

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: P517367

Luminaire Tested: HVL12-2-LD4-2LO-50-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: P517367
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2LO-50-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2528.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

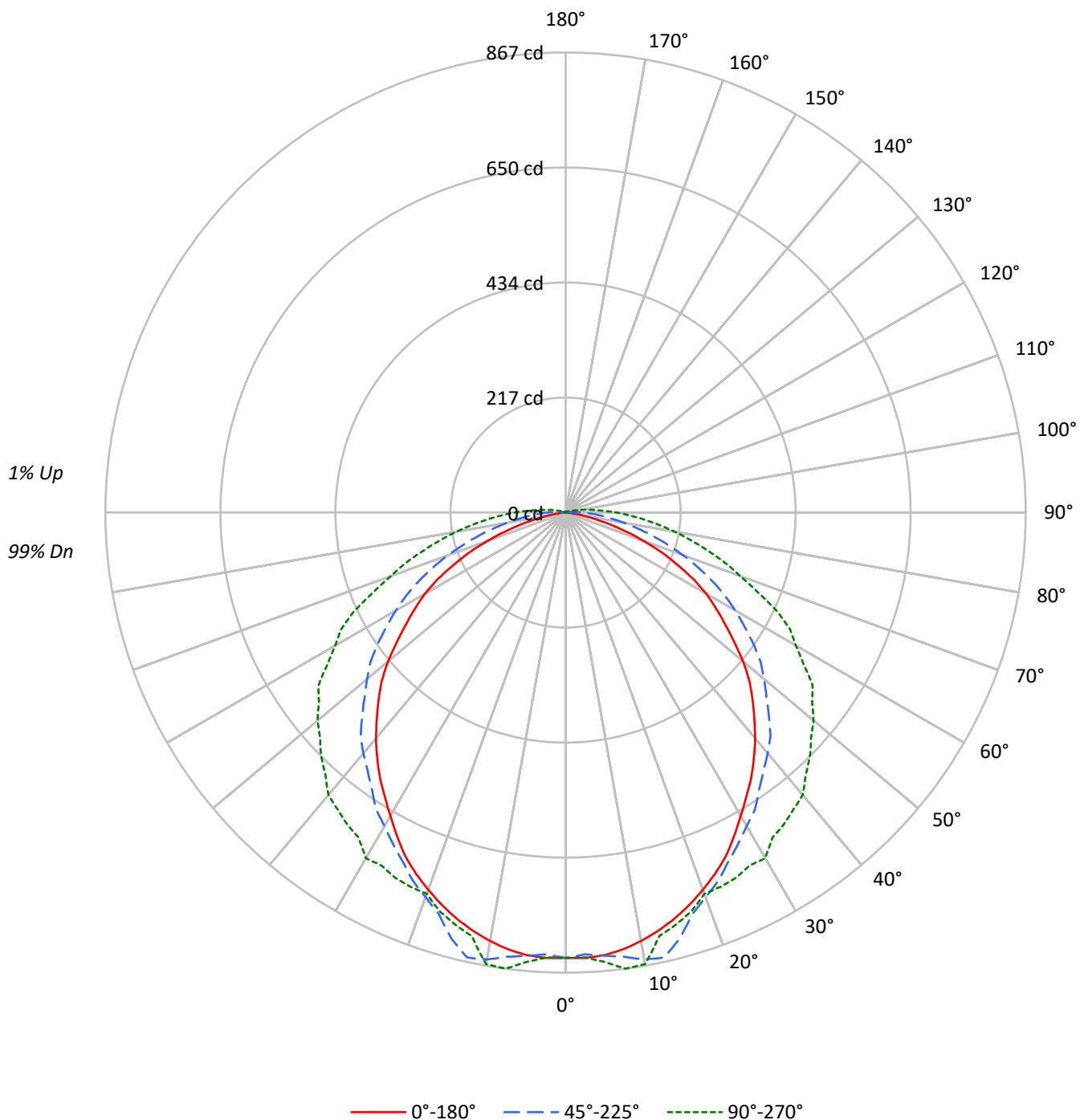
Input Watts (W): 23.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4517	4517	4517
5°	4490	4460	4527
10°	4415	4532	4586
15°	4318	4420	4287
20°	4205	4150	4129
25°	4085	3981	4185
30°	3913	3846	4263
35°	3786	3719	4221
40°	3648	3626	4284
45°	3501	3504	4247
50°	3325	3375	4260
55°	3077	3237	4309
60°	2878	3044	4185
65°	2510	2811	4123
70°	2009	2504	3781
75°	1394	2126	3555
80°	745	1746	3328
85°	250	1353	3133

