

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

Report Number: P887114

Luminaire Tested: ML412LSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-2700K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887114  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-52)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-2700K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, METALLIC SILVER TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 787.7 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.64  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

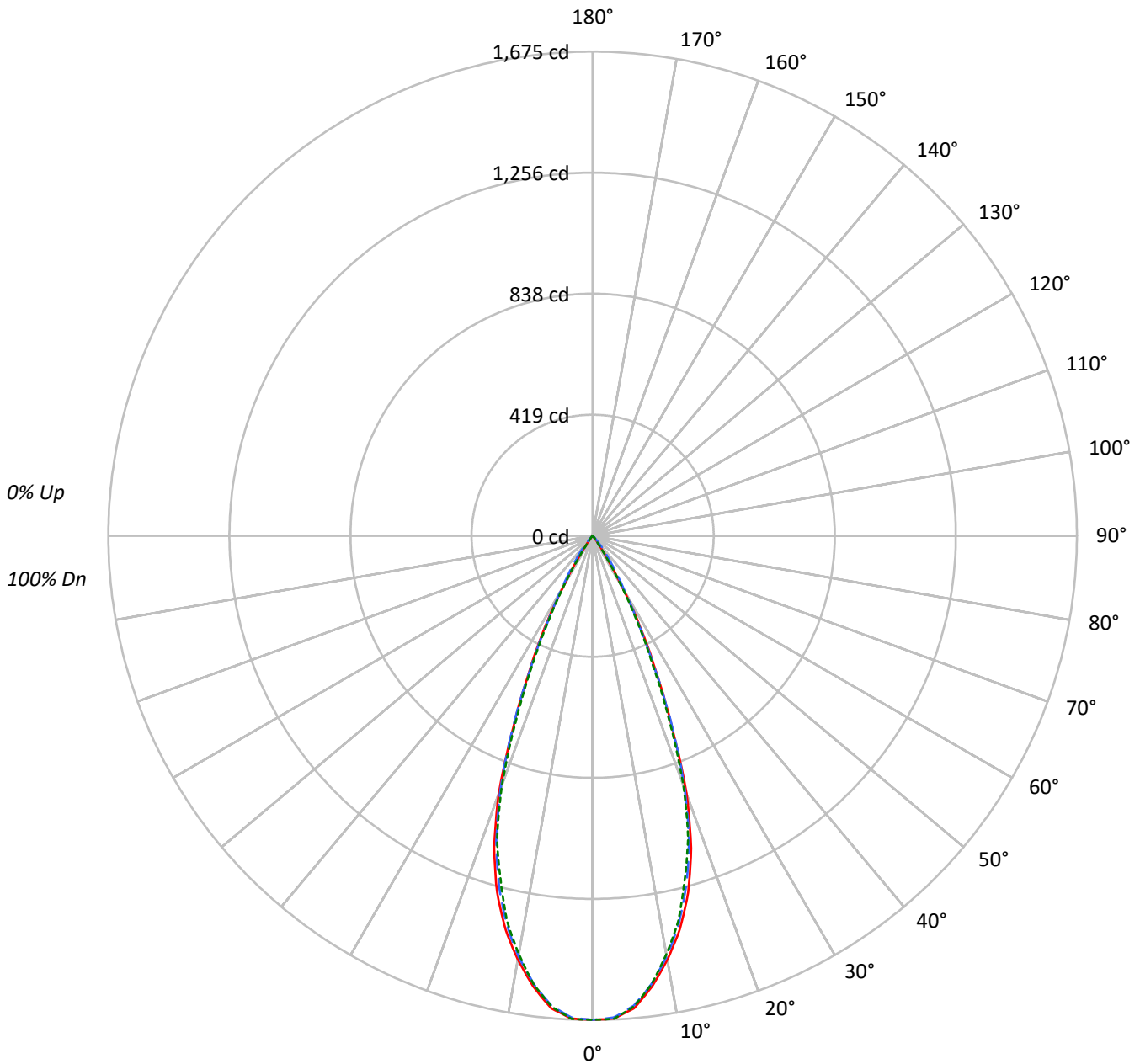
Input Watts (W): 9.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95																			
2	110	106	103	100	108	104	101	99	101	99	97	98	96	94	96	94	93	91																			
3	106	101	96	93	104	99	95	92	97	94	91	94	92	90	92	90	88	87																			
4	102	96	91	88	100	95	90	87	92	89	86	91	88	85	89	86	84	83																			
5	98	91	86	83	96	90	86	83	89	85	82	87	84	81	86	83	80	79																			
6	94	87	82	79	93	86	82	78	85	81	78	84	80	77	82	79	77	76																			
7	91	83	78	75	90	83	78	75	82	77	74	80	77	74	79	76	74	73																			
8	88	80	75	72	87	79	75	72	78	74	71	77	74	71	77	73	71	70																			
9	84	77	72	69	84	76	72	68	75	71	68	75	71	68	74	70	68	67																			
10	82	74	69	66	81	73	69	66	73	68	66	72	68	65	71	68	65	64																			

