

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: P886913

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-4000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886913  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-51)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-4000K  
Description: 4IN SQUARE 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: 1327.5 lumens  
Efficiency: N/A  
Efficacy: 75.4 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

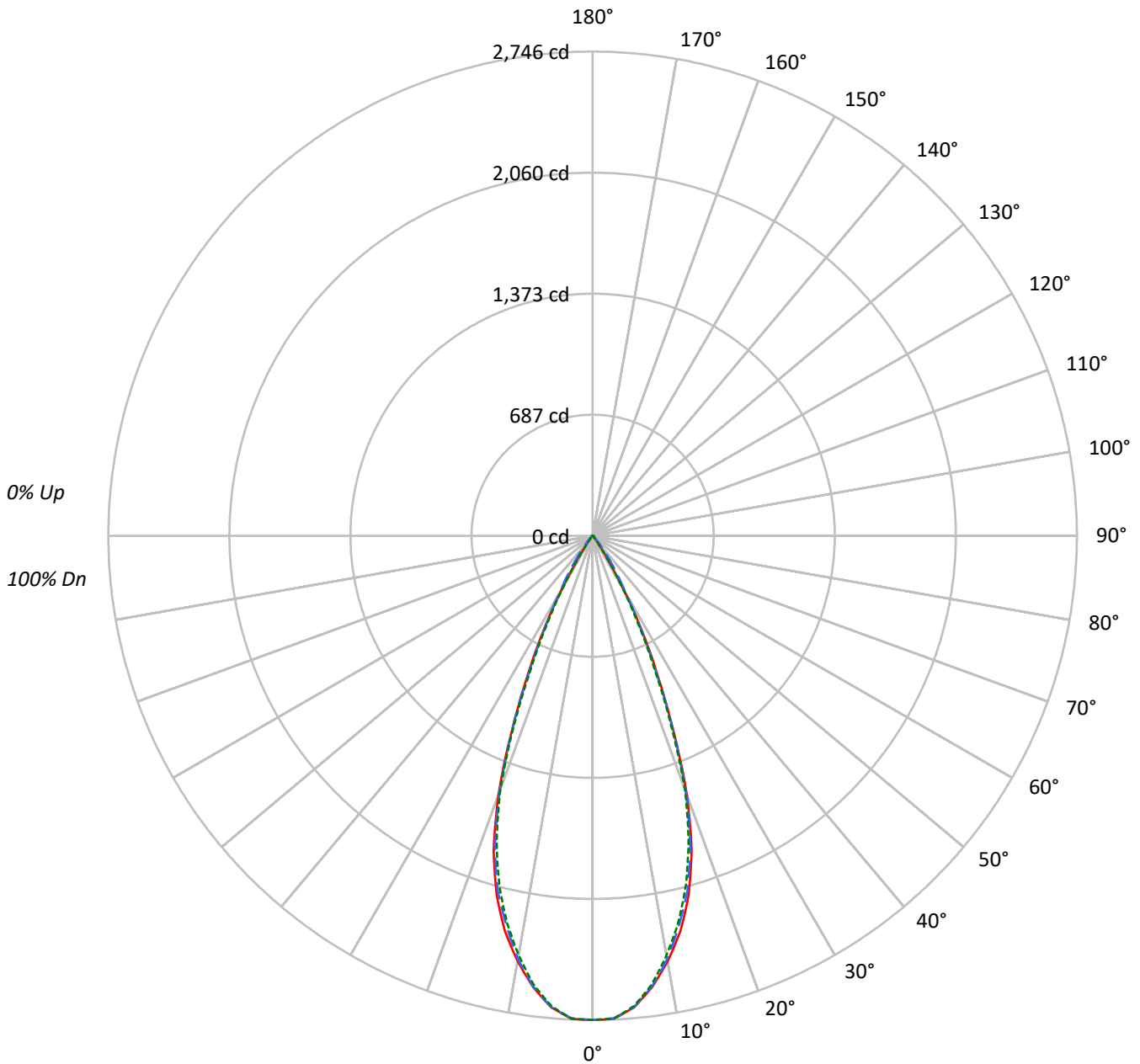
Input Watts (W): 17.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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	100	100	100	100		
	1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95	95	95	95	95	95		
	2	110	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90	90	90	90	90	90		
	3	105	100	96	92	103	99	95	92	96	93	90	94	91	89	91	89	87	86	86	86	86	86	86		
	4	101	95	90	87	100	94	89	86	92	88	85	90	87	84	88	85	83	82	82	82	82	82	82		
	5	97	90	85	82	96	89	85	81	88	84	81	86	83	80	85	82	79	78	78	78	78	78	78		
	6	94	86	81	78	92	85	81	77	84	80	77	83	79	76	82	78	76	75	75	75	75	75	75		
	7	90	82	77	74	89	82	77	74	81	76	73	79	76	73	78	75	73	71	71	71	71	71	71		
	8	87	79	74	71	86	78	74	70	77	73	70	76	73	70	76	72	70	68	68	68	68	68	68		
	9	84	76	71	67	83	75	71	67	74	70	67	74	70	67	73	69	67	66	66	66	66	66	66		
	10	81	73	68	65	80	72	68	65	72	67	64	71	67	64	70	67	64	63	63	63	63	63	63		