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4309 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.7	3.2
10°-20°	229.7	9.1
20°-30°	341.7	13.5
30°-40°	410.8	16.2
40°-50°	432.4	17.1
50°-60°	401.2	15.9
60°-70°	317.2	12.5
70°-80°	193.8	7.7
80°-90°	84.4	3.3
90°-100°	26.3	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°	652.1	25.8
0°-40°	1062.8	42.0
0°-60°	1896.4	75.0
0°-90°	2491.8	98.6
90°-120°	34.5	1.4
90°-150°	36.2	1.4
90°-180°	36.0	1.4
0°-180°	2528.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	839	839	839	839	839	
5°	837	835	838	848	850	79
15°	792	823	831	803	804	223
25°	715	760	726	747	760	328
35°	610	627	636	694	717	381
45°	498	500	542	628	651	384
55°	367	373	432	527	569	330
65°	232	240	304	403	440	230
75°	88	116	170	261	277	96
85°	8	27	66	128	147	12
90°	0	8	35	81	96	0
95°	0	2	15	45	54	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

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CATALOG NUMBER: HVL12-2-LD4-2LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	839.2	839.2	839.2	839.2	839.2
2.5°	840.2	838.0	833.3	837.8	839.0
5°	837.1	835.4	838.3	847.7	850.1
7.5°	830.1	836.6	844.3	861.4	866.9
10°	819.7	832.0	855.1	869.6	863.9
12.5°	807.0	827.9	858.8	830.4	817.3
15°	792.3	822.7	830.8	803.3	803.8
17.5°	775.1	818.5	793.7	793.0	788.0
20°	756.4	804.1	771.3	769.9	764.6
22.5°	736.4	785.1	751.5	748.7	763.1
25°	714.7	760.4	725.7	747.4	759.5
27.5°	687.5	727.9	704.1	734.9	750.1
30°	660.0	694.4	682.1	725.0	752.0
32.5°	634.2	659.3	663.9	721.2	725.7
35°	609.8	626.7	636.1	693.9	717.4
37.5°	582.9	587.5	612.5	682.4	705.1
40°	555.6	552.7	592.7	663.6	695.1
42.5°	526.2	525.1	571.6	654.2	669.9
45°	498.3	500.5	541.7	627.5	651.0
47.5°	469.8	472.7	513.3	598.3	627.4
50°	436.6	440.3	488.0	572.3	609.8
52.5°	400.7	407.9	463.4	547.7	585.5
55°	367.0	373.0	432.1	526.7	568.6
57.5°	336.2	339.8	399.8	500.2	531.8
60°	306.0	306.8	369.4	470.8	501.0
62.5°	271.3	272.8	338.1	436.1	476.6
65°	232.3	239.7	304.4	402.9	439.5
67.5°	195.9	208.7	270.1	372.5	391.6
70°	156.9	178.6	236.4	336.8	350.3
72.5°	121.2	146.7	201.9	296.8	315.7
75°	87.9	116.4	169.7	260.9	277.3
77.5°	59.1	88.2	139.7	221.2	242.9
80°	35.4	64.4	112.8	184.4	208.9
82.5°	18.1	43.2	87.5	154.7	176.6
85°	7.9	27.4	66.2	128.4	147.4
87.5°	2.2	15.6	48.7	103.8	119.8
90°	0.2	8.2	34.7	81.4	95.9
92.5°	0.2	3.9	24.4	61.5	72.7
95°	0.2	2.1	15.2	44.6	54.5
97.5°	0.2	1.2	9.2	31.6	40.0
100°	0.2	1.0	5.5	21.0	28.5
102.5°	0.2	1.2	3.8	13.3	18.6
105°	0.2	1.2	3.1	8.7	12.3
107.5°	0.3	1.2	2.7	6.5	8.5
110°	0.2	1.0	2.9	5.0	6.7

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CATALOG NUMBER: HVL12-2-LD4-2LO-50-UNV-C-EDD-90

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)