

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: P517355

Luminaire Tested: HVL12-2-LD4-2LO-30-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: P517355
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2LO-30-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2336.0 lumens
Efficiency: N/A
Efficacy: 98.6 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

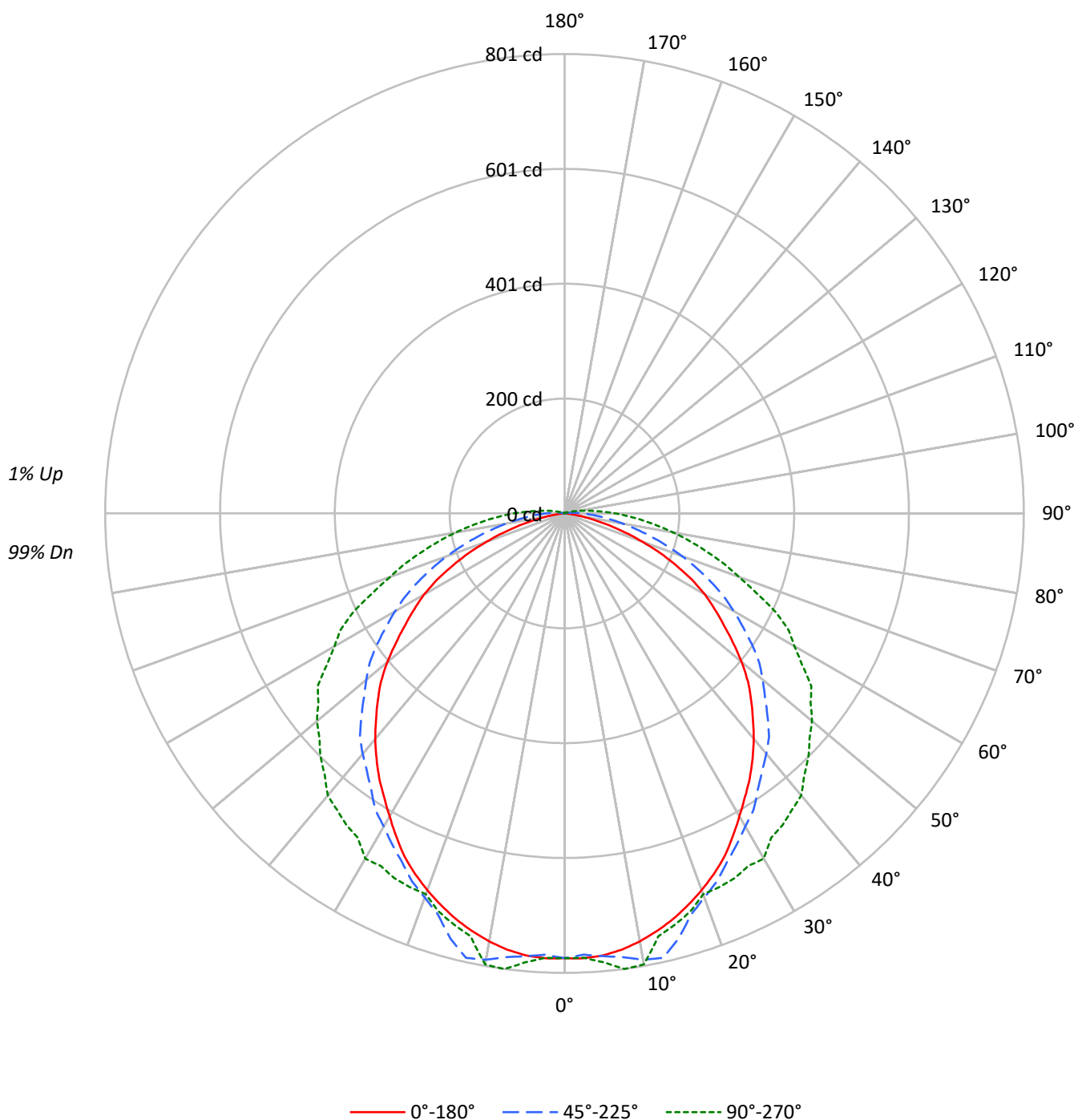
Input Watts (W): 23.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4173	4173	4173
5°	4149	4121	4183
10°	4079	4187	4238
15°	3990	4084	3961
20°	3886	3835	3815
25°	3775	3678	3867
30°	3616	3554	3939
35°	3498	3436	3901
40°	3371	3350	3959
45°	3235	3238	3924
50°	3072	3119	3935
55°	2843	2991	3982
60°	2659	2813	3867
65°	2320	2597	3810
70°	1857	2314	3494
75°	1288	1966	3284
80°	688	1614	3075
85°	231	1249	2895

