

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: P887084

Luminaire Tested: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887084
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-46)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, METALLIC SILVER TRIM
Light Source: (1) D2W LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

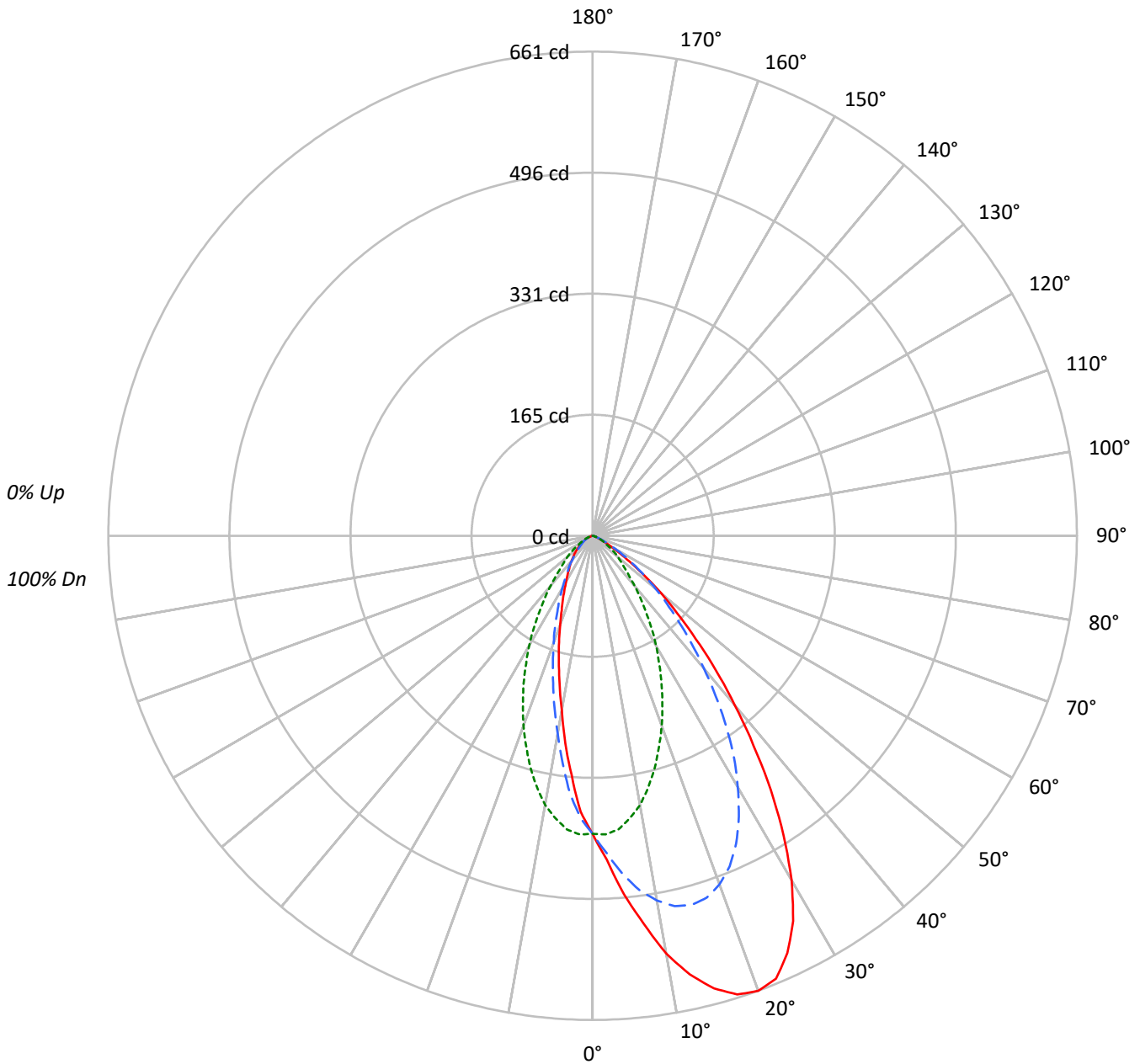
Lumens per Lamp: N/A
Luminaire Lumens: 514.1 lumens
Efficiency: N/A
Efficacy: 54.7 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 0.8 / 1
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 9.4
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



