

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: P837472

Luminaire Tested: HCSQ430D010-HM43040940-41SQMW

Issue Date: 5/17/2024



**Test Information**

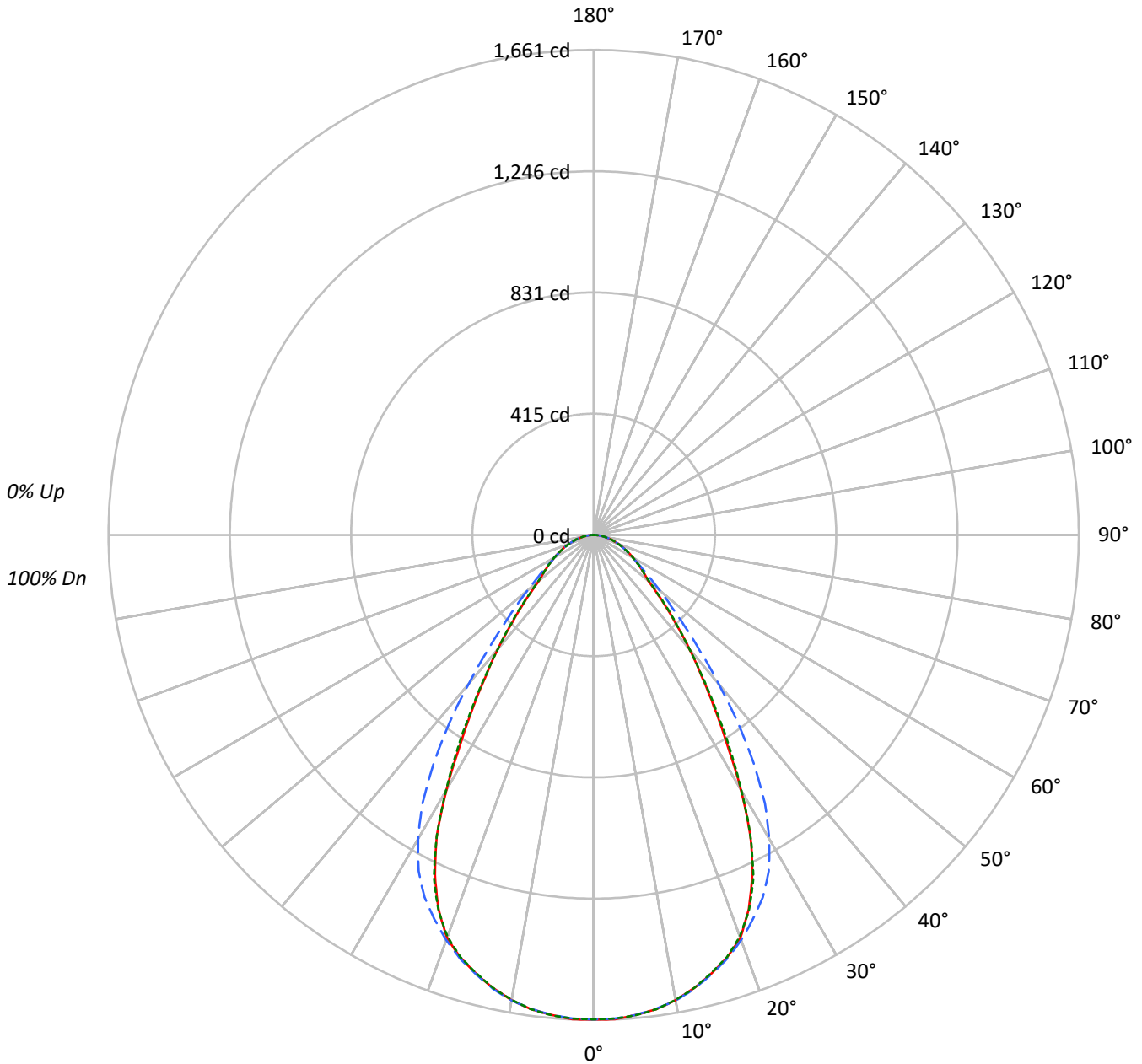
Test Method: LM-79-2019  
Report Number: P837472  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ430D010-HM43040940-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2408.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 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): 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										
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								
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°	160745	160745	160745
5°	160474	160474	160601
10°	159162	159290	159035
15°	156066	156196	155815
20°	151392	152185	150856
25°	137397	146354	138359
30°	112779	134414	113216
35°	84771	112835	85989
40°	64559	84135	64407
45°	48225	59706	49102
50°	36728	44490	37497
55°	33104	34843	33104
60°	30225	29973	29973
65°	27484	27484	27484
70°	25549	25209	25209
75°	23656	23169	23656
80°	21590	20865	21590
85°	18674	18674	18674

