

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: P886941

Luminaire Tested: ML412LSFL95FS1E-TIR4D55WFL-TL4SDMW-1020LM-3000K

Issue Date: 7/10/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886941  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-54)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/10/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML412LSFL95FS1E-TIR4D55WFL-TL4SDMW-1020LM-3000K  
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

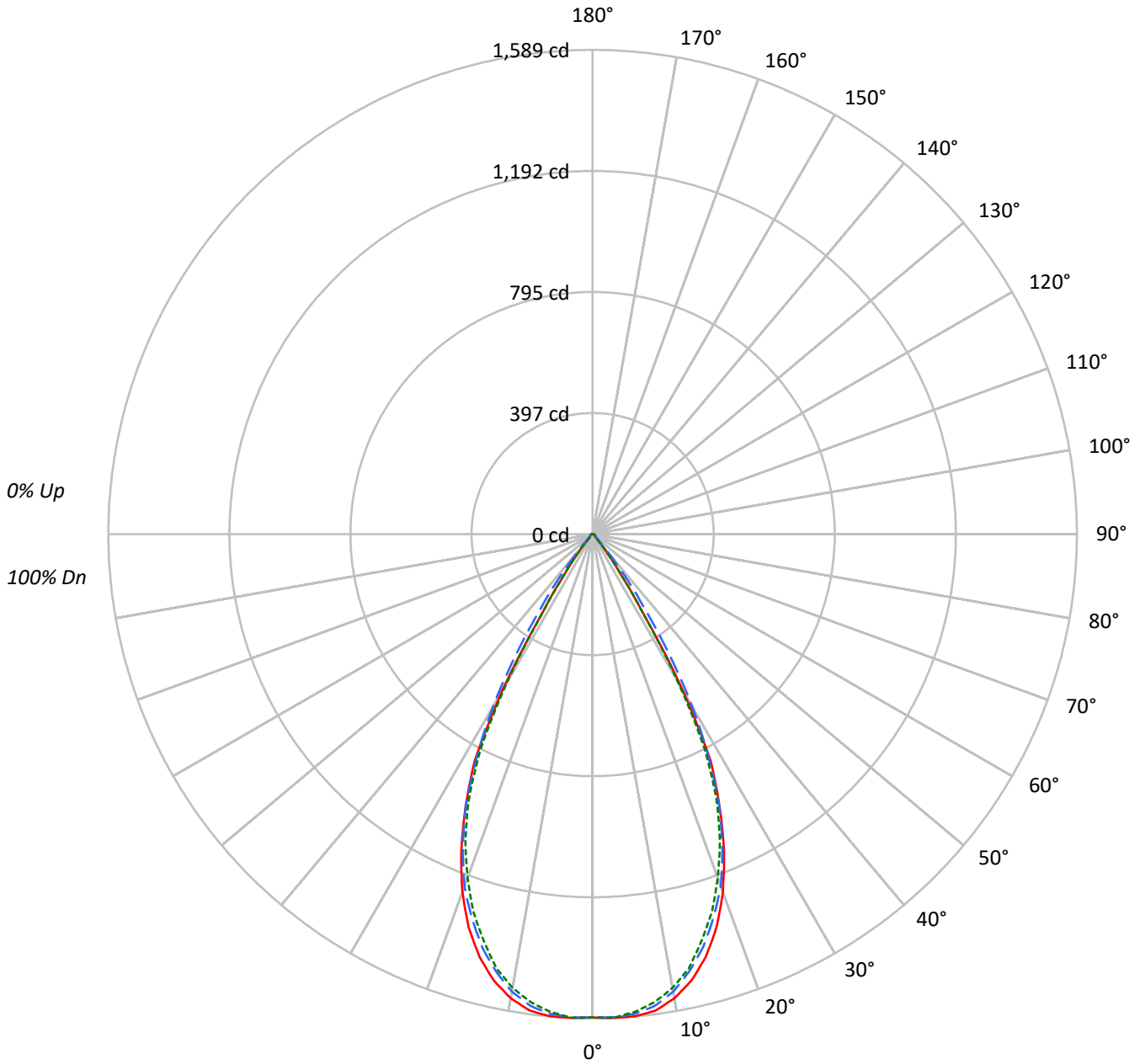
Lumens per Lamp: N/A  
Luminaire Lumens: 1170.1 lumens  
Efficiency: N/A  
Efficacy: 66.5 lumens/watt  
Spacing Criteria (0/90/45): 0.89 / 0.88 / 0.83  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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				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			
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94			
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88			
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	85	83			
4	99	92	87	83	97	91	86	82	89	85	81	87	83	81	85	82	80	78			
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74			
6	90	82	77	73	89	81	76	72	80	75	72	78	74	71	77	74	71	70			
7	86	78	72	68	85	77	72	68	76	71	68	75	71	67	74	70	67	66			
8	83	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	64	62			
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59			
10	76	67	61	58	75	66	61	58	66	61	58	65	60	57	64	60	57	56			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	153664	153664	153664
5°	154484	153696	153074
10°	152149	149926	148735
15°	143960	140641	138534
20°	128773	126773	123701
25°	105330	105073	102828
30°	65853	73068	62688
35°	18591	34710	19265
40°	4085	9282	3263
45°	1767	3206	1658
50°	1703	1824	1703
55°	1638	1773	1638
60°	1724	1724	1724
65°	1673	1857	1673
70°	1586	1841	1586
75°	1797	1797	1797
80°	1785	1785	1785
85°	1778	1778	1778

