

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: P887083

Luminaire Tested: ML412LSFLD2W1E-TIR4D25AWW-TL4RWMW-600LM-3000K

Issue Date: 7/9/2024

Test Information

Test Method: LM-79-2019
Report Number: P887083
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-45)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/9/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFLD2W1E-TIR4D25AWW-TL4RWMW-600LM-3000K
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE WHITE TRIM
Light Source: (1) D2W LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 556.9 lumens
Efficiency: N/A
Efficacy: 59.2 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 0.81 / 1.01
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

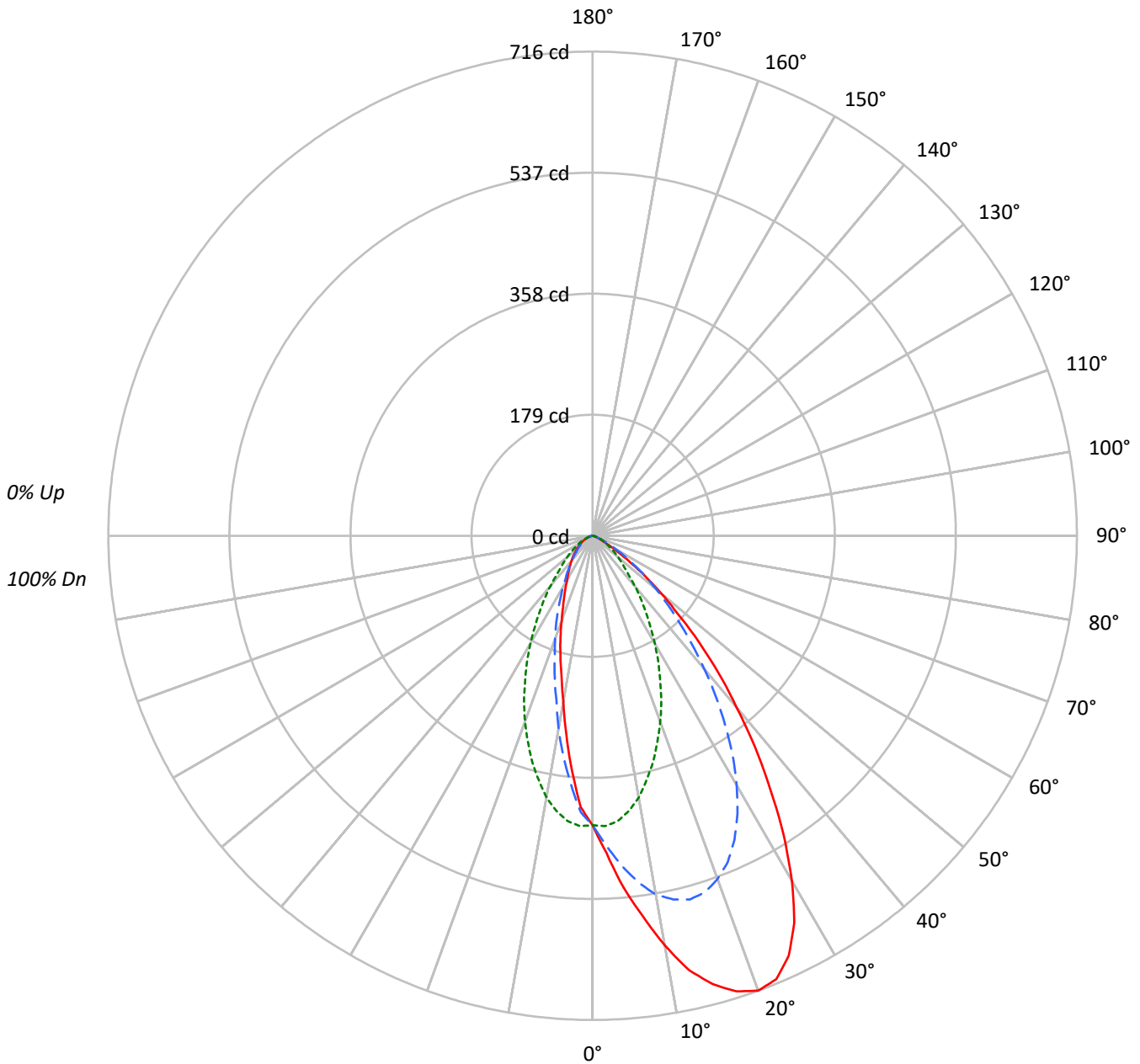
Input Watts (W): 9.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					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	112	109	106	103	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82					82			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74					74			
4	92	83	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67					67			
5	87	77	70	65	85	76	69	65	74	68	64	72	67	63	70	66	63	61					61			
6	81	71	64	59	80	70	63	59	69	63	58	67	62	58	66	61	57	56					56			
7	77	66	59	54	75	65	58	54	64	58	53	62	57	53	61	56	53	51					51			
8	72	61	54	49	71	61	54	49	59	53	49	58	53	49	57	52	49	47					47			
9	68	57	50	46	67	57	50	46	56	50	45	55	49	45	54	49	45	44					44			
10	65	53	47	42	63	53	47	42	52	46	42	51	46	42	50	45	42	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	93852	93852	93852	93852	93852
5°	114880	107704	93242	81202	76821
10°	136983	119960	87440	64550	55577
15°	155847	126380	78479	49149	41748
20°	167011	126034	68186	37757	31176
25°	165832	119995	57052	29131	23929
30°	149213	107877	46438	21953	19016
35°	122710	91444	36379	17159	16115
40°	94692	73194	27824	13425	13912
45°	68689	55990	20560	10792	12001
50°	45031	41363	16579	8870	10371
55°	25117	28615	12884	7799	8869
60°	11403	17564	10394	7017	7763
65°	5707	9314	8302	6019	6278
70°	3526	5321	6027	4937	4616
75°	2372	3050	4660	3304	2372
80°	758	1389	2147	2147	2147
85°	0	1510	2768	2768	2768

