

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: P887067

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-3500K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887067
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-56)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1485.2 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 0.87 / 0.83
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

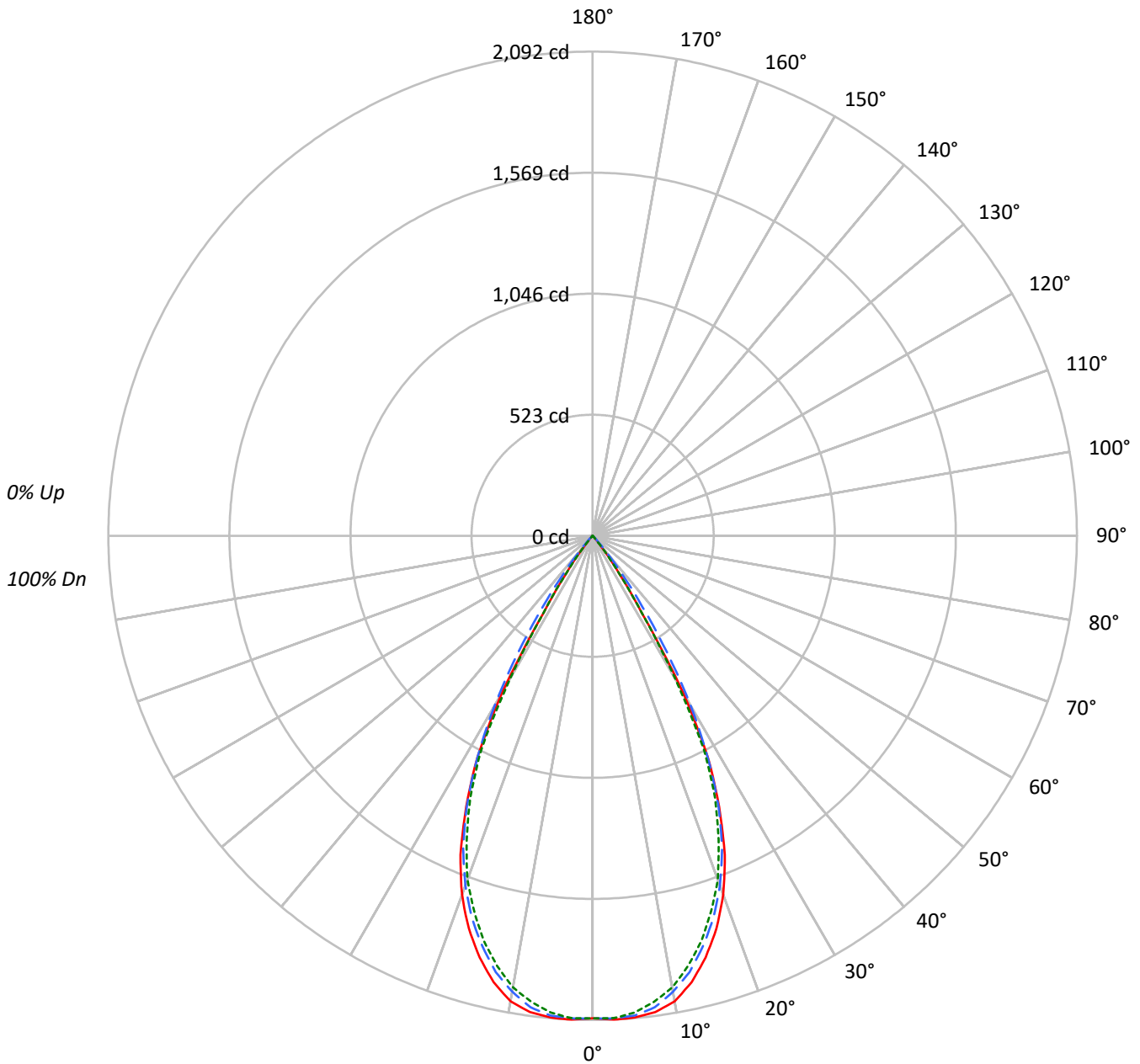
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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	114	112	109	107	112	109	107	106	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	93	91	89																			
3	104	99	94	91	103	97	93	90	95	91	89	92	90	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	96	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	73	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	70	66	74	69	66	73	68	65	72	68	65	64																			
9	80	72	66	63	79	71	66	63	70	66	62	69	65	62	69	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°	201995	201995	201995
5°	203175	202348	201104
10°	200911	196720	194930
15°	189112	184298	181841
20°	170093	165701	162948
25°	138166	137375	133720
30°	86973	94725	79456
35°	23842	44396	23582
40°	3377	10522	2428
45°	151	2343	151
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: 2343 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.2	13.2
10°-20°	513.3	34.6
20°-30°	569.5	38.3
30°-40°	197.1	13.3
40°-50°	9.0	0.6
50°-60°	0.1	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°	1279.0	86.1
0°-40°	1476.1	99.4
0°-60°	1485.2	100.0
0°-90°	1485.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1485.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2085	2085	2085	2085	2085	
5°	2089	2086	2081	2071	2068	198
15°	1886	1869	1838	1820	1813	525
25°	1293	1284	1285	1260	1251	576
35°	202	228	375	232	199	162
45°	1	3	17	3	1	4
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°	2085.1	2085.1	2085.1	2085.1	2085.1
2.5°	2092.5	2089.3	2087.2	2086.1	2086.1
5°	2089.3	2086.1	2080.8	2071.2	2068.0
7.5°	2075.5	2064.8	2055.2	2040.3	2030.7
10°	2042.4	2028.5	1999.8	1985.9	1981.6
12.5°	1975.2	1959.2	1931.5	1910.2	1903.8
15°	1885.6	1868.6	1837.6	1819.5	1813.1
17.5°	1779.0	1766.2	1733.1	1708.6	1701.1
20°	1649.9	1630.7	1607.3	1585.9	1580.6
22.5°	1492.1	1475.0	1461.2	1434.5	1421.7
25°	1292.6	1284.1	1285.2	1259.6	1251.0
27.5°	1078.3	1083.6	1074.0	1064.4	1043.1
30°	777.5	849.0	846.8	810.6	710.3
32.5°	391.4	510.9	598.3	483.1	397.8
35°	201.6	228.2	375.4	232.5	199.4
37.5°	90.7	105.6	210.1	104.5	88.5
40°	26.7	43.7	83.2	42.7	19.2
42.5°	4.3	12.8	39.5	8.5	4.3
45°	1.1	3.2	17.1	3.2	1.1
47.5°	1.1	1.1	5.3	1.1	0.0
50°	0.0	0.0	2.1	0.0	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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