

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: P837588

Luminaire Tested: HCSQ445D010-HM44560940-41SQC

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837588  
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: HCSQ445D010-HM44560940-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

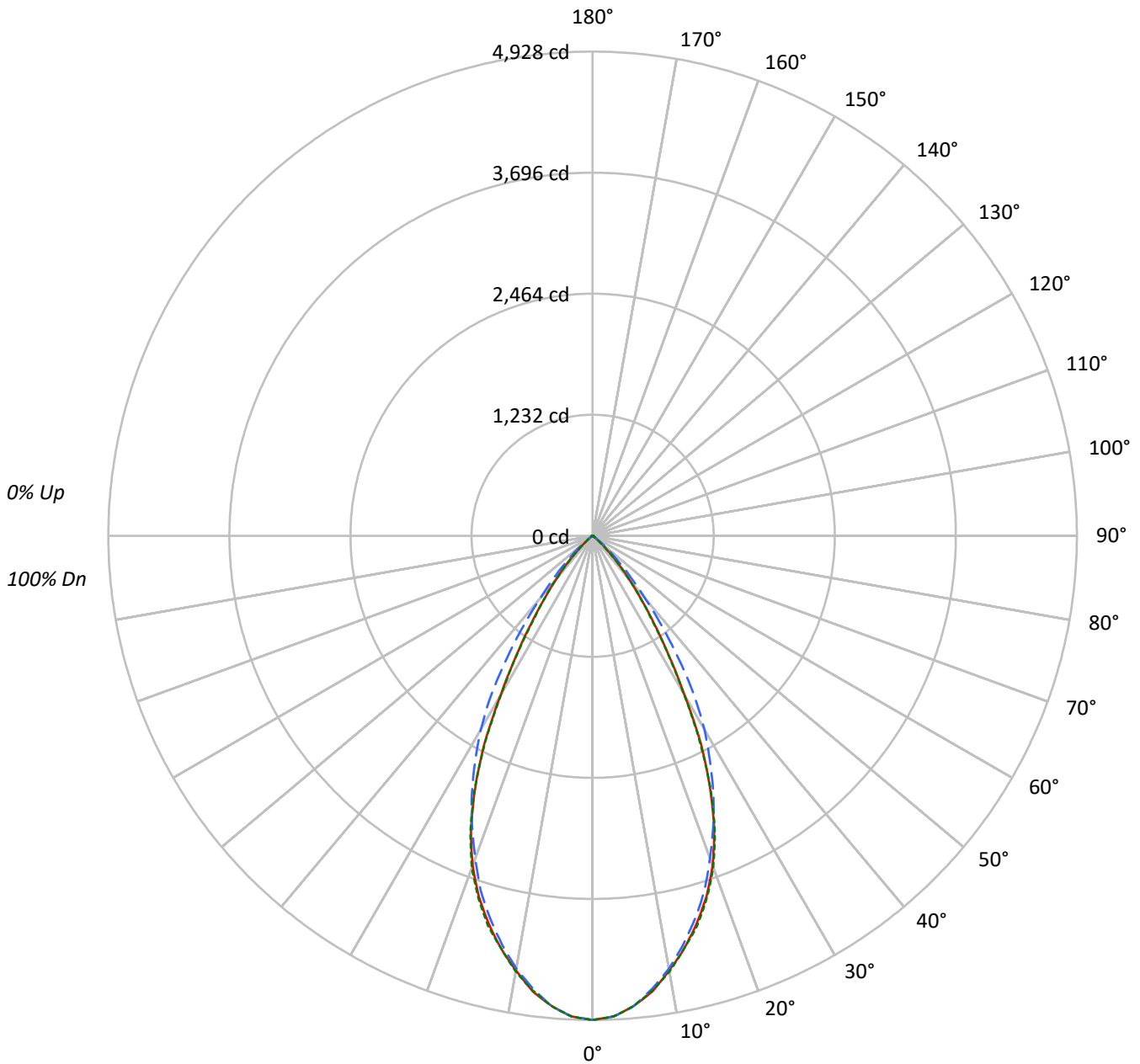
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3982.1 lumens  
Efficiency: N/A  
Efficacy: 86.8 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): 45.9  
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					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								
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	71	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°	477373	477373	477373
5°	467138	467333	467333
10°	441848	439881	443028
15°	409967	404351	412173
20°	368020	359773	370288
25°	302264	311029	303333
30°	208947	254128	207381
35°	128658	179512	125584
40°	72589	104951	72083
45°	33155	52609	31785
50°	8440	21100	8741
55°	4054	6418	3716
60°	2713	2325	3100
65°	2292	1834	2292
70°	1699	1699	2266
75°	1497	1497	2246
80°	2232	2232	2232
85°	2223	4446	4446

