

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: P990676

Luminaire Tested: **ML2ALSFLD2W1E-TIR1D40FL-TL2RDMW-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: P990676
Test Lab: Cooper Lighting Solutions
Issue Date: 5/13/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML2ALSFLD2W1E-TIR1D40FL-TL2RDMW-20°-400LM-2700K
Description: 2IN ROUND 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: 345.8 lumens
Efficiency: N/A
Efficacy: 56.7 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 0.69 / 1.03
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

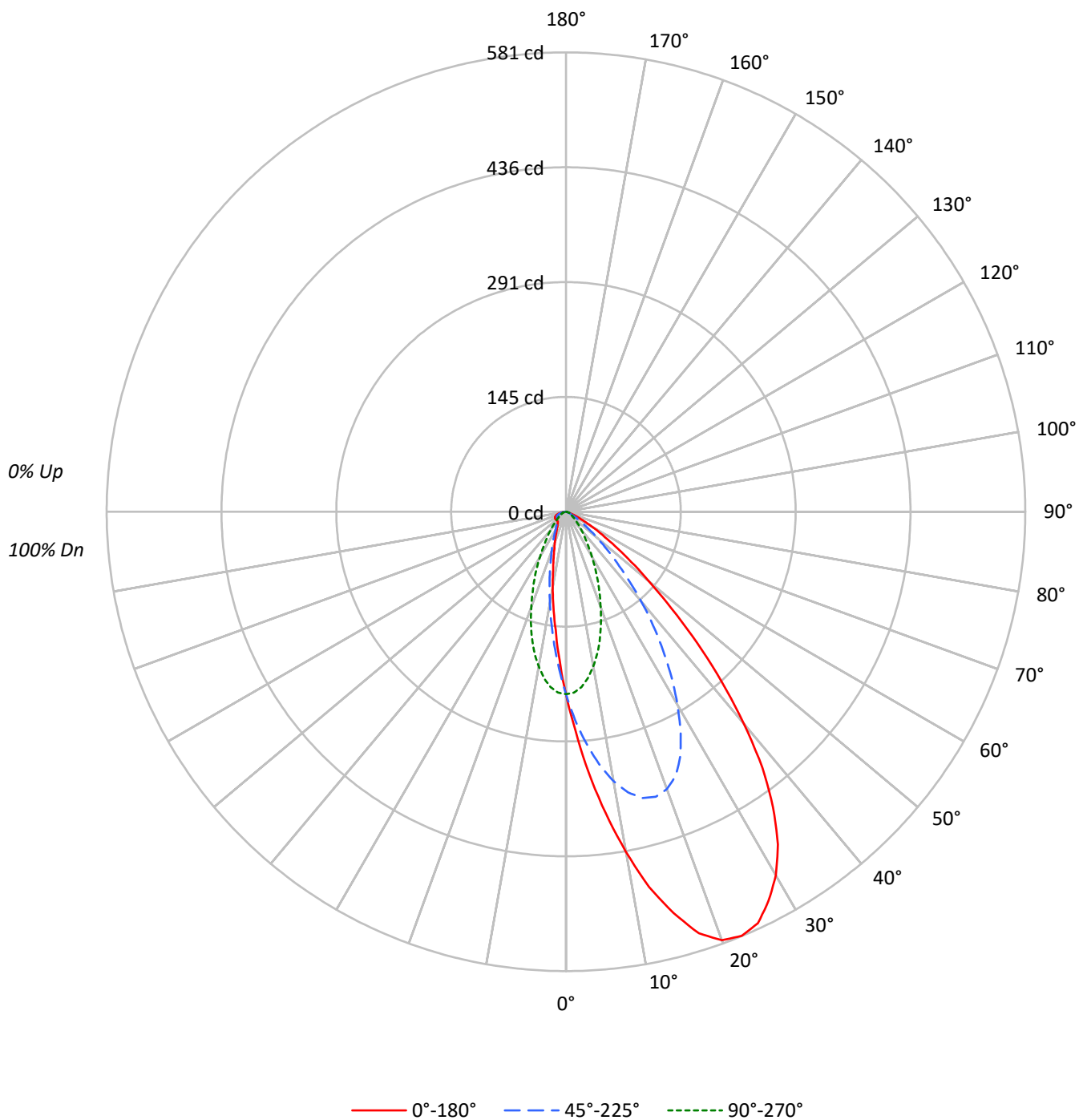
Input Watts (W): 6.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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		84	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		70
6	81	70	63	58	79	69	62	58	68	62	57		66	61	57		65
7	76	65	58	53	74	64	57	53	63	57	52		61	56	52		60
8	71	60	53	48	70	60	53	48	58	52	48		57	52	48		56
9	67	56	49	45	66	56	49	44	55	48	44		54	48	44		53
10	64	52	46	41	63	52	45	41	51	45	41		50	45	41		49

