

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: P837640

Luminaire Tested: HCSQ455D010-HM44560830-41SQLWW

Issue Date: 5/17/2024

**Test Information**

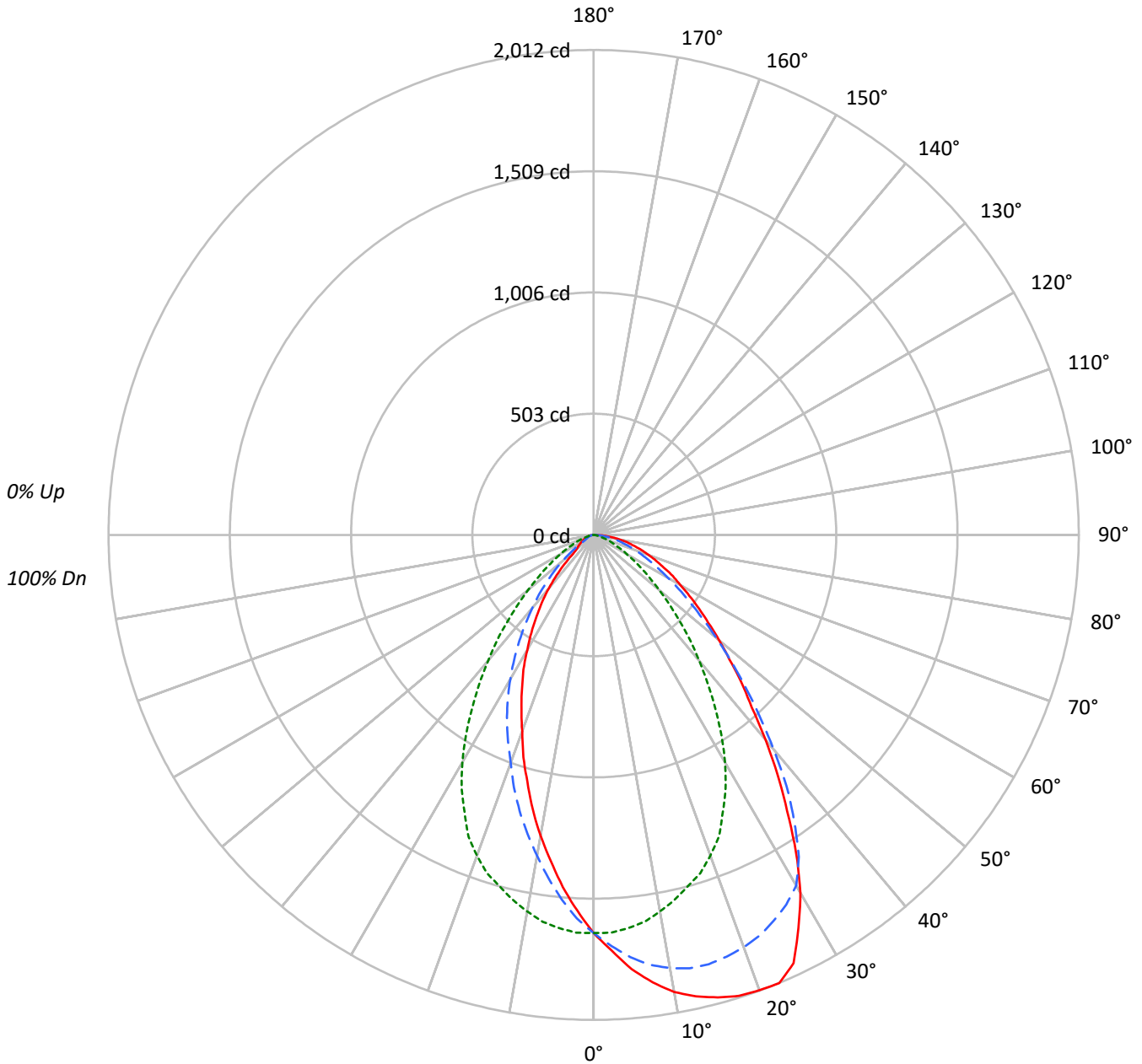
Test Method: LM-79-2019  
Report Number: P837640  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560830-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2671.5 lumens  
Efficiency: N/A  
Efficacy: 49.5 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): 54  
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										
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	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78								
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69								
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62								
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55								
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50								
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45								
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42								
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38								
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35								

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

	0°	45°	90°	135°	180°
0°	159999	159999	159999	159999	159999
5°	175868	171084	159239	147619	142610
10°	189431	179515	156015	132967	124674
15°	199242	184910	151312	118887	106431
20°	207216	187660	145876	103608	89361
25°	209590	188811	135473	90899	75122
30°	191821	187895	121851	77308	61580
35°	165403	171493	103894	63448	48760
40°	140132	146645	85918	50066	36434
45°	118754	121645	68679	37224	23427
50°	102393	99922	53307	25063	14122
55°	90208	82304	40755	13850	12667
60°	80348	68995	30419	7711	11354
65°	73559	59072	22556	6991	10201
70°	68347	51097	16598	6628	9942
75°	64005	44729	11416	6138	8759
80°	61423	39219	7866	6527	7866
85°	59911	33901	5224	5224	5224

