

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: P837474

Luminaire Tested: HCSQ435D010-HM43040827-41SQH

Issue Date: 5/17/2024



**Test Information**

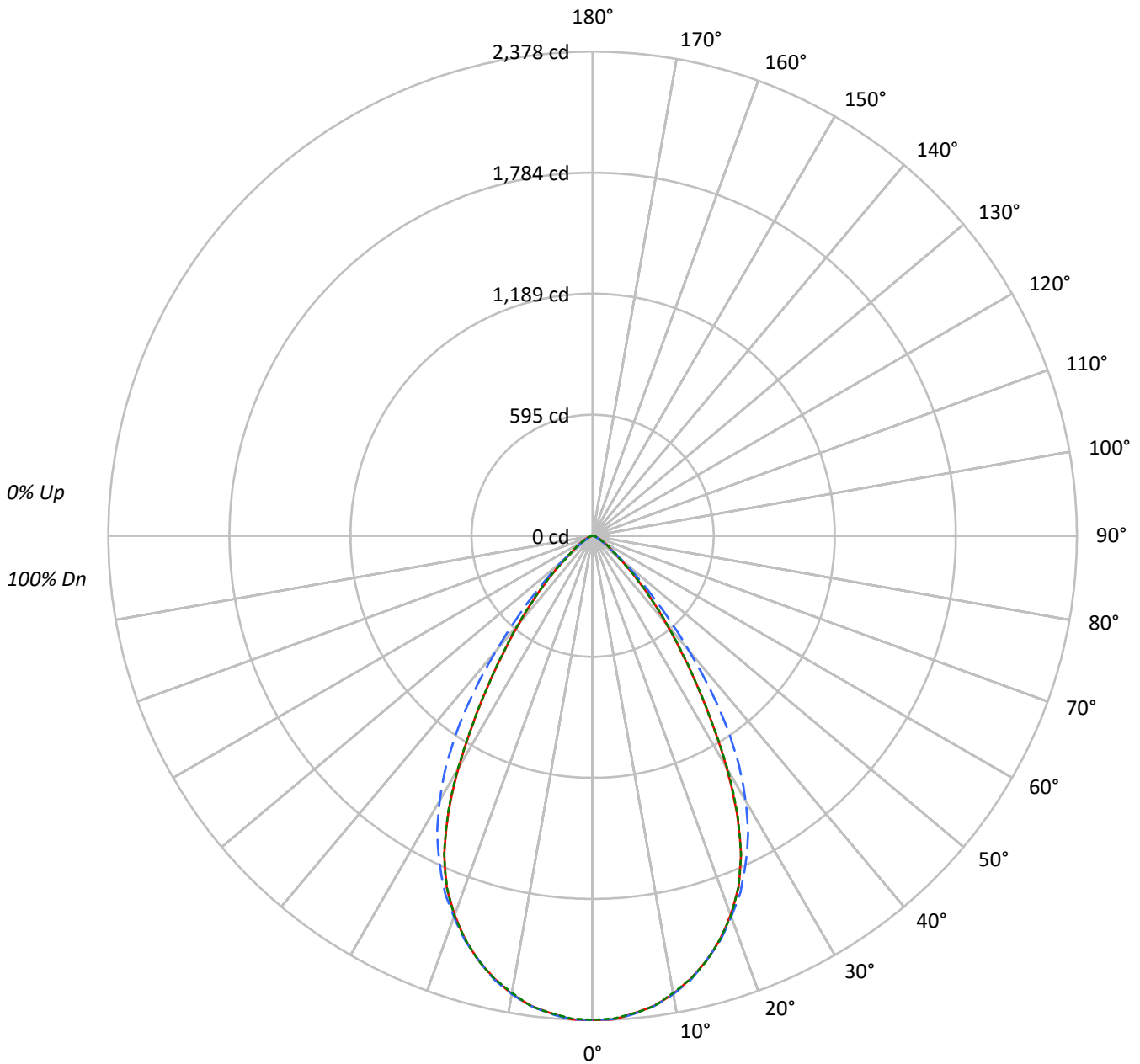
Test Method: LM-79-2019  
Report Number: P837474  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ435D010-HM43040827-41SQH  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2672.6 lumens  
Efficiency: N/A  
Efficacy: 78.6 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34  
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

