

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: P517304

Luminaire Tested: HVL12-2-LD4-1HI-50-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: P517304
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1HI-50-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2536.0 lumens
Efficiency: N/A
Efficacy: 114.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

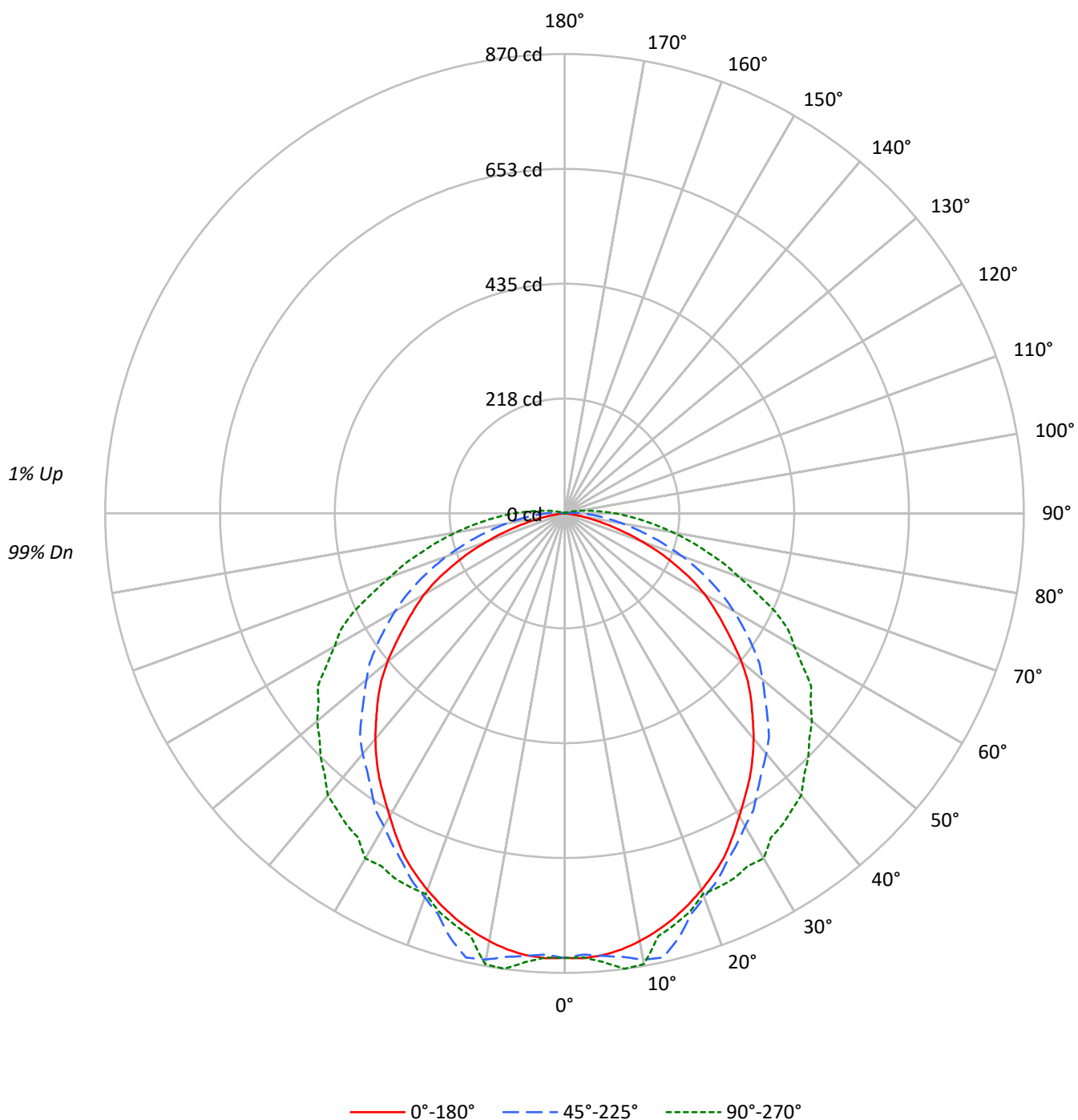
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4531	4531	4531
5°	4504	4474	4541
10°	4429	4546	4601
15°	4332	4434	4300
20°	4218	4163	4142
25°	4098	3993	4198
30°	3926	3858	4277
35°	3797	3731	4234
40°	3659	3637	4298
45°	3512	3515	4260
50°	3336	3386	4273
55°	3087	3248	4323
60°	2888	3054	4198
65°	2517	2820	4136
70°	2015	2512	3793
75°	1397	2133	3565
80°	747	1752	3339
85°	250	1357	3141

