

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: P887066

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-3000K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887066
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-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1435.1 lumens
Efficiency: N/A
Efficacy: 81.5 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

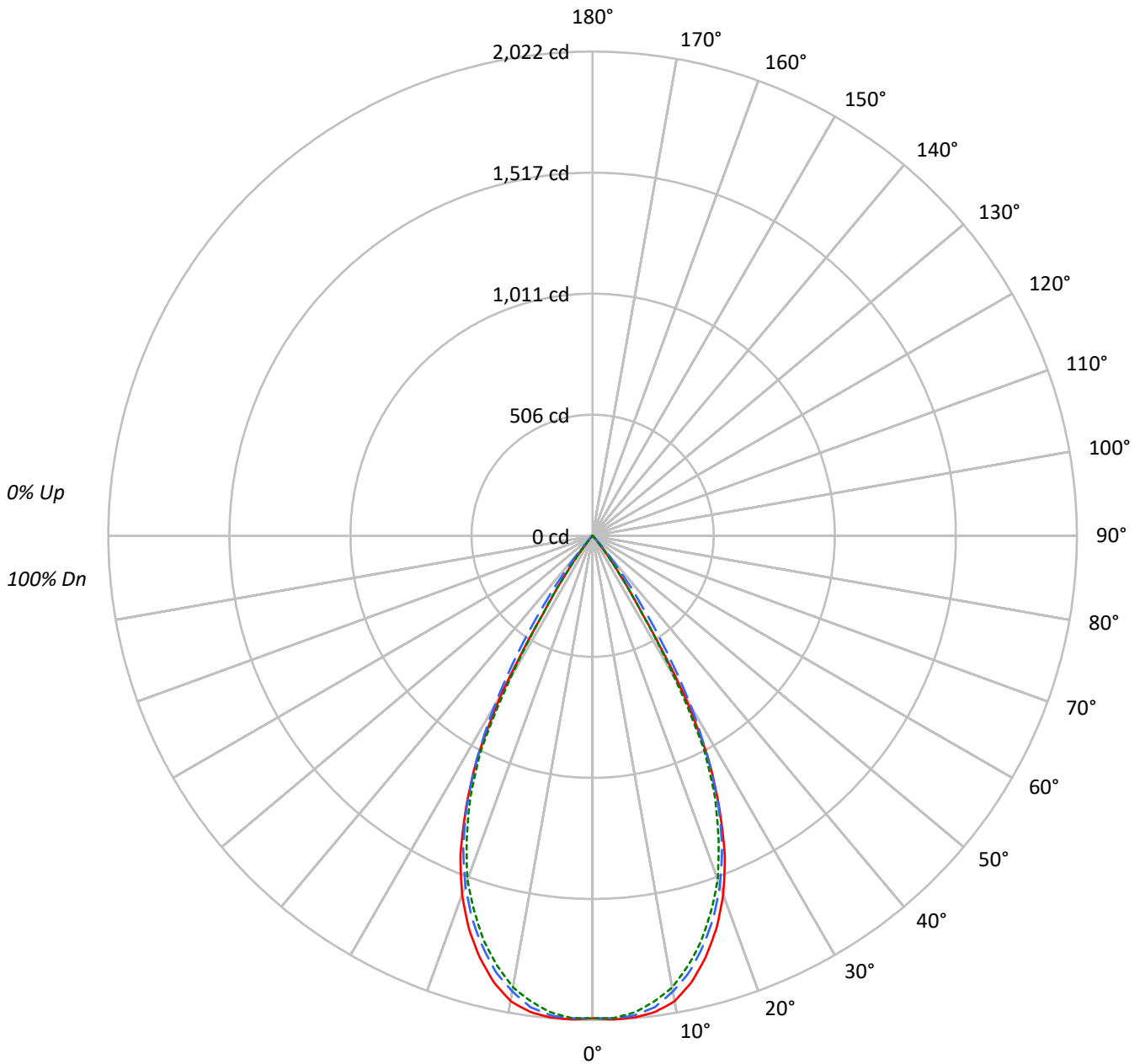
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					70					50					30				
RW	70	50	30	10	70	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°	195185	195185	195185
5°	196329	195531	194326
10°	194133	190080	188359
15°	182744	178090	175713
20°	164361	160113	157453
25°	133517	132736	129220
30°	84042	91537	76782
35°	23038	42906	22789
40°	3263	10168	2352
45°	137	2261	137
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: 2261 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	13.2
10°-20°	496.0	34.6
20°-30°	550.3	38.3
30°-40°	190.4	13.3
40°-50°	8.7	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°	1235.9	86.1
0°-40°	1426.3	99.4
0°-60°	1435.1	100.0
0°-90°	1435.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1435.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2015	2015	2015	2015	2015	
5°	2019	2016	2011	2001	1998	191
15°	1822	1806	1776	1758	1752	507
25°	1249	1241	1242	1217	1209	556
35°	195	220	363	225	193	157
45°	1	3	16	3	1	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	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2014.8	2014.8	2014.8	2014.8	2014.8
2.5°	2022.0	2018.9	2016.8	2015.8	2015.8
5°	2018.9	2015.8	2010.7	2001.4	1998.3
7.5°	2005.5	1995.2	1985.9	1971.5	1962.2
10°	1973.5	1960.2	1932.3	1918.9	1914.8
12.5°	1908.6	1893.2	1866.4	1845.8	1839.6
15°	1822.1	1805.6	1775.7	1758.2	1752.0
17.5°	1719.0	1706.6	1674.7	1651.0	1643.8
20°	1594.3	1575.7	1553.1	1532.5	1527.3
22.5°	1441.8	1425.3	1411.9	1386.1	1373.8
25°	1249.1	1240.8	1241.8	1217.1	1208.9
27.5°	1041.9	1047.1	1037.8	1028.5	1007.9
30°	751.3	820.3	818.3	783.2	686.4
32.5°	378.2	493.6	578.2	466.9	384.4
35°	194.8	220.5	362.8	224.7	192.7
37.5°	87.6	102.0	203.0	101.0	85.5
40°	25.8	42.3	80.4	41.2	18.6
42.5°	4.1	12.4	38.1	8.2	4.1
45°	1.0	3.1	16.5	3.1	1.0
47.5°	1.0	1.0	5.2	1.0	0.0
50°	0.0	0.0	2.1	0.0	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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