

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: P601190

Luminaire Tested: **ML406FL9FS1E - TIR4D40FL - 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: P601190
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML406FL9FS1E - TIR4D40FL - TL41R_ TL42S_ 4000K
 Description: RETROFIT, 40D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 90CRI / 4000K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 882.2 lumens
 Efficiency: N/A
 Efficacy: 106.3 lumens/watt
 Spacing Criteria (0/90/45): 0.67 / 0.67 / 0.63
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

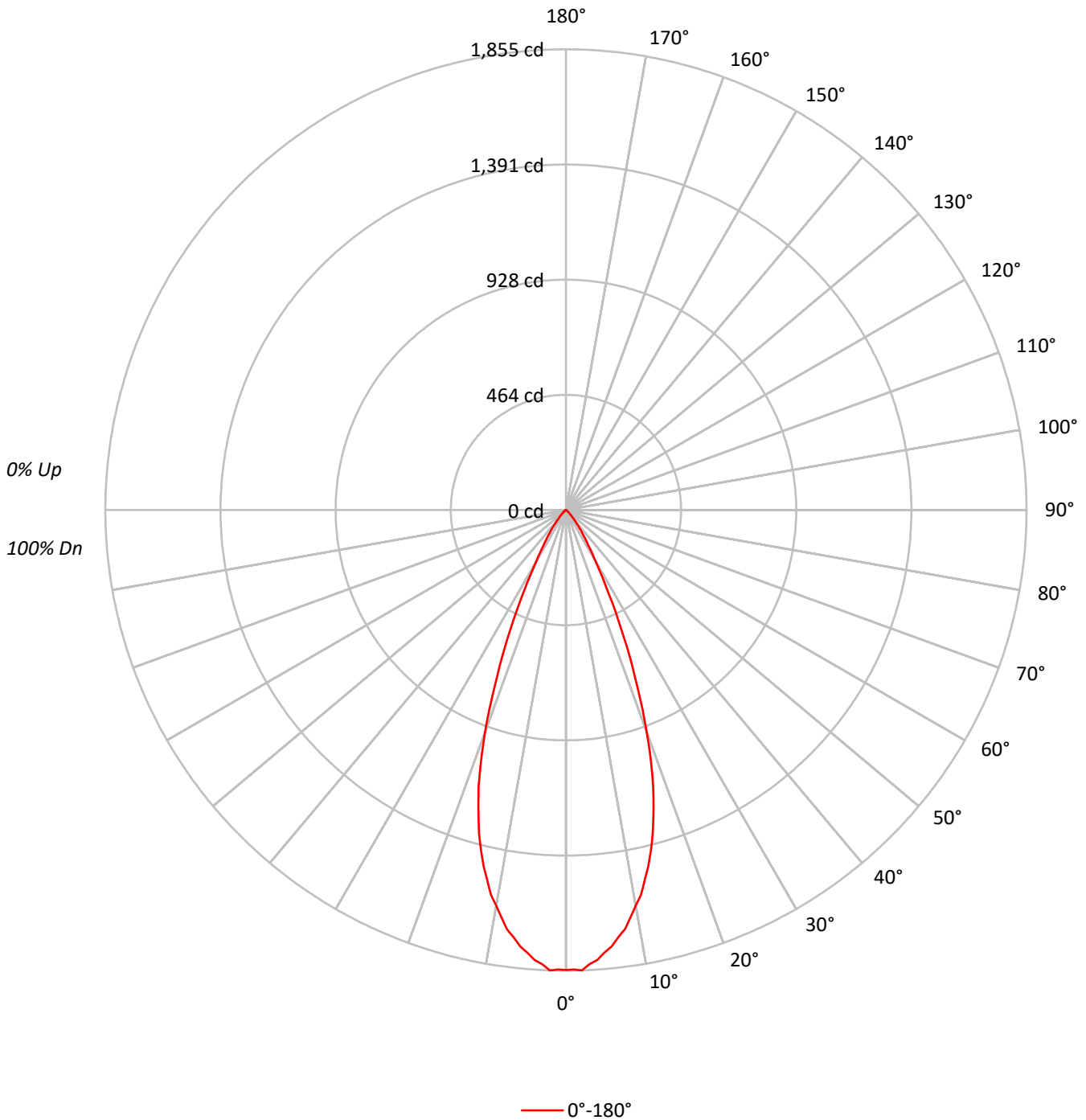
Input Watts (W): 8.3
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90
3	105	100	96	92	103	98	95	91	96	93	90	94	91	89	91	89	87	86
4	101	95	90	86	99	94	89	86	92	88	85	90	87	84	88	85	83	82
5	97	90	85	81	96	89	85	81	87	83	80	86	82	80	84	81	79	78
6	93	86	81	77	92	85	80	77	84	79	76	82	79	76	81	78	75	74
7	90	82	77	73	89	81	77	73	80	76	73	79	75	72	78	75	72	71
8	86	78	73	70	85	78	73	70	77	73	69	76	72	69	75	72	69	68
9	83	75	70	67	82	75	70	67	74	69	66	73	69	66	72	69	66	65
10	80	72	67	64	79	72	67	64	71	67	64	70	66	63	70	66	63	62

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	584766
5°	566872
10°	518822
15°	441517
20°	320203
25°	182392
30°	86778
35°	45255
40°	22671
45°	10851
50°	6239
55°	2918
60°	695
65°	822
70°	0
75°	0
80°	0
85°	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	165.6	18.8
10°-20°	366.5	41.5
20°-30°	244.5	27.7
30°-40°	78.3	8.9
40°-50°	21.3	2.4
50°-60°	5.3	0.6
60°-70°	0.7	0.1
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°	776.6	88.0
0°-40°	854.9	96.9
0°-60°	881.5	99.9
0°-90°	882.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	882.2	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1852	
5°	1788	166
15°	1351	367
25°	524	245
35°	117	78
45°	24	21
55°	5	5
65°	1	1
75°	0	0
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

0°	
0°	1851.9
1°	1850.8
2°	1855.0
3°	1830.7
4°	1815.9
5°	1788.4
6°	1766.2
7°	1732.4
8°	1704.9
9°	1660.4
10°	1618.1
11°	1580.1
12°	1524.0
13°	1472.2
14°	1414.0
15°	1350.6
17.5°	1169.7
20°	952.9
22.5°	723.4
25°	523.5
27.5°	355.4
30°	238.0
32.5°	165.0
35°	117.4
37.5°	83.6
40°	55.0
42.5°	36.0
45°	24.3
47.5°	18.0
50°	12.7
52.5°	8.5
55°	5.3
57.5°	3.2
60°	1.1
62.5°	1.1
65°	1.1
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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269


NVLAP Lab Code: 200050-0



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CANDELA DISTRIBUTION (continued):

90° | $\frac{0^\circ}{0.0}$

(END OF REPORT)