

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: P887074

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMW-1200LM-5000K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887074
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-54)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMW-1200LM-5000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1690.5 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 0.88 / 0.83
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

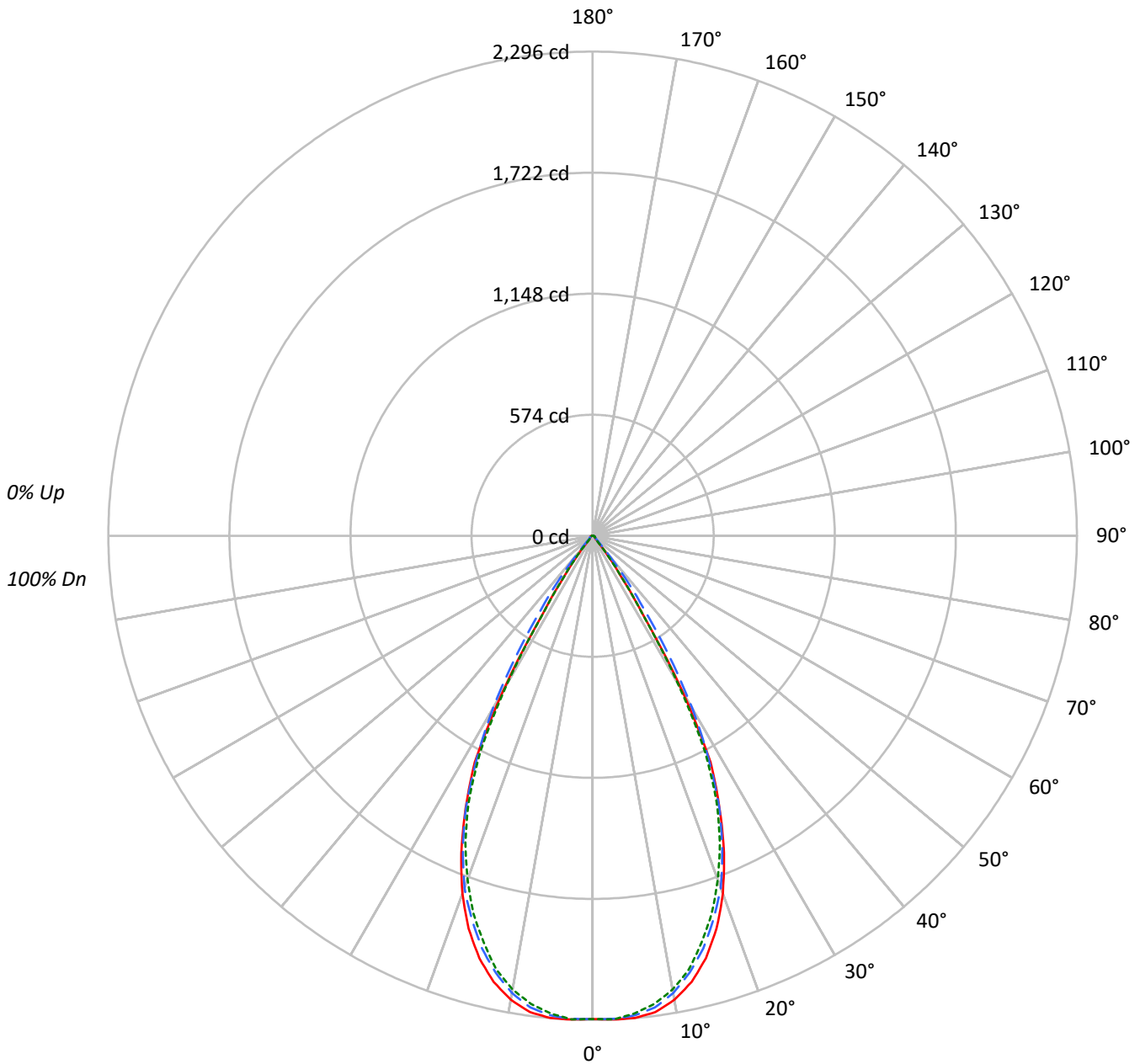
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94								
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88								
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	85	83								
4	99	92	87	83	97	91	86	82	89	85	81	87	83	81	85	82	80	78								
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74								
6	90	82	77	73	89	81	76	72	80	75	72	78	74	71	77	74	71	70								
7	86	78	72	68	85	77	72	68	76	71	68	75	71	67	74	70	67	66								
8	83	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	64	62								
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59								
10	76	67	61	58	75	66	61	58	66	61	58	65	61	57	64	60	57	56								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	221990	221990	221990
5°	223178	222050	221136
10°	219798	216591	214869
15°	207977	203183	200144
20°	186041	183154	178711
25°	152169	151795	148556
30°	95128	105553	90575
35°	26869	50155	27827
40°	5893	13405	4717
45°	2548	4631	2398
50°	2457	2637	2457
55°	2365	2550	2365
60°	2480	2480	2480
65°	2407	2659	2407
70°	2323	2634	2323
75°	2620	2620	2620
80°	2622	2622	2622
85°	2556	2556	2556

