

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: P837598

Luminaire Tested: HCSQ450D010-HM44560830-41SQC

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837598
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-1)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ450D010-HM44560830-41SQC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

Summary

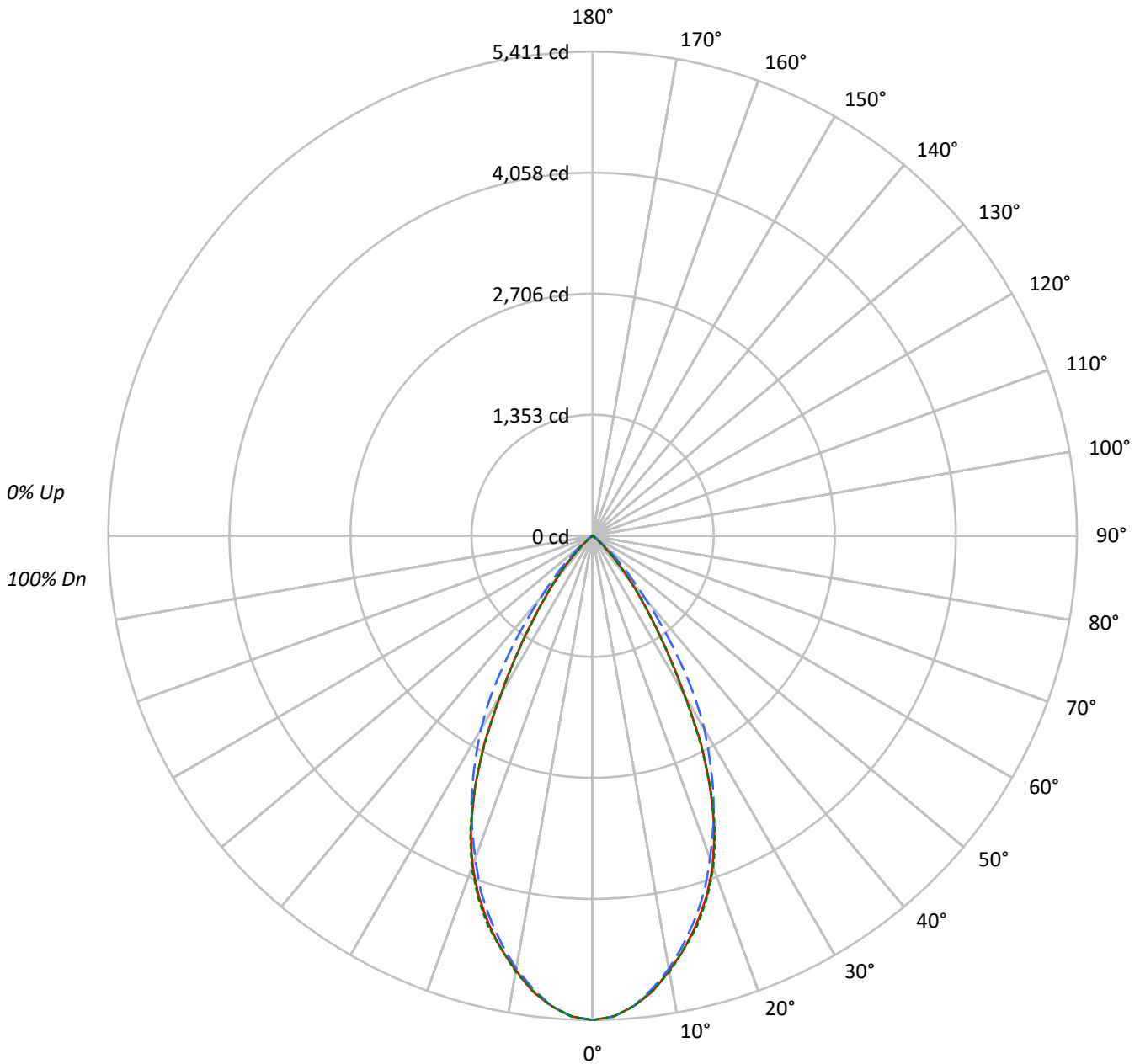
Lumens per Lamp: N/A
Luminaire Lumens: 4372.7 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 0.85 / 0.87
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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																			
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	94																			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	96	91	87	101	95	90	87	92	89	85	90	87	84	88	85	83	81																			
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76																			
5	93	84	79	74	91	83	78	74	82	77	73	80	76	73	78	75	72	71																			
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	70	68	66																			
7	84	75	69	65	82	74	68	64	73	68	64	71	67	64	70	66	63	62																			
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	60	58																			
9	76	67	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55																			
10	73	63	57	53	72	63	57	53	62	57	53	61	56	53	60	56	53	52																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	524193	524193	524193
5°	512950	513164	513164
10°	485180	483026	486478
15°	450174	444016	452601
20°	404113	395051	406598
25°	331915	341536	333081
30°	229440	279062	227718
35°	141277	197121	137907
40°	79709	115245	79152
45°	36402	57760	34895
50°	9269	23164	9600
55°	4459	7043	4087
60°	2984	2558	3410
65°	2521	2017	2521
70°	1869	1869	2493
75°	1647	1647	2470
80°	2455	2455	2455
85°	2445	4891	4891

