

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P990685

Luminaire Tested: **ML2ALSFLD2W1E-TIR1D40FL-TL2SDMW-20°-400LM-3000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990685
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML2ALSFLD2W1E-TIR1D40FL-TL2SDMW-20°-400LM-3000K
 Description: 2IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM 20° Tilt
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

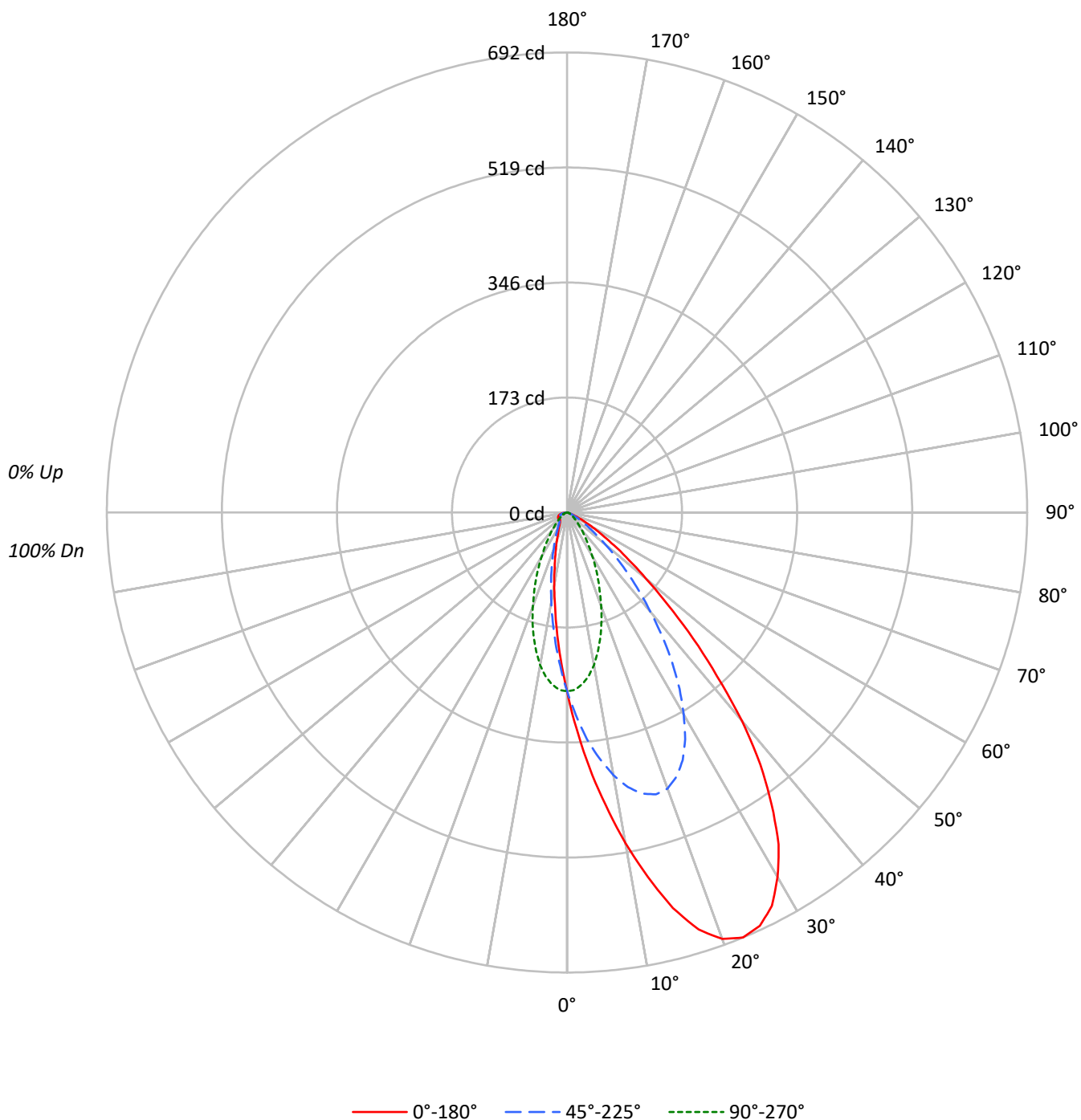
Lumens per Lamp: N/A
 Luminaire Lumens: 411.9 lumens
 Efficiency: N/A
 Efficacy: 67.5 lumens/watt
 Spacing Criteria (0/90/45): 1.48 / 0.69 / 1.07
 Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')
 CIE Type: Direct