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 59706 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.5	6.5
10°-20°	438.1	18.2
20°-30°	602.5	25.0
30°-40°	512.9	21.3
40°-50°	309.8	12.9
50°-60°	182.6	7.6
60°-70°	119.8	5.0
70°-80°	66.4	2.8
80°-90°	19.4	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°	1197.1	49.7
0°-40°	1710.0	71.0
0°-60°	2202.4	91.5
0°-90°	2408.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2408.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1659	1659	1659	1659	1659	
5°	1650	1652	1650	1649	1652	157
15°	1556	1560	1557	1556	1554	438
25°	1285	1325	1369	1328	1294	581
35°	717	789	954	811	727	454
45°	352	389	436	393	358	277
55°	196	200	206	200	196	176
65°	120	121	120	120	120	120
75°	63	63	62	62	63	67
85°	17	17	17	17	17	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1659.3	1659.3	1659.3	1659.3	1659.3
2.5°	1660.6	1656.7	1658.0	1656.7	1658.0
5°	1650.2	1651.5	1650.2	1649.0	1651.5
7.5°	1638.6	1637.4	1637.4	1636.1	1638.6
10°	1618.0	1615.4	1619.3	1616.7	1616.7
12.5°	1589.7	1593.5	1592.2	1592.2	1589.7
15°	1556.1	1560.0	1557.4	1556.1	1553.6
17.5°	1517.5	1520.0	1521.3	1516.2	1516.2
20°	1468.5	1473.6	1476.2	1467.2	1463.3
22.5°	1387.2	1410.4	1424.6	1409.2	1389.8
25°	1285.4	1325.4	1369.2	1327.9	1294.4
27.5°	1162.9	1219.6	1298.3	1228.7	1162.9
30°	1008.2	1092.0	1201.6	1101.0	1012.1
32.5°	848.3	937.3	1090.7	952.8	866.4
35°	716.8	789.0	954.1	810.9	727.1
37.5°	603.4	665.3	810.9	679.4	609.8
40°	510.5	559.5	665.3	566.0	509.3
42.5°	421.6	468.0	538.9	474.4	426.7
45°	352.0	389.4	435.8	393.2	358.4
47.5°	292.7	323.6	357.1	323.6	296.5
50°	243.7	268.2	295.2	268.2	248.8
52.5°	217.9	225.6	243.7	226.9	217.9
55°	196.0	199.8	206.3	199.8	196.0
57.5°	175.3	177.9	176.6	176.6	175.3
60°	156.0	157.3	154.7	156.0	154.7
62.5°	138.0	138.0	135.4	138.0	136.7
65°	119.9	121.2	119.9	119.9	119.9
67.5°	104.4	104.4	103.1	104.4	104.4
70°	90.2	90.2	89.0	90.2	89.0
72.5°	76.1	76.1	74.8	74.8	74.8
75°	63.2	63.2	61.9	61.9	63.2
77.5°	50.3	50.3	49.0	50.3	50.3
80°	38.7	38.7	37.4	38.7	38.7
82.5°	27.1	27.1	27.1	28.4	28.4
85°	16.8	16.8	16.8	16.8	16.8
87.5°	7.7	7.7	7.7	7.7	9.0
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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