TEST NUMBER: P887084
CATALOG NUMBER: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

Luminous Intensity Polar Plot





TEST NUMBER: P887084

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

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								
1	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91								
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83								
3	99	91	86	81	97	90	85	80	87	83	79	85	81	78	82	79	76	75								
4	93	84	77	73	91	83	77	72	81	75	71	78	74	70	76	73	69	68								
5	87	77	71	65	85	76	70	65	74	69	65	73	68	64	71	67	63	62								
6	82	72	65	60	80	71	64	59	69	63	59	68	62	58	66	62	58	56								
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52								
8	73	62	55	50	71	61	55	50	60	54	50	59	53	50	58	53	49	48								
9	69	58	51	46	67	57	51	46	56	50	46	55	50	46	54	49	46	44								
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	43	41								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	89247	89247	89247	89247	89247
5°	108166	101827	88576	77812	72265
10°	129011	112567	83076	61188	53840
15°	145199	118446	74416	47197	40295
20°	154293	118205	64359	36263	30149
25°	152138	112119	53906	27510	23155
30°	137464	100319	43905	20839	18231
35°	113502	85046	33890	15981	15018
40°	86448	67527	25476	12366	12681
45°	61743	51788	18824	9737	10854
50°	41790	38174	15283	7539	8938
55°	23397	25882	11393	6499	7264
60°	11490	15328	8333	5394	5877
65°	5863	8276	6382	4255	4514
70°	3270	4135	4296	3270	2949
75°	1779	2203	2626	1271	847
80°	631	631	631	0	0
85°	0	0	1258	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 62394 cd/sqm



TEST NUMBER: P887084

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	7.5
10°-20°	102.9	20.0
20°-30°	132.7	25.8
30°-40°	116.1	22.6
40°-50°	73.4	14.3
50°-60°	35.6	6.9
60°-70°	12.3	2.4
70°-80°	2.7	0.5
80°-90°	0.1	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°	273.9	53.3
0°-40°	390.1	75.9
0°-60°	499.0	97.1
0°-90°	514.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	514.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	407	407	407	407	407	
5°	491	463	402	354	328	49
15°	640	522	328	208	178	180
25°	629	463	223	114	96	285
35°	424	318	127	60	56	263
45°	199	167	61	31	35	156
55°	61	68	30	17	19	58
65°	11	16	12	8	9	13
75°	2	3	3	2	1	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P887084

