

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: P601312

Luminaire Tested: **ML410LSWFL9FS1E - TIR4D55WFL - TL41R_ TL42S_ 4000K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P601312
 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_ 4000K
 Description: RETROFIT, 55D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 4000K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1223.7 lumens
 Efficiency: N/A
 Efficacy: 102.0 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

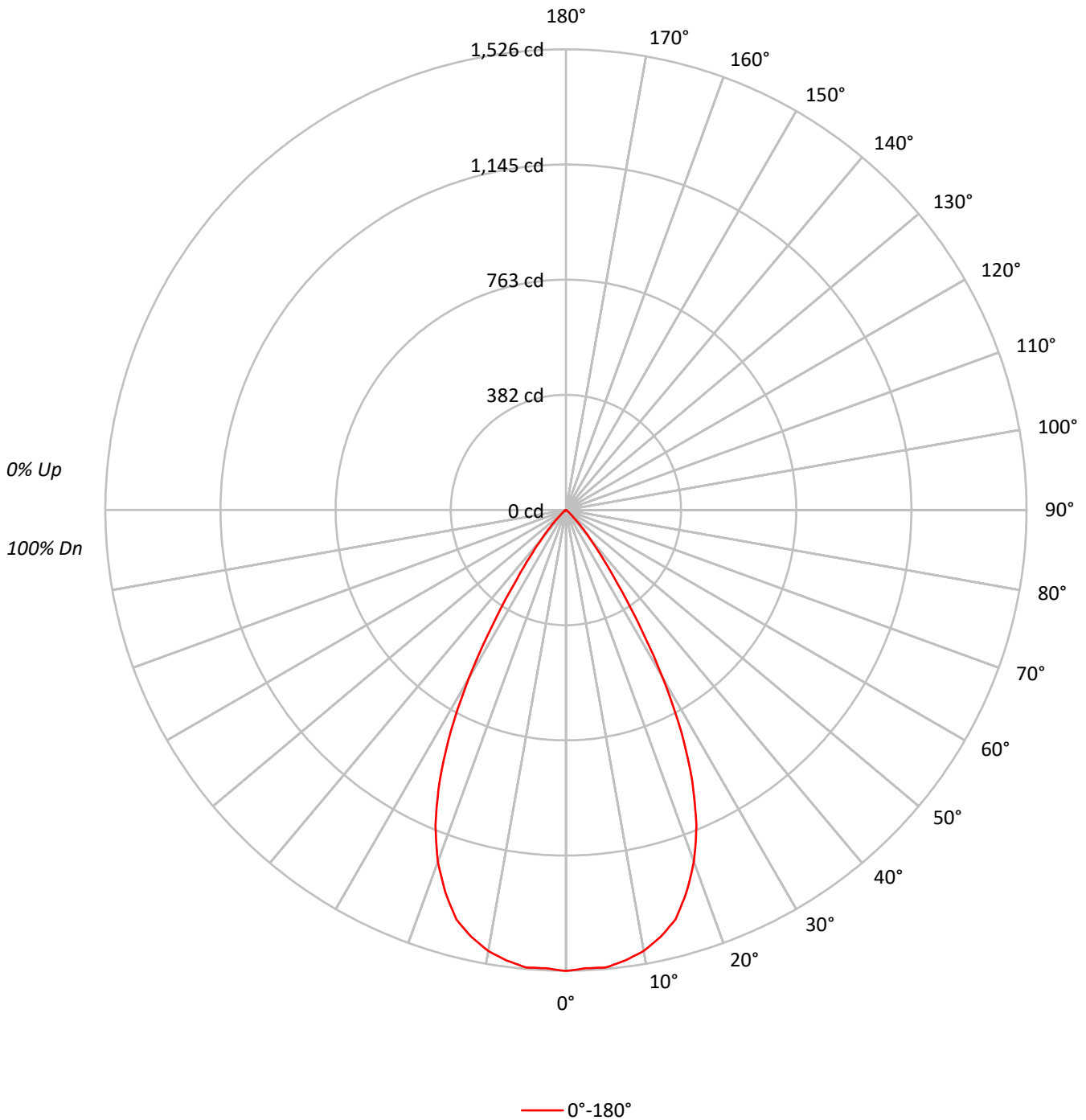
Input Watts (W): 12
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



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°	482016
5°	482018
10°	475536
15°	458777
20°	416610
25°	345168
30°	233936
35°	114448
40°	51360
45°	18755
50°	7811
55°	3193
60°	884
65°	0
70°	0
75°	0
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.8	11.8
10°-20°	389.2	31.8
20°-30°	441.8	36.1
30°-40°	201.9	16.5
40°-50°	40.5	3.3
50°-60°	6.0	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°	974.8	79.7
0°-40°	1176.7	96.2
0°-60°	1223.2	100.0
0°-90°	1223.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1223.7	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1526	
5°	1521	144
15°	1403	389
25°	991	442
35°	297	202
45°	42	40
55°	6	6
65°	0	1
75°	0	0
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

	0°
0°	1526.5
2.5°	1519.3
5°	1520.7
7.5°	1504.8
10°	1483.1
12.5°	1448.3
15°	1403.4
17.5°	1328.1
20°	1239.8
22.5°	1129.7
25°	990.7
27.5°	827.0
30°	641.6
32.5°	451.9
35°	296.9
37.5°	194.1
40°	124.6
42.5°	78.2
45°	42.0
47.5°	24.6
50°	15.9
52.5°	10.1
55°	5.8
57.5°	2.9
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)