

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: P601309

Luminaire Tested: **ML410LSWFL9FS1E - TIR4D55WFL - 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: P601309
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML410LSWFL9FS1E - TIR4D55WFL - TL41R_ TL42S_ 2700K
 Description: RETROFIT, 55D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1158.5 lumens
 Efficiency: N/A
 Efficacy: 96.5 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.84
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

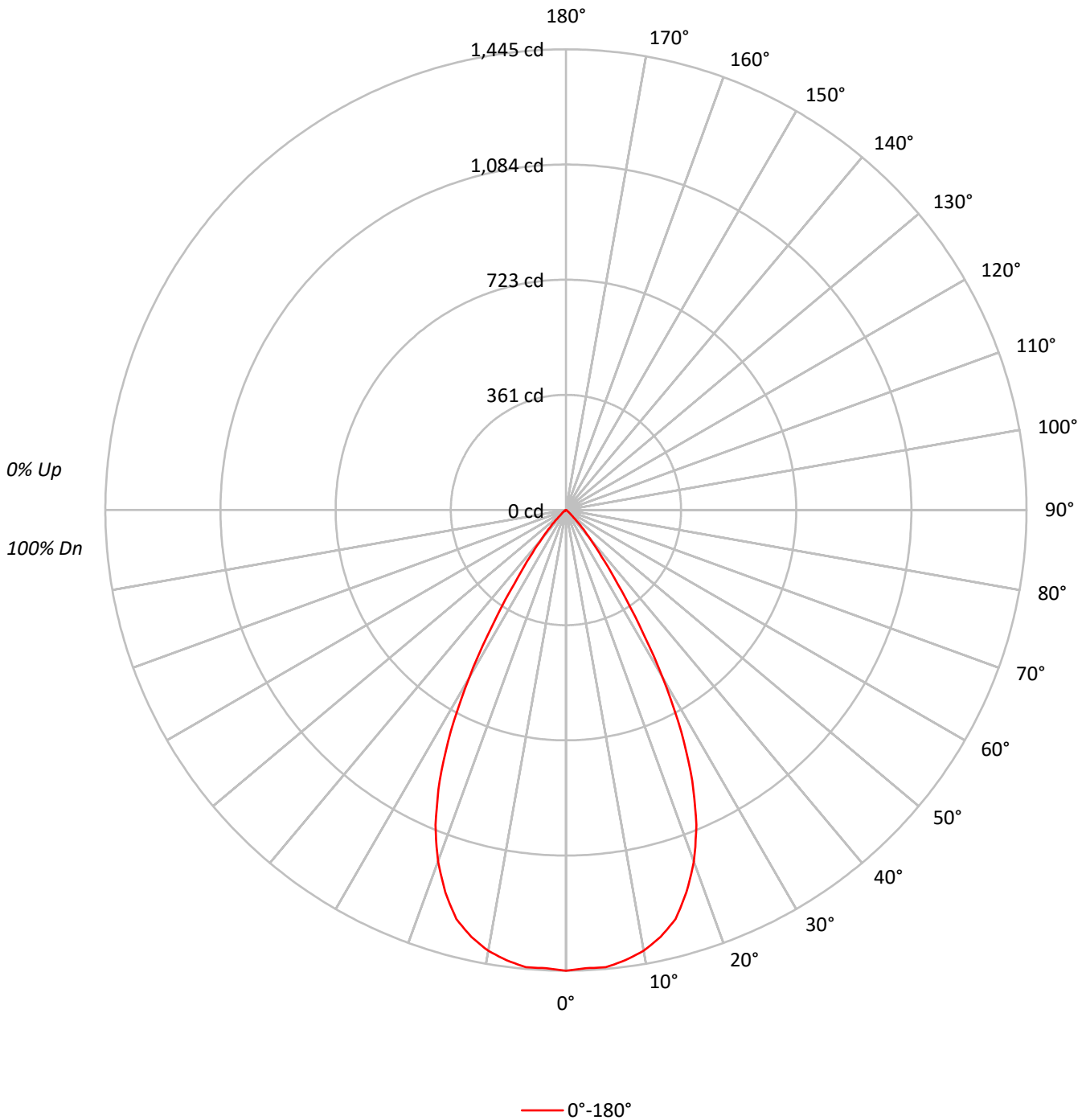
Input Watts (W): 12
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



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	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	88	94	90	87	91	88	86	89	86	84	83
4	99	92	86	82	97	91	86	82	88	84	81	86	83	80	85	82	79	78
5	94	86	81	77	93	85	80	76	84	79	76	82	78	75	80	77	74	73
6	90	81	76	72	88	81	75	71	79	74	71	78	74	71	76	73	70	69
7	86	77	71	67	84	76	71	67	75	70	67	74	70	66	73	69	66	65
8	82	73	67	63	81	72	67	63	71	66	63	70	66	63	69	65	62	61
9	78	69	63	60	77	69	63	60	68	63	59	67	62	59	66	62	59	58
10	75	66	60	56	74	65	60	56	64	59	56	64	59	56	63	59	56	55

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	456312
5°	456312
10°	450141
15°	434292
20°	394365
25°	326737
30°	221467
35°	108358
40°	48599
45°	17773
50°	7418
55°	3028
60°	884
65°	0
70°	0
75°	0
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.1	11.8
10°-20°	368.4	31.8
20°-30°	418.2	36.1
30°-40°	191.1	16.5
40°-50°	38.3	3.3
50°-60°	5.7	0.5
60°-70°	0.5	0.0
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°	922.8	79.7
0°-40°	1113.9	96.2
0°-60°	1158.0	100.0
0°-90°	1158.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1158.5	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1445	
5°	1440	136
15°	1328	368
25°	938	418
35°	281	191
45°	40	38
55°	6	6
65°	0	1
75°	0	0
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

	0°
0°	1445.1
2.5°	1438.2
5°	1439.6
7.5°	1424.5
10°	1403.9
12.5°	1371.0
15°	1328.5
17.5°	1257.2
20°	1173.6
22.5°	1069.4
25°	937.8
27.5°	782.9
30°	607.4
32.5°	427.8
35°	281.1
37.5°	183.7
40°	117.9
42.5°	74.0
45°	39.8
47.5°	23.3
50°	15.1
52.5°	9.6
55°	5.5
57.5°	2.7
60°	1.4
62.5°	1.4
65°	0.0
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
90°	0.0

(END OF REPORT)