

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: P886880

Luminaire Tested: ML412LSFL95FS1E-TIR4D25NFL-TL4SDMW-1020LM-2700K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886880  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-48)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D25NFL-TL4SDMW-1020LM-2700K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

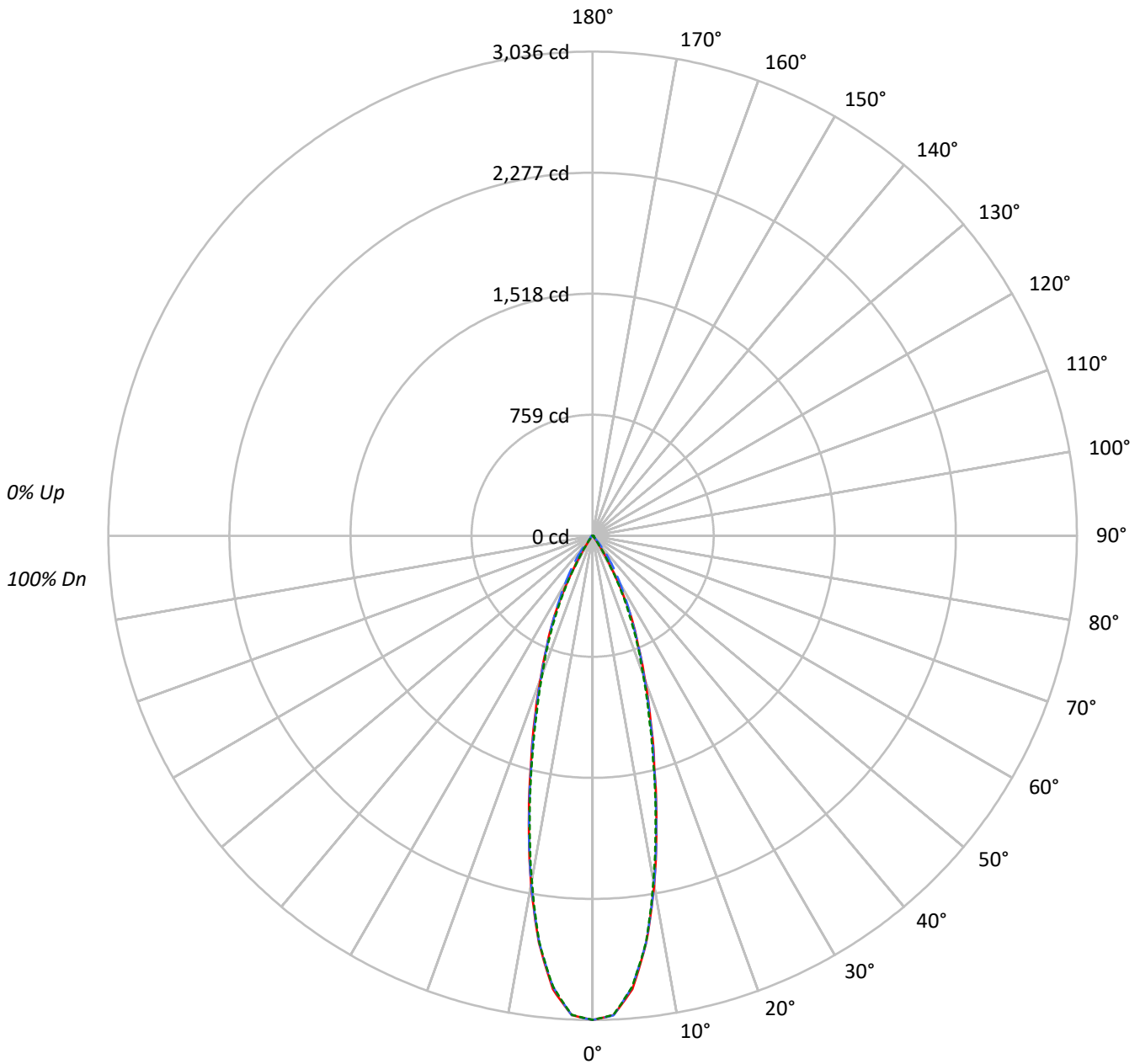
Lumens per Lamp: N/A  
Luminaire Lumens: 1046.6 lumens  
Efficiency: N/A  
Efficacy: 59.5 lumens/watt  
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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									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	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90																			
3	105	100	96	92	104	99	95	92	96	93	90	94	91	89	92	89	88	86																			
4	101	95	90	87	100	94	90	86	92	88	85	90	87	84	88	86	84	82																			
5	98	91	86	82	96	90	85	82	88	84	81	87	83	81	85	82	80	79																			
6	94	87	82	78	93	86	81	78	85	81	78	83	80	77	82	79	77	75																			
7	91	83	78	75	89	82	78	75	81	77	74	80	77	74	79	76	73	72																			
8	87	80	75	72	86	79	75	71	78	74	71	77	74	71	76	73	71	69																			
9	85	77	72	69	84	76	72	69	75	71	68	75	71	68	74	70	68	67																			
10	82	74	69	66	81	74	69	66	73	69	66	72	68	66	71	68	65	64																			

