

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: P517699

Luminaire Tested: HVL12-8-LD4-3LO-40-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: P517699
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3LO-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18020.9 lumens
Efficiency: N/A
Efficacy: 130.2 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

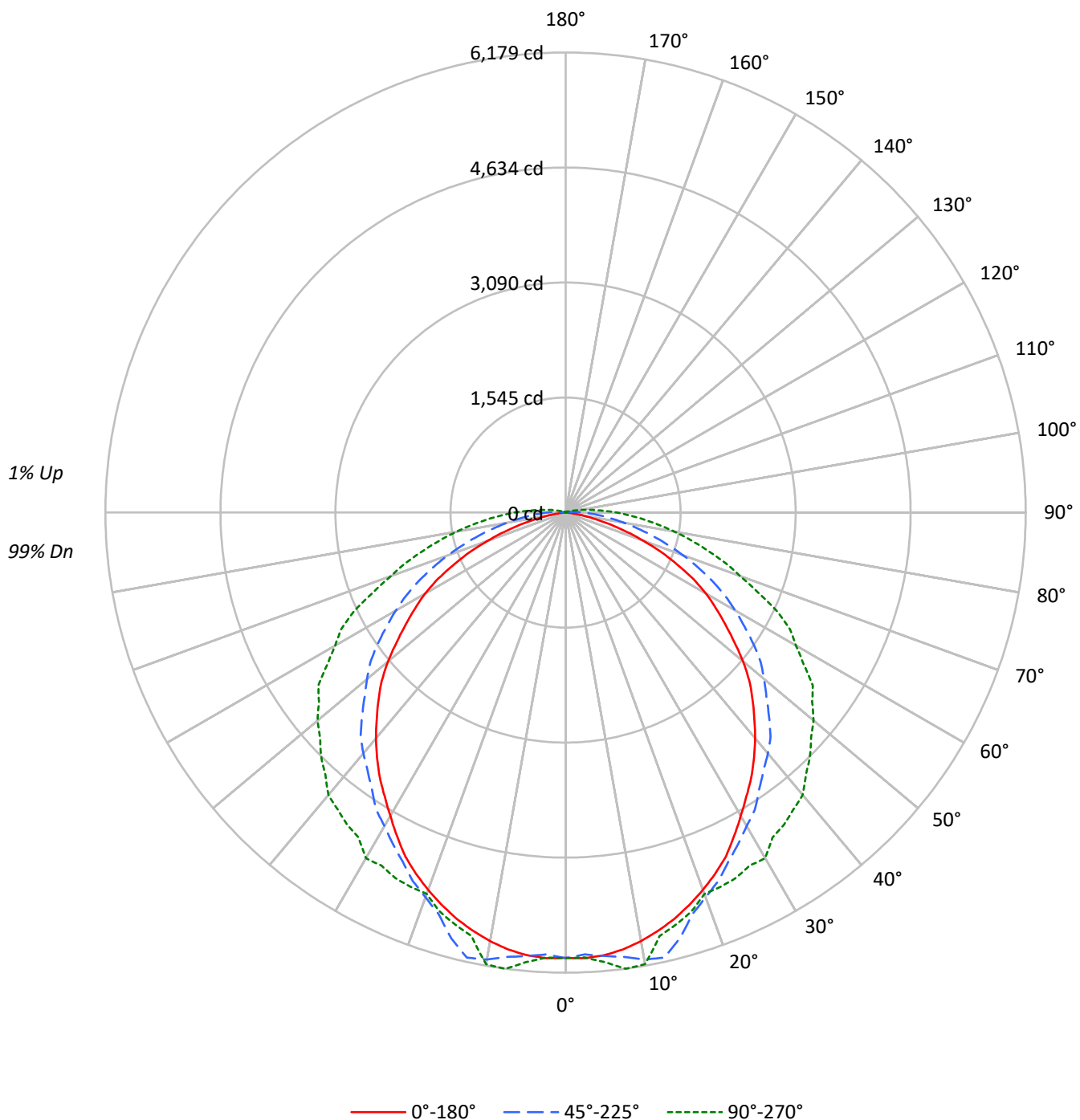
Input Watts (W): 138.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8049	8049	8049
5°	8045	7979	8067
10°	7954	8137	8174
15°	7824	7966	7640
20°	7663	7510	7358
25°	7491	7232	7458
30°	7223	7017	7597
35°	7037	6815	7523
40°	6837	6677	7635
45°	6621	6488	7568
50°	6357	6288	7591
55°	5960	6076	7679
60°	5665	5763	7458
65°	5047	5380	7348
70°	4163	4859	6737
75°	3021	4208	6334
80°	1748	3557	5931
85°	699	2894	5581

