

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: P838659

Luminaire Tested: HCSQ650D010-HM64560830-61SQC

Issue Date: 5/21/2024



**Test Information**

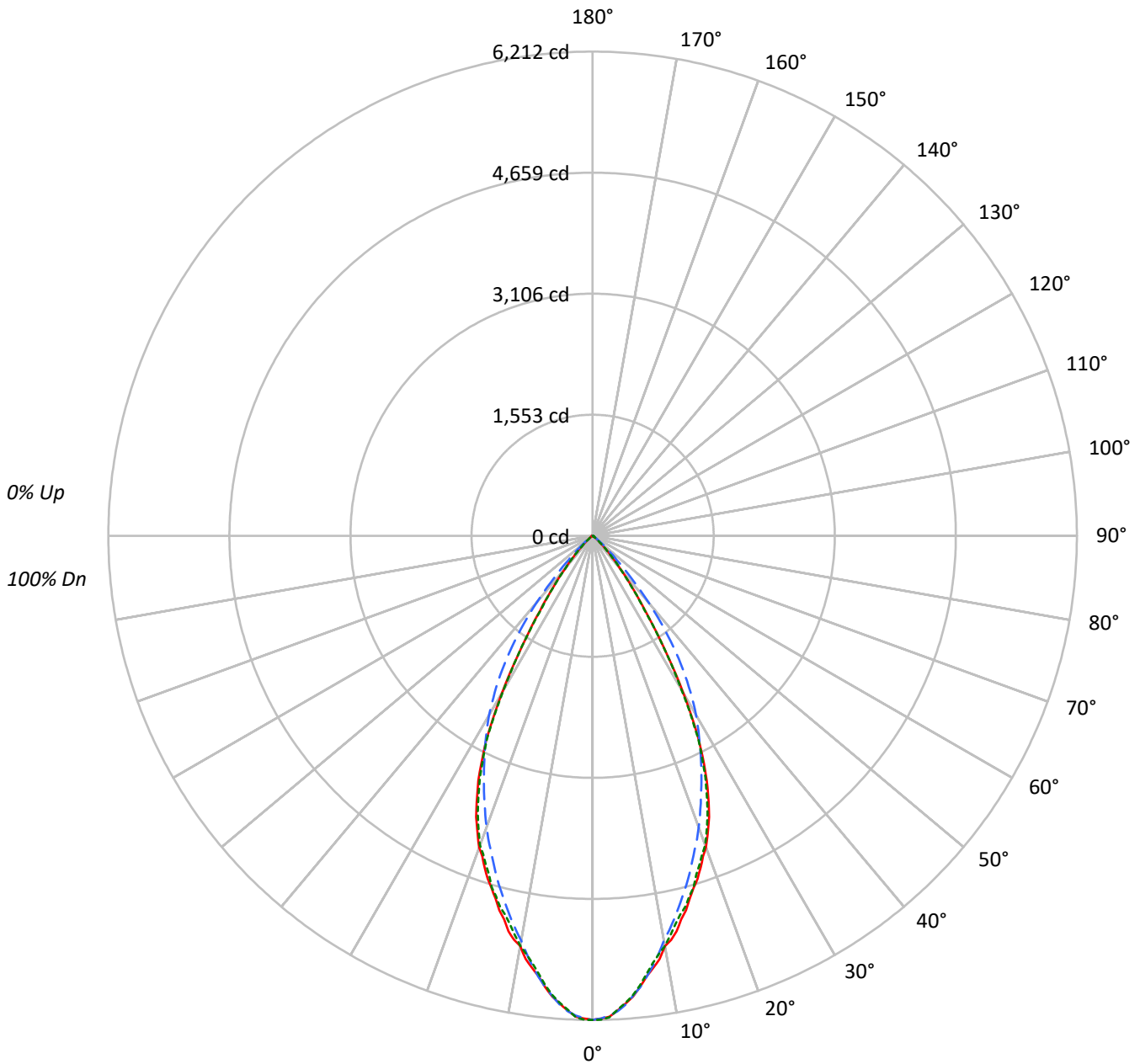
Test Method: LM-79-2019  
Report Number: P838659  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560830-61SQC  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4653.2 lumens  
Efficiency: N/A  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 0.82 / 0.81 / 0.85  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 49.7  
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									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	107	105	105	103	101	101	100	98	98	96	95	94																			
2	108	103	99	96	106	102	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	97	92	88	101	95	91	87	93	89	86	90	87	84	88	85	83	81																			
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	78	76																			
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71																			
6	88	80	74	70	87	79	73	69	77	72	69	76	72	68	75	71	68	66																			
7	84	75	69	65	83	74	69	65	73	68	64	72	67	64	71	67	64	62																			
8	80	71	65	61	79	70	65	61	69	64	60	68	64	60	67	63	60	59																			
9	76	67	61	57	75	66	61	57	65	60	57	65	60	57	64	60	56	55																			
10	73	63	58	54	72	63	57	54	62	57	54	61	57	53	61	56	53	52																			

