

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: P990953

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4SDMW-1000LM-3000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990953
 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-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

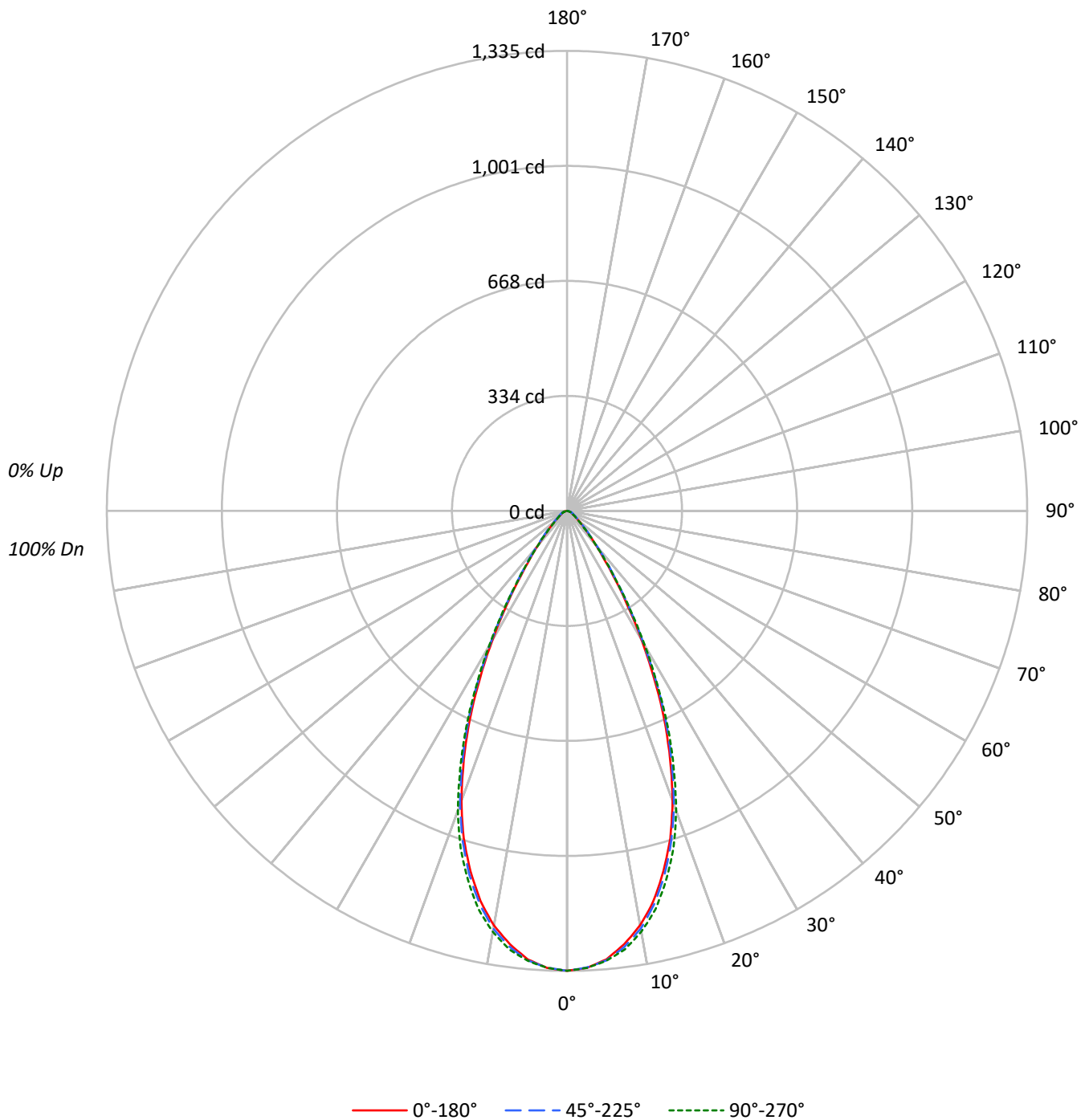
Lumens per Lamp: N/A
 Luminaire Lumens: 1009.9 lumens
 Efficiency: N/A
 Efficacy: 77.7 lumens/watt
 Spacing Criteria (0/90/45): 0.79 / 0.81 / 0.78
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	129290	129290	129290
5°	127032	127333	127440
10°	120149	121074	121998
15°	108507	109670	111345
20°	92299	93495	95433
25°	71274	72846	73957
30°	48313	49611	50550
35°	28762	30133	30133
40°	16706	17629	16706
45°	10056	10768	9618
50°	6481	7114	6164
55°	4611	5320	4611
60°	3856	4476	3856
65°	3599	4080	3599
70°	3257	3852	3257
75°	2732	3518	2358
80°	558	1729	558
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.4	12.1
10°-20°	303.1	30.0
20°-30°	307.3	30.4
30°-40°	163.5	16.2
40°-50°	61.4	6.1
50°-60°	27.1	2.7
60°-70°	16.6	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°	732.8	72.6
0°-40°	896.3	88.8
0°-60°	984.8	97.5
0°-90°	1009.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1009.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1335	1335	1335	1335	1335	
5°	1306	1305	1309	1312	1310	122
15°	1082	1084	1094	1107	1110	300
25°	667	673	682	689	692	301
35°	243	245	255	258	255	158
45°	73	76	79	74	70	60
55°	27	29	32	28	27	26
65°	16	17	18	17	16	16
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°	1334.6	1334.6	1334.6	1334.6	1334.6
2.5°	1327.3	1325.2	1326.2	1328.3	1327.3
5°	1306.3	1305.2	1309.4	1311.5	1310.5
7.5°	1268.5	1270.6	1275.9	1282.2	1283.2
10°	1221.4	1222.4	1230.8	1239.2	1240.2
12.5°	1159.5	1161.6	1169.0	1178.4	1184.7
15°	1081.9	1084.0	1093.5	1107.1	1110.2
17.5°	996.0	996.0	1005.4	1018.0	1026.4
20°	895.3	896.4	906.9	919.4	925.7
22.5°	782.1	785.2	794.7	806.2	809.4
25°	666.8	673.1	681.5	688.8	691.9
27.5°	546.2	551.5	561.9	566.1	567.2
30°	431.9	436.1	443.5	448.7	451.9
32.5°	328.1	330.2	341.8	346.0	344.9
35°	243.2	245.3	254.8	257.9	254.8
37.5°	178.2	182.4	189.8	189.8	183.5
40°	132.1	132.1	139.4	137.3	132.1
42.5°	97.5	98.5	103.8	100.6	96.5
45°	73.4	75.5	78.6	74.4	70.2
47.5°	55.6	57.7	59.8	56.6	52.4
50°	43.0	45.1	47.2	44.0	40.9
52.5°	33.5	35.6	37.7	34.6	32.5
55°	27.3	29.4	31.5	28.3	27.3
57.5°	23.1	24.1	26.2	24.1	23.1
60°	19.9	21.0	23.1	21.0	19.9
62.5°	17.8	18.9	19.9	18.9	17.8
65°	15.7	16.8	17.8	16.8	15.7
67.5°	13.6	14.7	15.7	14.7	13.6
70°	11.5	12.6	13.6	12.6	11.5
72.5°	9.4	10.5	11.5	10.5	9.4
75°	7.3	7.3	9.4	7.3	6.3
77.5°	3.1	5.2	6.3	4.2	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)