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	407.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0
2.5°	442.5	441.0	444.1	439.4	435.3	431.2	427.6	418.9	414.2	408.0	396.7
5°	491.4	490.9	486.8	478.0	468.8	456.4	444.6	428.6	416.3	402.4	374.6
7.5°	534.1	534.6	527.4	513.5	498.6	477.0	456.4	433.8	410.6	389.0	346.8
10°	579.4	573.2	562.9	545.4	519.7	491.4	461.6	430.2	399.8	373.1	318.0
12.5°	613.4	606.2	592.8	567.6	536.2	499.6	461.0	422.5	384.9	351.4	288.2
15°	639.6	633.9	615.4	583.0	543.9	499.6	453.8	409.6	365.9	327.8	255.2
17.5°	656.6	649.9	625.7	588.7	542.9	493.0	441.0	389.5	343.2	301.5	228.0
20°	661.2	653.5	627.8	585.6	534.6	478.5	421.9	368.4	318.0	275.8	198.1
22.5°	654.5	644.2	617.5	574.8	518.7	458.0	399.8	342.7	291.2	248.5	172.4
25°	628.8	621.6	593.8	547.5	493.5	433.3	370.0	315.9	264.5	222.8	150.3
27.5°	592.8	581.5	557.8	515.6	463.6	400.8	340.6	286.1	236.7	196.6	127.6
30°	542.9	533.6	509.9	473.4	425.0	367.4	309.8	257.8	210.5	173.4	109.6
32.5°	485.2	481.1	458.5	428.1	385.4	332.9	277.3	228.5	185.2	149.7	93.7
35°	424.0	417.3	400.8	378.2	340.6	294.8	245.4	198.6	158.0	126.6	78.2
37.5°	360.7	358.1	345.3	324.7	295.9	256.3	212.5	169.8	135.8	107.0	65.3
40°	302.0	303.6	291.2	276.8	252.1	219.7	182.7	144.6	112.7	89.0	54.5
42.5°	248.5	246.5	239.8	231.0	214.6	185.2	151.8	120.4	93.1	72.6	44.8
45°	199.1	201.2	197.6	190.4	178.6	155.4	126.1	97.3	76.2	60.7	36.5
47.5°	155.9	155.4	159.0	156.4	147.2	127.6	102.9	79.8	63.3	52.0	31.4
50°	122.5	120.9	123.0	124.5	120.9	102.9	82.8	66.4	54.0	44.8	28.3
52.5°	88.0	89.5	93.7	98.3	96.2	81.8	66.9	54.0	45.3	37.6	23.2
55°	61.2	64.3	68.4	75.6	72.6	62.8	52.0	43.7	35.0	29.8	19.6
57.5°	40.7	42.2	47.9	55.6	53.5	46.8	39.6	32.9	26.8	22.6	16.0
60°	26.2	27.3	32.4	38.1	36.5	33.4	28.8	24.2	21.1	19.0	13.4
62.5°	17.0	18.0	21.6	25.2	25.2	22.6	19.6	18.5	17.0	15.4	11.3
65°	11.3	12.3	14.9	17.5	16.5	15.4	13.9	13.9	13.4	12.3	9.3
67.5°	7.7	8.2	10.3	11.3	10.8	9.8	9.8	10.8	10.3	9.3	6.7
70°	5.1	5.7	6.7	7.2	6.7	6.2	6.7	7.7	7.2	6.7	5.1
72.5°	3.6	3.6	4.1	4.1	4.1	4.1	4.6	5.1	5.1	4.6	3.6
75°	2.1	2.1	2.1	2.6	2.6	2.6	3.1	3.1	3.1	3.1	2.1
77.5°	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P887084

CATALOG NUMBER: ML412LSFLD2W1E-TIR4D25AWW-TL4RWSL-600LM-2700K

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	407.0	407.0	407.0
2.5°	384.9	378.7	377.2
5°	353.5	335.0	328.3
7.5°	312.9	291.2	285.6
10°	274.8	250.6	241.8
12.5°	240.3	214.6	207.9
15°	207.9	183.7	177.5
17.5°	180.1	158.5	152.3
20°	155.4	135.8	129.2
22.5°	133.8	115.8	110.1
25°	113.7	98.3	95.7
27.5°	97.3	84.9	82.8
30°	82.3	73.1	72.0
32.5°	70.0	63.3	63.8
35°	59.7	55.6	56.1
37.5°	52.0	48.4	50.4
40°	43.2	42.2	44.3
42.5°	37.0	37.0	39.1
45°	31.4	32.9	35.0
47.5°	26.2	28.8	30.4
50°	22.1	25.2	26.2
52.5°	19.0	22.1	22.6
55°	17.0	19.0	19.0
57.5°	14.9	16.0	16.0
60°	12.3	13.4	13.4
62.5°	10.3	10.8	10.8
65°	8.2	8.7	8.7
67.5°	6.7	6.7	6.7
70°	5.1	4.6	4.6
72.5°	3.1	3.1	2.6
75°	1.5	1.0	1.0
77.5°	0.5	0.5	0.0
80°	0.0	0.0	0.0
82.5°	0.0	0.0	0.0
85°	0.0	0.0	0.0
87.5°	0.0	0.0	0.0
90°	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



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

Scaled Data Report



(END OF REPORT)