

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: P837674

Luminaire Tested: HCSQ460D010-HM44560827-41SQH

Issue Date: 5/17/2024

**Test Information**

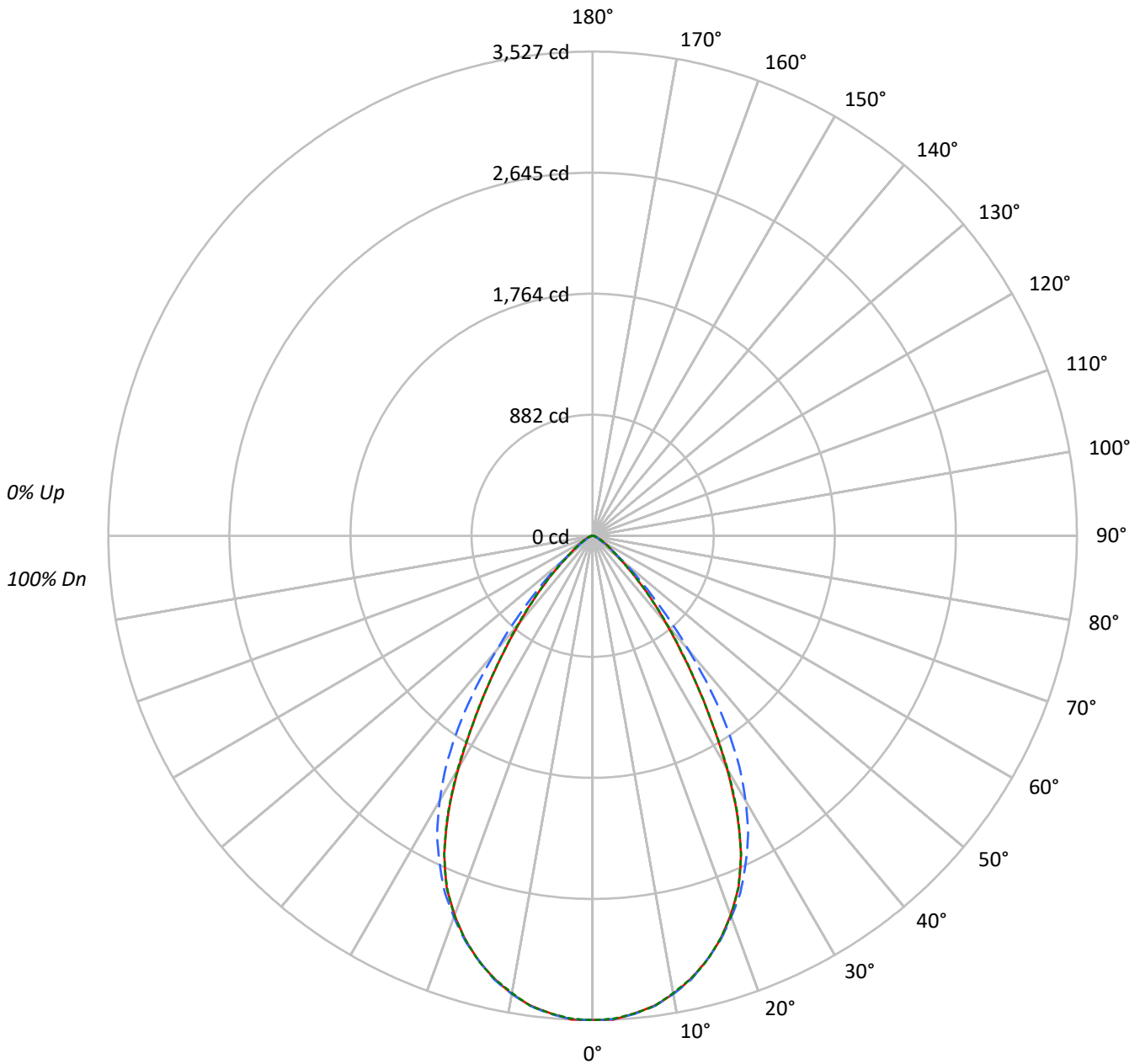
Test Method: LM-79-2019  
Report Number: P837674  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560827-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3964.9 lumens  
Efficiency: N/A  
Efficacy: 70.8 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): 56  
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					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	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92					92			
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85					85			
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77					77			
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71					71			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65					65			
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60					60			
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56					56			
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52					52			
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48					48			
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45					45			

