

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P886659

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3SWMB-1000LM-3500K

Issue Date: 7/8/2024

Test Information

Test Method: LM-79-2019
Report Number: P886659
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-24)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/8/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25AWW-TL3SWMB-1000LM-3500K
Description: 3IN SQUARE ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 826.9 lumens
Efficiency: N/A
Efficacy: 59.9 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 0.8 / 1
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

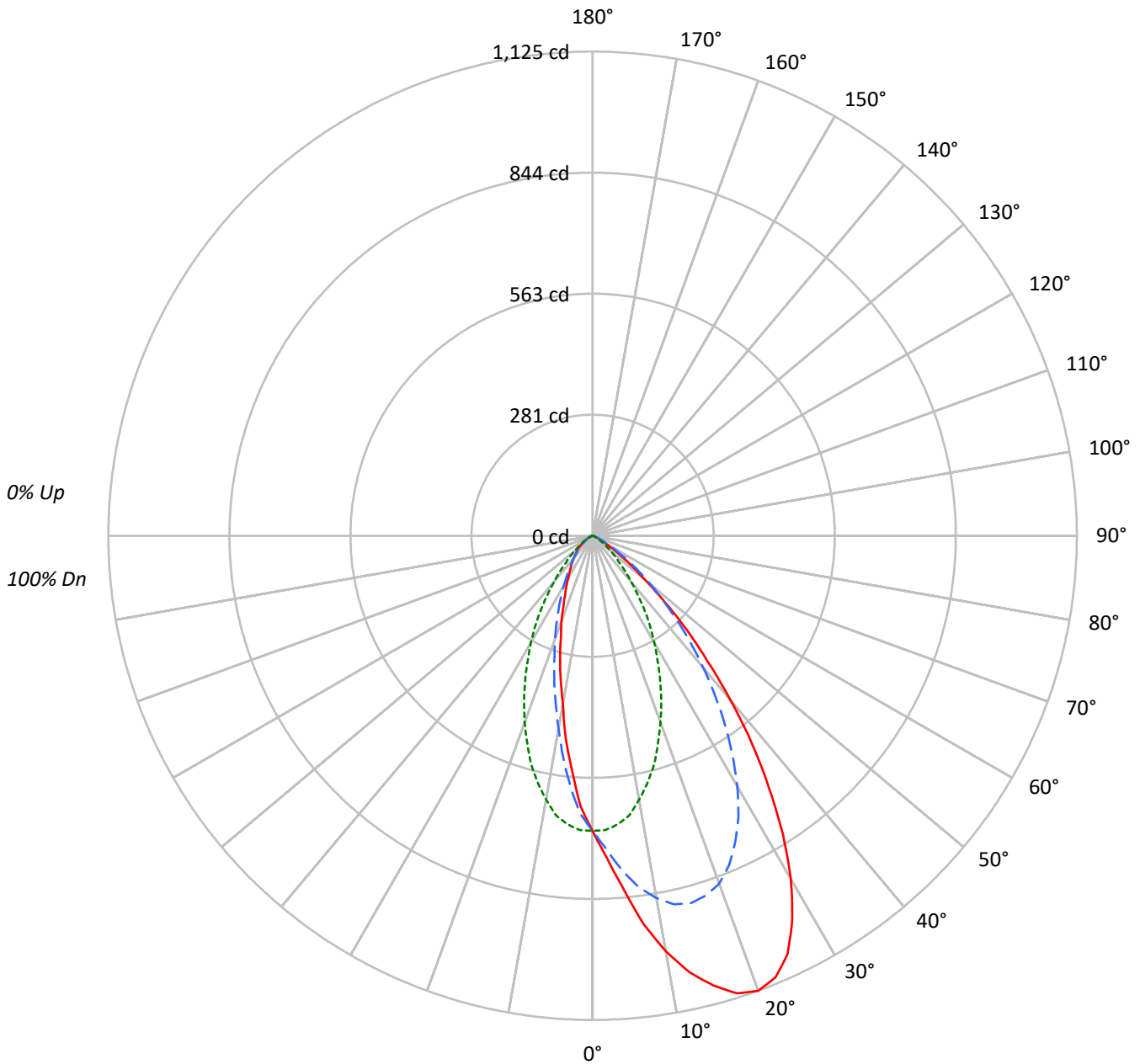
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76					76			
4	94	85	79	74	92	84	78	74	82	77	73	80	75	72	78	74	71	69					69			
5	88	79	72	67	86	78	71	67	76	70	66	74	69	65	72	68	65	63					63			
6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60	58					58			
7	78	68	61	56	77	67	60	56	66	60	56	64	59	55	63	58	55	53					53			
8	74	63	56	52	72	62	56	52	61	55	51	60	55	51	59	54	51	49					49			
9	70	59	52	48	69	58	52	48	57	52	48	56	51	47	56	51	47	46					46			
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43					43			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	118093	118093	118093	118093	118093
5°	142402	134812	116331	101343	94687
10°	171364	149469	108880	79500	69410
15°	192829	157544	98224	61406	52063
20°	206240	157635	84490	46662	38616
25°	203690	149000	70538	35364	28656
30°	183155	133598	57015	26370	22333
35°	150010	112670	43857	19784	18438
40°	112073	89703	31273	15400	15400
45°	75284	67490	21092	11472	12763
50°	41851	46995	14629	8601	10315
55°	22159	29215	9008	6756	8017
60°	11057	15844	5890	5167	5511
65°	5216	7865	3912	3056	3505
70°	2669	3223	2165	1611	1057
75°	732	1397	732	732	0
80°	0	0	0	0	0
85°	0	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 75552 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.3	7.8
10°-20°	172.5	20.9
20°-30°	222.6	26.9
30°-40°	192.8	23.3
40°-50°	114.2	13.8
50°-60°	46.0	5.6
60°-70°	12.8	1.5
70°-80°	1.7	0.2
80°-90°	0.0	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°	459.4	55.6
0°-40°	652.2	78.9
0°-60°	812.4	98.2
