

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: P887065

Luminaire Tested: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-2700K

Issue Date: 7/10/2024

Test Information

Test Method: LM-79-2019
Report Number: P887065
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-56)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/10/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D55WFL-TL4SDMB-1200LM-2700K
Description: 4IN SQUARE ML FLEX, SELECTABLE CCT, WITH 55D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

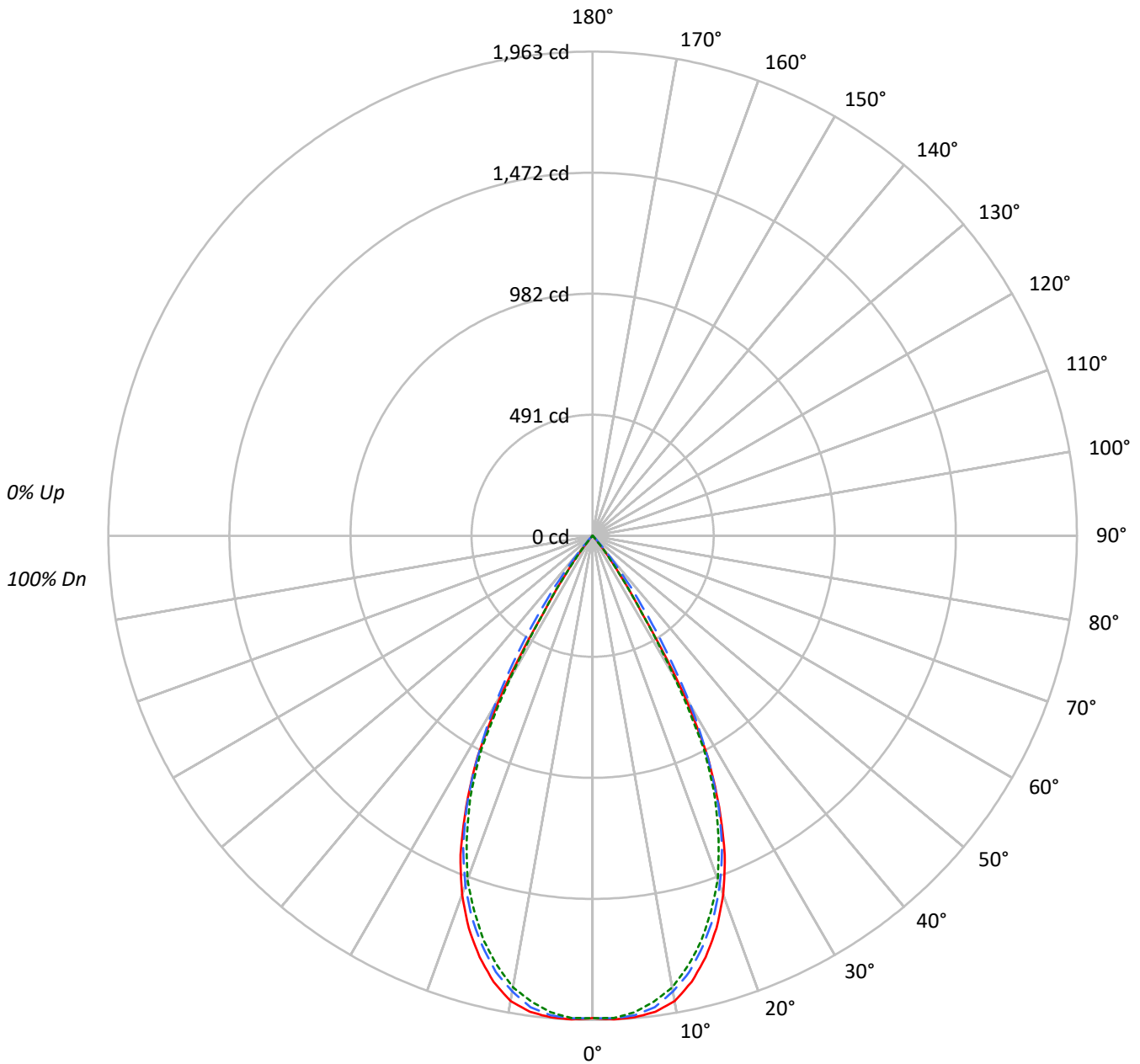
Lumens per Lamp: N/A
Luminaire Lumens: 1393.0 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 0.87 / 0.83
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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	112	109	107	112	109	107	106	105	104	102	102	100	99	98	97	96	95
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	93	91	89
3	104	99	94	91	103	97	93	90	95	91	89	92	90	87	90	88	86	84
4	100	93	88	84	98	92	87	84	90	86	83	88	85	82	86	83	81	80
5	96	88	83	79	94	87	82	79	85	81	78	84	80	77	82	79	77	75
6	91	83	78	74	90	83	78	74	81	77	73	80	76	73	79	75	73	71
7	87	79	74	70	86	78	73	70	77	73	69	76	72	69	75	71	69	67
8	84	75	70	66	83	75	70	66	74	69	66	73	68	65	72	68	65	64
9	80	72	66	63	79	71	66	63	70	66	62	69	65	62	69	65	62	61
10	77	68	63	59	76	68	63	59	67	62	59	66	62	59	66	62	59	58

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	189459	189459	189459
5°	190572	189794	188627
10°	188437	184503	182830
15°	177378	172865	170558
20°	159536	155412	152835
25°	129594	128845	125425
30°	81570	88852	74523
35°	22364	41640	22127
40°	3162	9864	2276
45°	137	2192	137
50°	0	301	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 2192 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.0	13.2
10°-20°	481.4	34.6
20°-30°	534.2	38.3
30°-40°	184.8	13.3
40°-50°	8.4	0.6
50°-60°	0.1	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
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°	1199.6	86.1
0°-40°	1384.4	99.4
0°-60°	1393.0	100.0
0°-90°	1393.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1393.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1956	1956	1956	1956	1956	
5°	1960	1957	1952	1943	1940	186
15°	1769	1753	1724	1707	1701	492
25°	1212	1204	1205	1181	1173	540
35°	189	214	352	218	187	152
45°	1	3	16	3	1	3
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1955.7	1955.7	1955.7	1955.7	1955.7
2.5°	1962.7	1959.7	1957.7	1956.7	1956.7
5°	1959.7	1956.7	1951.7	1942.7	1939.7
7.5°	1946.7	1936.6	1927.6	1913.6	1904.6
10°	1915.6	1902.6	1875.6	1862.6	1858.6
12.5°	1852.6	1837.6	1811.6	1791.6	1785.6
15°	1768.6	1752.6	1723.6	1706.6	1700.6
17.5°	1668.6	1656.6	1625.5	1602.5	1595.5
20°	1547.5	1529.5	1507.5	1487.5	1482.5
22.5°	1399.5	1383.5	1370.5	1345.5	1333.4
25°	1212.4	1204.4	1205.4	1181.4	1173.4
27.5°	1011.3	1016.3	1007.3	998.3	978.3
30°	729.2	796.3	794.3	760.3	666.2
32.5°	367.1	479.2	561.2	453.2	373.1
35°	189.1	214.1	352.1	218.1	187.1
37.5°	85.0	99.0	197.1	98.0	83.0
40°	25.0	41.0	78.0	40.0	18.0
42.5°	4.0	12.0	37.0	8.0	4.0
45°	1.0	3.0	16.0	3.0	1.0
47.5°	1.0	1.0	5.0	1.0	0.0
50°	0.0	0.0	2.0	0.0	0.0
52.5°	0.0	0.0	1.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
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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