

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: P887079

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDSL-1200LM-5000K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887079
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-5000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

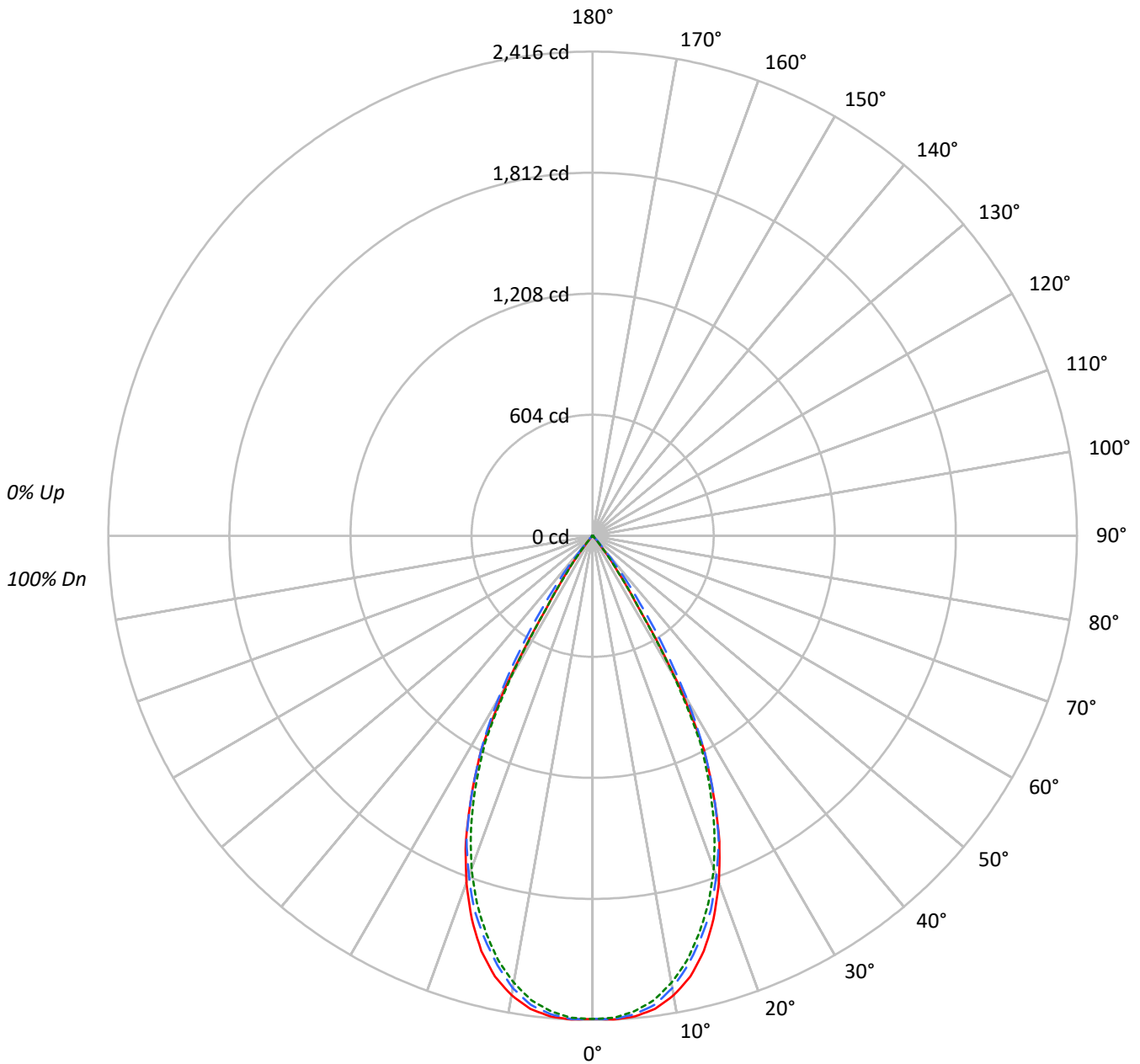
Lumens per Lamp: N/A
Luminaire Lumens: 1680.0 lumens
Efficiency: N/A
Efficacy: 95.5 lumens/watt
Spacing Criteria (0/90/45): 0.87 / 0.85 / 0.82
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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°	233509	233509	233509
5°	234167	233039	231678
10°	228976	225415	222788
15°	215108	208790	205871
20°	189763	186041	182072
25°	152671	152789	147690
30°	95788	105296	91481
35°	26314	48772	26172
40°	4565	11192	3237
45°	959	2877	795
50°	708	708	708
55°	591	591	591
60°	446	446	446
65°	275	527	275
70°	340	340	340
75°	449	449	449
80°	669	669	669
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2877 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	225.6	13.4
10°-20°	581.6	34.6
20°-30°	635.1	37.8
30°-40°	218.7	13.0
40°-50°	12.8	0.8
50°-60°	2.8	0.2
60°-70°	1.9	0.1
70°-80°	1.3	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°	1442.3	85.9
0°-40°	1661.0	98.9
0°-60°	1676.6	99.8
0°-90°	1680.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1680.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2410	2410	2410	2410	2410	
5°	2408	2406	2396	2394	2382	227
15°	2145	2119	2082	2066	2053	594
25°	1428	1435	1429	1404	1382	639
35°	222	255	412	252	221	180
45°	7	8	21	7	6	8
55°	4	4	4	4	4	3
65°	1	2	2	2	1	2
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°	2410.4	2410.4	2410.4	2410.4	2410.4
2.5°	2416.2	2411.5	2413.9	2412.7	2408.0
5°	2408.0	2405.7	2396.4	2394.1	2382.4
7.5°	2381.3	2377.8	2361.4	2348.6	2338.1
10°	2327.7	2312.5	2291.5	2269.4	2264.8
12.5°	2253.1	2232.1	2194.9	2171.6	2171.6
15°	2144.8	2119.1	2081.8	2065.5	2052.7
17.5°	2005.0	1991.0	1959.5	1931.6	1921.1
20°	1840.7	1839.5	1804.6	1780.1	1766.1
22.5°	1652.0	1649.6	1643.8	1612.4	1586.7
25°	1428.3	1435.3	1429.4	1403.8	1381.7
27.5°	1201.1	1208.1	1203.4	1169.7	1160.3
30°	856.3	928.5	941.3	893.6	817.8
32.5°	428.7	554.5	667.5	539.4	426.4
35°	222.5	255.1	412.4	251.6	221.3
37.5°	104.8	124.7	236.5	122.3	102.5
40°	36.1	52.4	88.5	52.4	25.6
42.5°	9.3	18.6	45.4	14.0	10.5
45°	7.0	8.2	21.0	7.0	5.8
47.5°	4.7	4.7	9.3	4.7	4.7
50°	4.7	3.5	4.7	3.5	4.7
52.5°	3.5	3.5	3.5	3.5	3.5
55°	3.5	3.5	3.5	3.5	3.5
57.5°	2.3	2.3	2.3	2.3	2.3
60°	2.3	2.3	2.3	2.3	2.3
62.5°	2.3	2.3	2.3	2.3	2.3
65°	1.2	2.3	2.3	2.3	1.2
67.5°	1.2	1.2	2.3	1.2	1.2
70°	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2
75°	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	1.2	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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