

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: P837487

Luminaire Tested: HCSQ435D010-HM43040835-41SQMW

Issue Date: 5/17/2024

**Test Information**

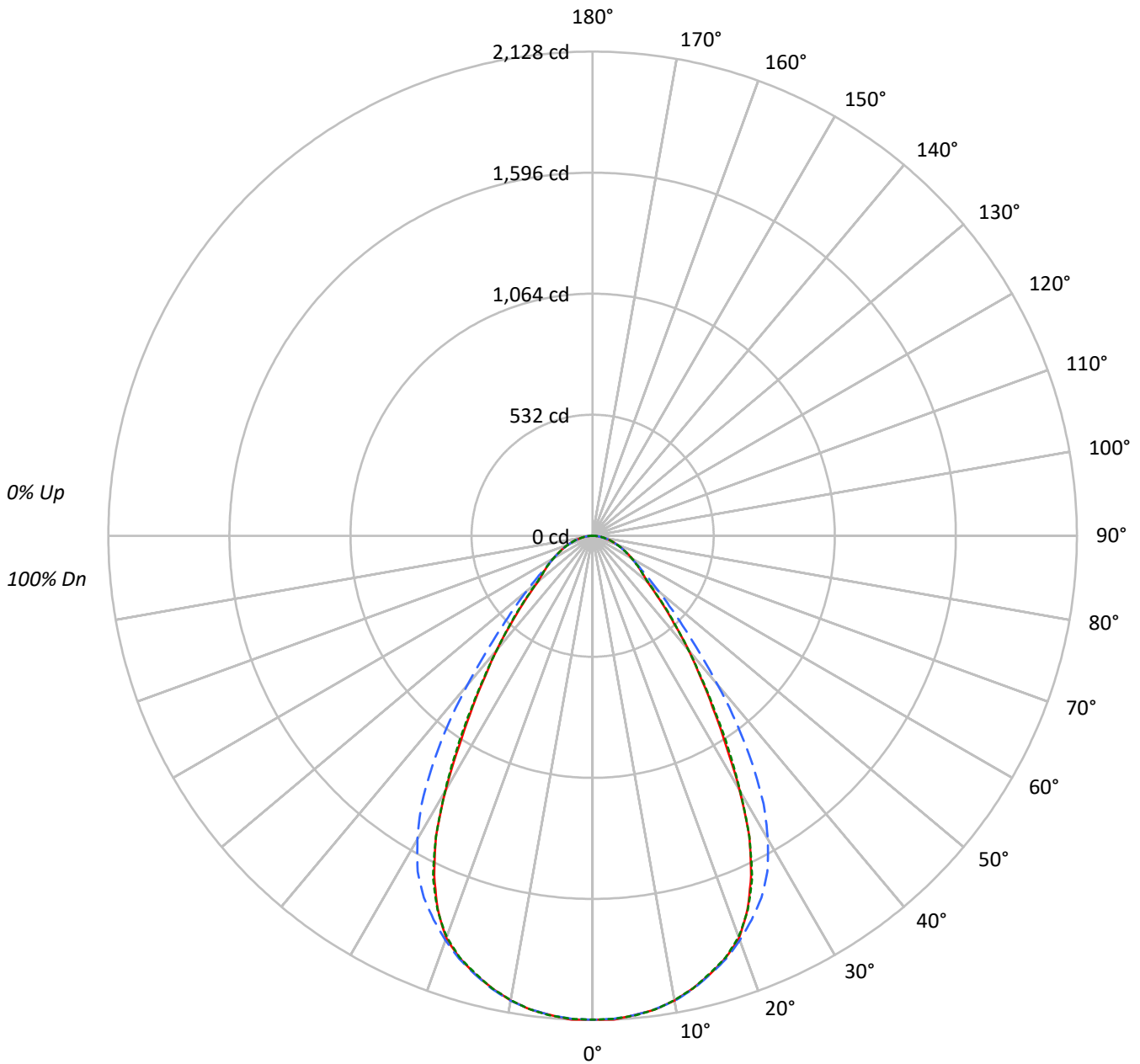
Test Method: LM-79-2019  
Report Number: P837487  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ435D010-HM43040835-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3086.0 lumens  
Efficiency: N/A  
Efficacy: 90.8 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): 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	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°	206006	206006	206006
5°	205664	205664	205830
10°	203980	204147	203822
15°	200014	200184	199683
20°	194010	195041	193330
25°	176080	187560	177320
30°	144537	172256	145085
35°	108648	144600	110209
40°	82744	107821	82542
45°	61802	76516	62925
50°	47067	57029	48062
55°	42410	44656	42410
60°	38731	38421	38421
65°	35232	35232	35232
70°	32771	32290	32290
75°	30318	29682	30318
80°	27671	26723	27671
85°	23898	23898	23898

