

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: P837607

Luminaire Tested: HCSQ450D010-HM44560835-41SQMW

Issue Date: 5/17/2024



Test Information

Test Method: LM-79-2019
Report Number: P837607
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: HCSQ450D010-HM44560835-41SQMW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: -

Summary

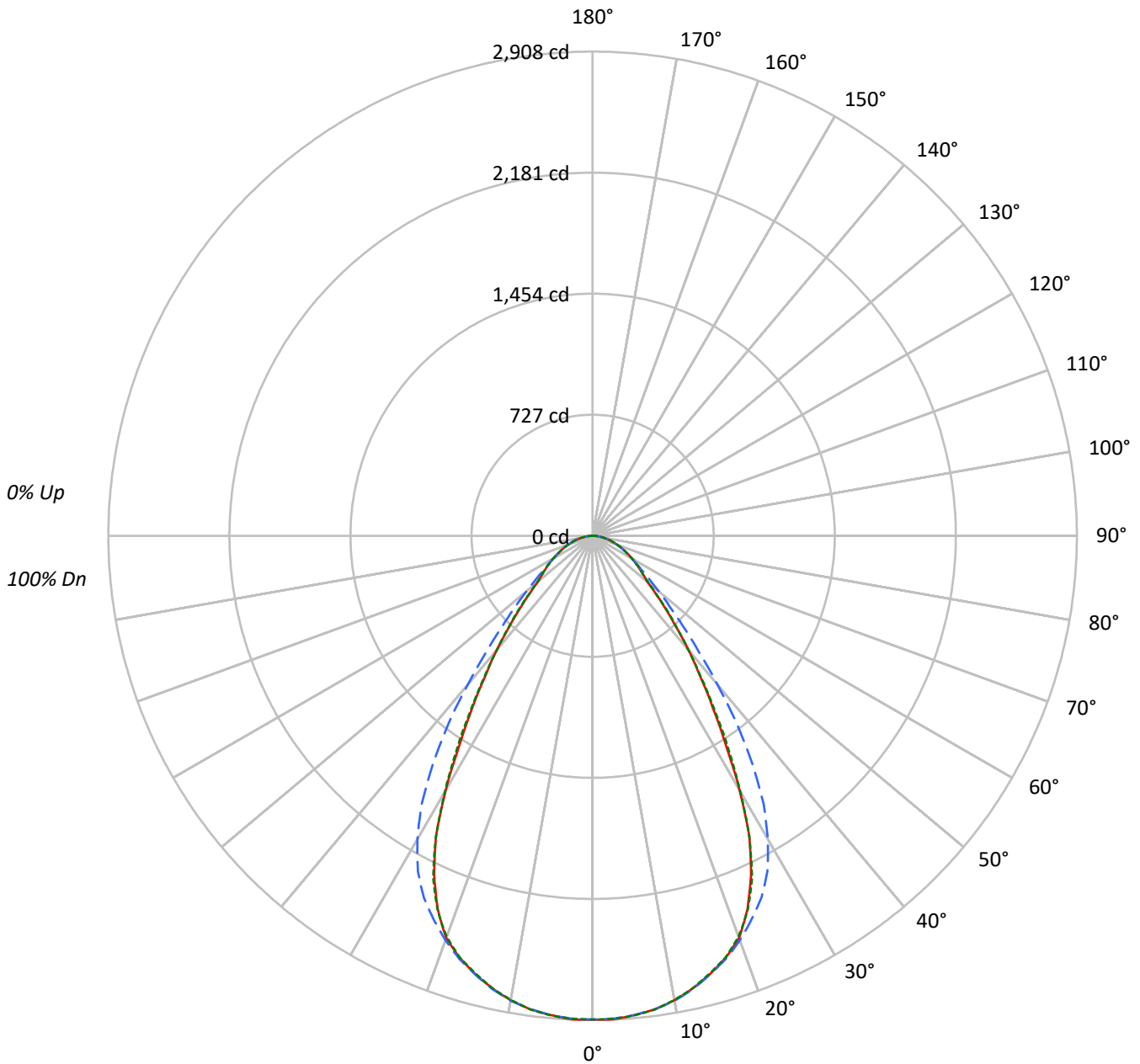
Lumens per Lamp: N/A
Luminaire Lumens: 4216.3 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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					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°	281462	281462	281462
5°	281001	281001	281214
10°	278692	278918	278475
15°	273278	273499	272817
20°	265082	266474	264144
25°	240578	256259	242267
30°	197470	235358	198231
35°	148444	197558	150573
40°	113057	147315	112766
45°	84435	104533	85983
50°	64309	77918	65665
55°	57949	61006	57949
60°	52933	52487	52487
65°	48115	48115	48115
70°	44753	44130	44130
75°	41397	40574	41397
80°	37769	36541	37769
85°	32568	32568	32568

