

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: P837648

Luminaire Tested: HCSQ455D010-HM44560840-41SQC

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837648  
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: HCSQ455D010-HM44560840-41SQC  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

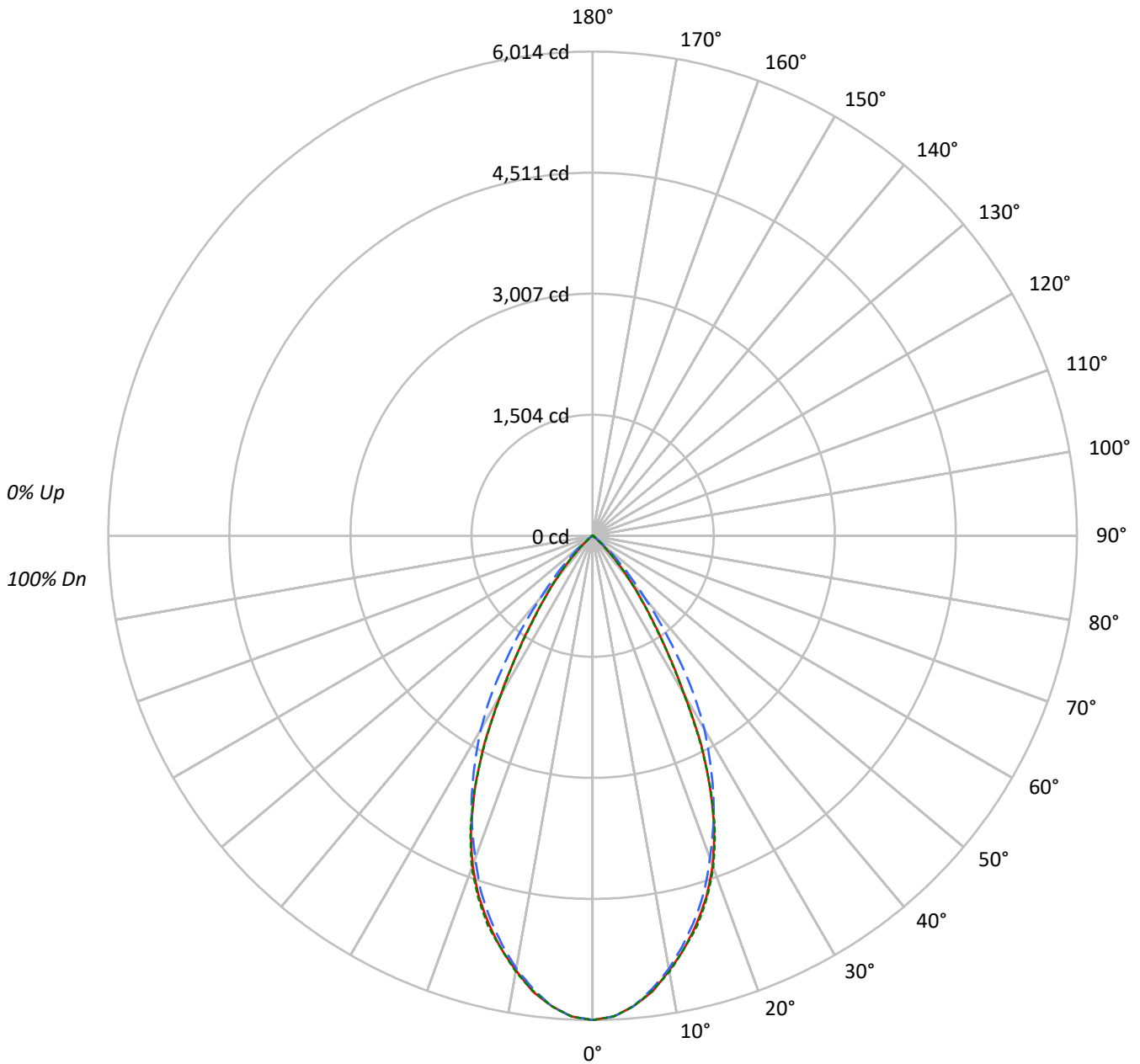
Lumens per Lamp: N/A  
Luminaire Lumens: 4859.8 lumens  
Efficiency: N/A  
Efficacy: 90.0 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 54  
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									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	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°	582589	582589	582589
5°	570102	570335	570335
10°	539234	536834	540680
15°	500331	493481	503029
20°	449134	439072	451896
25°	368889	379589	370193
30°	255001	310149	253088
35°	157018	219082	153269
40°	88587	128093	87967
45°	40457	64199	38785
50°	10294	25742	10670
55°	4949	7837	4526
60°	3313	2829	3778
65°	2797	2246	2797
70°	2068	2068	2776
75°	1834	1834	2732
80°	2734	2734	2734
85°	2668	5446	5446