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 76516 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	200.6	6.5
10°-20°	561.4	18.2
20°-30°	772.2	25.0
30°-40°	657.3	21.3
40°-50°	397.0	12.9
50°-60°	234.0	7.6
60°-70°	153.5	5.0
70°-80°	85.1	2.8
80°-90°	24.9	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°	1534.2	49.7
0°-40°	2191.5	71.0
0°-60°	2822.5	91.5
0°-90°	3086.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3086.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2126	2126	2126	2126	2126	
5°	2115	2117	2115	2113	2117	201
15°	1994	1999	1996	1994	1991	561
25°	1647	1698	1755	1702	1659	745
35°	919	1011	1223	1039	932	582
45°	451	499	558	504	459	355
55°	251	256	264	256	251	226
65°	154	155	154	154	154	154
75°	81	81	79	79	81	86
85°	22	22	22	22	22	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2126.5	2126.5	2126.5	2126.5	2126.5
2.5°	2128.1	2123.2	2124.8	2123.2	2124.8
5°	2114.9	2116.6	2114.9	2113.3	2116.6
7.5°	2100.1	2098.4	2098.4	2096.7	2100.1
10°	2073.6	2070.3	2075.3	2072.0	2072.0
12.5°	2037.3	2042.2	2040.6	2040.6	2037.3
15°	1994.3	1999.3	1996.0	1994.3	1991.0
17.5°	1944.7	1948.0	1949.7	1943.1	1943.1
20°	1881.9	1888.6	1891.9	1880.3	1875.3
22.5°	1777.9	1807.6	1825.8	1805.9	1781.2
25°	1647.3	1698.5	1754.7	1701.9	1658.9
27.5°	1490.4	1563.1	1663.8	1574.6	1490.4
30°	1292.1	1399.5	1539.9	1411.0	1297.0
32.5°	1087.2	1201.2	1397.8	1221.0	1110.3
35°	918.7	1011.2	1222.7	1039.3	931.9
37.5°	773.3	852.6	1039.3	870.8	781.5
40°	654.3	717.1	852.6	725.4	652.7
42.5°	540.3	599.8	690.7	608.0	546.9
45°	451.1	499.0	558.5	503.9	459.3
47.5°	375.1	414.7	457.7	414.7	380.0
50°	312.3	343.7	378.4	343.7	318.9
52.5°	279.2	289.1	312.3	290.8	279.2
55°	251.1	256.1	264.4	256.1	251.1
57.5°	224.7	228.0	226.4	226.4	224.7
60°	199.9	201.6	198.3	199.9	198.3
62.5°	176.8	176.8	173.5	176.8	175.1
65°	153.7	155.3	153.7	153.7	153.7
67.5°	133.8	133.8	132.2	133.8	133.8
70°	115.7	115.7	114.0	115.7	114.0
72.5°	97.5	97.5	95.8	95.8	95.8
75°	81.0	81.0	79.3	79.3	81.0
77.5°	64.4	64.4	62.8	64.4	64.4
80°	49.6	49.6	47.9	49.6	49.6
82.5°	34.7	34.7	34.7	36.4	36.4
85°	21.5	21.5	21.5	21.5	21.5
87.5°	9.9	9.9	9.9	9.9	11.6
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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