

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: P837366

Luminaire Tested: HCSQ420D010-HM40525835-41SQMB

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837366  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ420D010-HM40525835-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

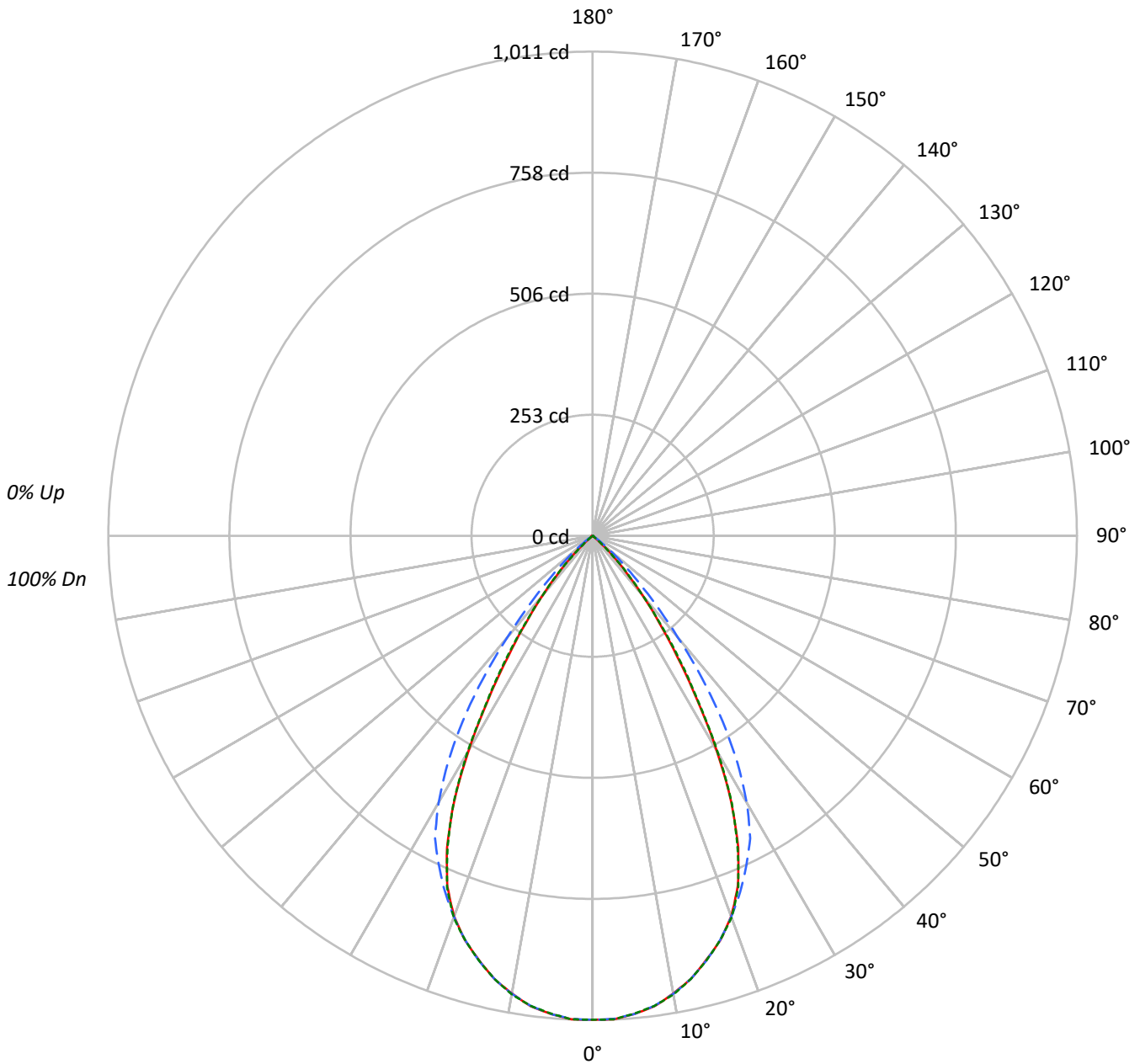
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1009.4 lumens  
Efficiency: N/A  
Efficacy: 50.5 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
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					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	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87					87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80					80			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74					74			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69					69			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64					64			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60					60			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56					56			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52					52			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49					49			

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

	0°	45°	90°
0°	97902	97902	97902
5°	97459	97459	97362
10°	95448	95537	95635
15°	91958	92049	92049
20°	87175	87278	87464
25°	76865	81172	76555
30°	57989	71939	58515
35°	36366	55986	37584
40°	20512	34853	20512
45°	8604	17591	8480
50°	708	6782	844
55°	321	1419	321
60°	368	174	368
65°	206	206	206
70°	255	255	255
75°	337	337	337
80°	0	502	502
85°	0	1000	1000

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 17591 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.7	9.4
10°-20°	257.7	25.5
20°-30°	334.3	33.1
30°-40°	237.6	23.5
40°-50°	77.1	7.6
50°-60°	5.6	0.6
60°-70°	0.9	0.1
70°-80°	0.9	0.1
80°-90°	0.6	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°	686.7	68.0
0°-40°	924.3	91.6
0°-60°	1006.9	99.8
0°-90°	1009.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1009.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1002	1003	1002	1002	1001	95
15°	917	920	918	920	918	257
25°	719	738	759	742	716	322
35°	308	364	473	368	318	197
45°	63	89	128	91	62	52
55°	2	2	8	2	2	2
65°	1	1	1	1	1	1
75°	1	1	1	1	1	1
85°	0	0	1	1	1	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1010.6	1010.6	1010.6	1010.6	1010.6
2.5°	1010.6	1010.6	1009.7	1009.7	1010.6
5°	1002.2	1003.1	1002.2	1002.2	1001.2
7.5°	990.9	990.9	990.0	990.0	990.0
10°	970.3	971.2	971.2	971.2	972.2
12.5°	947.8	947.8	947.8	947.8	947.8
15°	916.9	919.7	917.8	919.7	917.8
17.5°	885.9	885.9	885.0	886.9	885.0
20°	845.6	845.6	846.6	848.4	848.4
22.5°	792.2	801.6	805.3	803.4	794.1
25°	719.1	737.8	759.4	741.6	716.2
27.5°	627.2	662.8	712.5	668.4	629.1
30°	518.4	571.9	643.1	573.7	523.1
32.5°	405.9	467.8	562.5	472.5	409.7
35°	307.5	363.7	473.4	367.5	317.8
37.5°	226.9	278.4	375.9	280.3	233.4
40°	162.2	199.7	275.6	203.4	162.2
42.5°	104.1	141.6	194.1	142.5	108.7
45°	62.8	89.1	128.4	90.9	61.9
47.5°	28.1	50.6	79.7	52.5	28.1
50°	4.7	20.6	45.0	21.6	5.6
52.5°	2.8	3.7	21.6	3.7	2.8
55°	1.9	1.9	8.4	1.9	1.9
57.5°	1.9	1.9	1.9	1.9	1.9
60°	1.9	0.9	0.9	0.9	1.9
62.5°	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9
80°	0.0	0.9	0.9	0.9	0.9
82.5°	0.0	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.9	0.9	0.9
87.5°	0.0	0.0	0.9	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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