

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: P887007

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-3500K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887007
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-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

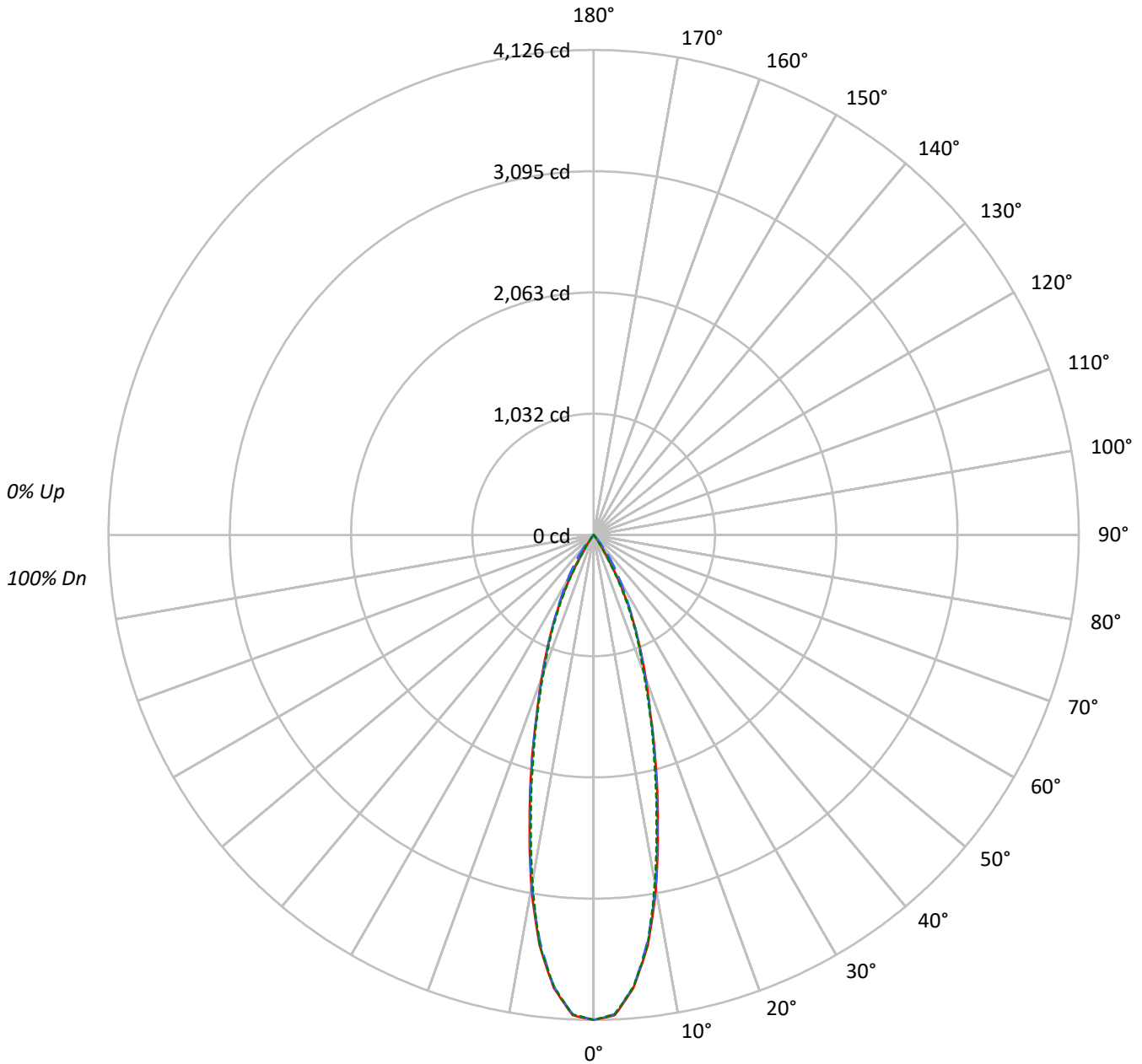
Lumens per Lamp: N/A
Luminaire Lumens: 1358.3 lumens
Efficiency: N/A
Efficacy: 77.2 lumens/watt
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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



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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					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	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°	399689	399689	399689
5°	376418	375484	375377
10°	300166	298277	295021
15°	205129	202993	199994
20°	132979	131113	127484
25°	83022	82680	78693
30°	35449	50606	31870
35°	8326	27638	7817
40°	1353	8359	1353
45°	438	1603	288
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°	341.7	25.2
10°-20°	560.0	41.2
20°-30°	354.1	26.1
30°-40°	95.6	7.0
40°-50°	6.8	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°	1255.7	92.4
0°-40°	1351.4	99.5
0°-60°	1358.3	100.0
0°-90°	1358.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1358.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4126	4126	4126	4126	4126	
5°	3871	3866	3861	3864	3860	343
15°	2045	2032	2024	1988	1994	565
25°	777	783	774	765	736	350
35°	70	123	234	110	66	63
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	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4125.8	4125.8	4125.8	4125.8	4125.8
2.5°	4091.7	4088.5	4081.0	4085.3	4083.1
5°	3870.8	3866.5	3861.2	3864.4	3860.1
7.5°	3523.0	3502.7	3493.1	3496.3	3515.5
10°	3051.4	3021.5	3032.2	2988.5	2999.1
12.5°	2516.9	2504.1	2499.8	2491.3	2464.6
15°	2045.3	2032.5	2024.0	1987.7	1994.1
17.5°	1610.0	1622.8	1608.9	1595.1	1584.4
20°	1289.9	1279.2	1271.8	1254.7	1236.6
22.5°	1014.6	1011.4	1004.0	984.8	979.4
25°	776.7	783.1	773.5	765.0	736.2
27.5°	538.8	592.1	598.5	568.7	508.9
30°	316.9	387.3	452.4	374.5	284.9
32.5°	165.4	231.5	336.1	217.7	143.0
35°	70.4	122.7	233.7	109.9	66.1
37.5°	22.4	53.3	132.3	48.0	23.5
40°	10.7	17.1	66.1	18.1	10.7
42.5°	5.3	8.5	32.0	8.5	5.3
45°	3.2	4.3	11.7	4.3	2.1
47.5°	1.1	2.1	4.3	2.1	1.1
50°	0.0	1.1	2.1	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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