

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: P837675

Luminaire Tested: HCSQ460D010-HM44560827-41SQLWW

Issue Date: 5/17/2024

**Test Information**

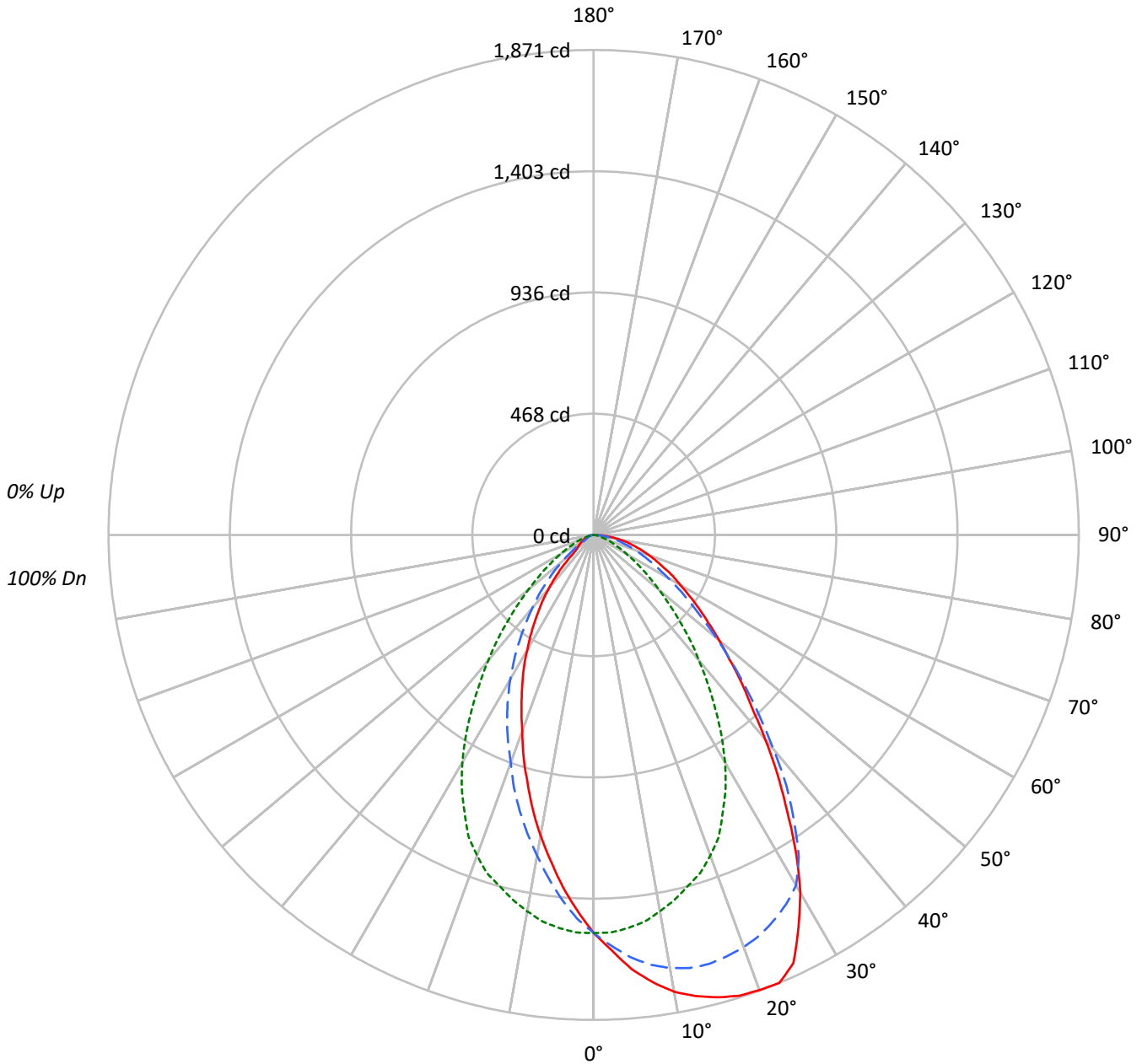
Test Method: LM-79-2019  
Report Number: P837675  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560827-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2483.5 lumens  
Efficiency: N/A  
Efficacy: 44.3 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): 56  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	100	100	100	100		
	1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89	89	89	89	89	89		
	2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78	78	78	78	78	78		
	3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69	69	69	69	69	69		
	4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62	62	62	62	62	62		
	5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55	55	55	55	55	55		
	6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50	50	50	50	50	50		
	7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45	45	45	45	45	45		
	8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42	42	42		
	9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35	35	35	35	35	35		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	148743	148743	148743	148743	148743
5°	163499	159055	148037	137233	132575
10°	176102	166885	145037	123612	115899
15°	185221	171902	140661	110523	98949
20°	192639	174453	135608	96319	83072
25°	194839	175524	125938	84507	69842
30°	178331	174673	113283	71871	57251
35°	153766	159430	96585	58978	45330
40°	130268	136326	79873	46551	33879
45°	110397	113082	63857	34607	21783
50°	95189	92883	49569	23300	13127
55°	83857	76510	37884	12870	11772
60°	74691	64132	28268	7169	10540
65°	68401	54923	20974	6487	9490
70°	63532	47500	15409	6175	9262
75°	59513	41584	10593	5689	8160
80°	57127	36430	7308	6081	7308
85°	55687	31456	4891	4891	4891

