

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: P990732

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
Report Number: P990732
Test Lab: Cooper Lighting Solutions
Issue Date: 5/13/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-2700K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

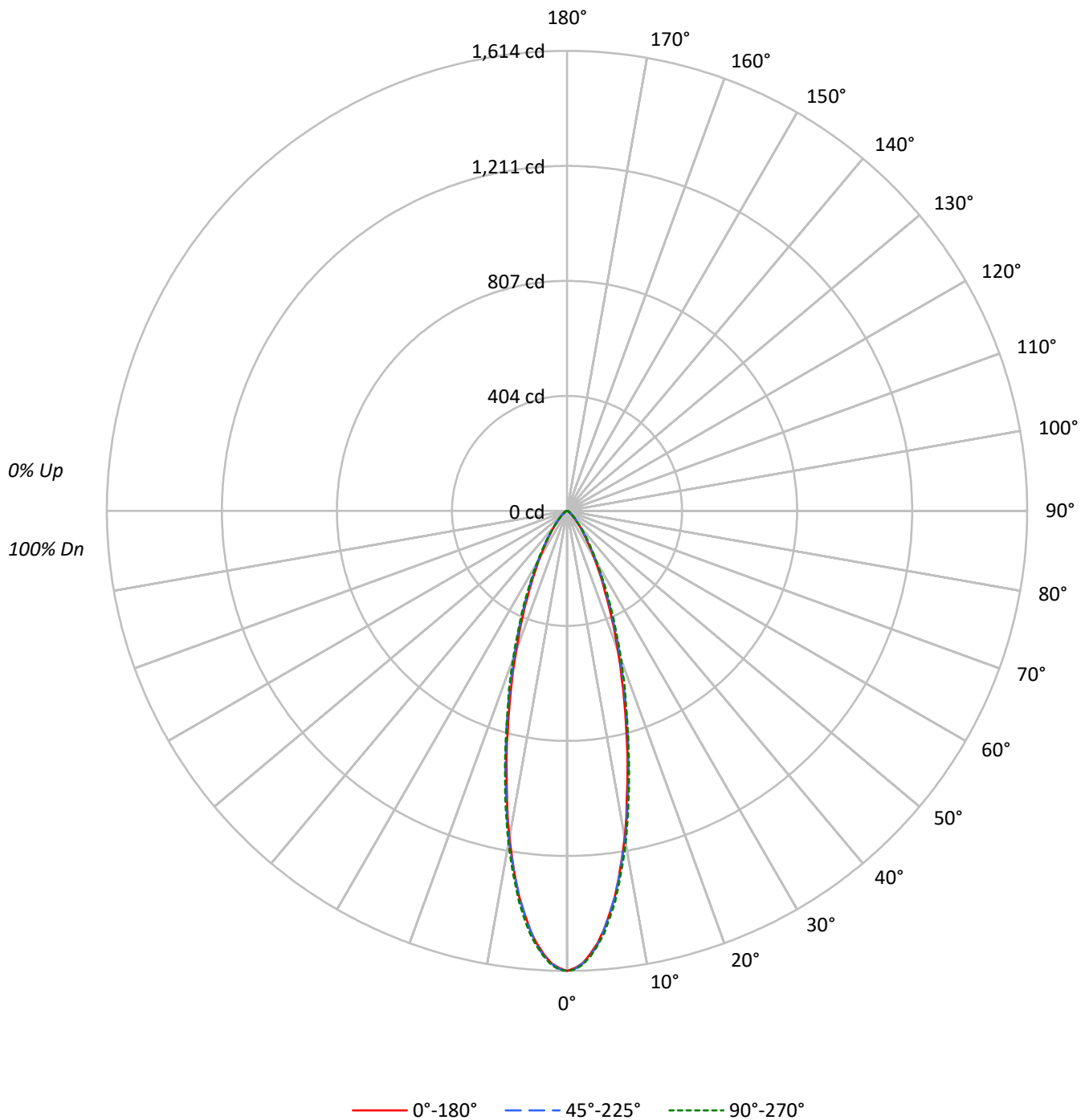
Lumens per Lamp: N/A
Luminaire Lumens: 648.6 lumens
Efficiency: N/A
Efficacy: 66.9 lumens/watt
Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.54
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 9.7
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	114	111	109	107	111	109	107	105	105	103	102		101	100	99		98
2	109	104	100	97	107	103	99	96	99	97	94		96	94	92		94
3	104	98	93	90	102	97	92	89	94	90	88		92	89	86		89
4	99	92	87	84	98	91	87	83	89	85	82		87	84	81		85
5	95	87	82	78	94	87	82	78	85	81	77		83	79	77		82
6	91	83	78	74	90	82	77	74	81	76	73		79	76	73		78
7	87	79	74	70	86	78	73	70	77	73	69		76	72	69		75
8	84	75	70	66	83	75	70	66	74	69	66		73	69	66		72
9	81	72	67	63	80	72	67	63	71	66	63		70	66	63		69
10	78	69	64	60	77	69	64	60	68	63	60		67	63	60		66

