

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: P837289

Luminaire Tested: HCSQ410D010-HM40525840-41SQH

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837289  
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-HM40525840-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

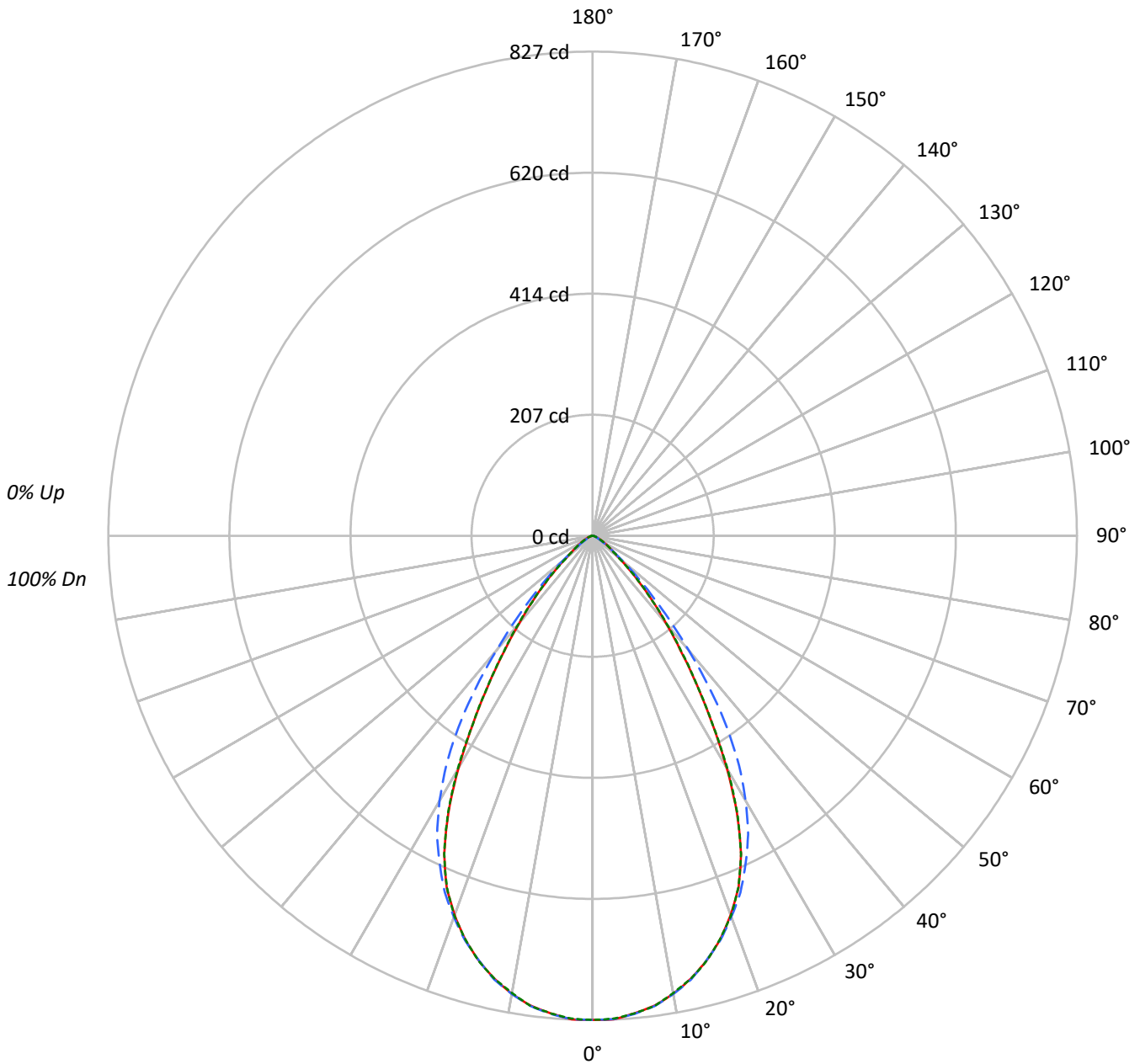
Lumens per Lamp: N/A  
Luminaire Lumens: 929.6 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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					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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92								
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85								
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77								
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71								
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65								
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60								
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56								
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52								
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48								
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45								

