

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: P601299

Luminaire Tested: **ML410LSNFL9FS1E - TIR4D25NFL - TL41R_ TL42S_ 2700K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P601299
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML410LSNFL9FS1E - TIR4D25NFL - TL41R_ TL42S_ 2700K
 Description: RETROFIT, 25D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1151.6 lumens
 Efficiency: N/A
 Efficacy: 96.0 lumens/watt
 Spacing Criteria (0/90/45): 0.43 / 0.43 / 0.46
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

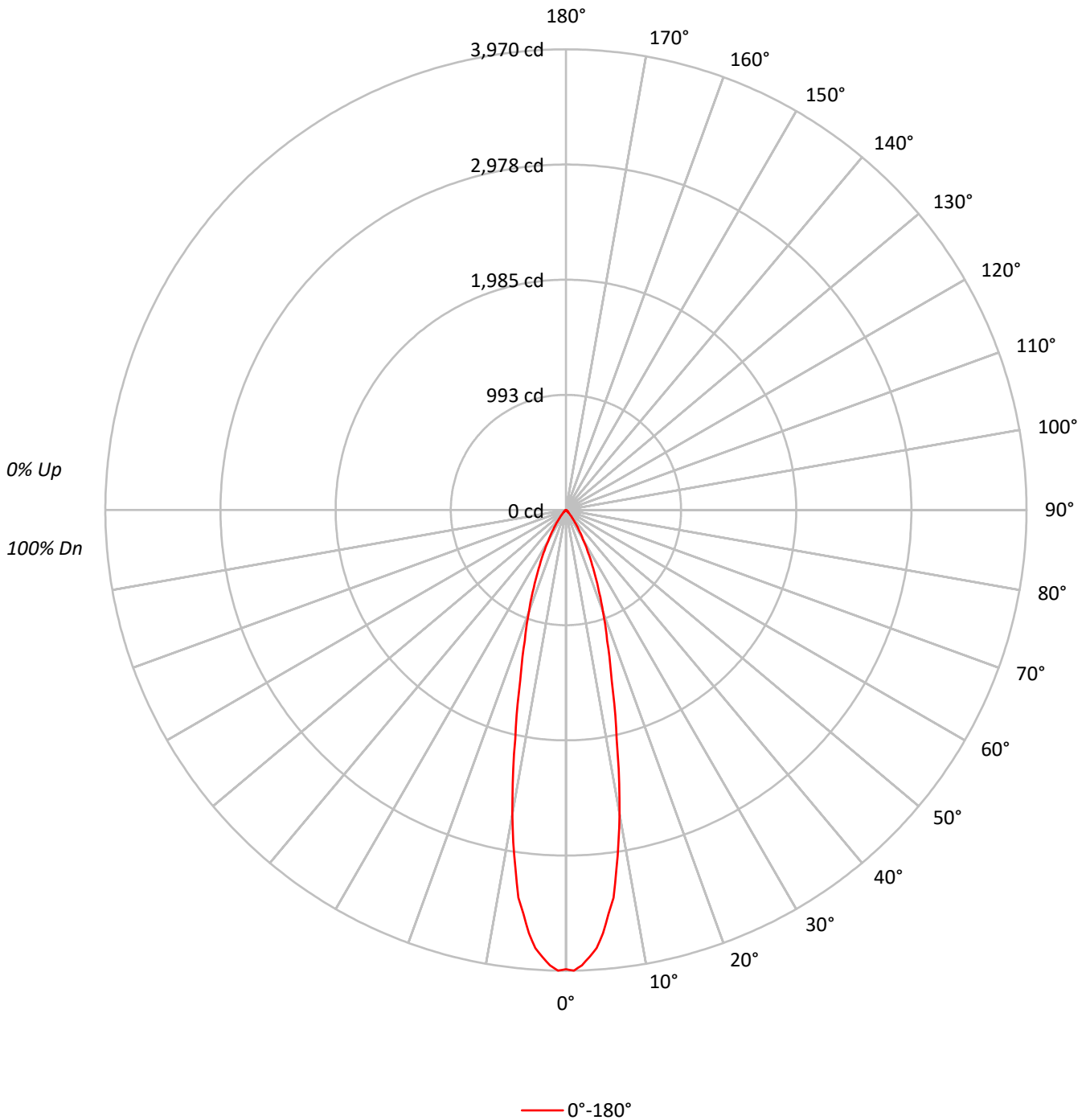
Input Watts (W): 12
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96		
2	110	106	103	100	108	105	102	99	101	99	97	98	97	95	96	94	93	91		
3	106	101	97	94	104	100	96	93	97	94	91	95	92	90	93	90	89	87		
4	102	96	92	88	101	95	91	88	93	90	87	91	88	86	89	87	85	84		
5	98	92	87	84	97	91	87	83	89	86	83	88	84	82	86	84	81	80		
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	83	80	78	77		
7	92	84	80	76	91	84	79	76	83	79	76	82	78	75	81	77	75	74		
8	89	81	76	73	88	81	76	73	80	76	73	79	75	72	78	75	72	71		
9	86	78	74	70	85	78	73	70	77	73	70	76	72	70	75	72	70	69		
10	83	75	71	68	82	75	71	68	74	70	68	74	70	67	73	70	67	66		

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	1249325
5°	1160686
10°	853342
15°	497744
20°	314054
25°	193367
30°	110442
35°	59711
40°	28236
45°	14067
50°	8056
55°	3799
60°	1705
65°	1046
70°	1293
75°	0
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	317.2	27.5
10°-20°	437.6	38.0
20°-30°	259.3	22.5
30°-40°	101.4	8.8
40°-50°	27.1	2.4
50°-60°	7.0	0.6
60°-70°	1.9	0.2
70°-80°	0.2	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°	1014.1	88.1
0°-40°	1115.5	96.9
0°-60°	1149.5	99.8
0°-90°	1151.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1151.6	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	3956	
5°	3662	317
15°	1523	438
25°	555	259
35°	155	101
45°	32	27
55°	7	7
65°	1	2
75°	0	0
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

0°	
0°	3956.5
1°	3970.2
2°	3926.3
3°	3857.8
4°	3785.2
5°	3661.8
6°	3501.5
7°	3365.8
8°	3127.4
9°	2897.1
10°	2661.4
12.5°	2021.4
15°	1522.6
17.5°	1181.3
20°	934.6
22.5°	725.0
25°	555.0
27.5°	415.2
30°	302.9
32.5°	220.6
35°	154.9
37.5°	102.8
40°	68.5
42.5°	45.2
45°	31.5
47.5°	23.3
50°	16.4
52.5°	11.0
55°	6.9
57.5°	4.1
60°	2.7
62.5°	2.7
65°	1.4
67.5°	1.4
70°	1.4
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
90°	0.0

(END OF REPORT)