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

	0°	45°	90°
0°	341699	341699	341699
5°	339610	340038	339610
10°	333258	333464	332608
15°	321418	321198	321629
20°	302989	304556	303659
25°	273393	281773	273393
30°	218366	249307	220066
35°	155883	201745	156143
40°	105242	137211	106898
45°	66857	81188	67159
50°	38085	43345	36774
55°	25014	20977	24659
60°	17302	12245	16876
65°	11989	8986	11989
70°	8639	6798	8639
75°	5727	5727	5727
80°	3626	4854	4854
85°	4891	4891	4891

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 81188 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	330.4	8.3
10°-20°	898.5	22.7
20°-30°	1176.4	29.7
30°-40°	924.6	23.3
40°-50°	431.9	10.9
50°-60°	133.8	3.4
60°-70°	47.8	1.2
70°-80°	16.8	0.4
80°-90°	4.6	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°	2405.4	60.7
0°-40°	3330.0	84.0
0°-60°	3895.7	98.3
0°-90°	3964.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3964.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3527	3527	3527	3527	3527	
5°	3492	3494	3497	3501	3492	330
15°	3205	3205	3203	3205	3207	898
25°	2558	2593	2636	2595	2558	1150
35°	1318	1438	1706	1455	1320	831
45°	488	547	593	536	490	389
55°	148	139	124	137	146	139
65°	52	48	39	46	52	54
75°	15	15	15	15	15	17
85°	4	4	4	4	4	4
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3527.2	3527.2	3527.2	3527.2	3527.2
2.5°	3527.2	3522.8	3525.0	3520.7	3520.7
5°	3492.3	3494.5	3496.7	3501.1	3492.3
7.5°	3453.1	3457.5	3455.3	3455.3	3455.3
10°	3387.8	3389.9	3389.9	3389.9	3381.2
12.5°	3305.0	3309.3	3311.5	3305.0	3305.0
15°	3204.8	3204.8	3202.6	3204.8	3206.9
17.5°	3084.9	3091.5	3091.5	3084.9	3082.8
20°	2939.0	2949.9	2954.2	2945.5	2945.5
22.5°	2775.6	2786.5	2812.6	2790.8	2773.4
25°	2557.7	2592.6	2636.1	2594.7	2557.7
27.5°	2276.7	2352.9	2453.1	2366.0	2283.2
30°	1952.1	2076.2	2228.7	2082.8	1967.3
32.5°	1620.9	1760.3	1984.7	1771.2	1620.9
35°	1318.1	1437.9	1705.9	1455.3	1320.3
37.5°	1047.9	1163.4	1398.7	1176.5	1063.2
40°	832.2	925.9	1085.0	923.7	845.3
42.5°	649.2	716.8	821.3	714.6	647.1
45°	488.0	546.8	592.6	535.9	490.2
47.5°	359.5	398.7	424.8	392.2	350.8
50°	252.7	281.0	287.6	274.5	244.0
52.5°	189.5	189.5	191.7	187.4	185.2
55°	148.1	139.4	124.2	137.3	146.0
57.5°	115.5	106.8	87.1	102.4	113.3
60°	89.3	80.6	63.2	78.4	87.1
62.5°	69.7	61.0	50.1	61.0	67.5
65°	52.3	47.9	39.2	45.8	52.3
67.5°	39.2	34.9	30.5	34.9	39.2
70°	30.5	28.3	24.0	26.1	30.5
72.5°	21.8	19.6	19.6	19.6	21.8
75°	15.3	15.3	15.3	15.3	15.3
77.5°	10.9	10.9	10.9	10.9	10.9
80°	6.5	6.5	8.7	8.7	8.7
82.5°	4.4	4.4	6.5	6.5	6.5
85°	4.4	4.4	4.4	4.4	4.4
87.5°	2.2	2.2	2.2	4.4	4.4
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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