

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: P601317

Luminaire Tested: **ML410LSWFL9FS1E - TIR4D55WFL - TL43R2G_ TL44S2G_ 4000K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P601317
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML410LSWFL9FS1E - TIR4D55WFL - TL43R2G_ TL44S2G_ 4000K
 Description: RETROFIT, 55D OPTIC, DIFFUSE CLEAR LENS TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 4000K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1155.7 lumens
 Efficiency: N/A
 Efficacy: 96.3 lumens/watt
 Spacing Criteria (0/90/45): 0.9 / 0.9 / 0.83
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

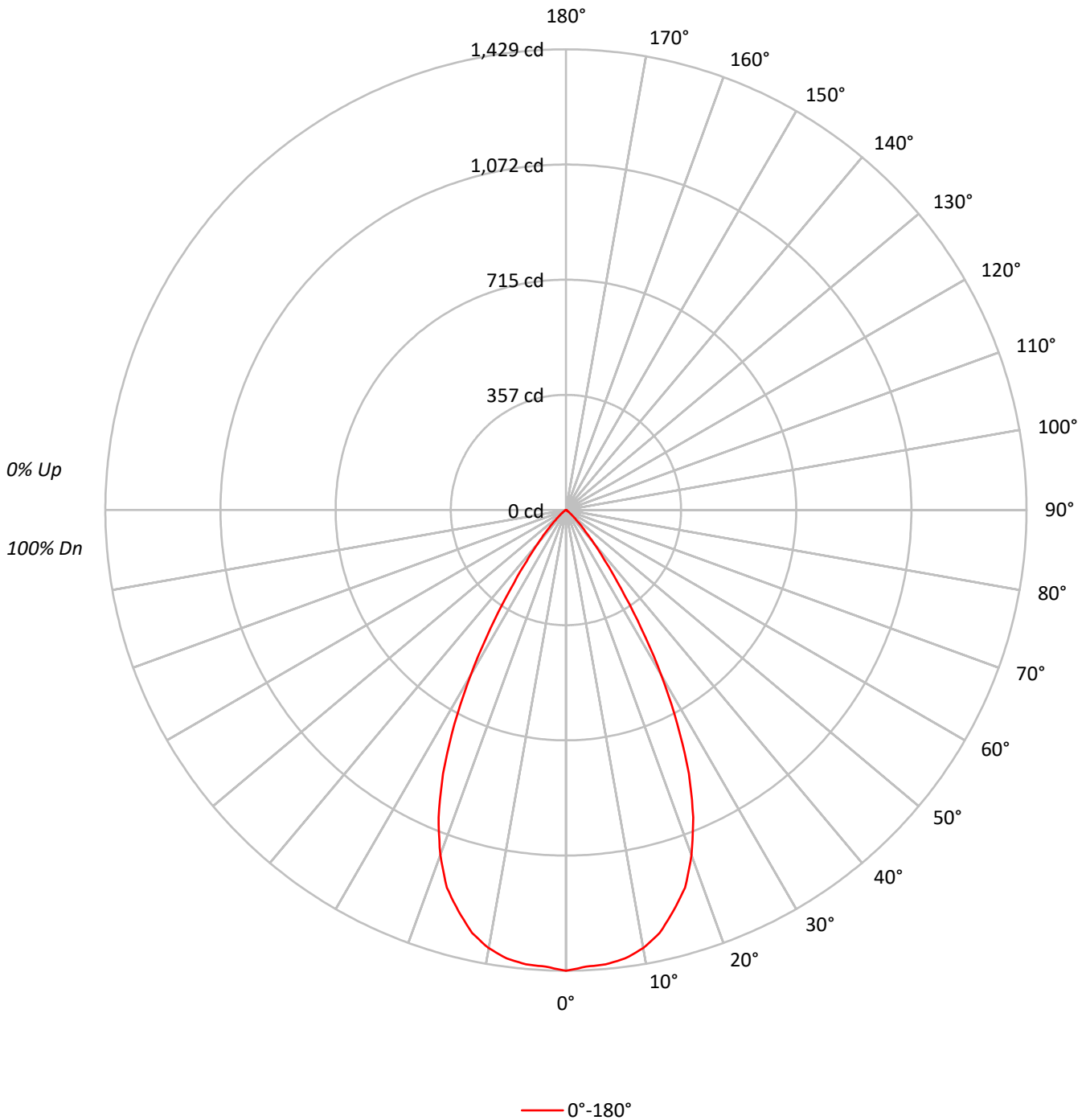
Input Watts (W): 12
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



Meas			
Instrument	Identificatio		Calibration Due Date
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	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94	94	94	94
2	108	104	100	97	106	102	99	96	99	96	93	96	94	91	93	91	90	88	88	88	88
3	103	97	92	89	101	96	91	88	93	89	86	91	88	85	89	86	84	82	82	82	82
4	98	91	86	82	97	90	85	81	88	84	80	86	82	79	84	81	79	77	77	77	77
5	94	86	80	76	92	85	80	76	83	78	75	81	77	74	80	76	74	72	72	72	72
6	89	81	75	71	88	80	75	71	78	74	70	77	73	70	76	72	69	68	68	68	68
7	85	76	70	66	84	76	70	66	74	69	66	73	69	66	72	68	65	64	64	64	64
8	81	72	66	62	80	71	66	62	70	65	62	69	65	62	68	64	61	60	60	60	60
9	77	68	63	59	76	68	62	59	67	62	58	66	61	58	65	61	58	57	57	57	57
10	74	65	59	55	73	64	59	55	64	59	55	63	58	55	62	58	55	54	54	54	54

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	451260
5°	448419
10°	442510
15°	420955
20°	382739
25°	314334
30°	215268
35°	114641
40°	55359
45°	25141
50°	11348
55°	5560
60°	2716
65°	1046
70°	1293
75°	1708
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.0	11.6
10°-20°	359.4	31.1
20°-30°	403.1	34.9
30°-40°	197.7	17.1
40°-50°	48.7	4.2
50°-60°	9.7	0.8
60°-70°	2.1	0.2
70°-80°	0.9	0.1
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°	896.5	77.6
0°-40°	1094.2	94.7
0°-60°	1152.6	99.7
0°-90°	1155.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1155.7	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1429	
5°	1415	134
15°	1288	359
25°	902	403
35°	297	198
45°	56	49
55°	10	10
65°	1	2
75°	1	1
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

	0°
0°	1429.1
2.5°	1417.6
5°	1414.7
7.5°	1403.2
10°	1380.1
12.5°	1344.0
15°	1287.7
17.5°	1228.5
20°	1139.0
22.5°	1032.2
25°	902.2
27.5°	749.2
30°	590.4
32.5°	434.5
35°	297.4
37.5°	200.7
40°	134.3
42.5°	88.1
45°	56.3
47.5°	34.6
50°	23.1
52.5°	14.4
55°	10.1
57.5°	5.8
60°	4.3
62.5°	2.9
65°	1.4
67.5°	1.4
70°	1.4
72.5°	1.4
75°	1.4
77.5°	0.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

(END OF REPORT)