

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: P837341

Luminaire Tested: HCSQ415D010-HM40525930-41SQMB

Issue Date: 5/17/2024



**Test Information**

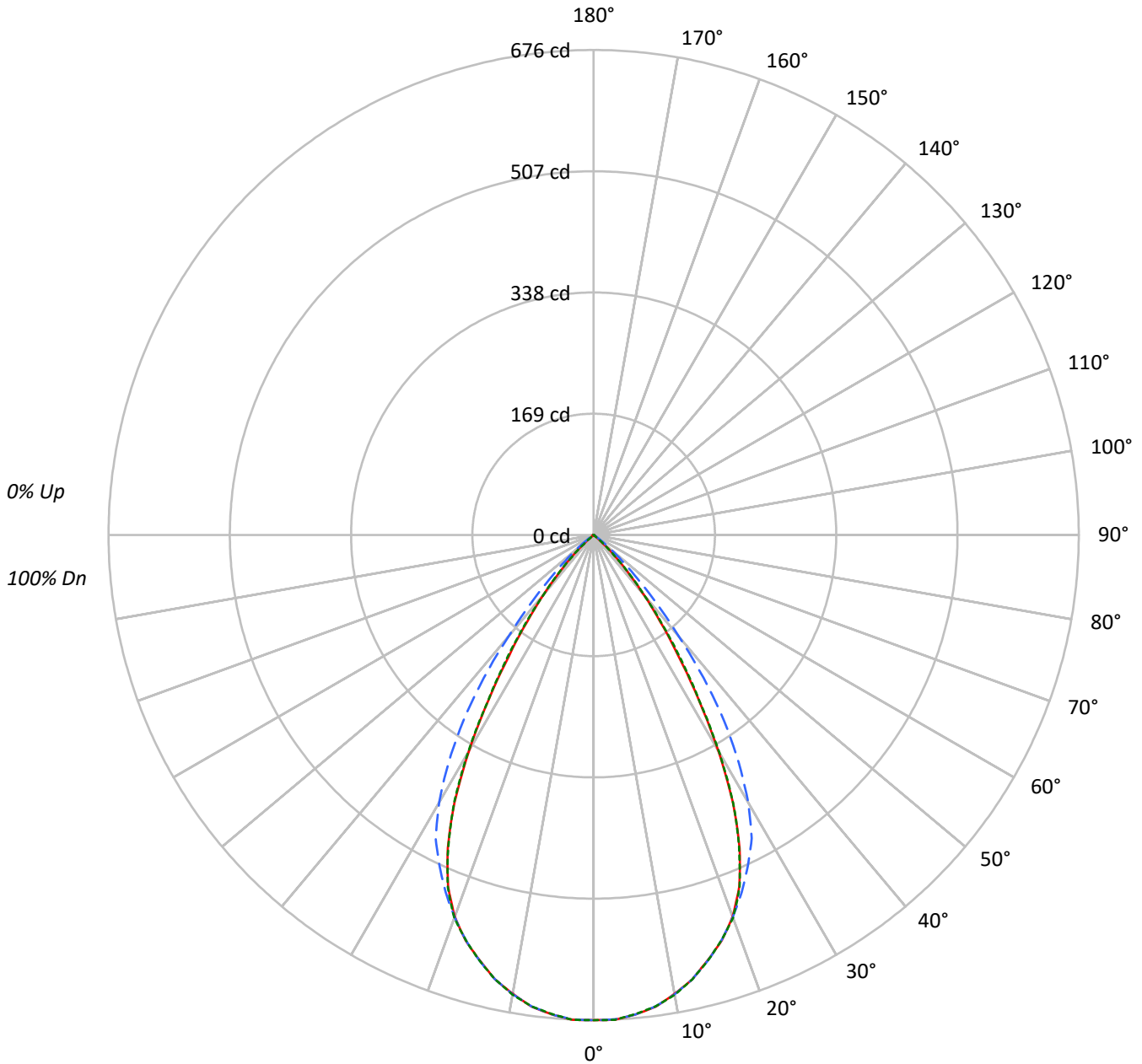
Test Method: LM-79-2019  
Report Number: P837341  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ415D010-HM40525930-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 675.7 lumens  
Efficiency: N/A  
Efficacy: 48.3 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 14  
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				
RW	70	50	30	10	70	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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93		
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87		
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80		
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74		
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69		
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64		
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60		
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56		
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52		
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49		

