

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: P837354

Luminaire Tested: HCSQ420D010-HM40525827-41SQH

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837354  
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: HCSQ420D010-HM40525827-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

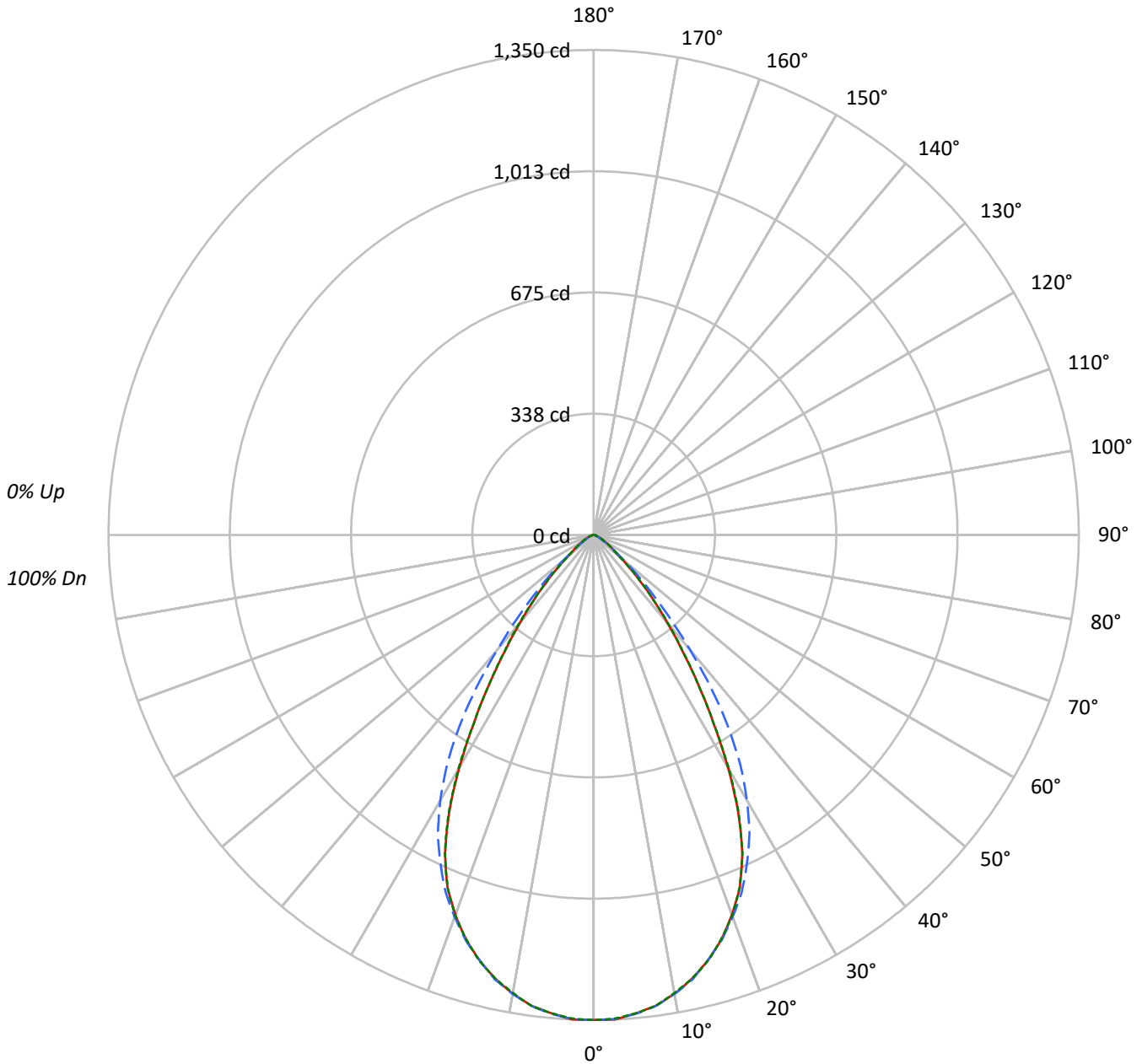
Lumens per Lamp: N/A  
Luminaire Lumens: 1517.8 lumens  
Efficiency: N/A  
Efficacy: 75.9 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 20  
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	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°	130811	130811	130811
5°	130007	130173	130007
10°	127576	127655	127330
15°	123039	122959	123130
20°	115990	116588	116247
25°	104656	107874	104656
30°	83595	95441	84243
35°	59676	77226	59770
40°	40291	52520	40923
45°	25592	31086	25715
50°	14574	16593	14076
55°	9576	8023	9441
60°	6626	4689	6471
65°	4585	3438	4585
70°	3314	2606	3314
75°	2171	2171	2171
80°	1395	1841	1841
85°	1890	1890	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 31086 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.5	8.3
10°-20°	344.0	22.7
20°-30°	450.3	29.7
30°-40°	354.0	23.3
40°-50°	165.3	10.9
50°-60°	51.2	3.4
60°-70°	18.3	1.2
70°-80°	6.4	0.4
80°-90°	1.8	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°	920.8	60.7
0°-40°	1274.8	84.0
0°-60°	1491.3	98.3
0°-90°	1517.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1517.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1350	1350	1350	1350	1350	
5°	1337	1338	1339	1340	1337	126
