

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: P886647

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMW-1000LM-2700K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886647
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-10)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/5/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25AWW-TL3RMMW-1000LM-2700K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 805.2 lumens
Efficiency: N/A
Efficacy: 58.3 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 0.81 / 0.99
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

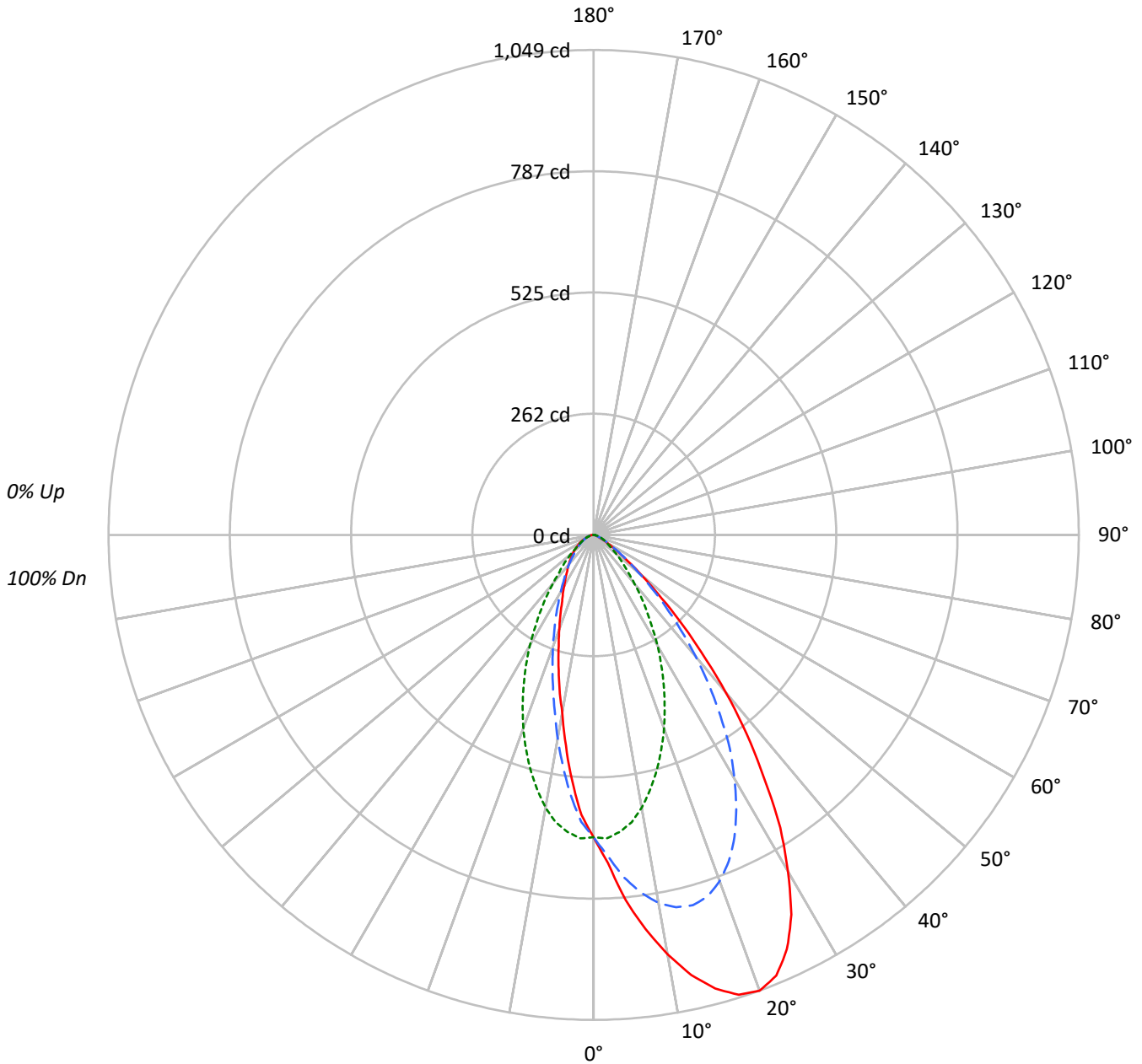
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91				91				
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82				82				
3	99	91	85	81	97	90	84	80	87	82	79	85	81	77	82	79	76	74				74				
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68				68				
5	87	77	71	66	85	76	70	65	75	69	65	73	68	64	71	67	63	62				62				
6	82	72	65	60	80	71	64	60	69	63	59	68	63	59	66	62	58	57				57				
7	77	67	60	55	76	66	59	55	64	59	54	63	58	54	62	57	54	52				52				
8	73	62	55	50	72	61	55	50	60	54	50	59	54	50	58	53	50	48				48				
9	69	58	51	47	68	57	51	47	56	51	46	55	50	46	55	50	46	45				45				
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41				41				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	143388	143388	143388	143388	143388
5°	174532	163526	141954	124565	117521
10°	205051	180001	133353	99531	86839
15°	230626	188287	119615	77185	66516
20°	244765	185960	103842	59972	50638
25°	239264	174421	86618	46454	39196
30°	212666	154049	69884	35955	32157
35°	172099	127823	53271	28643	27305
40°	127382	98041	39216	23473	24045
45°	80939	68379	29150	19227	21398
50°	45713	43154	21492	16375	19445
55°	24850	26570	16057	14528	16821
60°	13595	15788	13595	12718	14911
65°	7783	10118	11415	11415	12453
70°	5129	6732	10258	10258	10258
75°	3389	5083	8472	9320	9320
80°	2526	3157	6314	8840	10102
85°	2516	2516	7548	10064	10064

