

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: P838647

Luminaire Tested: HCSQ645D010-HM64560935-61SQMB

Issue Date: 5/21/2024



**Test Information**

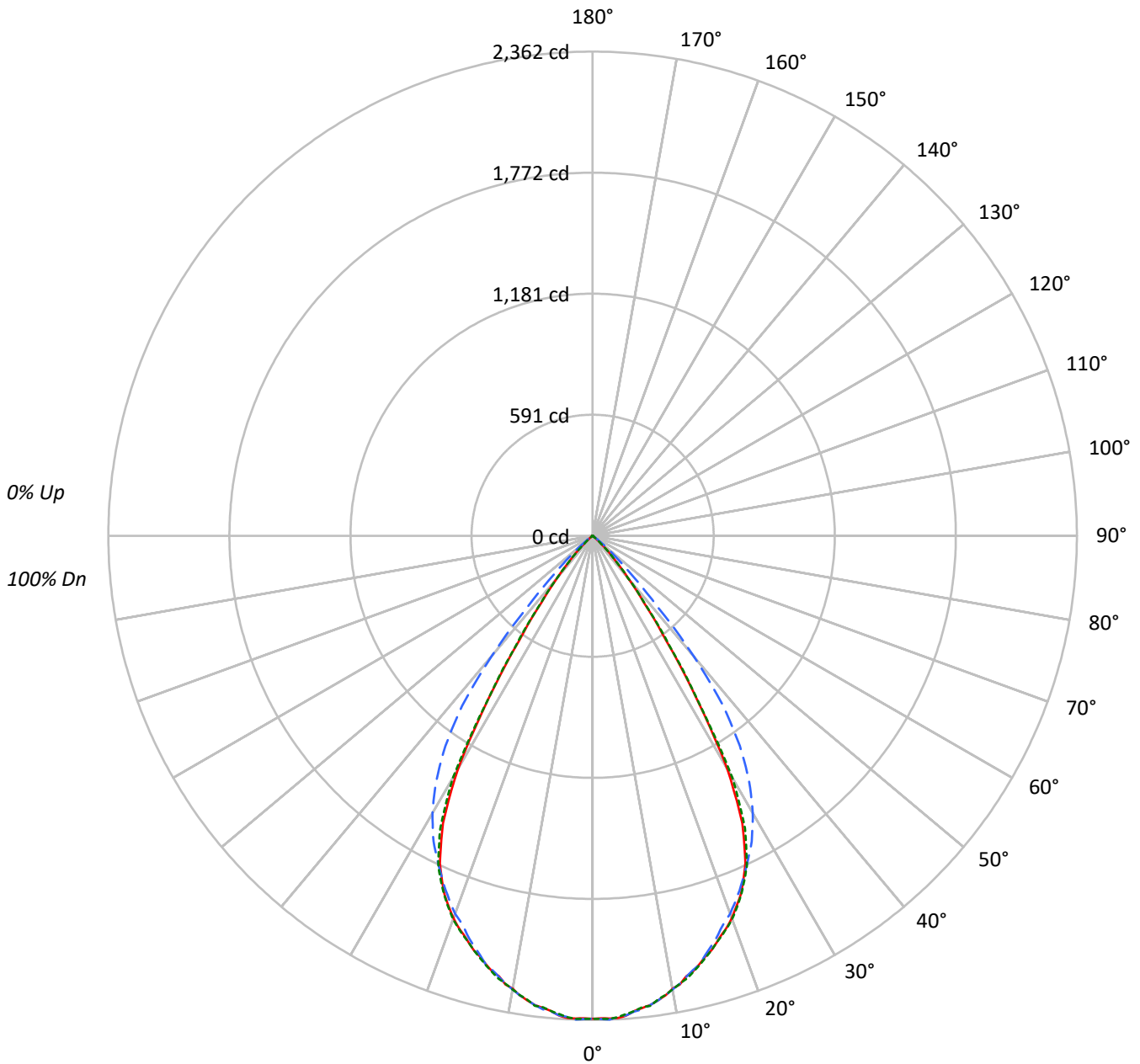
Test Method: LM-79-2019  
Report Number: P838647  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560935-61SQMB  
Description: HALO COMMERCIAL 6" 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: 2342.3 lumens  
Efficiency: N/A  
Efficacy: 51.0 lumens/watt  
Spacing Criteria (0/90/45): 1 / 1.01 / 1.03  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' 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

