

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: P886911

Luminaire Tested: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P886911
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-51)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL95FS1E-TIR4D40FL-TL4SDMW-1020LM-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1236.2 lumens
Efficiency: N/A
Efficacy: 70.2 lumens/watt
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

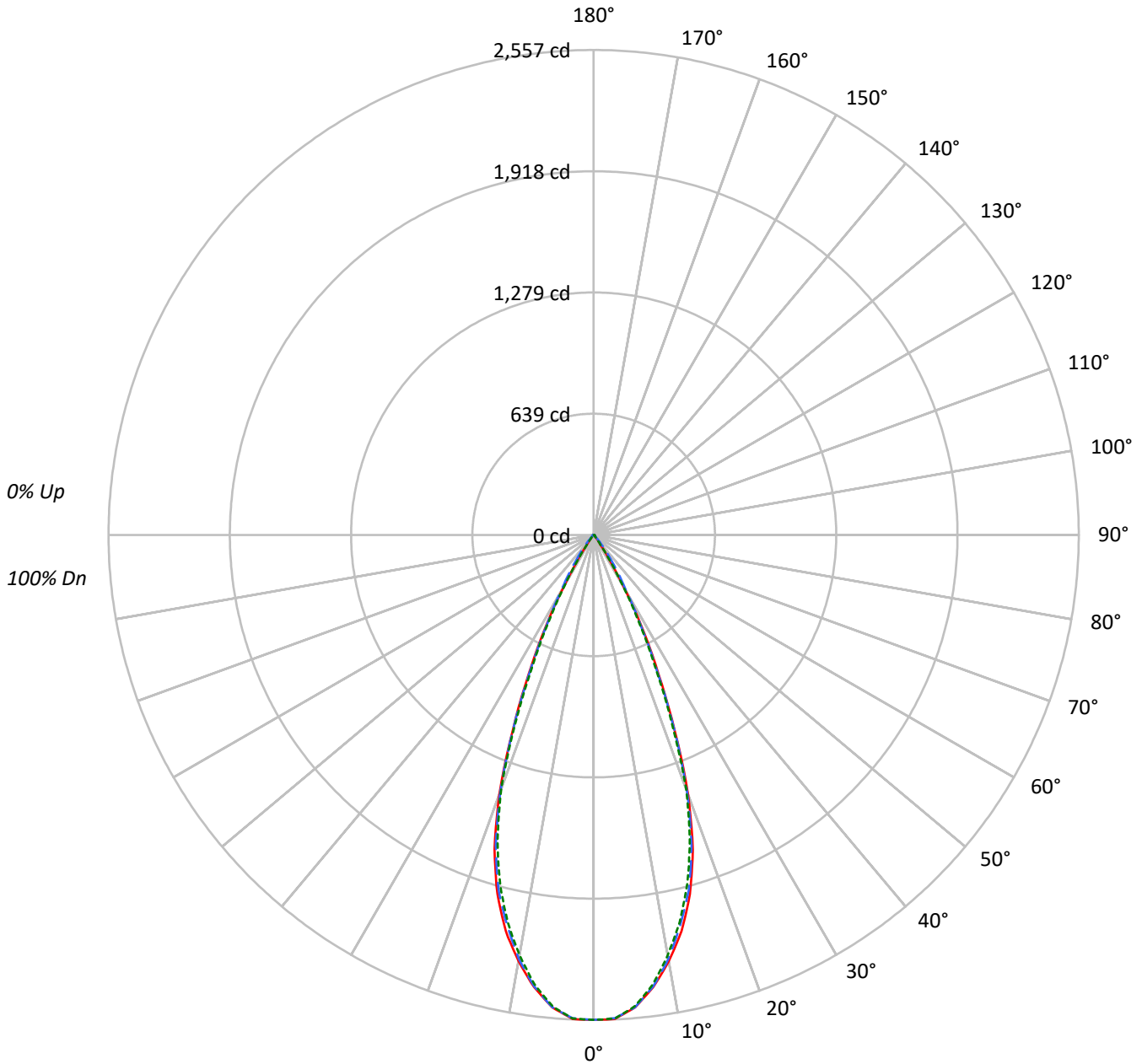
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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					100			
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95					95			
2	110	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90					90			
3	105	100	96	92	103	99	95	92	96	93	90	94	91	89	91	89	87	86					86			
4	101	95	90	87	100	94	89	86	92	88	85	90	87	84	88	85	83	82					82			
5	97	90	85	82	96	89	85	81	88	84	81	86	83	80	85	82	79	78					78			
6	94	86	81	78	92	85	81	77	84	80	77	83	79	76	82	78	76	75					75			
7	90	82	77	74	89	82	77	74	81	76	73	79	76	73	78	75	73	71					71			
8	87	79	74	71	86	78	74	70	77	73	70	76	73	70	76	72	70	68					68			
9	84	76	71	67	83	75	71	67	74	70	67	74	70	67	73	69	67	66					66			
10	81	73	68	65	80	72	68	65	72	67	64	71	67	64	70	67	64	63					63			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	247710	247710	247710
5°	243172	243094	242540
10°	224411	223300	221244
15°	196624	194277	191208
20°	150000	148175	146928
25°	86335	84529	81429
30°	35527	39141	33368
35°	7344	18402	6954
40°	2137	7132	2340
45°	1329	2315	1329
50°	1221	1462	1221
55°	1368	1368	1233
60°	1240	1414	1240
65°	1284	1284	1284
70°	1360	1360	1360
75°	1198	1497	1198
80°	1339	1339	1339
85°	1778	1778	1778

