

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: P886912

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886912  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-51)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

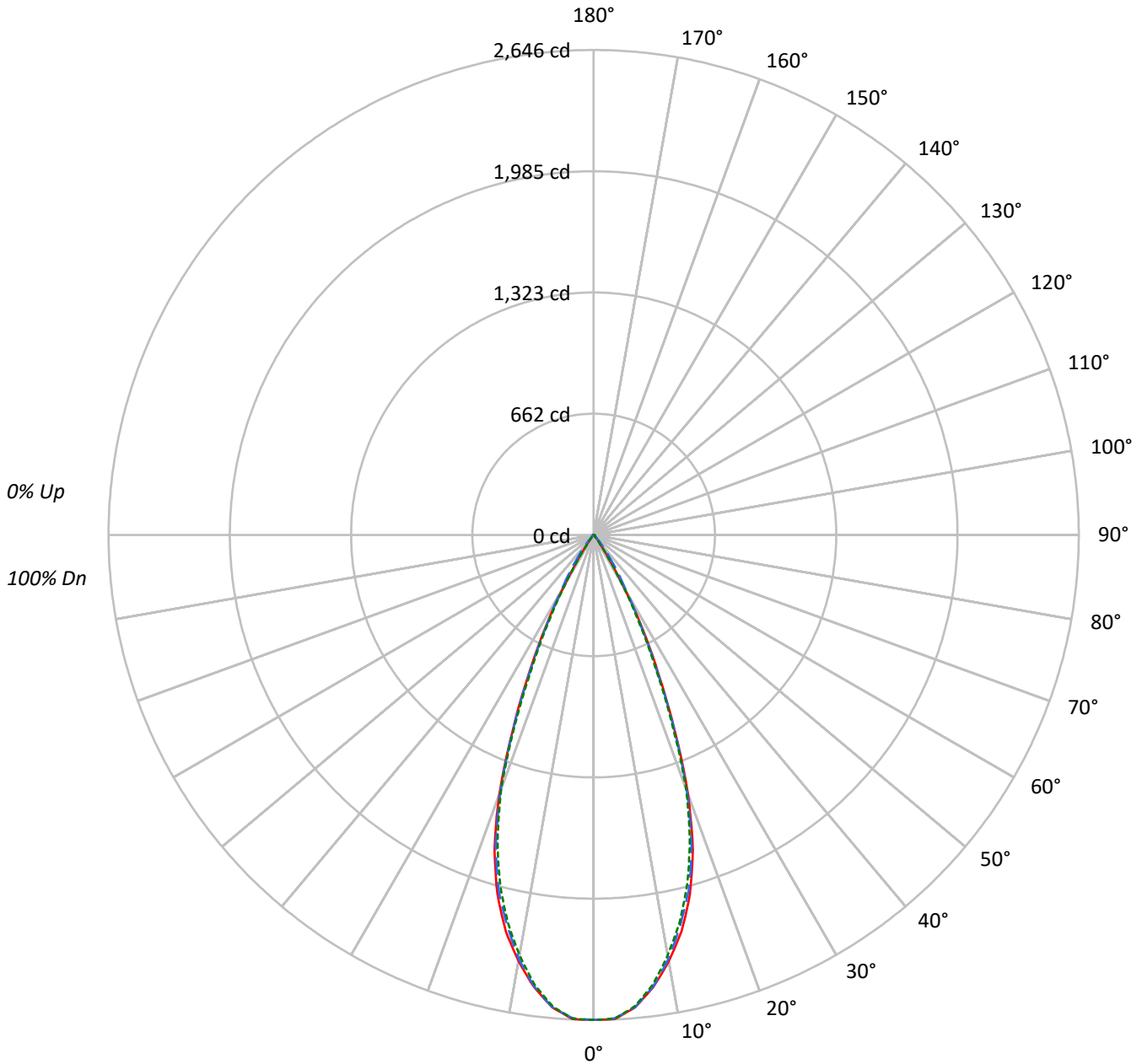
Lumens per Lamp: N/A  
Luminaire Lumens: 1279.4 lumens  
Efficiency: N/A  
Efficacy: 72.7 lumens/watt  
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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



TEST NUMBER: P886912  
CATALOG NUMBER: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K