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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									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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93																			
2	108	103	99	96	106	101	98	94	98	95	92	95	93	90	92	90	89	87																			
3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	85	82	81																			
4	97	89	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75																			
5	92	84	78	73	90	83	77	73	81	76	72	79	75	72	78	74	71	70																			
6	87	78	72	68	86	77	72	68	76	71	67	75	70	67	73	69	66	65																			
7	83	73	67	63	81	73	67	63	71	66	63	70	66	62	69	65	62	60																			
8	79	69	63	59	77	68	63	59	67	62	58	66	62	58	65	61	58	56																			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53																			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50																			

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

	0°	45°	90°
0°	101452	101452	101452
5°	100599	100681	100599
10°	98081	98247	98247
15°	94707	94453	94962
20°	90950	89897	91212
25°	83749	84386	84567
30°	65283	77652	67758
35°	33103	65796	34307
40°	15063	43036	15063
45°	5827	16203	5711
50°	898	5131	898
55°	285	1006	285
60°	164	164	164
65°	194	0	194
70°	0	0	239
75°	0	0	316
80°	0	0	0
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 16203 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	220.0	9.4
10°-20°	596.7	25.5
20°-30°	804.3	34.3
30°-40°	565.5	24.1
40°-50°	144.4	6.2
50°-60°	10.0	0.4
60°-70°	1.2	0.1
70°-80°	0.2	0.0
80°-90°	0.0	0.0
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°	1621.0	69.2
0°-40°	2186.6	93.4
0°-60°	2340.9	99.9
0°-90°	2342.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2342.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2356	2356	2356	2356	2356	
5°	2328	2331	2330	2331	2328	220
15°	2125	2121	2119	2125	2130	598
25°	1763	1769	1776	1782	1780	788
35°	630	835	1252	856	653	424
45°	96	144	266	146	94	84
55°	4	4	13	4	4	5
65°	2	2	0	2	2	2
75°	0	0	0	0	2	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2356.3	2356.3	2356.3	2356.3	2356.3
1°	2354.4	2356.3	2358.2	2358.2	2356.3
2°	2356.3	2350.6	2362.0	2356.3	2358.2
3°	2356.3	2344.8	2350.6	2354.4	2352.5
4°	2346.7	2339.1	2344.8	2342.9	2339.1
5°	2327.6	2331.4	2329.5	2331.4	2327.6
6°	2316.1	2319.9	2323.8	2318.0	2312.3
7°	2306.5	2304.6	2306.5	2310.4	2310.4
8°	2289.3	2293.1	2289.3	2291.2	2285.5
9°	2270.2	2270.2	2270.2	2274.0	2268.3
10°	2243.4	2252.9	2247.2	2251.0	2247.2
11°	2230.0	2226.1	2226.1	2228.1	2226.1
12°	2197.4	2201.3	2199.3	2203.2	2208.9
13°	2180.2	2182.1	2174.5	2184.0	2184.0
14°	2153.4	2151.5	2155.3	2153.4	2157.2
15°	2124.7	2120.9	2119.0	2124.7	2130.4
16°	2103.6	2094.1	2088.3	2096.0	2103.6
17°	2073.0	2063.4	2055.8	2071.1	2073.0
18°	2042.4	2038.6	2019.4	2038.6	2048.1
19°	2017.5	2004.1	1986.9	2007.9	2019.4
20°	1985.0	1973.5	1962.0	1973.5	1990.7
22.5°	1891.2	1881.6	1872.0	1885.4	1895.0
25°	1762.9	1768.7	1776.3	1782.1	1780.1
27.5°	1581.1	1632.8	1680.6	1650.0	1609.8
30°	1313.1	1443.3	1561.9	1464.3	1362.9
32.5°	951.3	1173.4	1420.3	1217.4	960.9
35°	629.8	834.6	1251.8	855.6	652.7
37.5°	409.6	560.8	1045.1	562.8	428.8
40°	268.0	365.6	765.7	373.3	268.0
42.5°	164.6	231.6	465.1	241.2	164.6
45°	95.7	143.6	266.1	145.5	93.8
47.5°	44.0	78.5	151.2	76.6	45.9
50°	13.4	34.5	76.6	34.5	13.4
52.5°	5.7	9.6	36.4	9.6	5.7
55°	3.8	3.8	13.4	3.8	3.8
57.5°	3.8	1.9	3.8	3.8	3.8
60°	1.9	1.9	1.9	1.9	1.9
62.5°	1.9	1.9	1.9	1.9	1.9
65°	1.9	1.9	0.0	1.9	1.9
67.5°	1.9	0.0	0.0	0.0	1.9
70°	0.0	0.0	0.0	0.0	1.9
72.5°	0.0	0.0	0.0	0.0	1.9
75°	0.0	0.0	0.0	0.0	1.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
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



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Scaled Data Report





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

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77.5°	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



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