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 123563 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.9	5.8
10°-20°	426.4	16.0
20°-30°	596.1	22.3
30°-40°	582.7	21.8
40°-50°	422.8	15.8
50°-60°	254.9	9.5
60°-70°	143.3	5.4
70°-80°	71.0	2.7
80°-90°	19.4	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°	1177.4	44.1
0°-40°	1760.1	65.9
0°-60°	2437.8	91.3
0°-90°	2671.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2671.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1652	1652	1652	1652	1652	
5°	1808	1759	1638	1518	1466	176
15°	1987	1844	1509	1185	1061	563
25°	1961	1766	1267	850	703	884
35°	1399	1450	878	536	412	876
45°	867	888	501	272	171	672
55°	534	487	241	82	75	480
65°	321	258	98	30	44	322
75°	171	120	30	16	23	184
85°	54	30	5	5	5	60
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°	1651.6	1651.6	1651.6	1651.6	1651.6	1651.6	1651.6	1651.6	1651.6
2.5°	1726.5	1721.9	1707.8	1679.7	1651.6	1618.8	1593.0	1574.3	1560.2
5°	1808.5	1799.2	1759.3	1700.8	1637.5	1574.3	1518.0	1485.3	1466.5
7.5°	1871.8	1855.4	1799.2	1717.2	1618.8	1522.7	1436.1	1384.5	1363.4
10°	1925.7	1897.6	1824.9	1714.8	1586.0	1459.5	1351.7	1290.8	1267.4
12.5°	1960.8	1930.4	1841.3	1712.5	1550.8	1396.2	1269.7	1190.1	1166.6
15°	1986.6	1949.1	1843.7	1693.7	1508.7	1330.6	1185.4	1091.7	1061.2
17.5°	2005.3	1953.8	1834.3	1672.7	1471.2	1262.7	1098.7	998.0	967.5
20°	2010.0	1953.8	1820.3	1642.2	1415.0	1194.8	1005.0	904.3	866.8
22.5°	2012.4	1946.8	1799.2	1604.7	1356.4	1117.5	927.7	822.3	782.5
25°	1960.8	1923.3	1766.4	1541.5	1267.4	1033.1	850.4	735.6	702.8
27.5°	1839.0	1836.7	1728.9	1457.1	1185.4	941.8	770.7	660.6	630.2
30°	1714.8	1717.2	1679.7	1363.4	1089.3	855.1	691.1	583.3	550.5
32.5°	1562.6	1586.0	1583.6	1258.0	986.3	773.1	613.8	513.0	480.2
35°	1398.6	1440.7	1450.1	1138.5	878.5	679.4	536.5	445.1	412.3
37.5°	1251.0	1293.2	1314.2	1033.1	777.8	597.4	463.8	384.2	351.4
40°	1108.1	1143.2	1159.6	911.3	679.4	513.0	395.9	320.9	288.1
42.5°	969.9	1021.4	1016.7	808.2	592.7	445.1	335.0	260.0	227.2
45°	866.8	901.9	887.9	700.5	501.3	374.8	271.7	201.5	171.0
47.5°	763.7	789.5	768.4	609.1	424.0	309.2	220.2	147.6	114.8
50°	679.4	691.1	663.0	517.7	353.7	253.0	166.3	98.4	93.7
52.5°	599.7	606.8	566.9	440.4	292.8	203.8	121.8	77.3	82.0
55°	534.1	531.8	487.3	372.5	241.3	157.0	82.0	70.3	75.0
57.5°	470.9	463.8	419.3	309.2	196.8	121.8	49.2	60.9	65.6
60°	414.7	407.6	356.1	255.4	157.0	91.4	39.8	53.9	58.6
62.5°	370.1	353.7	302.2	210.8	126.5	65.6	35.1	46.9	51.5
65°	320.9	306.9	257.7	171.0	98.4	46.9	30.5	39.8	44.5
67.5°	281.1	264.7	217.9	140.6	79.7	32.8	28.1	35.1	39.8
70°	241.3	227.2	180.4	112.4	58.6	21.1	23.4	30.5	35.1
72.5°	208.5	192.1	149.9	89.0	44.5	16.4	21.1	25.8	28.1
75°	171.0	157.0	119.5	67.9	30.5	14.1	16.4	21.1	23.4
77.5°	142.9	128.8	93.7	51.5	21.1	11.7	14.1	18.7	18.7
80°	110.1	98.4	70.3	35.1	14.1	7.0	11.7	14.1	14.1
82.5°	79.7	70.3	49.2	23.4	7.0	7.0	7.0	9.4	9.4
85°	53.9	46.9	30.5	14.1	4.7	4.7	4.7	4.7	4.7
87.5°	30.5	23.4	14.1	4.7	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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