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	113773	113773	113773
5°	164180	110246	74141
10°	218632	99497	48145
15°	268315	84688	30698
20°	302740	67258	21422
25°	312585	51444	15678
30°	302457	37430	12306
35°	274952	26983	11082
40°	225357	19579	10305
45°	163691	14513	11164
50°	105079	11053	12281
55°	64772	8946	13763
60°	38681	7894	15788
65°	20547	6538	17745
70°	10386	6924	18465
75°	3050	4575	19825
80°	0	4546	18184
85°	0	4529	18115

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	22.2	6.4
10°-20°	64.3	18.6
20°-30°	89.0	25.7
30°-40°	81.2	23.5
40°-50°	49.6	14.3
50°-60°	22.8	6.6
60°-70°	10.5	3.0
70°-80°	4.9	1.4
80°-90°	1.4	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°	175.4	50.7
0°-40°	256.6	74.2
0°-60°	329.0	95.1
0°-90°	345.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	345.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	231	231	231	231	231	
5°	332	294	223	169	150	35
15°	525	375	166	78	60	149
25°	574	342	94	37	29	261
35°	456	214	45	21	18	281
45°	235	91	21	14	16	182
55°	75	27	10	14	16	71
65°	18	6	6	12	15	19
75°	2	2	2	7	10	3
85°	0	0	1	2	3	0
90°	0	0	0	0	0	

