

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: P886845

Luminaire Tested: ML412LSFL95FS1E-TIR4D25AWW-TL4SWSL-1020LM-2700K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P886845
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-58)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL95FS1E-TIR4D25AWW-TL45WSL-1020LM-2700K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH WW TIR, METALLIC SILVER TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 2700K CCT
Ballast/Driver: -

Summary

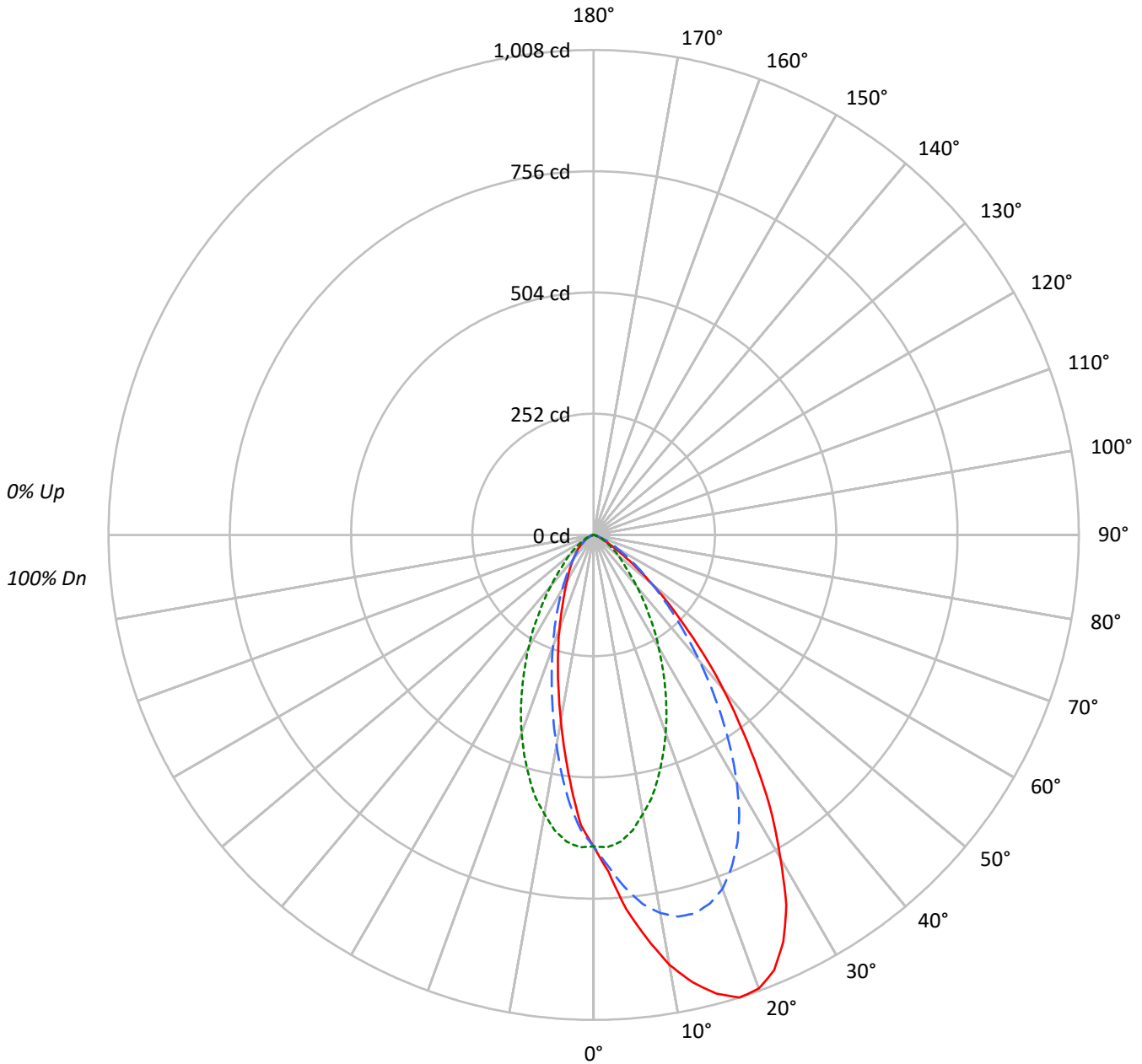
Lumens per Lamp: N/A
Luminaire Lumens: 779.5 lumens
Efficiency: N/A
Efficacy: 44.3 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 0.8 / 0.97
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 17.6
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: 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				
RW	70	50	30	10	70	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		
1	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83		
3	99	92	86	81	97	90	85	81	88	83	79	85	81	78	83	79	77	75		
4	93	84	78	73	91	83	77	72	81	76	72	79	74	71	77	73	70	68		
5	87	78	71	66	86	77	70	66	75	69	65	73	68	64	71	67	64	62		
6	82	72	65	60	81	71	65	60	70	64	59	68	63	59	67	62	59	57		
7	77	67	60	55	76	66	60	55	65	59	55	63	58	54	62	58	54	52		
8	73	62	55	51	72	62	55	51	60	55	50	59	54	50	58	54	50	48		
9	69	58	52	47	68	58	51	47	57	51	47	56	50	47	55	50	46	45		
10	65	55	48	44	64	54	48	44	53	47	44	52	47	43	52	47	43	42		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	62717	62717	62717	62717	62717
5°	75978	71446	62276	54739	51316
10°	89251	78514	57910	43666	38581
15°	99009	81653	52132	33528	28734
20°	103464	80670	45113	25505	21392
25°	99664	75481	37572	19411	15895
30°	86783	66513	30214	14620	12350
35°	70272	54951	23333	10928	10182
40°	53063	43313	17528	8410	8321
45°	36676	32607	12659	6439	6973
50°	23360	23654	10143	4958	5667
55°	13360	16400	7533	4239	4628
60°	6665	11296	5619	3643	3643
65°	3759	7450	4493	3049	2865
70°	2209	4107	2889	2436	1983
75°	1460	2059	1759	1460	599