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 64199 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	547.1	11.3
10°-20°	1381.6	28.4
20°-30°	1579.4	32.5
30°-40°	980.4	20.2
40°-50°	308.9	6.4
50°-60°	40.0	0.8
60°-70°	11.8	0.2
70°-80°	6.3	0.1
80°-90°	4.2	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°	3508.1	72.2
0°-40°	4488.5	92.4
0°-60°	4837.4	99.5
0°-90°	4859.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4859.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6014	6014	6014	6014	6014	
5°	5862	5858	5865	5860	5865	548
15°	4989	4952	4920	4952	5016	1391
25°	3451	3500	3551	3500	3463	1548
35°	1328	1533	1852	1496	1296	853
45°	295	354	469	356	283	249
55°	29	29	46	29	27	29
65°	12	12	10	12	12	12
75°	5	5	5	5	7	6
85°	2	5	5	5	5	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6013.8	6013.8	6013.8	6013.8	6013.8
2.5°	5977.2	5982.1	5977.2	5986.9	5977.2
5°	5862.5	5857.6	5864.9	5860.0	5864.9
7.5°	5706.3	5677.0	5674.5	5694.1	5696.5
10°	5481.7	5474.4	5457.3	5474.4	5496.4
12.5°	5252.3	5223.0	5198.6	5232.8	5252.3
15°	4988.7	4952.1	4920.4	4952.1	5015.6
17.5°	4698.3	4647.0	4620.2	4656.8	4717.8
20°	4356.6	4302.9	4259.0	4290.7	4383.4
22.5°	3946.5	3941.7	3912.4	3929.5	3963.6
25°	3451.1	3499.9	3551.2	3499.9	3463.3
27.5°	2906.8	3038.6	3155.8	3002.0	2884.9
30°	2279.6	2479.7	2772.6	2465.1	2262.5
32.5°	1762.2	1972.1	2345.5	1945.2	1747.5
35°	1327.7	1532.7	1852.5	1496.1	1296.0
37.5°	976.3	1130.0	1408.3	1120.3	976.3
40°	700.5	800.5	1012.9	798.1	695.6
42.5°	485.7	551.6	707.8	546.7	471.0
45°	295.3	353.9	468.6	356.3	283.1
47.5°	156.2	224.5	295.3	214.8	156.2
50°	68.3	119.6	170.8	117.2	70.8
52.5°	36.6	51.3	92.7	51.3	36.6
55°	29.3	29.3	46.4	29.3	26.8
57.5°	22.0	22.0	24.4	22.0	22.0
60°	17.1	17.1	14.6	17.1	19.5
62.5°	14.6	14.6	12.2	14.6	14.6
65°	12.2	12.2	9.8	12.2	12.2
67.5°	9.8	9.8	9.8	9.8	9.8
70°	7.3	7.3	7.3	9.8	9.8
72.5°	7.3	7.3	7.3	7.3	7.3
75°	4.9	4.9	4.9	4.9	7.3
77.5°	4.9	4.9	4.9	4.9	4.9
80°	4.9	4.9	4.9	4.9	4.9
82.5°	2.4	4.9	4.9	4.9	4.9
85°	2.4	4.9	4.9	4.9	4.9
87.5°	2.4	2.4	4.9	4.9	4.9
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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