

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: P837495

Luminaire Tested: HCSQ435D010-HM43040927-41SQLWW

Issue Date: 5/17/2024

**Test Information**

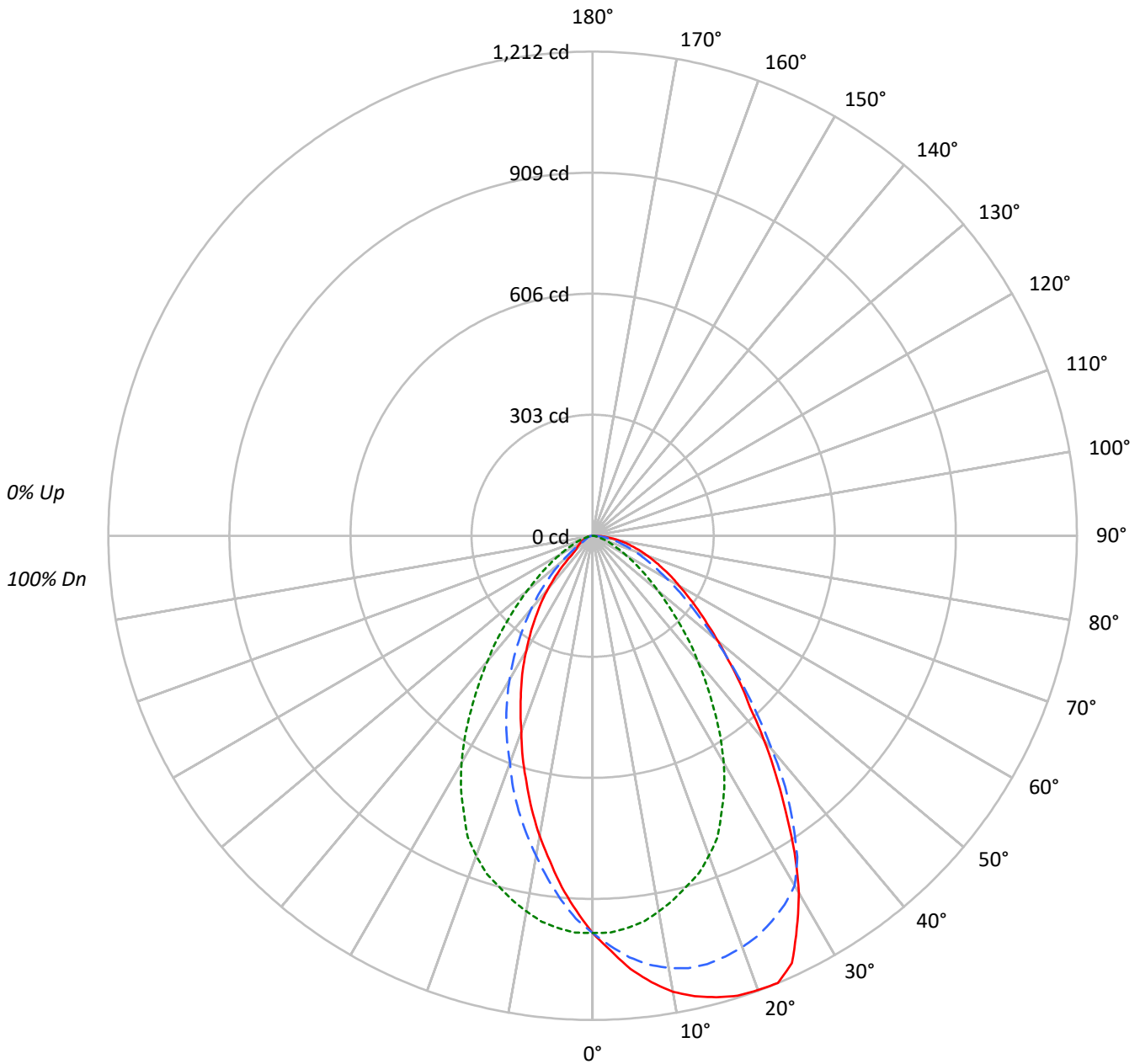
Test Method: LM-79-2019  
Report Number: P837495  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ435D010-HM43040927-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1608.3 lumens  
Efficiency: N/A  
Efficacy: 47.3 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): 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

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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°	96323	96323	96323	96323	96323
5°	105881	103002	95865	88873	85858
10°	114040	108079	93924	80053	75056
15°	119950	111315	91096	71569	64077
20°	124752	112969	87814	62371	53794
25°	126184	113667	81557	54728	45225
30°	115486	113115	73359	46535	37071
35°	99577	103244	62549	38199	29353
40°	84363	88283	51723	30136	21941
45°	71488	73228	41347	22414	14111
50°	61641	60149	32102	15086	8500
55°	54317	49554	24541	8344	7617
60°	48360	41540	18309	4650	6839
65°	44287	35553	13570	4195	6143
70°	41155	30760	9999	3994	6005
75°	38553	26912	6850	3706	5278
80°	36988	23598	4742	3961	4742
85°	36013	20341	3112	3112	3112

