

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: P642543

Luminaire Tested: ML5615LSFL409FS1E - 691WB - 1500LM - 3500K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642543  
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 - 3500K  
Description: ML56 RR, 40D TIR OPTIC, 6" DEADFRONT TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1881.0 lumens  
Efficiency: N/A  
Efficacy: 110.0 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

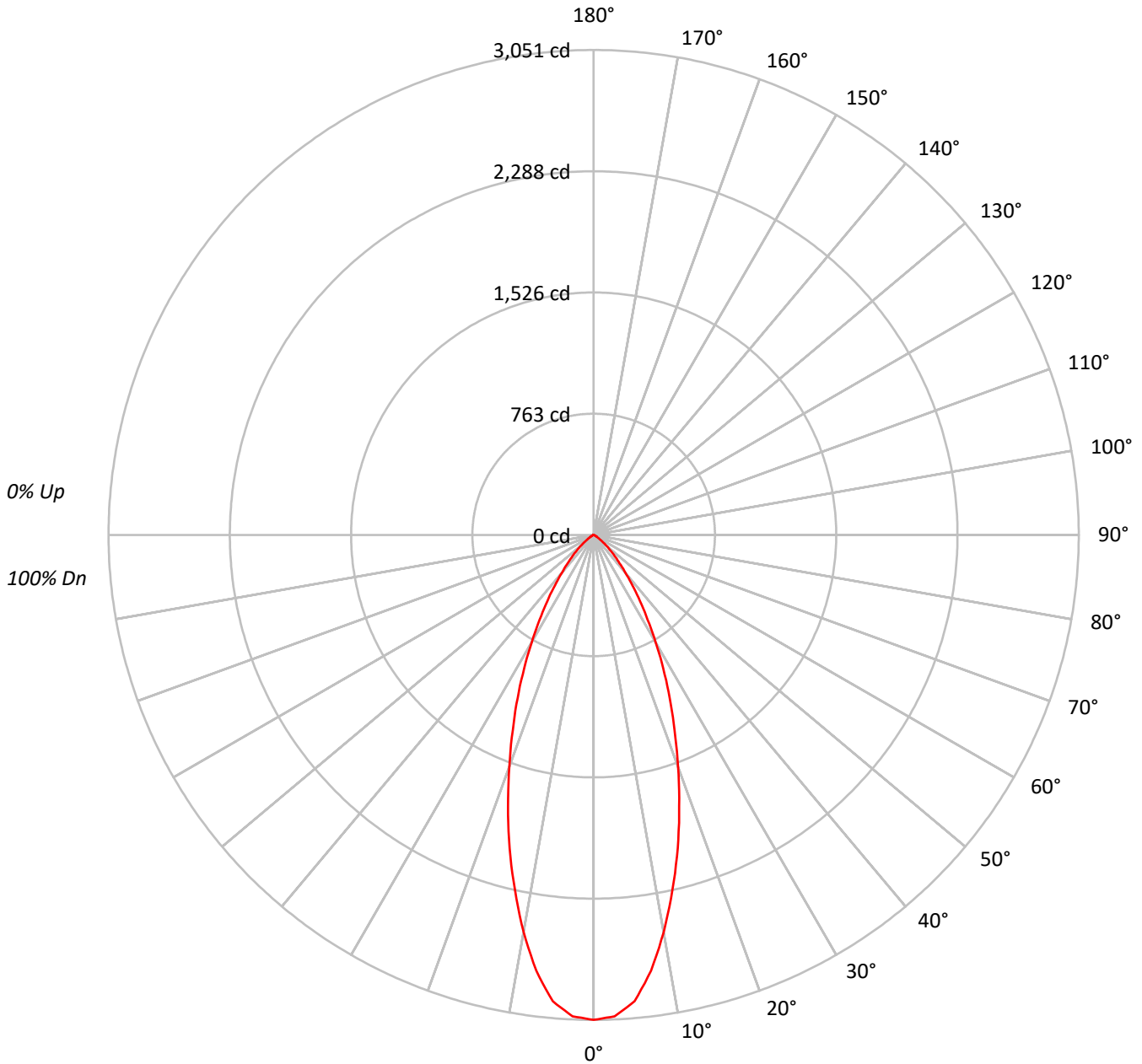
Input Watts (W): 17.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
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°	167245
5°	162101
10°	141219
15°	115835
20°	90425
25°	68429
30°	49368
35°	33957
40°	22206
45°	14513
50°	8546
55°	4549
60°	2522
65°	1492
70°	785
75°	339
80°	505
85°	1006

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14513 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.5	14.2
10°-20°	564.2	30.0
20°-30°	518.5	27.6
30°-40°	321.8	17.1
40°-50°	147.2	7.8
50°-60°	46.3	2.5
60°-70°	11.9	0.6
70°-80°	2.6	0.1
80°-90°	1.1	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°	1350.2	71.8
0°-40°	1672.0	88.9
0°-60°	1865.5	99.2
0°-90°	1881.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1881.0	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3051	
5°	2946	268
15°	2041	564
25°	1131	518
35°	507	322
45°	187	147
55°	48	46
65°	12	12
75°	2	3
85°	2	1
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°
0°	3050.8
2.5°	3031.1
5°	2945.7
7.5°	2765.1
10°	2536.9
12.5°	2288.9
15°	2041.0
17.5°	1789.8
20°	1550.0
22.5°	1328.4
25°	1131.3
27.5°	945.8
30°	779.9
32.5°	632.2
35°	507.4
37.5°	400.6
40°	310.3
42.5°	241.4
45°	187.2
47.5°	137.9
50°	100.2
52.5°	69.0
55°	47.6
57.5°	31.2
60°	23.0
62.5°	16.4
65°	11.5
67.5°	6.6
70°	4.9
72.5°	3.3
75°	1.6
77.5°	1.6
80°	1.6
82.5°	1.6
85°	1.6
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)