

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: P886919

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDSL-1020LM-5000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886919  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-52)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDSL-1020LM-5000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, METALLIC SILVER TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

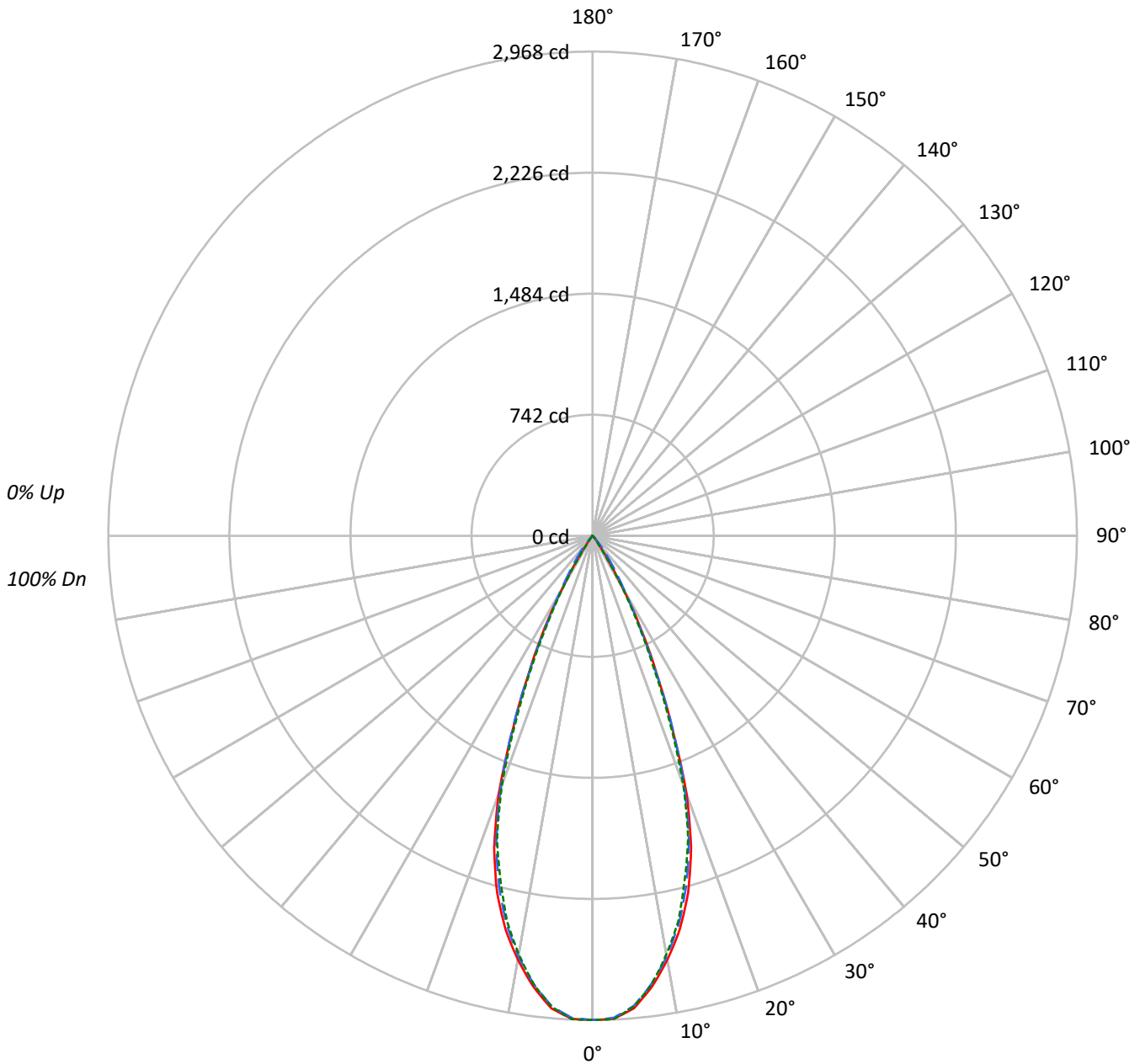
Lumens per Lamp: N/A  
Luminaire Lumens: 1396.1 lumens  
Efficiency: N/A  
Efficacy: 79.3 lumens/watt  
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.64  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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

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

	0°	45°	90°
0°	287536	287536	287536
5°	282780	281273	281720
10°	259578	257513	256263
15°	226963	222480	218819
20°	173495	169917	167474
25°	98371	97206	93112
30°	40505	44488	38469
35°	8089	20389	7119
40°	1619	7385	1619
45°	630	1630	493
50°	407	543	407
55°	304	304	304
60°	349	349	174
65°	206	206	206
70°	255	255	255
75°	337	337	337
80°	0	502	502
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 1630 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.5	19.2
10°-20°	607.9	43.5
20°-30°	421.5	30.2
30°-40°	88.0	6.3
40°-50°	7.3	0.5
50°-60°	1.8	0.1
60°-70°	1.0	0.1
70°-80°	0.9	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°	1297.0	92.9
0°-40°	1385.0	99.2
0°-60°	1394.0	99.9
0°-90°	1396.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1396.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2968	2968	2968	2968	2968	
5°	2908	2901	2892	2893	2897	269
15°	2263	2253	2218	2196	2182	617
25°	920	920	909	888	871	428
35°	68	107	172	98	60	68
45°	5	5	12	5	4	4
55°	2	2	2	2	2	2
65°	1	1	1	1	1	1
75°	1	1	1	1	1	1
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°	2968.1	2968.1	2968.1	2968.1	2968.1
2.5°	2963.5	2962.6	2957.2	2959.9	2965.4
5°	2907.9	2900.6	2892.4	2893.3	2897.0
7.5°	2787.5	2792.1	2770.2	2774.7	2772.0
10°	2638.8	2629.7	2617.8	2613.3	2605.1
12.5°	2470.1	2459.1	2438.1	2419.0	2421.7
15°	2263.0	2253.0	2218.3	2196.4	2181.8
17.5°	2007.6	1995.8	1964.7	1956.5	1946.5
20°	1682.9	1674.7	1648.2	1625.4	1624.5
22.5°	1271.5	1287.0	1285.2	1247.8	1233.2
25°	920.3	920.3	909.4	887.5	871.1
27.5°	636.7	623.0	602.9	596.5	581.0
30°	362.1	389.5	397.7	377.6	343.9
32.5°	170.6	226.2	265.4	212.5	149.6
35°	68.4	106.7	172.4	98.5	60.2
37.5°	30.1	46.5	107.6	42.9	28.3
40°	12.8	21.0	58.4	20.1	12.8
42.5°	7.3	10.0	28.3	9.1	6.4
45°	4.6	4.6	11.9	4.6	3.6
47.5°	2.7	3.6	5.5	2.7	2.7
50°	2.7	2.7	3.6	2.7	2.7
52.5°	1.8	1.8	2.7	1.8	1.8
55°	1.8	1.8	1.8	1.8	1.8
57.5°	1.8	1.8	1.8	1.8	1.8
60°	1.8	1.8	1.8	1.8	0.9
62.5°	0.9	0.9	1.8	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9
80°	0.0	0.9	0.9	0.9	0.9
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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