

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: P887111

Luminaire Tested: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K

Issue Date: 7/9/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P887111  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-53)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/9/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 824.8 lumens  
Efficiency: N/A  
Efficacy: 87.7 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

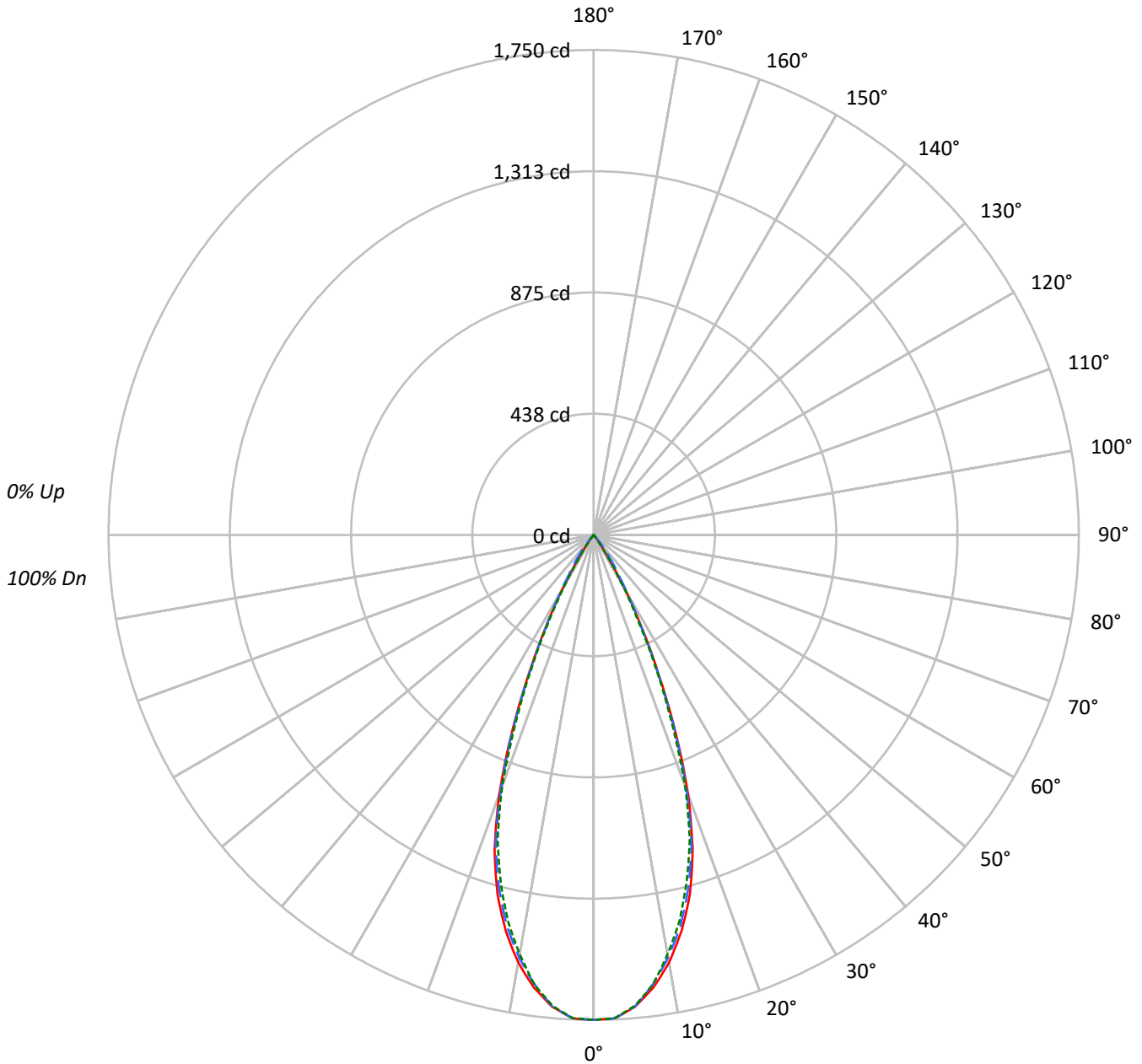
Input Watts (W): 9.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P887111

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K

### Luminous Intensity Polar Plot





TEST NUMBER: P887111

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K

**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	115	112	110	108	112	110	108	106	106	105	103	102	101	100	99	98	97	96					96			
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91					91			
3	106	101	97	93	104	99	96	93	97	94	91	94	92	90	92	90	88	87					87			
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83					83			
5	98	91	87	83	97	90	86	83	89	85	82	87	84	81	86	83	81	79					79			
6	94	87	82	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76					76			
7	91	83	79	75	90	83	78	75	82	78	75	81	77	74	80	76	74	73					73			
8	88	80	75	72	87	79	75	72	79	74	71	78	74	71	77	73	71	70					70			
9	85	77	72	69	84	76	72	69	76	71	68	75	71	68	74	71	68	67					67			
10	82	74	69	66	81	73	69	66	73	69	66	72	68	66	71	68	65	64					64			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	169493	169493	169493
5°	166222	166115	165842
10°	154116	152267	151067
15°	134503	132346	129959
20°	102474	101155	99330
25°	59089	57913	56844
30°	24677	26399	22507
35°	4577	12228	3985
40°	696	4338	696
45°	82	836	82
50°	0	166	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: 836 cd/sqm



TEST NUMBER: P887111

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.8	19.1
10°-20°	360.4	43.7
20°-30°	251.9	30.5
30°-40°	51.5	6.2
40°-50°	3.2	0.4
50°-60°	0.1	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°	770.1	93.4
0°-40°	821.6	99.6
0°-60°	824.8	100.0
0°-90°	824.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	824.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1750	1750	1750	1750	1750	
5°	1709	1711	1708	1703	1705	159
15°	1341	1339	1320	1304	1296	366
25°	553	556	542	534	532	256
35°	39	64	103	55	34	40
45°	1	1	6	1	1	1
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	



TEST NUMBER: P887111

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1749.6	1749.6	1749.6	1749.6	1749.6
2.5°	1745.8	1744.7	1745.8	1745.2	1744.7
5°	1709.3	1710.9	1708.2	1703.2	1705.4
7.5°	1647.9	1643.5	1635.8	1633.5	1636.3
10°	1566.7	1555.6	1547.9	1545.1	1535.7
12.5°	1463.8	1458.3	1445.0	1432.9	1427.9
15°	1341.1	1338.9	1319.6	1304.1	1295.8
17.5°	1188.5	1178.6	1174.2	1159.2	1152.1
20°	994.0	994.0	981.2	960.2	963.5
22.5°	772.8	764.5	767.3	745.2	738.6
25°	552.8	556.1	541.8	534.0	531.8
27.5°	372.6	367.6	368.7	354.4	343.8
30°	220.6	236.0	236.0	222.8	201.2
32.5°	103.4	132.7	155.9	123.8	87.9
35°	38.7	63.6	103.4	54.7	33.7
37.5°	14.9	26.0	63.0	22.1	13.8
40°	5.5	10.5	34.3	10.0	5.5
42.5°	2.2	3.9	16.0	3.3	2.2
45°	0.6	1.1	6.1	1.1	0.6
47.5°	0.6	0.6	2.2	0.6	0.0
50°	0.0	0.0	1.1	0.0	0.0
52.5°	0.0	0.0	0.6	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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)