

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: P887019

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-5000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887019
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-5000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1551.9 lumens
Efficiency: N/A
Efficacy: 88.2 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

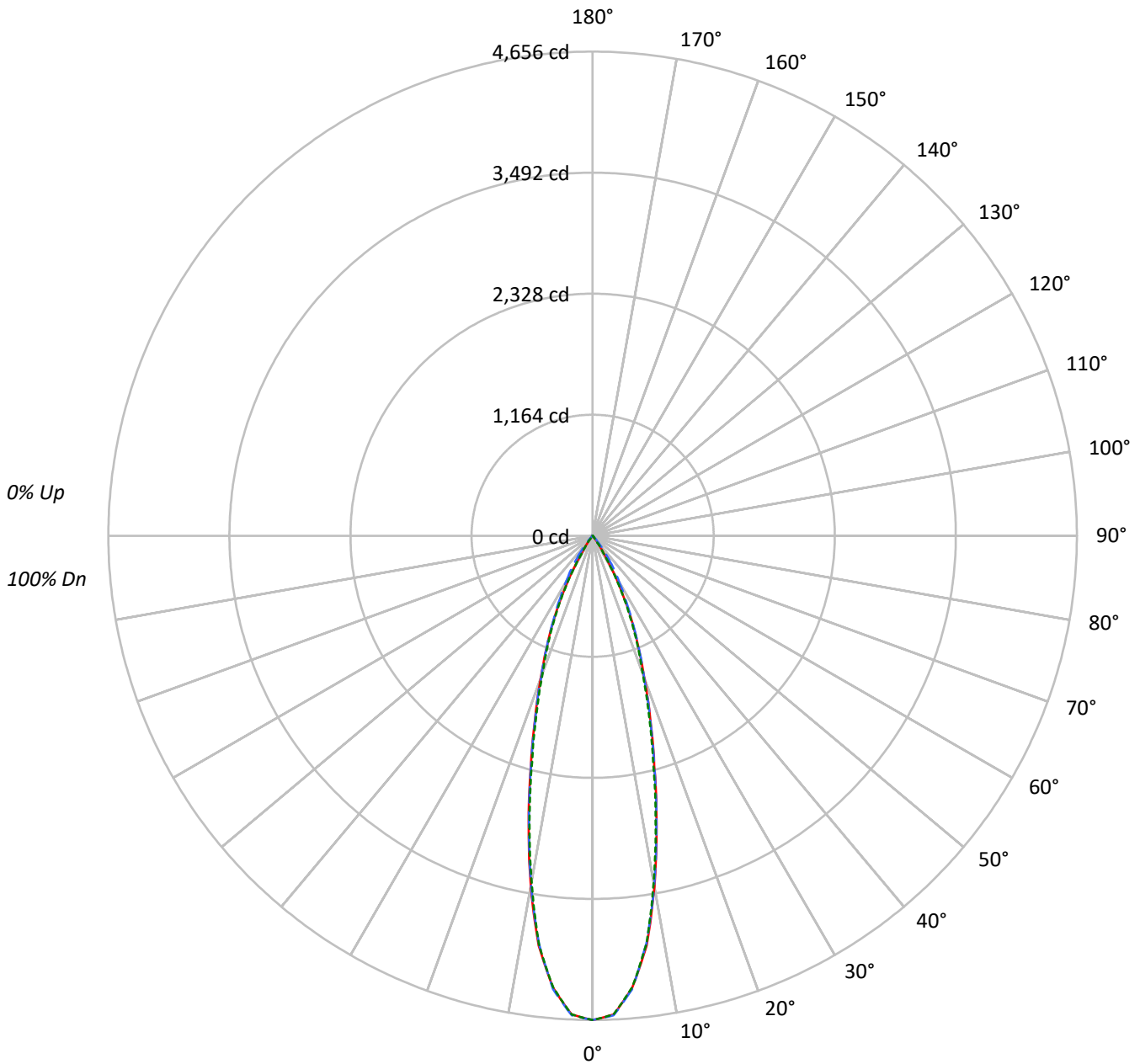
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P887019

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-5000K

Luminous Intensity Polar Plot





TEST NUMBER: P887019

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-5000K

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°	451091	451091	451091
5°	424486	425284	423806
10°	336691	335658	332677
15°	229931	229119	225609
20°	149886	148928	144598
25°	93518	94758	89157
30°	40919	56815	37530
35°	10880	30311	9638
40°	2504	10016	2352
45°	1274	2233	1123
50°	708	1055	708
55°	591	591	591
60°	446	446	446
65°	527	527	527
70°	340	340	340
75°	449	449	449
80°	669	669	669
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 2233 cd/sqm



TEST NUMBER: P887019

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.0	24.9
10°-20°	634.9	40.9
20°-30°	401.6	25.9
30°-40°	111.0	7.2
40°-50°	11.5	0.7
50°-60°	3.2	0.2
60°-70°	2.1	0.1
70°-80°	1.3	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°	1422.6	91.7
0°-40°	1533.5	98.8
0°-60°	1548.2	99.8
0°-90°	1551.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1551.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4656	4656	4656	4656	4656	
5°	4365	4373	4373	4349	4358	387
15°	2293	2309	2284	2255	2250	638
25°	875	888	886	861	834	394
35°	92	141	256	132	82	76
45°	9	10	16	9	8	8
55°	4	4	4	4	4	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



TEST NUMBER: P887019

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-5000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4656.4	4656.4	4656.4	4656.4	4656.4
2.5°	4608.6	4615.6	4616.7	4615.6	4608.6
5°	4365.1	4373.3	4373.3	4348.8	4358.1
7.5°	3973.7	3955.0	3952.7	3943.4	3958.5
10°	3422.7	3433.1	3412.2	3413.3	3381.9
12.5°	2839.0	2847.2	2829.7	2808.7	2800.6
15°	2292.6	2309.0	2284.5	2255.4	2249.5
17.5°	1839.5	1869.8	1830.2	1803.4	1795.2
20°	1453.9	1466.7	1444.6	1415.4	1402.6
22.5°	1140.5	1142.8	1147.5	1118.4	1112.5
25°	874.9	887.7	886.5	860.9	834.1
27.5°	602.3	672.2	676.8	646.6	582.5
30°	365.8	441.5	507.9	418.2	335.5
32.5°	192.2	272.6	379.8	248.1	171.2
35°	92.0	141.0	256.3	131.6	81.5
37.5°	33.8	66.4	154.9	60.6	32.6
40°	19.8	26.8	79.2	25.6	18.6
42.5°	12.8	16.3	39.6	15.1	12.8
45°	9.3	10.5	16.3	9.3	8.2
47.5°	5.8	7.0	9.3	7.0	5.8
50°	4.7	4.7	7.0	4.7	4.7
52.5°	3.5	3.5	4.7	3.5	3.5
55°	3.5	3.5	3.5	3.5	3.5
57.5°	2.3	3.5	3.5	3.5	2.3
60°	2.3	2.3	2.3	2.3	2.3
62.5°	2.3	2.3	2.3	2.3	2.3
65°	2.3	2.3	2.3	2.3	2.3
67.5°	1.2	2.3	2.3	2.3	1.2
70°	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2
75°	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	1.2	1.2	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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270°

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)