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

	0°	45°	90°
0°	80116	80116	80116
5°	79625	79732	79625
10°	78135	78184	77988
15°	75360	75310	75410
20°	71041	71412	71196
25°	64102	66069	64102
30°	51199	58459	51602
35°	36543	47305	36614
40°	24673	32172	25065
45°	15673	19030	15742
50°	8937	10158	8621
55°	5861	4915	5776
60°	4049	2868	3953
65°	2819	2109	2819
70°	2039	1586	2039
75°	1347	1347	1347
80°	837	1116	1116
85°	1112	1112	1112

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 19030 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	77.5	8.3
10°-20°	210.7	22.7
20°-30°	275.8	29.7
30°-40°	216.8	23.3
40°-50°	101.3	10.9
50°-60°	31.4	3.4
60°-70°	11.2	1.2
70°-80°	4.0	0.4
80°-90°	1.1	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°	564.0	60.7
0°-40°	780.8	84.0
0°-60°	913.4	98.3
0°-90°	929.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	929.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	819	819	820	821	819	77
15°	751	751	751	751	752	210
25°	600	608	618	608	600	270
35°	309	337	400	341	310	195
45°	114	128	139	126	115	91
55°	35	33	29	32	34	32
65°	12	11	9	11	12	13
75°	4	4	4	4	4	4
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°	827.0	827.0	827.0	827.0	827.0
2.5°	827.0	826.0	826.5	825.5	825.5
5°	818.8	819.3	819.9	820.9	818.8
7.5°	809.6	810.7	810.2	810.2	810.2
10°	794.3	794.8	794.8	794.8	792.8
12.5°	774.9	775.9	776.4	774.9	774.9
15°	751.4	751.4	750.9	751.4	751.9
17.5°	723.3	724.8	724.8	723.3	722.8
20°	689.1	691.6	692.7	690.6	690.6
22.5°	650.8	653.3	659.5	654.4	650.3
25°	599.7	607.9	618.1	608.4	599.7
27.5°	533.8	551.7	575.2	554.7	535.3
30°	457.7	486.8	522.6	488.3	461.3
32.5°	380.0	412.7	465.4	415.3	380.0
35°	309.0	337.1	400.0	341.2	309.6
37.5°	245.7	272.8	327.9	275.8	249.3
40°	195.1	217.1	254.4	216.6	198.2
42.5°	152.2	168.1	192.6	167.5	151.7
45°	114.4	128.2	138.9	125.7	114.9
47.5°	84.3	93.5	99.6	91.9	82.2
50°	59.3	65.9	67.4	64.4	57.2
52.5°	44.4	44.4	45.0	43.9	43.4
55°	34.7	32.7	29.1	32.2	34.2
57.5°	27.1	25.0	20.4	24.0	26.6
60°	20.9	18.9	14.8	18.4	20.4
62.5°	16.3	14.3	11.7	14.3	15.8
65°	12.3	11.2	9.2	10.7	12.3
67.5°	9.2	8.2	7.2	8.2	9.2
70°	7.2	6.6	5.6	6.1	7.2
72.5°	5.1	4.6	4.6	4.6	5.1
75°	3.6	3.6	3.6	3.6	3.6
77.5°	2.6	2.6	2.6	2.6	2.6
80°	1.5	1.5	2.0	2.0	2.0
82.5°	1.0	1.0	1.5	1.5	1.5
85°	1.0	1.0	1.0	1.0	1.0
87.5°	0.5	0.5	0.5	1.0	1.0
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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