

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: P886885

Luminaire Tested: ML412LSFL95FS1E-TIR4D25NFL-TL4SDSL-1020LM-2700K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886885  
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: ML412LSFL95FS1E-TIR4D25NFL-TL4SDSL-1020LM-2700K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

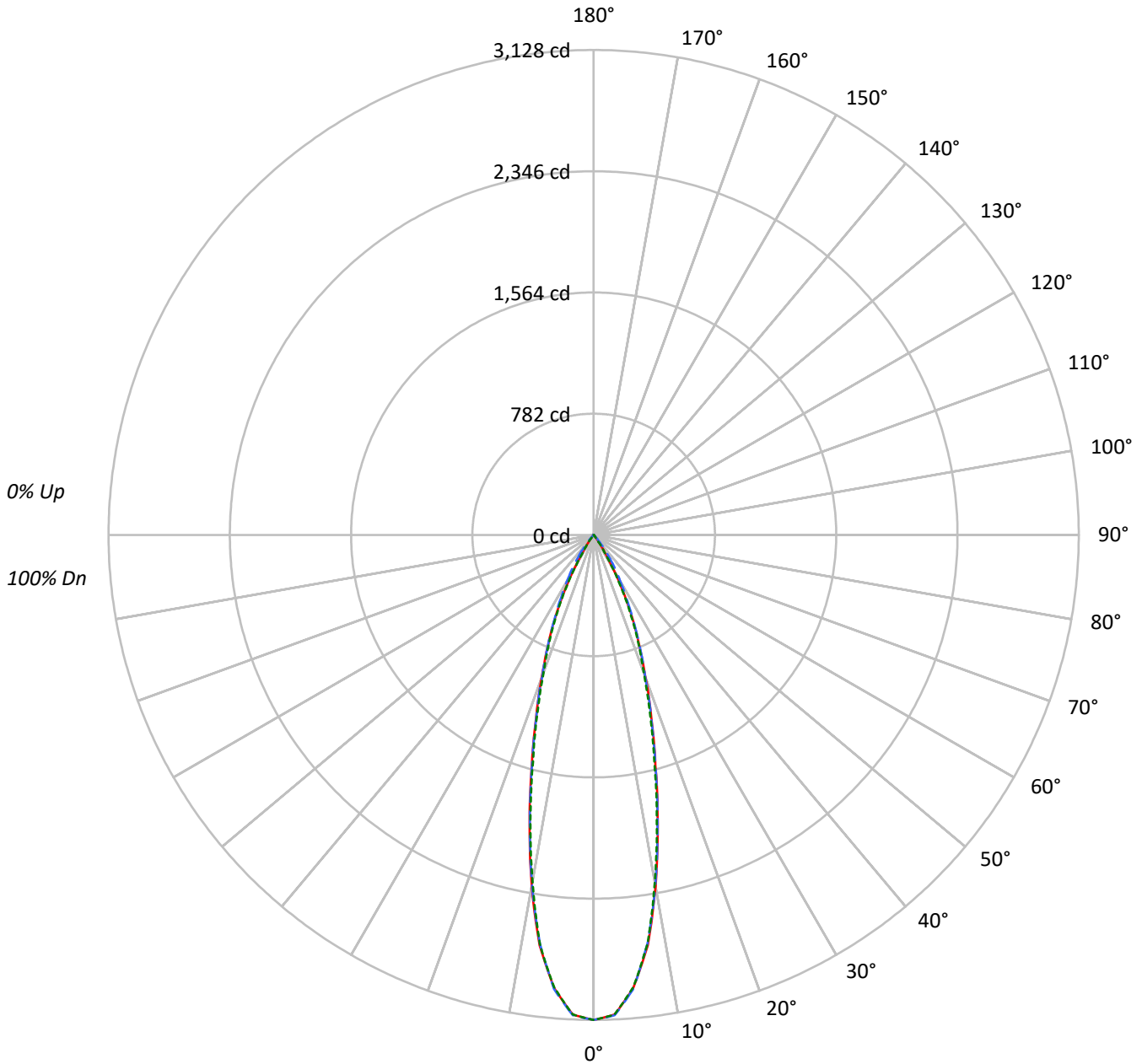
Lumens per Lamp: N/A  
Luminaire Lumens: 1042.7 lumens  
Efficiency: N/A  
Efficacy: 59.2 lumens/watt  
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 17.6  
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	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°	303075	303075	303075
5°	285202	285736	284744
10°	226211	225523	223516
15°	154491	153939	151583
20°	100701	100062	97155
25°	62830	63664	59901
30°	27496	38179	25214
35°	7309	20365	6481
40°	1682	6728	1581
45°	863	1507	754
50°	467	708	467
55°	388	388	388
60°	310	310	310
65°	367	367	367
70°	227	227	227
75°	299	299	299
80°	446	446	446
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 1507 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	259.3	24.9
10°-20°	426.6	40.9
20°-30°	269.8	25.9
30°-40°	74.6	7.2
40°-50°	7.7	0.7
50°-60°	2.1	0.2
60°-70°	1.4	0.1
70°-80°	0.8	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°	955.8	91.7
0°-40°	1030.3	98.8
0°-60°	1040.2	99.8
0°-90°	1042.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1042.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3128	3128	3128	3128	3128	
5°	2933	2938	2938	2922	2928	260
15°	1540	1551	1535	1515	1511	429
25°	588	596	596	578	560	264
35°	62	95	172	88	55	51
45°	6	7	11	6	6	5
55°	2	2	2	2	2	2
65°	2	2	2	2	2	1
75°	1	1	1	1	1	1
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°	3128.5	3128.5	3128.5	3128.5	3128.5
2.5°	3096.4	3101.1	3101.9	3101.1	3096.4
5°	2932.8	2938.3	2938.3	2921.9	2928.1
7.5°	2669.8	2657.3	2655.7	2649.5	2659.7
10°	2299.6	2306.7	2292.6	2293.4	2272.2
12.5°	1907.5	1913.0	1901.2	1887.1	1881.6
15°	1540.4	1551.3	1534.9	1515.3	1511.4
17.5°	1235.9	1256.3	1229.6	1211.6	1206.2
20°	976.8	985.4	970.6	951.0	942.4
22.5°	766.3	767.8	771.0	751.4	747.5
25°	587.8	596.4	595.6	578.4	560.4
27.5°	404.7	451.6	454.8	434.4	391.4
30°	245.8	296.6	341.3	281.0	225.4
32.5°	129.1	183.2	255.2	166.7	115.1
35°	61.8	94.7	172.2	88.4	54.8
37.5°	22.7	44.6	104.1	40.7	21.9
40°	13.3	18.0	53.2	17.2	12.5
42.5°	8.6	11.0	26.6	10.2	8.6
45°	6.3	7.0	11.0	6.3	5.5
47.5°	3.9	4.7	6.3	4.7	3.9
50°	3.1	3.1	4.7	3.1	3.1
52.5°	2.3	2.3	3.1	2.3	2.3
55°	2.3	2.3	2.3	2.3	2.3
57.5°	1.6	2.3	2.3	2.3	1.6
60°	1.6	1.6	1.6	1.6	1.6
62.5°	1.6	1.6	1.6	1.6	1.6
65°	1.6	1.6	1.6	1.6	1.6
67.5°	0.8	1.6	1.6	1.6	0.8
70°	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.8	0.8	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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