

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: P837692

Luminaire Tested: HCSQ460D010-HM44560840-41SQMW

Issue Date: 5/17/2024



**Test Information**

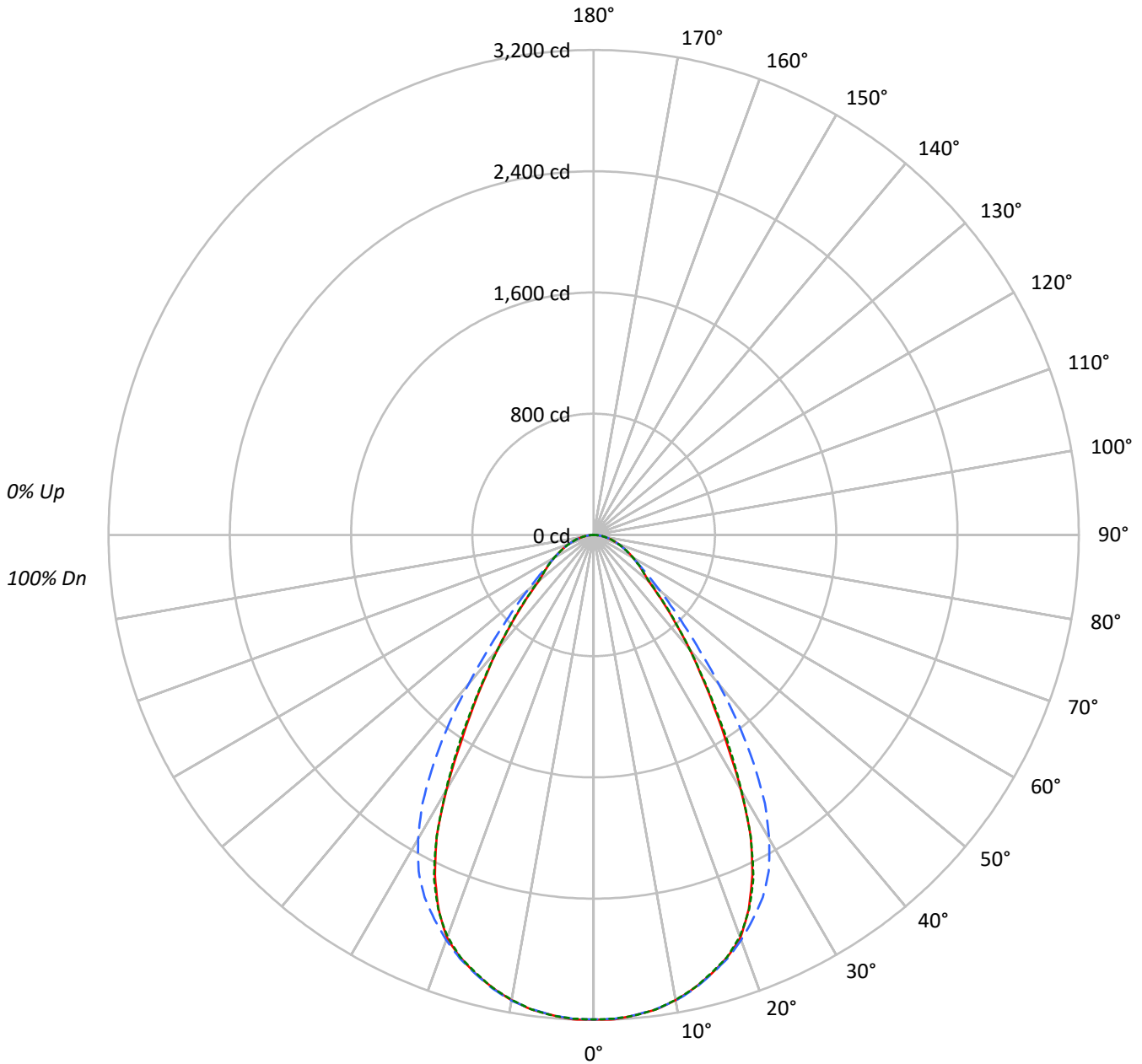
Test Method: LM-79-2019  
Report Number: P837692  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560840-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4639.9 lumens  
Efficiency: N/A  
Efficacy: 82.9 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