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2315 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.0	18.7
10°-20°	527.6	42.7
20°-30°	369.0	29.8
30°-40°	79.5	6.4
40°-50°	11.1	0.9
50°-60°	7.0	0.6
60°-70°	5.7	0.5
70°-80°	3.9	0.3
80°-90°	1.5	0.1
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°	1127.6	91.2
0°-40°	1207.0	97.6
0°-60°	1225.2	99.1
0°-90°	1236.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1236.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2557	2557	2557	2557	2557	
5°	2501	2502	2500	2493	2494	232
15°	1960	1949	1937	1910	1906	534
25°	808	797	791	778	762	375
35°	62	98	156	90	59	61
45°	10	10	17	10	10	8
55°	8	8	8	8	7	7
65°	6	6	6	6	6	6
75°	3	4	4	4	3	4
85°	2	2	2	2	2	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2557.0	2557.0	2557.0	2557.0	2557.0
2.5°	2554.6	2553.0	2550.6	2550.6	2552.2
5°	2500.6	2502.2	2499.8	2493.3	2494.1
7.5°	2405.5	2411.1	2400.6	2396.6	2390.1
10°	2281.3	2279.7	2270.0	2256.3	2249.1
12.5°	2140.2	2133.8	2108.0	2095.1	2091.1
15°	1960.5	1949.2	1937.1	1909.7	1906.5
17.5°	1738.0	1732.3	1715.4	1692.0	1684.0
20°	1455.0	1455.8	1437.3	1418.0	1425.2
22.5°	1114.1	1130.2	1108.4	1089.9	1081.8
25°	807.7	797.3	790.8	777.9	761.8
27.5°	560.3	550.6	538.5	532.0	507.9
30°	317.6	352.3	349.9	328.9	298.3
32.5°	150.7	200.7	238.6	180.6	138.7
35°	62.1	98.3	155.6	89.5	58.8
37.5°	29.8	45.1	97.5	44.3	29.0
40°	16.9	24.2	56.4	23.4	18.5
42.5°	12.1	13.7	30.6	13.7	12.1
45°	9.7	10.5	16.9	10.5	9.7
47.5°	8.9	8.9	11.3	8.9	8.9
50°	8.1	8.9	9.7	8.1	8.1
52.5°	8.1	8.1	8.9	8.1	8.1
55°	8.1	8.1	8.1	8.1	7.3
57.5°	7.3	7.3	7.3	7.3	7.3
60°	6.4	7.3	7.3	6.4	6.4
62.5°	6.4	6.4	6.4	6.4	5.6
65°	5.6	5.6	5.6	5.6	5.6
67.5°	4.8	5.6	5.6	5.6	4.8
70°	4.8	4.8	4.8	4.8	4.8
72.5°	4.0	4.0	4.0	4.0	4.0
75°	3.2	4.0	4.0	4.0	3.2
77.5°	3.2	3.2	3.2	3.2	3.2
80°	2.4	2.4	2.4	2.4	2.4
82.5°	1.6	2.4	1.6	1.6	1.6
85°	1.6	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	0.8	0.8	0.8
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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