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4323 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.9	3.2
10°-20°	230.4	9.1
20°-30°	342.8	13.5
30°-40°	412.1	16.2
40°-50°	433.7	17.1
50°-60°	402.5	15.9
60°-70°	318.2	12.5
70°-80°	194.4	7.7
80°-90°	84.7	3.3
90°-100°	26.4	1.0
100°-110°	5.9	0.2
110°-120°	2.4	0.1
120°-130°	1.3	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°	654.1	25.8
0°-40°	1066.2	42.0
0°-60°	1902.4	75.0
0°-90°	2499.6	98.6
90°-120°	34.7	1.4
90°-150°	36.3	1.4
90°-180°	36.0	1.4
0°-180°	2536.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	842	842	842	842	842	
5°	840	838	841	850	853	80
15°	795	825	833	806	806	224
25°	717	763	728	750	762	329
35°	612	629	638	696	720	382
45°	500	502	543	630	653	385
55°	368	374	434	528	570	331
65°	233	240	305	404	441	231
75°	88	117	170	262	278	96
85°	8	27	66	129	148	12
90°	0	8	35	82	96	0
95°	0	2	15	45	55	0
105°	0	1	3	9	12	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

TEST NUMBER: P517304

CATALOG NUMBER: HVL12-2-LD4-1HI-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	841.8	841.8	841.8	841.8	841.8
2.5°	842.8	840.6	836.0	840.4	841.6
5°	839.8	838.0	841.0	850.4	852.8
7.5°	832.7	839.2	847.0	864.1	869.6
10°	822.3	834.6	857.8	872.3	866.7
12.5°	809.6	830.5	861.5	833.1	819.9
15°	794.8	825.4	833.4	805.8	806.3
17.5°	777.5	821.1	796.2	795.5	790.5
20°	758.8	806.7	773.7	772.4	767.0
22.5°	738.8	787.6	753.8	751.1	765.5
25°	717.0	762.8	727.9	749.7	761.9
27.5°	689.7	730.2	706.3	737.2	752.5
30°	662.1	696.6	684.2	727.3	754.4
32.5°	636.2	661.4	666.0	723.5	727.9
35°	611.7	628.7	638.1	696.1	719.7
37.5°	584.8	589.4	614.4	684.6	707.4
40°	557.3	554.4	594.5	665.7	697.3
42.5°	527.8	526.8	573.4	656.3	672.0
45°	499.9	502.1	543.4	629.5	653.0
47.5°	471.2	474.2	515.0	600.2	629.3
50°	438.0	441.7	489.6	574.1	611.7
52.5°	402.0	409.2	464.9	549.4	587.3
55°	368.2	374.2	433.5	528.3	570.4
57.5°	337.3	340.9	401.1	501.8	533.5
60°	307.0	307.8	370.6	472.3	502.6
62.5°	272.1	273.7	339.2	437.5	478.1
65°	233.0	240.4	305.4	404.2	440.9
67.5°	196.5	209.4	270.9	373.7	392.9
70°	157.4	179.2	237.2	337.8	351.4
72.5°	121.6	147.1	202.5	297.7	316.7
75°	88.1	116.8	170.3	261.7	278.1
77.5°	59.3	88.5	140.1	221.9	243.7
80°	35.5	64.6	113.2	185.0	209.6
82.5°	18.2	43.4	87.8	155.2	177.1
85°	7.9	27.4	66.4	128.8	147.8
87.5°	2.2	15.6	48.9	104.1	120.2
90°	0.2	8.2	34.8	81.6	96.2
92.5°	0.2	3.9	24.5	61.7	72.9
95°	0.2	2.1	15.3	44.8	54.7
97.5°	0.2	1.2	9.3	31.7	40.1
100°	0.2	1.0	5.5	21.1	28.6
102.5°	0.2	1.2	3.8	13.4	18.7
105°	0.2	1.2	3.1	8.7	12.3
107.5°	0.3	1.2	2.7	6.5	8.6
110°	0.2	1.0	2.9	5.0	6.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.9	2.7	4.1	5.0
115°	0.2	0.7	2.4	3.9	4.1
117.5°	0.3	0.5	1.9	3.9	4.1
120°	0.3	0.3	1.5	3.8	4.3
122.5°	0.3	0.3	1.2	3.4	4.1
125°	0.2	0.3	1.0	2.6	3.6
127.5°	0.3	0.3	0.9	2.1	2.7
130°	0.3	0.3	0.7	1.5	2.1
132.5°	0.3	0.3	0.5	1.2	1.5
135°	0.3	0.3	0.3	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)