

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: P886883

Luminaire Tested: ML412LSFL95FS1E-TIR4D25NFL-TL4SDMW-1020LM-4000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886883  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-48)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D25NFL-TL4SDMW-1020LM-4000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

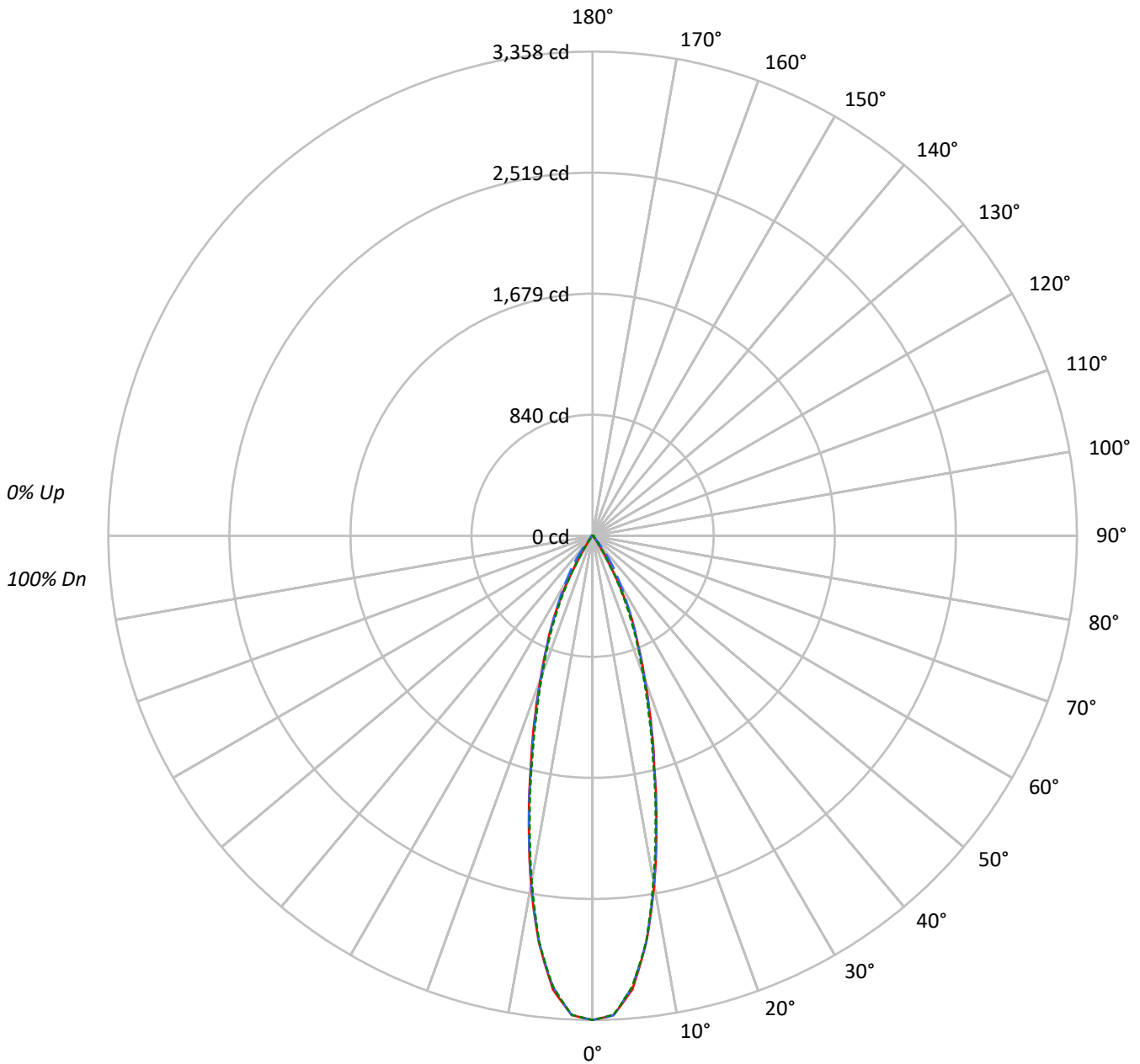
Lumens per Lamp: N/A  
Luminaire Lumens: 1157.7 lumens  
Efficiency: N/A  
Efficacy: 65.8 lumens/watt  
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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