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 80939 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.6	7.6
10°-20°	164.8	20.5
20°-30°	210.8	26.2
30°-40°	180.7	22.4
40°-50°	106.1	13.2
50°-60°	47.7	5.9
60°-70°	21.4	2.7
70°-80°	9.3	1.2
80°-90°	2.8	0.3
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°	437.2	54.3
0°-40°	617.8	76.7
0°-60°	771.7	95.8
0°-90°	805.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	805.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	654	654	654	654	654	
5°	793	743	645	566	534	79
15°	1016	829	527	340	293	287
25°	989	721	358	192	162	447
35°	643	478	199	107	102	400
45°	261	220	94	62	69	206
55°	65	70	42	38	44	63
65°	15	20	22	22	24	16
75°	4	6	10	11	11	5
85°	1	1	3	4	4	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	653.9	653.9	653.9	653.9	653.9	653.9	653.9	653.9	653.9	653.9	653.9
2.5°	709.9	709.9	709.9	707.9	697.9	690.9	683.9	674.9	665.9	656.9	635.9
5°	792.9	790.9	777.9	767.9	752.9	732.9	711.9	688.9	666.9	644.9	600.9
7.5°	859.9	854.9	845.9	822.9	795.9	763.9	728.9	693.9	659.9	626.9	559.9
10°	920.9	918.9	898.9	870.9	830.9	785.9	737.9	688.9	640.9	598.9	512.0
12.5°	974.9	969.9	944.9	903.9	853.9	795.9	734.9	674.9	616.9	563.9	467.0
15°	1015.9	1005.9	973.9	924.9	863.9	794.9	723.9	651.9	585.9	526.9	416.0
17.5°	1042.9	1028.9	989.9	931.9	859.9	779.9	699.9	620.9	548.9	486.0	370.0
20°	1048.9	1033.9	989.9	921.9	840.9	752.9	667.9	583.9	507.0	445.0	326.0
22.5°	1031.9	1013.9	970.9	898.9	811.9	715.9	626.9	540.9	466.0	401.0	284.0
25°	988.9	974.9	927.9	858.9	769.9	671.9	580.9	498.0	421.0	358.0	245.0
27.5°	925.9	911.9	863.9	801.9	712.9	622.9	530.9	450.0	376.0	316.0	213.0
30°	839.9	829.9	791.9	728.9	651.9	564.9	479.0	398.0	330.0	276.0	183.0
32.5°	750.9	735.9	703.9	653.9	589.9	506.0	425.0	351.0	286.0	234.0	156.0
35°	642.9	639.9	609.9	571.9	512.0	443.0	366.0	299.0	244.0	199.0	134.0
37.5°	543.9	538.9	518.9	486.0	441.0	380.0	314.0	254.0	207.0	167.0	112.0
40°	445.0	442.0	427.0	400.0	368.0	317.0	266.0	210.0	168.0	137.0	93.0
42.5°	344.0	340.0	337.0	325.0	298.0	260.0	217.0	172.0	139.0	111.0	78.0
