

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: P887032

Luminaire Tested: ML412LSFL9FS1E-TIR4D40FL-TL4RDSL-1200LM-3500K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887032  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-40)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL9FS1E-TIR4D40FL-TL4RDSL-1200LM-3500K  
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH 40D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1600.4 lumens  
Efficiency: N/A  
Efficacy: 90.9 lumens/watt  
Spacing Criteria (0/90/45): 0.67 / 0.67 / 0.63  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

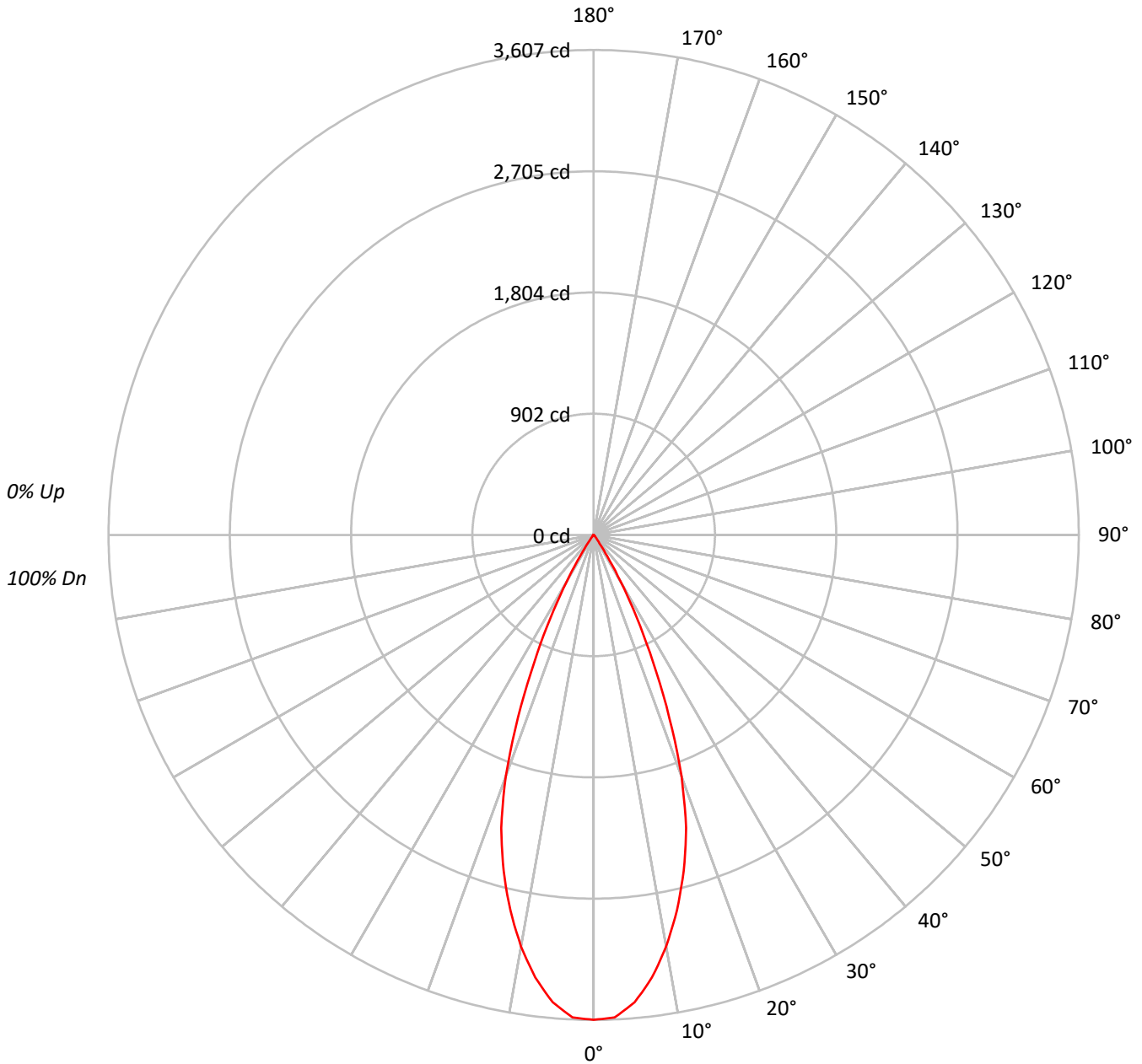
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	115	112	110	108	112	110	108	106	106	105	103	102	101	100	99	98	97	96																			
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91																			
3	106	101	97	94	104	99	96	93	97	94	91	95	92	90	92	90	89	87																			
4	102	96	92	88	100	95	91	88	93	89	87	91	88	86	89	87	85	83																			
5	98	92	87	83	97	91	86	83	89	85	82	88	84	82	86	83	81	80																			
6	95	88	83	79	93	87	82	79	85	82	79	84	81	78	83	80	78	76																			
7	91	84	79	76	90	83	79	76	82	78	75	81	77	75	80	77	74	73																			
8	88	81	76	72	87	80	75	72	79	75	72	78	74	72	77	74	71	70																			
9	85	77	73	69	84	77	72	69	76	72	69	75	72	69	75	71	69	68																			
10	82	74	70	67	81	74	70	67	73	69	66	73	69	66	72	69	66	65																			

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

	0°
0°	444858
5°	432034
10°	389235
15°	330275
20°	250487
25°	141609
30°	56786
35°	11082
40°	3092
45°	1308
50°	825
55°	688
60°	518
65°	613
70°	397
75°	524
80°	781
85°	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1308 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	320.7	20.0
10°-20°	708.7	44.3
20°-30°	483.3	30.2
30°-40°	74.9	4.7
40°-50°	6.7	0.4
50°-60°	3.1	0.2
60°-70°	1.7	0.1
70°-80°	1.2	0.1
80°-90°	0.1	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°	1512.6	94.5
0°-40°	1587.6	99.2
0°-60°	1597.4	99.8
0°-90°	1600.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1600.4	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3607	
5°	3489	321
15°	2586	709
25°	1040	483
35°	74	75
45°	8	7
55°	3	3
65°	2	2
75°	1	1
85°	0	0
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°
0°	3606.6
2.5°	3592.8
5°	3489.3
7.5°	3320.9
10°	3107.7
12.5°	2860.3
15°	2586.4
17.5°	2285.7
20°	1908.3
22.5°	1468.0
25°	1040.5
27.5°	693.0
30°	398.7
32.5°	184.4
35°	73.6
37.5°	37.3
40°	19.2
42.5°	10.7
45°	7.5
47.5°	5.3
50°	4.3
52.5°	4.3
55°	3.2
57.5°	3.2
60°	2.1
62.5°	2.1
65°	2.1
67.5°	1.1
70°	1.1
72.5°	1.1
75°	1.1
77.5°	1.1
80°	1.1
82.5°	0.0
85°	0.0
87.5°	0.0
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)