

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: P990957

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4SDSL-1000LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990957
 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-2700K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, METALLIC SILVER TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

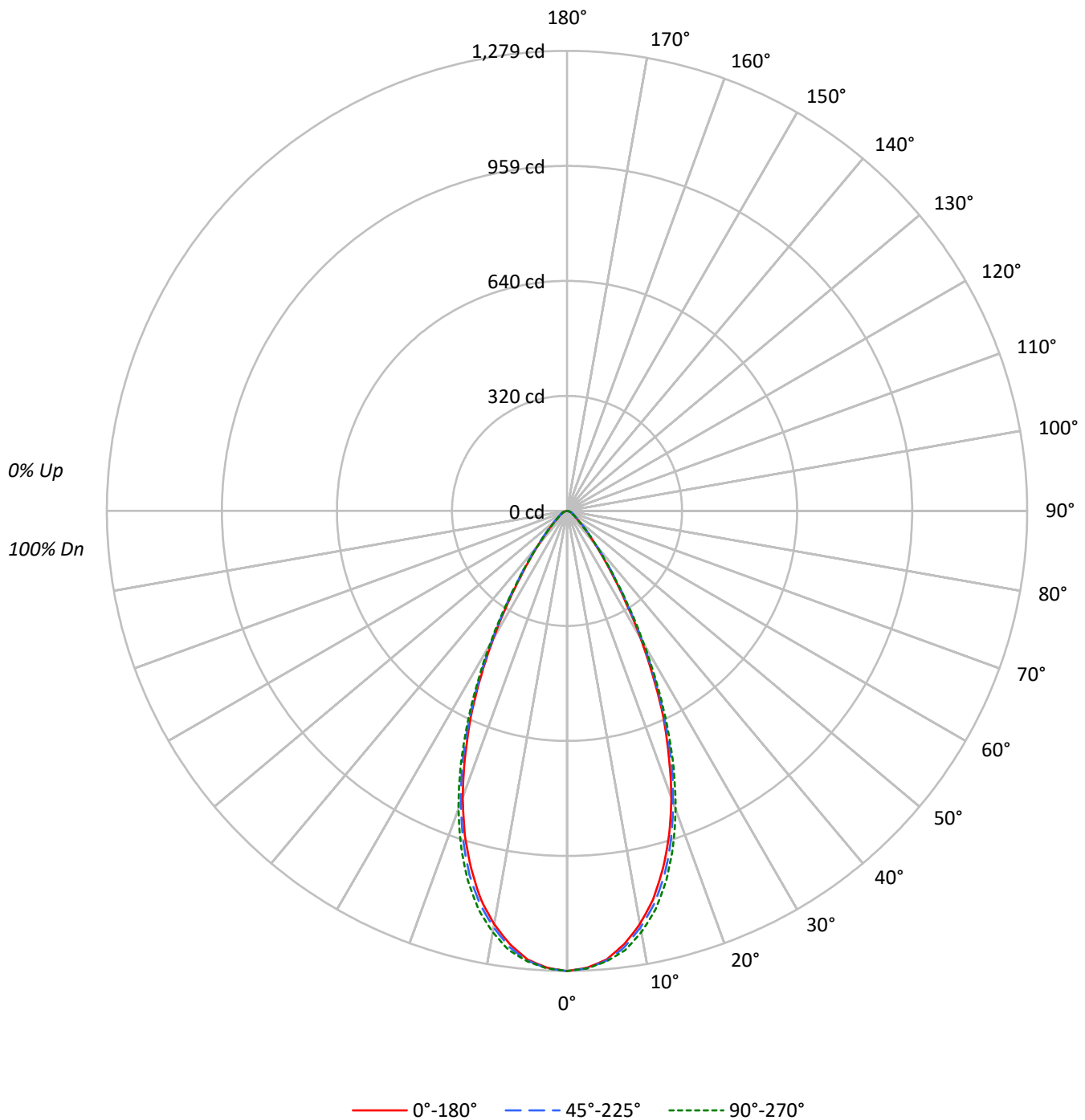
Lumens per Lamp: N/A
 Luminaire Lumens: 959.0 lumens
 Efficiency: N/A
 Efficacy: 73.8 lumens/watt
 Spacing Criteria (0/90/45): 0.78 / 0.8 / 0.78
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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

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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	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°	123933	123933	123933
5°	121781	122072	122267
10°	114729	115614	116991
15°	103231	105037	106742
20°	87443	88887	90948
25°	67683	68752	70248
30°	45651	46881	47776
35°	26976	28395	28277
40°	15681	16567	16061
45°	9590	10138	9179
50°	6028	6782	5878
55°	4391	4898	4391
60°	3681	4069	3681
65°	3209	3668	3438
70°	2832	3682	3116
75°	2246	2994	2246
80°	558	1116	558
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.3	12.2
10°-20°	289.4	30.2
20°-30°	291.7	30.4
30°-40°	154.5	16.1
40°-50°	58.1	6.1
50°-60°	25.4	2.7
60°-70°	15.4	1.6
70°-80°	7.0	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°	698.4	72.8
0°-40°	852.9	88.9
0°-60°	936.4	97.6
0°-90°	959.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	959.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1279	1279	1279	1279	1279	
5°	1252	1251	1255	1257	1257	117
15°	1029	1036	1047	1058	1064	285
25°	633	636	643	655	657	285
35°	228	233	240	243	239	149
45°	70	71	74	71	67	56
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°	1279.3	1279.3	1279.3	1279.3	1279.3
2.5°	1271.3	1270.3	1273.3	1272.3	1273.3
5°	1252.3	1251.3	1255.3	1257.3	1257.3
7.5°	1215.3	1219.3	1223.3	1227.3	1232.3
10°	1166.3	1170.3	1175.3	1184.3	1189.3
12.5°	1106.3	1108.3	1119.3	1128.3	1135.3
15°	1029.3	1036.3	1047.3	1058.3	1064.3
17.5°	944.2	950.2	960.2	973.3	979.3
20°	848.2	852.2	862.2	877.2	882.2
22.5°	740.2	746.2	759.2	767.2	774.2
25°	633.2	636.2	643.2	655.2	657.2
27.5°	517.1	520.1	529.1	538.1	540.1
30°	408.1	414.1	419.1	426.1	427.1
32.5°	309.1	314.1	322.1	326.1	328.1
35°	228.1	233.1	240.1	243.1	239.1
37.5°	169.0	171.0	178.0	178.0	176.0
40°	124.0	127.0	131.0	130.0	127.0
42.5°	92.0	94.0	98.0	95.0	92.0
45°	70.0	71.0	74.0	71.0	67.0
47.5°	52.0	54.0	57.0	53.0	50.0
50°	40.0	42.0	45.0	41.0	39.0
52.5°	31.0	33.0	36.0	33.0	31.0
55°	26.0	27.0	29.0	27.0	26.0
57.5°	21.0	22.0	25.0	23.0	22.0
60°	19.0	19.0	21.0	20.0	19.0
62.5°	16.0	17.0	18.0	18.0	17.0
65°	14.0	15.0	16.0	16.0	15.0
67.5°	12.0	13.0	15.0	14.0	13.0
70°	10.0	11.0	13.0	12.0	11.0
72.5°	8.0	9.0	11.0	10.0	9.0
75°	6.0	7.0	8.0	7.0	6.0
77.5°	2.0	3.0	5.0	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)