

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: P517679

Luminaire Tested: HVL12-8-LD4-3HI-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: P517679
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-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: 29578.0 lumens
Efficiency: N/A
Efficacy: 114.4 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

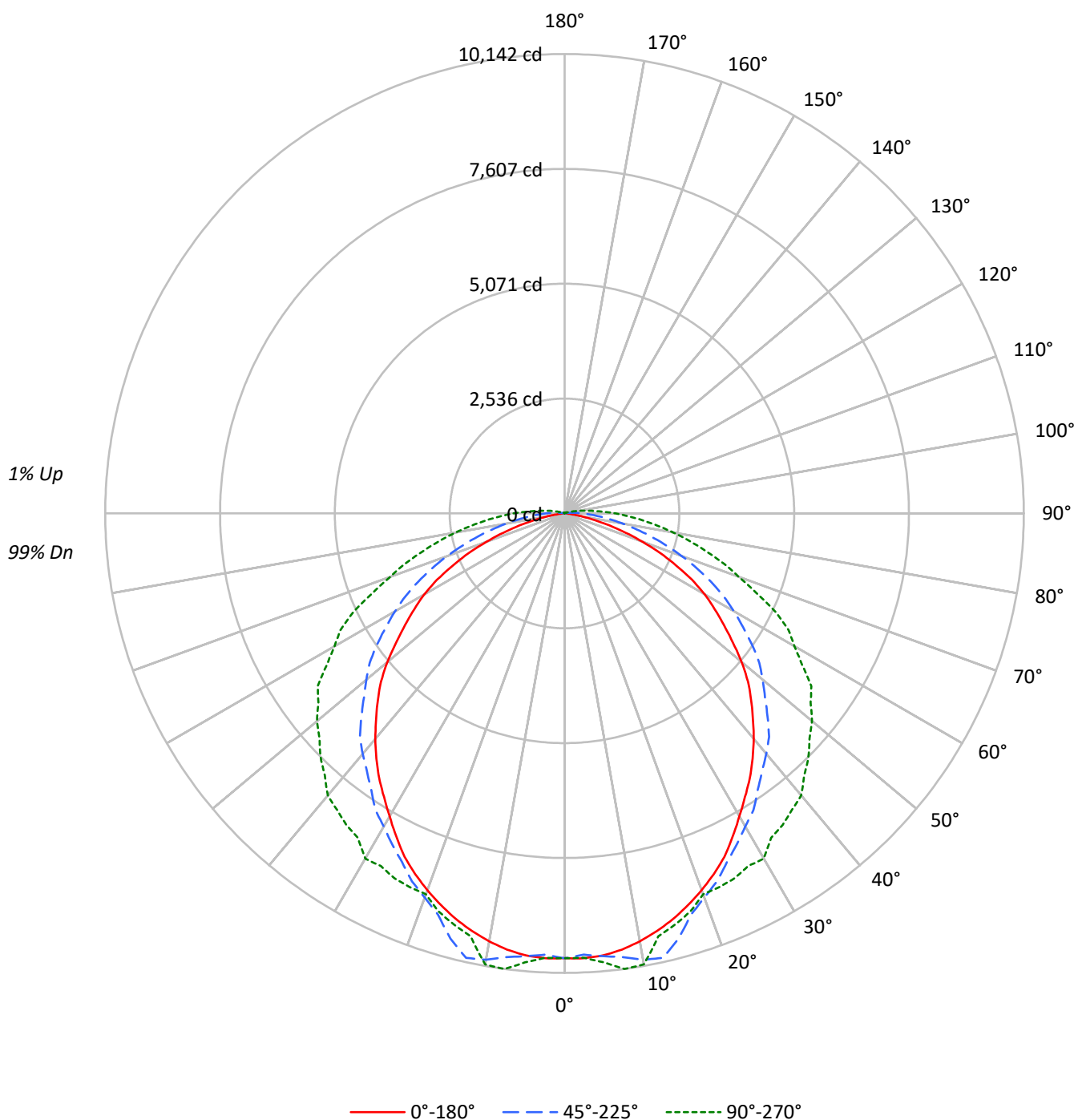
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13210	13210	13210
5°	13204	13095	13241
10°	13055	13356	13416
15°	12841	13075	12540
20°	12577	12326	12077
25°	12295	11870	12241
30°	11855	11517	12469
35°	11550	11185	12347
40°	11221	10960	12531
45°	10867	10648	12422
50°	10433	10321	12458
55°	9782	9972	12604
60°	9298	9458	12241
65°	8283	8830	12060
70°	6832	7976	11057
75°	4959	6907	10397
80°	2869	5838	9735
85°	1147	4750	9161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12604 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	943.6	3.2
10°-20°	2687.3	9.1
20°-30°	3998.4	13.5
30°-40°	4806.0	16.2
40°-50°	5058.6	17.1
50°-60°	4693.9	15.9
60°-70°	3711.3	12.5
70°-80°	2267.0	7.7
80°-90°	987.7	3.3
90°-100°	307.5	1.0
100°-110°	69.1	0.2
110°-120°	27.8	0.1
120°-130°	15.6	0.1
130°-140°	4.2	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°	7629.3	25.8
0°-40°	12435.3	42.0
0°-60°	22187.8	75.0
0°-90°	29153.8	98.6
90°-120°	404.3	1.4
90°-150°	424.2	1.4
90°-180°	424.0	1.4
0°-180°	29578.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	9818	9818	9818	9818	9818	
5°	9794	9774	9808	9918	9946	928
15°	9270	9626	9720	9398	9404	2611
25°	8362	8896	8490	8744	8886	3839
35°	7134	7332	7442	8118	8394	4459
45°	5830	5856	6338	7342	7616	4494
55°	4294	4364	5056	6162	6652	3858
65°	2718	2804	3562	4714	5142	2692
75°	1028	1362	1986	3052	3244	1122
85°	92	320	774	1502	1724	142
90°	2	96	406	952	1122	4
95°	2	24	178	522	638	2
105°	2	14	36	102	144	3
115°	2	8	28	46	48	3
125°	2	4	12	30	42	3
135°	4	4	4	10	14	2
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°	9818.3	9818.3	9818.3	9818.3	9818.3
2.5°	9830.3	9804.3	9750.3	9802.3	9816.3
