

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: P837288

Luminaire Tested: HCSQ410D010-HM40525840-41SQC

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837288  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ410D010-HM40525840-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

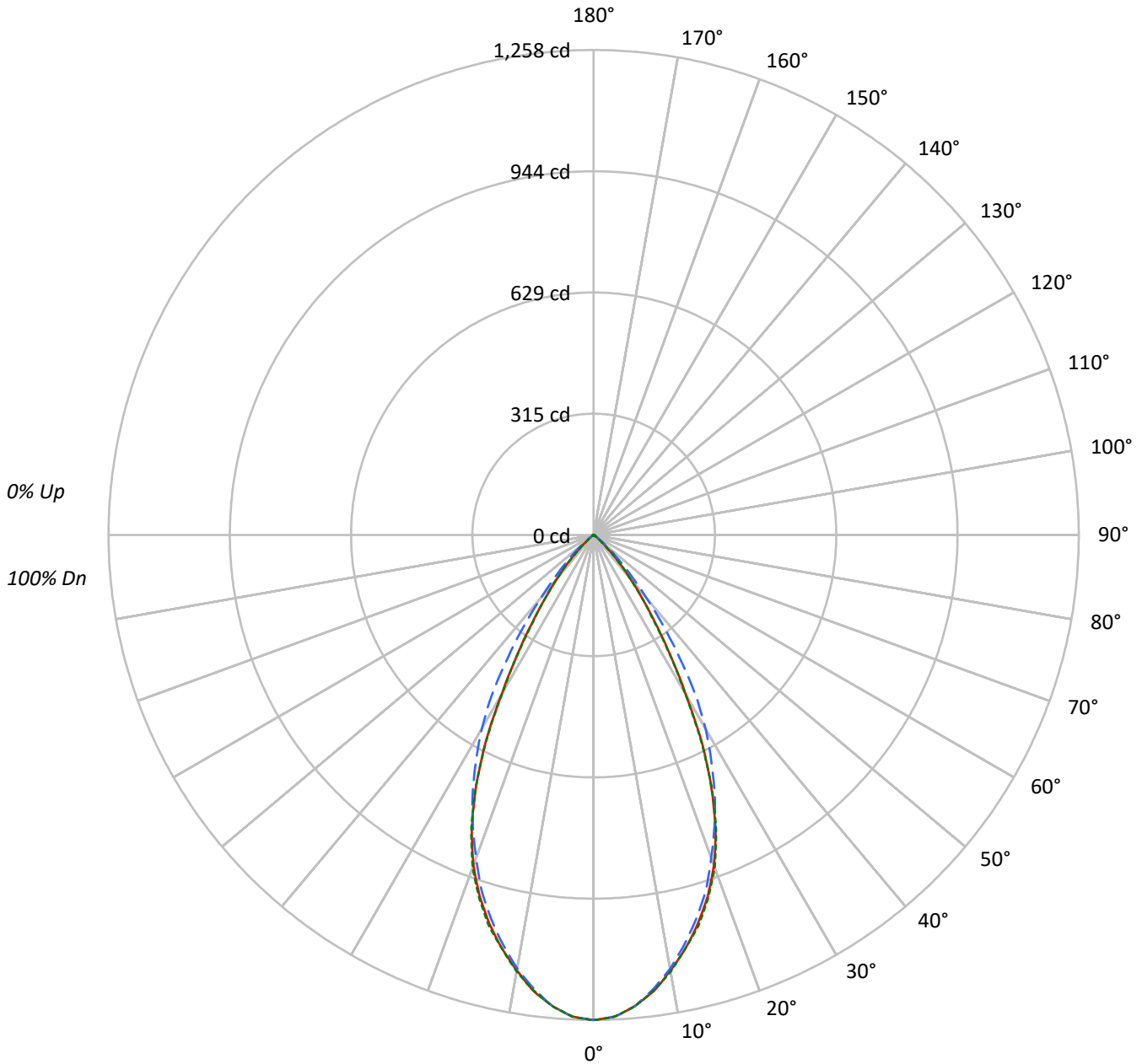
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1016.9 lumens  
Efficiency: N/A  
Efficacy: 102.7 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87  
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 (Ain): 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																			
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	94																			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	96	91	87	101	95	90	87	92	89	85	90	87	84	88	85	83	81																			
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76																			
5	93	84	79	74	91	83	78	74	82	77	73	80	76	73	78	75	72	71																			
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	70	68	66																			
7	84	75	69	65	82	74	68	64	73	68	64	72	67	64	70	66	63	62																			
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	60	58																			
9	76	67	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55																			
10	73	63	57	53	72	63	57	53	62	57	53	61	56	53	60	56	53	52																			

