

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: P990956

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4SDMW-1000LM-5000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990956
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFL9FS1E-TIR4D55WFL-TL4SDMW-1000LM-5000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
 Ballast/Driver: -

Summary

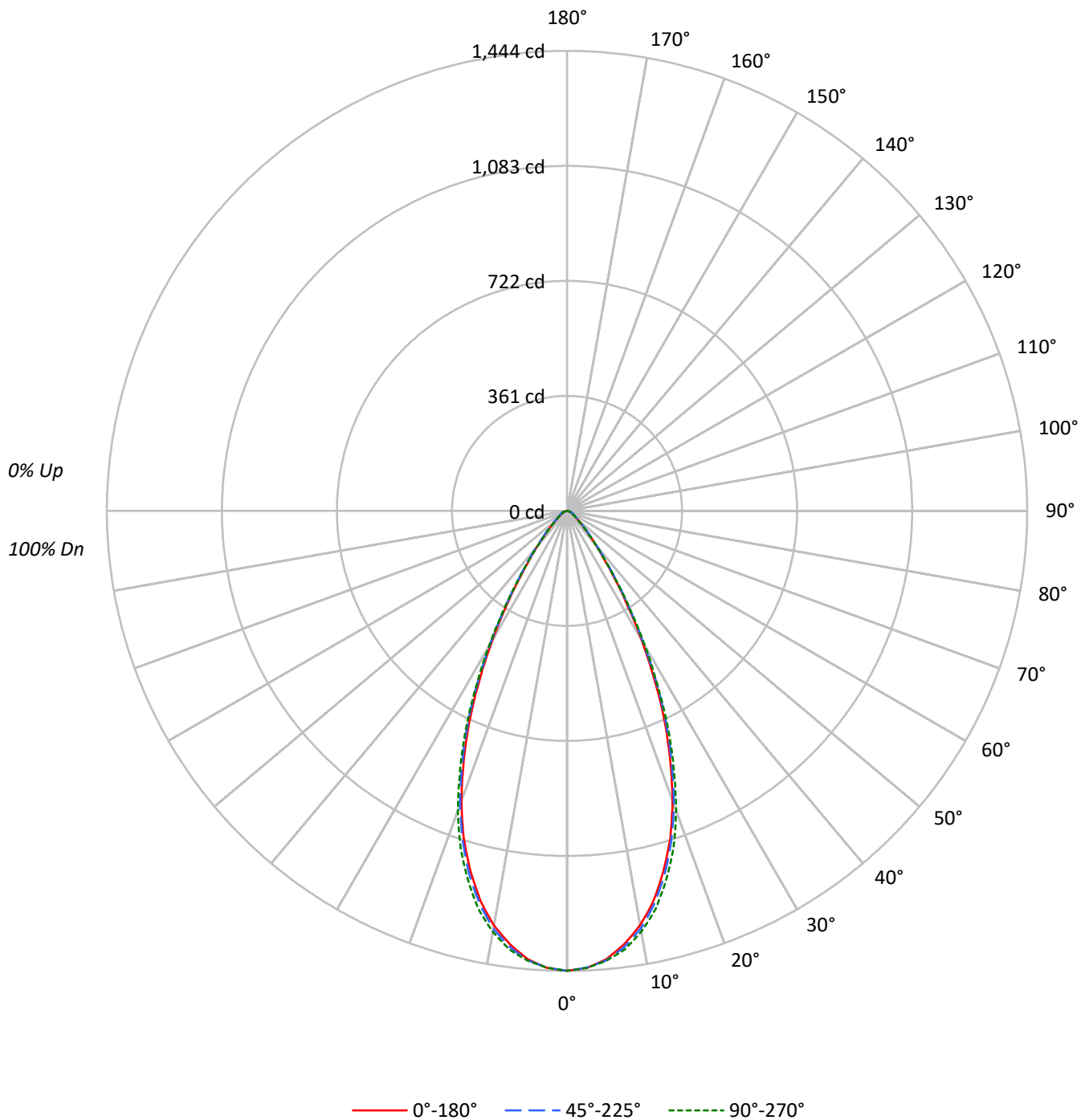
Lumens per Lamp: N/A
 Luminaire Lumens: 1092.3 lumens
 Efficiency: N/A
 Efficacy: 84.0 lumens/watt
 Spacing Criteria (0/90/45): 0.79 / 0.81 / 0.78
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 13
 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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CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4SDMW-1000LM-5000K

