

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: P886993

Luminaire Tested: ML412LSFL9FS1E-TIR4D25NFL-TL4RDMB-960LM-4000K

Issue Date: 7/18/2024

Test Information

Test Method: LM-79-2019
Report Number: P886993
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-38)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/18/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML412LSFL9FS1E-TIR4D25NFL-TL4RDMB-960LM-4000K
Description: 4IN ROUND ML FLEX, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

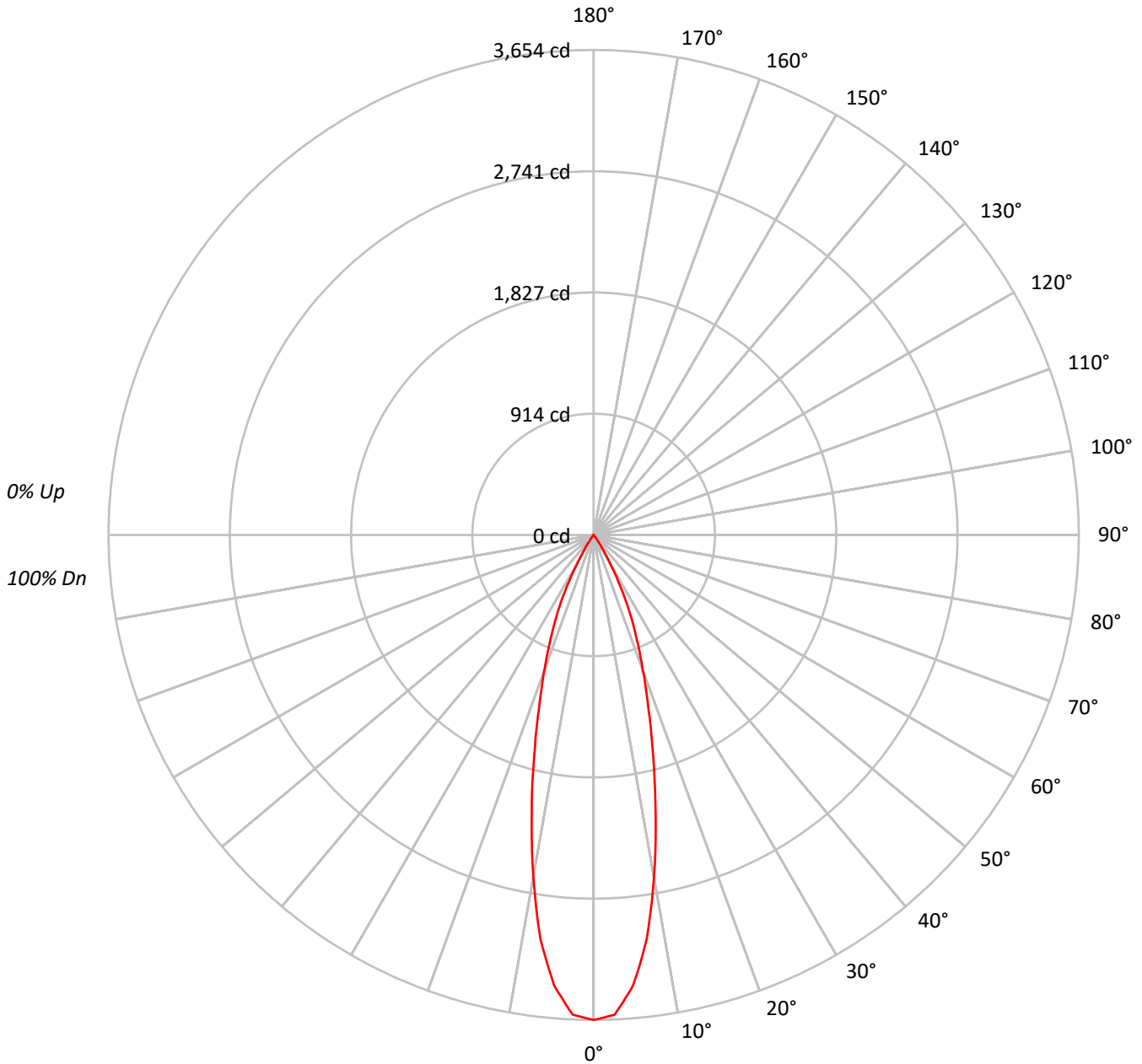
Lumens per Lamp: N/A
Luminaire Lumens: 1117.3 lumens
Efficiency: N/A
Efficacy: 80.4 lumens/watt
Spacing Criteria (0/90/45): 0.48 / 0.48 / 0.51
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 13.9
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



TEST NUMBER: P886993
CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4RDMB-960LM-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P886993

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4RDDB-960LM-4000K

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	115	113	111	109	112	110	109	107	106	105	104	103	102	101	99	99	98	96			
2	111	107	104	101	109	105	102	100	102	100	98	99	97	96	97	95	94	92			
3	107	102	98	95	105	101	97	94	98	95	93	96	93	91	94	92	90	89			
4	103	97	93	90	102	96	93	90	94	91	89	93	90	88	91	88	87	85			
5	100	93	89	86	98	93	88	85	91	87	85	89	86	84	88	85	83	82			
6	96	90	85	82	95	89	85	82	88	84	81	86	83	81	85	82	80	79			
7	93	86	82	79	92	86	82	78	85	81	78	84	80	78	83	80	77	76			
8	90	83	79	76	89	83	78	76	82	78	75	81	77	75	80	77	75	74			
9	88	80	76	73	87	80	76	73	79	75	73	78	75	72	78	74	72	71			
10	85	78	73	70	84	77	73	70	77	73	70	76	72	70	75	72	70	69			

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	450742
5°	421930
10°	327738
15°	220788
20°	142065
25°	87007
30°	34467
35°	7845
40°	1320
45°	314
50°	0
55°	0
60°	0
65°	0
70°	0
75°	0
80°	0
85°	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 314 cd/sqm



TEST NUMBER: P886993

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4RDMB-960LM-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.0	26.8
10°-20°	481.1	43.1
20°-30°	286.9	25.7
30°-40°	47.2	4.2
40°-50°	2.1	0.2
50°-60°	0.0	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°	1068.0	95.6
0°-40°	1115.1	99.8
0°-60°	1117.3	100.0
0°-90°	1117.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1117.3	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	3654	
5°	3408	300
15°	1729	481
25°	639	287
35°	52	47
45°	2	2
55°	0	0
65°	0	0
75°	0	0
85°	0	0
90°	0	



TEST NUMBER: P886993

CATALOG NUMBER: ML412LSFL9FS1E-TIR4D25NFL-TL4RDMB-960LM-4000K

CANDELA DISTRIBUTION (FULL):

0°	
0°	3654.3
2.5°	3618.7
5°	3407.7
7.5°	3069.8
10°	2616.7
12.5°	2155.5
15°	1729.0
17.5°	1370.0
20°	1082.3
22.5°	844.8
25°	639.3
27.5°	431.1
30°	242.0
32.5°	122.4
35°	52.1
37.5°	18.3
40°	8.2
42.5°	4.6
45°	1.8
47.5°	0.9
50°	0.0
52.5°	0.0
55°	0.0
57.5°	0.0
60°	0.0
62.5°	0.0
65°	0.0
67.5°	0.0
70°	0.0
72.5°	0.0
75°	0.0
77.5°	0.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



— 0°-180°

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)