

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: P886905

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDMB-1020LM-2700K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886905  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-53)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDMB-1020LM-2700K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

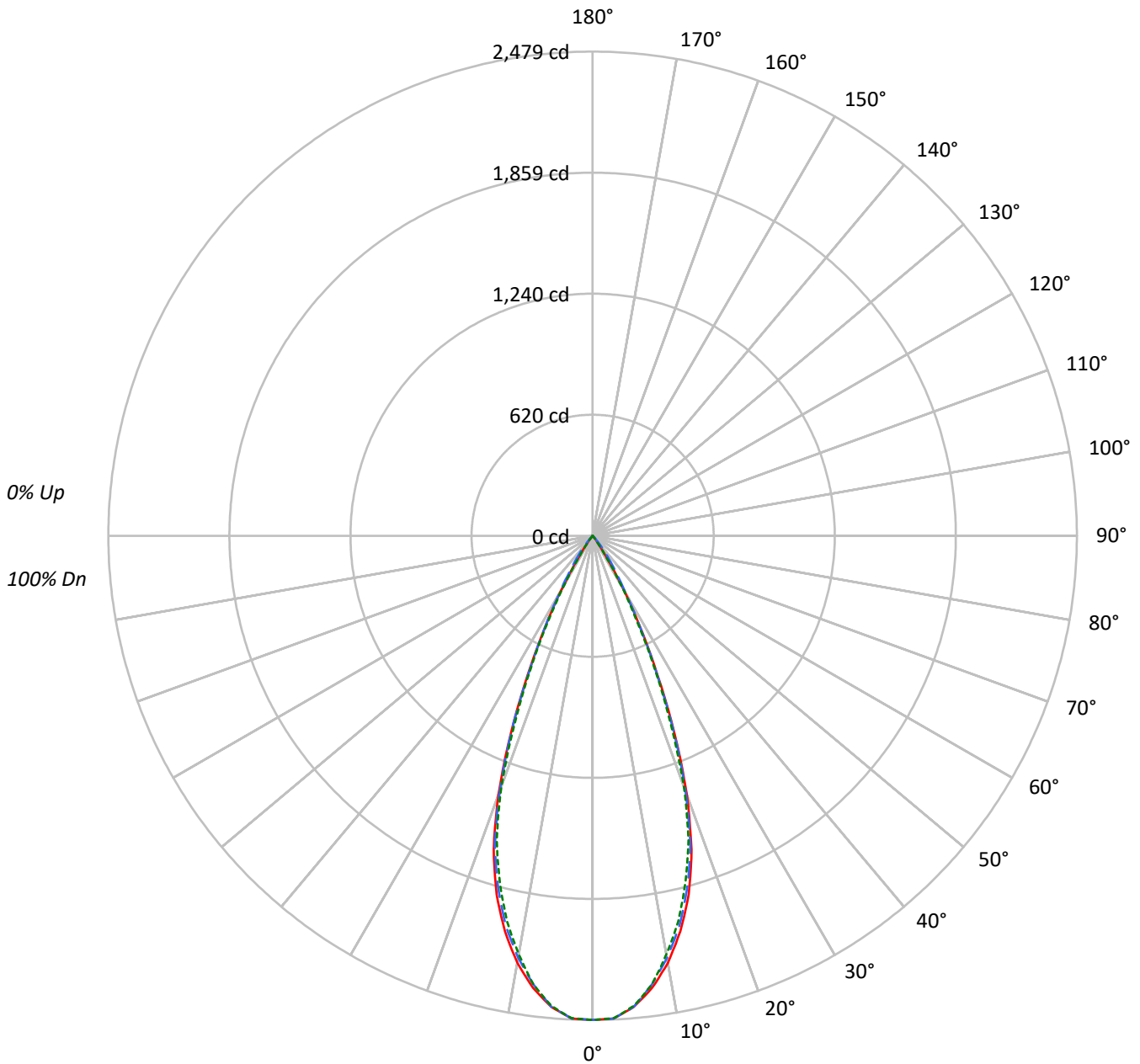
Lumens per Lamp: N/A  
Luminaire Lumens: 1168.7 lumens  
Efficiency: N/A  
Efficacy: 66.4 lumens/watt  
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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



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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					70					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	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	115	112	110	108	112	110	108	106	106	105	103	102	101	100	99	98	97	96					96			
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91					91			
3	106	101	97	93	104	99	96	93	97	94	91	94	92	90	92	90	88	87					87			
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83					83			
5	98	91	87	83	97	90	86	83	89	85	82	87	84	81	86	83	81	79					79			
6	94	87	82	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76					76			
7	91	83	79	75	90	83	78	75	82	78	75	81	77	74	80	76	74	73					73			
8	88	80	75	72	87	79	75	72	79	74	71	78	74	71	77	73	71	70					70			
9	85	77	72	69	84	76	72	69	76	71	68	75	71	68	74	71	68	67					67			
10	82	74	69	66	81	73	69	66	73	69	66	72	68	66	71	68	65	64					64			

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

	0°	45°	90°
0°	240154	240154	240154
5°	235519	235363	234984
10°	218361	215745	214043
15°	190576	187517	184138
20°	145185	143330	140742
25°	83727	82049	80542
30°	34957	37418	31892
35°	6481	17326	5653
40°	986	6146	986
45°	110	1178	110
50°	0	241	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 1178 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	223.6	19.1
10°-20°	510.7	43.7
20°-30°	356.9	30.5
30°-40°	72.9	6.2
40°-50°	4.5	0.4
50°-60°	0.1	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.0	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°	1091.2	93.4
0°-40°	1164.1	99.6
0°-60°	1168.7	100.0
0°-90°	1168.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1168.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2479	2479	2479	2479	2479	
5°	2422	2424	2420	2413	2416	225
15°	1900	1897	1870	1848	1836	518
25°	783	788	768	757	754	363
35°	55	90	146	78	48	57
45°	1	2	9	2	1	2
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2479.0	2479.0	2479.0	2479.0	2479.0
2.5°	2473.6	2472.0	2473.6	2472.8	2472.0
5°	2421.9	2424.2	2420.3	2413.2	2416.4
7.5°	2334.9	2328.7	2317.7	2314.6	2318.5
10°	2219.8	2204.1	2193.2	2189.2	2175.9
12.5°	2074.1	2066.3	2047.5	2030.2	2023.2
15°	1900.2	1897.1	1869.7	1847.7	1836.0
17.5°	1684.0	1669.9	1663.7	1642.5	1632.3
20°	1408.3	1408.3	1390.3	1360.5	1365.2
22.5°	1095.0	1083.3	1087.2	1055.8	1046.4
25°	783.3	788.0	767.6	756.6	753.5
27.5°	527.9	520.9	522.4	502.1	487.2
30°	312.5	334.5	334.5	315.7	285.1
32.5°	146.5	188.0	220.9	175.5	124.5
35°	54.8	90.1	146.5	77.5	47.8
37.5°	21.1	36.8	89.3	31.3	19.6
40°	7.8	14.9	48.6	14.1	7.8
42.5°	3.1	5.5	22.7	4.7	3.1
45°	0.8	1.6	8.6	1.6	0.8
47.5°	0.8	0.8	3.1	0.8	0.0
50°	0.0	0.0	1.6	0.0	0.0
52.5°	0.0	0.0	0.8	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
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



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Scaled Data Report







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

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