

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P837574

Luminaire Tested: HCSQ445D010-HM44560927-41SQH

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837574  
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: HCSQ445D010-HM44560927-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

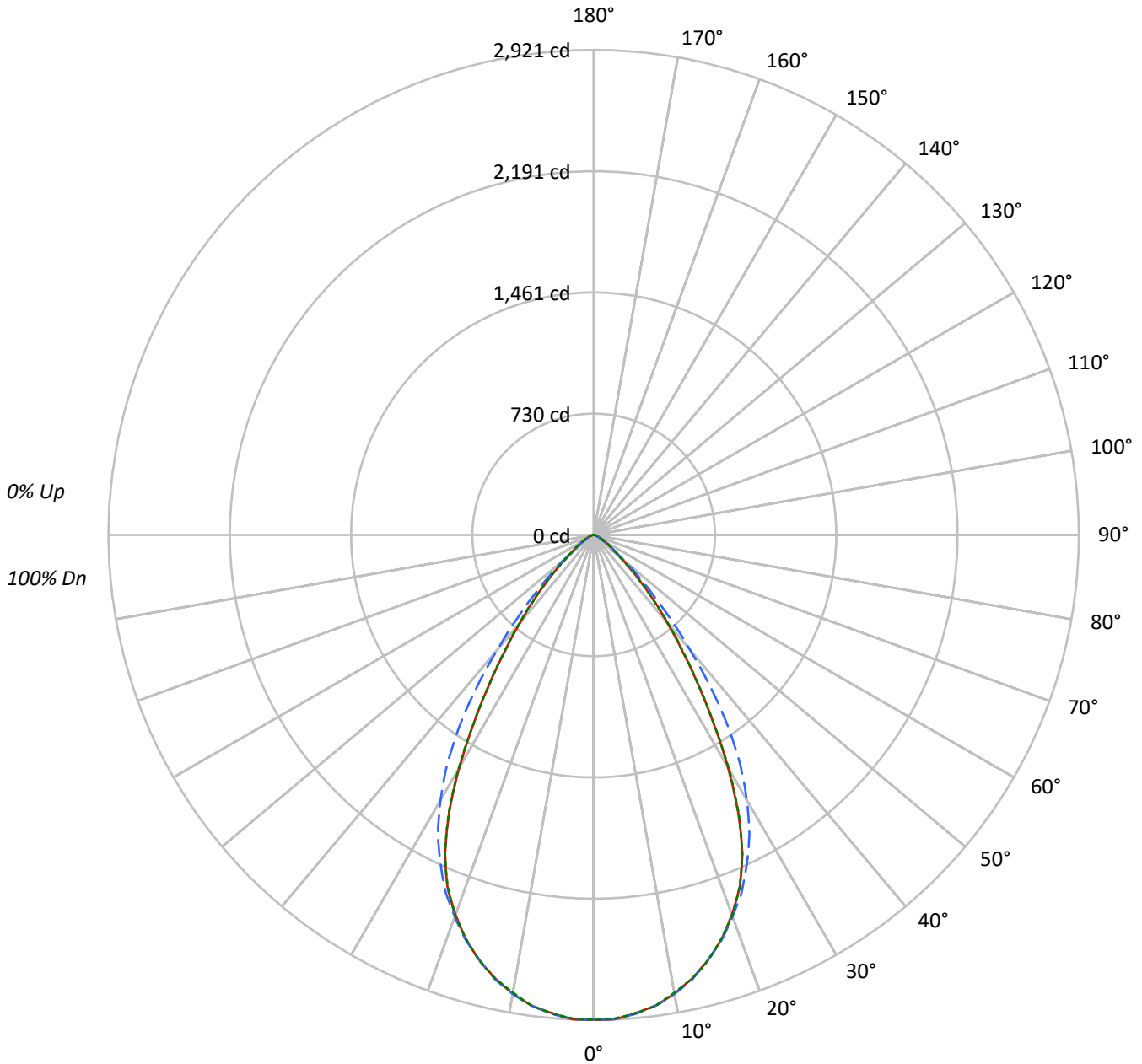
Lumens per Lamp: N/A  
Luminaire Lumens: 3283.1 lumens  
Efficiency: N/A  
Efficacy: 71.5 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 45.9  
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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92																			
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85																			
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77																			
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71																			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65																			
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60																			
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56																			
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52																			
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48																			
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45																			

