

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: P990958

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4SDSL-1000LM-3000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990958
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFL9FS1E-TIR4D55WFL-TL4SDSL-1000LM-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

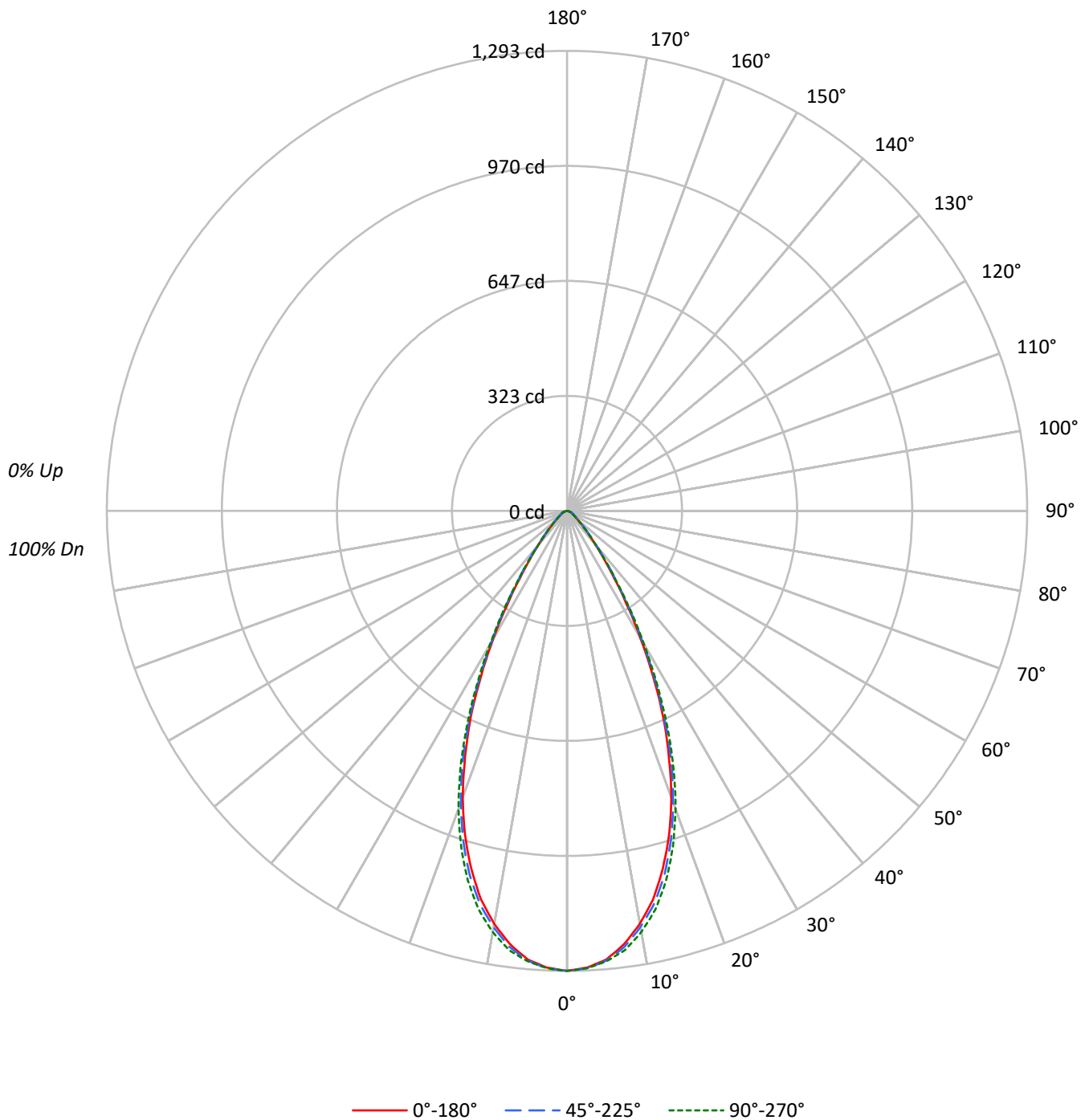
Lumens per Lamp: N/A
 Luminaire Lumens: 969.1 lumens
 Efficiency: N/A
 Efficacy: 74.5 lumens/watt
 Spacing Criteria (0/90/45): 0.78 / 0.8 / 0.78
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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

