

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: P601444

Luminaire Tested: **ML4DM10LSFL9FS1E - TIR4D40FL - TL41R\_ TL42S\_ 3500K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P601444  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Issue Date: 7/29/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML4DM10LSFL9FS1E - TIR4D40FL - TL41R\_ TL42S\_ 3500K  
 Description: DIRECT MOUNT, 40D OPTIC, OPEN TRIM  
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 3500K CCT  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 1215.1 lumens  
 Efficiency: N/A  
 Efficacy: 101.3 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

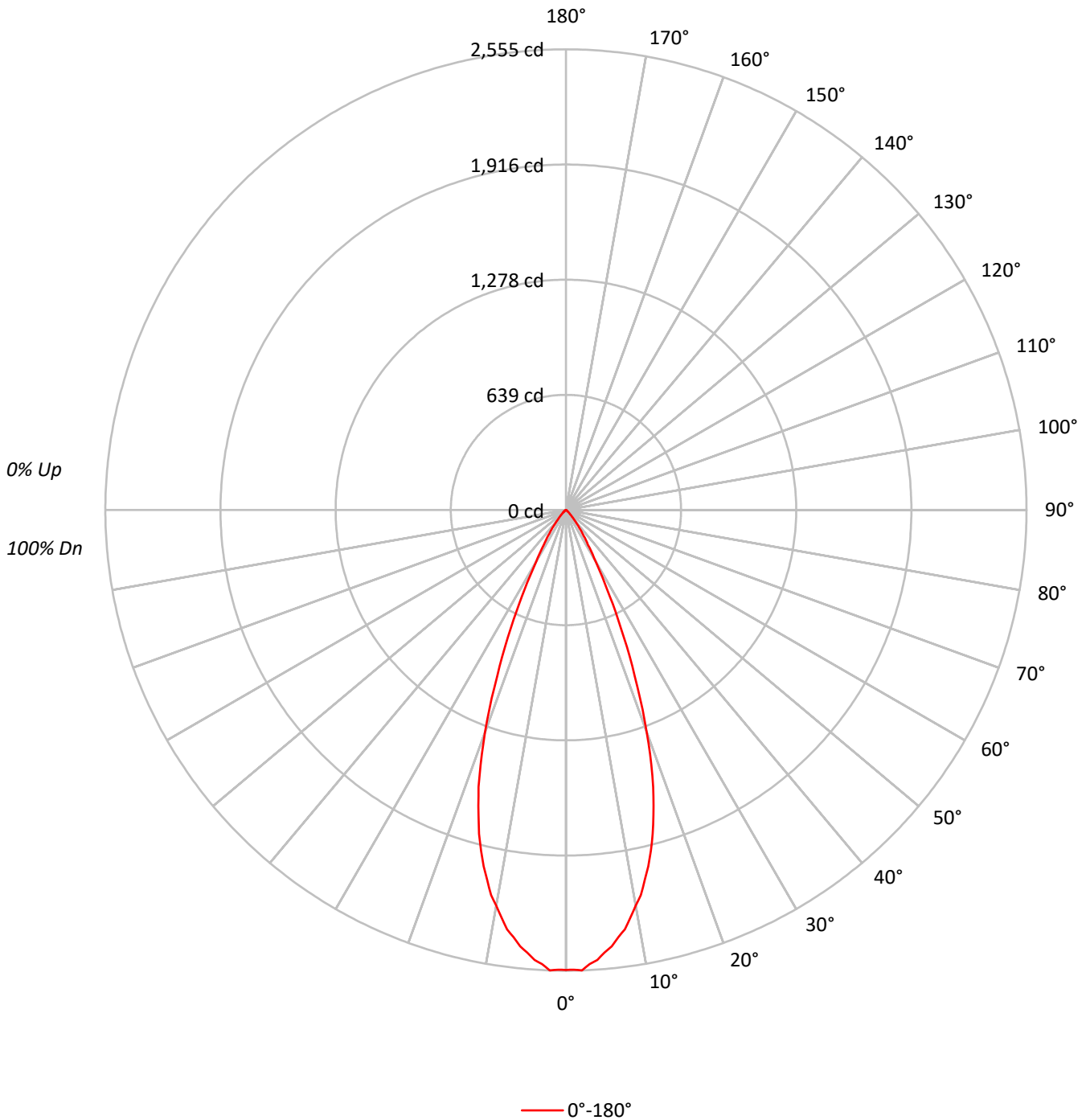
Input Watts (W): 12  
 Input Voltage (V): NR  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 25 FT



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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103		102	101	100		99	98	97	95
2	110	106	102	99	108	104	101	98	101	98	96		98	96	94		95	93	92	90
3	105	100	96	92	103	98	95	91	96	93	90		94	91	89		91	89	87	86
4	101	95	90	86	99	94	89	86	92	88	85		90	87	84		88	85	83	82
5	97	90	85	81	96	89	85	81	87	83	80		86	82	80		84	81	79	78
6	93	86	81	77	92	85	80	77	84	79	76		82	79	76		81	78	75	74
7	90	82	77	73	89	81	77	73	80	76	73		79	75	72		78	75	72	71
8	86	78	73	70	85	78	73	70	77	73	69		76	72	69		75	72	69	68
9	83	75	70	67	82	75	70	67	74	69	66		73	69	66		72	69	66	65
10	80	72	67	64	79	72	67	64	71	67	64		70	66	63		70	66	63	62

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

	0°
0°	805454
5°	780827
10°	714666
15°	608140
20°	441073
25°	251237
30°	119521
35°	62332
40°	31245
45°	14960
50°	8597
55°	4019
60°	947
65°	1121
70°	0
75°	0
80°	0
85°	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	228.0	18.8
10°-20°	504.9	41.5
20°-30°	336.8	27.7
30°-40°	107.9	8.9
40°-50°	29.3	2.4
50°-60°	7.2	0.6
60°-70°	0.9	0.1
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°	1069.7	88.0
0°-40°	1177.6	96.9
0°-60°	1214.2	99.9
0°-90°	1215.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1215.1	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	2551	
5°	2463	228
15°	1860	505
25°	721	337
35°	162	108
45°	34	29
55°	7	7
65°	2	1
75°	0	0
85°	0	0
90°	0	

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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	2550.8
1°	2549.4
2°	2555.2
3°	2521.7
4°	2501.3
5°	2463.4
6°	2432.8
7°	2386.2
8°	2348.3
9°	2287.1
10°	2228.9
11°	2176.4
12°	2099.2
13°	2027.8
14°	1947.7
15°	1860.3
17.5°	1611.2
20°	1312.6
22.5°	996.4
25°	721.1
27.5°	489.5
30°	327.8
32.5°	227.3
35°	161.7
37.5°	115.1
40°	75.8
42.5°	49.5
45°	33.5
47.5°	24.8
50°	17.5
52.5°	11.7
55°	7.3
57.5°	4.4
60°	1.5
62.5°	1.5
65°	1.5
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

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)