

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: P886889

Luminaire Tested: ML412LSFL95FS1E-TIR4D25NFL-TL4SDSL-1020LM-5000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886889  
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-5000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1214.6 lumens  
Efficiency: N/A  
Efficacy: 69.0 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

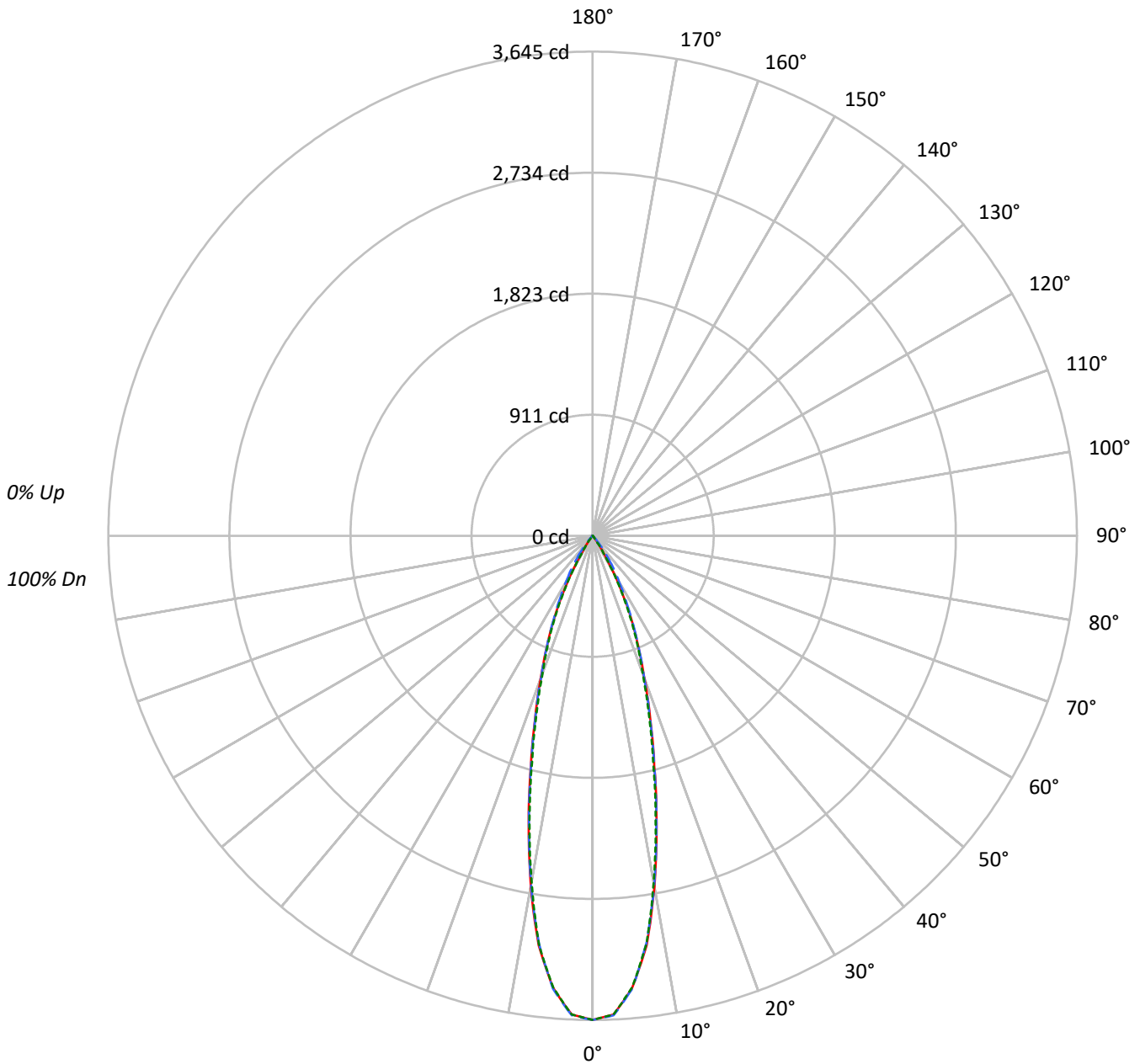
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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°	353092	353092	353092
5°	332268	332891	331743
10°	263543	262736	260405
15°	179986	179344	176606
20°	117319	116567	113185
25°	73198	74171	69789
30°	32026	44476	29375
35°	8515	23724	7545
40°	1960	7841	1846
45°	1000	1754	877
50°	543	829	543
55°	456	456	456
60°	349	349	349
65°	413	413	413
70°	255	255	255
75°	337	337	337
80°	502	502	502
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 1754 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	302.1	24.9
10°-20°	497.0	40.9
20°-30°	314.4	25.9
30°-40°	86.9	7.2
40°-50°	9.0	0.7
50°-60°	2.5	0.2
60°-70°	1.6	0.1
70°-80°	1.0	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°	1113.5	91.7
0°-40°	1200.4	98.8
0°-60°	1211.8	99.8
0°-90°	1214.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1214.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3645	3645	3645	3645	3645	
5°	3417	3423	3423	3404	3411	303
15°	1795	1807	1788	1765	1761	500
25°	685	695	694	674	653	308
35°	72	110	201	103	64	60
45°	7	8	13	7	6	6
55°	3	3	3	3	3	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°	3644.8	3644.8	3644.8	3644.8	3644.8
2.5°	3607.4	3612.9	3613.8	3612.9	3607.4
5°	3416.8	3423.2	3423.2	3404.1	3411.4
7.5°	3110.4	3095.9	3094.0	3086.7	3098.6
10°	2679.1	2687.3	2670.9	2671.8	2647.2
12.5°	2222.3	2228.7	2215.0	2198.6	2192.2
15°	1794.6	1807.4	1788.2	1765.4	1760.9
17.5°	1439.9	1463.6	1432.6	1411.6	1405.2
20°	1138.0	1148.1	1130.7	1107.9	1097.9
22.5°	892.7	894.6	898.2	875.4	870.9
25°	684.8	694.9	693.9	673.9	652.9
27.5°	471.4	526.2	529.8	506.1	455.9
30°	286.3	345.6	397.6	327.4	262.6
32.5°	150.5	213.4	297.3	194.2	134.0
35°	72.0	110.3	200.6	103.0	63.8
37.5°	26.4	52.0	121.3	47.4	25.5
40°	15.5	21.0	62.0	20.1	14.6
42.5°	10.0	12.8	31.0	11.9	10.0
45°	7.3	8.2	12.8	7.3	6.4
47.5°	4.6	5.5	7.3	5.5	4.6
50°	3.6	3.6	5.5	3.6	3.6
52.5°	2.7	2.7	3.6	2.7	2.7
55°	2.7	2.7	2.7	2.7	2.7
57.5°	1.8	2.7	2.7	2.7	1.8
60°	1.8	1.8	1.8	1.8	1.8
62.5°	1.8	1.8	1.8	1.8	1.8
65°	1.8	1.8	1.8	1.8	1.8
67.5°	0.9	1.8	1.8	1.8	0.9
70°	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.9	0.9	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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