

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: P990684

Luminaire Tested: **ML2ALSFLD2W1E-TIR1D40FL-TL2SDMW-20°-400LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
Report Number: P990684
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-2700K
Description: 2IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE
WHITE TRIM 20° Tilt
Light Source: (1) D2W LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

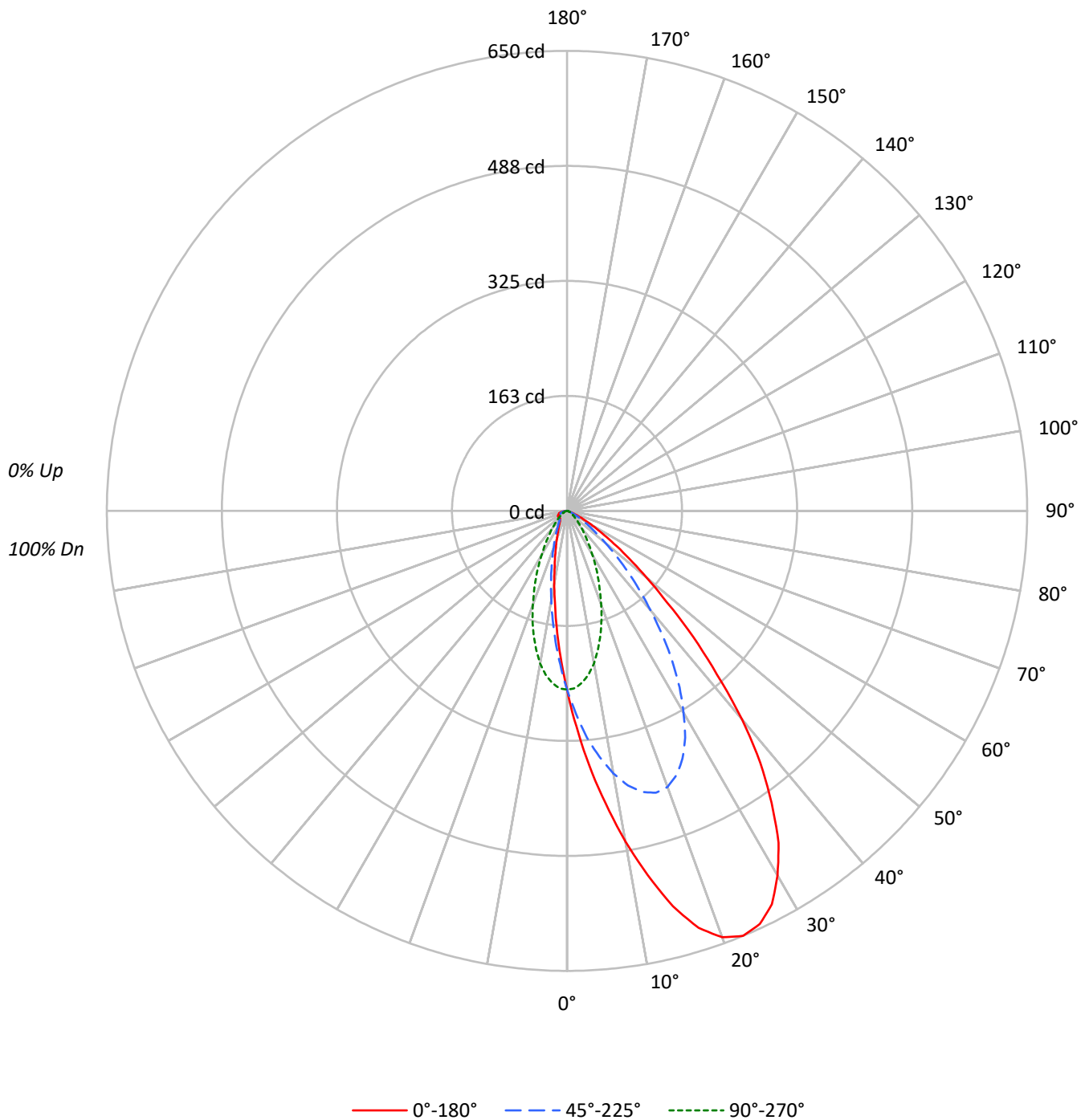
Lumens per Lamp: N/A
Luminaire Lumens: 386.8 lumens
Efficiency: N/A
Efficacy: 63.4 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 0.69 / 1.07
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')
CIE Type: Direct

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	110	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°	97805	97805	97805
5°	140577	94755	64532
10°	186351	86093	40686
15°	232076	72973	25715
20°	264328	58144	17196
25°	275433	44210	12314
30°	266051	31903	9665
35°	238417	22754	7947
40°	194548	16642	7689
45°	138317	11837	7891
50°	87894	8681	8681
55°	54655	7026	9728
60°	32317	5580	11160
65°	16871	5135	12470
70°	8157	4532	13596
75°	2395	3593	15571
80°	0	3570	16067
85°	0	3557	17784

