

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: P887012

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887012
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: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

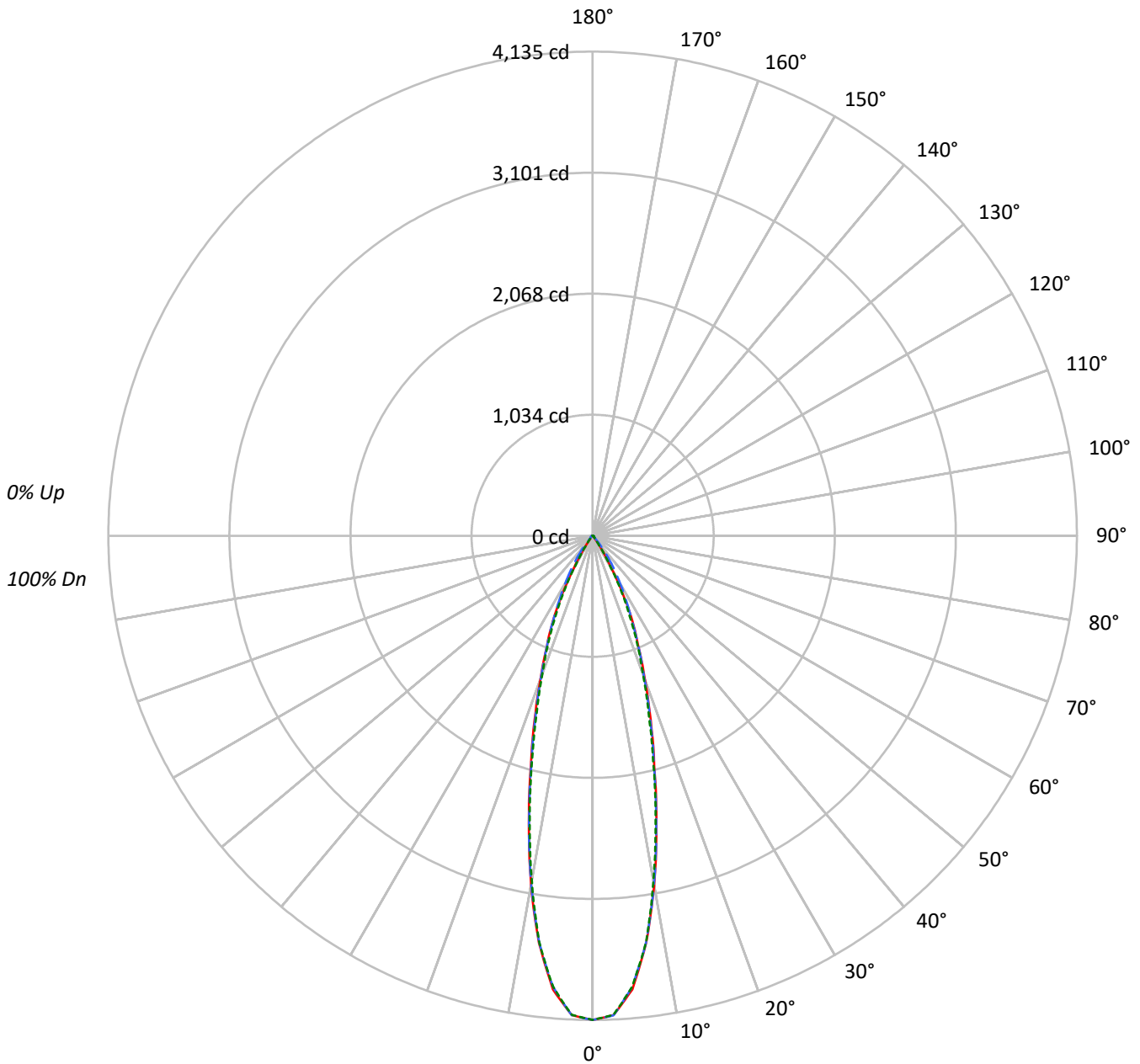
Lumens per Lamp: N/A
Luminaire Lumens: 1425.5 lumens
Efficiency: N/A
Efficacy: 81.0 lumens/watt
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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: P887012
CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K