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 57760 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	492.2	11.3
10°-20°	1243.1	28.4
20°-30°	1421.1	32.5
30°-40°	882.1	20.2
40°-50°	278.0	6.4
50°-60°	36.0	0.8
60°-70°	10.7	0.2
70°-80°	5.7	0.1
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°	3156.4	72.2
0°-40°	4038.6	92.4
0°-60°	4352.5	99.5
0°-90°	4372.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4372.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5411	5411	5411	5411	5411	
5°	5275	5270	5277	5273	5277	493
15°	4489	4456	4427	4456	4513	1252
25°	3105	3149	3195	3149	3116	1393
35°	1195	1379	1667	1346	1166	768
45°	266	318	422	321	255	224
55°	26	26	42	26	24	26
65°	11	11	9	11	11	11
75°	4	4	4	4	7	6
85°	2	4	4	4	4	2
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5411.0	5411.0	5411.0	5411.0	5411.0
2.5°	5378.0	5382.4	5378.0	5386.8	5378.0
5°	5274.8	5270.4	5277.0	5272.6	5277.0
7.5°	5134.3	5107.9	5105.7	5123.3	5125.5
10°	4932.2	4925.6	4910.3	4925.6	4945.4
12.5°	4725.8	4699.5	4677.5	4708.2	4725.8
15°	4488.6	4455.7	4427.2	4455.7	4512.8
17.5°	4227.3	4181.2	4157.0	4190.0	4244.9
20°	3919.9	3871.6	3832.0	3860.6	3944.0
22.5°	3550.9	3546.6	3520.2	3535.6	3566.3
25°	3105.2	3149.1	3195.2	3149.1	3116.1
27.5°	2615.4	2734.0	2839.4	2701.1	2595.7
30°	2051.1	2231.1	2494.7	2218.0	2035.7
32.5°	1585.5	1774.4	2110.4	1750.2	1572.3
35°	1194.6	1379.1	1666.8	1346.2	1166.1
37.5°	878.4	1016.8	1267.1	1008.0	878.4
40°	630.3	720.3	911.3	718.1	625.9
42.5°	437.0	496.3	636.8	491.9	423.8
45°	265.7	318.4	421.6	320.6	254.7
47.5°	140.5	202.0	265.7	193.2	140.5
50°	61.5	107.6	153.7	105.4	63.7
52.5°	32.9	46.1	83.4	46.1	32.9
55°	26.4	26.4	41.7	26.4	24.2
57.5°	19.8	19.8	22.0	19.8	19.8
60°	15.4	15.4	13.2	15.4	17.6
62.5°	13.2	13.2	11.0	13.2	13.2
65°	11.0	11.0	8.8	11.0	11.0
67.5°	8.8	8.8	8.8	8.8	8.8
70°	6.6	6.6	6.6	8.8	8.8
72.5°	6.6	6.6	6.6	6.6	6.6
75°	4.4	4.4	4.4	4.4	6.6
77.5°	4.4	4.4	4.4	4.4	4.4
80°	4.4	4.4	4.4	4.4	4.4
82.5°	2.2	4.4	4.4	4.4	4.4
85°	2.2	4.4	4.4	4.4	4.4
87.5°	2.2	2.2	4.4	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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