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

	0°	45°	90°
0°	267475	267475	267475
5°	256572	256122	255764
10°	233683	230509	233499
15°	214760	206897	213463
20°	194895	182345	193562
25°	164715	156729	162449
30°	115332	131937	113368
35°	61949	101207	60745
40°	30671	62624	30441
45°	13390	26408	13140
50°	4307	9592	4307
55°	2177	3115	2027
60°	1429	1429	1429
65°	1060	1060	1060
70°	780	780	780
75°	682	682	682
80°	521	521	521
85°	1037	1037	1037

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 26408 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	545.5	11.7
10°-20°	1317.3	28.3
20°-30°	1521.7	32.7
30°-40°	950.3	20.4
40°-50°	264.0	5.7
50°-60°	36.9	0.8
60°-70°	10.9	0.2
70°-80°	4.6	0.1
80°-90°	2.0	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°	3384.5	72.7
0°-40°	4334.8	93.2
0°-60°	4635.7	99.6
0°-90°	4653.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4653.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6212	6212	6212	6212	6212	
5°	5936	5920	5926	5918	5918	547
15°	4818	4727	4642	4714	4789	1350
25°	3467	3366	3299	3363	3420	1549
35°	1179	1454	1926	1438	1156	783
45°	220	280	434	278	216	191
55°	29	29	42	29	27	29
65°	10	10	10	10	10	11
75°	4	4	4	4	4	4
85°	2	2	2	2	2	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6212.3	6212.3	6212.3	6212.3	6212.3
1°	6193.6	6193.6	6193.6	6210.2	6210.2
2°	6175.0	6170.8	6160.4	6172.9	6179.1
3°	6098.2	6106.5	6110.6	6104.4	6089.9
4°	6019.3	6011.0	6033.9	6019.3	6006.9
5°	5936.4	5919.8	5926.0	5917.7	5917.7
6°	5820.2	5840.9	5824.3	5809.8	5801.5
7°	5693.6	5710.2	5699.8	5679.1	5664.5
8°	5594.0	5583.6	5567.0	5562.9	5538.0
9°	5498.5	5461.2	5423.8	5430.1	5436.3
10°	5345.0	5349.1	5272.4	5330.5	5340.8
11°	5280.7	5257.9	5156.2	5203.9	5220.5
12°	5187.3	5114.7	5027.5	5067.0	5098.1
13°	5052.4	4977.7	4898.9	4959.1	4990.2
14°	4950.8	4865.7	4766.1	4842.9	4907.2
15°	4818.0	4726.7	4641.6	4714.2	4788.9
16°	4701.8	4596.0	4510.9	4581.4	4693.5
17°	4600.1	4469.4	4365.6	4440.3	4548.2
18°	4481.8	4330.4	4234.9	4313.8	4436.2
19°	4351.1	4197.6	4112.5	4176.8	4317.9
20°	4253.6	4081.4	3979.7	4041.9	4224.5
22.5°	3905.0	3724.5	3631.1	3705.8	3851.1
25°	3467.2	3365.5	3299.1	3363.4	3419.5
27.5°	2948.5	2948.5	2971.3	2944.3	2927.7
30°	2319.8	2487.8	2653.8	2479.5	2280.3
32.5°	1693.1	1962.9	2296.9	1998.1	1691.1
35°	1178.6	1454.5	1925.5	1437.9	1155.7
37.5°	819.6	1002.2	1518.8	1012.6	809.2
40°	545.7	672.3	1114.2	684.7	541.6
42.5°	356.9	444.0	720.0	446.1	348.6
45°	219.9	280.1	433.7	278.0	215.8
47.5°	128.6	166.0	253.1	168.1	126.6
50°	64.3	97.5	143.2	95.4	64.3
52.5°	37.3	51.9	78.8	49.8	37.3
55°	29.0	29.0	41.5	29.0	27.0
57.5°	22.8	22.8	22.8	22.8	20.7
60°	16.6	18.7	16.6	16.6	16.6
62.5°	14.5	14.5	12.4	14.5	12.4
65°	10.4	10.4	10.4	10.4	10.4
67.5°	8.3	8.3	8.3	8.3	8.3
70°	6.2	6.2	6.2	6.2	6.2
72.5°	4.1	6.2	4.1	6.2	6.2
75°	4.1	4.1	4.1	4.1	4.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	2.1	2.1	2.1	2.1	2.1
85°	2.1	2.1	2.1	2.1	2.1
87.5°	2.1	2.1	2.1	2.1	2.1
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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Scaled Data Report





77.5°	4.1	4.1	4.1	4.1	2.1
80°	2.1	2.1	2.1	2.1	2.1

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Scaled Data Report



(END OF REPORT)