

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P517852

Luminaire Tested: HVL8-1-LD4-3STD-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517852
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-30-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2622.0 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

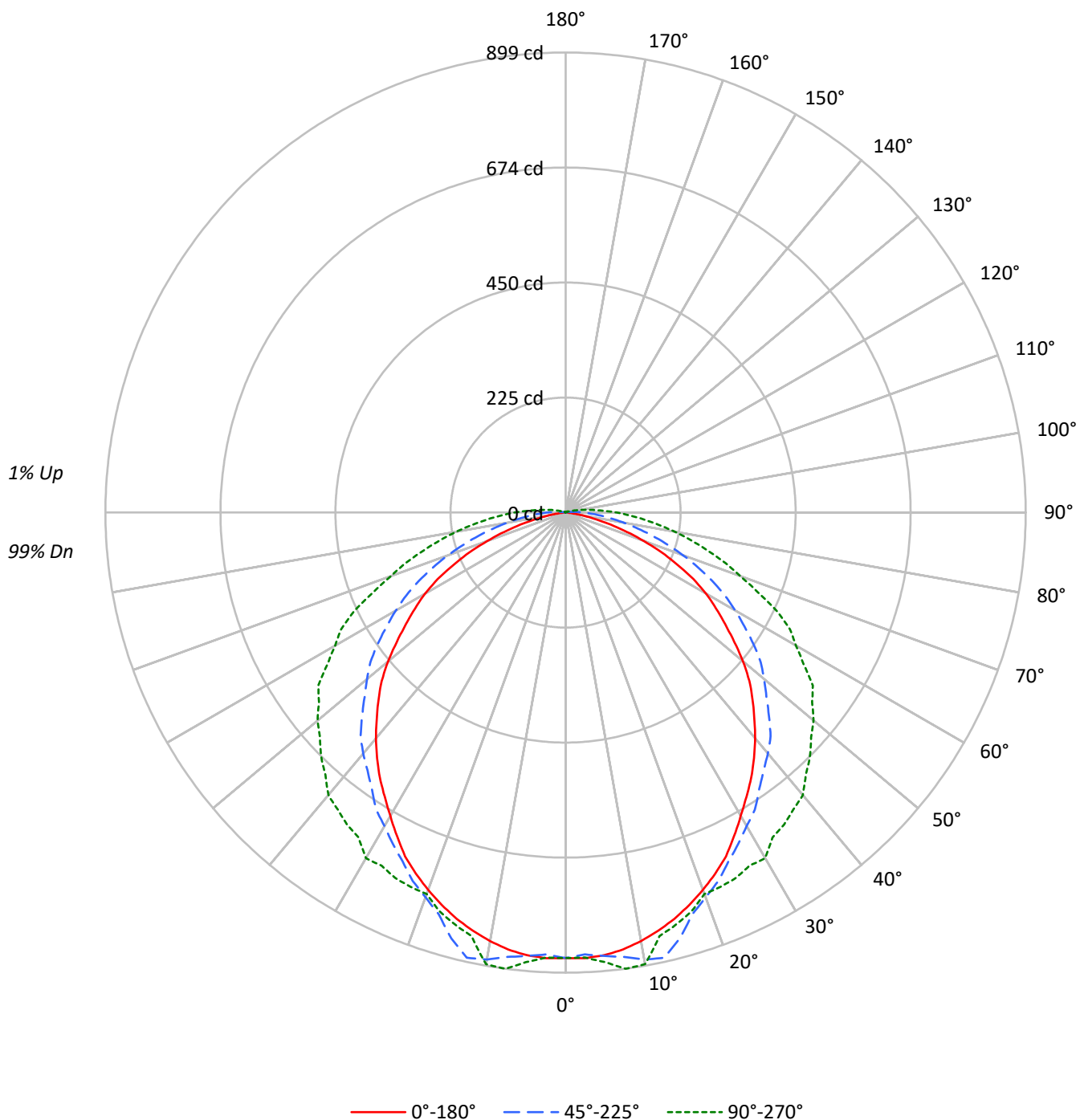
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14053	14053	14053
5°	13869	13738	13984
10°	13539	13822	14071
15°	13149	13350	13061
20°	12708	12414	12490
25°	12254	11788	12568
30°	11643	11271	12706
35°	11162	10779	12481
40°	10654	10387	12559
45°	10114	9910	12333
50°	9489	9410	12238
55°	8656	8880	12232
60°	7953	8190	11710
65°	6780	7393	11335
70°	5271	6396	10166
75°	3503	5232	9281
80°	1754	4073	8332
85°	523	2909	7337

