

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: P887018

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-4000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887018
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-49)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-4000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1473.4 lumens
Efficiency: N/A
Efficacy: 83.7 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

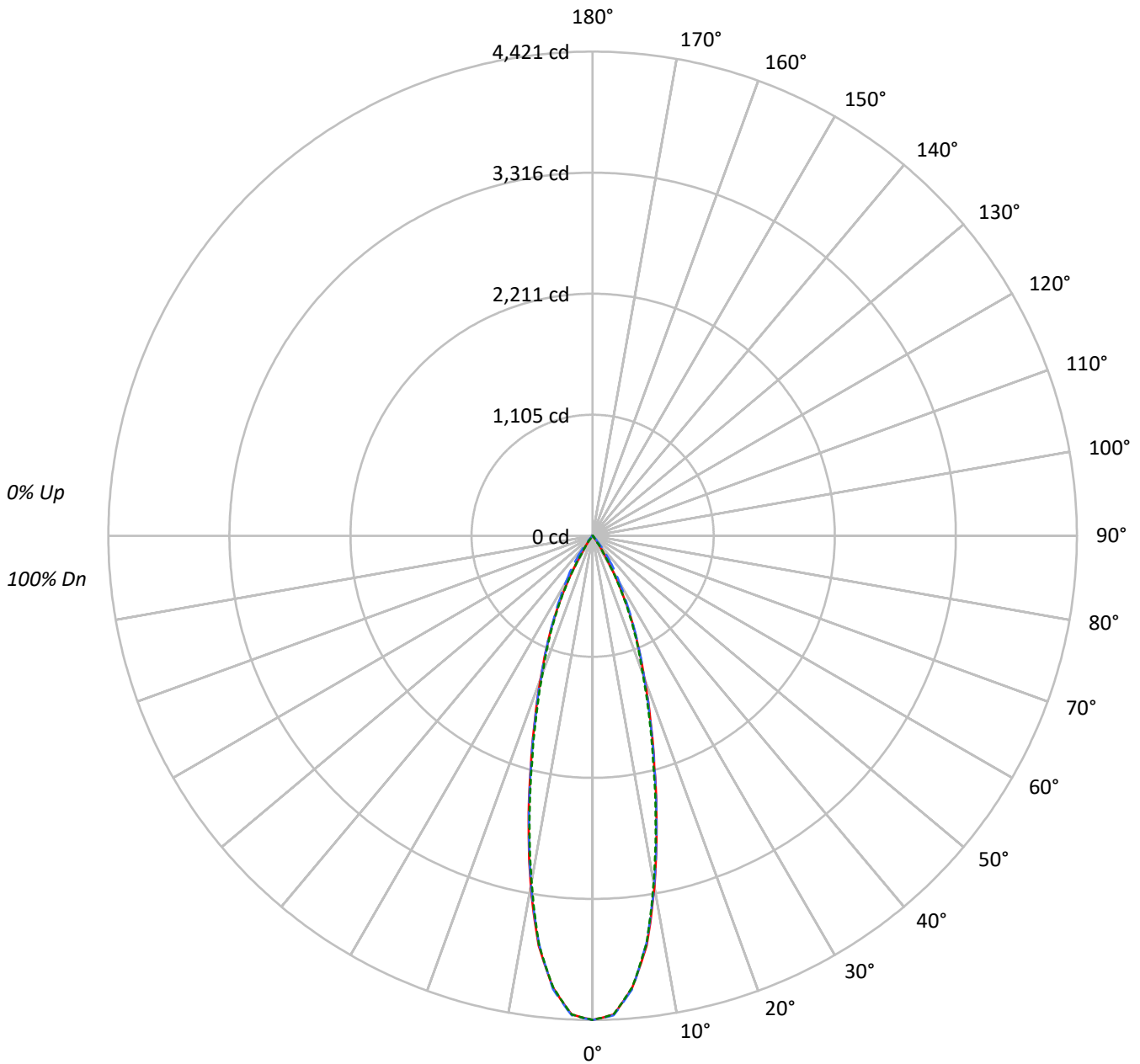
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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	107	106	105	103	102	101	100	99	98	97	96					96			
2	110	106	103	100	108	105	102	99	101	99	97	99	97	95	96	94	93	92					92			
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	93	91	89	88					88			
4	102	96	92	89	101	95	91	88	93	90	87	91	88	86	90	87	85	84					84			
5	99	92	87	84	97	91	87	84	90	86	83	88	85	82	87	84	82	80					80			
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	84	81	78	77					77			
7	92	85	80	77	91	84	80	76	83	79	76	82	78	76	81	78	75	74					74			
8	89	81	77	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71					71			
9	86	78	74	71	85	78	73	70	77	73	70	76	73	70	76	72	70	69					69			
10	83	76	71	68	82	75	71	68	74	70	68	74	70	68	73	70	67	66					66			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	428306	428306	428306
5°	403053	403812	402412
10°	319682	318709	315876
15°	218327	217545	214225
20°	142319	141402	137299
25°	88794	89980	84657
30°	38850	53951	35639
35°	10336	28785	9154
40°	2377	9510	2238
45°	1206	2124	1055
50°	663	995	663
55°	557	557	557
60°	426	426	426
65°	504	504	504
70°	312	312	312
75°	412	412	412
80°	614	614	614
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2124 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.5	24.9
