

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: P887037

Luminaire Tested: ML412LSFL9FS1E-TIR4D40FL-TL4SDMB-1200LM-3500K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887037
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-53)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D40FL-TL4SDMB-1200LM-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1591.8 lumens
Efficiency: N/A
Efficacy: 90.4 lumens/watt
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

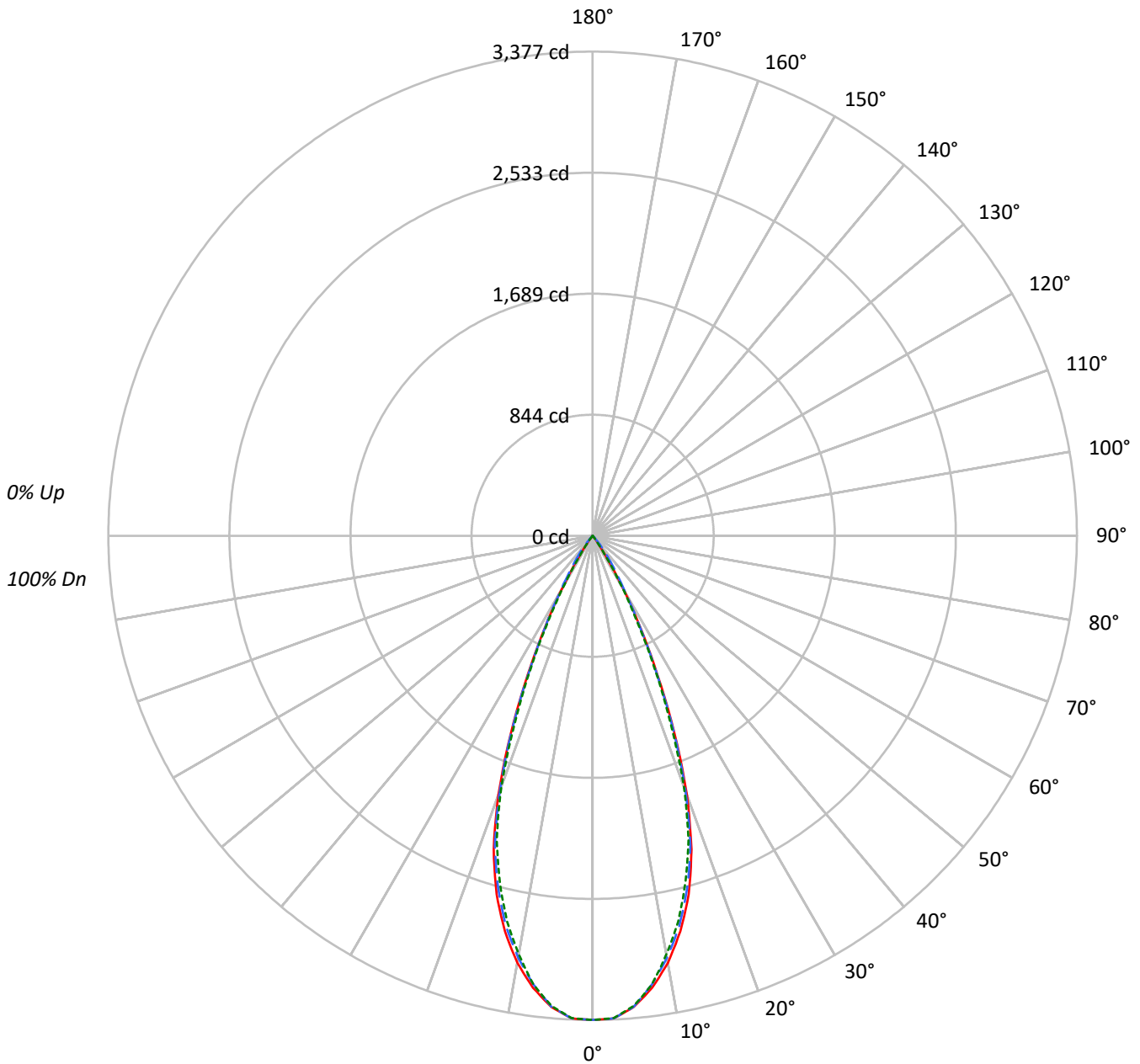
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	115	112	110	108	112	110	108	106	106	105	103	102	101	100	99	98	97	96																			
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91																			
3	106	101	97	93	104	99	96	93	97	94	91	94	92	90	92	90	88	87																			
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83																			
5	98	91	87	83	97	90	86	83	89	85	82	87	84	81	86	83	81	79																			
6	94	87	82	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76																			
7	91	83	79	75	90	83	78	75	82	78	75	81	77	74	80	76	74	73																			
8	88	80	75	72	87	79	75	72	79	74	71	78	74	71	77	73	71	70																			
9	85	77	72	69	84	76	72	69	76	71	68	75	71	68	74	71	68	67																			
10	82	74	69	66	81	73	69	66	73	69	66	72	68	66	71	68	65	64																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	327110	327110	327110
5°	320793	320579	320064
10°	297421	293851	291549
15°	259578	255406	250802
20°	197752	195227	191701
25°	114041	111754	109701
30°	47620	50964	43436
35°	8834	23593	7699
40°	1353	8359	1353
45°	151	1603	151
50°	0	316	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 1603 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	304.6	19.1
10°-20°	695.6	43.7
20°-30°	486.1	30.5
30°-40°	99.3	6.2
40°-50°	6.1	0.4
50°-60°	0.1	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.0	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°	1486.2	93.4
0°-40°	1585.6	99.6
0°-60°	1591.8	100.0
0°-90°	1591.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1591.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3377	3377	3377	3377	3377	
5°	3299	3302	3297	3287	3291	306
15°	2588	2584	2547	2517	2501	706
25°	1067	1073	1046	1031	1026	494
35°	75	123	200	106	65	77
45°	1	2	12	2	1	2
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
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°	3376.6	3376.6	3376.6	3376.6	3376.6
2.5°	3369.2	3367.0	3369.2	3368.1	3367.0
5°	3298.8	3302.0	3296.6	3287.0	3291.3
7.5°	3180.3	3171.8	3156.9	3152.6	3157.9
10°	3023.5	3002.2	2987.2	2981.9	2963.8
12.5°	2825.1	2814.4	2788.8	2765.3	2755.7
15°	2588.2	2584.0	2546.6	2516.7	2500.7
17.5°	2293.8	2274.6	2266.0	2237.2	2223.4
20°	1918.2	1918.2	1893.7	1853.1	1859.5
22.5°	1491.5	1475.5	1480.8	1438.1	1425.3
25°	1066.9	1073.3	1045.5	1030.6	1026.3
27.5°	719.1	709.5	711.6	683.9	663.6
30°	425.7	455.6	455.6	429.9	388.3
32.5°	199.5	256.0	300.9	239.0	169.6
35°	74.7	122.7	199.5	105.6	65.1
37.5°	28.8	50.1	121.6	42.7	26.7
40°	10.7	20.3	66.1	19.2	10.7
42.5°	4.3	7.5	30.9	6.4	4.3
45°	1.1	2.1	11.7	2.1	1.1
47.5°	1.1	1.1	4.3	1.1	0.0
50°	0.0	0.0	2.1	0.0	0.0
52.5°	0.0	0.0	1.1	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	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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