80°	446	893	446	0	0
85°	0	0	889	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 37004 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.0	7.8
10°-20°	161.8	20.8
20°-30°	203.3	26.1
30°-40°	171.7	22.0
40°-50°	105.3	13.5
50°-60°	51.2	6.6
60°-70°	20.0	2.6
70°-80°	4.9	0.6
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°	426.2	54.7
0°-40°	597.9	76.7
0°-60°	754.4	96.8
0°-90°	779.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	779.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	647	647	647	647	647	
5°	781	735	640	563	528	78
15°	987	814	520	334	286	278
25°	932	706	352	182	149	421
35°	594	465	197	92	86	370
45°	268	238	92	47	51	211
55°	79	97	45	25	27	75
65°	16	32	20	13	12	18
75°	4	6	5	4	2	4
85°	0	0	1	0	0	0
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°	647.4	647.4	647.4	647.4	647.4	647.4	647.4	647.4	647.4	647.4	647.4
2.5°	699.9	706.1	701.5	701.5	692.1	685.8	676.4	668.6	660.0	649.8	630.2
5°	781.3	776.6	768.0	759.4	743.7	725.7	706.1	682.7	662.3	640.4	595.8
7.5°	845.5	842.4	833.0	814.2	789.1	757.0	723.4	688.1	653.7	619.3	556.6
10°	907.3	898.7	884.6	855.7	819.7	776.6	729.6	683.4	635.7	588.7	511.2
12.5°	952.8	943.4	923.0	886.2	840.8	784.4	726.5	669.4	609.1	559.0	462.7
15°	987.2	980.2	951.2	906.6	847.8	780.5	713.2	645.9	580.1	519.8	413.4
17.5°	1008.3	997.4	963.7	908.9	840.8	765.6	689.7	616.1	546.4	479.1	366.4
20°	1003.6	993.5	958.2	897.2	822.8	742.2	659.2	577.8	504.2	437.6	321.8
22.5°	979.4	971.5	932.4	867.4	790.7	705.4	620.0	536.3	461.1	394.6	279.5
25°	932.4	919.9	882.3	825.1	750.0	662.3	572.3	493.2	416.5	351.5	238.8
27.5°	866.6	851.0	818.1	767.2	695.2	614.6	524.5	444.7	373.4	309.2	205.1
30°	775.8	771.1	738.2	699.1	631.8	557.4	476.8	395.3	328.8	270.1	174.6
32.5°	689.7	680.3	657.6	617.7	565.2	497.1	422.0	352.3	290.4	234.9	148.0
35°	594.2	590.3	567.6	541.7	494.8	434.5	371.1	308.5	247.4	197.3	125.3
37.5°	501.8	501.0	482.2	467.4	425.1	378.9	318.6	259.9	210.6	167.5	103.3
40°	419.6	414.9	404.0	387.5	361.7	323.3	270.1	218.4	175.4	138.6	85.3
