

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: P887068

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-4000K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887068
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-4000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1540.9 lumens
Efficiency: N/A
Efficacy: 87.6 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

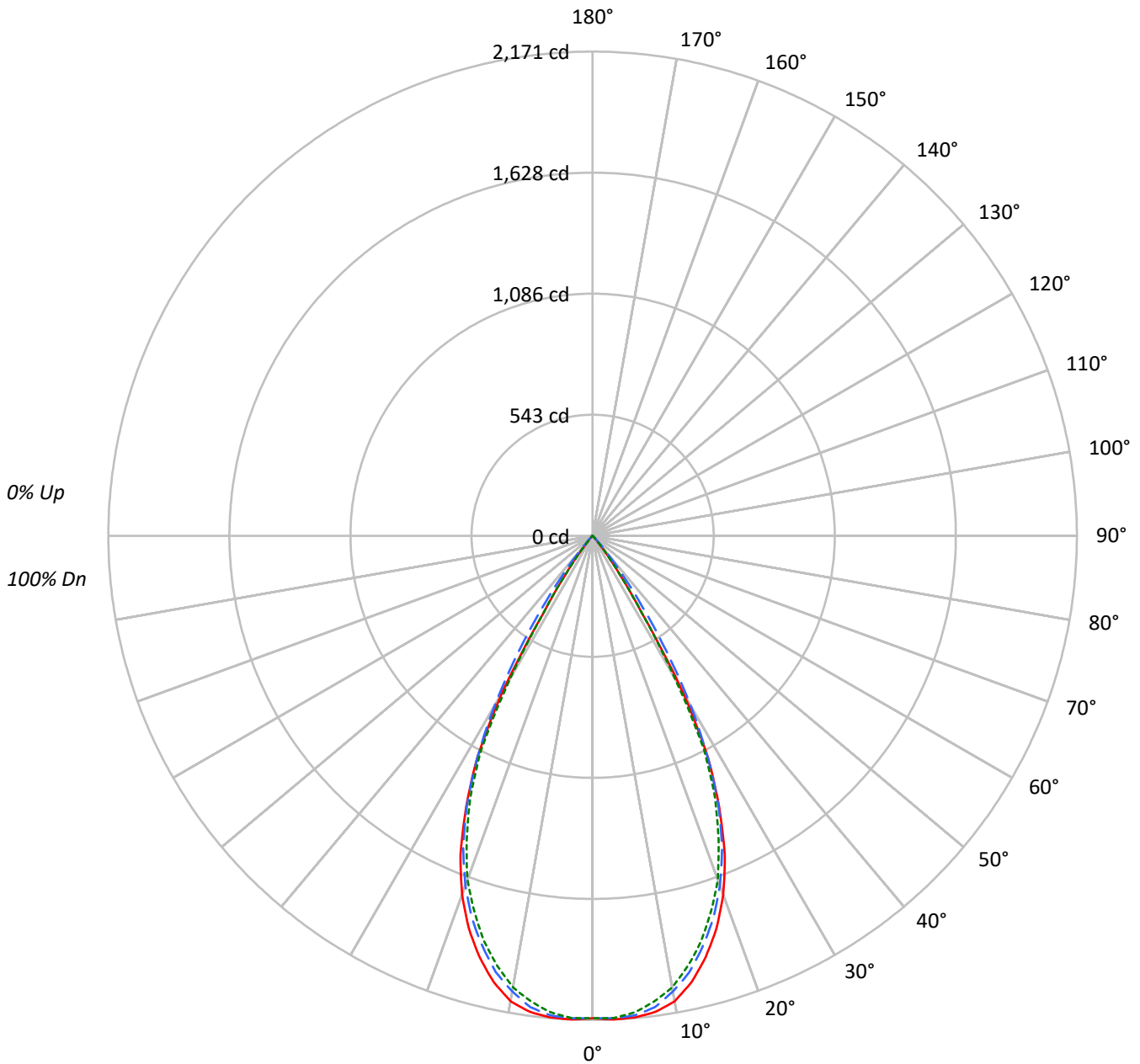
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	209580	209580	209580
5°	210809	209943	208660
10°	208456	204098	202248
15°	196213	191218	188671
20°	176484	171917	169072
25°	143361	142527	138743
30°	90239	98282	82442
35°	24729	46063	24469
40°	3503	10914	2517
45°	151	2425	151
50°	0	332	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: 2425 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.5	13.2
10°-20°	532.6	34.6
20°-30°	590.9	38.3
30°-40°	204.5	13.3
40°-50°	9.3	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°	1327.0	86.1
0°-40°	1531.5	99.4
0°-60°	1540.9	100.0
0°-90°	1540.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1540.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2163	2163	2163	2163	2163	
5°	2168	2164	2159	2149	2146	205
15°	1956	1939	1907	1888	1881	545
25°	1341	1332	1333	1307	1298	598
35°	209	237	390	241	207	168
45°	1	3	18	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°	2163.4	2163.4	2163.4	2163.4	2163.4
2.5°	2171.1	2167.8	2165.6	2164.5	2164.5
5°	2167.8	2164.5	2158.9	2149.0	2145.7
7.5°	2153.4	2142.3	2132.4	2116.9	2106.9
10°	2119.1	2104.7	2074.8	2060.5	2056.0
12.5°	2049.4	2032.8	2004.0	1981.9	1975.2
15°	1956.4	1938.7	1906.6	1887.8	1881.2
17.5°	1845.8	1832.5	1798.2	1772.7	1765.0
20°	1711.9	1692.0	1667.6	1645.5	1640.0
22.5°	1548.1	1530.4	1516.0	1488.4	1475.1
25°	1341.2	1332.3	1333.4	1306.9	1298.0
27.5°	1118.8	1124.3	1114.3	1104.4	1082.2
30°	806.7	880.8	878.6	841.0	737.0
32.5°	406.1	530.1	620.8	501.3	412.8
35°	209.1	236.8	389.5	241.2	206.9
37.5°	94.1	109.6	218.0	108.4	91.8
40°	27.7	45.4	86.3	44.3	19.9
42.5°	4.4	13.3	40.9	8.9	4.4
45°	1.1	3.3	17.7	3.3	1.1
47.5°	1.1	1.1	5.5	1.1	0.0
50°	0.0	0.0	2.2	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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