

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: HALO

Report Number: P601192

Luminaire Tested: **ML406FL9FS1E - TIR4D40FL - TL43R2G\_ TL44S2G\_ 2700K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P601192  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Issue Date: 7/29/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML406FL9FS1E - TIR4D40FL - TL43R2G\_ TL44S2G\_ 2700K  
 Description: RETROFIT, 40D OPTIC, DIFFUSE CLEAR LENS TRIM  
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 2700K CCT  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 791.0 lumens  
 Efficiency: N/A  
 Efficacy: 95.3 lumens/watt  
 Spacing Criteria (0/90/45): 0.67 / 0.67 / 0.63  
 Luminous Opening: Circular (Dia: 0.21' x H: 0')  
 CIE Type: Direct

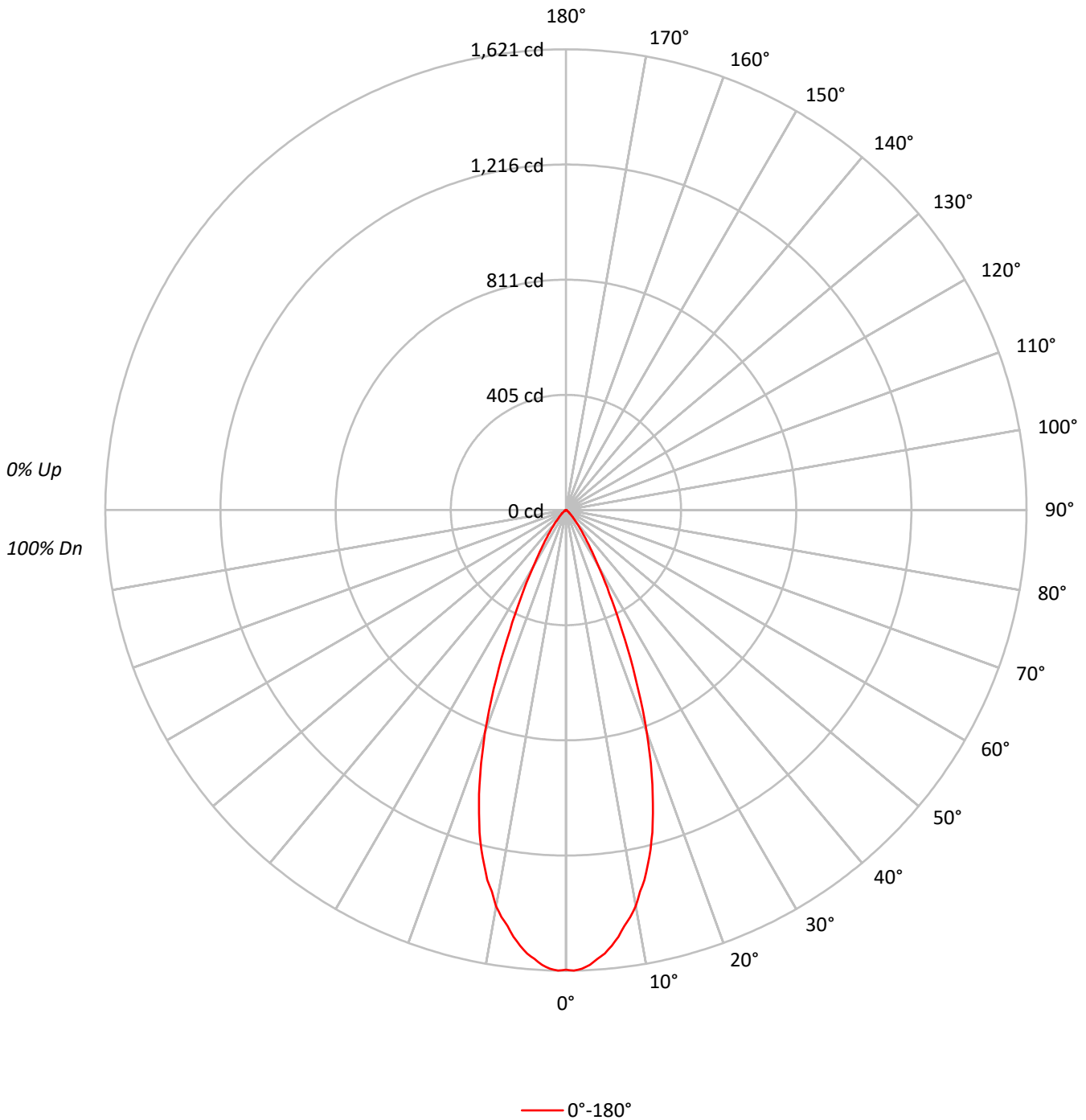
Input Watts (W): 8.3  
 Input Voltage (V): NR  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 25 FT



Meas		Calibration Due Date	
Instrument	Identificatio		
Photometer	GONIO 1 11111111	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95	95	95	95
2	109	105	102	99	107	104	100	98	100	98	95	97	95	93	95	93	92	90	90	90	90
3	105	99	95	92	103	98	94	91	95	92	89	93	90	88	91	89	87	85	85	85	85
4	101	94	89	86	99	93	89	85	91	87	84	89	86	83	87	85	82	81	81	81	81
5	97	89	84	81	95	88	84	80	87	83	80	85	82	79	84	81	78	77	77	77	77
6	93	85	80	76	91	84	79	76	83	79	76	82	78	75	80	77	75	73	73	73	73
7	89	81	76	72	88	80	76	72	79	75	72	78	74	71	77	74	71	70	70	70	70
8	86	77	72	69	85	77	72	69	76	72	68	75	71	68	74	71	68	67	67	67	67
9	82	74	69	66	81	74	69	66	73	68	65	72	68	65	71	68	65	64	64	64	64
10	79	71	66	63	78	71	66	63	70	66	63	69	65	62	69	65	62	61	61	61	61

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

	0°
0°	510876
5°	496631
10°	453957
15°	383982
20°	279745
25°	162114
30°	83169
35°	43598
40°	23496
45°	12504
50°	7369
55°	3854
60°	1895
65°	1494
70°	923
75°	0
80°	0
85°	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.5	18.3
10°-20°	318.6	40.3
20°-30°	219.1	27.7
30°-40°	76.0	9.6
40°-50°	23.6	3.0
50°-60°	7.1	0.9
60°-70°	1.7	0.2
70°-80°	0.4	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°	682.2	86.3
0°-40°	758.2	95.9
0°-60°	788.9	99.7
0°-90°	791.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	791.0	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	1618	
5°	1567	144
15°	1175	319
25°	465	219
35°	113	76
45°	28	24
55°	7	7
65°	2	2
75°	0	0
85°	0	0
90°	0	

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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	1617.9
1°	1620.9
2°	1614.9
3°	1602.9
4°	1583.9
5°	1566.8
6°	1541.8
7°	1512.8
8°	1477.8
9°	1449.8
10°	1415.8
11°	1367.7
12°	1330.7
13°	1280.7
14°	1230.7
15°	1174.6
17.5°	1012.5
20°	832.5
22.5°	639.3
25°	465.3
27.5°	330.2
30°	228.1
32.5°	160.1
35°	113.1
37.5°	81.0
40°	57.0
42.5°	40.0
45°	28.0
47.5°	20.0
50°	15.0
52.5°	11.0
55°	7.0
57.5°	5.0
60°	3.0
62.5°	2.0
65°	2.0
67.5°	1.0
70°	1.0
72.5°	1.0
75°	0.0
77.5°	0.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0

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

  
NVLAP Lab Code: 200050-0



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CANDELA DISTRIBUTION (continued):



(END OF REPORT)