

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: P887070

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMW-1200LM-2700K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887070
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: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMW-1200LM-2700K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

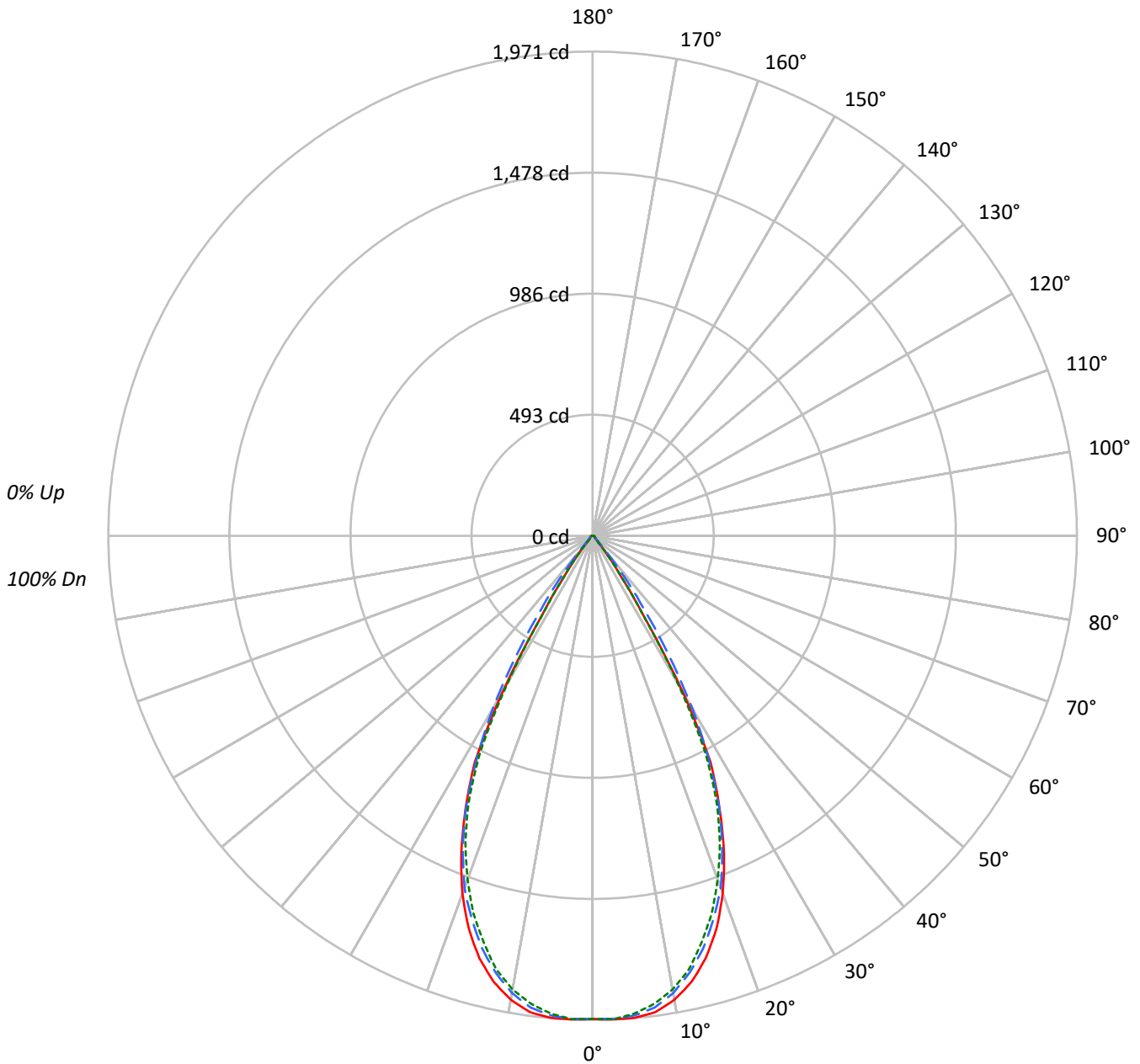
Lumens per Lamp: N/A
Luminaire Lumens: 1451.0 lumens
Efficiency: N/A
Efficacy: 82.4 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 0.88 / 0.83
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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	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°	190544	190544	190544
5°	191564	190591	189813
10°	188664	185909	184434
15°	178511	174399	171792
20°	159680	157206	153392
25°	130609	130288	127509
30°	81659	90608	77744
35°	23061	43048	23889
40°	5058	11508	4047
45°	2192	3973	2055
50°	2110	2261	2110
55°	2027	2196	2027
60°	2131	2131	2131
65°	2063	2292	2063
70°	1983	2266	1983
75°	2246	2246	2246
80°	2232	2232	2232
85°	2223	2223	2223

