

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: P837362

Luminaire Tested: HCSQ420D010-HM40525830-41SQMW

Issue Date: 5/17/2024



**Test Information**

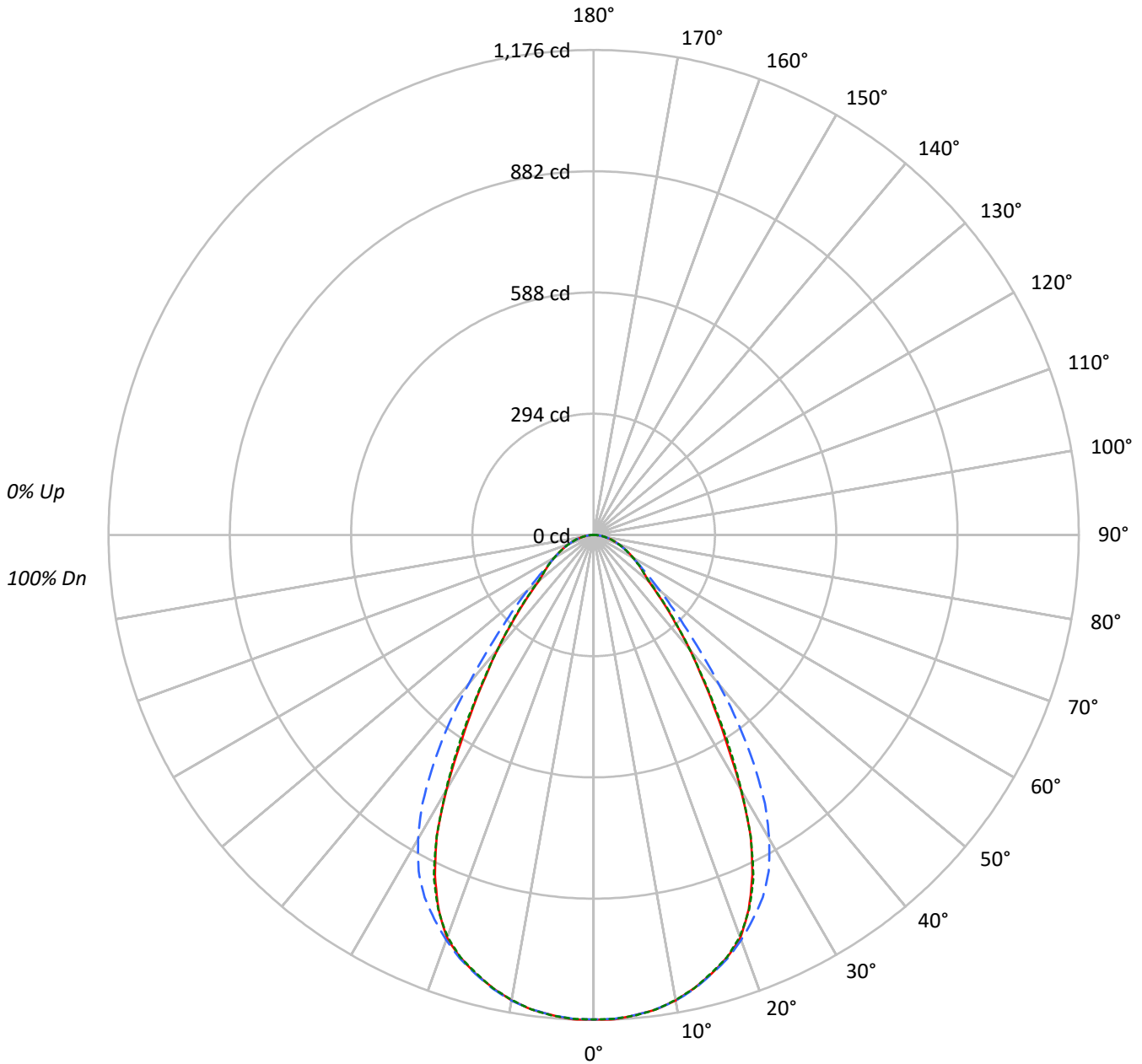
Test Method: LM-79-2019  
Report Number: P837362  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ420D010-HM40525830-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1705.3 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 20  
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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79																			
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71																			
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64																			
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41																			
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38																			

