

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: P887076

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-3000K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887076
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-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

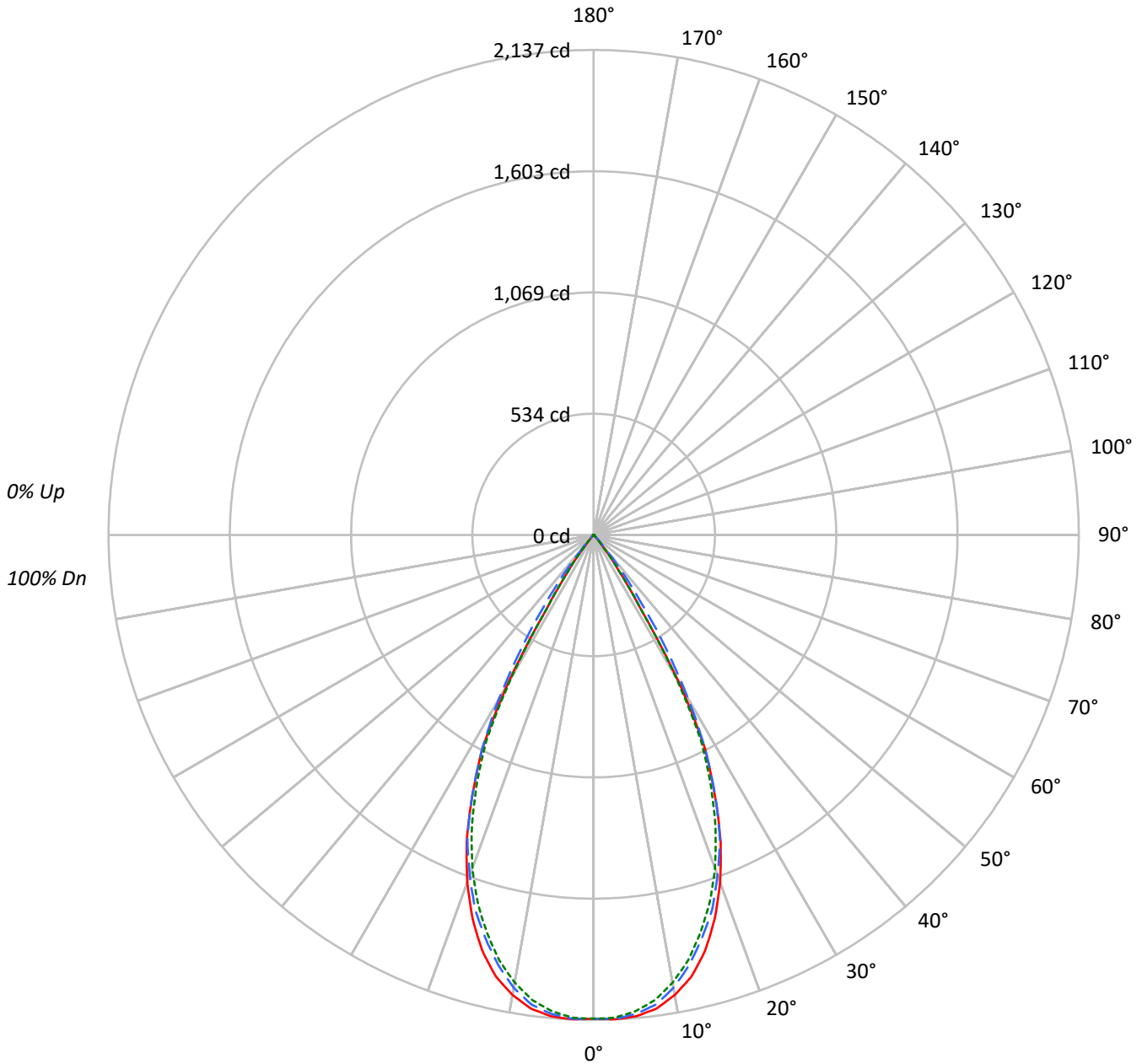
Lumens per Lamp: N/A
Luminaire Lumens: 1485.6 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.85 / 0.82
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 17.6
Input Voltage (V): NR
Input Current (A_{in}): 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°	206490	206490	206490
5°	207075	206073	204877
10°	202475	199337	197005
15°	190215	184639	182052
20°	167804	164515	161010
25°	135002	135120	130598
30°	84702	93114	80899
35°	23274	43131	23144
40°	4034	9902	2871
45°	849	2535	712
50°	618	618	618
55°	524	524	524
60°	407	407	407
65°	229	481	229
70°	283	283	283
75°	374	374	374
80°	558	558	558
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2535 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	199.5	13.4
10°-20°	514.3	34.6
20°-30°	561.7	37.8
30°-40°	193.4	13.0
40°-50°	11.3	0.8
50°-60°	2.5	0.2
60°-70°	1.7	0.1
70°-80°	1.1	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°	1275.4	85.9
0°-40°	1468.9	98.9
0°-60°	1482.7	99.8
0°-90°	1485.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1485.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2132	2132	2132	2132	2132	
5°	2129	2127	2119	2117	2107	201
15°	1897	1874	1841	1826	1815	526
25°	1263	1269	1264	1241	1222	565
35°	197	226	365	222	196	159
45°	6	7	18	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°	2131.5	2131.5	2131.5	2131.5	2131.5
2.5°	2136.6	2132.5	2134.6	2133.5	2129.4
5°	2129.4	2127.4	2119.1	2117.1	2106.8
7.5°	2105.7	2102.6	2088.2	2076.9	2067.6
10°	2058.3	2044.9	2026.4	2006.8	2002.7
12.5°	1992.4	1973.9	1940.9	1920.3	1920.3
15°	1896.6	1873.9	1841.0	1826.5	1815.2
17.5°	1773.0	1760.6	1732.8	1708.1	1698.8
20°	1627.7	1626.7	1595.8	1574.1	1561.8
22.5°	1460.8	1458.8	1453.6	1425.8	1403.1
25°	1263.0	1269.2	1264.1	1241.4	1221.8
27.5°	1062.1	1068.3	1064.2	1034.3	1026.1
30°	757.2	821.1	832.4	790.2	723.2
32.5°	379.1	490.4	590.3	477.0	377.1
35°	196.8	225.6	364.7	222.5	195.7
37.5°	92.7	110.2	209.1	108.2	90.7
40°	31.9	46.4	78.3	46.4	22.7
42.5°	8.2	16.5	40.2	12.4	9.3
45°	6.2	7.2	18.5	6.2	5.2
47.5°	4.1	4.1	8.2	4.1	4.1
50°	4.1	3.1	4.1	3.1	4.1
52.5°	3.1	3.1	3.1	3.1	3.1
55°	3.1	3.1	3.1	3.1	3.1
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°	1.0	2.1	2.1	2.1	1.0
67.5°	1.0	1.0	2.1	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0
72.5°	1.0	1.0	1.0	1.0	1.0
75°	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	1.0	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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