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 68689 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	7.3
10°-20°	109.1	19.6
20°-30°	142.1	25.5
30°-40°	125.1	22.5
40°-50°	80.1	14.4
50°-60°	39.8	7.1
60°-70°	15.0	2.7
70°-80°	4.4	0.8
80°-90°	0.8	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°	291.7	52.4
0°-40°	416.8	74.8
0°-60°	536.7	96.4
0°-90°	556.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	556.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	428	428	428	428	428	
5°	522	489	424	369	349	52
15°	686	557	346	216	184	194
25°	685	496	236	120	99	310
35°	458	342	136	64	60	286
45°	222	181	66	35	39	172
55°	66	75	34	20	23	63
65°	11	18	16	12	12	12
75°	3	4	6	4	3	3
85°	0	1	1	1	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	428.0	428.0	428.0	428.0	428.0	428.0	428.0	428.0	428.0	428.0	428.0
2.5°	469.4	470.5	466.7	462.8	460.6	455.6	449.5	440.7	436.3	429.7	417.5
5°	521.9	521.9	518.0	506.4	496.5	482.1	470.0	454.0	438.5	423.6	394.9
7.5°	567.2	567.2	559.4	548.4	528.0	505.3	482.7	456.7	433.0	410.3	366.7
10°	615.2	612.5	602.0	581.5	553.4	524.1	488.8	454.0	423.0	392.7	334.7
12.5°	657.8	650.6	634.0	607.5	571.0	530.7	489.3	445.7	405.9	369.5	301.5
15°	686.5	680.4	658.3	624.6	581.0	532.4	482.7	431.9	386.0	345.7	270.6
17.5°	706.4	700.3	671.6	631.2	580.4	524.7	468.9	413.7	363.4	318.7	238.6
20°	715.7	707.5	677.6	629.6	570.5	509.7	448.4	389.4	338.0	292.2	209.9
22.5°	709.7	699.7	665.5	617.4	555.6	488.8	425.2	365.6	309.8	265.1	182.2
25°	685.4	678.7	642.8	590.9	530.2	461.7	395.4	335.2	281.1	235.8	157.9
27.5°	645.6	634.0	602.0	558.3	497.0	430.2	363.4	305.4	254.0	209.9	135.9
30°	589.3	579.3	554.5	513.1	458.9	393.2	330.8	272.3	224.8	183.4	116.5
32.5°	525.8	521.9	499.3	465.6	415.9	354.6	299.3	242.4	197.7	158.5	99.4
35°	458.4	452.9	437.4	404.8	366.2	317.0	261.8	211.5	172.3	135.9	83.4
37.5°	394.9	387.1	374.4	351.8	319.8	278.3	226.4	181.1	145.2	116.0	70.7
40°	330.8	326.9	315.3	298.2	274.5	236.9	193.8	155.2	124.8	97.2	59.1