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

	0°	45°	90°
0°	113838	113838	113838
5°	113651	113651	113738
10°	112722	112811	112634
15°	110523	110623	110342
20°	107216	107773	106835
25°	97302	103641	97986
30°	79870	95195	80172
35°	60042	79910	60905
40°	45729	59576	45615
45°	34155	42279	34771
50°	26013	31514	26555
55°	23443	24676	23443
60°	21409	21235	21235
65°	19461	19461	19461
70°	18099	17844	17844
75°	16731	16394	16731
80°	15286	14784	15286
85°	13227	13227	13227

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 42279 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.8	6.5
10°-20°	310.2	18.2
20°-30°	426.7	25.0
30°-40°	363.2	21.3
40°-50°	219.4	12.9
50°-60°	129.3	7.6
60°-70°	84.8	5.0
70°-80°	47.0	2.8
80°-90°	13.8	0.8
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°	847.8	49.7
0°-40°	1211.0	71.0
0°-60°	1559.7	91.5
0°-90°	1705.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1705.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1175	1175	1175	1175	1175	
5°	1169	1170	1169	1168	1170	111
15°	1102	1105	1103	1102	1100	310
25°	910	939	970	940	917	411
35°	508	559	676	574	515	321
45°	249	276	309	278	254	196
55°	139	142	146	142	139	125
65°	85	86	85	85	85	85
75°	45	45	44	44	45	47
85°	12	12	12	12	12	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1175.1	1175.1	1175.1	1175.1	1175.1
2.5°	1176.0	1173.3	1174.2	1173.3	1174.2
5°	1168.7	1169.6	1168.7	1167.8	1169.6
7.5°	1160.5	1159.6	1159.6	1158.6	1160.5
10°	1145.9	1144.0	1146.8	1145.0	1145.0
12.5°	1125.8	1128.5	1127.6	1127.6	1125.8
15°	1102.0	1104.8	1103.0	1102.0	1100.2
17.5°	1074.6	1076.5	1077.4	1073.7	1073.7
20°	1040.0	1043.6	1045.4	1039.0	1036.3
22.5°	982.4	998.9	1008.9	998.0	984.3
25°	910.3	938.6	969.6	940.4	916.7
27.5°	823.6	863.7	919.4	870.1	823.6
30°	714.0	773.3	851.0	779.7	716.7
32.5°	600.8	663.8	772.4	674.7	613.6
35°	507.7	558.8	675.7	574.3	515.0
37.5°	427.3	471.1	574.3	481.2	431.9
40°	361.6	396.3	471.1	400.8	360.7
42.5°	298.6	331.4	381.7	336.0	302.2
45°	249.3	275.7	308.6	278.5	253.8
47.5°	207.3	229.2	252.9	229.2	210.0
50°	172.6	189.9	209.1	189.9	176.2
52.5°	154.3	159.8	172.6	160.7	154.3
55°	138.8	141.5	146.1	141.5	138.8
57.5°	124.2	126.0	125.1	125.1	124.2
60°	110.5	111.4	109.6	110.5	109.6
62.5°	97.7	97.7	95.9	97.7	96.8
65°	84.9	85.8	84.9	84.9	84.9
67.5°	74.0	74.0	73.0	74.0	74.0
70°	63.9	63.9	63.0	63.9	63.0
72.5°	53.9	53.9	53.0	53.0	53.0
75°	44.7	44.7	43.8	43.8	44.7
77.5°	35.6	35.6	34.7	35.6	35.6
80°	27.4	27.4	26.5	27.4	27.4
82.5°	19.2	19.2	19.2	20.1	20.1
85°	11.9	11.9	11.9	11.9	11.9
87.5°	5.5	5.5	5.5	5.5	6.4
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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