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 74392 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.2	5.8
10°-20°	256.7	16.0
20°-30°	358.9	22.3
30°-40°	350.8	21.8
40°-50°	254.6	15.8
50°-60°	153.5	9.5
60°-70°	86.3	5.4
70°-80°	42.7	2.7
80°-90°	11.7	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°	708.8	44.1
0°-40°	1059.6	65.9
0°-60°	1467.6	91.3
0°-90°	1608.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1608.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	994	994	994	994	994	
5°	1089	1059	986	914	883	106
15°	1196	1110	908	714	639	339
25°	1180	1063	763	512	423	532
35°	842	873	529	323	248	527
45°	522	534	302	164	103	405
55°	322	293	145	49	45	289
65°	193	155	59	18	27	194
75°	103	72	18	10	14	111
85°	32	18	3	3	3	36
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°	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3
2.5°	1039.4	1036.6	1028.1	1011.2	994.3	974.5	959.0	947.7	939.3
5°	1088.8	1083.1	1059.2	1023.9	985.8	947.7	913.9	894.2	882.9
7.5°	1126.9	1117.0	1083.1	1033.8	974.5	916.7	864.5	833.5	820.8
10°	1159.3	1142.4	1098.7	1032.4	954.8	878.6	813.8	777.1	763.0
12.5°	1180.5	1162.1	1108.5	1031.0	933.6	840.6	764.4	716.5	702.3
15°	1196.0	1173.4	1109.9	1019.7	908.3	801.1	713.6	657.2	638.9
17.5°	1207.2	1176.2	1104.3	1007.0	885.7	760.2	661.4	600.8	582.5
20°	1210.1	1176.2	1095.8	988.6	851.8	719.3	605.0	544.4	521.8
22.5°	1211.5	1172.0	1083.1	966.1	816.6	672.7	558.5	495.0	471.1
25°	1180.5	1157.9	1063.4	928.0	763.0	622.0	512.0	442.8	423.1
27.5°	1107.1	1105.7	1040.8	877.2	713.6	567.0	464.0	397.7	379.4
30°	1032.4	1033.8	1011.2	820.8	655.8	514.8	416.0	351.2	331.4
32.5°	940.7	954.8	953.4	757.4	593.8	465.4	369.5	308.9	289.1
35°	842.0	867.4	873.0	685.4	528.9	409.0	323.0	268.0	248.2
37.5°	753.1	778.5	791.2	622.0	468.2	359.6	279.2	231.3	211.6
40°	667.1	688.2	698.1	548.6	409.0	308.9	238.3	193.2	173.5
42.5°	583.9	614.9	612.1	486.6	356.8	268.0	201.7	156.5	136.8
45°	521.8	543.0	534.5	421.7	301.8	225.7	163.6	121.3	103.0
47.5°	459.8	475.3	462.6	366.7	255.3	186.2	132.6	88.9	69.1
50°	409.0	416.0	399.1	311.7	213.0	152.3	100.1	59.2	56.4
52.5°	361.0	365.3	341.3	265.1	176.3	122.7	73.3	46.5	49.4
55°	321.6	320.1	293.4	224.2	145.3	94.5	49.4	42.3	45.1
57.5°	283.5	279.2	252.5	186.2	118.5	73.3	29.6	36.7	39.5
60°	249.6	245.4	214.4	153.7	94.5	55.0	24.0	32.4	35.3
62.5°	222.8	213.0	181.9	126.9	76.2	39.5	21.2	28.2	31.0
65°	193.2	184.8	155.1	103.0	59.2	28.2	18.3	24.0	26.8
67.5°	169.2	159.4	131.2	84.6	48.0	19.7	16.9	21.2	24.0
70°	145.3	136.8	108.6	67.7	35.3	12.7	14.1	18.3	21.2
72.5°	125.5	115.6	90.3	53.6	26.8	9.9	12.7	15.5	16.9
75°	103.0	94.5	71.9	40.9	18.3	8.5	9.9	12.7	14.1
77.5°	86.0	77.6	56.4	31.0	12.7	7.1	8.5	11.3	11.3
80°	66.3	59.2	42.3	21.2	8.5	4.2	7.1	8.5	8.5
82.5°	48.0	42.3	29.6	14.1	4.2	4.2	4.2	5.6	5.6
85°	32.4	28.2	18.3	8.5	2.8	2.8	2.8	2.8	2.8
87.5°	18.3	14.1	8.5	2.8	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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