### Luminous Intensity Polar Plot





TEST NUMBER: P886912

CATALOG NUMBER: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K

**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			100																
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95			95																
2	110	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90			90																
3	105	100	96	92	103	99	95	92	96	93	90	94	91	89	91	89	87	86			86																
4	101	95	90	87	100	94	89	86	92	88	85	90	87	84	88	85	83	82			82																
5	97	90	85	82	96	89	85	81	88	84	81	86	83	80	85	82	79	78			78																
6	94	86	81	78	92	85	81	77	84	80	77	83	79	76	82	78	76	75			75																
7	90	82	77	74	89	82	77	74	81	76	73	79	76	73	78	75	73	71			71																
8	87	79	74	71	86	78	74	70	77	73	70	76	73	70	76	72	70	68			68																
9	84	76	71	67	83	75	71	67	74	70	67	74	70	67	73	69	67	66			66																
10	81	73	68	65	80	72	68	65	72	67	64	71	67	64	70	67	64	63			63																

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

	0°	45°	90°
0°	256352	256352	256352
5°	251652	251574	251010
10°	232241	231091	228956
15°	203484	201057	197878
20°	155237	153350	152051
25°	89350	87479	84272
30°	36769	40505	34532
35°	7592	19040	7202
40°	2213	7385	2428
45°	1370	2398	1370
50°	1251	1507	1251
55°	1402	1402	1267
60°	1298	1453	1298
65°	1330	1330	1330
70°	1416	1416	1416
75°	1235	1572	1235
80°	1395	1395	1395
85°	1890	1890	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 2398 cd/sqm



TEST NUMBER: P886912

CATALOG NUMBER: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	239.1	18.7
10°-20°	546.0	42.7
20°-30°	381.9	29.8
30°-40°	82.2	6.4
40°-50°	11.5	0.9
50°-60°	7.2	0.6
60°-70°	6.0	0.5
70°-80°	4.0	0.3
80°-90°	1.5	0.1
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°	1166.9	91.2
0°-40°	1249.1	97.6
0°-60°	1267.8	99.1
0°-90°	1279.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1279.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2646	2646	2646	2646	2646	
5°	2588	2590	2587	2580	2581	240
15°	2029	2017	2005	1976	1973	553
25°	836	825	818	805	788	388
35°	64	102	161	93	61	63
45°	10	11	18	11	10	9
55°	8	8	8	8	8	7
65°	6	6	6	6	6	6
75°	3	4	4	4	3	4
85°	2	2	2	2	2	1
90°	0	0	0	0	0	



TEST NUMBER: P886912

CATALOG NUMBER: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3500K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2646.2	2646.2	2646.2	2646.2	2646.2
2.5°	2643.7	2642.1	2639.6	2639.6	2641.2
5°	2587.8	2589.5	2587.0	2580.3	2581.2
7.5°	2489.4	2495.2	2484.4	2480.2	2473.5
10°	2360.9	2359.2	2349.2	2335.1	2327.5
12.5°	2214.9	2208.2	2181.6	2168.2	2164.0
15°	2028.9	2017.2	2004.7	1976.3	1973.0
17.5°	1798.6	1792.8	1775.3	1751.1	1742.7
20°	1505.8	1506.6	1487.5	1467.4	1474.9
22.5°	1152.9	1169.6	1147.1	1127.9	1119.6
25°	835.9	825.1	818.4	805.0	788.4
27.5°	579.8	569.8	557.3	550.6	525.6
30°	328.7	364.6	362.1	340.4	308.7
32.5°	156.0	207.7	246.9	186.9	143.5
35°	64.2	101.8	161.0	92.6	60.9
37.5°	30.9	46.7	100.9	45.9	30.0
40°	17.5	25.0	58.4	24.2	19.2
42.5°	12.5	14.2	31.7	14.2	12.5
45°	10.0	10.8	17.5	10.8	10.0
47.5°	9.2	9.2	11.7	9.2	9.2
50°	8.3	9.2	10.0	8.3	8.3
52.5°	8.3	8.3	9.2	8.3	8.3
55°	8.3	8.3	8.3	8.3	7.5
57.5°	7.5	7.5	7.5	7.5	7.5
60°	6.7	7.5	7.5	6.7	6.7
62.5°	6.7	6.7	6.7	6.7	5.8
65°	5.8	5.8	5.8	5.8	5.8
67.5°	5.0	5.8	5.8	5.8	5.0
70°	5.0	5.0	5.0	5.0	5.0
72.5°	4.2	4.2	4.2	4.2	4.2
75°	3.3	4.2	4.2	4.2	3.3
77.5°	3.3	3.3	3.3	3.3	3.3
80°	2.5	2.5	2.5	2.5	2.5
82.5°	1.7	2.5	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	1.7
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)