15°	1227	1227	1226	1227	1228	344
25°	979	992	1009	993	979	440
35°	505	550	653	557	505	318
45°	187	209	227	205	188	149
55°	57	53	48	52	56	53
65°	20	18	15	18	20	21
75°	6	6	6	6	6	7
85°	2	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°	1350.3	1350.3	1350.3	1350.3	1350.3
2.5°	1350.3	1348.6	1349.4	1347.8	1347.8
5°	1336.9	1337.8	1338.6	1340.3	1336.9
7.5°	1321.9	1323.6	1322.7	1322.7	1322.7
10°	1296.9	1297.7	1297.7	1297.7	1294.4
12.5°	1265.2	1266.9	1267.7	1265.2	1265.2
15°	1226.8	1226.8	1226.0	1226.8	1227.7
17.5°	1181.0	1183.5	1183.5	1181.0	1180.1
20°	1125.1	1129.3	1130.9	1127.6	1127.6
22.5°	1062.5	1066.7	1076.7	1068.4	1061.7
25°	979.1	992.5	1009.2	993.3	979.1
27.5°	871.5	900.7	939.1	905.7	874.0
30°	747.3	794.8	853.2	797.3	753.1
32.5°	620.5	673.9	759.8	678.1	620.5
35°	504.6	550.4	653.0	557.1	505.4
37.5°	401.2	445.4	535.4	450.4	407.0
40°	318.6	354.5	415.3	353.6	323.6
42.5°	248.5	274.4	314.4	273.6	247.7
45°	186.8	209.3	226.9	205.2	187.7
47.5°	137.6	152.6	162.6	150.1	134.3
50°	96.7	107.6	110.1	105.1	93.4
52.5°	72.6	72.6	73.4	71.7	70.9
55°	56.7	53.4	47.5	52.5	55.9
57.5°	44.2	40.9	33.4	39.2	43.4
60°	34.2	30.9	24.2	30.0	33.4
62.5°	26.7	23.4	19.2	23.4	25.9
65°	20.0	18.3	15.0	17.5	20.0
67.5°	15.0	13.3	11.7	13.3	15.0
70°	11.7	10.8	9.2	10.0	11.7
72.5°	8.3	7.5	7.5	7.5	8.3
75°	5.8	5.8	5.8	5.8	5.8
77.5°	4.2	4.2	4.2	4.2	4.2
80°	2.5	2.5	3.3	3.3	3.3
82.5°	1.7	1.7	2.5	2.5	2.5
85°	1.7	1.7	1.7	1.7	1.7
87.5°	0.8	0.8	0.8	1.7	1.7
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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