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 4631 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	215.6	12.8
10°-20°	564.7	33.4
20°-30°	629.3	37.2
30°-40°	224.8	13.3
40°-50°	22.2	1.3
50°-60°	13.1	0.8
60°-70°	10.8	0.6
70°-80°	7.3	0.4
80°-90°	2.5	0.2
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°	1409.7	83.4
0°-40°	1634.4	96.7
0°-60°	1669.8	98.8
0°-90°	1690.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1690.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2295	2295	2283	2282	2274	217
15°	2074	2058	2026	1998	1996	576
25°	1424	1432	1420	1389	1390	634
35°	227	262	424	258	235	185
45°	19	20	34	19	18	17
55°	14	15	15	15	14	13
65°	10	12	12	10	10	10
75°	7	7	7	7	7	7
85°	2	2	2	2	2	3
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.5	2291.5	2291.5	2291.5	2291.5
2.5°	2296.2	2297.3	2292.7	2292.7	2295.0
5°	2295.0	2295.0	2283.4	2282.2	2274.0
7.5°	2278.7	2272.9	2256.6	2243.8	2239.1
10°	2234.4	2224.0	2201.8	2180.8	2184.3
12.5°	2166.9	2154.1	2122.6	2104.0	2107.5
15°	2073.7	2058.5	2025.9	1997.9	1995.6
17.5°	1953.7	1937.4	1905.9	1886.1	1878.0
20°	1804.6	1797.6	1776.6	1740.5	1733.5
22.5°	1627.5	1627.5	1606.5	1584.4	1576.2
25°	1423.6	1431.8	1420.1	1388.7	1389.8
27.5°	1210.4	1204.6	1188.3	1167.3	1152.2
30°	850.4	935.5	943.6	898.2	809.7
32.5°	442.7	579.0	668.7	541.7	438.0
35°	227.2	262.1	424.1	257.5	235.3
37.5°	117.7	135.1	250.5	134.0	115.3
40°	46.6	62.9	106.0	61.7	37.3
42.5°	21.0	29.1	59.4	25.6	21.0
45°	18.6	19.8	33.8	18.6	17.5
47.5°	17.5	17.5	22.1	17.5	16.3
50°	16.3	16.3	17.5	16.3	16.3
52.5°	15.1	15.1	16.3	15.1	15.1
55°	14.0	15.1	15.1	15.1	14.0
57.5°	12.8	14.0	14.0	14.0	12.8
60°	12.8	12.8	12.8	12.8	12.8
62.5°	11.6	11.6	11.6	11.6	11.6
65°	10.5	11.6	11.6	10.5	10.5
67.5°	9.3	10.5	10.5	10.5	9.3
70°	8.2	9.3	9.3	9.3	8.2
72.5°	7.0	8.2	8.2	8.2	7.0
75°	7.0	7.0	7.0	7.0	7.0
77.5°	5.8	5.8	5.8	5.8	5.8
80°	4.7	4.7	4.7	4.7	4.7
82.5°	3.5	3.5	3.5	3.5	3.5
85°	2.3	2.3	2.3	2.3	2.3
87.5°	1.2	1.2	1.2	1.2	1.2
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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