

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: P887016

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDSL-1200LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887016
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-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1372.3 lumens
Efficiency: N/A
Efficacy: 78.0 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

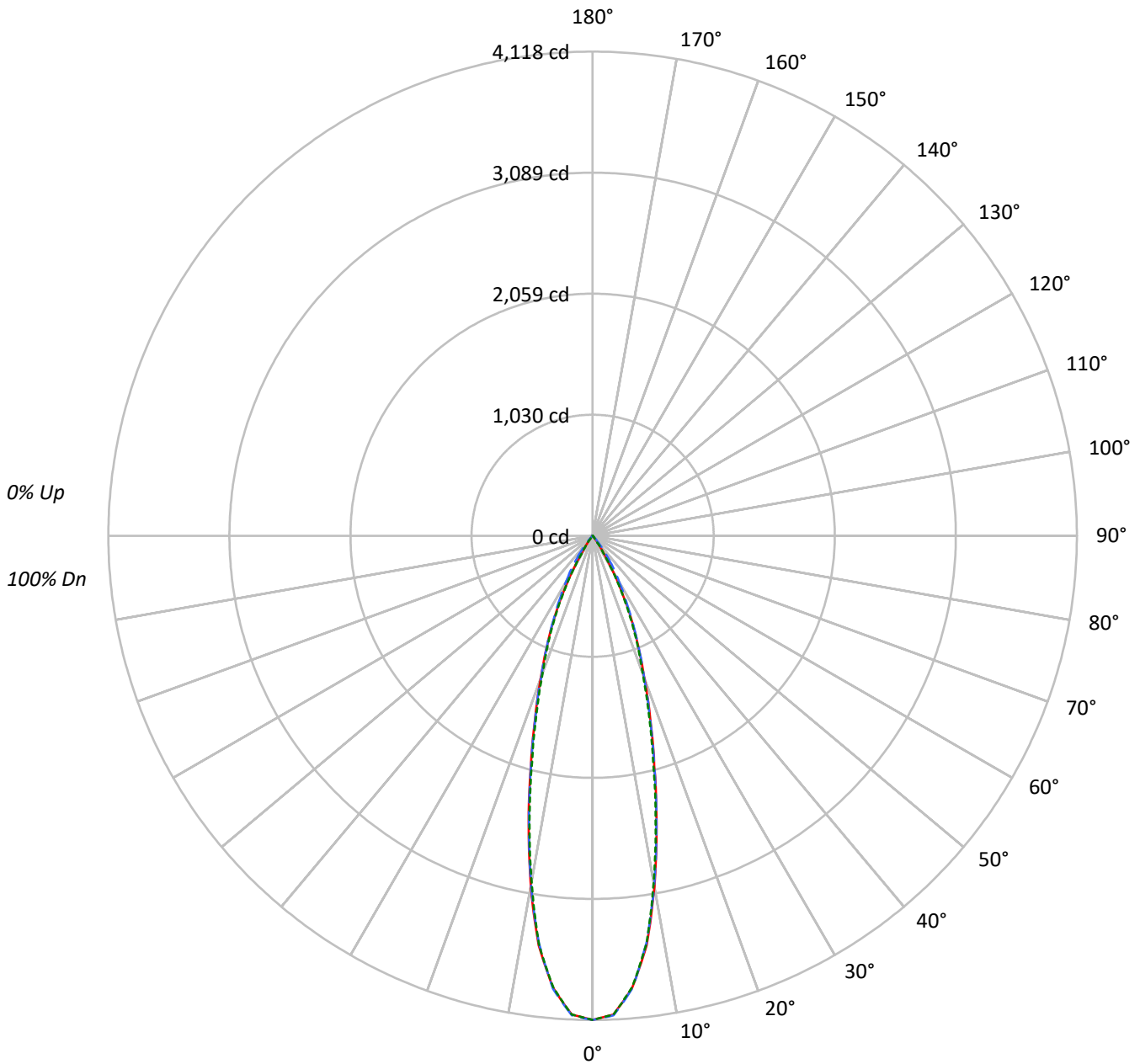
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	398894	398894	398894
5°	375368	376068	374774
10°	297726	296821	294185
15°	203334	202612	199513
20°	132536	131691	127866
25°	82701	83802	78842
30°	36187	50248	33189
35°	9627	26798	8527
40°	2213	8865	2087
45°	1123	1973	986
50°	618	934	618
55°	524	524	524
60°	407	407	407
65°	481	481	481
70°	283	283	283
75°	374	374	374
80°	558	558	558
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 1973 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	341.3	24.9
10°-20°	561.5	40.9
20°-30°	355.2	25.9
30°-40°	98.1	7.2
40°-50°	10.1	0.7
50°-60°	2.8	0.2
60°-70°	1.9	0.1
70°-80°	1.1	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°	1258.0	91.7
0°-40°	1356.1	98.8
0°-60°	1369.1	99.8
0°-90°	1372.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1372.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4118	4118	4118	4118	4118	
5°	3860	3867	3867	3846	3854	342
15°	2027	2042	2020	1994	1989	564
25°	774	785	784	761	738	348
35°	81	125	227	116	72	67
45°	8	9	14	8	7	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°	4117.6	4117.6	4117.6	4117.6	4117.6
2.5°	4075.3	4081.5	4082.5	4081.5	4075.3
5°	3860.0	3867.2	3867.2	3845.6	3853.9
7.5°	3513.9	3497.4	3495.4	3487.1	3500.5
10°	3026.6	3035.9	3017.4	3018.4	2990.6
12.5°	2510.5	2517.7	2502.3	2483.7	2476.5
15°	2027.4	2041.8	2020.2	1994.4	1989.3
17.5°	1626.6	1653.4	1618.4	1594.7	1587.5
20°	1285.6	1297.0	1277.4	1251.7	1240.3
22.5°	1008.5	1010.6	1014.7	989.0	983.8
25°	773.7	785.0	784.0	761.3	737.6
27.5°	532.6	594.4	598.5	571.7	515.1
30°	323.5	390.4	449.2	369.8	296.7
32.5°	170.0	241.1	335.8	219.4	151.4
35°	81.4	124.7	226.6	116.4	72.1
37.5°	29.9	58.7	137.0	53.6	28.8
40°	17.5	23.7	70.1	22.7	16.5
42.5°	11.3	14.4	35.0	13.4	11.3
45°	8.2	9.3	14.4	8.2	7.2
47.5°	5.2	6.2	8.2	6.2	5.2
50°	4.1	4.1	6.2	4.1	4.1
52.5°	3.1	3.1	4.1	3.1	3.1
55°	3.1	3.1	3.1	3.1	3.1
57.5°	2.1	3.1	3.1	3.1	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°	1.0	2.1	2.1	2.1	1.0
70°	1.0	1.0	1.0	1.0	1.0
72.5°	1.0	1.0	1.0	1.0	1.0
75°	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	1.0	1.0	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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