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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	113	110	108	106	111	108	106	104	104	102	101		101	99	98		97	96	95	93
2	108	103	98	95	105	101	97	94	98	94	92		95	92	90		92	90	88	86
3	102	96	90	86	100	94	89	86	91	88	84		89	86	83		87	84	82	80
4	97	89	84	79	95	88	83	79	86	81	78		84	80	77		82	79	76	75
5	92	84	78	73	90	83	77	73	81	76	72		79	75	72		78	74	71	70
6	88	79	73	68	86	78	72	68	76	71	68		75	71	67		74	70	67	65
7	83	74	68	64	82	73	68	64	72	67	63		71	66	63		70	66	63	61
8	79	70	64	60	78	69	64	60	68	63	60		67	63	59		66	62	59	58
9	76	66	60	57	75	66	60	56	65	60	56		64	59	56		63	59	56	55
10	73	63	57	53	72	63	57	53	62	57	53		61	56	53		60	56	53	52

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	139840	139840	139840
5°	137398	137729	137836
10°	129947	130960	131963
15°	117363	118616	120432
20°	99835	101124	103227
25°	77089	78789	79997
30°	52262	53660	54667
35°	31115	32581	32581
40°	18071	19070	18071
45°	10878	11645	10412
50°	7008	7686	6661
55°	4982	5743	4982
60°	4166	4824	4166
65°	3897	4424	3897
70°	3541	4164	3541
75°	2957	3818	2545
80°	614	1897	614
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.4	12.1
10°-20°	327.8	30.0
20°-30°	332.4	30.4
30°-40°	176.8	16.2
40°-50°	66.4	6.1
50°-60°	29.3	2.7
60°-70°	18.0	1.6
70°-80°	8.6	0.8
80°-90°	0.6	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°	792.6	72.6
0°-40°	969.5	88.8
0°-60°	1065.2	97.5
0°-90°	1092.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1092.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1444	1444	1444	1444	1444	
5°	1413	1412	1416	1419	1417	132
15°	1170	1172	1183	1197	1201	324
25°	721	728	737	745	748	326
35°	263	265	276	279	276	171
45°	79	82	85	80	76	65
55°	30	32	34	31	30	28
65°	17	18	19	18	17	17
75°	8	8	10	8	7	7
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1443.5	1443.5	1443.5	1443.5	1443.5
2.5°	1435.6	1433.3	1434.4	1436.7	1435.6
5°	1412.9	1411.8	1416.3	1418.6	1417.4
7.5°	1372.1	1374.3	1380.0	1386.8	1388.0
10°	1321.0	1322.2	1331.3	1340.3	1341.5
12.5°	1254.1	1256.4	1264.4	1274.6	1281.4
15°	1170.2	1172.5	1182.7	1197.4	1200.8
17.5°	1077.2	1077.2	1087.5	1101.1	1110.1
20°	968.4	969.5	980.9	994.5	1001.3
22.5°	845.9	849.3	859.5	872.0	875.4
25°	721.2	728.0	737.1	745.0	748.4
27.5°	590.8	596.5	607.8	612.3	613.5
30°	467.2	471.7	479.7	485.3	488.7
32.5°	354.9	357.2	369.7	374.2	373.1
35°	263.1	265.3	275.5	279.0	275.5
37.5°	192.8	197.3	205.2	205.2	198.4
40°	142.9	142.9	150.8	148.5	142.9
42.5°	105.5	106.6	112.3	108.9	104.3
45°	79.4	81.6	85.0	80.5	76.0
47.5°	60.1	62.4	64.6	61.2	56.7
50°	46.5	48.8	51.0	47.6	44.2
52.5°	36.3	38.6	40.8	37.4	35.2
55°	29.5	31.8	34.0	30.6	29.5
57.5°	24.9	26.1	28.3	26.1	24.9
60°	21.5	22.7	24.9	22.7	21.5
62.5°	19.3	20.4	21.5	20.4	19.3
65°	17.0	18.1	19.3	18.1	17.0
67.5°	14.7	15.9	17.0	15.9	14.7
70°	12.5	13.6	14.7	13.6	12.5
72.5°	10.2	11.3	12.5	11.3	10.2
75°	7.9	7.9	10.2	7.9	6.8
77.5°	3.4	5.7	6.8	4.5	3.4
80°	1.1	2.3	3.4	2.3	1.1
82.5°	1.1	1.1	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)