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7679 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	574.9	3.2
10°-20°	1637.3	9.1
20°-30°	2436.1	13.5
30°-40°	2928.2	16.2
40°-50°	3082.1	17.1
50°-60°	2859.8	15.9
60°-70°	2261.2	12.5
70°-80°	1381.2	7.7
80°-90°	601.8	3.3
90°-100°	187.3	1.0
100°-110°	42.1	0.2
110°-120°	16.9	0.1
120°-130°	9.5	0.1
130°-140°	2.6	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°	4648.3	25.8
0°-40°	7576.5	42.0
0°-60°	13518.4	75.0
0°-90°	17762.6	98.6
90°-120°	246.3	1.4
90°-150°	258.4	1.4
90°-180°	258.0	1.4
0°-180°	18020.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5982	5982	5982	5982	5982	
5°	5967	5955	5976	6043	6060	566
15°	5648	5865	5922	5726	5730	1591
25°	5095	5420	5173	5328	5414	2339
35°	4347	4467	4534	4946	5114	2717
45°	3552	3568	3862	4473	4640	2738
55°	2616	2659	3081	3754	4053	2351
65°	1656	1708	2170	2872	3133	1640
75°	626	830	1210	1860	1976	684
85°	56	195	472	915	1050	87
90°	1	58	247	580	684	3
95°	1	15	108	318	389	1
105°	1	8	22	62	88	2
115°	1	5	17	28	29	2
125°	1	2	7	18	26	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°	5982.0	5982.0	5982.0	5982.0	5982.0
2.5°	5989.3	5973.5	5940.6	5972.2	5980.8
5°	5967.4	5955.2	5975.9	6042.9	6060.0
7.5°	5917.4	5963.7	6018.5	6140.4	6179.4
10°	5843.1	5930.8	6095.3	6198.9	6158.7
12.5°	5752.9	5901.6	6122.1	5919.8	5826.0
15°	5648.1	5865.0	5922.3	5726.1	5729.7
17.5°	5525.0	5834.5	5657.9	5653.0	5617.6
20°	5392.2	5732.2	5498.2	5488.5	5450.7
22.5°	5249.6	5596.9	5356.9	5337.4	5439.7
25°	5094.9	5420.2	5172.9	5327.6	5414.1
27.5°	4901.1	5188.7	5019.3	5238.7	5347.1
30°	4704.9	4949.9	4862.1	5168.0	5360.5
32.5°	4520.9	4700.0	4733.0	5141.2	5172.9
35°	4346.7	4467.3	4534.3	4946.2	5114.4
37.5°	4155.3	4188.2	4366.2	4864.6	5026.6
40°	3960.4	3939.7	4224.8	4730.5	4954.7
42.5°	3750.8	3743.5	4074.9	4663.5	4775.6
45°	3552.2	3568.0	3861.7	4473.4	4640.3
47.5°	3348.6	3369.4	3659.4	4265.0	4472.2
50°	3112.2	3139.1	3479.0	4079.8	4346.7
52.5°	2856.3	2907.5	3303.6	3904.3	4173.6
55°	2616.3	2658.9	3080.6	3754.4	4053.0
57.5°	2396.9	2422.5	2850.3	3565.6	3791.0
60°	2181.3	2187.3	2633.3	3356.0	3571.6
62.5°	1933.9	1944.8	2410.3	3108.6	3397.4
65°	1656.0	1708.4	2170.3	2872.2	3133.0
67.5°	1396.5	1487.9	1925.4	2655.3	2791.8
70°	1118.7	1273.4	1685.3	2400.6	2496.9
72.5°	864.0	1045.5	1439.1	2115.4	2250.7
75°	626.3	829.9	1210.0	1859.5	1976.5
77.5°	421.6	628.8	995.6	1576.8	1731.6
80°	252.2	459.4	804.3	1314.8	1489.1
82.5°	129.2	308.3	623.9	1102.8	1258.8
85°	56.1	195.0	471.6	915.2	1050.4
87.5°	15.8	110.9	347.3	739.7	854.2
90°	1.2	58.5	247.4	580.0	683.6
92.5°	1.2	28.0	174.3	438.7	517.9
95°	1.2	14.6	108.5	318.0	388.7
97.5°	1.2	8.5	65.8	225.4	285.1
100°	1.2	7.3	39.0	149.9	203.5
102.5°	1.2	8.5	26.8	95.0	132.8
105°	1.2	8.5	21.9	62.1	87.7
107.5°	2.4	8.5	19.5	46.3	60.9
110°	1.2	7.3	20.7	35.3	47.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.4	6.1	19.5	29.2	35.3
115°	1.2	4.9	17.1	28.0	29.2
117.5°	2.4	3.7	13.4	28.0	29.2
120°	2.4	2.4	11.0	26.8	30.5
122.5°	2.4	2.4	8.5	24.4	29.2
125°	1.2	2.4	7.3	18.3	25.6
127.5°	2.4	2.4	6.1	14.6	19.5
130°	2.4	2.4	4.9	11.0	14.6
132.5°	2.4	2.4	3.7	8.5	11.0
135°	2.4	2.4	2.4	6.1	8.5
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)