

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: P517695

Luminaire Tested: HVL12-8-LD4-3LO-35-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: P517695
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3LO-35-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17843.0 lumens
Efficiency: N/A
Efficacy: 128.9 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

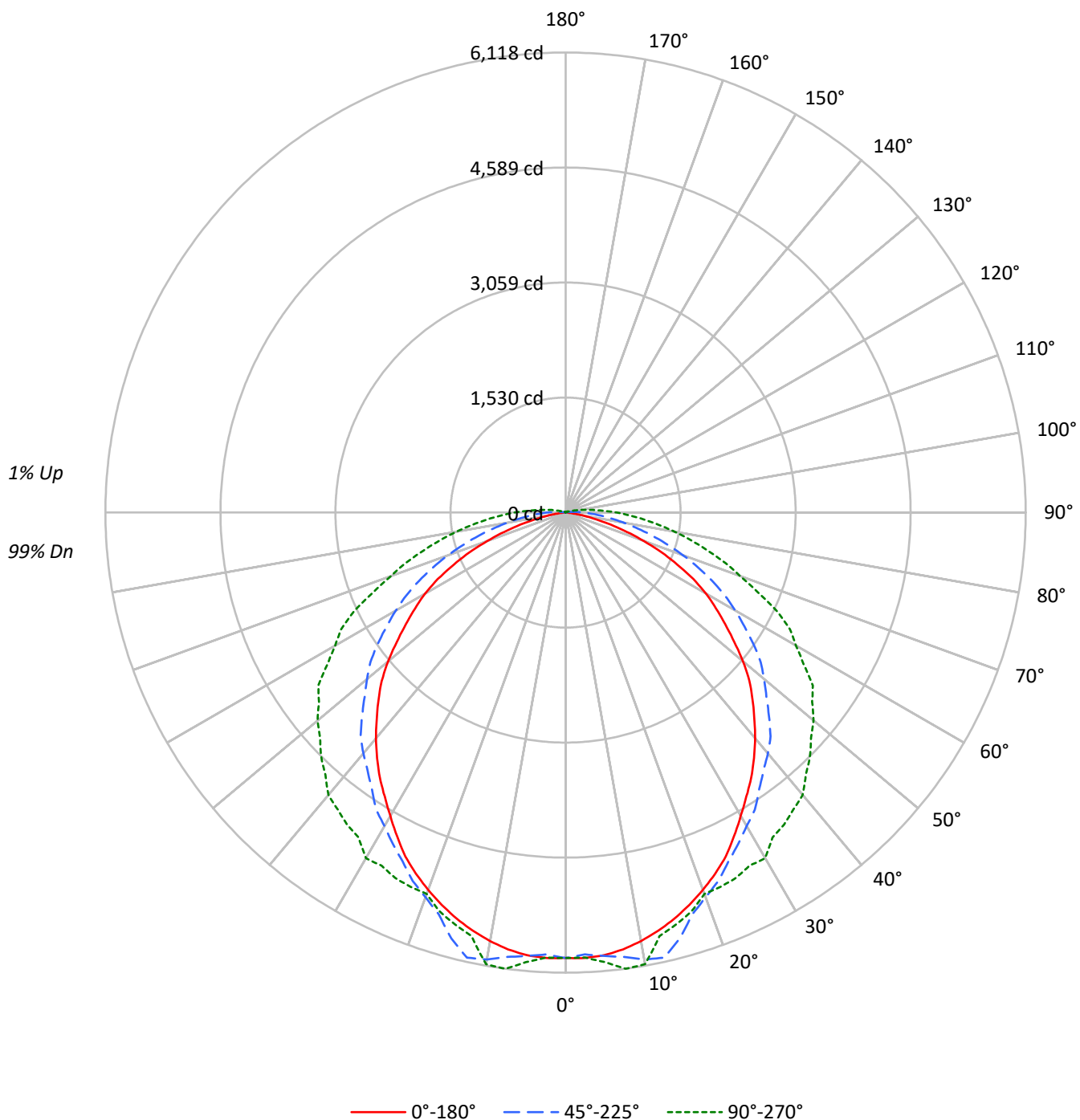
Input Watts (W): 138.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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					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°	7969	7969	7969
5°	7966	7900	7987
10°	7875	8057	8093
15°	7747	7888	7565
20°	7587	7436	7285
25°	7417	7161	7384
30°	7152	6947	7522
35°	6967	6748	7448
40°	6769	6612	7559
45°	6556	6424	7493
50°	6294	6226	7515
55°	5901	6016	7603
60°	5609	5706	7384
65°	4997	5326	7275
70°	4121	4811	6670
75°	2992	4166	6272
80°	1731	3522	5872
85°	692	2865	5526