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 52609 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	448.3	11.3
10°-20°	1132.1	28.4
20°-30°	1294.1	32.5
30°-40°	803.3	20.2
40°-50°	253.2	6.4
50°-60°	32.8	0.8
60°-70°	9.7	0.2
70°-80°	5.2	0.1
80°-90°	3.5	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°	2874.5	72.2
0°-40°	3677.8	92.4
0°-60°	3963.8	99.5
0°-90°	3982.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3982.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4928	4928	4928	4928	4928	
5°	4804	4800	4806	4802	4806	449
15°	4088	4058	4032	4058	4110	1140
25°	2828	2868	2910	2868	2838	1269
35°	1088	1256	1518	1226	1062	699
45°	242	290	384	292	232	204
55°	24	24	38	24	22	24
65°	10	10	8	10	10	10
75°	4	4	4	4	6	5
85°	2	4	4	4	4	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4927.7	4927.7	4927.7	4927.7	4927.7
2.5°	4897.7	4901.7	4897.7	4905.7	4897.7
5°	4803.7	4799.7	4805.7	4801.7	4805.7
7.5°	4675.7	4651.7	4649.7	4665.7	4667.7
10°	4491.7	4485.7	4471.7	4485.7	4503.7
12.5°	4303.7	4279.7	4259.7	4287.7	4303.7
15°	4087.7	4057.7	4031.7	4057.7	4109.7
17.5°	3849.7	3807.7	3785.7	3815.7	3865.7
20°	3569.8	3525.8	3489.8	3515.8	3591.8
22.5°	3233.8	3229.8	3205.8	3219.8	3247.8
25°	2827.8	2867.8	2909.8	2867.8	2837.8
27.5°	2381.8	2489.8	2585.8	2459.8	2363.8
30°	1867.9	2031.9	2271.8	2019.9	1853.9
32.5°	1443.9	1615.9	1921.9	1593.9	1431.9
35°	1087.9	1255.9	1517.9	1225.9	1061.9
37.5°	799.9	925.9	1153.9	917.9	799.9
40°	574.0	656.0	829.9	654.0	570.0
42.5°	398.0	452.0	580.0	448.0	386.0
45°	242.0	290.0	384.0	292.0	232.0
47.5°	128.0	184.0	242.0	176.0	128.0
50°	56.0	98.0	140.0	96.0	58.0
52.5°	30.0	42.0	76.0	42.0	30.0
55°	24.0	24.0	38.0	24.0	22.0
57.5°	18.0	18.0	20.0	18.0	18.0
60°	14.0	14.0	12.0	14.0	16.0
62.5°	12.0	12.0	10.0	12.0	12.0
65°	10.0	10.0	8.0	10.0	10.0
67.5°	8.0	8.0	8.0	8.0	8.0
70°	6.0	6.0	6.0	8.0	8.0
72.5°	6.0	6.0	6.0	6.0	6.0
75°	4.0	4.0	4.0	4.0	6.0
77.5°	4.0	4.0	4.0	4.0	4.0
80°	4.0	4.0	4.0	4.0	4.0
82.5°	2.0	4.0	4.0	4.0	4.0
85°	2.0	4.0	4.0	4.0	4.0
87.5°	2.0	2.0	4.0	4.0	4.0
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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