

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: P517691

Luminaire Tested: HVL12-8-LD4-3LO-30-UNV-C-EDD-90

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: P517691
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3LO-30-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17000.0 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

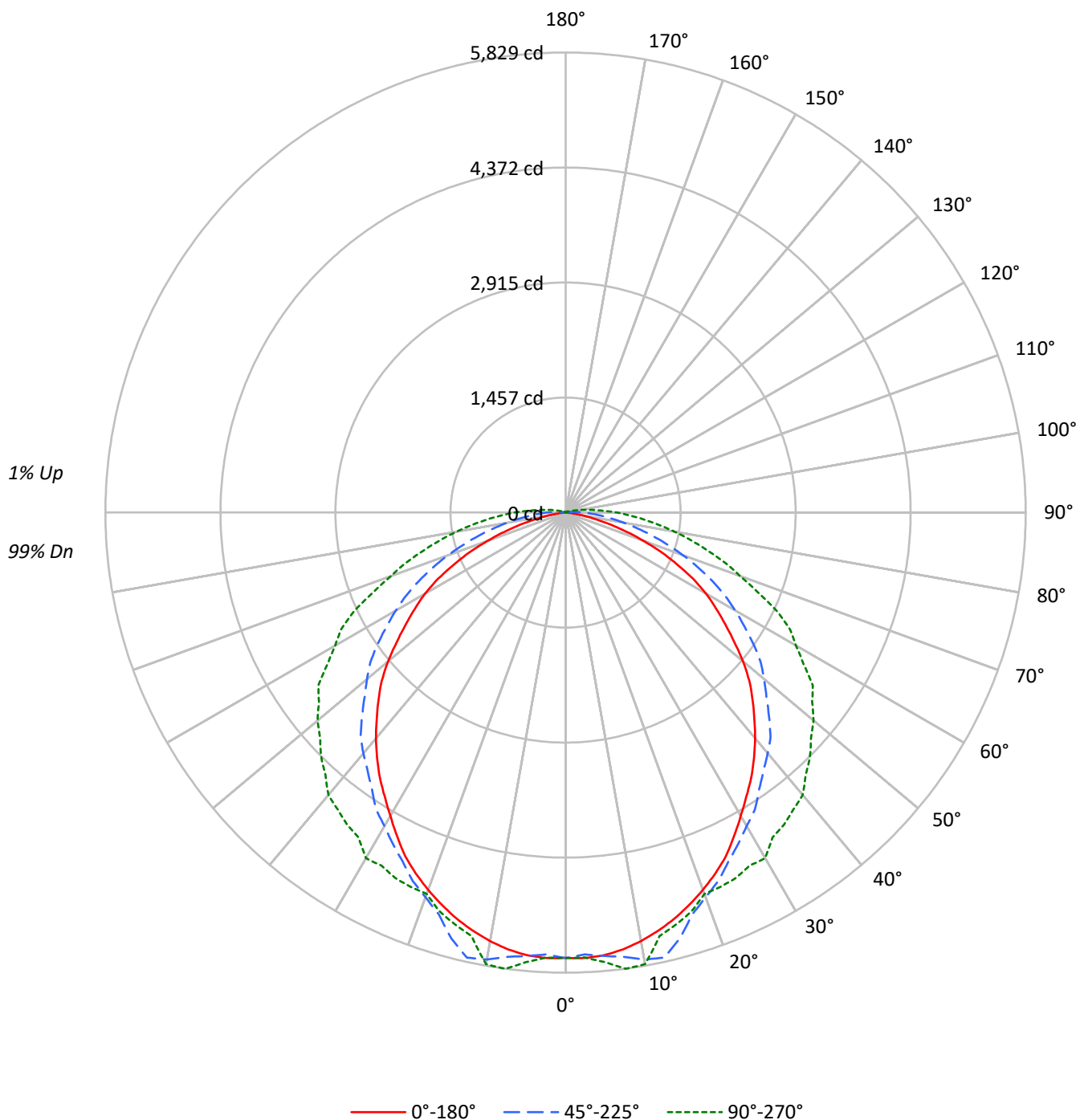
Input Watts (W): 138.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7593	7593	7593
5°	7589	7527	7610
10°	7503	7676	7711
15°	7381	7515	7207
20°	7229	7085	6941
25°	7067	6823	7035
30°	6814	6619	7167
35°	6638	6429	7096
40°	6449	6299	7202
45°	6246	6120	7139
50°	5997	5932	7160
55°	5622	5731	7244
60°	5344	5436	7035
65°	4761	5075	6931
70°	3927	4584	6355
75°	2850	3970	5975
80°	1649	3355	5595
85°	660	2730	5265

