

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: P887006

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887006
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-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1312.5 lumens
Efficiency: N/A
Efficacy: 74.6 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

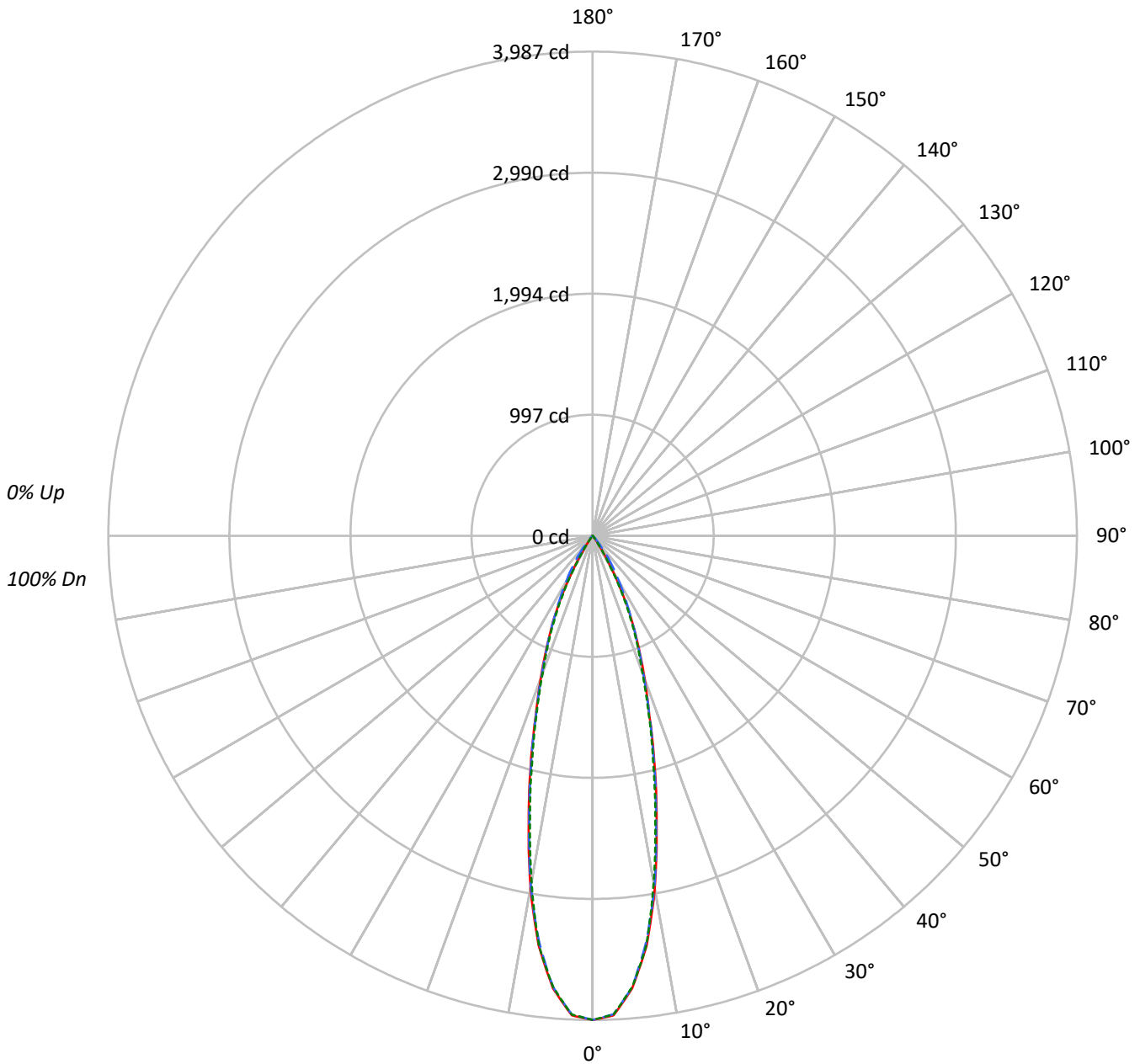
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	386213	386213	386213
5°	363727	362823	362726
10°	290044	288224	285076
15°	198209	196143	193254
20°	128495	126691	123185
25°	80221	79890	76042
30°	34252	48895	30796
35°	8042	26704	7557
40°	1303	8081	1303
45°	425	1548	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: 1548 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	330.2	25.2
10°-20°	541.1	41.2
20°-30°	342.2	26.1
30°-40°	92.4	7.0
40°-50°	6.5	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°	1213.4	92.5
0°-40°	1305.8	99.5
0°-60°	1312.5	100.0
0°-90°	1312.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1312.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3987	3987	3987	3987	3987	
5°	3740	3736	3731	3734	3730	332
15°	1976	1964	1956	1921	1927	546
25°	750	757	747	739	711	338
35°	68	119	226	106	64	60
45°	3	4	11	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°	3986.7	3986.7	3986.7	3986.7	3986.7
2.5°	3953.7	3950.6	3943.4	3947.5	3945.5
5°	3740.3	3736.2	3731.0	3734.1	3730.0
7.5°	3404.2	3384.6	3375.3	3378.4	3397.0
10°	2948.5	2919.7	2930.0	2887.7	2898.0
12.5°	2432.0	2419.6	2415.5	2407.3	2381.5
15°	1976.3	1964.0	1955.7	1920.7	1926.9
17.5°	1555.7	1568.1	1554.7	1541.3	1531.0
20°	1246.4	1236.1	1228.9	1212.4	1194.9
22.5°	980.4	977.3	970.1	951.6	946.4
25°	750.5	756.7	747.4	739.2	711.4
27.5°	520.6	572.2	578.4	549.5	491.8
30°	306.2	374.2	437.1	361.9	275.3
32.5°	159.8	223.7	324.8	210.3	138.1
35°	68.0	118.6	225.8	106.2	63.9
37.5°	21.7	51.5	127.8	46.4	22.7
40°	10.3	16.5	63.9	17.5	10.3
42.5°	5.2	8.2	30.9	8.2	5.2
45°	3.1	4.1	11.3	4.1	2.1
47.5°	1.0	2.1	4.1	2.1	1.0
50°	0.0	1.0	2.1	1.0	0.0
52.5°	0.0	0.0	1.0	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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