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

	0°	45°	90°
0°	325317	325317	325317
5°	307111	305516	305429
10°	241852	241262	239049
15°	165834	164621	162966
20°	108969	107546	105041
25°	69767	68752	63846
30°	30024	42127	27015
35°	8290	23239	7888
40°	2959	8536	2845
45°	2247	3083	2137
50°	2095	2351	1959
55°	2044	2196	2044
60°	2015	2189	2015
65°	1994	2178	1994
70°	1954	2209	1954
75°	1946	2283	1946
80°	1953	2399	1953
85°	1890	1890	1890

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 3083 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	278.0	24.0
10°-20°	457.5	39.5
20°-30°	292.5	25.3
30°-40°	85.3	7.4
40°-50°	16.0	1.4
50°-60°	11.1	1.0
60°-70°	9.2	0.8
70°-80°	6.2	0.5
80°-90°	2.0	0.2
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°	1027.9	88.8
0°-40°	1113.2	96.2
0°-60°	1140.3	98.5
0°-90°	1157.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1157.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3358	3358	3358	3358	3358	
5°	3158	3155	3142	3142	3141	278
15°	1654	1648	1641	1630	1625	461
25°	653	649	643	628	597	290
35°	70	112	196	103	67	60
45°	16	17	22	17	16	13
55°	12	12	13	12	12	11
65°	9	10	10	10	9	9
75°	5	6	6	6	5	5
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°	3358.1	3358.1	3358.1	3358.1	3358.1
2.5°	3327.8	3331.3	3329.5	3320.0	3325.2
5°	3158.1	3154.7	3141.7	3142.5	3140.8
7.5°	2848.2	2847.3	2843.0	2844.7	2839.5
10°	2458.6	2475.9	2452.6	2452.6	2430.1
12.5°	2044.8	2049.1	2038.8	2026.6	2016.2
15°	1653.5	1647.5	1641.4	1630.1	1624.9
17.5°	1336.7	1335.8	1321.1	1307.2	1288.2
20°	1057.0	1054.4	1043.2	1038.0	1018.9
22.5°	829.4	839.7	827.6	807.7	802.5
25°	652.7	649.3	643.2	627.6	597.3
27.5°	452.8	489.1	496.1	467.5	419.9
30°	268.4	325.5	376.6	310.8	241.5
32.5°	150.6	200.8	284.0	187.0	129.9
35°	70.1	111.7	196.5	103.0	66.7
37.5°	32.0	54.5	119.5	53.7	34.6
40°	23.4	27.7	67.5	29.4	22.5
42.5°	19.0	20.8	38.1	20.8	18.2
45°	16.4	17.3	22.5	17.3	15.6
47.5°	13.9	15.6	17.3	14.7	13.9
50°	13.9	13.9	15.6	13.9	13.0
52.5°	13.0	13.0	13.9	13.0	13.0
55°	12.1	12.1	13.0	12.1	12.1
57.5°	11.3	11.3	12.1	11.3	11.3
60°	10.4	11.3	11.3	10.4	10.4
62.5°	9.5	10.4	10.4	10.4	9.5
65°	8.7	9.5	9.5	9.5	8.7
67.5°	7.8	8.7	8.7	8.7	7.8
70°	6.9	7.8	7.8	7.8	6.9
72.5°	6.1	6.9	6.9	6.9	6.1
75°	5.2	6.1	6.1	6.1	5.2
77.5°	4.3	5.2	5.2	5.2	4.3
80°	3.5	4.3	4.3	4.3	3.5
82.5°	2.6	2.6	2.6	3.5	2.6
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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