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	6.3
10°-20°	70.5	18.2
20°-30°	99.4	25.7
30°-40°	92.2	23.8
40°-50°	56.8	14.7
50°-60°	25.8	6.7
60°-70°	11.3	2.9
70°-80°	5.1	1.3
80°-90°	1.5	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°	194.2	50.2
0°-40°	286.3	74.0
0°-60°	368.9	95.4
0°-90°	386.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	386.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	252	252	252	252	252	
5°	361	321	244	185	166	38
15°	578	411	182	84	64	164
25°	644	386	103	38	29	293
35°	504	259	48	20	17	311
45°	252	121	22	14	14	196
55°	81	39	10	13	14	76
65°	18	10	6	11	14	21
75°	2	2	2	7	10	3
85°	0	1	1	2	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°	252.4	252.4	252.4	252.4	252.4	252.4	252.4	252.4	252.4	252.4	252.4
2.5°	305.3	302.9	302.9	301.3	300.5	298.1	296.5	293.3	290.1	286.1	270.0
5°	361.4	358.2	357.4	354.2	351.0	347.0	340.6	333.3	327.7	321.3	282.1
7.5°	416.7	417.5	414.3	409.5	401.5	395.8	386.2	375.0	363.8	350.2	290.1
10°	473.6	473.6	471.2	460.7	451.9	441.5	427.9	412.7	395.0	376.6	291.7
12.5°	527.3	527.3	521.6	513.6	500.8	484.8	465.6	444.7	422.3	397.4	290.1
15°	578.5	574.5	567.3	554.5	538.5	520.0	496.0	468.8	440.7	411.1	281.3
17.5°	617.8	612.2	605.0	590.6	568.9	544.9	517.6	485.6	451.9	417.5	268.4
20°	641.0	637.8	628.2	611.4	589.8	562.5	529.7	492.8	454.3	415.1	250.8
22.5°	649.9	646.6	637.0	619.4	595.4	564.1	529.7	489.6	447.1	403.9	230.8
25°	644.2	641.0	630.6	613.8	589.0	554.5	518.4	476.8	431.9	386.2	208.3
27.5°	626.6	621.8	610.6	591.4	565.7	534.5	496.0	451.9	407.1	361.4	183.5
30°	594.6	592.2	581.7	559.3	533.7	500.0	462.4	418.3	375.0	329.3	160.3
32.5°	556.1	550.5	539.3	520.0	492.8	458.3	421.5	380.6	338.1	295.7	137.0
35°	504.0	503.2	492.0	468.8	441.5	410.3	374.2	334.9	296.5	258.8	113.8
37.5°	448.7	443.1	431.9	412.7	388.6	359.8	324.5	288.5	254.8	221.2	95.4
40°	384.6	379.8	367.8	350.2	329.3	302.9	274.8	243.6	212.3	183.5	76.9
42.5°	313.3	310.1	305.3	288.5	272.4	249.2	226.0	198.7	174.7	150.6	60.9
45°	252.4	248.4	242.0	230.8	215.5	200.3	179.5	160.3	140.2	121.0	48.1
47.5°	192.3	193.1	187.5	177.9	167.5	155.5	141.0	125.8	109.8	94.6	38.5
50°	145.8	146.6	141.8	135.4	126.6	118.6	106.6	96.2	83.3	72.1	29.6
52.5°	110.6	109.0	105.0	101.0	94.6	86.5	79.3	71.3	61.7	52.9	23.2
55°	80.9	80.9	78.5	74.5	70.5	64.9	57.7	52.1	46.5	39.3	17.6
57.5°	58.5	57.7	56.1	53.7	50.5	46.5	42.5	37.7	32.9	28.8	13.6
60°	41.7	41.7	40.1	37.7	35.3	32.1	29.6	26.4	23.2	20.8	10.4
62.5°	28.8	28.0	27.2	25.6	24.8	22.4	20.0	18.4	16.8	15.2	8.8
65°	18.4	18.4	18.4	17.6	16.0	15.2	13.6	12.8	11.2	10.4	6.4
67.5°	12.0	12.0	12.0	11.2	11.2	10.4	9.6	8.8	8.0	7.2	5.6
70°	7.2	7.2	7.2	7.2	6.4	6.4	6.4	5.6	5.6	5.6	4.0
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.2
75°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
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°	252.4	252.4	252.4	252.4	252.4
2.5°	250.8	233.2	217.2	209.1	206.7
5°	243.6	209.9	185.1	170.7	165.9
7.5°	233.2	188.3	154.7	139.4	130.6
10°	218.8	163.5	128.2	109.0	103.4
12.5°	201.1	140.2	104.2	86.5	80.9
15°	181.9	118.6	84.1	68.9	64.1
17.5°	161.9	98.6	68.9	55.3	51.3
20°	141.0	82.5	55.3	44.1	41.7
22.5°	121.0	67.3	44.9	36.1	33.7
25°	103.4	56.1	37.7	30.4	28.8
27.5°	86.5	46.5	31.3	26.4	24.8
30°	71.3	38.5	26.4	22.4	21.6
32.5°	59.3	32.1	23.2	20.0	19.2
35°	48.1	26.4	20.0	17.6	16.8
37.5°	39.3	23.2	17.6	16.0	16.0
40°	32.9	20.0	16.0	15.2	15.2
42.5°	26.4	16.8	14.4	14.4	14.4
45°	21.6	15.2	13.6	13.6	14.4
47.5°	17.6	13.6	12.8	13.6	14.4
50°	14.4	12.0	12.8	14.4	14.4
52.5°	12.0	11.2	12.0	13.6	14.4
55°	10.4	10.4	12.8	14.4	14.4
57.5°	8.8	9.6	12.0	14.4	15.2
60°	7.2	9.6	12.0	13.6	14.4
62.5°	6.4	8.8	12.0	13.6	14.4
65°	5.6	8.0	11.2	12.8	13.6
67.5°	4.8	7.2	10.4	12.8	12.8
70°	4.0	6.4	9.6	12.0	12.0
72.5°	3.2	5.6	8.8	11.2	11.2
75°	2.4	4.8	7.2	9.6	10.4
77.5°	1.6	4.0	6.4	8.8	8.8
80°	1.6	2.4	4.8	7.2	7.2
82.5°	0.8	2.4	3.2	5.6	5.6
85°	0.8	1.6	2.4	4.0	4.0
87.5°	0.8	0.8	0.8	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)