

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: P642359

Luminaire Tested: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642359  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-24)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K  
Description: ML56 RR, 40D TIR OPTIC, 5" DEADFRONT TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1639.1 lumens  
Efficiency: N/A  
Efficacy: 122.3 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.69  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

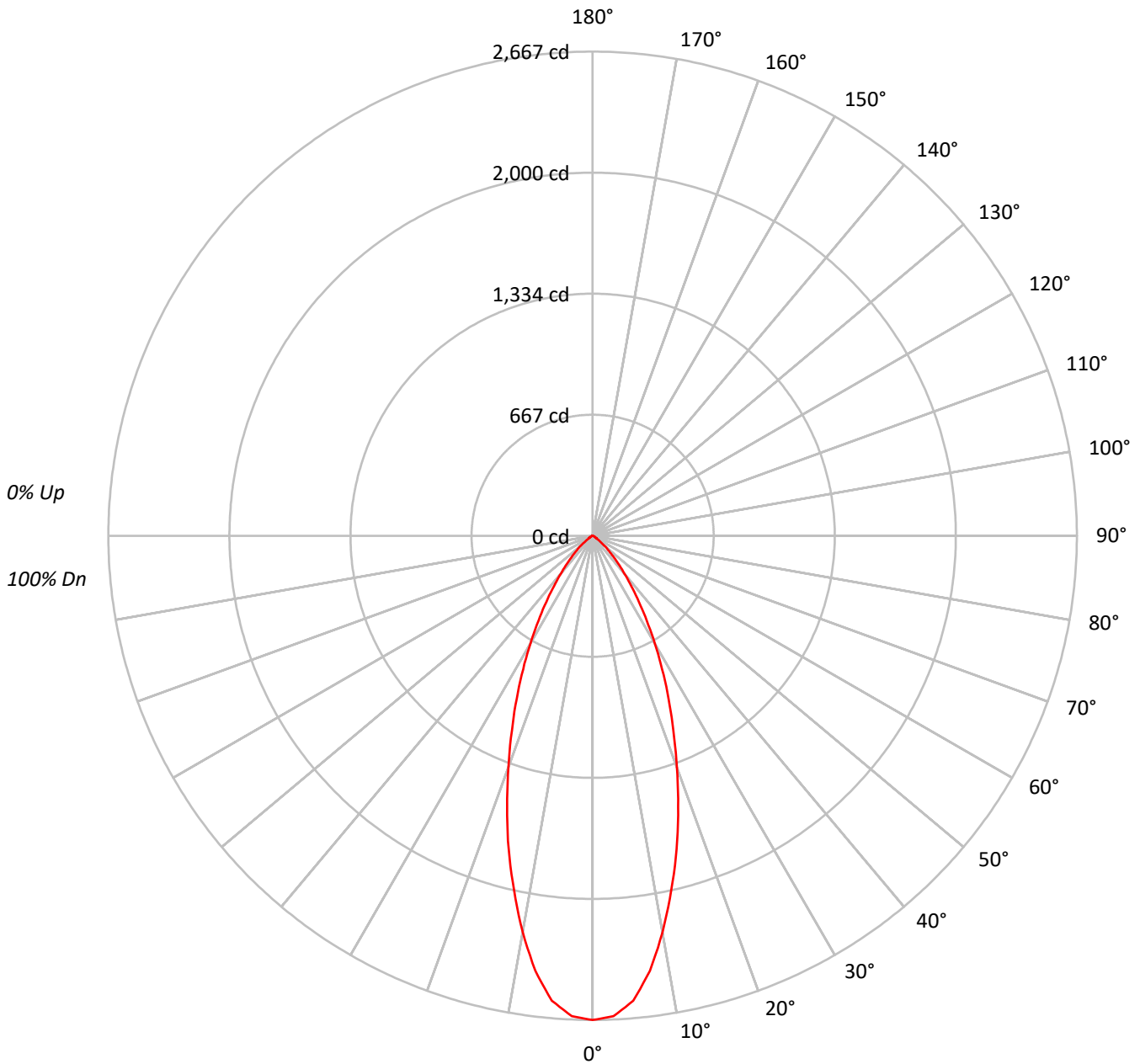
Input Watts (W): 13.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P642359

CATALOG NUMBER: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K

### Luminous Intensity Polar Plot





TEST NUMBER: P642359

CATALOG NUMBER: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K

**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	88	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	73	69	76	72	69	75	71	68	67																			
7	84	75	69	65	83	75	69	65	73	68	65	72	68	64	71	67	64	63																			
8	80	71	65	61	79	71	65	61	70	65	61	69	64	61	68	63	60	59																			
9	77	67	62	58	76	67	62	58	66	61	58	65	61	57	64	60	57	56																			
10	74	64	59	55	73	64	58	55	63	58	55	62	58	54	61	57	54	53																			

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

	0°
0°	210543
5°	203709
10°	177712
15°	146060
20°	113779
25°	86161
30°	62385
35°	42817
40°	27999
45°	17661
50°	10242
55°	4349
60°	2952
65°	1887
70°	992
75°	885
80°	1318
85°	1268

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 17661 cd/sqm



TEST NUMBER: P642359

CATALOG NUMBER: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.7	14.3
10°-20°	493.4	30.1
20°-30°	453.6	27.7
30°-40°	281.6	17.2
40°-50°	126.2	7.7
50°-60°	35.1	2.1
60°-70°	10.6	0.6
70°-80°	3.2	0.2
80°-90°	1.5	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°	1180.8	72.0
0°-40°	1462.4	89.2
0°-60°	1623.7	99.1
0°-90°	1639.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1639.1	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	2667	
5°	2571	234
15°	1787	493
25°	989	454
35°	444	282
45°	158	126
55°	32	35
65°	10	11
75°	3	3
85°	1	2
90°	0	



TEST NUMBER: P642359

CATALOG NUMBER: ML5615LSFL409FS1E - 591WB - 1200LM - 4000K

**CANDELA DISTRIBUTION (FULL):**

0°	
0°	2667.1
2.5°	2648.4
5°	2570.7
7.5°	2416.9
10°	2217.0
12.5°	1999.9
15°	1787.2
17.5°	1565.7
20°	1354.4
22.5°	1161.7
25°	989.2
27.5°	828.2
30°	684.4
32.5°	553.5
35°	444.3
37.5°	349.4
40°	271.7
42.5°	209.9
45°	158.2
47.5°	116.5
50°	83.4
52.5°	51.8
55°	31.6
57.5°	24.4
60°	18.7
62.5°	14.4
65°	10.1
67.5°	7.2
70°	4.3
72.5°	2.9
75°	2.9
77.5°	2.9
80°	2.9
82.5°	1.4
85°	1.4
87.5°	1.4
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)