

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: P887113

Luminaire Tested: ML412LSFLD2W1E-TIR4D40FL-TL4SDMW-600LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887113
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-51)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFLD2W1E-TIR4D40FL-TL4SDMW-600LM-3000K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 4000K CCT
Ballast/Driver: -

Summary

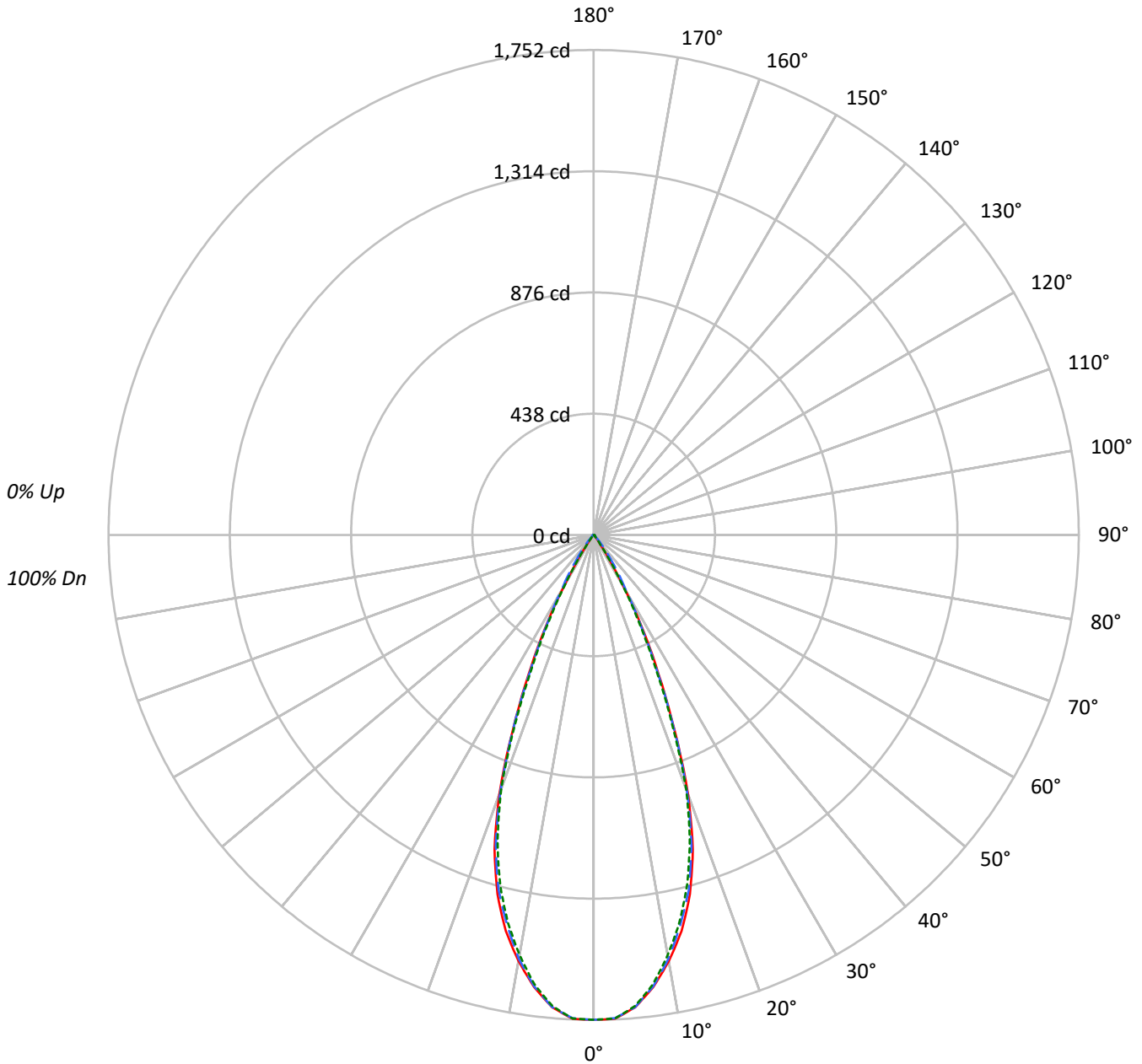
Lumens per Lamp: N/A
Luminaire Lumens: 847.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 0.7 / 0.69 / 0.65
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 9.4
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					70					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	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95					95			
2	110	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90					90			
3	105	100	96	92	103	99	95	92	96	93	90	94	91	89	91	89	87	86					86			
4	101	95	90	87	100	94	89	86	92	88	85	90	87	84	88	85	83	82					82			
5	97	90	85	82	96	89	85	81	88	84	81	86	83	80	85	82	79	78					78			
6	94	86	81	78	92	85	81	77	84	80	77	83	79	76	82	78	76	75					75			
7	90	82	77	74	89	82	77	74	81	76	73	79	76	73	78	75	73	71					71			
8	87	79	74	71	86	78	74	70	77	73	70	76	73	70	76	72	70	68					68			
9	84	76	71	67	83	75	71	67	74	70	67	74	70	67	73	69	67	66					66			
10	81	73	68	65	80	72	68	65	72	67	64	71	67	64	70	67	64	63					63			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	169697	169697	169697
5°	166591	166533	166154
10°	153732	152975	151568
15°	134703	133089	130992
20°	102763	101505	100660
25°	59142	57902	55786
30°	24341	26813	22853
35°	5026	12607	4766
40°	1467	4894	1606
45°	904	1589	904
50°	829	995	829
55°	929	929	844
60°	853	969	853
65°	894	894	894
70°	935	935	935
75°	823	1048	823
80°	948	948	948
85°	1223	1223	1223

