

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: P837609

Luminaire Tested: HCSQ450D010-HM44560840-41SQH

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837609
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: HCSQ450D010-HM44560840-41SQH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: -

Summary

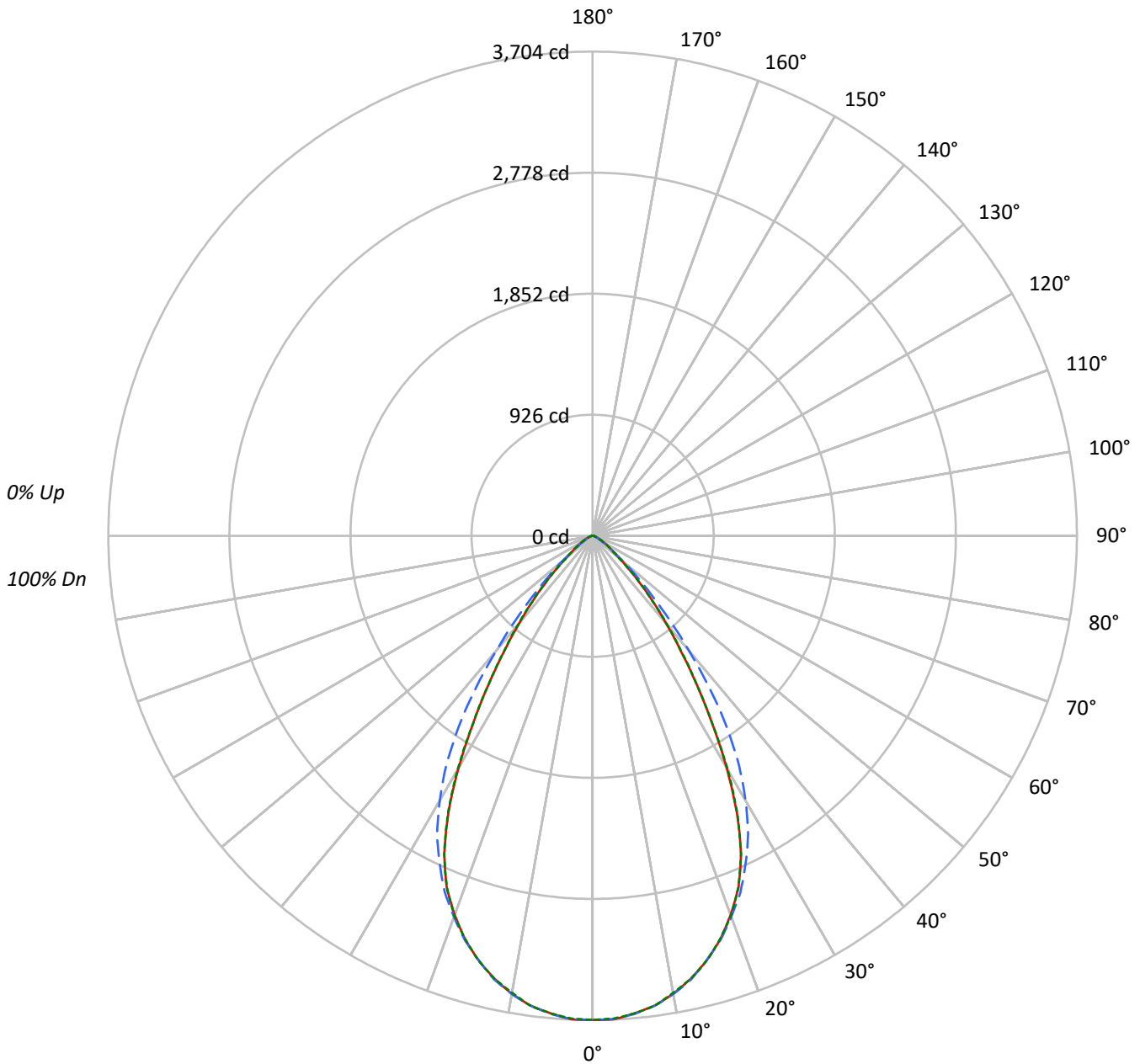
Lumens per Lamp: N/A
Luminaire Lumens: 4163.4 lumens
Efficiency: N/A
Efficacy: 83.8 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.7
Input Voltage (V): NR
Input Current (A_{in}): 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			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°	358807	358807	358807
5°	356619	357056	356619
10°	349941	350157	349262
15°	337505	337275	337736
20°	318154	319804	318866
25°	287075	295883	287075
30°	229295	261791	231085
35°	163688	211845	163948
40°	110515	144078	112248
45°	70200	85257	70515
50°	39999	45515	38612
55°	26280	22024	25892
60°	18174	12846	17728
65°	12585	9444	12585
70°	9064	7138	9064
75°	5989	5989	5989
80°	3849	5133	5133
85°	5113	5113	5113