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

	0°	45°	90°
0°	65536	65536	65536
5°	65242	65242	65174
10°	63891	63950	64019
15°	61550	61620	61620
20°	58361	58423	58546
25°	51446	54332	51243
30°	38816	48157	39174
35°	24339	37478	25155
40°	13734	23332	13734
45°	5754	11782	5672
50°	467	4536	573
55°	220	946	220
60°	252	116	252
65°	138	138	138
70°	170	170	170
75°	225	225	225
80°	0	335	335
85°	0	667	667

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 11782 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.4	9.4
10°-20°	172.5	25.5
20°-30°	223.8	33.1
30°-40°	159.1	23.5
40°-50°	51.6	7.6
50°-60°	3.7	0.6
60°-70°	0.6	0.1
70°-80°	0.6	0.1
80°-90°	0.4	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°	459.6	68.0
0°-40°	618.7	91.6
0°-60°	674.0	99.8
0°-90°	675.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	675.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	676	676	676	676	676	
5°	671	672	671	671	670	63
15°	614	616	614	616	614	172
25°	481	494	508	496	479	215
35°	206	244	317	246	213	132
45°	42	60	86	61	41	35
55°	1	1	6	1	1	1
65°	1	1	1	1	1	1
75°	1	1	1	1	1	1
85°	0	0	1	1	1	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	676.5	676.5	676.5	676.5	676.5
2.5°	676.5	676.5	675.9	675.9	676.5
5°	670.9	671.5	670.9	670.9	670.2
7.5°	663.3	663.3	662.7	662.7	662.7
10°	649.5	650.1	650.1	650.1	650.8
12.5°	634.5	634.5	634.5	634.5	634.5
15°	613.7	615.6	614.4	615.6	614.4
17.5°	593.0	593.0	592.4	593.7	592.4
20°	566.1	566.1	566.7	567.9	567.9
22.5°	530.3	536.6	539.1	537.8	531.5
25°	481.3	493.9	508.3	496.4	479.4
27.5°	419.8	443.7	476.9	447.4	421.1
30°	347.0	382.8	430.5	384.1	350.2
32.5°	271.7	313.1	376.5	316.3	274.2
35°	205.8	243.5	316.9	246.0	212.7
37.5°	151.9	186.4	251.6	187.6	156.3
40°	108.6	133.7	184.5	136.2	108.6
42.5°	69.7	94.8	129.9	95.4	72.8
45°	42.0	59.6	86.0	60.9	41.4
47.5°	18.8	33.9	53.3	35.1	18.8
50°	3.1	13.8	30.1	14.4	3.8
52.5°	1.9	2.5	14.4	2.5	1.9
55°	1.3	1.3	5.6	1.3	1.3
57.5°	1.3	1.3	1.3	1.3	1.3
60°	1.3	0.6	0.6	0.6	1.3
62.5°	0.6	0.6	0.6	0.6	0.6
65°	0.6	0.6	0.6	0.6	0.6
67.5°	0.6	0.6	0.6	0.6	0.6
70°	0.6	0.6	0.6	0.6	0.6
72.5°	0.6	0.6	0.6	0.6	0.6
75°	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6
80°	0.0	0.6	0.6	0.6	0.6
82.5°	0.0	0.6	0.6	0.6	0.6
85°	0.0	0.0	0.6	0.6	0.6
87.5°	0.0	0.0	0.6	0.6	0.6
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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(END OF REPORT)