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 1589 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.3	18.7
10°-20°	361.4	42.7
20°-30°	252.8	29.8
30°-40°	54.4	6.4
40°-50°	7.6	0.9
50°-60°	4.8	0.6
60°-70°	4.0	0.5
70°-80°	2.7	0.3
80°-90°	1.0	0.1
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°	772.4	91.2
0°-40°	826.9	97.6
0°-60°	839.3	99.1
0°-90°	847.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	847.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1752	1752	1752	1752	1752	
5°	1713	1714	1712	1708	1709	159
15°	1343	1335	1327	1308	1306	366
25°	553	546	542	533	522	257
35°	42	67	107	61	40	42
45°	7	7	12	7	7	6
55°	6	6	6	6	5	5
65°	4	4	4	4	4	4
75°	2	3	3	3	2	3
85°	1	1	1	1	1	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1751.7	1751.7	1751.7	1751.7	1751.7
2.5°	1750.1	1748.9	1747.3	1747.3	1748.4
5°	1713.1	1714.2	1712.5	1708.1	1708.6
7.5°	1647.9	1651.8	1644.6	1641.8	1637.4
10°	1562.8	1561.7	1555.1	1545.7	1540.8
12.5°	1466.2	1461.8	1444.1	1435.3	1432.5
15°	1343.1	1335.3	1327.0	1308.3	1306.1
17.5°	1190.6	1186.8	1175.2	1159.2	1153.6
20°	996.8	997.3	984.6	971.4	976.4
22.5°	763.2	774.2	759.3	746.6	741.1
25°	553.3	546.2	541.7	532.9	521.9
27.5°	383.8	377.2	368.9	364.5	347.9
30°	217.6	241.3	239.7	225.3	204.3
32.5°	103.3	137.5	163.5	123.7	95.0
35°	42.5	67.4	106.6	61.3	40.3
37.5°	20.4	30.9	66.8	30.4	19.9
40°	11.6	16.6	38.7	16.0	12.7
42.5°	8.3	9.4	21.0	9.4	8.3
45°	6.6	7.2	11.6	7.2	6.6
47.5°	6.1	6.1	7.7	6.1	6.1
50°	5.5	6.1	6.6	5.5	5.5
52.5°	5.5	5.5	6.1	5.5	5.5
55°	5.5	5.5	5.5	5.5	5.0
57.5°	5.0	5.0	5.0	5.0	5.0
60°	4.4	5.0	5.0	4.4	4.4
62.5°	4.4	4.4	4.4	4.4	3.9
65°	3.9	3.9	3.9	3.9	3.9
67.5°	3.3	3.9	3.9	3.9	3.3
70°	3.3	3.3	3.3	3.3	3.3
72.5°	2.8	2.8	2.8	2.8	2.8
75°	2.2	2.8	2.8	2.8	2.2
77.5°	2.2	2.2	2.2	2.2	2.2
80°	1.7	1.7	1.7	1.7	1.7
82.5°	1.1	1.7	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1
87.5°	0.6	0.6	0.6	0.6	0.6
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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