42.5°	339.8	337.4	331.9	321.8	301.4	270.1	227.8	182.4	143.3	113.5	69.7
45°	267.7	270.1	270.1	263.8	250.5	225.5	187.9	148.7	116.6	92.4	57.1
47.5°	210.6	209.0	212.2	210.6	205.1	184.0	151.9	119.0	97.9	79.1	48.5
50°	155.0	160.5	163.6	169.9	165.2	148.7	120.6	98.6	82.2	67.3	41.5
52.5°	114.3	116.6	124.5	136.2	133.1	117.4	97.1	83.0	68.1	55.6	35.2
55°	79.1	81.4	93.2	104.1	102.6	91.6	79.1	67.3	54.8	44.6	29.0
57.5°	51.7	54.0	64.2	79.9	79.9	72.8	64.2	53.2	43.1	35.2	24.3
60°	34.4	36.0	44.6	56.4	58.7	57.9	50.9	39.9	33.7	29.0	20.4
62.5°	22.7	24.3	31.3	39.9	44.6	44.6	37.6	30.5	27.4	24.3	17.2
65°	16.4	17.2	21.9	26.6	32.1	32.9	27.4	24.3	21.9	19.6	14.9
67.5°	11.7	11.7	15.7	18.8	22.7	21.9	20.4	18.0	16.4	14.1	11.7
70°	7.8	8.6	10.2	12.5	14.9	14.1	14.1	13.3	11.7	10.2	8.6
72.5°	5.5	6.3	7.0	8.6	9.4	9.4	9.4	8.6	7.8	7.0	6.3
75°	3.9	3.9	3.9	4.7	5.5	5.5	6.3	5.5	4.7	4.7	3.9
77.5°	2.3	2.3	2.3	2.3	3.1	3.1	3.1	2.3	2.3	1.6	2.3
80°	0.8	0.8	0.8	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8	0.0
87.5°	0.0	0.0	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	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	647.4	647.4	647.4
2.5°	613.8	604.4	603.6
5°	562.9	540.2	527.7
7.5°	503.4	471.3	456.4
10°	443.9	405.5	392.2
12.5°	388.3	347.6	335.1
15°	334.3	295.1	286.5
17.5°	288.9	252.9	244.3
20°	247.4	216.9	207.5
22.5°	212.9	184.0	174.6
25°	181.6	156.6	148.7
27.5°	155.0	133.1	128.4
30°	130.7	113.5	110.4
32.5°	109.6	97.9	97.1
35°	92.4	83.8	86.1
37.5°	79.9	72.8	75.2
40°	66.5	63.4	65.8
42.5°	56.4	54.8	57.9
45°	47.0	48.5	50.9
47.5°	39.9	43.1	44.6
50°	32.9	37.6	37.6
52.5°	28.2	32.9	32.1
55°	25.1	28.2	27.4
57.5°	21.9	23.5	22.7
60°	18.8	19.6	18.8
62.5°	15.7	16.4	15.7
65°	13.3	13.3	12.5
67.5°	11.0	10.2	10.2
70°	8.6	7.8	7.0
72.5°	6.3	5.5	3.9
75°	3.9	3.1	1.6
77.5°	1.6	0.8	0.0
80°	0.0	0.0	0.0
82.5°	0.0	0.0	0.0
85°	0.0	0.0	0.0
87.5°	0.0	0.0	0.0
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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Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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