

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: P837624

Luminaire Tested: HCSQ450D010-HM44560935-41SQH

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837624
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-HM44560935-41SQH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

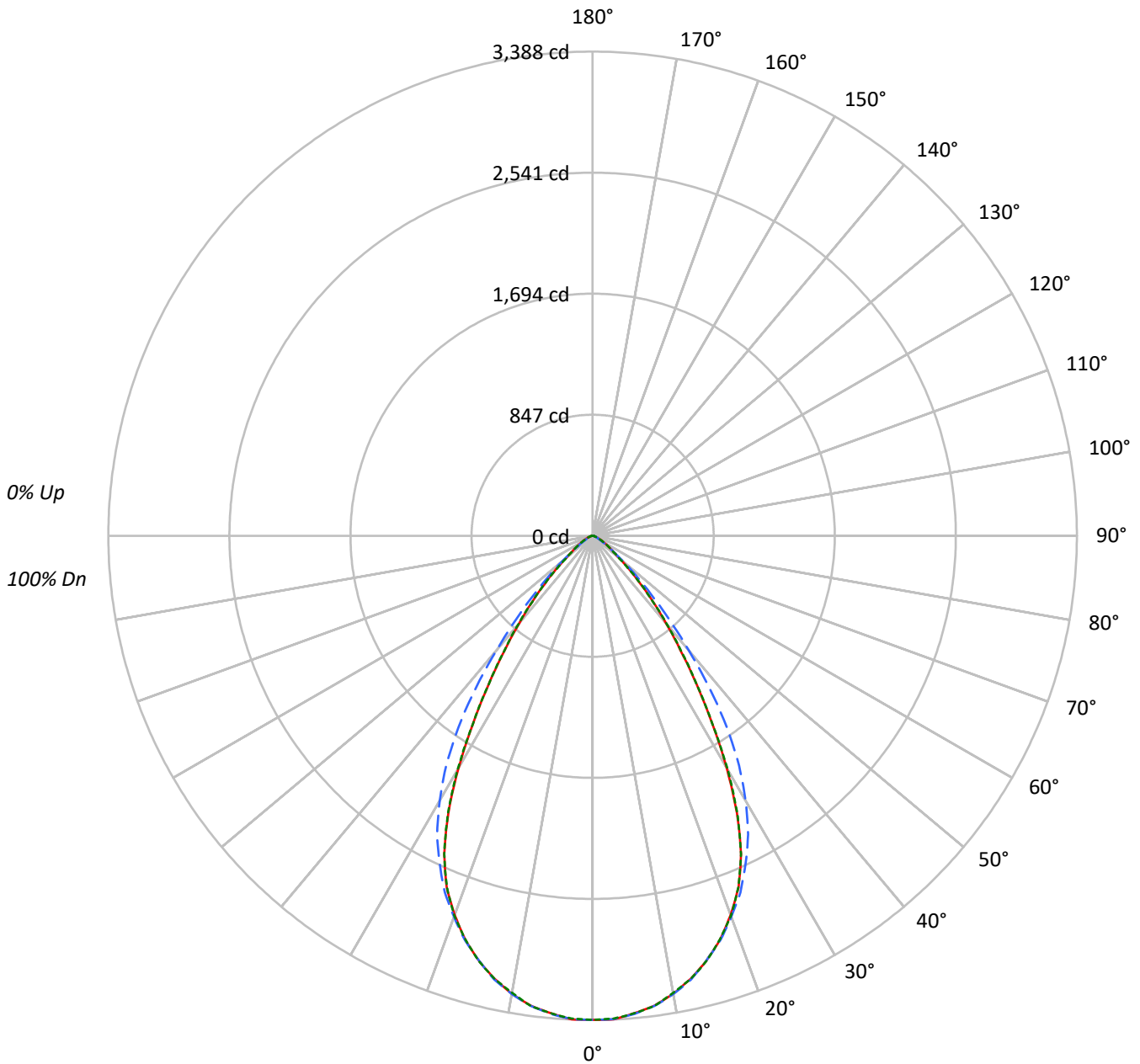
Lumens per Lamp: N/A
Luminaire Lumens: 3808.0 lumens
Efficiency: N/A
Efficacy: 76.6 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.7
Input Voltage (V): NR
Input Current (Ain): 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°	328175	328175	328175
5°	326171	326579	326171
10°	320066	320273	319446
15°	308691	308491	308902
20°	291000	292505	291649
25°	262576	270625	262576
30°	209719	239441	211363
35°	149709	193762	149958
40°	101081	131773	102674
45°	64213	77968	64501
50°	36578	41626	35327
55°	24034	20149	23679
60°	16624	11761	16217
65°	11507	8642	11507
70°	8299	6515	8299
75°	5465	5465	5465
80°	3515	4686	4686
85°	4668	4668	4668

