

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: P887008

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-4000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887008
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-50)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-4000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1409.3 lumens
Efficiency: N/A
Efficacy: 80.1 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

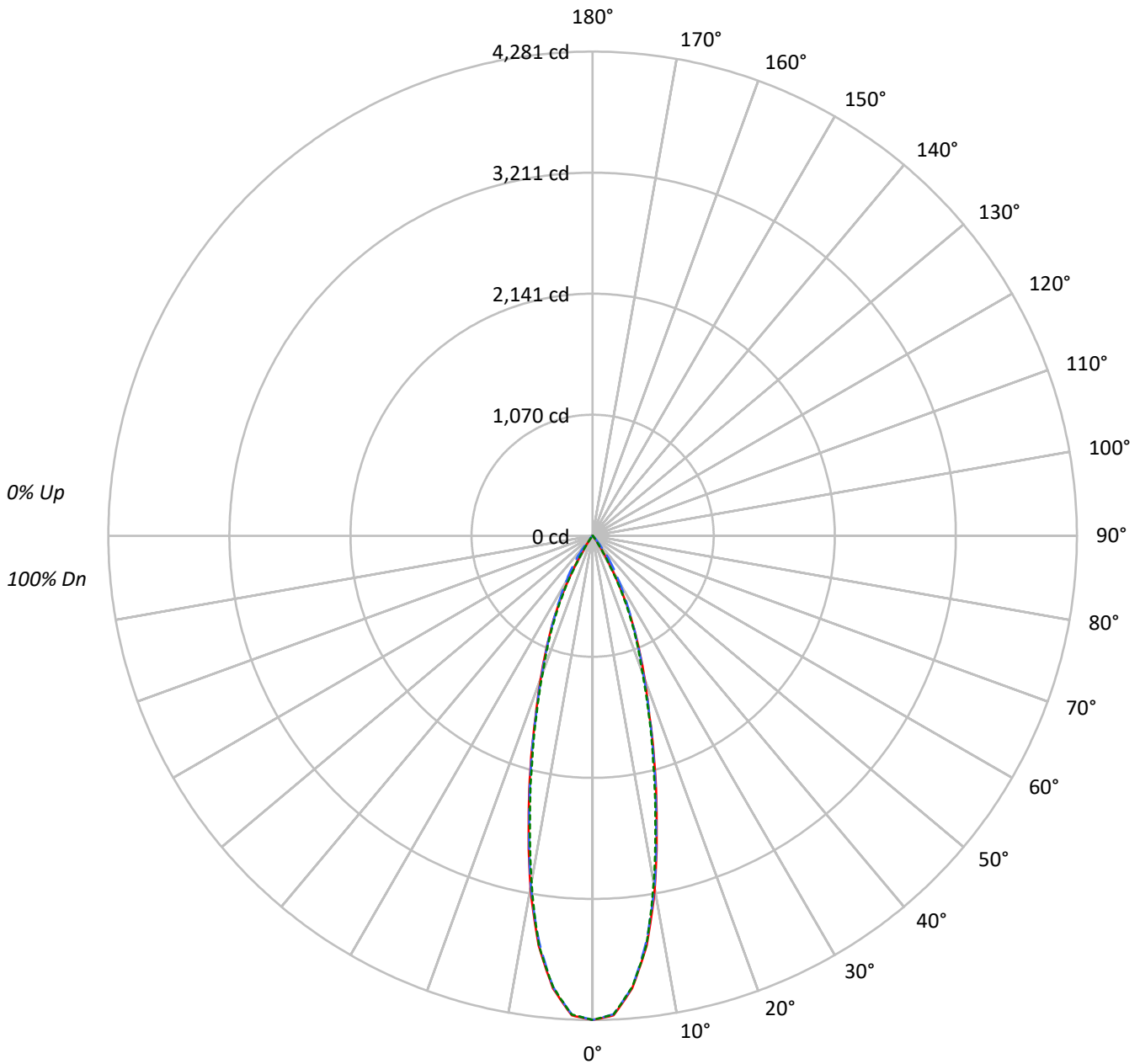
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	414695	414695	414695
5°	390557	389585	389478
10°	311439	309482	306098
15°	212831	210615	207506
20°	137969	136031	132268
25°	86143	85790	81643
30°	36780	52508	33066
35°	8645	28667	8113
40°	1404	8675	1404
45°	452	1671	301
50°	0	332	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: 1671 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	354.5	25.2
10°-20°	581.0	41.2
20°-30°	367.4	26.1
30°-40°	99.2	7.0
40°-50°	7.0	0.5
50°-60°	0.2	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°	1302.9	92.5
0°-40°	1402.1	99.5
0°-60°	1409.3	100.0
0°-90°	1409.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1409.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4281	4281	4281	4281	4281	
5°	4016	4012	4006	4010	4005	356
15°	2122	2109	2100	2062	2069	587
25°	806	812	803	794	764	363
35°	73	127	242	114	69	65
45°	3	4	12	4	2	3
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	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4280.7	4280.7	4280.7	4280.7	4280.7
2.5°	4245.3	4242.0	4234.2	4238.7	4236.4
5°	4016.2	4011.7	4006.2	4009.5	4005.1
7.5°	3655.3	3634.2	3624.3	3627.6	3647.5
10°	3166.0	3135.0	3146.1	3100.7	3111.7
12.5°	2611.4	2598.1	2593.7	2584.8	2557.1
15°	2122.1	2108.8	2100.0	2062.3	2069.0
17.5°	1670.4	1683.7	1669.3	1654.9	1643.9
20°	1338.3	1327.3	1319.5	1301.8	1283.0
22.5°	1052.7	1049.4	1041.7	1021.7	1016.2
25°	805.9	812.5	802.6	793.7	763.8
27.5°	559.0	614.4	621.0	590.0	528.0
30°	328.8	401.8	469.4	388.6	295.6
32.5°	171.6	240.2	348.7	225.8	148.3
35°	73.1	127.3	242.4	114.0	68.6
37.5°	23.2	55.3	137.3	49.8	24.4
40°	11.1	17.7	68.6	18.8	11.1
42.5°	5.5	8.9	33.2	8.9	5.5
45°	3.3	4.4	12.2	4.4	2.2
47.5°	1.1	2.2	4.4	2.2	1.1
50°	0.0	1.1	2.2	1.1	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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