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7244 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	542.4	3.2
10°-20°	1544.5	9.1
20°-30°	2298.1	13.5
30°-40°	2762.3	16.2
40°-50°	2907.5	17.1
50°-60°	2697.8	15.9
60°-70°	2133.1	12.5
70°-80°	1303.0	7.7
80°-90°	567.7	3.3
90°-100°	176.7	1.0
100°-110°	39.7	0.2
110°-120°	15.9	0.1
120°-130°	9.0	0.1
130°-140°	2.4	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°	4385.0	25.8
0°-40°	7147.2	42.0
0°-60°	12752.5	75.0
0°-90°	16756.2	98.6
90°-120°	232.4	1.4
90°-150°	243.7	1.4
90°-180°	244.0	1.4
0°-180°	17000.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5643	5643	5643	5643	5643	
5°	5629	5618	5637	5701	5717	534
15°	5328	5533	5587	5402	5405	1501
25°	4806	5113	4880	5026	5107	2206
35°	4100	4214	4277	4666	4825	2563
45°	3351	3366	3643	4220	4377	2583
55°	2468	2508	2906	3542	3823	2218
65°	1562	1612	2047	2710	2956	1547
75°	591	783	1142	1754	1864	645
85°	53	184	445	863	991	82
90°	1	55	233	547	645	2
95°	1	14	102	300	367	1
105°	1	8	21	59	83	1
115°	1	5	16	26	28	2
125°	1	2	7	17	24	2
135°	2	2	2	6	8	1
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°	5643.1	5643.1	5643.1	5643.1	5643.1
2.5°	5650.0	5635.0	5604.0	5633.9	5641.9
5°	5629.3	5617.8	5637.3	5700.6	5716.6
7.5°	5582.1	5625.8	5677.6	5792.5	5829.3
10°	5512.0	5594.8	5750.0	5847.7	5809.8
12.5°	5427.0	5567.2	5775.3	5584.4	5495.9
15°	5328.1	5532.7	5586.7	5401.7	5405.1
17.5°	5212.0	5504.0	5337.3	5332.7	5299.4
20°	5086.7	5407.4	5186.7	5177.5	5141.9
22.5°	4952.2	5279.8	5053.4	5035.0	5131.5
25°	4806.2	5113.1	4879.8	5025.8	5107.4
27.5°	4623.4	4894.7	4734.9	4941.9	5044.2
30°	4438.4	4669.4	4586.7	4875.2	5056.8
32.5°	4264.8	4433.8	4464.8	4849.9	4879.8
35°	4100.4	4214.2	4277.4	4666.0	4824.6
37.5°	3919.9	3951.0	4118.8	4589.0	4741.8
40°	3736.0	3716.5	3985.4	4462.5	4674.0
42.5°	3538.3	3531.4	3844.1	4399.3	4505.0
45°	3350.9	3365.8	3642.9	4219.9	4377.4
47.5°	3158.9	3178.5	3452.1	4023.4	4218.8
50°	2935.9	2961.2	3281.9	3848.6	4100.4
52.5°	2694.5	2742.8	3116.4	3683.1	3937.2
55°	2468.1	2508.3	2906.0	3541.7	3823.4
57.5°	2261.1	2285.3	2688.8	3363.5	3576.2
60°	2057.7	2063.4	2484.1	3165.8	3369.3
62.5°	1824.3	1834.7	2273.8	2932.5	3204.9
65°	1562.2	1611.7	2047.3	2709.5	2955.5
67.5°	1317.4	1403.6	1816.3	2504.8	2633.6
70°	1055.3	1201.3	1589.8	2264.6	2355.4
72.5°	815.0	986.3	1357.6	1995.6	2123.2
75°	590.9	782.8	1141.5	1754.2	1864.5
77.5°	397.7	593.2	939.2	1487.5	1633.5
80°	238.0	433.4	758.7	1240.4	1404.7
82.5°	121.9	290.8	588.6	1040.3	1187.5
85°	52.9	183.9	444.9	863.3	990.9
87.5°	14.9	104.6	327.6	697.8	805.8
90°	1.1	55.2	233.4	547.2	644.9
92.5°	1.1	26.4	164.4	413.8	488.6
95°	1.1	13.8	102.3	300.0	366.7
97.5°	1.1	8.0	62.1	212.7	269.0
100°	1.1	6.9	36.8	141.4	192.0
102.5°	1.1	8.0	25.3	89.7	125.3
105°	1.1	8.0	20.7	58.6	82.8
107.5°	2.3	8.0	18.4	43.7	57.5
110°	1.1	6.9	19.5	33.3	44.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.3	5.7	18.4	27.6	33.3
115°	1.1	4.6	16.1	26.4	27.6
117.5°	2.3	3.4	12.6	26.4	27.6
120°	2.3	2.3	10.3	25.3	28.7
122.5°	2.3	2.3	8.0	23.0	27.6
125°	1.1	2.3	6.9	17.2	24.1
127.5°	2.3	2.3	5.7	13.8	18.4
130°	2.3	2.3	4.6	10.3	13.8
132.5°	2.3	2.3	3.4	8.0	10.3
135°	2.3	2.3	2.3	5.7	8.0
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)