

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: P887017

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-3500K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887017
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-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1420.2 lumens
Efficiency: N/A
Efficacy: 80.7 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

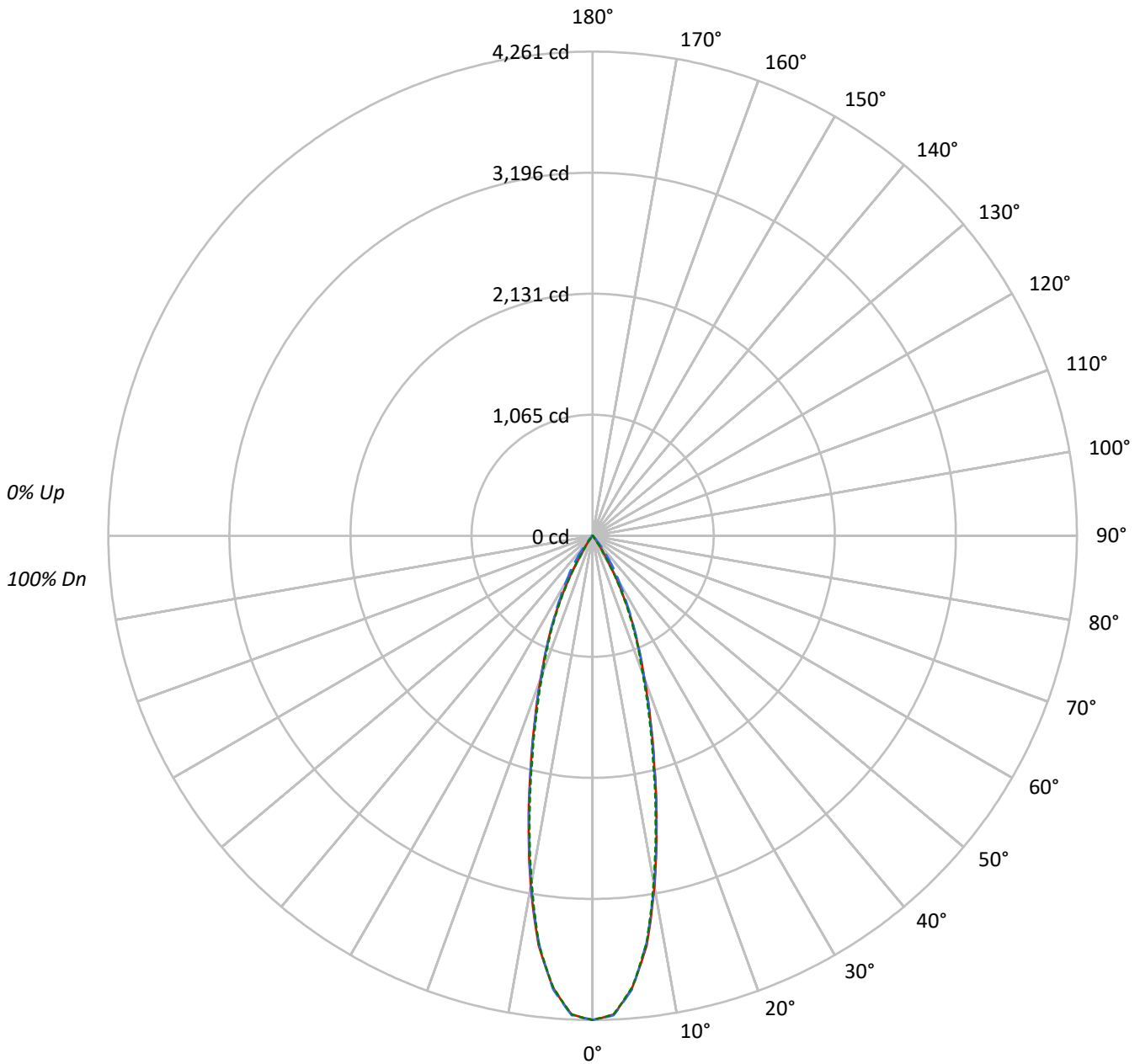
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96																			
2	110	106	103	100	108	105	102	99	101	99	97	99	97	95	96	94	93	92																			
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	93	91	89	88																			
4	102	96	92	89	101	95	91	88	93	90	87	91	88	86	90	87	85	84																			
5	99	92	87	84	97	91	87	84	90	86	83	88	85	82	87	84	82	80																			
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	84	81	78	77																			
7	92	85	80	77	91	84	80	76	83	79	76	82	78	76	81	78	75	74																			
8	89	81	77	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71																			
9	86	78	74	71	85	78	73	70	77	73	70	76	73	70	76	72	70	69																			
10	83	76	71	68	82	75	71	68	74	70	68	74	70	68	73	70	67	66																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	412806	412806	412806
5°	388467	389196	387844
10°	308114	307170	304445
15°	210424	209672	206473
20°	137165	136289	132330
25°	85576	86720	81589
30°	37451	51994	34342
35°	9958	27733	8822
40°	2289	9168	2162
45°	1165	2041	1028
50°	648	965	648
55°	540	540	540
60°	407	407	407
65°	481	481	481
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: 2041 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	353.2	24.9
10°-20°	581.1	40.9
20°-30°	367.6	25.9
30°-40°	101.6	7.2
40°-50°	10.5	0.7
50°-60°	2.9	0.2
60°-70°	1.9	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°	1301.9	91.7
0°-40°	1403.4	98.8
0°-60°	1416.8	99.8
0°-90°	1420.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1420.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4261	4261	4261	4261	4261	
5°	3995	4002	4002	3980	3988	354
15°	2098	2113	2091	2064	2059	584
25°	801	812	811	788	763	360
35°	84	129	234	120	75	70
45°	8	10	15	8	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°	4261.2	4261.2	4261.2	4261.2	4261.2
2.5°	4217.5	4223.9	4225.0	4223.9	4217.5
5°	3994.7	4002.2	4002.2	3979.8	3988.3
7.5°	3636.5	3619.4	3617.3	3608.8	3622.6
10°	3132.2	3141.8	3122.6	3123.7	3094.9
12.5°	2598.1	2605.6	2589.6	2570.4	2562.9
15°	2098.1	2113.0	2090.6	2064.0	2058.7
17.5°	1683.4	1711.1	1674.9	1650.3	1642.9
20°	1330.5	1342.2	1322.0	1295.3	1283.6
22.5°	1043.7	1045.9	1050.1	1023.5	1018.1
25°	800.6	812.4	811.3	787.9	763.3
27.5°	551.2	615.1	619.4	591.7	533.1
30°	334.8	404.1	464.8	382.7	307.0
32.5°	175.9	249.5	347.6	227.1	156.7
35°	84.2	129.0	234.5	120.5	74.6
37.5°	30.9	60.8	141.8	55.4	29.9
40°	18.1	24.5	72.5	23.5	17.1
42.5°	11.7	14.9	36.2	13.9	11.7
45°	8.5	9.6	14.9	8.5	7.5
47.5°	5.3	6.4	8.5	6.4	5.3
50°	4.3	4.3	6.4	4.3	4.3
52.5°	3.2	3.2	4.3	3.2	3.2
55°	3.2	3.2	3.2	3.2	3.2
57.5°	2.1	3.2	3.2	3.2	2.1
60°	2.1	2.1	2.1	2.1	2.1
62.5°	2.1	2.1	2.1	2.1	2.1
65°	2.1	2.1	2.1	2.1	2.1
67.5°	1.1	2.1	2.1	2.1	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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