

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: P887075

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-2700K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887075
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-55)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-2700K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1442.0 lumens
Efficiency: N/A
Efficacy: 81.9 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.85 / 0.82
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

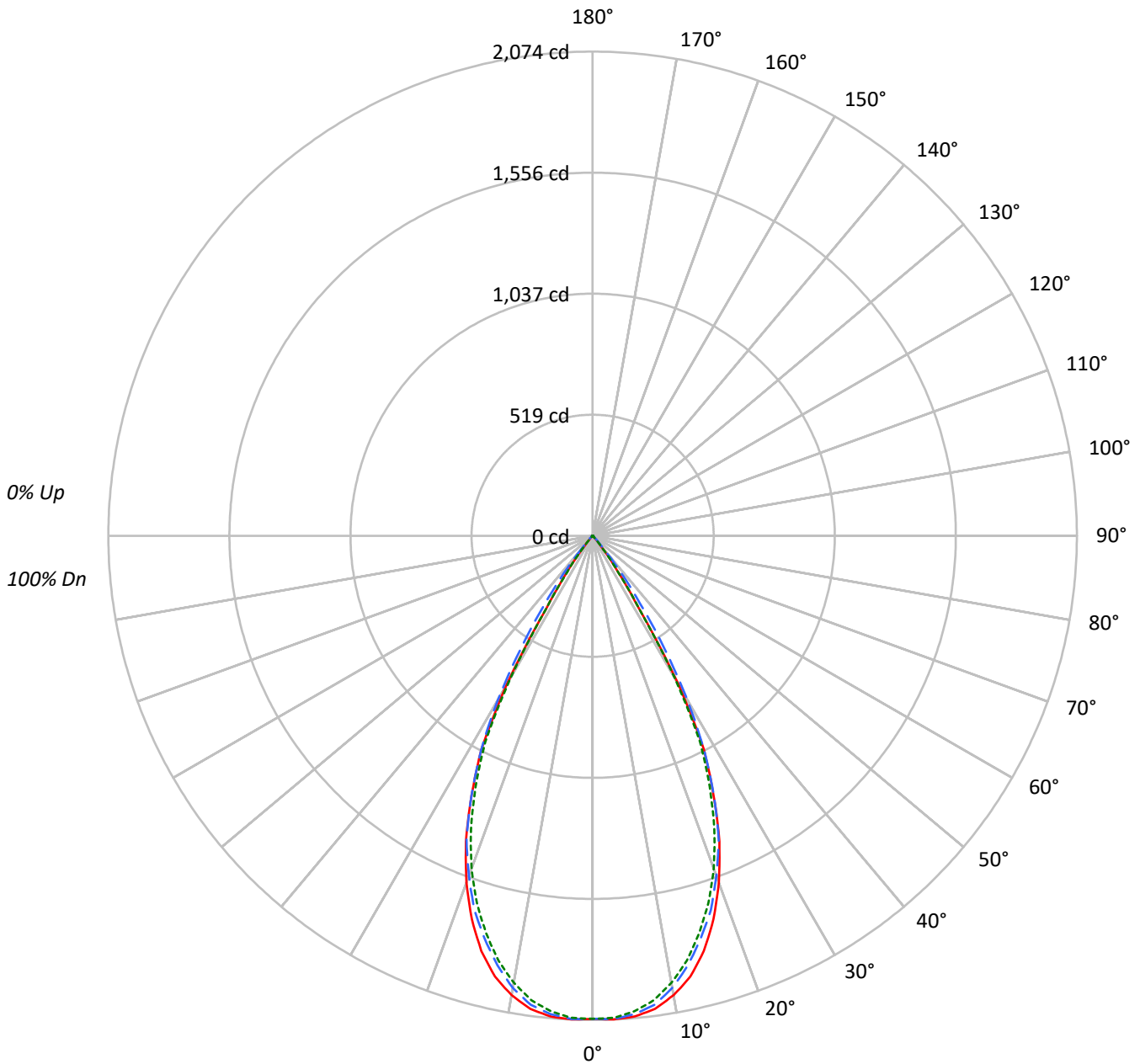
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	114	112	109	107	112	109	107	105	105	104	102	102	100	99	98	97	96	95								
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	92	91	89								
3	104	99	94	91	102	97	93	90	95	91	88	92	89	87	90	88	86	84								
4	100	93	88	84	98	92	87	84	90	86	83	88	85	82	86	83	81	80								
5	95	88	83	79	94	87	82	79	85	81	78	84	80	77	82	79	77	75								
6	91	83	78	74	90	83	78	74	81	77	73	80	76	73	79	75	72	71								
7	87	79	74	70	86	78	73	70	77	73	69	76	72	69	75	71	69	67								
8	84	75	70	66	83	75	69	66	74	69	66	73	68	65	72	68	65	64								
9	80	71	66	63	79	71	66	62	70	65	62	69	65	62	68	65	62	61								
10	77	68	63	59	76	68	63	59	67	62	59	66	62	59	66	62	59	58								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	200426	200426	200426
5°	200997	200024	198857
10°	196533	193484	191221
15°	184629	179213	176706
20°	162876	159691	156289
25°	131047	131154	126772
30°	82219	90385	78527
35°	22588	41865	22470
40°	3920	9611	2782
45°	822	2466	685
50°	603	603	603
55°	507	507	507
60°	388	388	388
65°	229	458	229
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: 2466 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	13.4