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 77968 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	317.4	8.3
10°-20°	862.9	22.7
20°-30°	1129.9	29.7
30°-40°	888.0	23.3
40°-50°	414.8	10.9
50°-60°	128.5	3.4
60°-70°	45.9	1.2
70°-80°	16.1	0.4
80°-90°	4.5	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°	2310.2	60.7
0°-40°	3198.2	84.0
0°-60°	3741.5	98.3
0°-90°	3808.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3808.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3388	3388	3388	3388	3388	
5°	3354	3356	3358	3362	3354	317
15°	3078	3078	3076	3078	3080	862
25°	2456	2490	2532	2492	2456	1105
35°	1266	1381	1638	1398	1268	798
45°	469	525	569	515	471	373
55°	142	134	119	132	140	133
65°	50	46	38	44	50	52
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°	3387.6	3387.6	3387.6	3387.6	3387.6
2.5°	3387.6	3383.4	3385.5	3381.4	3381.4
5°	3354.1	3356.2	3358.3	3362.5	3354.1
7.5°	3316.5	3320.7	3318.6	3318.6	3318.6
10°	3253.7	3255.8	3255.8	3255.8	3247.4
12.5°	3174.2	3178.4	3180.5	3174.2	3174.2
15°	3077.9	3077.9	3075.9	3077.9	3080.0
17.5°	2962.9	2969.1	2969.1	2962.9	2960.8
20°	2822.7	2833.1	2837.3	2829.0	2829.0
22.5°	2665.7	2676.2	2701.3	2680.4	2663.7
25°	2456.5	2490.0	2531.8	2492.1	2456.5
27.5°	2186.6	2259.8	2356.1	2272.4	2192.9
30°	1874.8	1994.1	2140.5	2000.4	1889.5
32.5°	1556.8	1690.7	1906.2	1701.1	1556.8
35°	1265.9	1381.0	1638.4	1397.7	1268.0
37.5°	1006.5	1117.4	1343.3	1129.9	1021.1
40°	799.3	889.3	1042.0	887.2	811.9
42.5°	623.5	688.4	788.8	686.3	621.4
45°	468.7	525.2	569.1	514.7	470.8
47.5°	345.2	382.9	408.0	376.6	336.9
50°	242.7	269.9	276.2	263.6	234.4
52.5°	182.0	182.0	184.1	179.9	177.9
55°	142.3	133.9	119.3	131.8	140.2
57.5°	110.9	102.5	83.7	98.3	108.8
60°	85.8	77.4	60.7	75.3	83.7
62.5°	67.0	58.6	48.1	58.6	64.9
65°	50.2	46.0	37.7	43.9	50.2
67.5°	37.7	33.5	29.3	33.5	37.7
70°	29.3	27.2	23.0	25.1	29.3
72.5°	20.9	18.8	18.8	18.8	20.9
75°	14.6	14.6	14.6	14.6	14.6
77.5°	10.5	10.5	10.5	10.5	10.5
80°	6.3	6.3	8.4	8.4	8.4
82.5°	4.2	4.2	6.3	6.3	6.3
85°	4.2	4.2	4.2	4.2	4.2
87.5°	2.1	2.1	2.1	4.2	4.2
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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