

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: P837591

Luminaire Tested: HCSQ445D010-HM44560940-41SQMB

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837591
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ445D010-HM44560940-41SQMB
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

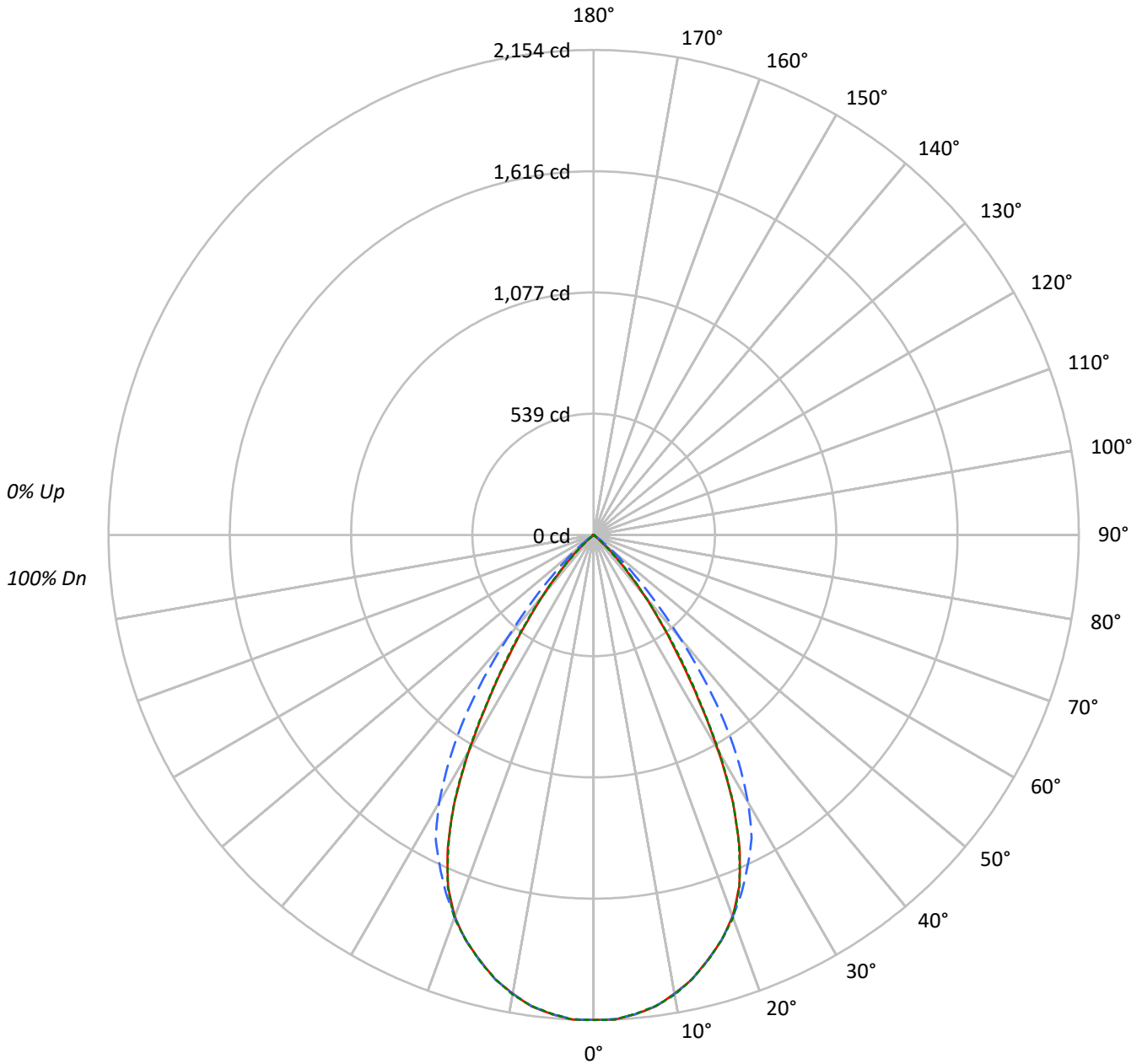
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2152.1 lumens
Efficiency: N/A
Efficacy: 46.9 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 45.9
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	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	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87					87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80					80			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74					74			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69					69			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64					64			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60					60			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56					56			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52					52			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49					49			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	208708	208708	208708
5°	207755	207755	207561
10°	203478	203675	203872
15°	196032	196233	196233
20°	185845	186051	186464
25°	163852	173034	163211
30°	123630	153363	124749
35°	77521	119363	80123
40°	43718	74309	43718
45°	18345	37511	18071
50°	1507	14453	1809
55°	676	3040	676
60°	775	388	775
65°	458	458	458
70°	566	566	566
75°	749	749	749
80°	0	1116	1116
85°	0	2223	2223

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 37511 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	201.9	9.4
10°-20°	549.3	25.5
20°-30°	712.6	33.1
30°-40°	506.6	23.5
40°-50°	164.3	7.6
50°-60°	11.9	0.6
60°-70°	2.0	0.1
70°-80°	2.1	0.1
80°-90°	1.4	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°	1463.8	68.0
0°-40°	1970.4	91.6
0°-60°	2146.6	99.7
0°-90°	2152.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2152.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2154	2154	2154	2154	2154	
5°	2136	2138	2136	2136	2134	202
15°	1955	1960	1957	1960	1957	549
25°	1533	1573	1619	1581	1527	686
35°	656	775	1009	783	678	419
45°	134	190	274	194	132	111
55°	4	4	18	4	4	5
65°	2	2	2	2	2	2
75°	2	2	2	2	2	2
85°	0	0	2	2	2	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2154.4	2154.4	2154.4	2154.4	2154.4
2.5°	2154.4	2154.4	2152.4	2152.4	2154.4
5°	2136.4	2138.4	2136.4	2136.4	2134.4
7.5°	2112.4	2112.4	2110.4	2110.4	2110.4
10°	2068.5	2070.5	2070.5	2070.5	2072.5
12.5°	2020.5	2020.5	2020.5	2020.5	2020.5
15°	1954.6	1960.5	1956.6	1960.5	1956.6
17.5°	1888.6	1888.6	1886.6	1890.6	1886.6
20°	1802.7	1802.7	1804.7	1808.7	1808.7
22.5°	1688.8	1708.7	1716.7	1712.7	1692.7
25°	1532.9	1572.8	1618.8	1580.8	1526.9
27.5°	1337.0	1413.0	1518.9	1424.9	1341.0
30°	1105.2	1219.1	1371.0	1223.1	1115.2
32.5°	865.4	997.3	1199.1	1007.3	873.4
35°	655.5	775.4	1009.3	783.4	677.5
37.5°	483.6	593.6	801.4	597.6	497.6
40°	345.7	425.7	587.6	433.7	345.7
42.5°	221.8	301.8	413.7	303.8	231.8
45°	133.9	189.9	273.8	193.9	131.9
47.5°	60.0	107.9	169.9	111.9	60.0
50°	10.0	44.0	95.9	46.0	12.0
52.5°	6.0	8.0	46.0	8.0	6.0
55°	4.0	4.0	18.0	4.0	4.0
57.5°	4.0	4.0	4.0	4.0	4.0
60°	4.0	2.0	2.0	2.0	4.0
62.5°	2.0	2.0	2.0	2.0	2.0
65°	2.0	2.0	2.0	2.0	2.0
67.5°	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0
80°	0.0	2.0	2.0	2.0	2.0
82.5°	0.0	2.0	2.0	2.0	2.0
85°	0.0	0.0	2.0	2.0	2.0
87.5°	0.0	0.0	2.0	2.0	2.0
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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