0°-90°	826.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	826.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	686	686	686	686	686	
5°	824	780	673	586	548	84
15°	1082	884	551	344	292	306
25°	1072	784	371	186	151	484
35°	714	536	209	94	88	443
45°	309	277	87	47	52	240
55°	74	97	30	22	27	73
65°	13	19	10	8	9	15
75°	1	2	1	1	0	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	685.7	685.7	685.7	685.7	685.7	685.7	685.7	685.7	685.7
2.5°	747.7	738.1	728.5	704.9	684.6	663.2	647.2	634.3	630.1
5°	823.7	816.2	779.8	727.4	672.9	623.6	586.2	560.5	547.7
7.5°	910.3	883.6	823.7	738.1	654.7	578.7	521.0	484.6	476.0
10°	979.9	947.8	854.7	738.1	622.6	531.6	454.6	414.0	396.9
12.5°	1038.7	995.9	877.2	727.4	588.3	480.3	396.9	351.9	341.2
15°	1081.5	1031.2	883.6	707.1	550.9	425.7	344.4	303.8	292.0
17.5°	1114.6	1049.4	876.1	680.3	504.9	376.5	294.2	258.9	245.0
20°	1125.3	1051.5	860.1	642.9	461.0	329.5	254.6	220.4	210.7
22.5°	1110.4	1033.3	828.0	605.5	416.1	285.6	218.2	187.2	177.6
25°	1071.9	991.6	784.1	556.3	371.2	246.0	186.1	157.2	150.8
27.5°	1004.5	929.6	733.8	507.0	326.3	210.7	157.2	134.8	131.6
30°	921.0	853.6	671.8	455.7	286.7	179.7	132.6	116.6	112.3
32.5°	822.6	768.1	604.4	406.5	247.1	153.0	112.3	100.6	99.5
35°	713.5	675.0	535.9	349.8	208.6	127.3	94.1	86.6	87.7
37.5°	607.6	575.5	466.4	297.4	171.2	103.8	81.3	75.9	77.0
40°	498.5	480.3	399.0	246.0	139.1	84.5	68.5	66.3	68.5
42.5°	394.7	390.4	335.9	204.3	111.3	68.5	57.8	56.7	59.9
45°	309.1	310.2	277.1	163.7	86.6	53.5	47.1	50.3	52.4
47.5°	224.6	238.5	219.3	126.2	70.6	43.9	38.5	43.9	46.0
50°	156.2	176.5	175.4	97.3	54.6	36.4	32.1	38.5	38.5
52.5°	113.4	126.2	133.7	72.7	40.6	28.9	26.7	33.2	32.1
55°	73.8	89.9	97.3	52.4	30.0	21.4	22.5	27.8	26.7
57.5°	49.2	63.1	67.4	36.4	21.4	16.0	18.2	22.5	21.4
60°	32.1	42.8	46.0	25.7	17.1	12.8	15.0	17.1	16.0
62.5°	20.3	28.9	30.0	17.1	12.8	10.7	10.7	12.8	11.8
65°	12.8	18.2	19.3	12.8	9.6	7.5	7.5	9.6	8.6
67.5°	8.6	11.8	11.8	8.6	7.5	5.3	5.3	6.4	5.3
70°	5.3	6.4	6.4	6.4	4.3	4.3	3.2	3.2	2.1
72.5°	3.2	3.2	3.2	3.2	2.1	2.1	2.1	1.1	1.1
75°	1.1	1.1	2.1	1.1	1.1	1.1	1.1	0.0	0.0
77.5°	0.0	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



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— 0°-180° - - 45°-225° - - - - 90°-270°

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