

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: P601301

Luminaire Tested: **ML410LSNFL9FS1E - TIR4D25NFL - 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: P601301
 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_ 3500K
 Description: RETROFIT, 25D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 3500K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1222.3 lumens
 Efficiency: N/A
 Efficacy: 101.9 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

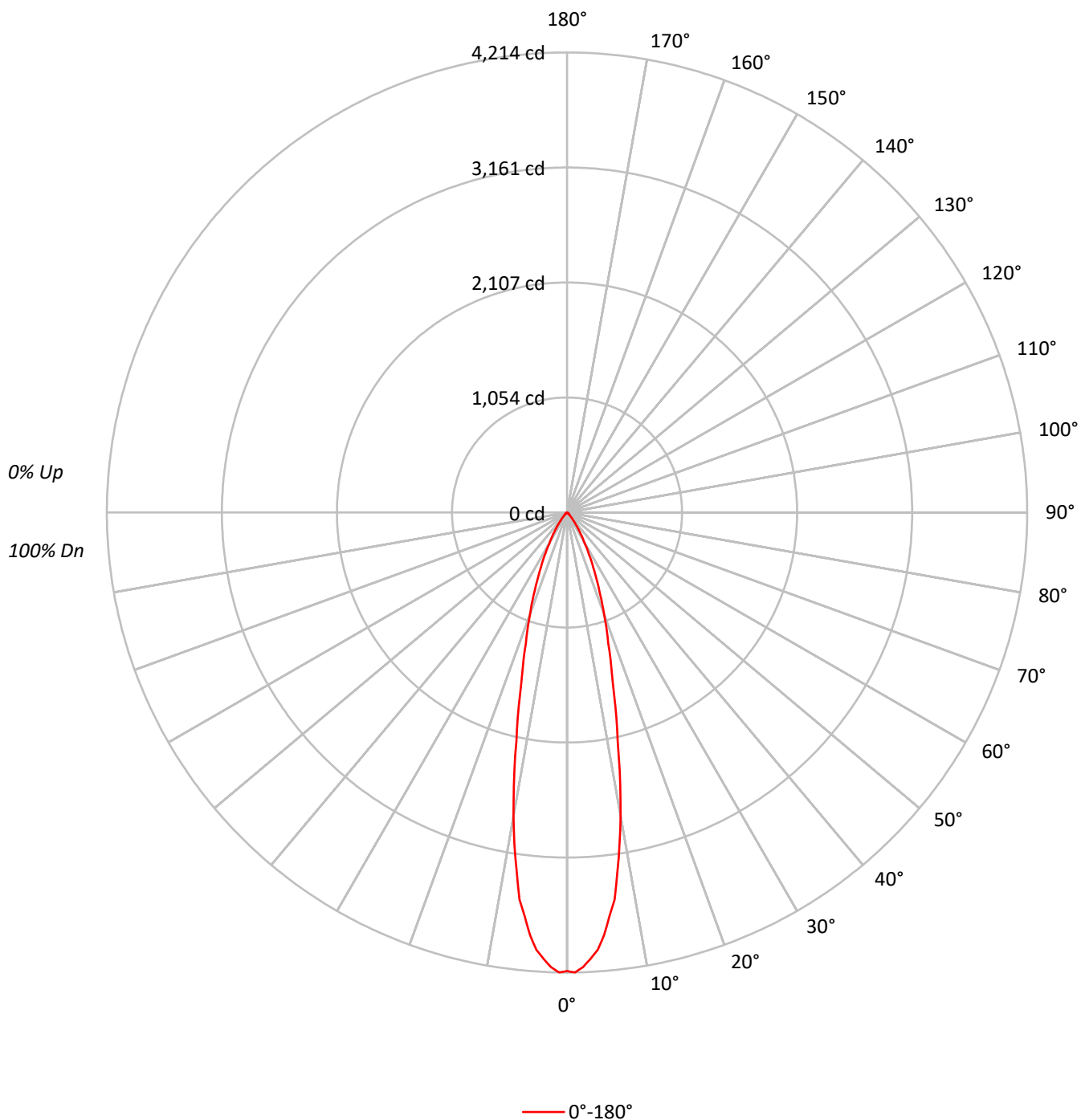
Input Watts (W): 12
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



Meas			
Instrument	Identificatio		Calibration Due Date
Photometer	GONIO 1 IN0197	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	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	83	81	80
6	95	88	83	80	94	87	83	80	86	82	79		85	81	78		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°	1326024
5°	1231973
10°	905734
15°	528310
20°	333342
25°	205247
30°	117223
35°	63373
40°	29967
45°	14960
50°	8597
55°	4019
60°	1831
65°	1121
70°	1385
75°	0
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	336.7	27.5
10°-20°	464.5	38.0
20°-30°	275.2	22.5
30°-40°	107.6	8.8
40°-50°	28.7	2.4
50°-60°	7.4	0.6
60°-70°	2.0	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°	1076.4	88.1
0°-40°	1184.0	96.9
0°-60°	1220.2	99.8
0°-90°	1222.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1222.3	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	4199	
5°	3887	337
15°	1616	464
25°	589	275
35°	164	108
45°	34	29
55°	7	7
65°	2	2
75°	0	0
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

0°	
0°	4199.4
1°	4214.0
2°	4167.4
3°	4094.7
4°	4017.6
5°	3886.7
6°	3716.5
7°	3572.5
8°	3319.4
9°	3075.0
10°	2824.8
12.5°	2145.5
15°	1616.1
17.5°	1253.9
20°	992.0
22.5°	769.5
25°	589.1
27.5°	440.7
30°	321.5
32.5°	234.2
35°	164.4
37.5°	109.1
40°	72.7
42.5°	48.0
45°	33.5
47.5°	24.7
50°	17.5
52.5°	11.6
55°	7.3
57.5°	4.4
60°	2.9
62.5°	2.9
65°	1.5
67.5°	1.5
70°	1.5
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)