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	277985	277985	277985
5°	255189	255362	257436
10°	203577	204976	206900
15°	143548	147114	147649
20°	95120	98969	101351
25°	60619	64229	66699
30°	37983	40569	41961
35°	23127	25229	26070
40°	14613	15962	15737
45°	9255	10230	9742
50°	5894	6966	6162
55°	4204	5104	4204
60°	3100	3789	3100
65°	2853	3260	2853
70°	2518	2518	2014
75°	1331	1996	1331
80°	992	992	992
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.0	20.2
10°-20°	226.1	34.9
20°-30°	157.0	24.2
30°-40°	77.0	11.9
40°-50°	32.7	5.0
50°-60°	14.2	2.2
60°-70°	7.2	1.1
70°-80°	2.9	0.5
80°-90°	0.4	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°	514.2	79.3
0°-40°	591.1	91.1
0°-60°	638.1	98.4
0°-90°	648.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	648.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1614	1614	1614	1614	1614	
5°	1476	1477	1477	1480	1489	131
15°	805	810	825	825	828	222
25°	319	326	338	346	351	150
35°	110	114	120	124	124	72
45°	38	40	42	41	40	31
55°	14	15	17	15	14	13
65°	7	7	8	7	7	7
75°	2	3	3	3	2	2
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°	1614.1	1614.1	1614.1	1614.1	1614.1
1°	1604.1	1607.1	1607.1	1606.1	1609.1
2°	1587.1	1588.1	1589.1	1588.1	1593.1
3°	1557.1	1560.1	1562.1	1560.1	1565.1
4°	1521.1	1525.1	1527.1	1523.1	1530.1
5°	1476.1	1477.1	1477.1	1480.1	1489.1
6°	1422.1	1427.1	1424.1	1426.1	1436.1
7°	1367.1	1365.1	1366.1	1368.1	1382.1
8°	1301.1	1302.1	1302.1	1305.1	1316.1
9°	1231.1	1232.1	1236.1	1237.1	1250.1
10°	1164.1	1160.1	1172.1	1170.1	1183.1
11°	1090.1	1089.1	1100.1	1101.1	1111.1
12°	1012.1	1021.1	1025.1	1032.1	1038.1
13°	943.1	947.1	960.1	963.1	967.1
14°	876.1	880.1	889.1	892.1	897.1
15°	805.1	810.1	825.1	825.1	828.1
16°	742.1	746.1	763.1	763.1	764.1
17°	682.1	685.1	701.1	704.1	706.1
18°	623.0	630.0	643.0	649.0	658.0
19°	573.0	577.0	590.0	596.0	602.0
20°	519.0	530.0	540.0	546.0	553.0
22.5°	411.0	416.0	430.0	440.0	440.0
25°	319.0	326.0	338.0	346.0	351.0
27.5°	248.0	251.0	264.0	273.0	272.0
30°	191.0	194.0	204.0	210.0	211.0
32.5°	146.0	148.0	157.0	162.0	162.0
35°	110.0	114.0	120.0	124.0	124.0
37.5°	84.0	87.0	92.0	95.0	93.0
40°	65.0	67.0	71.0	71.0	70.0
42.5°	50.0	52.0	54.0	54.0	52.0
45°	38.0	40.0	42.0	41.0	40.0
47.5°	29.0	31.0	33.0	32.0	30.0
50°	22.0	24.0	26.0	25.0	23.0
52.5°	17.0	19.0	21.0	19.0	18.0
55°	14.0	15.0	17.0	15.0	14.0
57.5°	11.0	12.0	14.0	12.0	11.0
60°	9.0	10.0	11.0	10.0	9.0
62.5°	8.0	8.0	9.0	9.0	8.0
65°	7.0	7.0	8.0	7.0	7.0
67.5°	5.0	6.0	7.0	6.0	5.0
70°	5.0	5.0	5.0	5.0	4.0
72.5°	3.0	4.0	4.0	4.0	3.0
75°	2.0	3.0	3.0	3.0	2.0
77.5°	1.0	2.0	2.0	2.0	1.0
80°	1.0	1.0	1.0	1.0	1.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
82.5°	1.0	1.0	1.0	1.0	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)