45°	261.0	259.0	257.0	247.0	234.0	207.0	172.0	137.0	113.0	94.0	66.0
47.5°	187.0	190.0	189.0	190.0	182.0	158.0	132.0	108.0	92.0	78.0	58.0
50°	134.0	133.0	140.0	143.0	135.0	118.0	99.0	84.0	72.0	63.0	49.0
52.5°	94.0	96.0	104.0	106.0	100.0	89.0	75.0	64.0	57.0	51.0	42.0
55°	65.0	66.0	74.0	78.0	73.0	66.0	56.0	49.0	46.0	42.0	35.0
57.5°	44.0	47.0	52.0	55.0	53.0	46.0	41.0	39.0	37.0	36.0	31.0
60°	31.0	32.0	37.0	40.0	38.0	34.0	32.0	31.0	31.0	31.0	28.0
62.5°	21.0	22.0	26.0	28.0	27.0	25.0	24.0	26.0	26.0	26.0	24.0
65°	15.0	15.0	18.0	20.0	20.0	19.0	20.0	21.0	22.0	22.0	21.0
67.5°	10.0	11.0	12.0	14.0	14.0	15.0	16.0	18.0	19.0	19.0	19.0
70°	8.0	8.0	9.0	10.0	10.0	11.0	13.0	14.0	15.0	16.0	16.0
72.5°	6.0	6.0	6.0	7.0	8.0	8.0	10.0	11.0	12.0	13.0	13.0
75°	4.0	4.0	4.0	5.0	6.0	6.0	7.0	8.0	9.0	10.0	11.0
77.5°	3.0	3.0	3.0	3.0	4.0	4.0	5.0	6.0	7.0	7.0	8.0
80°	2.0	2.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0	5.0	6.0
82.5°	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0	5.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	653.9	653.9	653.9
2.5°	620.9	611.9	605.9
5°	565.9	540.9	533.9
7.5°	506.0	471.0	460.0
10°	447.0	406.0	390.0
12.5°	389.0	349.0	341.0
15°	340.0	303.0	293.0
17.5°	295.0	263.0	252.0
20°	257.0	226.0	217.0
22.5°	221.0	195.0	188.0
25°	192.0	169.0	162.0
27.5°	165.0	145.0	144.0
30°	142.0	129.0	127.0
32.5°	123.0	114.0	114.0
35°	107.0	101.0	102.0
37.5°	94.0	90.0	92.0
40°	82.0	82.0	84.0
42.5°	72.0	74.0	76.0
45°	62.0	68.0	69.0
47.5°	54.0	61.0	63.0
50°	48.0	55.0	57.0
52.5°	43.0	49.0	51.0
55°	38.0	44.0	44.0
57.5°	33.0	38.0	39.0
60°	29.0	33.0	34.0
62.5°	25.0	28.0	29.0
65°	22.0	24.0	24.0
67.5°	19.0	20.0	20.0
70°	16.0	17.0	16.0
72.5°	14.0	14.0	13.0
75°	11.0	11.0	11.0
77.5°	9.0	9.0	9.0
80°	7.0	8.0	8.0
82.5°	6.0	6.0	6.0
85°	4.0	4.0	4.0
87.5°	2.0	2.0	2.0
90°	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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Peachtree City, GA 30269

Scaled Data Report





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

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