

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: P990952

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4SDMW-1000LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990952
 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-2700K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

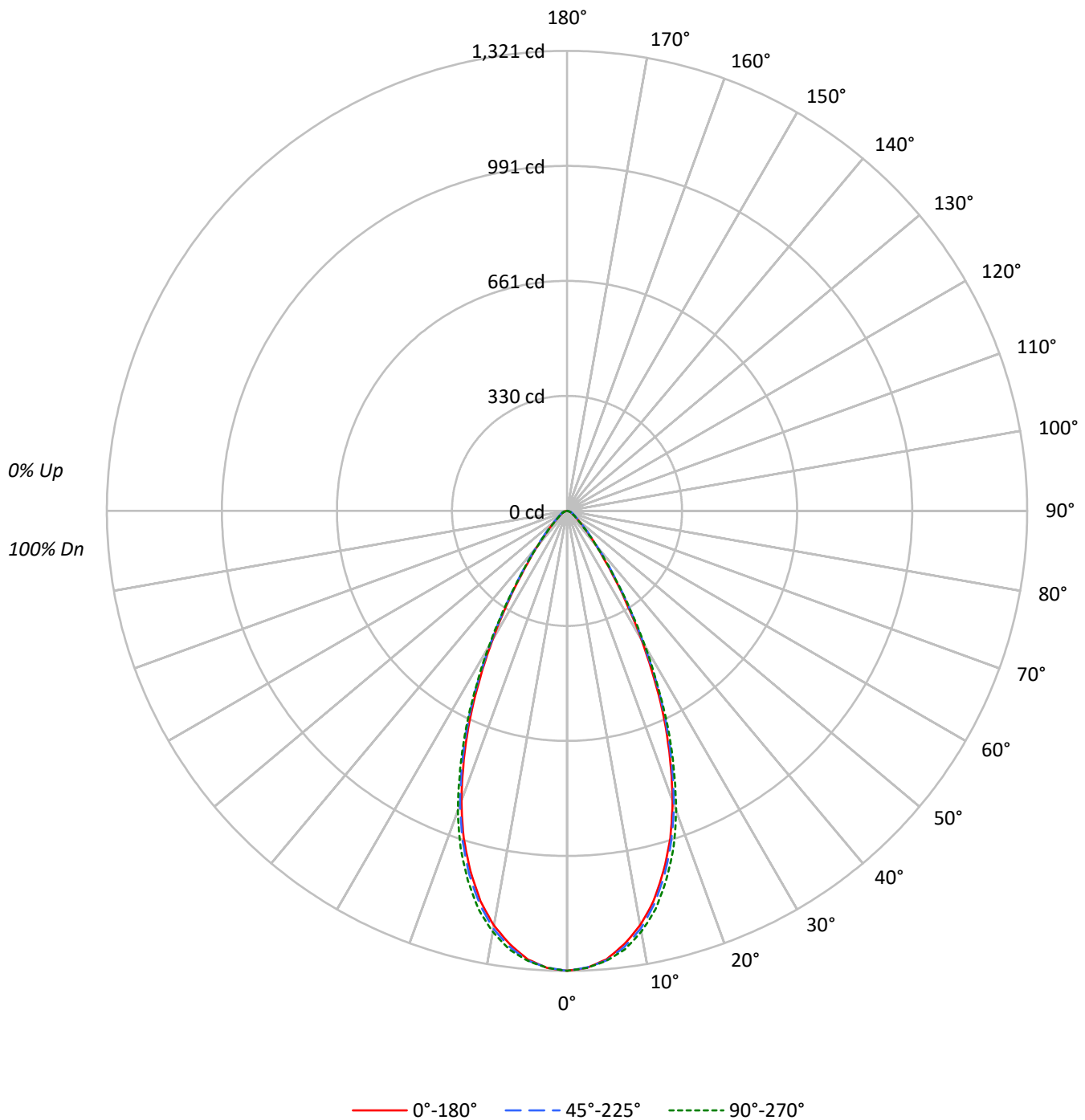
Lumens per Lamp: N/A
 Luminaire Lumens: 999.4 lumens
 Efficiency: N/A
 Efficacy: 76.9 lumens/watt
 Spacing Criteria (0/90/45): 0.79 / 0.81 / 0.78
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	127934	127934	127934
5°	125700	126011	126108
10°	118890	119805	120729
15°	107373	108517	110182
20°	91340	92515	94443
25°	70526	72076	73188
30°	47810	49085	50014
35°	28466	29814	29814
40°	16529	17452	16529
45°	9946	10659	9522
50°	6405	7038	6104
55°	4560	5253	4560
60°	3817	4418	3817
65°	3576	4034	3576
70°	3229	3824	3229
75°	2732	3481	2321
80°	558	1729	558
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.1	12.1
10°-20°	299.9	30.0
20°-30°	304.1	30.4
30°-40°	161.8	16.2
40°-50°	60.8	6.1
50°-60°	26.8	2.7
60°-70°	16.4	1.6
70°-80°	7.9	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°	725.2	72.6
0°-40°	886.9	88.8
0°-60°	974.5	97.5
0°-90°	999.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	999.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1321	1321	1321	1321	1321	
5°	1293	1292	1296	1298	1297	121
15°	1071	1073	1082	1096	1099	297
25°	660	666	674	682	685	298
35°	241	243	252	255	252	157
45°	73	75	78	74	70	59
55°	27	29	31	28	27	25
65°	16	17	18	17	16	15
75°	7	7	9	7	6	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°	1320.6	1320.6	1320.6	1320.6	1320.6
2.5°	1313.4	1311.3	1312.3	1314.4	1313.4
5°	1292.6	1291.6	1295.8	1297.8	1296.8
7.5°	1255.3	1257.4	1262.6	1268.8	1269.8
10°	1208.6	1209.6	1217.9	1226.2	1227.3
12.5°	1147.4	1149.5	1156.7	1166.1	1172.3
15°	1070.6	1072.7	1082.0	1095.5	1098.6
17.5°	985.6	985.6	994.9	1007.3	1015.6
20°	886.0	887.0	897.4	909.8	916.1
22.5°	773.9	777.0	786.4	797.8	800.9
25°	659.8	666.0	674.3	681.6	684.7
27.5°	540.5	545.7	556.1	560.2	561.2
30°	427.4	431.6	438.8	444.0	447.1
32.5°	324.7	326.8	338.2	342.4	341.3
35°	240.7	242.8	252.1	255.2	252.1
37.5°	176.4	180.5	187.8	187.8	181.6
40°	130.7	130.7	138.0	135.9	130.7
42.5°	96.5	97.5	102.7	99.6	95.4
45°	72.6	74.7	77.8	73.7	69.5
47.5°	55.0	57.1	59.1	56.0	51.9
50°	42.5	44.6	46.7	43.6	40.5
52.5°	33.2	35.3	37.3	34.2	32.2
55°	27.0	29.0	31.1	28.0	27.0
57.5°	22.8	23.9	25.9	23.9	22.8
60°	19.7	20.7	22.8	20.7	19.7
62.5°	17.6	18.7	19.7	18.7	17.6
65°	15.6	16.6	17.6	16.6	15.6
67.5°	13.5	14.5	15.6	14.5	13.5
70°	11.4	12.4	13.5	12.4	11.4
72.5°	9.3	10.4	11.4	10.4	9.3
75°	7.3	7.3	9.3	7.3	6.2
77.5°	3.1	5.2	6.2	4.1	3.1
80°	1.0	2.1	3.1	2.1	1.0
82.5°	1.0	1.0	1.0	1.0	1.0
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)