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3982 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.5	3.2
10°-20°	212.2	9.1
20°-30°	315.8	13.5
30°-40°	379.6	16.2
40°-50°	399.5	17.1
50°-60°	370.7	15.9
60°-70°	293.1	12.5
70°-80°	179.1	7.7
80°-90°	78.0	3.3
90°-100°	24.3	1.0
100°-110°	5.5	0.2
110°-120°	2.2	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	602.5	25.8
0°-40°	982.1	42.0
0°-60°	1752.4	75.0
0°-90°	2302.5	98.6
90°-120°	31.9	1.4
90°-150°	33.5	1.4
90°-180°	33.0	1.4
0°-180°	2336.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	775	775	775	775	775	
5°	774	772	775	783	786	73
15°	732	760	768	742	743	206
25°	660	703	670	691	702	303
35°	563	579	588	641	663	352
45°	460	462	501	580	602	355
55°	339	345	399	487	525	305
65°	215	222	281	372	406	213
75°	81	108	157	241	256	89
85°	7	25	61	119	136	11
90°	0	8	32	75	89	0
95°	0	2	14	41	50	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	775.4	775.4	775.4	775.4	775.4
2.5°	776.4	774.3	770.1	774.2	775.3
5°	773.5	771.9	774.6	783.3	785.5
7.5°	767.1	773.1	780.2	796.0	801.0
10°	757.4	768.8	790.1	803.5	798.3
12.5°	745.7	765.0	793.6	767.4	755.2
15°	732.1	760.3	767.7	742.3	742.7
17.5°	716.2	756.3	733.4	732.8	728.2
20°	699.0	743.0	712.7	711.5	706.6
22.5°	680.5	725.5	694.4	691.9	705.1
25°	660.4	702.6	670.5	690.6	701.8
27.5°	635.3	672.6	650.6	679.1	693.1
30°	609.9	641.6	630.3	669.9	694.9
32.5°	586.0	609.3	613.5	666.4	670.5
35°	563.4	579.1	587.8	641.2	663.0
37.5°	538.6	542.9	566.0	630.6	651.6
40°	513.4	510.7	547.6	613.2	642.3
42.5°	486.2	485.3	528.2	604.5	619.0
45°	460.5	462.5	500.6	579.9	601.5
47.5°	434.1	436.8	474.4	552.9	579.7
50°	403.4	406.9	451.0	528.8	563.4
52.5°	370.3	376.9	428.2	506.1	541.0
55°	339.1	344.7	399.3	486.7	525.4
57.5°	310.7	314.0	369.5	462.2	491.4
60°	282.7	283.5	341.4	435.0	463.0
62.5°	250.7	252.1	312.4	403.0	440.4
65°	214.7	221.5	281.3	372.3	406.1
67.5°	181.0	192.9	249.6	344.2	361.9
70°	145.0	165.1	218.5	311.2	323.7
72.5°	112.0	135.5	186.6	274.2	291.8
75°	81.2	107.6	156.9	241.0	256.2
77.5°	54.7	81.5	129.1	204.4	224.5
80°	32.7	59.6	104.3	170.4	193.0
82.5°	16.7	40.0	80.9	143.0	163.2
85°	7.3	25.3	61.1	118.6	136.2
87.5°	2.1	14.4	45.0	95.9	110.7
90°	0.2	7.6	32.1	75.2	88.6
92.5°	0.2	3.6	22.6	56.9	67.1
95°	0.2	1.9	14.1	41.2	50.4
97.5°	0.2	1.1	8.5	29.2	37.0
100°	0.2	0.9	5.1	19.4	26.4
102.5°	0.2	1.1	3.5	12.3	17.2
105°	0.2	1.1	2.8	8.1	11.4
107.5°	0.3	1.1	2.5	6.0	7.9
110°	0.2	0.9	2.7	4.6	6.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.8	4.6
115°	0.2	0.6	2.2	3.6	3.8
117.5°	0.3	0.5	1.7	3.6	3.8
120°	0.3	0.3	1.4	3.5	3.9
122.5°	0.3	0.3	1.1	3.2	3.8
125°	0.2	0.3	0.9	2.4	3.3
127.5°	0.3	0.3	0.8	1.9	2.5
130°	0.3	0.3	0.6	1.4	1.9
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)