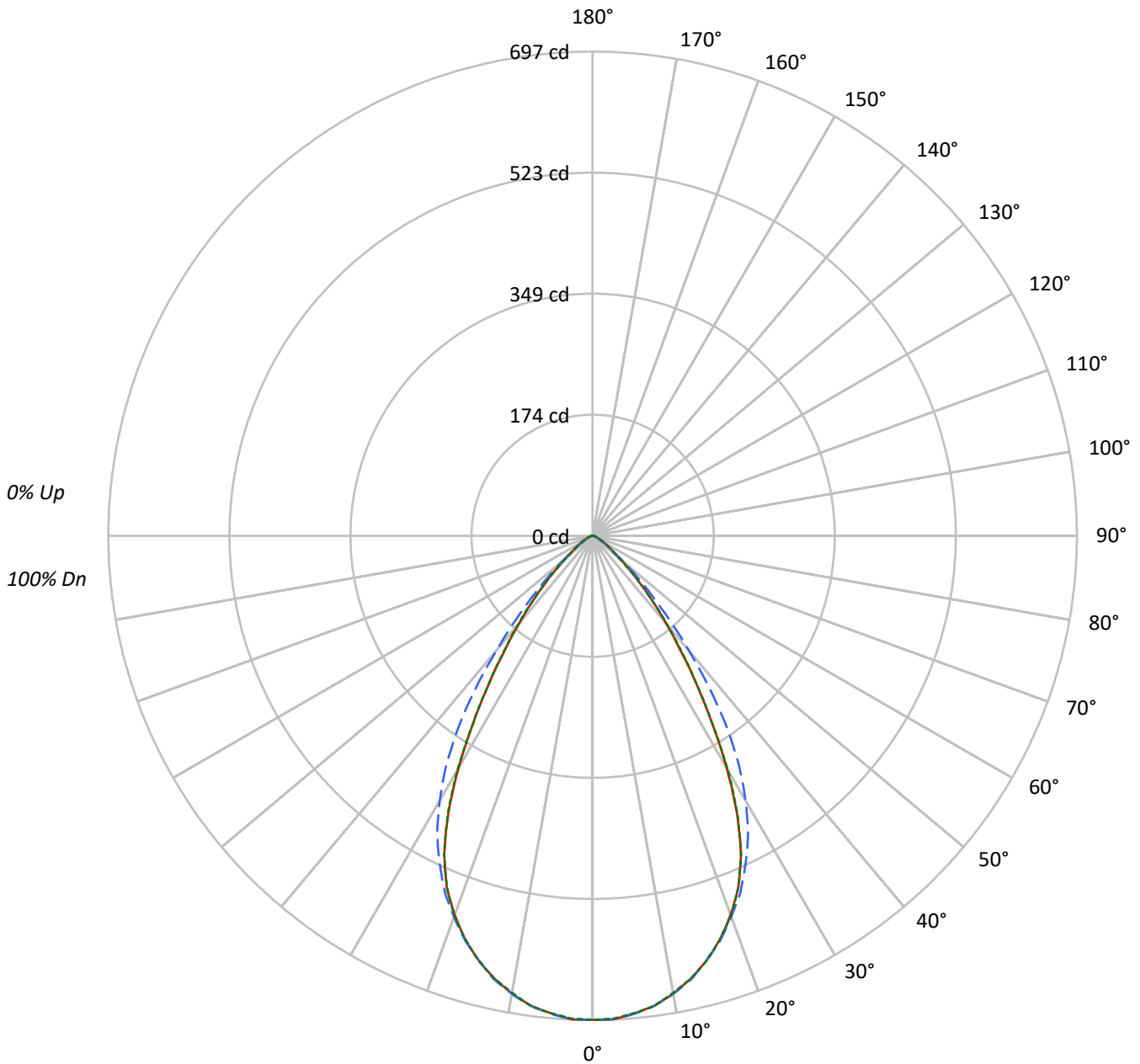
Lumens per Lamp: N/A  
Luminaire Lumens: 783.3 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.9  
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°	67503	67503	67503
5°	67099	67177	67099
10°	65839	65878	65711
15°	63495	63455	63546
20°	59856	60165	59990
25°	54012	55668	54012
30°	43134	49253	43481
35°	30796	39855	30843
40°	20790	27101	21119
45°	13207	16043	13262
50°	7520	8560	7264
55°	4949	4138	4864
60°	3410	2422	3333
65°	2361	1765	2361
70°	1699	1331	1699
75°	1123	1123	1123
80°	725	948	948
85°	1000	1000	1000

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 16043 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.3	8.3
10°-20°	177.5	22.7
20°-30°	232.4	29.7
30°-40°	182.7	23.3
40°-50°	85.3	10.9
50°-60°	26.4	3.4
60°-70°	9.4	1.2
70°-80°	3.3	0.4
80°-90°	0.9	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°	475.2	60.7
0°-40°	657.9	84.0
0°-60°	769.6	98.3
0°-90°	783.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	783.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	697	697	697	697	697	
5°	690	690	691	692	690	65
15°	633	633	633	633	634	177
25°	505	512	521	513	505	227
35°	260	284	337	288	261	164
45°	96	108	117	106	97	77
55°	29	28	24	27	29	27
65°	10	10	8	9	10	11
75°	3	3	3	3	3	3
85°	1	1	1	1	1	1
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	696.8	696.8	696.8	696.8	696.8
2.5°	696.8	696.0	696.4	695.5	695.5
5°	690.0	690.4	690.8	691.7	690.0
7.5°	682.2	683.1	682.6	682.6	682.6
10°	669.3	669.7	669.7	669.7	668.0
12.5°	652.9	653.8	654.2	652.9	652.9
15°	633.1	633.1	632.7	633.1	633.6
17.5°	609.5	610.8	610.8	609.5	609.0
20°	580.6	582.8	583.6	581.9	581.9
22.5°	548.3	550.5	555.7	551.4	547.9
25°	505.3	512.2	520.8	512.6	505.3
27.5°	449.8	464.8	484.6	467.4	451.1
30°	385.6	410.2	440.3	411.5	388.7
32.5°	320.2	347.8	392.1	349.9	320.2
35°	260.4	284.1	337.0	287.5	260.8
37.5°	207.0	229.8	276.3	232.4	210.0
40°	164.4	182.9	214.3	182.5	167.0
42.5°	128.3	141.6	162.3	141.2	127.8
45°	96.4	108.0	117.1	105.9	96.8
47.5°	71.0	78.8	83.9	77.5	69.3
50°	49.9	55.5	56.8	54.2	48.2
52.5°	37.4	37.4	37.9	37.0	36.6
55°	29.3	27.5	24.5	27.1	28.8
57.5°	22.8	21.1	17.2	20.2	22.4
60°	17.6	15.9	12.5	15.5	17.2
62.5°	13.8	12.1	9.9	12.1	13.3
65°	10.3	9.5	7.7	9.0	10.3
67.5°	7.7	6.9	6.0	6.9	7.7
70°	6.0	5.6	4.7	5.2	6.0
72.5°	4.3	3.9	3.9	3.9	4.3
75°	3.0	3.0	3.0	3.0	3.0
77.5°	2.2	2.2	2.2	2.2	2.2
80°	1.3	1.3	1.7	1.7	1.7
82.5°	0.9	0.9	1.3	1.3	1.3
85°	0.9	0.9	0.9	0.9	0.9
87.5°	0.4	0.4	0.4	0.9	0.9
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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