

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: P887077

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-3500K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887077
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-55)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-3500K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1537.5 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.85 / 0.82
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

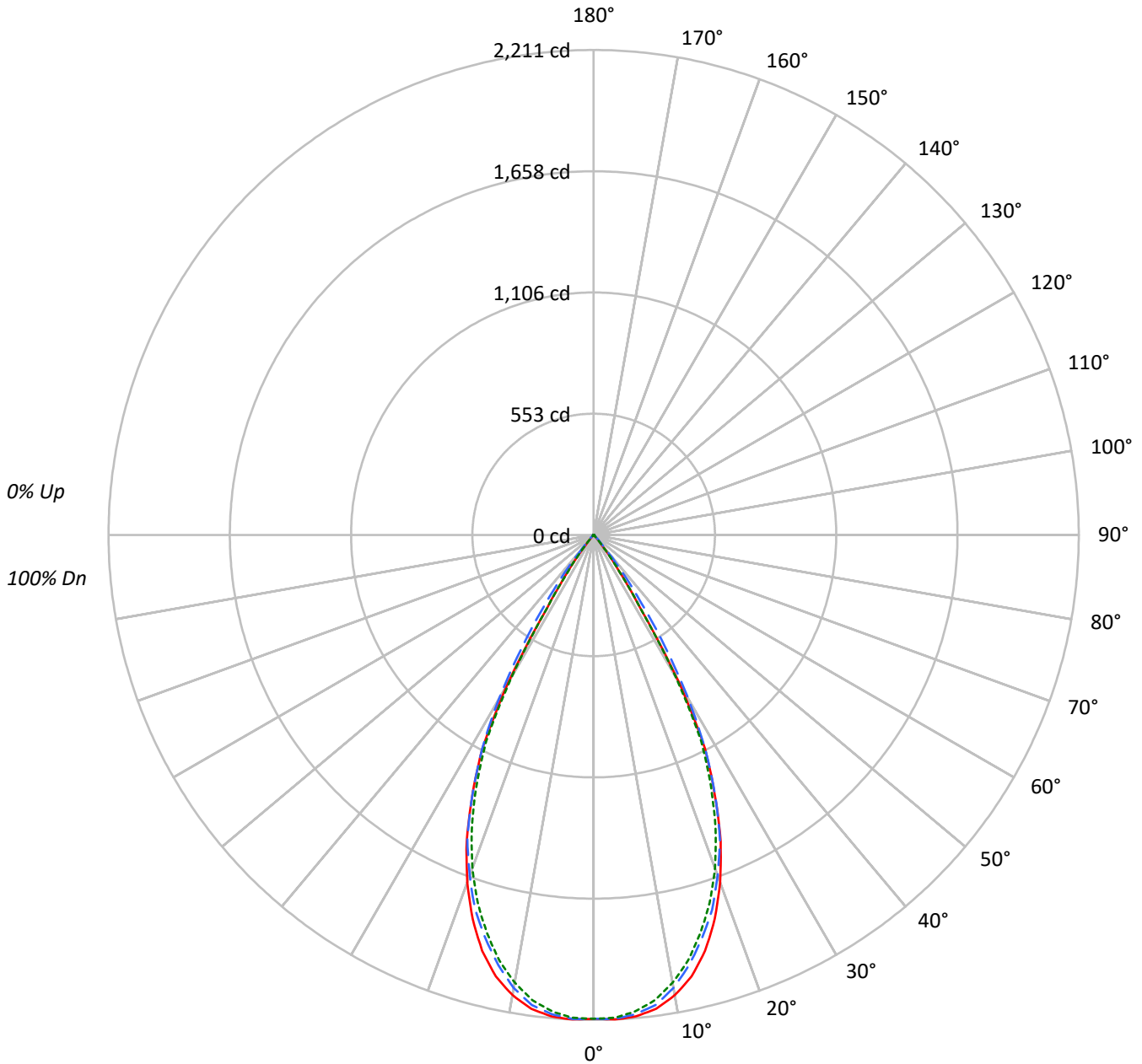
Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	105	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	92	91	89																			
3	104	99	94	91	102	97	93	90	95	91	88	92	89	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	95	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	72	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	69	66	74	69	66	73	68	65	72	68	65	64																			
9	80	71	66	63	79	71	66	62	70	65	62	69	65	62	68	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°	213688	213688	213688
5°	214300	213269	212024
10°	209548	206291	203881
15°	196855	191078	188400
20°	173660	170258	166629
25°	139716	139834	135152
30°	87655	96358	83718
35°	24078	44632	23960
40°	4186	10243	2972
45°	877	2630	726
50°	648	648	648
55°	540	540	540
60°	407	407	407
65°	252	481	252
70°	312	312	312
75°	412	412	412
80°	614	614	614
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2630 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	206.5	13.4
10°-20°	532.2	34.6
20°-30°	581.2	37.8
30°-40°	200.2	13.0
40°-50°	11.7	0.8
50°-60°	2.5	0.2
60°-70°	1.7	0.1
70°-80°	1.2	0.1
80°-90°	0.2	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°	1319.9	85.9
0°-40°	1520.1	98.9
0°-60°	1534.4	99.8
0°-90°	1537.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1537.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2206	2206	2206	2206	2206	
5°	2204	2202	2193	2191	2180	208
15°	1963	1939	1905	1890	1878	544
25°	1307	1314	1308	1285	1264	584
35°	204	234	377	230	203	164
45°	6	8	19	6	5	7
55°	3	3	3	3	3	3
65°	1	2	2	2	1	1
75°	1	1	1	1	1	1
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°	2205.8	2205.8	2205.8	2205.8	2205.8
2.5°	2211.2	2206.9	2209.0	2208.0	2203.7
5°	2203.7	2201.6	2193.1	2190.9	2180.3
7.5°	2179.2	2176.0	2161.1	2149.3	2139.7
10°	2130.2	2116.3	2097.1	2076.8	2072.6
12.5°	2061.9	2042.7	2008.6	1987.3	1987.3
15°	1962.8	1939.3	1905.2	1890.3	1878.5
17.5°	1834.8	1822.0	1793.3	1767.7	1758.1
20°	1684.5	1683.4	1651.5	1629.1	1616.3
22.5°	1511.8	1509.7	1504.3	1475.5	1452.1
25°	1307.1	1313.5	1308.2	1284.7	1264.4
27.5°	1099.2	1105.6	1101.3	1070.4	1061.9
30°	783.6	849.7	861.4	817.7	748.4
32.5°	392.3	507.5	610.9	493.6	390.2
35°	203.6	233.5	377.4	230.3	202.6
37.5°	96.0	114.1	216.4	111.9	93.8
40°	33.1	48.0	81.0	48.0	23.5
42.5°	8.5	17.1	41.6	12.8	9.6
45°	6.4	7.5	19.2	6.4	5.3
47.5°	4.3	4.3	8.5	4.3	4.3
50°	4.3	3.2	4.3	3.2	4.3
52.5°	3.2	3.2	3.2	3.2	3.2
55°	3.2	3.2	3.2	3.2	3.2
57.5°	2.1	2.1	2.1	2.1	2.1
60°	2.1	2.1	2.1	2.1	2.1
62.5°	2.1	2.1	2.1	2.1	2.1
65°	1.1	2.1	2.1	2.1	1.1
67.5°	1.1	1.1	2.1	1.1	1.1
70°	1.1	1.1	1.1	1.1	1.1
72.5°	1.1	1.1	1.1	1.1	1.1
75°	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	1.1	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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