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 114877 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.0	5.8
10°-20°	396.4	16.0
20°-30°	554.2	22.3
30°-40°	541.7	21.8
40°-50°	393.1	15.8
50°-60°	237.0	9.5
60°-70°	133.2	5.4
70°-80°	66.0	2.7
80°-90°	18.1	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°	1094.5	44.1
0°-40°	1636.2	65.9
0°-60°	2266.3	91.3
0°-90°	2483.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2483.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1535	1535	1535	1535	1535	
5°	1681	1636	1522	1411	1363	164
15°	1847	1714	1402	1102	987	523
25°	1823	1642	1178	791	653	822
35°	1300	1348	817	499	383	814
45°	806	825	466	253	159	625
55°	496	453	224	76	70	447
65°	298	240	92	28	41	299
75°	159	111	28	15	22	171
85°	50	28	4	4	4	55
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°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1605.1	1600.7	1587.6	1561.5	1535.4	1504.9	1480.9	1463.5	1450.4
5°	1681.3	1672.6	1635.6	1581.1	1522.3	1463.5	1411.2	1380.7	1363.3
7.5°	1740.1	1724.8	1672.6	1596.4	1504.9	1415.6	1335.0	1287.1	1267.5
10°	1790.2	1764.0	1696.5	1594.2	1474.4	1356.8	1256.6	1200.0	1178.2
12.5°	1822.8	1794.5	1711.8	1592.0	1441.7	1298.0	1180.4	1106.3	1084.6
15°	1846.8	1812.0	1714.0	1574.6	1402.5	1237.0	1102.0	1014.9	986.6
17.5°	1864.2	1816.3	1705.2	1555.0	1367.7	1173.9	1021.4	927.8	899.4
20°	1868.6	1816.3	1692.2	1526.7	1315.4	1110.7	934.3	840.6	805.8
22.5°	1870.8	1809.8	1672.6	1491.8	1261.0	1038.8	862.4	764.4	727.4
25°	1822.8	1788.0	1642.1	1433.0	1178.2	960.4	790.6	683.8	653.4
27.5°	1709.6	1707.4	1607.2	1354.6	1102.0	875.5	716.5	614.1	585.8
30°	1594.2	1596.4	1561.5	1267.5	1012.7	794.9	642.5	542.3	511.8
32.5°	1452.6	1474.4	1472.2	1169.5	916.9	718.7	570.6	476.9	446.5
35°	1300.2	1339.4	1348.1	1058.4	816.7	631.6	498.7	413.8	383.3
37.5°	1163.0	1202.2	1221.8	960.4	723.0	555.3	431.2	357.2	326.7
40°	1030.1	1062.8	1078.0	847.2	631.6	476.9	368.1	298.4	267.9
42.5°	901.6	949.5	945.2	751.4	551.0	413.8	311.4	241.7	211.3
45°	805.8	838.5	825.4	651.2	466.1	348.5	252.6	187.3	159.0
47.5°	710.0	733.9	714.3	566.2	394.2	287.5	204.7	137.2	106.7
50°	631.6	642.5	616.3	481.3	328.9	235.2	154.6	91.5	87.1
52.5°	557.5	564.1	527.0	409.4	272.2	189.5	113.2	71.9	76.2
55°	496.5	494.4	453.0	346.3	224.3	145.9	76.2	65.3	69.7
57.5°	437.7	431.2	389.8	287.5	182.9	113.2	45.7	56.6	61.0
60°	385.5	378.9	331.0	237.4	145.9	84.9	37.0	50.1	54.4
62.5°	344.1	328.9	280.9	196.0	117.6	61.0	32.7	43.6	47.9
65°	298.4	285.3	239.6	159.0	91.5	43.6	28.3	37.0	41.4
67.5°	261.3	246.1	202.5	130.7	74.0	30.5	26.1	32.7	37.0
70°	224.3	211.3	167.7	104.5	54.4	19.6	21.8	28.3	32.7
72.5°	193.8	178.6	139.4	82.8	41.4	15.2	19.6	24.0	26.1
75°	159.0	145.9	111.1	63.2	28.3	13.1	15.2	19.6	21.8
77.5°	132.8	119.8	87.1	47.9	19.6	10.9	13.1	17.4	17.4
80°	102.4	91.5	65.3	32.7	13.1	6.5	10.9	13.1	13.1
82.5°	74.0	65.3	45.7	21.8	6.5	6.5	6.5	8.7	8.7
85°	50.1	43.6	28.3	13.1	4.4	4.4	4.4	4.4	4.4
87.5°	28.3	21.8	13.1	4.4	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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