

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: P837586

Luminaire Tested: HCSQ445D010-HM44560935-41SQMB

Issue Date: 5/17/2024



**Test Information**

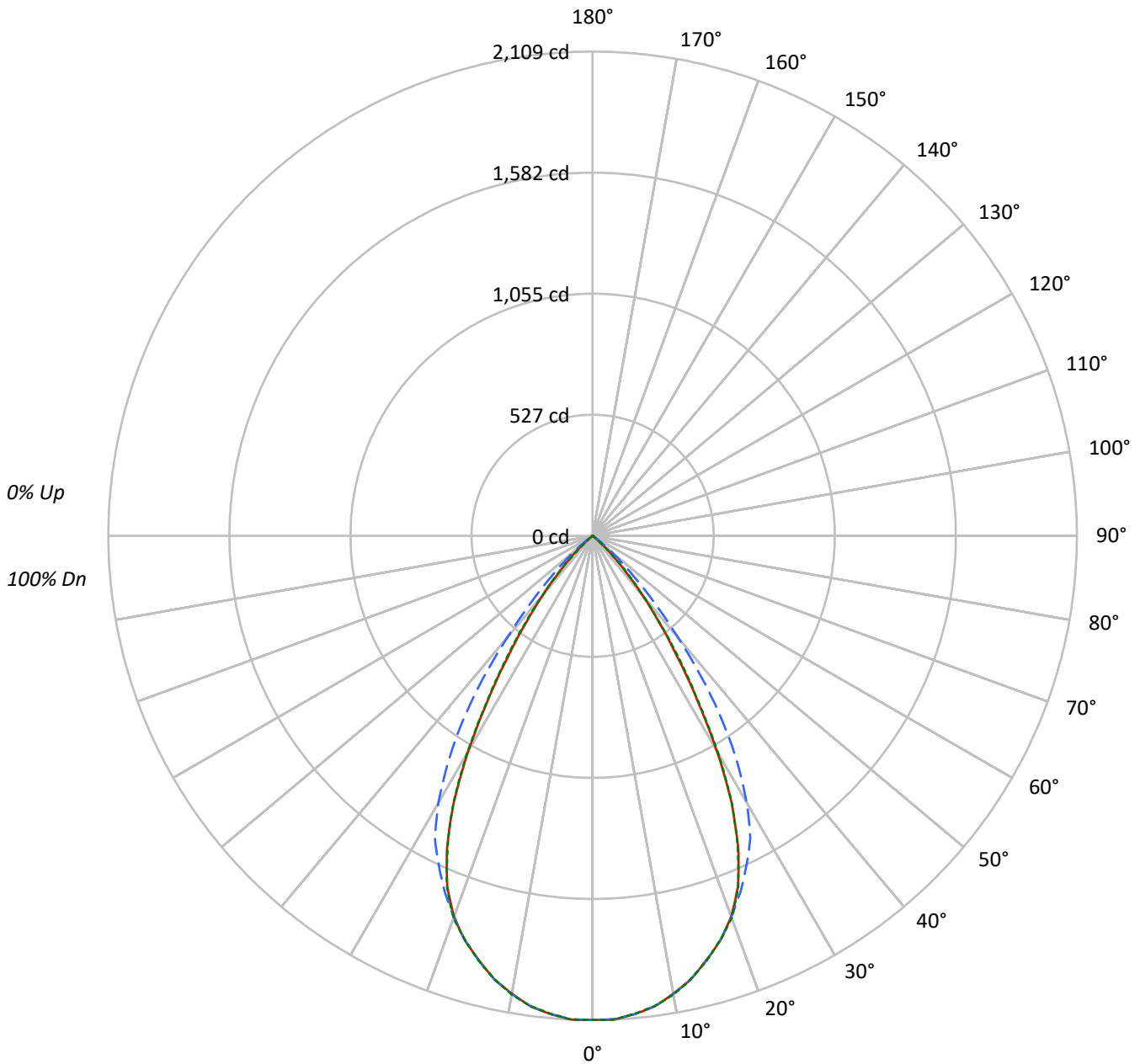
Test Method: LM-79-2019  
Report Number: P837586  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ445D010-HM44560935-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2107.1 lumens  
Efficiency: N/A  
Efficacy: 45.9 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 (Ain): 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

