

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: P887028

Luminaire Tested: ML412LSFL9FS1E-TIR4D40FL-TL4RDMW-1200LM-4000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887028  
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-4000K  
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1687.0 lumens  
Efficiency: N/A  
Efficacy: 95.8 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

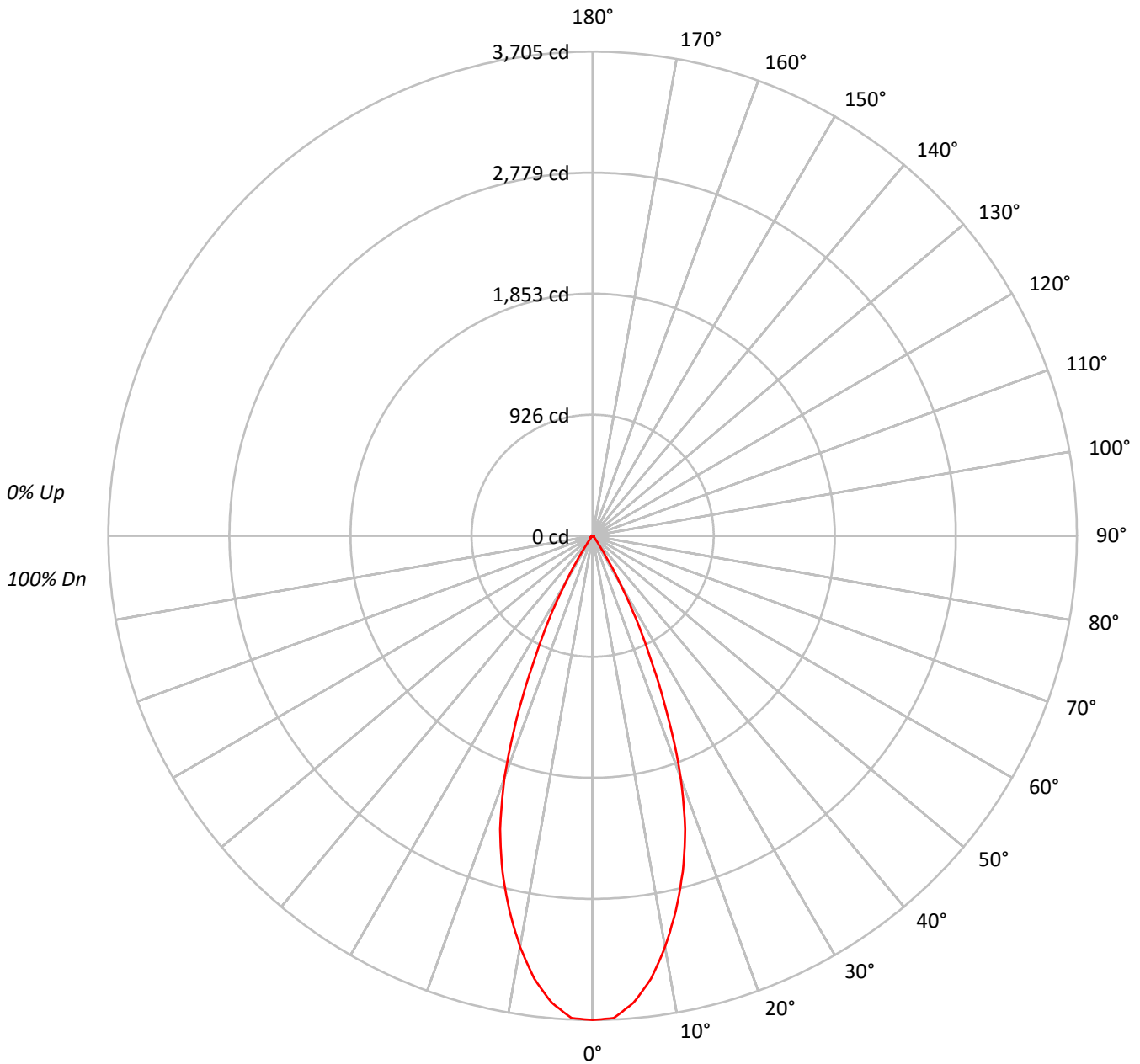
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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

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

	0°
0°	457008
5°	444081
10°	399993
15°	339967
20°	258638
25°	146440
30°	59122
35°	11835
40°	4283
45°	3088
50°	2974
55°	3097
60°	3281
65°	3240
70°	3210
75°	3145
80°	3125
85°	3114

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 57.5°  
 Luminance: 3306 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	329.8	19.6
10°-20°	729.4	43.2
20°-30°	500.2	29.7
30°-40°	79.6	4.7
40°-50°	14.5	0.9
50°-60°	13.1	0.8
60°-70°	11.0	0.7
70°-80°	7.0	0.4
80°-90°	2.4	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°	1559.4	92.4
0°-40°	1639.0	97.2
0°-60°	1666.6	98.8
0°-90°	1687.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1687.0	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3705	
5°	3587	330
15°	2662	729
25°	1076	500
35°	79	80
45°	18	14
55°	14	13
65°	11	11
75°	7	7
85°	2	2
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°
0°	3705.1
2.5°	3694.0
5°	3586.6
7.5°	3419.5
10°	3193.6
12.5°	2939.0
15°	2662.3
17.5°	2353.4
20°	1970.4
22.5°	1518.8
25°	1076.0
27.5°	719.5
30°	415.1
32.5°	191.5
35°	78.6
37.5°	43.2
40°	26.6
42.5°	19.9
45°	17.7
47.5°	16.6
50°	15.5
52.5°	15.5
55°	14.4
57.5°	14.4
60°	13.3
62.5°	12.2
65°	11.1
67.5°	10.0
70°	8.9
72.5°	7.7
75°	6.6
77.5°	5.5
80°	4.4
82.5°	3.3
85°	2.2
87.5°	1.1
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)