

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: P642545

Luminaire Tested: ML5615LSFL409FS1E - 691WB - 1500LM - 5000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642545  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-36)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5615LSFL409FS1E - 691WB - 1500LM - 5000K  
Description: ML56 RR, 40D TIR OPTIC, 6" DEADFRONT TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2024.8 lumens  
Efficiency: N/A  
Efficacy: 118.4 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.69  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

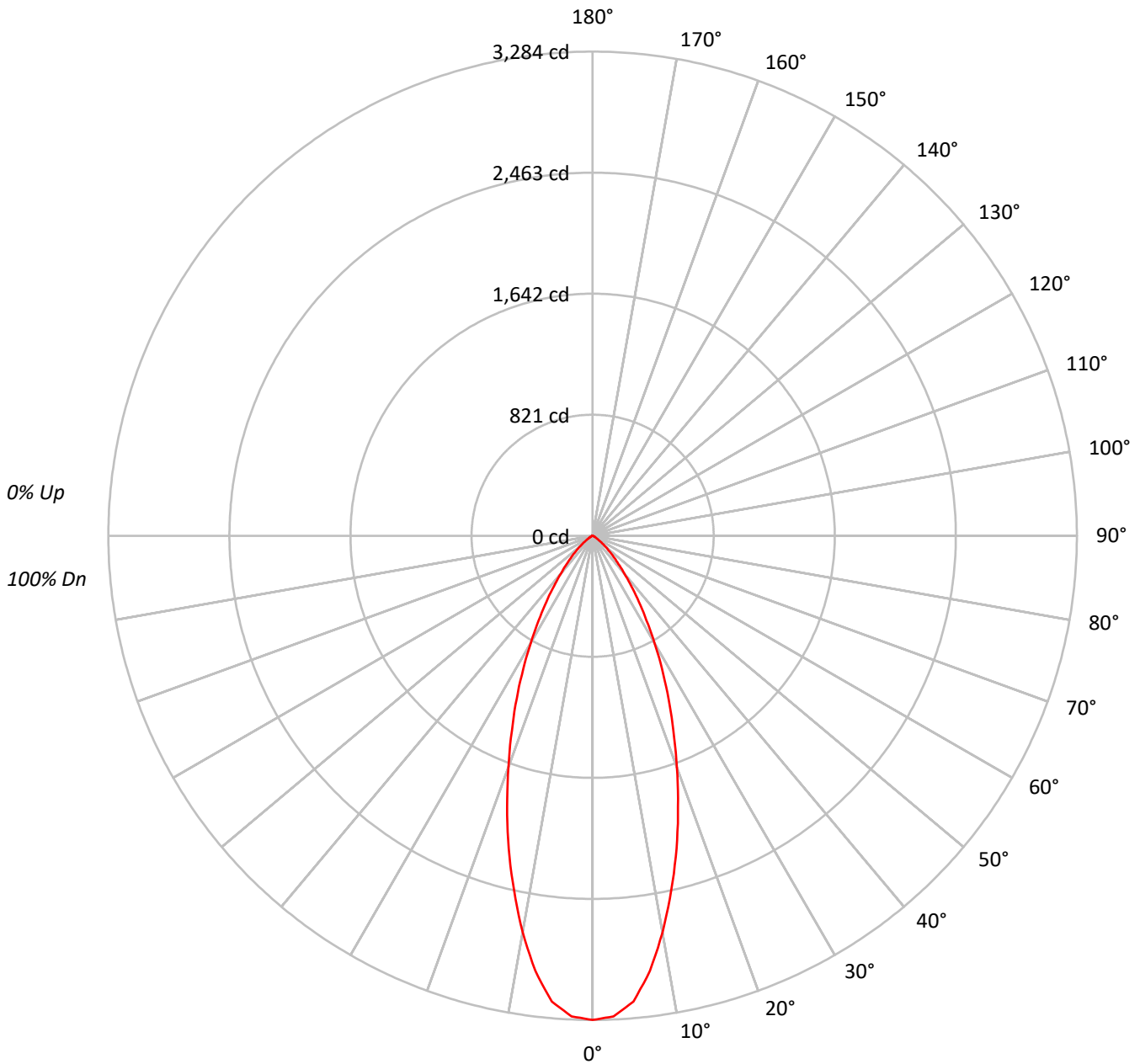
Input Watts (W): 17.1  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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									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	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	94																			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	93	91	89	87																			
3	103	96	91	87	101	95	90	87	92	89	85	90	87	84	88	85	83	81																			
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76																			
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71																			
6	88	80	74	70	87	79	73	69	77	72	69	76	72	68	75	71	68	67																			
7	84	75	69	65	83	74	69	65	73	68	65	72	68	64	71	67	64	63																			
8	80	71	65	61	79	70	65	61	69	64	61	68	64	61	67	63	60	59																			
9	77	67	62	58	76	67	61	58	66	61	57	65	61	57	64	60	57	56																			
10	73	64	58	55	72	64	58	55	63	58	54	62	57	54	61	57	54	53																			

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

	0°
0°	180018
5°	174482
10°	152001
15°	124683
20°	97332
25°	73655
30°	53141
35°	36547
40°	23902
45°	15622
50°	9194
55°	4903
60°	2708
65°	1608
70°	850
75°	381
80°	568
85°	1132

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 15622 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	288.0	14.2
10°-20°	607.3	30.0
20°-30°	558.1	27.6
30°-40°	346.3	17.1
40°-50°	158.5	7.8
50°-60°	49.8	2.5
60°-70°	12.8	0.6
70°-80°	2.8	0.1
80°-90°	1.2	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°	1453.3	71.8
0°-40°	1799.6	88.9
0°-60°	2007.9	99.2
0°-90°	2024.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2024.8	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3284	
5°	3171	288
15°	2197	607
25°	1218	558
35°	546	346
45°	202	158
55°	51	50
65°	12	13
75°	2	3
85°	2	1
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	3283.8
2.5°	3262.6
5°	3170.7
7.5°	2976.3
10°	2730.6
12.5°	2463.7
15°	2196.9
17.5°	1926.5
20°	1668.4
22.5°	1429.8
25°	1217.7
27.5°	1018.0
30°	839.5
32.5°	680.4
35°	546.1
37.5°	431.2
40°	334.0
42.5°	259.8
45°	201.5
47.5°	148.5
50°	107.8
52.5°	74.2
55°	51.3
57.5°	33.6
60°	24.7
62.5°	17.7
65°	12.4
67.5°	7.1
70°	5.3
72.5°	3.5
75°	1.8
77.5°	1.8
80°	1.8
82.5°	1.8
85°	1.8
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

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— 0°-180°

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(END OF REPORT)