TEST NUMBER: P990958
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4SDSL-1000LM-3000K

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	111	108	106	111	108	106	104	104	102	101		101	99	98		97
2	108	103	99	95	105	101	97	94	98	95	92		95	92	90		92
3	102	96	91	87	100	94	90	86	92	88	84		89	86	83		87
4	97	89	84	80	95	88	83	79	86	82	78		84	80	77		82
5	92	84	78	74	91	83	77	73	81	76	73		79	75	72		78
6	88	79	73	69	86	78	72	68	77	72	68		75	71	67		74
7	84	74	68	64	82	74	68	64	72	67	64		71	67	63		70
8	80	70	64	60	78	70	64	60	69	63	60		68	63	60		67
9	76	66	61	57	75	66	60	57	65	60	56		64	60	56		63
10	73	63	57	54	72	63	57	53	62	57	53		61	56	53		60

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	125241	125241	125241
5°	123074	123366	123560
10°	115939	116834	118231
15°	104315	106140	107865
20°	88371	89825	91907
25°	68399	69479	70986
30°	46132	47374	48280
35°	27260	28691	28572
40°	15846	16744	16238
45°	9700	10248	9275
50°	6089	6857	5938
55°	4442	4949	4442
60°	3720	4108	3720
65°	3255	3713	3484
70°	2861	3711	3144
75°	2283	3032	2283
80°	558	1116	558
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.5	12.2
10°-20°	292.5	30.2
20°-30°	294.7	30.4
30°-40°	156.1	16.1
40°-50°	58.7	6.1
50°-60°	25.7	2.7
60°-70°	15.5	1.6
70°-80°	7.1	0.7
80°-90°	0.2	0.0
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°	705.8	72.8
0°-40°	861.9	88.9
0°-60°	946.3	97.6
0°-90°	969.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	969.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1293	1293	1293	1293	1293	
5°	1266	1264	1269	1271	1271	118
15°	1040	1047	1058	1070	1076	288
25°	640	643	650	662	664	288
35°	230	236	243	246	242	151
45°	71	72	75	72	68	57
55°	26	27	29	27	26	24
65°	14	15	16	16	15	14
75°	6	7	8	7	6	6
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°	1292.8	1292.8	1292.8	1292.8	1292.8
2.5°	1284.8	1283.7	1286.8	1285.8	1286.8
5°	1265.6	1264.5	1268.6	1270.6	1270.6
7.5°	1228.2	1232.2	1236.2	1240.3	1245.3
10°	1178.6	1182.7	1187.7	1196.8	1201.9
12.5°	1118.0	1120.0	1131.1	1140.2	1147.3
15°	1040.1	1047.2	1058.3	1069.5	1075.5
17.5°	954.2	960.3	970.4	983.5	989.6
20°	857.2	861.2	871.3	886.5	891.5
22.5°	748.0	754.1	767.2	775.3	782.4
25°	639.9	642.9	650.0	662.1	664.1
27.5°	522.6	525.6	534.7	543.8	545.8
30°	412.4	418.5	423.5	430.6	431.6
32.5°	312.3	317.4	325.5	329.5	331.6
35°	230.5	235.5	242.6	245.6	241.6
37.5°	170.8	172.9	179.9	179.9	177.9
40°	125.3	128.4	132.4	131.4	128.4
42.5°	93.0	95.0	99.1	96.0	93.0
45°	70.8	71.8	74.8	71.8	67.7
47.5°	52.6	54.6	57.6	53.6	50.5
50°	40.4	42.5	45.5	41.4	39.4
52.5°	31.3	33.4	36.4	33.4	31.3
55°	26.3	27.3	29.3	27.3	26.3
57.5°	21.2	22.2	25.3	23.2	22.2
60°	19.2	19.2	21.2	20.2	19.2
62.5°	16.2	17.2	18.2	18.2	17.2
65°	14.2	15.2	16.2	16.2	15.2
67.5°	12.1	13.1	15.2	14.2	13.1
70°	10.1	11.1	13.1	12.1	11.1
72.5°	8.1	9.1	11.1	10.1	9.1
75°	6.1	7.1	8.1	7.1	6.1
77.5°	2.0	3.0	5.1	4.0	3.0
80°	1.0	1.0	2.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0
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)