

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: P887103

Luminaire Tested: ML412LSFLD2W1E-TIR4D25NFL-TL4SDSL-600LM-3000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887103  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-49)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFLD2W1E-TIR4D25NFL-TL4SDSL-600LM-3000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 736.0 lumens  
Efficiency: N/A  
Efficacy: 78.3 lumens/watt  
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

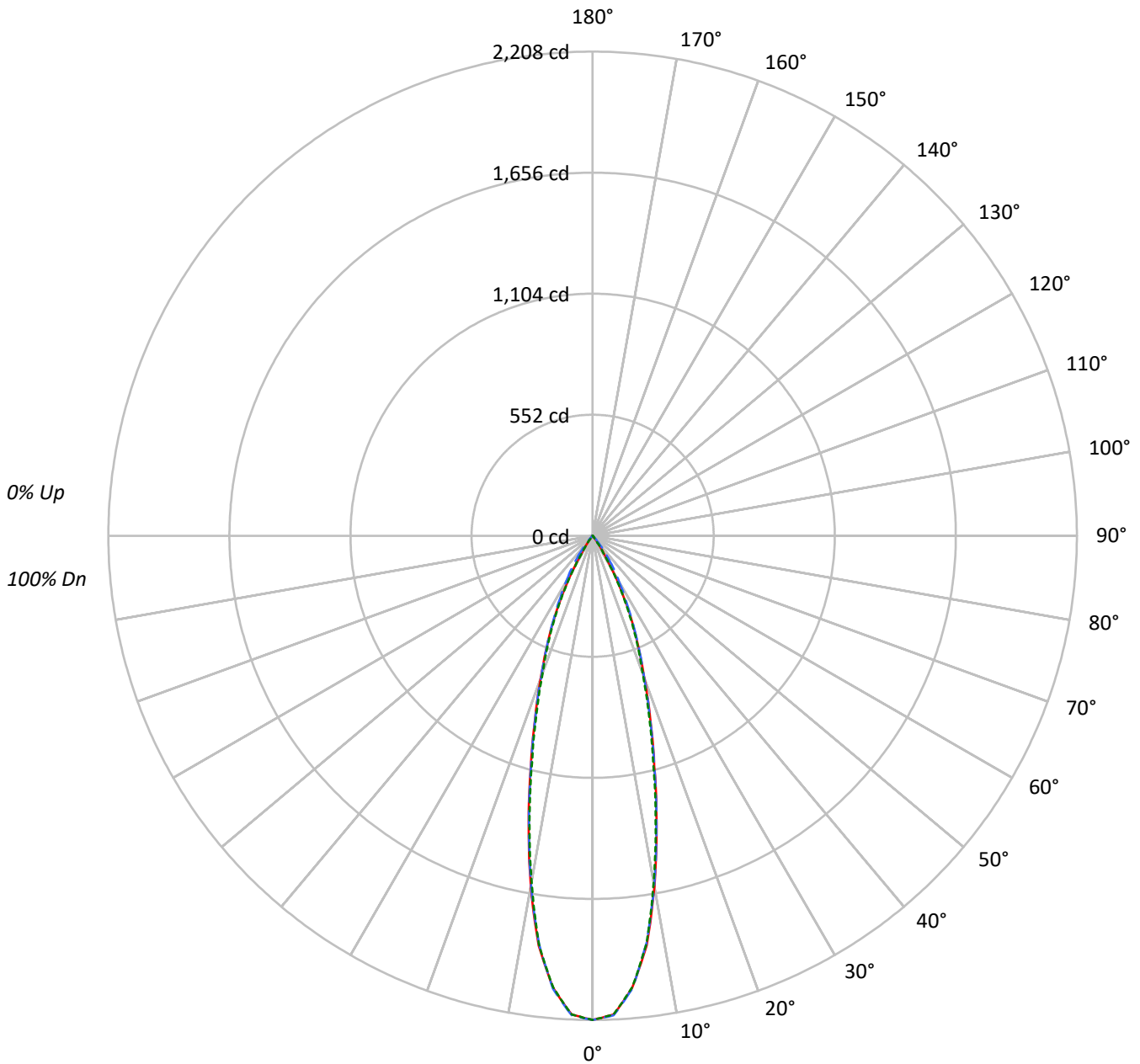
Input Watts (W): 9.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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					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	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96								
2	110	106	103	100	108	105	102	99	101	99	97	99	97	95	96	94	93	92								
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	93	91	89	88								
4	102	96	92	89	101	95	91	88	93	90	87	91	88	86	90	87	85	84								
5	99	92	87	84	97	91	87	84	90	86	83	88	85	82	87	84	82	80								
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	84	81	78	77								
7	92	85	80	77	91	84	80	76	83	79	76	82	78	76	81	78	75	74								
8	89	81	77	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71								
9	86	78	74	71	85	78	73	70	77	73	70	76	73	70	76	72	70	69								
10	83	76	71	68	82	75	71	68	74	70	68	74	70	68	73	70	67	66								

