

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: P837471

Luminaire Tested: HCSQ430D010-HM43040940-41SQMB

Issue Date: 5/17/2024



**Test Information**

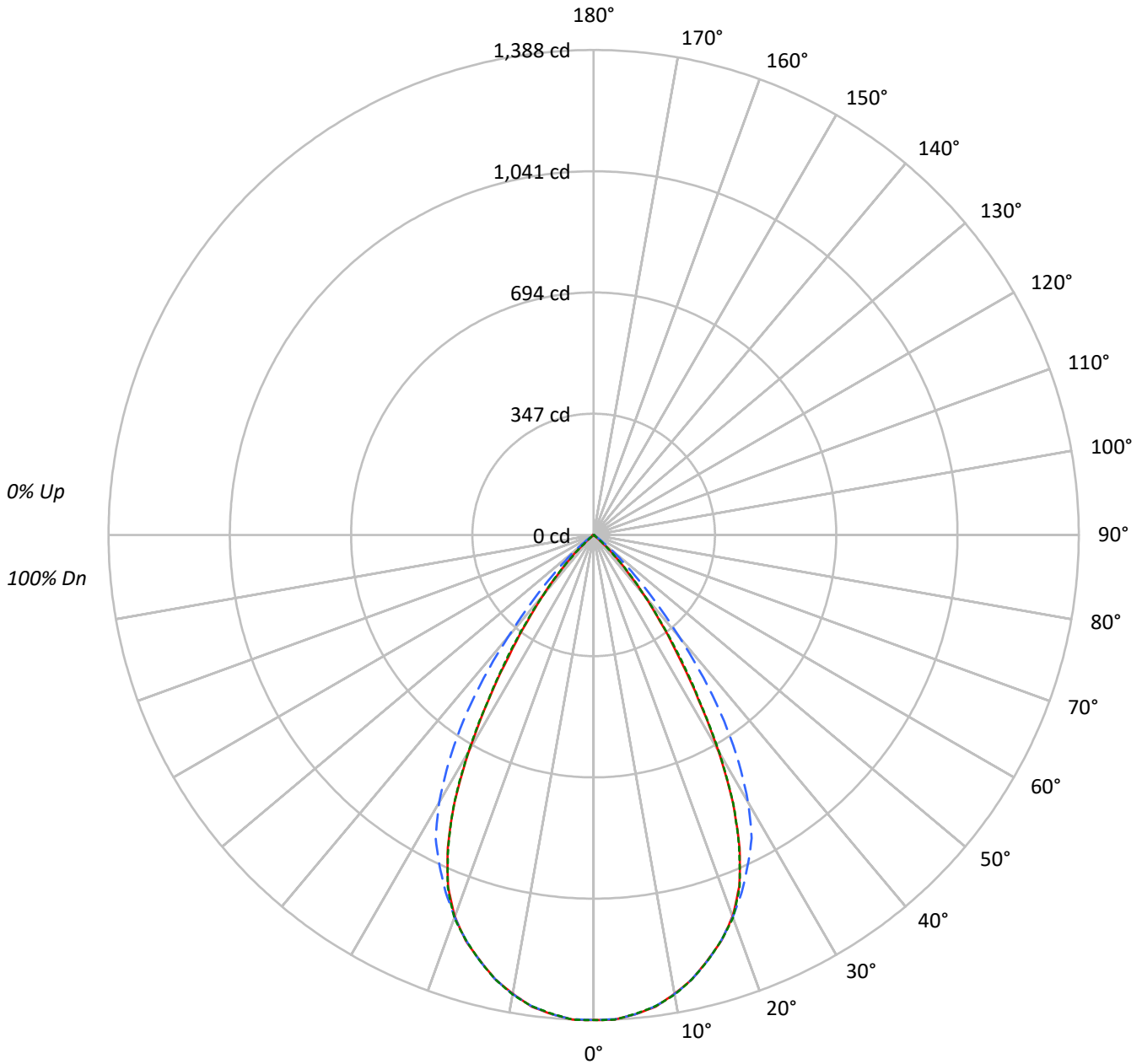
Test Method: LM-79-2019  
Report Number: P837471  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ430D010-HM43040940-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1387.1 lumens  
Efficiency: N/A  
Efficacy: 49.2 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): 28.2  
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					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87					87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80					80			
4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74					74			
5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69					69			
6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64					64			
7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60					60			
8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56					56			
9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52					52			
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49					49			