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7603 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	569.3	3.2
10°-20°	1621.1	9.1
20°-30°	2412.0	13.5
30°-40°	2899.3	16.2
40°-50°	3051.6	17.1
50°-60°	2831.6	15.9
60°-70°	2238.9	12.5
70°-80°	1367.6	7.7
80°-90°	595.8	3.3
90°-100°	185.5	1.0
100°-110°	41.6	0.2
110°-120°	16.8	0.1
120°-130°	9.4	0.1
130°-140°	2.5	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°	4602.4	25.8
0°-40°	7501.6	42.0
0°-60°	13384.9	75.0
0°-90°	17587.1	98.6
90°-120°	243.9	1.4
90°-150°	255.8	1.4
90°-180°	256.0	1.4
0°-180°	17843.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5923	5923	5923	5923	5923	
5°	5908	5896	5917	5983	6000	560
15°	5592	5807	5864	5670	5673	1575
25°	5044	5367	5122	5275	5361	2316
35°	4304	4423	4490	4897	5064	2690
45°	3517	3533	3824	4429	4594	2711
55°	2590	2633	3050	3717	4013	2328
65°	1640	1692	2149	2844	3102	1624
75°	620	822	1198	1841	1957	677
85°	56	193	467	906	1040	86
90°	1	58	245	574	677	3
95°	1	14	107	315	385	1
105°	1	8	22	62	87	2
115°	1	5	17	28	29	2
125°	1	2	7	18	25	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°	5922.9	5922.9	5922.9	5922.9	5922.9
2.5°	5930.1	5914.5	5881.9	5913.3	5921.7
5°	5908.4	5896.4	5916.9	5983.2	6000.1
7.5°	5859.0	5904.8	5959.1	6079.8	6118.4
10°	5785.4	5872.2	6035.1	6137.7	6097.9
12.5°	5696.1	5843.3	6061.7	5861.4	5768.5
15°	5592.3	5807.1	5863.8	5669.5	5673.2
17.5°	5470.5	5776.9	5602.0	5597.1	5562.1
20°	5338.9	5675.6	5443.9	5434.3	5396.9
22.5°	5197.8	5541.6	5304.0	5284.6	5386.0
25°	5044.5	5366.7	5121.8	5275.0	5360.7
27.5°	4852.7	5137.4	4969.7	5186.9	5294.3
30°	4658.5	4901.0	4814.1	5116.9	5307.6
32.5°	4476.3	4653.6	4686.2	5090.4	5121.8
35°	4303.7	4423.2	4489.5	4897.3	5063.8
37.5°	4114.3	4146.9	4323.0	4816.5	4977.0
40°	3921.3	3900.7	4183.1	4683.8	4905.8
42.5°	3713.7	3706.5	4034.7	4617.4	4728.4
45°	3517.1	3532.7	3823.5	4429.2	4594.5
47.5°	3315.6	3336.1	3623.2	4222.9	4428.0
50°	3081.5	3108.0	3444.7	4039.5	4303.7
52.5°	2828.1	2878.8	3270.9	3865.8	4132.4
55°	2590.4	2632.7	3050.1	3717.4	4013.0
57.5°	2373.3	2398.6	2822.1	3530.3	3753.5
60°	2159.7	2165.7	2607.3	3322.8	3536.4
62.5°	1914.8	1925.6	2386.5	3077.9	3363.8
65°	1639.7	1691.6	2148.8	2843.8	3102.0
67.5°	1382.7	1473.2	1906.3	2629.1	2764.2
70°	1107.6	1260.8	1668.6	2376.9	2472.2
72.5°	855.4	1035.2	1424.9	2094.6	2228.5
75°	620.2	821.7	1198.1	1841.2	1957.0
77.5°	417.5	622.6	985.7	1561.3	1714.5
80°	249.8	454.9	796.3	1301.9	1474.4
82.5°	127.9	305.3	617.7	1091.9	1246.4
85°	55.5	193.0	466.9	906.1	1040.0
87.5°	15.7	109.8	343.9	732.4	845.8
90°	1.2	57.9	244.9	574.3	676.9
92.5°	1.2	27.8	172.5	434.4	512.8
95°	1.2	14.5	107.4	314.9	384.9
97.5°	1.2	8.4	65.2	223.2	282.3
100°	1.2	7.2	38.6	148.4	201.5
102.5°	1.2	8.4	26.5	94.1	131.5
105°	1.2	8.4	21.7	61.5	86.9
107.5°	2.4	8.4	19.3	45.8	60.3
110°	1.2	7.2	20.5	35.0	47.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.4	6.0	19.3	29.0	35.0
115°	1.2	4.8	16.9	27.8	29.0
117.5°	2.4	3.6	13.3	27.8	29.0
120°	2.4	2.4	10.9	26.5	30.2
122.5°	2.4	2.4	8.4	24.1	29.0
125°	1.2	2.4	7.2	18.1	25.3
127.5°	2.4	2.4	6.0	14.5	19.3
130°	2.4	2.4	4.8	10.9	14.5
132.5°	2.4	2.4	3.6	8.4	10.9
135°	2.4	2.4	2.4	6.0	8.4
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)