TEST NUMBER: P990676

CATALOG NUMBER: ML2ALSFLD2W1E-TIR1D40FL-TL2RDMW-20°-400LM-2700K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	67.5°
0°	230.6	230.6	230.6	230.6	230.6	230.6	230.6	230.6	230.6	230.6	230.6
2.5°	277.1	278.7	277.9	277.1	275.5	273.1	271.5	269.1	266.7	263.5	246.6
5°	331.5	329.1	329.9	327.5	321.9	318.7	313.9	306.7	301.1	293.9	259.5
7.5°	384.4	382.0	378.8	374.8	370.0	360.4	354.8	344.3	333.9	321.9	265.9
10°	436.4	434.0	430.8	425.2	415.6	406.0	391.6	377.2	362.0	345.9	267.5
12.5°	486.1	482.1	476.5	468.5	455.7	442.0	426.8	406.8	385.2	363.6	264.3
15°	525.3	523.7	516.5	506.9	491.7	474.1	452.4	426.8	401.2	374.8	256.3
17.5°	559.0	553.3	547.7	534.9	516.5	494.1	468.5	440.4	409.2	378.0	243.4
20°	576.6	574.2	564.6	550.1	530.9	506.1	476.5	442.8	409.2	373.2	226.6
22.5°	580.6	578.2	568.6	552.5	531.7	503.7	472.5	437.2	398.8	362.0	207.4
25°	574.2	571.0	560.6	542.9	520.5	490.9	457.3	419.6	381.2	341.9	185.0
27.5°	554.9	551.7	540.5	522.1	498.9	467.7	430.8	393.2	354.0	313.9	162.6
30°	530.9	526.9	513.3	494.9	469.3	436.4	400.4	361.2	321.1	281.9	140.9
32.5°	498.9	494.1	480.5	461.3	433.2	400.4	364.4	324.3	285.9	249.0	119.3
35°	456.5	452.4	438.8	418.8	391.6	356.4	323.5	285.1	249.8	213.8	98.5
37.5°	408.4	401.2	390.8	369.2	341.9	311.5	277.1	244.2	211.4	181.0	80.1
40°	349.9	345.9	332.3	315.5	289.1	261.9	232.2	201.8	173.8	148.1	64.1
42.5°	291.5	289.1	275.5	257.1	237.8	213.8	188.2	162.6	140.1	117.7	50.4
45°	234.6	229.8	221.0	205.0	189.0	168.2	148.1	128.1	109.7	91.3	39.2
47.5°	181.0	179.4	171.4	161.0	146.5	130.5	114.5	97.7	83.3	69.7	29.6
50°	136.9	136.9	129.7	121.7	110.5	98.5	85.7	74.5	61.7	52.1	23.2
52.5°	104.1	101.7	97.7	90.5	81.7	72.9	63.3	54.5	45.6	37.6	17.6
55°	75.3	75.3	72.1	66.5	60.9	52.9	46.4	39.2	32.8	27.2	13.6
57.5°	54.5	53.7	51.3	48.0	43.2	38.4	32.8	28.0	23.2	19.2	10.4
60°	39.2	38.4	36.0	33.6	30.4	26.4	23.2	19.2	16.0	13.6	8.0
62.5°	26.4	26.4	24.8	23.2	20.8	18.4	15.2	13.6	11.2	9.6	6.4
65°	17.6	17.6	16.8	15.2	13.6	12.0	10.4	8.8	8.0	6.4	4.8
67.5°	11.2	11.2	11.2	9.6	8.8	8.0	7.2	6.4	5.6	4.8	4.0
70°	7.2	7.2	6.4	6.4	5.6	4.8	4.8	4.0	4.0	3.2	3.2
72.5°	4.0	4.0	4.0	3.2	3.2	3.2	2.4	2.4	2.4	2.4	2.4
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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°	230.6	230.6	230.6	230.6	230.6
2.5°	229.0	212.2	198.6	190.6	187.4
5°	222.6	191.4	169.0	155.4	149.7
7.5°	212.2	170.6	141.7	124.9	120.9
10°	198.6	148.9	116.9	100.1	96.1
12.5°	183.4	127.3	96.1	79.3	75.3
15°	165.8	108.9	78.5	64.9	60.1
17.5°	147.3	91.3	63.3	52.9	48.8
20°	128.1	76.1	52.9	43.2	40.8
22.5°	110.5	63.3	44.0	36.0	34.4
25°	94.5	52.9	36.8	31.2	28.8
27.5°	79.3	44.0	31.2	26.4	24.8
30°	65.7	36.8	26.4	23.2	21.6
32.5°	53.7	31.2	23.2	20.8	20.0
35°	44.8	26.4	20.8	18.4	18.4
37.5°	36.8	23.2	18.4	16.8	16.8
40°	30.4	20.0	16.8	16.0	16.0
42.5°	25.6	17.6	15.2	15.2	16.0
45°	20.8	15.2	14.4	15.2	16.0
47.5°	16.8	13.6	14.4	15.2	16.0
50°	14.4	12.8	13.6	15.2	16.0
52.5°	12.0	12.0	13.6	15.2	16.0
55°	10.4	11.2	13.6	15.2	16.0
57.5°	8.8	10.4	13.6	15.2	16.0
60°	8.0	9.6	12.8	15.2	16.0
62.5°	7.2	9.6	12.8	14.4	15.2
65°	5.6	8.8	12.0	14.4	15.2
67.5°	5.6	8.0	11.2	13.6	13.6
70°	4.8	7.2	10.4	12.0	12.8
72.5°	4.0	6.4	8.8	11.2	12.0
75°	2.4	4.8	7.2	9.6	10.4
77.5°	2.4	4.0	6.4	8.0	8.8
80°	1.6	3.2	4.8	6.4	6.4
82.5°	0.8	2.4	3.2	4.8	4.8
85°	0.8	1.6	2.4	3.2	3.2
87.5°	0.8	0.8	0.8	0.8	1.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)