

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: P887005

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-2700K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887005
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-50)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D25NFL-TL4SDMB-1200LM-2700K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

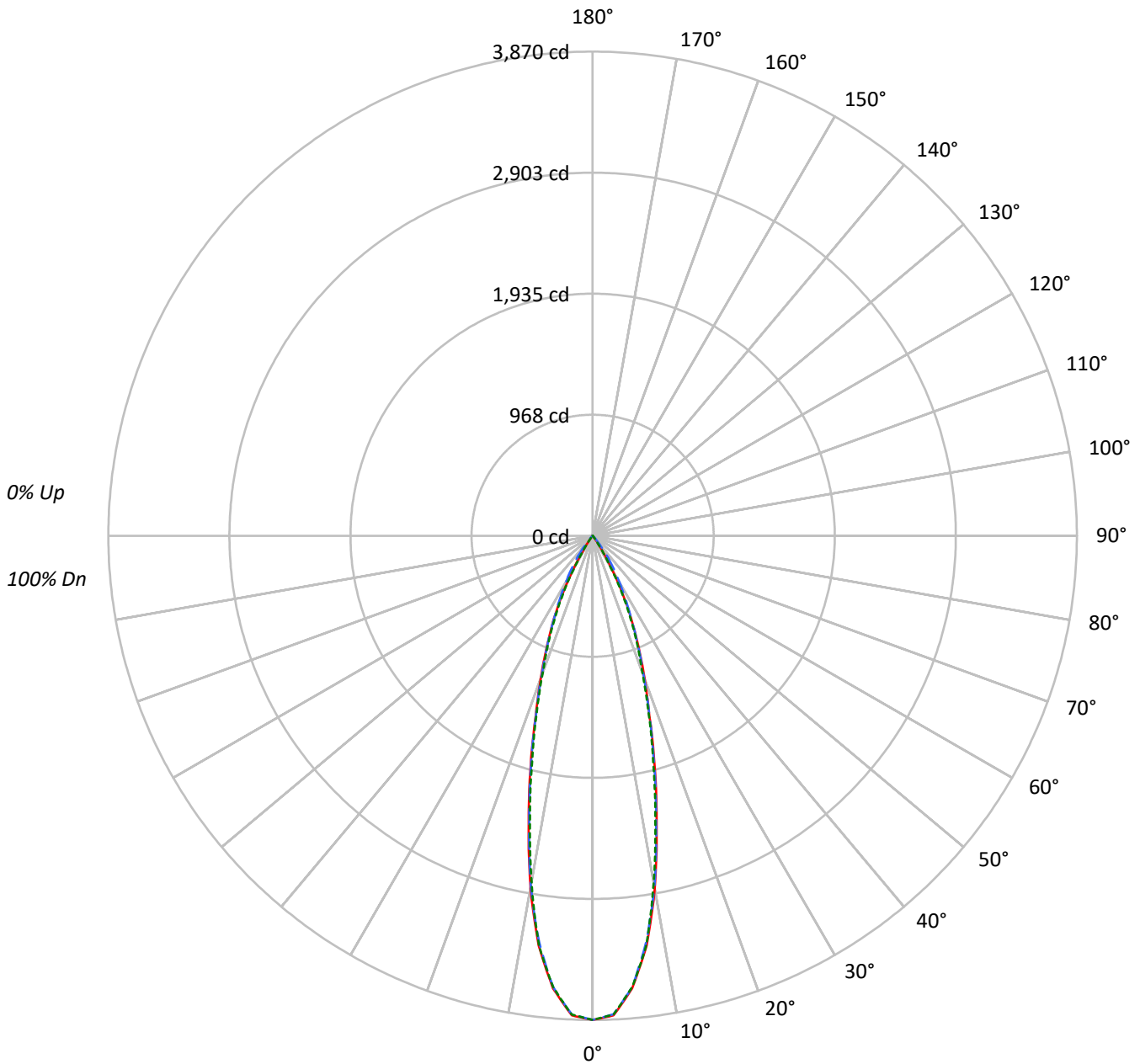
Lumens per Lamp: N/A
Luminaire Lumens: 1274.0 lumens
Efficiency: N/A
Efficacy: 72.4 lumens/watt
Spacing Criteria (0/90/45): 0.49 / 0.49 / 0.52
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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	50	30	10	0													
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100						100													
1	115	112	110	108	112	110	108	107	106	105	103	103	101	100	99	98	98	96						96													
2	110	106	103	101	108	105	102	99	102	99	97	99	97	95	96	95	93	92						92													
3	106	101	97	94	105	100	96	93	97	94	92	95	93	91	93	91	89	88						88													
4	103	97	92	89	101	96	92	88	94	90	87	92	89	86	90	88	86	84						84													
5	99	92	88	85	98	92	87	84	90	86	83	88	85	83	87	84	82	81						81													
6	95	89	84	81	94	88	83	80	86	83	80	85	82	79	84	81	79	78						78													
7	92	85	80	77	91	84	80	77	83	79	77	82	79	76	81	78	76	75						75													
8	89	82	77	74	88	81	77	74	80	76	74	79	76	73	79	75	73	72						72													
9	86	79	74	71	85	78	74	71	77	74	71	77	73	71	76	73	70	69						69													
10	83	76	71	68	83	76	71	68	75	71	68	74	71	68	74	70	68	67						67													

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	374879	374879	374879
5°	353059	352174	352077
10°	281535	279764	276714
15°	192392	190386	187578
20°	124732	122969	119567
25°	77870	77549	73808
30°	33245	47463	29890
35°	7805	25923	7332
40°	1265	7841	1265
45°	411	1507	274
50°	0	301	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: 1507 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	320.5	25.2
10°-20°	525.2	41.2
20°-30°	332.1	26.1
30°-40°	89.7	7.0
40°-50°	6.3	0.5
50°-60°	0.2	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°	1177.8	92.5
0°-40°	1267.5	99.5
0°-60°	1274.0	100.0
0°-90°	1274.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1274.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3870	3870	3870	3870	3870	
5°	3631	3627	3622	3624	3620	322
15°	1918	1906	1898	1864	1870	530
25°	728	734	726	718	690	328
35°	66	115	219	103	62	59
45°	3	4	11	4	2	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°	3869.7	3869.7	3869.7	3869.7	3869.7
2.5°	3837.7	3834.7	3827.7	3831.7	3829.7
5°	3630.6	3626.6	3621.5	3624.5	3620.5
7.5°	3304.3	3285.3	3276.3	3279.3	3297.3
10°	2862.0	2834.0	2844.0	2803.0	2813.0
12.5°	2360.7	2348.7	2344.6	2336.6	2311.6
15°	1918.3	1906.3	1898.3	1864.3	1870.3
17.5°	1510.1	1522.1	1509.1	1496.1	1486.0
20°	1209.9	1199.8	1192.8	1176.8	1159.8
22.5°	951.7	948.7	941.7	923.6	918.6
25°	728.5	734.5	725.5	717.5	690.5
27.5°	505.4	555.4	561.4	533.4	477.3
30°	297.2	363.3	424.3	351.2	267.2
32.5°	155.1	217.2	315.2	204.1	134.1
35°	66.0	115.1	219.2	103.1	62.0
37.5°	21.0	50.0	124.1	45.0	22.0
40°	10.0	16.0	62.0	17.0	10.0
42.5°	5.0	8.0	30.0	8.0	5.0
45°	3.0	4.0	11.0	4.0	2.0
47.5°	1.0	2.0	4.0	2.0	1.0
50°	0.0	1.0	2.0	1.0	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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