Input Watts (W): 6.1
 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: 25 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	109	106	103	109	106	104	101	102	100	98		99	97	95		95
2	105	99	94	90	103	97	93	89	94	90	87		91	88	85		88
3	98	90	84	79	96	89	83	79	86	81	77		83	79	76		81
4	92	83	76	71	90	81	75	70	79	74	69		77	72	69		75
5	86	76	69	64	84	75	68	63	73	67	63		71	66	62		69
6	81	70	63	58	79	69	62	57	67	61	57		66	61	57		65
7	76	65	58	53	74	64	57	52	63	56	52		61	56	52		60
8	71	60	53	48	70	59	53	48	58	52	48		57	52	48		56
9	67	56	49	44	66	55	49	44	54	48	44		53	48	44		52
10	63	52	45	41	62	52	45	41	51	45	41		50	44	41		49

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	104121	104121	104121
5°	149679	100901	68694
10°	198391	91641	43322
15°	247120	77706	27400
20°	281441	61938	18309
25°	293305	47074	13126
30°	283278	33961	10291
35°	253838	24220	8468
40°	207143	17705	8195
45°	147249	12604	8439
50°	93621	9284	9284
55°	58235	7499	10404
60°	34410	5967	11935
65°	17971	5501	13295
70°	8724	4872	14502
75°	2545	3893	16619
80°	0	3794	17183
85°	0	4001	19118

