

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: P887061

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4RDSL-1200LM-3000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887061  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-43)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4RDSL-1200LM-3000K  
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1445.4 lumens  
Efficiency: N/A  
Efficacy: 82.1 lumens/watt  
Spacing Criteria (0/90/45): 0.79 / 0.79 / 0.77  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

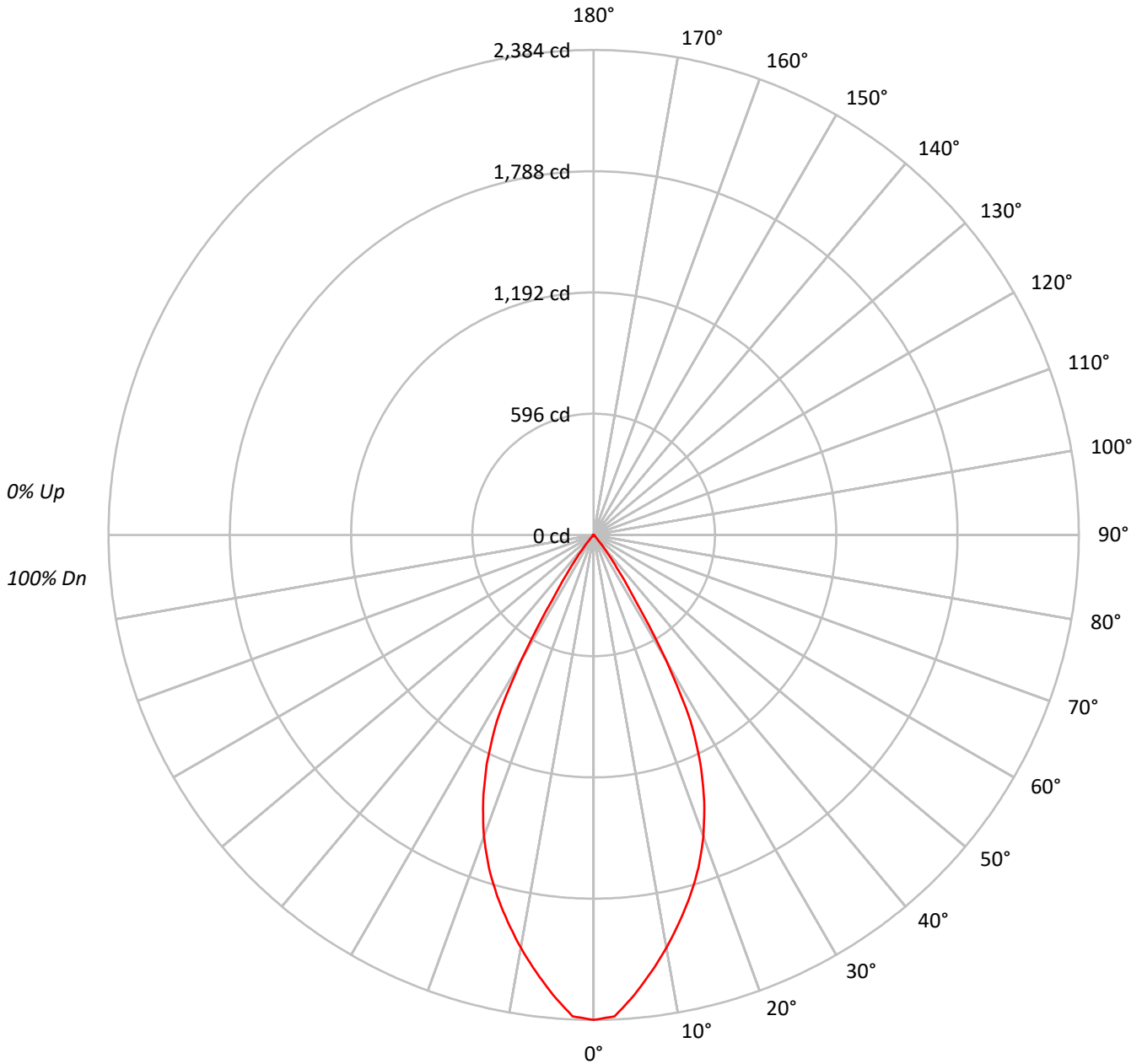
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	109	107	112	109	107	106	105	104	102	102	101	99	98	97	96	95																			
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	93	91	90																			
3	105	99	94	91	103	98	93	90	95	92	89	93	90	87	90	88	86	85																			
4	100	93	89	85	98	92	88	84	90	86	83	88	85	82	87	84	81	80																			
5	96	88	83	80	94	88	83	79	86	82	79	84	81	78	83	80	77	76																			
6	92	84	79	75	90	83	78	75	82	77	74	80	77	74	79	76	73	72																			
7	88	80	74	71	87	79	74	71	78	73	70	77	73	70	76	72	69	68																			
8	84	76	71	67	83	75	70	67	74	70	67	73	69	66	72	69	66	65																			
9	81	72	67	64	80	72	67	64	71	66	63	70	66	63	69	66	63	62																			
10	78	69	64	60	77	69	64	60	68	63	60	67	63	60	67	63	60	59																			

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

	0°
0°	294044
5°	281275
10°	258087
15°	234336
20°	206947
25°	169155
30°	101351
35°	29920
40°	6473
45°	1622
50°	1190
55°	882
60°	765
65°	613
70°	361
75°	477
80°	710
85°	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1622 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.2	14.5
10°-20°	511.5	35.4
20°-30°	548.6	38.0
30°-40°	157.6	10.9
40°-50°	10.0	0.7
50°-60°	4.0	0.3
60°-70°	2.3	0.2
70°-80°	1.1	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°	1270.3	87.9
0°-40°	1427.9	98.8
0°-60°	1441.9	99.8
0°-90°	1445.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1445.4	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	2384	
5°	2272	210
15°	1835	512
25°	1243	549
35°	199	158
45°	9	10
55°	4	4
65°	2	2
75°	1	1
85°	0	0
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	2383.9
2.5°	2368.5
5°	2271.7
7.5°	2166.7
10°	2060.6
12.5°	1948.3
15°	1835.1
17.5°	1713.5
20°	1576.6
22.5°	1420.1
25°	1242.9
27.5°	1030.8
30°	711.6
32.5°	379.0
35°	198.7
37.5°	98.9
40°	40.2
42.5°	13.4
45°	9.3
47.5°	7.2
50°	6.2
52.5°	5.1
55°	4.1
57.5°	4.1
60°	3.1
62.5°	3.1
65°	2.1
67.5°	2.1
70°	1.0
72.5°	1.0
75°	1.0
77.5°	1.0
80°	1.0
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)