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

	0°	45°	90°
0°	134512	134512	134512
5°	133907	133907	133781
10°	131147	131265	131393
15°	126339	126469	126469
20°	119773	119907	120175
25°	105608	111519	105191
30°	79679	98841	80395
35°	49966	76930	51645
40°	28176	47891	28176
45°	11823	24181	11645
50°	965	9314	1160
55°	439	1959	439
60°	504	252	504
65°	298	298	298
70°	368	368	368
75°	487	487	487
80°	0	725	725
85°	0	1445	1445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 24181 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.1	9.4
10°-20°	354.0	25.5
20°-30°	459.3	33.1
30°-40°	326.5	23.5
40°-50°	105.9	7.6
50°-60°	7.7	0.6
60°-70°	1.3	0.1
70°-80°	1.4	0.1
80°-90°	0.9	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°	943.4	68.0
0°-40°	1269.9	91.6
0°-60°	1383.5	99.7
0°-90°	1387.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1387.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1377	1378	1377	1377	1376	130
15°	1260	1264	1261	1264	1261	354
25°	988	1014	1043	1019	984	442
35°	422	500	650	505	437	270
45°	86	122	176	125	85	72
55°	3	3	12	3	3	3
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°	1388.5	1388.5	1388.5	1388.5	1388.5
2.5°	1388.5	1388.5	1387.3	1387.3	1388.5
5°	1377.0	1378.2	1377.0	1377.0	1375.7
7.5°	1361.5	1361.5	1360.2	1360.2	1360.2
10°	1333.2	1334.4	1334.4	1334.4	1335.7
12.5°	1302.2	1302.2	1302.2	1302.2	1302.2
15°	1259.7	1263.6	1261.0	1263.6	1261.0
17.5°	1217.2	1217.2	1215.9	1218.5	1215.9
20°	1161.8	1161.8	1163.1	1165.7	1165.7
22.5°	1088.4	1101.3	1106.5	1103.9	1091.0
25°	988.0	1013.7	1043.3	1018.9	984.1
27.5°	861.7	910.7	978.9	918.4	864.3
30°	712.3	785.7	883.6	788.3	718.7
32.5°	557.7	642.7	772.8	649.2	562.9
35°	422.5	499.8	650.5	504.9	436.7
37.5°	311.7	382.6	516.5	385.1	320.7
40°	222.8	274.4	378.7	279.5	222.8
42.5°	143.0	194.5	266.6	195.8	149.4
45°	86.3	122.4	176.5	124.9	85.0
47.5°	38.6	69.6	109.5	72.1	38.6
50°	6.4	28.3	61.8	29.6	7.7
52.5°	3.9	5.2	29.6	5.2	3.9
55°	2.6	2.6	11.6	2.6	2.6
57.5°	2.6	2.6	2.6	2.6	2.6
60°	2.6	1.3	1.3	1.3	2.6
62.5°	1.3	1.3	1.3	1.3	1.3
65°	1.3	1.3	1.3	1.3	1.3
67.5°	1.3	1.3	1.3	1.3	1.3
70°	1.3	1.3	1.3	1.3	1.3
72.5°	1.3	1.3	1.3	1.3	1.3
75°	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3
80°	0.0	1.3	1.3	1.3	1.3
82.5°	0.0	1.3	1.3	1.3	1.3
85°	0.0	0.0	1.3	1.3	1.3
87.5°	0.0	0.0	1.3	1.3	1.3
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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