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

	0°	45°	90°
0°	309740	309740	309740
5°	309231	309231	309474
10°	306698	306944	306452
15°	300728	300979	300237
20°	291711	293247	290690
25°	264746	282008	266606
30°	217315	259006	218153
35°	163357	217415	165698
40°	124413	162111	124097
45°	92915	115041	94614
50°	70759	85740	72266
55°	63776	67137	63776
60°	58242	57757	57757
65°	52951	52951	52951
70°	49256	48548	48548
75°	45552	44616	45552
80°	41562	40168	41562
85°	35902	35902	35902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 115041 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	301.6	6.5
10°-20°	844.1	18.2
20°-30°	1161.0	25.0
30°-40°	988.3	21.3
40°-50°	597.0	12.9
50°-60°	351.8	7.6
60°-70°	230.7	5.0
70°-80°	127.9	2.8
80°-90°	37.4	0.8
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°	2306.7	49.7
0°-40°	3295.0	71.0
0°-60°	4243.8	91.5
0°-90°	4639.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4639.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3197	3197	3197	3197	3197	
5°	3180	3182	3180	3177	3182	302
15°	2998	3006	3001	2998	2994	843
25°	2477	2554	2638	2559	2494	1119
35°	1381	1520	1838	1563	1401	874
45°	678	750	840	758	691	533
55°	378	385	398	385	378	340
65°	231	234	231	231	231	231
75°	122	122	119	119	122	129
85°	32	32	32	32	32	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3197.3	3197.3	3197.3	3197.3	3197.3
2.5°	3199.8	3192.3	3194.8	3192.3	3194.8
5°	3179.9	3182.4	3179.9	3177.4	3182.4
7.5°	3157.5	3155.0	3155.0	3152.6	3157.5
10°	3117.8	3112.8	3120.3	3115.3	3115.3
12.5°	3063.1	3070.6	3068.1	3068.1	3063.1
15°	2998.5	3006.0	3001.0	2998.5	2993.6
17.5°	2924.0	2929.0	2931.5	2921.5	2921.5
20°	2829.6	2839.5	2844.5	2827.1	2819.7
22.5°	2673.1	2717.8	2745.1	2715.3	2678.1
25°	2476.8	2553.8	2638.3	2558.8	2494.2
27.5°	2240.8	2350.1	2501.7	2367.5	2240.8
30°	1942.7	2104.2	2315.4	2121.6	1950.2
32.5°	1634.7	1806.1	2101.7	1835.9	1669.4
35°	1381.3	1520.4	1838.4	1562.6	1401.1
37.5°	1162.6	1281.9	1562.6	1309.2	1175.1
40°	983.8	1078.2	1281.9	1090.6	981.3
42.5°	812.4	901.8	1038.4	914.2	822.3
45°	678.2	750.3	839.7	757.7	690.6
47.5°	563.9	623.6	688.1	623.6	571.4
50°	469.5	516.7	568.9	516.7	479.5
52.5°	419.8	434.7	469.5	437.2	419.8
55°	377.6	385.1	397.5	385.1	377.6
57.5°	337.9	342.8	340.3	340.3	337.9
60°	300.6	303.1	298.1	300.6	298.1
62.5°	265.8	265.8	260.8	265.8	263.3
65°	231.0	233.5	231.0	231.0	231.0
67.5°	201.2	201.2	198.7	201.2	201.2
70°	173.9	173.9	171.4	173.9	171.4
72.5°	146.6	146.6	144.1	144.1	144.1
75°	121.7	121.7	119.2	119.2	121.7
77.5°	96.9	96.9	94.4	96.9	96.9
80°	74.5	74.5	72.0	74.5	74.5
82.5°	52.2	52.2	52.2	54.7	54.7
85°	32.3	32.3	32.3	32.3	32.3
87.5°	14.9	14.9	14.9	14.9	17.4
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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