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

	0°	45°	90°
0°	265981	265981	265981
5°	261104	261017	260433
10°	240967	239767	237553
15°	211126	208609	205309
20°	161072	159103	157763
25°	92706	90760	87436
30°	38145	42027	35829
35°	7876	19762	7474
40°	2302	7664	2517
45°	1425	2493	1425
50°	1311	1567	1311
55°	1469	1469	1317
60°	1337	1511	1337
65°	1398	1398	1398
70°	1473	1473	1473
75°	1310	1609	1310
80°	1450	1450	1450
85°	1890	1890	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 2493 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	248.1	18.7
10°-20°	566.5	42.7
20°-30°	396.2	29.8
30°-40°	85.3	6.4
40°-50°	11.9	0.9
50°-60°	7.5	0.6
60°-70°	6.2	0.5
70°-80°	4.2	0.3
80°-90°	1.6	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°	1210.7	91.2
0°-40°	1296.0	97.6
0°-60°	1315.5	99.1
0°-90°	1327.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1327.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2746	2746	2746	2746	2746	
5°	2685	2687	2684	2677	2678	249
15°	2105	2093	2080	2050	2047	574
25°	867	856	849	835	818	402
35°	67	106	167	96	63	65
45°	10	11	18	11	10	9
55°	9	9	9	9	8	7
65°	6	6	6	6	6	6
75°	4	4	4	4	4	4
85°	2	2	2	2	2	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2745.6	2745.6	2745.6	2745.6	2745.6
2.5°	2743.0	2741.3	2738.7	2738.7	2740.4
5°	2685.0	2686.7	2684.1	2677.2	2678.1
7.5°	2582.9	2588.9	2577.7	2573.3	2566.4
10°	2449.6	2447.8	2437.4	2422.7	2414.9
12.5°	2298.1	2291.2	2263.5	2249.6	2245.3
15°	2105.1	2092.9	2080.0	2050.5	2047.1
17.5°	1866.2	1860.1	1841.9	1816.8	1808.2
20°	1562.4	1563.2	1543.3	1522.5	1530.3
22.5°	1196.2	1213.5	1190.2	1170.3	1161.6
25°	867.3	856.0	849.1	835.3	818.0
27.5°	601.6	591.2	578.2	571.3	545.3
30°	341.0	378.3	375.7	353.2	320.3
32.5°	161.9	215.5	256.2	193.9	148.9
35°	66.6	105.6	167.1	96.1	63.2
37.5°	32.0	48.5	104.7	47.6	31.2
40°	18.2	26.0	60.6	25.1	19.9
42.5°	13.0	14.7	32.9	14.7	13.0
45°	10.4	11.3	18.2	11.3	10.4
47.5°	9.5	9.5	12.1	9.5	9.5
50°	8.7	9.5	10.4	8.7	8.7
52.5°	8.7	8.7	9.5	8.7	8.7
55°	8.7	8.7	8.7	8.7	7.8
57.5°	7.8	7.8	7.8	7.8	7.8
60°	6.9	7.8	7.8	6.9	6.9
62.5°	6.9	6.9	6.9	6.9	6.1
65°	6.1	6.1	6.1	6.1	6.1
67.5°	5.2	6.1	6.1	6.1	5.2
70°	5.2	5.2	5.2	5.2	5.2
72.5°	4.3	4.3	4.3	4.3	4.3
75°	3.5	4.3	4.3	4.3	3.5
77.5°	3.5	3.5	3.5	3.5	3.5
80°	2.6	2.6	2.6	2.6	2.6
82.5°	1.7	2.6	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	1.7
87.5°	0.9	0.9	0.9	0.9	0.9
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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