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 3973 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.1	12.8
10°-20°	484.7	33.4
20°-30°	540.2	37.2
30°-40°	192.9	13.3
40°-50°	19.1	1.3
50°-60°	11.3	0.8
60°-70°	9.3	0.6
70°-80°	6.2	0.4
80°-90°	2.2	0.2
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°	1210.0	83.4
0°-40°	1402.9	96.7
0°-60°	1433.3	98.8
0°-90°	1451.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1451.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1967	1967	1967	1967	1967	
5°	1970	1970	1960	1959	1952	186
15°	1780	1767	1739	1715	1713	494
25°	1222	1229	1219	1192	1193	545
35°	195	225	364	221	202	159
45°	16	17	29	16	15	15
55°	12	13	13	13	12	11
65°	9	10	10	9	9	9
75°	6	6	6	6	6	6
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°	1966.9	1966.9	1966.9	1966.9	1966.9
2.5°	1970.9	1971.9	1967.9	1967.9	1969.9
5°	1969.9	1969.9	1959.9	1958.9	1951.9
7.5°	1955.9	1950.9	1936.9	1925.9	1921.9
10°	1917.9	1908.9	1889.9	1871.9	1874.9
12.5°	1859.9	1848.9	1821.9	1805.9	1808.9
15°	1779.9	1766.9	1738.9	1714.9	1712.9
17.5°	1676.9	1662.9	1635.9	1618.9	1611.9
20°	1548.9	1542.9	1524.9	1493.9	1487.9
22.5°	1396.9	1396.9	1378.9	1359.9	1352.9
25°	1221.9	1228.9	1218.9	1191.9	1192.9
27.5°	1039.0	1034.0	1020.0	1002.0	989.0
30°	730.0	803.0	810.0	771.0	695.0
32.5°	380.0	497.0	574.0	465.0	376.0
35°	195.0	225.0	364.0	221.0	202.0
37.5°	101.0	116.0	215.0	115.0	99.0
40°	40.0	54.0	91.0	53.0	32.0
42.5°	18.0	25.0	51.0	22.0	18.0
45°	16.0	17.0	29.0	16.0	15.0
47.5°	15.0	15.0	19.0	15.0	14.0
50°	14.0	14.0	15.0	14.0	14.0
52.5°	13.0	13.0	14.0	13.0	13.0
55°	12.0	13.0	13.0	13.0	12.0
57.5°	11.0	12.0	12.0	12.0	11.0
60°	11.0	11.0	11.0	11.0	11.0
62.5°	10.0	10.0	10.0	10.0	10.0
65°	9.0	10.0	10.0	9.0	9.0
67.5°	8.0	9.0	9.0	9.0	8.0
70°	7.0	8.0	8.0	8.0	7.0
72.5°	6.0	7.0	7.0	7.0	6.0
75°	6.0	6.0	6.0	6.0	6.0
77.5°	5.0	5.0	5.0	5.0	5.0
80°	4.0	4.0	4.0	4.0	4.0
82.5°	3.0	3.0	3.0	3.0	3.0
85°	2.0	2.0	2.0	2.0	2.0
87.5°	1.0	1.0	1.0	1.0	1.0
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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