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12333 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.7	3.2
10°-20°	238.2	9.1
20°-30°	354.4	13.5
30°-40°	426.0	16.2
40°-50°	448.4	17.1
50°-60°	416.1	15.9
60°-70°	329.0	12.5
70°-80°	201.0	7.7
80°-90°	87.6	3.3
90°-100°	27.3	1.0
100°-110°	6.1	0.2
110°-120°	2.5	0.1
120°-130°	1.4	0.1
130°-140°	0.4	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°	676.3	25.8
0°-40°	1102.4	42.0
0°-60°	1966.9	75.0
0°-90°	2584.4	98.6
90°-120°	35.9	1.4
90°-150°	37.6	1.4
90°-180°	38.0	1.4
0°-180°	2622.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	870	870	870	870	870	
5°	868	866	870	879	882	82
15°	822	853	862	833	834	231
25°	741	789	753	775	788	340
35°	632	650	660	720	744	395
45°	517	519	562	651	675	398
55°	381	387	448	546	590	342
65°	241	249	316	418	456	239
75°	91	121	176	271	288	99
85°	8	28	69	133	153	13
90°	0	8	36	84	100	0
95°	0	2	16	46	57	0
105°	0	1	3	9	13	0
115°	0	1	2	4	4	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	870.4	870.4	870.4	870.4	870.4
2.5°	871.4	869.1	864.3	868.9	870.2
5°	868.2	866.5	869.5	879.2	881.7
7.5°	861.0	867.7	875.7	893.4	899.1
10°	850.1	862.9	886.9	901.9	896.1
12.5°	837.0	858.7	890.8	861.3	847.7
15°	821.8	853.3	861.7	833.1	833.7
17.5°	803.9	848.9	823.2	822.5	817.3
20°	784.5	834.0	800.0	798.6	793.1
22.5°	763.8	814.3	779.4	776.6	791.5
25°	741.3	788.6	752.6	775.2	787.7
27.5°	713.1	754.9	730.3	762.2	778.0
30°	684.6	720.2	707.4	751.9	779.9
32.5°	657.8	683.8	688.6	748.0	752.6
35°	632.4	650.0	659.7	719.7	744.1
37.5°	604.6	609.4	635.3	707.8	731.4
40°	576.2	573.2	614.7	688.3	720.9
42.5°	545.7	544.7	592.9	678.5	694.8
45°	516.8	519.1	561.9	650.9	675.2
47.5°	487.2	490.2	532.4	620.5	650.7
50°	452.8	456.7	506.2	593.6	632.4
52.5°	415.6	423.0	480.7	568.1	607.2
55°	380.7	386.9	448.2	546.3	589.7
57.5°	348.7	352.5	414.7	518.8	551.6
60°	317.4	318.3	383.1	488.3	519.7
62.5°	281.4	283.0	350.7	452.3	494.3
65°	240.9	248.6	315.8	417.9	455.8
67.5°	203.2	216.5	280.1	386.3	406.2
70°	162.8	185.3	245.2	349.3	363.3
72.5°	125.7	152.1	209.4	307.8	327.5
75°	91.1	120.7	176.1	270.6	287.6
77.5°	61.3	91.5	144.9	229.4	251.9
80°	36.7	66.8	117.0	191.3	216.7
82.5°	18.8	44.9	90.8	160.5	183.1
85°	8.2	28.4	68.6	133.2	152.8
87.5°	2.3	16.1	50.5	107.6	124.3
90°	0.2	8.5	36.0	84.4	99.5
92.5°	0.2	4.1	25.4	63.8	75.4
95°	0.2	2.1	15.8	46.3	56.6
97.5°	0.2	1.2	9.6	32.8	41.5
100°	0.2	1.1	5.7	21.8	29.6
102.5°	0.2	1.2	3.9	13.8	19.3
105°	0.2	1.2	3.2	9.0	12.8
107.5°	0.4	1.2	2.8	6.7	8.9
110°	0.2	1.1	3.0	5.1	6.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.9	2.8	4.3	5.1
115°	0.2	0.7	2.5	4.1	4.3
117.5°	0.4	0.5	2.0	4.1	4.3
120°	0.4	0.4	1.6	3.9	4.4
122.5°	0.4	0.4	1.2	3.5	4.3
125°	0.2	0.4	1.1	2.7	3.7
127.5°	0.4	0.4	0.9	2.1	2.8
130°	0.4	0.4	0.7	1.6	2.1
132.5°	0.4	0.4	0.5	1.2	1.6
135°	0.4	0.4	0.4	0.9	1.2
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)