

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: P837585

Luminaire Tested: HCSQ445D010-HM44560935-41SQLWW

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837585
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ445D010-HM44560935-41SQLWW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

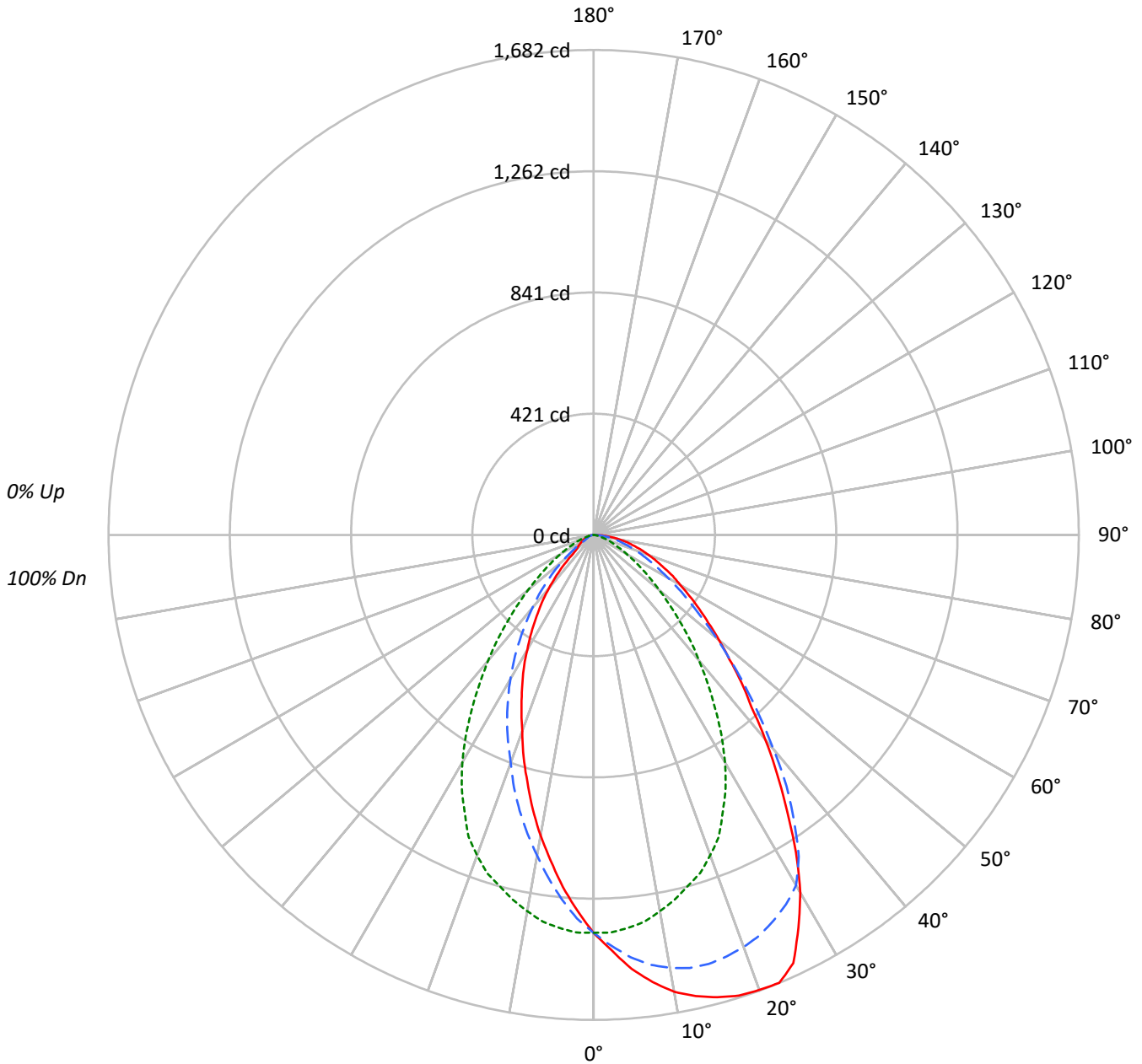
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2232.3 lumens
Efficiency: N/A
Efficacy: 48.6 lumens/watt
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12
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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89				89				
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78				78				
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69				69				
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62				62				
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55				55				
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50				50				
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45				45				
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42				
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38				38				
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35				35				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	133698	133698	133698	133698	133698
5°	146957	142961	133061	123356	119165
10°	158287	150004	130360	111109	104174
15°	166486	154511	126429	99340	88940
20°	173154	156804	121886	86577	74670
25°	175129	157770	113197	75956	62777
30°	160287	156998	101817	64600	51457
35°	138202	143299	86817	53017	40742
40°	117091	122542	71792	41834	30452
45°	99231	101642	57390	31113	19578
50°	85559	83494	44550	20949	11801
55°	75379	68775	34050	11569	10573
60°	67135	57641	25420	6452	9474
65°	61479	49353	18842	5822	8527
70°	57102	42685	13851	5552	8327
75°	53487	37355	9507	5128	7336
80°	51325	32748	6527	5467	6527
85°	50018	28233	4335	4335	4335