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 3206 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.3	12.8
10°-20°	390.9	33.4
20°-30°	435.6	37.2
30°-40°	155.6	13.3
40°-50°	15.4	1.3
50°-60°	9.1	0.8
60°-70°	7.6	0.6
70°-80°	5.0	0.4
80°-90°	1.7	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°	975.8	83.4
0°-40°	1131.3	96.7
0°-60°	1155.8	98.8
0°-90°	1170.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1170.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1589	1589	1580	1580	1574	150
15°	1435	1425	1402	1383	1381	399
25°	985	991	983	961	962	439
35°	157	181	294	178	163	128
45°	13	14	23	13	12	12
55°	10	10	10	10	10	9
65°	7	8	8	7	7	7
75°	5	5	5	5	5	5
85°	2	2	2	2	2	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1589.4	1590.2	1587.0	1587.0	1588.6
5°	1588.6	1588.6	1580.5	1579.7	1574.1
7.5°	1577.3	1573.3	1562.0	1553.1	1549.9
10°	1546.7	1539.4	1524.1	1509.6	1512.0
12.5°	1499.9	1491.0	1469.2	1456.3	1458.8
15°	1435.4	1424.9	1402.3	1383.0	1381.3
17.5°	1352.3	1341.0	1319.3	1305.5	1299.9
20°	1249.1	1244.3	1229.7	1204.7	1199.9
22.5°	1126.5	1126.5	1112.0	1096.7	1091.0
25°	985.4	991.1	983.0	961.2	962.0
27.5°	837.8	833.8	822.5	808.0	797.5
30°	588.7	647.5	653.2	621.7	560.4
32.5°	306.4	400.8	462.9	375.0	303.2
35°	157.2	181.4	293.5	178.2	162.9
37.5°	81.4	93.5	173.4	92.7	79.8
40°	32.3	43.5	73.4	42.7	25.8
42.5°	14.5	20.2	41.1	17.7	14.5
45°	12.9	13.7	23.4	12.9	12.1
47.5°	12.1	12.1	15.3	12.1	11.3
50°	11.3	11.3	12.1	11.3	11.3
52.5°	10.5	10.5	11.3	10.5	10.5
55°	9.7	10.5	10.5	10.5	9.7
57.5°	8.9	9.7	9.7	9.7	8.9
60°	8.9	8.9	8.9	8.9	8.9
62.5°	8.1	8.1	8.1	8.1	8.1
65°	7.3	8.1	8.1	7.3	7.3
67.5°	6.5	7.3	7.3	7.3	6.5
70°	5.6	6.5	6.5	6.5	5.6
72.5°	4.8	5.6	5.6	5.6	4.8
75°	4.8	4.8	4.8	4.8	4.8
77.5°	4.0	4.0	4.0	4.0	4.0
80°	3.2	3.2	3.2	3.2	3.2
82.5°	2.4	2.4	2.4	2.4	2.4
85°	1.6	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	0.8	0.8	0.8
90°	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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Scaled Data Report







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

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