10°-20°	602.9	40.9
20°-30°	381.4	25.9
30°-40°	105.4	7.2
40°-50°	10.9	0.7
50°-60°	3.0	0.2
60°-70°	2.0	0.1
70°-80°	1.2	0.1
80°-90°	0.3	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°	1350.7	91.7
0°-40°	1456.1	98.8
0°-60°	1470.0	99.8
0°-90°	1473.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1473.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4421	4421	4421	4421	4421	
5°	4145	4152	4152	4129	4138	367
15°	2177	2192	2169	2142	2136	606
25°	831	843	842	817	792	374
35°	87	134	243	125	77	72
45°	9	10	16	9	8	7
55°	3	3	3	3	3	3
65°	2	2	2	2	2	2
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°	4421.2	4421.2	4421.2	4421.2	4421.2
2.5°	4375.9	4382.5	4383.6	4382.5	4375.9
5°	4144.7	4152.5	4152.5	4129.2	4138.1
7.5°	3773.0	3755.4	3753.1	3744.3	3758.7
10°	3249.8	3259.8	3239.9	3241.0	3211.1
12.5°	2695.7	2703.4	2686.8	2666.9	2659.2
15°	2176.9	2192.4	2169.1	2141.5	2136.0
17.5°	1746.6	1775.4	1737.7	1712.3	1704.6
20°	1380.5	1392.6	1371.6	1344.0	1331.8
22.5°	1082.9	1085.1	1089.5	1061.9	1056.4
25°	830.7	842.9	841.8	817.4	792.0
27.5°	571.9	638.2	642.7	613.9	553.1
30°	347.3	419.2	482.3	397.1	318.6
32.5°	182.5	258.8	360.6	235.6	162.6
35°	87.4	133.8	243.4	125.0	77.4
37.5°	32.1	63.1	147.1	57.5	31.0
40°	18.8	25.4	75.2	24.3	17.7
42.5°	12.2	15.5	37.6	14.4	12.2
45°	8.8	10.0	15.5	8.8	7.7
47.5°	5.5	6.6	8.8	6.6	5.5
50°	4.4	4.4	6.6	4.4	4.4
52.5°	3.3	3.3	4.4	3.3	3.3
55°	3.3	3.3	3.3	3.3	3.3
57.5°	2.2	3.3	3.3	3.3	2.2
60°	2.2	2.2	2.2	2.2	2.2
62.5°	2.2	2.2	2.2	2.2	2.2
65°	2.2	2.2	2.2	2.2	2.2
67.5°	1.1	2.2	2.2	2.2	1.1
70°	1.1	1.1	1.1	1.1	1.1
72.5°	1.1	1.1	1.1	1.1	1.1
75°	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	1.1	1.1	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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