TEST NUMBER: P837474  
CATALOG NUMBER: HCSQ435D010-HM43040827-41SQH

### Luminous Intensity Polar Plot





TEST NUMBER: P837474

CATALOG NUMBER: HCSQ435D010-HM43040827-41SQH

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92				92															
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85				85															
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77				77															
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71				71															
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65				65															
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60				60															
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56				56															
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52				52															
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48				48															
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45				45															

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

	0°	45°	90°
0°	230331	230331	230331
5°	228926	229208	228926
10°	224637	224785	224205
15°	216653	216512	216803
20°	204237	205288	204691
25°	184289	189933	184289
30°	147188	168050	148340
35°	105077	135991	105242
40°	70945	92482	72058
45°	45074	54719	45266
50°	25681	29208	24792
55°	16873	14137	16619
60°	11664	8254	11373
65°	8069	6052	8069
70°	5835	4589	5835
75°	3855	3855	3855
80°	2455	3292	3292
85°	3223	3223	3223

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 54719 cd/sqm



TEST NUMBER: P837474

CATALOG NUMBER: HCSQ435D010-HM43040827-41SQH

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	222.7	8.3
10°-20°	605.7	22.7
20°-30°	793.0	29.7
30°-40°	623.3	23.3
40°-50°	291.1	10.9
50°-60°	90.2	3.4
60°-70°	32.2	1.2
70°-80°	11.3	0.4
80°-90°	3.1	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°	1621.4	60.7
0°-40°	2244.6	84.0
0°-60°	2626.0	98.3
0°-90°	2672.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2672.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2378	2378	2378	2378	2378	
5°	2354	2356	2357	2360	2354	223
15°	2160	2160	2159	2160	2162	605
25°	1724	1748	1777	1749	1724	775
35°	888	969	1150	981	890	560
45°	329	369	399	361	330	262
55°	100	94	84	92	98	93
65°	35	32	26	31	35	37
75°	10	10	10	10	10	12
85°	3	3	3	3	3	3
90°	0	0	0	0	0	



TEST NUMBER: P837474

CATALOG NUMBER: HCSQ435D010-HM43040827-41SQH

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2377.6	2377.6	2377.6	2377.6	2377.6
2.5°	2377.6	2374.6	2376.1	2373.2	2373.2
5°	2354.1	2355.5	2357.0	2360.0	2354.1
7.5°	2327.6	2330.6	2329.1	2329.1	2329.1
10°	2283.6	2285.1	2285.1	2285.1	2279.2
12.5°	2227.8	2230.7	2232.2	2227.8	2227.8
15°	2160.2	2160.2	2158.8	2160.2	2161.7
17.5°	2079.5	2083.9	2083.9	2079.5	2078.0
20°	1981.1	1988.4	1991.3	1985.5	1985.5
22.5°	1870.9	1878.3	1895.9	1881.2	1869.5
25°	1724.1	1747.6	1776.9	1749.0	1724.1
27.5°	1534.6	1586.0	1653.6	1594.8	1539.0
30°	1315.8	1399.5	1502.3	1403.9	1326.1
32.5°	1092.6	1186.6	1337.8	1193.9	1092.6
35°	888.5	969.2	1149.9	981.0	889.9
37.5°	706.4	784.2	942.8	793.0	716.6
40°	561.0	624.1	731.3	622.7	569.8
42.5°	437.6	483.2	553.6	481.7	436.2
45°	329.0	368.6	399.4	361.3	330.4
47.5°	242.3	268.7	286.4	264.3	236.4
50°	170.4	189.4	193.8	185.0	164.5
52.5°	127.8	127.8	129.2	126.3	124.8
55°	99.9	94.0	83.7	92.5	98.4
57.5°	77.8	72.0	58.7	69.0	76.4
60°	60.2	54.3	42.6	52.9	58.7
62.5°	47.0	41.1	33.8	41.1	45.5
65°	35.2	32.3	26.4	30.8	35.2
67.5°	26.4	23.5	20.6	23.5	26.4
70°	20.6	19.1	16.2	17.6	20.6
72.5°	14.7	13.2	13.2	13.2	14.7
75°	10.3	10.3	10.3	10.3	10.3
77.5°	7.3	7.3	7.3	7.3	7.3
80°	4.4	4.4	5.9	5.9	5.9
82.5°	2.9	2.9	4.4	4.4	4.4
85°	2.9	2.9	2.9	2.9	2.9
87.5°	1.5	1.5	1.5	2.9	2.9
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)