10°-20°	499.2	34.6
20°-30°	545.2	37.8
30°-40°	187.8	13.0
40°-50°	11.0	0.8
50°-60°	2.4	0.2
60°-70°	1.6	0.1
70°-80°	1.1	0.1
80°-90°	0.2	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°	1238.0	85.9
0°-40°	1425.8	98.9
0°-60°	1439.1	99.8
0°-90°	1442.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1442.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2069	2069	2069	2069	2069	
5°	2067	2065	2057	2055	2045	195
15°	1841	1819	1787	1773	1762	510
25°	1226	1232	1227	1205	1186	548
35°	191	219	354	216	190	154
45°	6	7	18	6	5	7
55°	3	3	3	3	3	2
65°	1	2	2	2	1	1
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°	2068.9	2068.9	2068.9	2068.9	2068.9
2.5°	2073.9	2069.9	2071.9	2070.9	2066.9
5°	2066.9	2064.9	2056.9	2054.9	2044.9
7.5°	2043.9	2040.9	2026.9	2015.9	2006.9
10°	1997.9	1984.9	1966.9	1947.9	1943.9
12.5°	1933.9	1915.9	1883.9	1863.9	1863.9
15°	1840.9	1818.9	1786.9	1772.9	1761.9
17.5°	1720.9	1708.9	1681.9	1657.9	1648.9
20°	1579.9	1578.9	1549.0	1528.0	1516.0
22.5°	1418.0	1416.0	1411.0	1384.0	1362.0
25°	1226.0	1232.0	1227.0	1205.0	1186.0
27.5°	1031.0	1037.0	1033.0	1004.0	996.0
30°	735.0	797.0	808.0	767.0	702.0
32.5°	368.0	476.0	573.0	463.0	366.0
35°	191.0	219.0	354.0	216.0	190.0
37.5°	90.0	107.0	203.0	105.0	88.0
40°	31.0	45.0	76.0	45.0	22.0
42.5°	8.0	16.0	39.0	12.0	9.0
45°	6.0	7.0	18.0	6.0	5.0
47.5°	4.0	4.0	8.0	4.0	4.0
50°	4.0	3.0	4.0	3.0	4.0
52.5°	3.0	3.0	3.0	3.0	3.0
55°	3.0	3.0	3.0	3.0	3.0
57.5°	2.0	2.0	2.0	2.0	2.0
60°	2.0	2.0	2.0	2.0	2.0
62.5°	2.0	2.0	2.0	2.0	2.0
65°	1.0	2.0	2.0	2.0	1.0
67.5°	1.0	1.0	2.0	1.0	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	0.0	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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