TEST NUMBER: P837586  
CATALOG NUMBER: HCSQ445D010-HM44560935-41SQMB

### Luminous Intensity Polar Plot





TEST NUMBER: P837586

CATALOG NUMBER: HCSQ445D010-HM44560935-41SQMB

**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	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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93	93	93	93		
	2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87	87	87	87	87	87		
	3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80	80	80	80	80	80		
	4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74	74	74	74	74	74		
	5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69	69	69	69	69	69		
	6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64	64	64	64	64	64		
	7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60	60	60	60	60	60		
	8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56	56	56	56	56	56		
	9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52	52	52	52	52	52		
	10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49	49	49	49	49	49		

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

	0°	45°	90°
0°	204339	204339	204339
5°	203399	203399	203214
10°	199209	199406	199593
15°	191920	192121	192121
20°	181948	182144	182557
25°	160410	169410	159790
30°	121035	150153	122131
35°	75901	116856	78444
40°	42807	72754	42807
45°	17961	36730	17687
50°	1477	14152	1763
55°	659	2973	659
60°	756	388	756
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: 36730 cd/sqm



TEST NUMBER: P837586

CATALOG NUMBER: HCSQ445D010-HM44560935-41SQMB

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.7	9.4
10°-20°	537.8	25.5
20°-30°	697.7	33.1
30°-40°	496.0	23.5
40°-50°	160.8	7.6
50°-60°	11.6	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°	1433.1	68.0
0°-40°	1929.1	91.6
0°-60°	2101.6	99.7
0°-90°	2107.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2107.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2109	2109	2109	2109	2109	
5°	2092	2094	2092	2092	2090	198
15°	1914	1920	1916	1920	1916	537
25°	1501	1540	1585	1548	1495	672
35°	642	759	988	767	663	411
45°	131	186	268	190	129	109
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	



TEST NUMBER: P837586

CATALOG NUMBER: HCSQ445D010-HM44560935-41SQMB

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2109.3	2109.3	2109.3	2109.3	2109.3
2.5°	2109.3	2109.3	2107.3	2107.3	2109.3
5°	2091.6	2093.6	2091.6	2091.6	2089.7
7.5°	2068.2	2068.2	2066.2	2066.2	2066.2
10°	2025.1	2027.1	2027.1	2027.1	2029.0
12.5°	1978.2	1978.2	1978.2	1978.2	1978.2
15°	1913.6	1919.5	1915.6	1919.5	1915.6
17.5°	1849.0	1849.0	1847.1	1851.0	1847.1
20°	1764.9	1764.9	1766.8	1770.8	1770.8
22.5°	1653.4	1672.9	1680.8	1676.8	1657.3
25°	1500.7	1539.9	1584.9	1547.7	1494.9
27.5°	1309.0	1383.3	1487.0	1395.1	1312.9
30°	1082.0	1193.6	1342.3	1197.5	1091.8
32.5°	847.2	976.4	1174.0	986.1	855.1
35°	641.8	759.2	988.1	767.0	663.3
37.5°	473.5	581.1	784.6	585.0	487.2
40°	338.5	416.8	575.3	424.6	338.5
42.5°	217.2	295.5	405.0	297.4	227.0
45°	131.1	185.9	268.1	189.8	129.1
47.5°	58.7	105.7	166.3	109.6	58.7
50°	9.8	43.0	93.9	45.0	11.7
52.5°	5.9	7.8	45.0	7.8	5.9
55°	3.9	3.9	17.6	3.9	3.9
57.5°	3.9	3.9	3.9	3.9	3.9
60°	3.9	2.0	2.0	2.0	3.9
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)