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

	0°	45°	90°
0°	213901	213901	213901
5°	201288	201668	200968
10°	159654	159162	157756
15°	109038	108647	106982
20°	71072	70618	68567
25°	44349	44937	42275
30°	19408	26948	17797
35°	5156	14369	4577
40°	1189	4755	1113
45°	603	1055	534
50°	332	497	332
55°	287	287	287
60°	213	213	213
65°	252	252	252
70°	170	170	170
75°	225	225	225
80°	335	335	335
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 1055 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.0	24.9
10°-20°	301.1	40.9
20°-30°	190.5	25.9
30°-40°	52.6	7.1
40°-50°	5.4	0.7
50°-60°	1.5	0.2
60°-70°	1.0	0.1
70°-80°	0.6	0.1
80°-90°	0.2	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°	674.6	91.7
0°-40°	727.2	98.8
0°-60°	734.2	99.8
0°-90°	736.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	736.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2208	2208	2208	2208	2208	
5°	2070	2074	2074	2062	2067	183
15°	1087	1095	1083	1070	1067	303
25°	415	421	420	408	396	187
35°	44	67	122	62	39	36
45°	4	5	8	4	4	4
55°	2	2	2	2	2	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°	2208.0	2208.0	2208.0	2208.0	2208.0
2.5°	2185.4	2188.7	2189.2	2188.7	2185.4
5°	2069.9	2073.8	2073.8	2062.2	2066.6
7.5°	1884.3	1875.5	1874.4	1869.9	1877.1
10°	1623.0	1628.0	1618.0	1618.6	1603.7
12.5°	1346.2	1350.1	1341.8	1331.9	1328.0
15°	1087.2	1094.9	1083.3	1069.5	1066.7
17.5°	872.3	886.6	867.8	855.1	851.3
20°	689.4	695.5	685.0	671.2	665.1
22.5°	540.8	541.9	544.1	530.3	527.6
25°	414.9	420.9	420.4	408.2	395.5
27.5°	285.6	318.7	321.0	306.6	276.2
30°	173.5	209.4	240.9	198.3	159.1
32.5°	91.1	129.3	180.1	117.7	81.2
35°	43.6	66.8	121.5	62.4	38.7
37.5°	16.0	31.5	73.5	28.7	15.5
40°	9.4	12.7	37.6	12.2	8.8
42.5°	6.1	7.7	18.8	7.2	6.1
45°	4.4	5.0	7.7	4.4	3.9
47.5°	2.8	3.3	4.4	3.3	2.8
50°	2.2	2.2	3.3	2.2	2.2
52.5°	1.7	1.7	2.2	1.7	1.7
55°	1.7	1.7	1.7	1.7	1.7
57.5°	1.1	1.7	1.7	1.7	1.1
60°	1.1	1.1	1.1	1.1	1.1
62.5°	1.1	1.1	1.1	1.1	1.1
65°	1.1	1.1	1.1	1.1	1.1
67.5°	0.6	1.1	1.1	1.1	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°	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.6	0.6	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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