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°

Vertical Angle: 45°

Luminance: 103245 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.4	5.8
10°-20°	356.3	16.0
20°-30°	498.1	22.3
30°-40°	486.9	21.8
40°-50°	353.3	15.8
50°-60°	213.0	9.5
60°-70°	119.7	5.4
70°-80°	59.3	2.7
80°-90°	16.2	0.7
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°	983.8	44.1
0°-40°	1470.7	65.9
0°-60°	2037.0	91.3
0°-90°	2232.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2232.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1380	1380	1380	1380	1380	
5°	1511	1470	1368	1268	1225	147
15°	1660	1541	1261	990	887	470
25°	1638	1476	1059	711	587	739
35°	1169	1212	734	448	344	732
45°	724	742	419	227	143	562
55°	446	407	202	68	63	401
65°	268	215	82	25	37	269
75°	143	100	25	14	20	154
85°	45	25	4	4	4	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1380.1	1380.1	1380.1	1380.1	1380.1	1380.1	1380.1	1380.1	1380.1
2.5°	1442.7	1438.8	1427.0	1403.5	1380.1	1352.6	1331.1	1315.5	1303.7
5°	1511.2	1503.4	1470.1	1421.2	1368.3	1315.5	1268.5	1241.1	1225.4
7.5°	1564.1	1550.4	1503.4	1434.9	1352.6	1272.4	1200.0	1156.9	1139.3
10°	1609.1	1585.6	1524.9	1432.9	1325.2	1219.5	1129.5	1078.6	1059.0
12.5°	1638.4	1613.0	1538.6	1431.0	1295.9	1166.7	1061.0	994.4	974.8
15°	1660.0	1628.7	1540.6	1415.3	1260.6	1111.9	990.5	912.2	886.8
17.5°	1675.6	1632.6	1532.7	1397.7	1229.3	1055.1	918.1	833.9	808.5
20°	1679.6	1632.6	1521.0	1372.2	1182.3	998.3	839.8	755.6	724.3
22.5°	1681.5	1626.7	1503.4	1340.9	1133.4	933.7	775.2	687.1	653.8
25°	1638.4	1607.1	1476.0	1288.1	1059.0	863.3	710.6	614.7	587.3
27.5°	1536.7	1534.7	1444.7	1217.6	990.5	786.9	644.0	552.0	526.6
30°	1432.9	1434.9	1403.5	1139.3	910.2	714.5	577.5	487.4	460.0
32.5°	1305.7	1325.2	1323.3	1051.2	824.1	646.0	512.9	428.7	401.3
35°	1168.6	1203.9	1211.7	951.4	734.1	567.7	448.3	371.9	344.5
37.5°	1045.3	1080.6	1098.2	863.3	649.9	499.2	387.6	321.0	293.6
40°	925.9	955.3	969.0	761.5	567.7	428.7	330.8	268.2	240.8
42.5°	810.4	853.5	849.6	675.3	495.3	371.9	279.9	217.3	189.9
45°	724.3	753.6	741.9	585.3	418.9	313.2	227.1	168.3	142.9
47.5°	638.2	659.7	642.1	509.0	354.3	258.4	184.0	123.3	95.9
50°	567.7	577.5	554.0	432.6	295.6	211.4	139.0	82.2	78.3
52.5°	501.1	507.0	473.7	368.0	244.7	170.3	101.8	64.6	68.5
55°	446.3	444.4	407.2	311.2	201.6	131.2	68.5	58.7	62.6
57.5°	393.5	387.6	350.4	258.4	164.4	101.8	41.1	50.9	54.8
60°	346.5	340.6	297.5	213.4	131.2	76.3	33.3	45.0	48.9
62.5°	309.3	295.6	252.5	176.2	105.7	54.8	29.4	39.2	43.1
65°	268.2	256.4	215.3	142.9	82.2	39.2	25.4	33.3	37.2
67.5°	234.9	221.2	182.0	117.5	66.6	27.4	23.5	29.4	33.3
70°	201.6	189.9	150.7	94.0	48.9	17.6	19.6	25.4	29.4
72.5°	174.2	160.5	125.3	74.4	37.2	13.7	17.6	21.5	23.5
75°	142.9	131.2	99.8	56.8	25.4	11.7	13.7	17.6	19.6
77.5°	119.4	107.7	78.3	43.1	17.6	9.8	11.7	15.7	15.7
80°	92.0	82.2	58.7	29.4	11.7	5.9	9.8	11.7	11.7
82.5°	66.6	58.7	41.1	19.6	5.9	5.9	5.9	7.8	7.8
85°	45.0	39.2	25.4	11.7	3.9	3.9	3.9	3.9	3.9
87.5°	25.4	19.6	11.7	3.9	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	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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