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

	0°	45°	90°
0°	294085	294085	294085
5°	277626	276177	276109
10°	218637	218096	216089
15°	149918	148814	147320
20°	98505	97216	94959
25°	63076	62157	57721
30°	27138	38078	24419
35°	7498	21004	7131
40°	2668	7714	2567
45°	2041	2781	1932
50°	1884	2125	1763
55°	1858	1976	1858
60°	1821	1976	1821
65°	1788	1971	1788
70°	1784	1983	1784
75°	1759	2059	1759
80°	1729	2176	1729
85°	1778	1778	1778

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 2781 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.3	24.0
10°-20°	413.5	39.5
20°-30°	264.4	25.3
30°-40°	77.1	7.4
40°-50°	14.5	1.4
50°-60°	10.0	1.0
60°-70°	8.3	0.8
70°-80°	5.6	0.5
80°-90°	1.8	0.2
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°	929.2	88.8
0°-40°	1006.4	96.2
0°-60°	1030.8	98.5
0°-90°	1046.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1046.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3036	3036	3036	3036	3036	
5°	2855	2852	2840	2841	2839	252
15°	1495	1489	1484	1474	1469	417
25°	590	587	582	567	540	262
35°	63	101	178	93	60	54
45°	15	16	20	16	14	12
55°	11	11	12	11	11	10
65°	8	9	9	9	8	8
75°	5	6	6	6	5	5
85°	2	2	2	2	2	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3035.7	3035.7	3035.7	3035.7	3035.7
2.5°	3008.3	3011.4	3009.9	3001.2	3005.9
5°	2854.9	2851.8	2840.0	2840.8	2839.3
7.5°	2574.7	2574.0	2570.0	2571.6	2566.9
10°	2222.6	2238.2	2217.1	2217.1	2196.7
12.5°	1848.5	1852.4	1843.0	1832.1	1822.7
15°	1494.8	1489.3	1483.8	1473.6	1468.9
17.5°	1208.3	1207.5	1194.2	1181.7	1164.5
20°	955.5	953.2	943.0	938.3	921.1
22.5°	749.7	759.1	748.2	730.2	725.5
25°	590.1	586.9	581.5	567.4	540.0
27.5°	409.3	442.2	448.4	422.6	379.6
30°	242.6	294.3	340.4	281.0	218.3
32.5°	136.2	181.6	256.7	169.0	117.4
35°	63.4	101.0	177.6	93.1	60.3
37.5°	29.0	49.3	108.0	48.5	31.3
40°	21.1	25.0	61.0	26.6	20.3
42.5°	17.2	18.8	34.4	18.8	16.4
45°	14.9	15.7	20.3	15.7	14.1
47.5°	12.5	14.1	15.7	13.3	12.5
50°	12.5	12.5	14.1	12.5	11.7
52.5°	11.7	11.7	12.5	11.7	11.7
55°	11.0	11.0	11.7	11.0	11.0
57.5°	10.2	10.2	11.0	10.2	10.2
60°	9.4	10.2	10.2	9.4	9.4
62.5°	8.6	9.4	9.4	9.4	8.6
65°	7.8	8.6	8.6	8.6	7.8
67.5°	7.0	7.8	7.8	7.8	7.0
70°	6.3	7.0	7.0	7.0	6.3
72.5°	5.5	6.3	6.3	6.3	5.5
75°	4.7	5.5	5.5	5.5	4.7
77.5°	3.9	4.7	4.7	4.7	3.9
80°	3.1	3.9	3.9	3.9	3.1
82.5°	2.3	2.3	2.3	3.1	2.3
85°	1.6	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	0.8	0.8	0.8
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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