

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: P887115

Luminaire Tested: ML412LSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887115  
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-3000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, METALLIC SILVER TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 845.9 lumens  
Efficiency: N/A  
Efficacy: 90.0 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

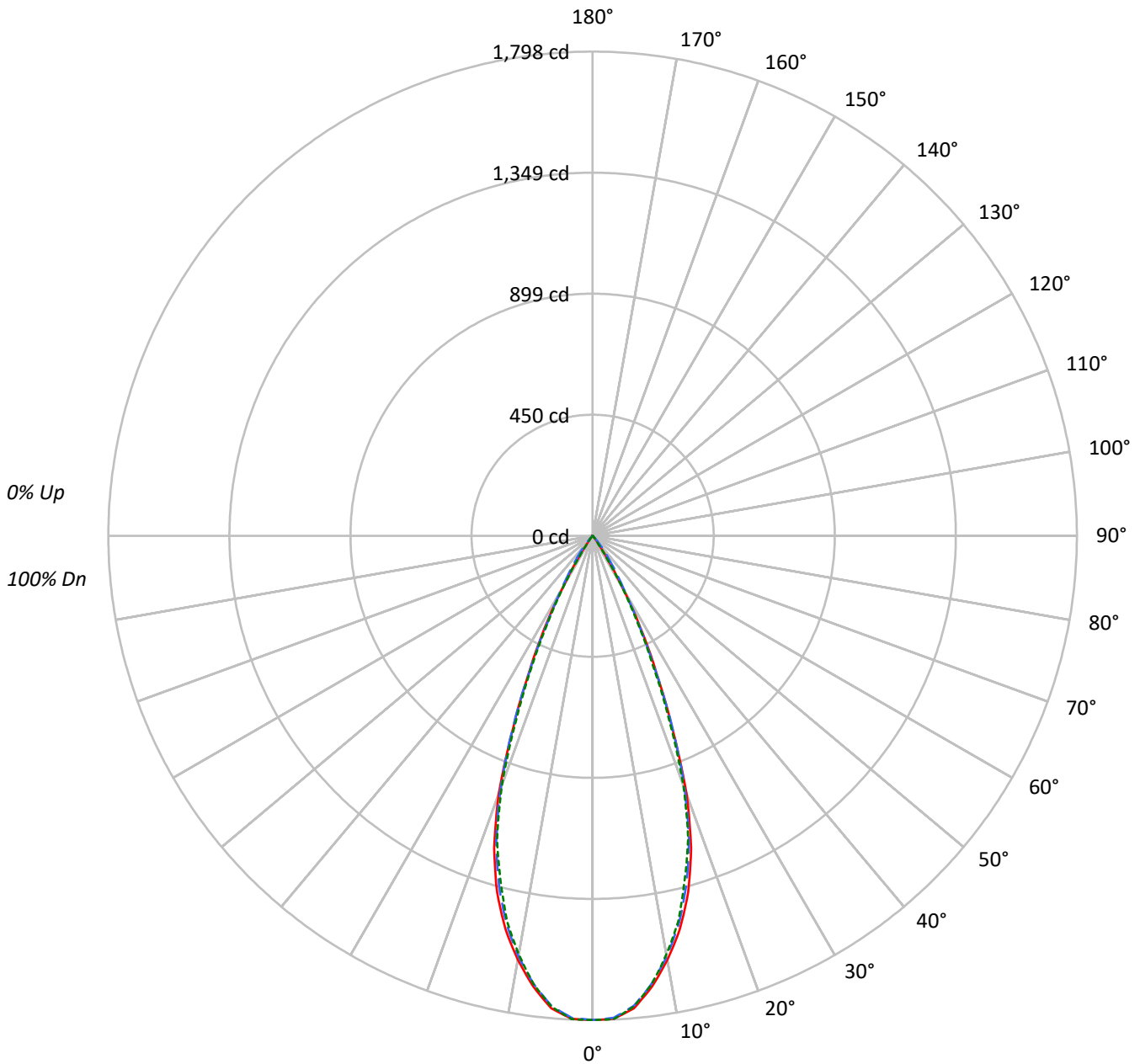
Input Watts (W): 9.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	86	79	75	71	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°	174192	174192	174192
5°	171308	170394	170666
10°	157254	156005	155238
15°	137491	134773	132557
20°	105103	102938	101454
25°	59591	58886	56406
30°	24543	26948	23301
35°	4896	12347	4317
40°	974	4477	974
45°	384	986	301
50°	256	332	256
55°	186	186	186
60°	213	213	116
65°	138	138	138
70°	170	170	170
75°	225	225	225
80°	0	335	335
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 986 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.1	19.2
10°-20°	368.2	43.5
20°-30°	255.4	30.2
30°-40°	53.3	6.3
40°-50°	4.4	0.5
50°-60°	1.1	0.1
60°-70°	0.7	0.1
70°-80°	0.6	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°	785.7	92.9
0°-40°	839.0	99.2
0°-60°	844.5	99.8
0°-90°	845.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	845.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1798	1798	1798	1798	1798	
5°	1762	1757	1752	1753	1755	163
15°	1371	1365	1344	1331	1322	374
25°	558	558	551	538	528	259
35°	41	65	104	60	36	41
45°	3	3	7	3	2	3
55°	1	1	1	1	1	1
65°	1	1	1	1	1	1
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1798.1	1798.1	1798.1	1798.1	1798.1
2.5°	1795.3	1794.7	1791.4	1793.1	1796.4
5°	1761.6	1757.2	1752.2	1752.8	1755.0
7.5°	1688.7	1691.4	1678.2	1680.9	1679.3
10°	1598.6	1593.1	1585.9	1583.1	1578.1
12.5°	1496.4	1489.7	1477.0	1465.4	1467.1
15°	1370.9	1364.8	1343.8	1330.6	1321.7
17.5°	1216.2	1209.0	1190.2	1185.3	1179.2
20°	1019.5	1014.5	998.5	984.7	984.1
22.5°	770.3	779.7	778.6	755.9	747.1
25°	557.5	557.5	550.9	537.7	527.7
27.5°	385.7	377.4	365.2	361.4	352.0
30°	219.4	235.9	240.9	228.8	208.3
32.5°	103.3	137.0	160.8	128.7	90.6
35°	41.4	64.7	104.4	59.7	36.5
37.5°	18.2	28.2	65.2	26.0	17.1
40°	7.7	12.7	35.4	12.2	7.7
42.5°	4.4	6.1	17.1	5.5	3.9
45°	2.8	2.8	7.2	2.8	2.2
47.5°	1.7	2.2	3.3	1.7	1.7
50°	1.7	1.7	2.2	1.7	1.7
52.5°	1.1	1.1	1.7	1.1	1.1
55°	1.1	1.1	1.1	1.1	1.1
57.5°	1.1	1.1	1.1	1.1	1.1
60°	1.1	1.1	1.1	1.1	0.6
62.5°	0.6	0.6	1.1	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	0.0	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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