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

	0°	45°	90°
0°	162237	162237	162237
5°	159551	158705	158948
10°	146463	145302	144584
15°	128064	125526	123460
20°	97886	95876	94495
25°	55508	54845	52537
30°	22853	25102	21701
35°	4565	11507	4021
40°	911	4161	911
45°	356	918	288
50°	226	316	226
55°	169	169	169
60°	194	194	97
65°	115	115	115
70°	142	142	142
75°	187	187	187
80°	0	279	279
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 918 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.0	19.2
10°-20°	343.0	43.5
20°-30°	237.9	30.2
30°-40°	49.7	6.3
40°-50°	4.1	0.5
50°-60°	1.0	0.1
60°-70°	0.6	0.1
70°-80°	0.5	0.1
80°-90°	0.1	0.0
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°	731.8	92.9
0°-40°	781.4	99.2
0°-60°	786.5	99.9
0°-90°	787.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	787.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1641	1637	1632	1632	1634	151
15°	1277	1271	1252	1239	1231	348
25°	519	519	513	501	492	241
35°	39	60	97	56	34	38
45°	3	3	7	3	2	2
55°	1	1	1	1	1	1
65°	0	0	0	0	0	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1674.7	1674.7	1674.7	1674.7	1674.7
2.5°	1672.1	1671.6	1668.5	1670.0	1673.1
5°	1640.7	1636.6	1632.0	1632.5	1634.5
7.5°	1572.8	1575.4	1563.0	1565.6	1564.0
10°	1488.9	1483.7	1477.1	1474.5	1469.8
12.5°	1393.7	1387.5	1375.7	1364.9	1366.4
15°	1276.9	1271.2	1251.6	1239.3	1231.0
17.5°	1132.8	1126.1	1108.6	1103.9	1098.3
20°	949.5	944.9	930.0	917.1	916.6
22.5°	717.4	726.2	725.1	704.0	695.8
25°	519.3	519.3	513.1	500.8	491.5
27.5°	359.2	351.5	340.2	336.6	327.8
30°	204.3	219.8	224.4	213.1	194.0
32.5°	96.2	127.6	149.8	119.9	84.4
35°	38.6	60.2	97.3	55.6	34.0
37.5°	17.0	26.2	60.7	24.2	16.0
40°	7.2	11.8	32.9	11.3	7.2
42.5°	4.1	5.7	16.0	5.1	3.6
45°	2.6	2.6	6.7	2.6	2.1
47.5°	1.5	2.1	3.1	1.5	1.5
50°	1.5	1.5	2.1	1.5	1.5
52.5°	1.0	1.0	1.5	1.0	1.0
55°	1.0	1.0	1.0	1.0	1.0
57.5°	1.0	1.0	1.0	1.0	1.0
60°	1.0	1.0	1.0	1.0	0.5
62.5°	0.5	0.5	1.0	0.5	0.5
65°	0.5	0.5	0.5	0.5	0.5
67.5°	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
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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