42.5°	275.6	269.0	261.2	250.2	232.0	201.6	164.6	130.3	101.1	79.5	49.2
45°	221.5	216.5	214.3	206.5	192.7	168.4	137.5	105.5	83.4	66.3	40.9
47.5°	170.1	171.2	171.2	168.4	160.2	139.7	112.1	87.3	70.7	57.4	35.3
50°	132.0	130.9	133.6	135.9	128.7	113.8	89.5	72.9	60.2	48.6	30.4
52.5°	96.6	96.6	102.7	107.7	102.7	91.1	72.9	59.6	49.2	41.4	26.5
55°	65.7	68.5	73.5	82.8	80.1	69.6	59.1	47.5	40.3	33.7	22.1
57.5°	42.0	44.7	50.3	60.2	58.0	53.0	44.2	38.1	31.5	27.1	18.8
60°	26.0	27.6	32.6	40.9	42.0	38.1	32.6	28.2	26.5	23.7	17.1
62.5°	16.6	17.7	22.6	27.1	28.2	25.4	23.7	22.6	22.1	19.9	14.9
65°	11.0	11.6	14.4	18.2	18.2	17.7	16.6	17.7	17.7	16.0	12.1
67.5°	7.2	7.7	9.9	12.1	12.1	12.1	13.3	13.8	13.8	12.1	9.4
70°	5.5	5.5	6.6	7.7	8.3	8.3	8.8	10.5	10.5	9.4	7.7
72.5°	3.9	3.9	4.4	5.0	5.5	5.5	6.6	7.2	7.7	7.2	6.1
75°	2.8	2.8	2.8	3.3	3.3	3.9	4.4	5.0	5.5	5.5	4.4
77.5°	1.7	1.7	1.7	2.2	2.2	2.2	2.8	2.8	3.3	3.3	2.8
80°	0.6	0.6	1.1	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.7
82.5°	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.1	1.1	1.1
87.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	428.0	428.0	428.0
2.5°	408.7	400.9	401.5
5°	368.9	351.8	349.0
7.5°	329.2	303.7	296.6
10°	289.9	260.1	249.6
12.5°	248.0	222.6	212.6
15°	216.5	192.2	183.9
17.5°	186.1	165.7	157.9
20°	161.8	143.0	133.6
22.5°	140.8	121.5	114.3
25°	120.4	103.3	98.9
27.5°	102.2	88.4	86.2
30°	86.7	76.8	75.1
32.5°	74.0	67.4	67.9
35°	64.1	59.6	60.2
37.5°	55.2	51.9	54.1
40°	46.9	46.4	48.6
42.5°	40.9	41.4	43.6
45°	34.8	37.0	38.7
47.5°	29.8	33.7	34.2
50°	26.0	29.8	30.4
52.5°	23.2	26.5	26.5
55°	20.4	23.2	23.2
57.5°	18.2	19.9	20.4
60°	16.0	16.6	17.7
62.5°	13.8	14.4	14.9
65°	11.6	12.1	12.1
67.5°	9.4	9.9	9.9
70°	7.7	7.7	7.2
72.5°	5.0	5.5	4.4
75°	3.9	3.3	2.8
77.5°	2.2	2.2	1.7
80°	1.7	1.7	1.7
82.5°	1.7	1.7	1.1
85°	1.1	1.1	1.1
87.5°	0.6	0.6	0.6
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°

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Scaled Data Report



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