5°	9794.3	9774.3	9808.3	9918.3	9946.3
7.5°	9712.3	9788.3	9878.3	10078.3	10142.3
10°	9590.3	9734.3	10004.3	10174.3	10108.3
12.5°	9442.3	9686.3	10048.3	9716.3	9562.3
15°	9270.3	9626.3	9720.3	9398.3	9404.3
17.5°	9068.3	9576.3	9286.3	9278.3	9220.3
20°	8850.3	9408.3	9024.3	9008.3	8946.3
22.5°	8616.3	9186.3	8792.3	8760.3	8928.3
25°	8362.2	8896.3	8490.2	8744.3	8886.3
27.5°	8044.2	8516.2	8238.2	8598.3	8776.3
30°	7722.2	8124.2	7980.2	8482.2	8798.3
32.5°	7420.2	7714.2	7768.2	8438.2	8490.2
35°	7134.2	7332.2	7442.2	8118.2	8394.2
37.5°	6820.2	6874.2	7166.2	7984.2	8250.2
40°	6500.2	6466.2	6934.2	7764.2	8132.2
42.5°	6156.2	6144.2	6688.2	7654.2	7838.2
45°	5830.2	5856.2	6338.2	7342.2	7616.2
47.5°	5496.2	5530.2	6006.2	7000.2	7340.2
50°	5108.1	5152.2	5710.2	6696.2	7134.2
52.5°	4688.1	4772.1	5422.2	6408.2	6850.2
55°	4294.1	4364.1	5056.1	6162.2	6652.2
57.5°	3934.1	3976.1	4678.1	5852.2	6222.2
60°	3580.1	3590.1	4322.1	5508.2	5862.2
62.5°	3174.1	3192.1	3956.1	5102.1	5576.2
65°	2718.1	2804.1	3562.1	4714.1	5142.2
67.5°	2292.1	2442.1	3160.1	4358.1	4582.1
70°	1836.1	2090.1	2766.1	3940.1	4098.1
72.5°	1418.0	1716.1	2362.1	3472.1	3694.1
75°	1028.0	1362.0	1986.1	3052.1	3244.1
77.5°	692.0	1032.0	1634.0	2588.1	2842.1
80°	414.0	754.0	1320.0	2158.1	2444.1
82.5°	212.0	506.0	1024.0	1810.1	2066.1
85°	92.0	320.0	774.0	1502.0	1724.1
87.5°	26.0	182.0	570.0	1214.0	1402.0
90°	2.0	96.0	406.0	952.0	1122.0
92.5°	2.0	46.0	286.0	720.0	850.0
95°	2.0	24.0	178.0	522.0	638.0
97.5°	2.0	14.0	108.0	370.0	468.0
100°	2.0	12.0	64.0	246.0	334.0
102.5°	2.0	14.0	44.0	156.0	218.0
105°	2.0	14.0	36.0	102.0	144.0
107.5°	4.0	14.0	32.0	76.0	100.0
110°	2.0	12.0	34.0	58.0	78.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.0	10.0	32.0	48.0	58.0
115°	2.0	8.0	28.0	46.0	48.0
117.5°	4.0	6.0	22.0	46.0	48.0
120°	4.0	4.0	18.0	44.0	50.0
122.5°	4.0	4.0	14.0	40.0	48.0
125°	2.0	4.0	12.0	30.0	42.0
127.5°	4.0	4.0	10.0	24.0	32.0
130°	4.0	4.0	8.0	18.0	24.0
132.5°	4.0	4.0	6.0	14.0	18.0
135°	4.0	4.0	4.0	10.0	14.0
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)