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

	0°	45°	90°
0°	121918	121918	121918
5°	119301	119349	119349
10°	112840	112338	113145
15°	104706	103272	105267
20°	93990	91876	94567
25°	77196	79430	77463
30°	53358	64902	52967
35°	32853	45851	32073
40°	18539	26810	18413
45°	8467	13440	8111
50°	2155	5395	2231
55°	1030	1638	946
60°	698	601	794
65°	596	458	596
70°	425	425	566
75°	374	374	561
80°	558	558	558
85°	556	1112	1112

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 13440 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.5	11.3
10°-20°	289.1	28.4
20°-30°	330.5	32.5
30°-40°	205.2	20.2
40°-50°	64.7	6.4
50°-60°	8.4	0.8
60°-70°	2.5	0.2
70°-80°	1.3	0.1
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°	734.1	72.2
0°-40°	939.3	92.4
0°-60°	1012.3	99.5
0°-90°	1016.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1016.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1258	1258	1258	1258	1258	
5°	1227	1226	1227	1226	1227	115
15°	1044	1036	1030	1036	1050	291
25°	722	732	743	732	725	324
35°	278	321	388	313	271	179
45°	62	74	98	75	59	52
55°	6	6	10	6	6	6
65°	3	3	2	3	3	3
75°	1	1	1	1	2	1
85°	0	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°	1258.5	1258.5	1258.5	1258.5	1258.5
2.5°	1250.8	1251.8	1250.8	1252.8	1250.8
5°	1226.8	1225.8	1227.3	1226.3	1227.3
7.5°	1194.1	1188.0	1187.5	1191.6	1192.1
10°	1147.1	1145.6	1142.0	1145.6	1150.2
12.5°	1099.1	1093.0	1087.9	1095.0	1099.1
15°	1044.0	1036.3	1029.7	1036.3	1049.6
17.5°	983.2	972.5	966.8	974.5	987.3
20°	911.7	900.4	891.2	897.9	917.3
22.5°	825.9	824.8	818.7	822.3	829.4
25°	722.2	732.4	743.1	732.4	724.7
27.5°	608.3	635.9	660.4	628.2	603.7
30°	477.0	518.9	580.2	515.8	473.5
32.5°	368.8	412.7	490.8	407.1	365.7
35°	277.8	320.7	387.7	313.1	271.2
37.5°	204.3	236.5	294.7	234.4	204.3
40°	146.6	167.5	212.0	167.0	145.6
42.5°	101.6	115.4	148.1	114.4	98.6
45°	61.8	74.1	98.1	74.6	59.2
47.5°	32.7	47.0	61.8	44.9	32.7
50°	14.3	25.0	35.8	24.5	14.8
52.5°	7.7	10.7	19.4	10.7	7.7
55°	6.1	6.1	9.7	6.1	5.6
57.5°	4.6	4.6	5.1	4.6	4.6
60°	3.6	3.6	3.1	3.6	4.1
62.5°	3.1	3.1	2.6	3.1	3.1
65°	2.6	2.6	2.0	2.6	2.6
67.5°	2.0	2.0	2.0	2.0	2.0
70°	1.5	1.5	1.5	2.0	2.0
72.5°	1.5	1.5	1.5	1.5	1.5
75°	1.0	1.0	1.0	1.0	1.5
77.5°	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0
82.5°	0.5	1.0	1.0	1.0	1.0
85°	0.5	1.0	1.0	1.0	1.0
87.5°	0.5	0.5	1.0	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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