

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: P887029

Luminaire Tested: ML412LSFL9FS1E-TIR4D40FL-TL4RDMW-1200LM-5000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887029  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-39)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL9FS1E-TIR4D40FL-TL4RDMW-1200LM-5000K  
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1776.7 lumens  
Efficiency: N/A  
Efficacy: 101.0 lumens/watt  
Spacing Criteria (0/90/45): 0.67 / 0.67 / 0.64  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

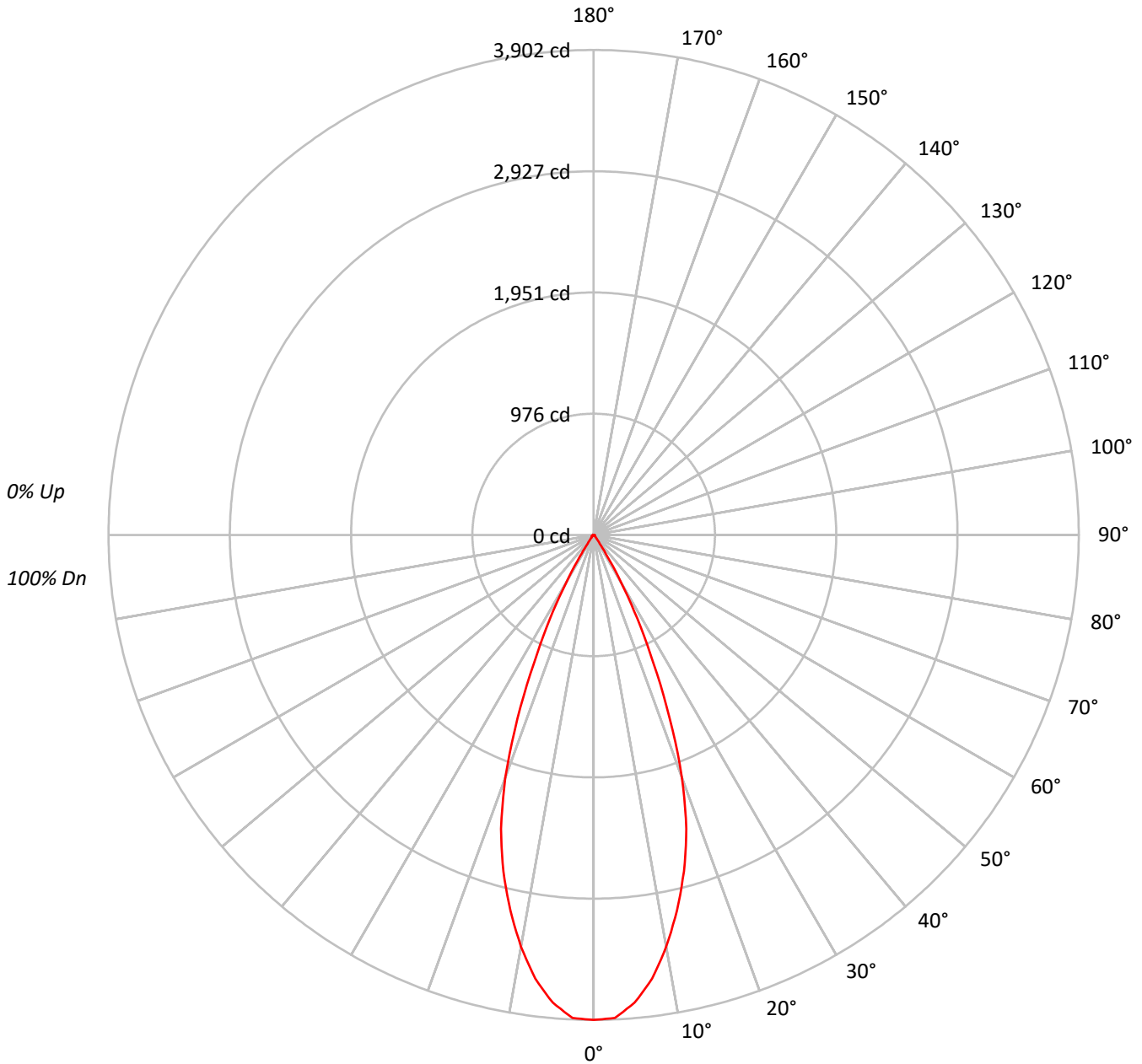
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	106	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	83	82																			
5	97	91	86	82	96	90	85	82	88	84	81	86	83	80	85	82	80	78																			
6	94	87	82	78	93	86	81	78	84	80	77	83	80	77	82	79	76	75																			
7	90	83	78	74	89	82	78	74	81	77	74	80	76	73	79	76	73	72																			
8	87	79	74	71	86	79	74	71	78	74	71	77	73	70	76	73	70	69																			
9	84	76	71	68	83	76	71	68	75	71	68	74	70	68	73	70	67	66																			
10	81	73	69	65	80	73	68	65	72	68	65	71	68	65	71	67	65	64																			

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

	0°
0°	481307
5°	467693
10°	421273
15°	358049
20°	272394
25°	154225
30°	62269
35°	12468
40°	4508
45°	3262
50°	3128
55°	3269
60°	3454
65°	3415
70°	3354
75°	3336
80°	3339
85°	3255

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 57.5°  
 Luminance: 3489 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	347.4	19.6
10°-20°	768.1	43.2
20°-30°	526.8	29.7
30°-40°	83.8	4.7
40°-50°	15.3	0.9
50°-60°	13.9	0.8
60°-70°	11.5	0.6
70°-80°	7.4	0.4
80°-90°	2.5	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°	1642.3	92.4
0°-40°	1726.1	97.2
0°-60°	1755.3	98.8
0°-90°	1776.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1776.7	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3902	
5°	3777	347
15°	2804	768
25°	1133	527
35°	83	84
45°	19	15
55°	15	14
65°	12	12
75°	7	7
85°	2	3
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°
0°	3902.1
2.5°	3890.4
5°	3777.3
7.5°	3601.3
10°	3363.5
12.5°	3095.3
15°	2803.9
17.5°	2478.6
20°	2075.2
22.5°	1599.5
25°	1133.2
27.5°	757.8
30°	437.2
32.5°	201.7
35°	82.8
37.5°	45.5
40°	28.0
42.5°	21.0
45°	18.7
47.5°	17.5
50°	16.3
52.5°	16.3
55°	15.2
57.5°	15.2
60°	14.0
62.5°	12.8
65°	11.7
67.5°	10.5
70°	9.3
72.5°	8.2
75°	7.0
77.5°	5.8
80°	4.7
82.5°	3.5
85°	2.3
87.5°	1.2
90°	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

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— 0°-180°

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(END OF REPORT)