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

	0°	45°	90°
0°	282944	282944	282944
5°	281214	281565	281214
10°	275947	276124	275416
15°	266147	265967	266328
20°	250886	252185	251443
25°	226383	233320	226383
30°	180814	206442	182223
35°	129072	167047	129285
40°	87145	113613	88511
45°	55363	67227	55609
50°	31544	35884	30444
55°	20724	17363	20420
60°	14338	10133	13989
65°	9926	7450	9926
70°	7166	5608	7166
75°	4716	4716	4716
80°	3013	4017	4017
85°	4001	4001	4001

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 67227 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	273.6	8.3
10°-20°	744.0	22.7
20°-30°	974.1	29.7
30°-40°	765.6	23.3
40°-50°	357.6	10.9
50°-60°	110.8	3.4
60°-70°	39.6	1.2
70°-80°	13.9	0.4
80°-90°	3.8	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°	1991.7	60.7
0°-40°	2757.4	84.0
0°-60°	3225.8	98.3
0°-90°	3283.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3283.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2921	2921	2921	2921	2921	
5°	2892	2894	2895	2899	2892	274
15°	2654	2654	2652	2654	2656	743
25°	2118	2147	2183	2149	2118	952
35°	1091	1191	1412	1205	1093	688
45°	404	453	491	444	406	322
55°	123	116	103	114	121	115
65°	43	40	32	38	43	45
75°	13	13	13	13	13	14
85°	4	4	4	4	4	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2920.7	2920.7	2920.7	2920.7	2920.7
2.5°	2920.7	2917.1	2918.9	2915.3	2915.3
5°	2891.8	2893.6	2895.4	2899.0	2891.8
7.5°	2859.3	2862.9	2861.1	2861.1	2861.1
10°	2805.2	2807.0	2807.0	2807.0	2799.8
12.5°	2736.7	2740.3	2742.1	2736.7	2736.7
15°	2653.7	2653.7	2651.9	2653.7	2655.5
17.5°	2554.5	2559.9	2559.9	2554.5	2552.7
20°	2433.6	2442.6	2446.2	2439.0	2439.0
22.5°	2298.3	2307.3	2329.0	2310.9	2296.5
25°	2117.9	2146.8	2182.8	2148.6	2117.9
27.5°	1885.2	1948.3	2031.3	1959.1	1890.6
30°	1616.4	1719.2	1845.5	1724.6	1629.0
32.5°	1342.2	1457.6	1643.4	1466.6	1342.2
35°	1091.4	1190.6	1412.5	1205.1	1093.2
37.5°	867.7	963.3	1158.2	974.2	880.3
40°	689.1	766.7	898.4	764.9	699.9
42.5°	537.6	593.5	680.1	591.7	535.8
45°	404.1	452.8	490.7	443.8	405.9
47.5°	297.7	330.1	351.8	324.7	290.4
50°	209.3	232.7	238.1	227.3	202.0
52.5°	156.9	156.9	158.8	155.1	153.3
55°	122.7	115.5	102.8	113.7	120.9
57.5°	95.6	88.4	72.2	84.8	93.8
60°	74.0	66.7	52.3	64.9	72.2
62.5°	57.7	50.5	41.5	50.5	55.9
65°	43.3	39.7	32.5	37.9	43.3
67.5°	32.5	28.9	25.3	28.9	32.5
70°	25.3	23.5	19.8	21.6	25.3
72.5°	18.0	16.2	16.2	16.2	18.0
75°	12.6	12.6	12.6	12.6	12.6
77.5°	9.0	9.0	9.0	9.0	9.0
80°	5.4	5.4	7.2	7.2	7.2
82.5°	3.6	3.6	5.4	5.4	5.4
85°	3.6	3.6	3.6	3.6	3.6
87.5°	1.8	1.8	1.8	3.6	3.6
90°	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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