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 85257 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.0	8.3
10°-20°	943.5	22.7
20°-30°	1235.3	29.7
30°-40°	970.9	23.3
40°-50°	453.5	10.9
50°-60°	140.5	3.4
60°-70°	50.2	1.2
70°-80°	17.7	0.4
80°-90°	4.9	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°	2525.8	60.7
0°-40°	3496.7	84.0
0°-60°	4090.7	98.3
0°-90°	4163.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4163.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3704	3704	3704	3704	3704	
5°	3667	3670	3672	3676	3667	347
15°	3365	3365	3363	3365	3368	943
25°	2686	2722	2768	2725	2686	1208
35°	1384	1510	1791	1528	1386	873
45°	512	574	622	563	515	408
55°	156	146	130	144	153	146
65°	55	50	41	48	55	57
75°	16	16	16	16	16	18
85°	5	5	5	5	5	4
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3703.8	3703.8	3703.8	3703.8	3703.8
2.5°	3703.8	3699.2	3701.5	3696.9	3696.9
5°	3667.2	3669.5	3671.7	3676.3	3667.2
7.5°	3626.0	3630.6	3628.3	3628.3	3628.3
10°	3557.4	3559.6	3559.6	3559.6	3550.5
12.5°	3470.4	3475.0	3477.3	3470.4	3470.4
15°	3365.2	3365.2	3362.9	3365.2	3367.5
17.5°	3239.4	3246.2	3246.2	3239.4	3237.1
20°	3086.1	3097.5	3102.1	3093.0	3093.0
22.5°	2914.5	2926.0	2953.4	2930.5	2912.2
25°	2685.7	2722.3	2768.1	2724.6	2685.7
27.5°	2390.6	2470.7	2575.9	2484.4	2397.5
30°	2049.8	2180.2	2340.3	2187.0	2065.8
32.5°	1702.0	1848.5	2084.1	1859.9	1702.0
35°	1384.1	1509.9	1791.3	1528.2	1386.3
37.5°	1100.4	1221.6	1468.7	1235.4	1116.4
40°	873.9	972.3	1139.3	970.0	887.6
42.5°	681.7	752.6	862.5	750.4	679.4
45°	512.4	574.2	622.3	562.8	514.7
47.5°	377.5	418.6	446.1	411.8	368.3
50°	265.4	295.1	302.0	288.2	256.2
52.5°	199.0	199.0	201.3	196.7	194.5
55°	155.6	146.4	130.4	144.1	153.3
57.5°	121.2	112.1	91.5	107.5	119.0
60°	93.8	84.6	66.3	82.4	91.5
62.5°	73.2	64.1	52.6	64.1	70.9
65°	54.9	50.3	41.2	48.0	54.9
67.5°	41.2	36.6	32.0	36.6	41.2
70°	32.0	29.7	25.2	27.5	32.0
72.5°	22.9	20.6	20.6	20.6	22.9
75°	16.0	16.0	16.0	16.0	16.0
77.5°	11.4	11.4	11.4	11.4	11.4
80°	6.9	6.9	9.2	9.2	9.2
82.5°	4.6	4.6	6.9	6.9	6.9
85°	4.6	4.6	4.6	4.6	4.6
87.5°	2.3	2.3	2.3	4.6	4.6
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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