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.8	6.3
10°-20°	75.1	18.2
20°-30°	105.9	25.7
30°-40°	98.1	23.8
40°-50°	60.5	14.7
50°-60°	27.5	6.7
60°-70°	12.0	2.9
70°-80°	5.4	1.3
80°-90°	1.6	0.4
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°	206.8	50.2
0°-40°	304.9	74.0
0°-60°	392.9	95.4
0°-90°	411.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	411.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	269	269	269	269	269	
5°	385	342	259	197	177	40
15°	616	438	194	90	68	175
25°	686	411	110	40	31	312
35°	537	276	51	21	18	331
45°	269	129	23	14	15	208
55°	86	42	11	14	15	81
65°	20	11	6	12	14	22
75°	2	3	3	8	11	3
85°	0	1	1	3	4	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	67.5°
0°	268.7	268.7	268.7	268.7	268.7	268.7	268.7	268.7	268.7	268.7	268.7
2.5°	325.1	322.5	322.5	320.8	319.9	317.4	315.7	312.3	308.8	304.6	287.5
5°	384.8	381.4	380.5	377.1	373.7	369.4	362.6	354.9	348.9	342.1	300.3
7.5°	443.7	444.5	441.1	436.0	427.4	421.5	411.2	399.3	387.3	372.8	308.8
10°	504.2	504.2	501.7	490.6	481.2	470.1	455.6	439.4	420.6	401.0	310.6
12.5°	561.4	561.4	555.4	546.9	533.2	516.2	495.7	473.5	449.6	423.2	308.8
15°	616.0	611.7	604.0	590.4	573.3	553.7	528.1	499.1	469.2	437.7	299.5
17.5°	657.8	651.8	644.1	628.8	605.8	580.2	551.2	517.0	481.2	444.5	285.8
20°	682.5	679.1	668.9	651.0	627.9	598.9	563.9	524.7	483.7	441.9	267.0
22.5°	691.9	688.5	678.3	659.5	633.9	600.6	563.9	521.3	476.1	430.0	245.7
25°	686.0	682.5	671.4	653.5	627.1	590.4	552.0	507.6	459.9	411.2	221.8
27.5°	667.2	662.1	650.1	629.6	602.3	569.1	528.1	481.2	433.4	384.8	195.4
30°	633.1	630.5	619.4	595.5	568.2	532.4	492.3	445.4	399.3	350.7	170.6
32.5°	592.1	586.1	574.2	553.7	524.7	488.0	448.8	405.3	360.0	314.8	145.9
35°	536.6	535.8	523.8	499.1	470.1	436.8	398.4	356.6	315.7	275.6	121.2
37.5°	477.8	471.8	459.9	439.4	413.8	383.1	345.5	307.1	271.3	235.5	101.5
40°	409.5	404.4	391.6	372.8	350.7	322.5	292.6	259.4	226.1	195.4	81.9
42.5°	333.6	330.2	325.1	307.1	290.1	265.3	240.6	211.6	186.0	160.4	64.8
45°	268.7	264.5	257.7	245.7	229.5	213.3	191.1	170.6	149.3	128.8	51.2
47.5°	204.8	205.6	199.6	189.4	178.3	165.5	150.2	133.9	116.9	100.7	41.0
50°	155.3	156.1	151.0	144.2	134.8	126.3	113.5	102.4	88.7	76.8	31.6
52.5°	117.7	116.0	111.8	107.5	100.7	92.1	84.5	75.9	65.7	56.3	24.7
55°	86.2	86.2	83.6	79.3	75.1	69.1	61.4	55.5	49.5	41.8	18.8
57.5°	62.3	61.4	59.7	57.2	53.7	49.5	45.2	40.1	35.0	30.7	14.5
60°	44.4	44.4	42.7	40.1	37.5	34.1	31.6	28.2	24.7	22.2	11.1
62.5°	30.7	29.9	29.0	27.3	26.4	23.9	21.3	19.6	17.9	16.2	9.4
65°	19.6	19.6	19.6	18.8	17.1	16.2	14.5	13.7	11.9	11.1	6.8
67.5°	12.8	12.8	12.8	11.9	11.9	11.1	10.2	9.4	8.5	7.7	6.0
70°	7.7	7.7	7.7	7.7	6.8	6.8	6.8	6.0	6.0	6.0	4.3
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.4
75°	1.7	1.7	1.7	1.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.7	1.7	1.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	268.7	268.7	268.7	268.7	268.7
2.5°	267.0	248.3	231.2	222.7	220.1
5°	259.4	223.5	197.1	181.7	176.6
7.5°	248.3	200.5	164.7	148.5	139.1
10°	232.9	174.0	136.5	116.0	110.1
12.5°	214.1	149.3	110.9	92.1	86.2
15°	193.7	126.3	89.6	73.4	68.3
17.5°	172.3	104.9	73.4	58.9	54.6
20°	150.2	87.9	58.9	46.9	44.4
22.5°	128.8	71.7	47.8	38.4	35.8
25°	110.1	59.7	40.1	32.4	30.7
27.5°	92.1	49.5	33.3	28.2	26.4
30°	75.9	41.0	28.2	23.9	23.0
32.5°	63.1	34.1	24.7	21.3	20.5
35°	51.2	28.2	21.3	18.8	17.9
37.5°	41.8	24.7	18.8	17.1	17.1
40°	35.0	21.3	17.1	16.2	16.2
42.5°	28.2	17.9	15.4	15.4	15.4
45°	23.0	16.2	14.5	14.5	15.4
47.5°	18.8	14.5	13.7	14.5	15.4
50°	15.4	12.8	13.7	15.4	15.4
52.5°	12.8	11.9	12.8	14.5	15.4
55°	11.1	11.1	13.7	15.4	15.4
57.5°	9.4	10.2	12.8	15.4	16.2
60°	7.7	10.2	12.8	14.5	15.4
62.5°	6.8	9.4	12.8	14.5	15.4
65°	6.0	8.5	11.9	13.7	14.5
67.5°	5.1	7.7	11.1	13.7	13.7
70°	4.3	6.8	10.2	12.8	12.8
72.5°	3.4	6.0	9.4	11.9	11.9
75°	2.6	5.1	7.7	10.2	11.1
77.5°	1.7	4.3	6.8	9.4	9.4
80°	1.7	2.6	5.1	7.7	7.7
82.5°	0.9	2.6	3.4	6.0	6.0
85°	0.9	1.7	2.6	4.3	4.3
87.5°	0.9	0.9	0.9	1.7	1.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)