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 104533 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	274.0	6.5
10°-20°	767.1	18.2
20°-30°	1055.0	25.0
30°-40°	898.1	21.3
40°-50°	542.5	12.9
50°-60°	319.7	7.6
60°-70°	209.7	5.0
70°-80°	116.3	2.8
80°-90°	34.0	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°	2096.1	49.7
0°-40°	2994.2	71.0
0°-60°	3856.3	91.5
0°-90°	4216.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4216.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2905	2905	2905	2905	2905	
5°	2890	2892	2890	2887	2892	274
15°	2725	2732	2727	2725	2720	766
25°	2251	2321	2397	2325	2266	1017
35°	1255	1382	1670	1420	1273	795
45°	616	682	763	688	628	484
55°	343	350	361	350	343	309
65°	210	212	210	210	210	210
75°	111	111	108	108	111	117
85°	29	29	29	29	29	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2905.4	2905.4	2905.4	2905.4	2905.4
2.5°	2907.6	2900.8	2903.1	2900.8	2903.1
5°	2889.6	2891.8	2889.6	2887.3	2891.8
7.5°	2869.2	2867.0	2867.0	2864.7	2869.2
10°	2833.1	2828.6	2835.4	2830.9	2830.9
12.5°	2783.5	2790.2	2788.0	2788.0	2783.5
15°	2724.8	2731.5	2727.0	2724.8	2720.2
17.5°	2657.0	2661.6	2663.8	2654.8	2654.8
20°	2571.3	2580.3	2584.8	2569.0	2562.2
22.5°	2429.0	2469.7	2494.5	2467.4	2433.5
25°	2250.7	2320.7	2397.4	2325.2	2266.5
27.5°	2036.2	2135.6	2273.3	2151.4	2036.2
30°	1765.3	1912.1	2104.0	1927.9	1772.1
32.5°	1485.4	1641.2	1909.8	1668.3	1517.0
35°	1255.2	1381.6	1670.5	1419.9	1273.2
37.5°	1056.5	1164.9	1419.9	1189.7	1067.8
40°	894.0	979.7	1164.9	991.0	891.7
42.5°	738.2	819.5	943.6	830.7	747.2
45°	616.3	681.8	763.0	688.5	627.6
47.5°	512.4	566.6	625.3	566.6	519.2
50°	426.7	469.6	517.0	469.6	435.7
52.5°	381.5	395.1	426.7	397.3	381.5
55°	343.1	349.9	361.2	349.9	343.1
57.5°	307.0	311.5	309.3	309.3	307.0
60°	273.2	275.4	270.9	273.2	270.9
62.5°	241.5	241.5	237.0	241.5	239.3
65°	209.9	212.2	209.9	209.9	209.9
67.5°	182.9	182.9	180.6	182.9	182.9
70°	158.0	158.0	155.8	158.0	155.8
72.5°	133.2	133.2	130.9	130.9	130.9
75°	110.6	110.6	108.4	108.4	110.6
77.5°	88.0	88.0	85.8	88.0	88.0
80°	67.7	67.7	65.5	67.7	67.7
82.5°	47.4	47.4	47.4	49.7	49.7
85°	29.3	29.3	29.3	29.3	29.3
87.5°	13.5	13.5	13.5	13.5	15.8
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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