Luminous Intensity Polar Plot





TEST NUMBER: P887012

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K

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								
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°	400561	400561	400561
5°	378149	376175	376077
10°	297795	297057	294333
15°	204196	202692	200666
20°	134175	132423	129340
25°	85908	84657	78618
30°	36959	51870	33268
35°	10206	28620	9709
40°	3642	10509	3503
45°	2781	3795	2630
50°	2577	2894	2411
55°	2517	2702	2517
60°	2480	2693	2480
65°	2453	2682	2453
70°	2408	2719	2408
75°	2396	2807	2396
80°	2399	2957	2399
85°	2334	2334	2334

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 3795 cd/sqm



TEST NUMBER: P887012

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	342.3	24.0
10°-20°	563.3	39.5
20°-30°	360.1	25.3
30°-40°	105.1	7.4
40°-50°	19.7	1.4
50°-60°	13.7	1.0
60°-70°	11.3	0.8
70°-80°	7.6	0.5
80°-90°	2.5	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°	1265.7	88.8
0°-40°	1370.7	96.2
0°-60°	1404.1	98.5
0°-90°	1425.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1425.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4135	4135	4135	4135	4135	
5°	3889	3884	3868	3869	3867	343
15°	2036	2028	2021	2007	2001	568
25°	804	800	792	773	736	357
35°	86	138	242	127	82	73
45°	20	21	28	21	19	16
55°	15	15	16	15	15	13
65°	11	12	12	12	11	11
75°	6	8	8	8	6	7
85°	2	2	2	2	2	2
90°	0	0	0	0	0	



TEST NUMBER: P887012

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMW-1200LM-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4134.8	4134.8	4134.8	4134.8	4134.8
2.5°	4097.5	4101.8	4099.6	4087.9	4094.3
5°	3888.6	3884.3	3868.3	3869.4	3867.3
7.5°	3507.0	3505.9	3500.6	3502.7	3496.3
10°	3027.3	3048.6	3019.8	3019.8	2992.1
12.5°	2517.8	2523.1	2510.3	2495.4	2482.6
15°	2036.0	2028.5	2021.0	2007.2	2000.8
17.5°	1645.8	1644.8	1626.6	1609.6	1586.1
20°	1301.5	1298.3	1284.5	1278.1	1254.6
22.5°	1021.2	1034.0	1019.0	994.5	988.1
25°	803.7	799.5	792.0	772.8	735.5
27.5°	557.5	602.3	610.8	575.6	517.0
30°	330.4	400.8	463.7	382.7	297.4
32.5°	185.5	247.3	349.6	230.2	159.9
35°	86.3	137.5	242.0	126.8	82.1
37.5°	39.4	67.2	147.1	66.1	42.6
40°	28.8	34.1	83.1	36.2	27.7
42.5°	23.5	25.6	46.9	25.6	22.4
45°	20.3	21.3	27.7	21.3	19.2
47.5°	17.1	19.2	21.3	18.1	17.1
50°	17.1	17.1	19.2	17.1	16.0
52.5°	16.0	16.0	17.1	16.0	16.0
55°	14.9	14.9	16.0	14.9	14.9
57.5°	13.9	13.9	14.9	13.9	13.9
60°	12.8	13.9	13.9	12.8	12.8
62.5°	11.7	12.8	12.8	12.8	11.7
65°	10.7	11.7	11.7	11.7	10.7
67.5°	9.6	10.7	10.7	10.7	9.6
70°	8.5	9.6	9.6	9.6	8.5
72.5°	7.5	8.5	8.5	8.5	7.5
75°	6.4	7.5	7.5	7.5	6.4
77.5°	5.3	6.4	6.4	6.4	5.3
80°	4.3	5.3	5.3	5.3	4.3
82.5°	3.2	3.2	3.2	4.3	3.2
85°	2.1	2.1	2.1	2.1	2.1
87.5°	1.1	1.1	1.1	1.1	1.1
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)