

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: P517328

Luminaire Tested: HVL12-2-LD4-1STD-35-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: P517328
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1STD-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1919.0 lumens
Efficiency: N/A
Efficacy: 114.9 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

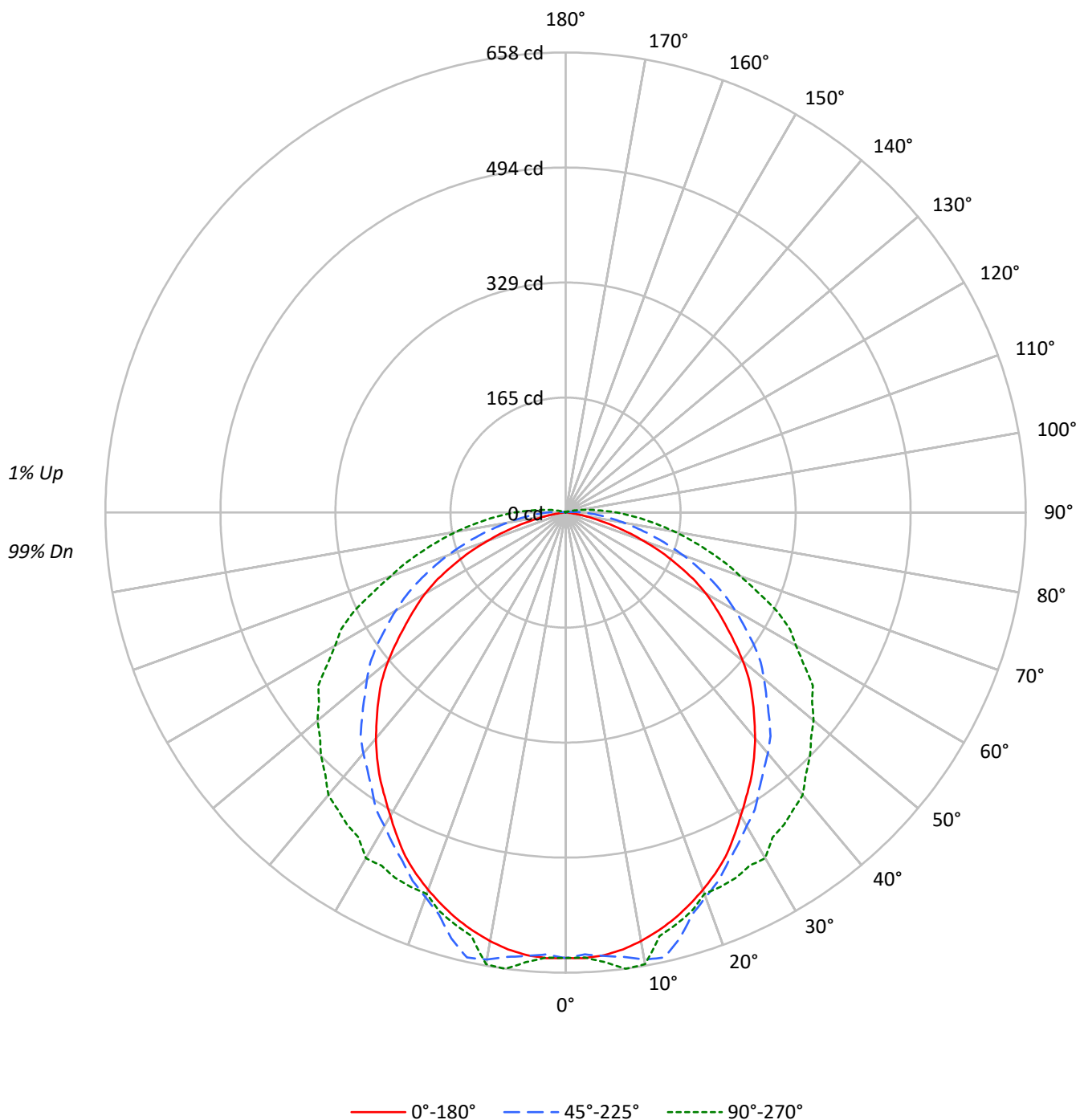
Input Watts (W): 16.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				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°	3428	3428	3428
5°	3408	3386	3436
10°	3351	3440	3482
15°	3278	3355	3254
20°	3192	3151	3134
25°	3101	3022	3177
30°	2971	2920	3236
35°	2874	2823	3204
40°	2769	2752	3252
45°	2658	2660	3223
50°	2524	2562	3233
55°	2336	2457	3271
60°	2185	2311	3176
65°	1905	2134	3130
70°	1525	1901	2870
75°	1058	1615	2698
80°	566	1325	2527
85°	190	1026	2378

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3271 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.2	3.2
10°-20°	174.3	9.1
20°-30°	259.4	13.5
30°-40°	311.8	16.2
40°-50°	328.2	17.1
50°-60°	304.5	15.9
60°-70°	240.8	12.5
70°-80°	147.1	7.7
80°-90°	64.1	3.3
90°-100°	20.0	1.0
100°-110°	4.5	0.2
110°-120°	1.8	0.1
120°-130°	1.0	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°	495.0	25.8
0°-40°	806.8	42.0
0°-60°	1439.5	75.0
0°-90°	1891.5	98.6
90°-120°	26.2	1.4
90°-150°	27.5	1.4
90°-180°	28.0	1.5
0°-180°	1919.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	637	637	637	637	637	
5°	635	634	636	644	645	60
15°	601	624	631	610	610	169
25°	542	577	551	567	576	249
35°	463	476	483	527	545	289
45°	378	380	411	476	494	292
55°	279	283	328	400	432	250
65°	176	182	231	306	334	175
75°	67	88	129	198	210	73
85°	6	21	50	98	112	9
90°	0	6	26	62	73	0
95°	0	2	12	34	41	0
105°	0	1	2	7	9	0
115°	0	0	2	3	3	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

TEST NUMBER: P517328

CATALOG NUMBER: HVL12-2-LD4-1STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	637.0	637.0	637.0	637.0	637.0
2.5°	637.8	636.1	632.6	636.0	636.9
5°	635.4	634.1	636.4	643.5	645.3
7.5°	630.1	635.1	640.9	653.9	658.0
10°	622.2	631.6	649.1	660.1	655.8
12.5°	612.6	628.4	651.9	630.4	620.4
15°	601.4	624.5	630.6	609.8	610.1
17.5°	588.3	621.3	602.5	602.0	598.2
20°	574.2	610.4	585.5	584.4	580.4
22.5°	559.0	596.0	570.4	568.4	579.3
25°	542.5	577.2	550.8	567.3	576.5
27.5°	521.9	552.5	534.5	557.8	569.4
30°	501.0	527.1	517.8	550.3	570.8
32.5°	481.4	500.5	504.0	547.5	550.8
35°	462.9	475.7	482.8	526.7	544.6
37.5°	442.5	446.0	464.9	518.0	535.3
40°	421.7	419.5	449.9	503.7	527.6
42.5°	399.4	398.6	433.9	496.6	508.5
45°	378.3	379.9	411.2	476.4	494.1
47.5°	356.6	358.8	389.7	454.2	476.2
50°	331.4	334.3	370.5	434.4	462.9
52.5°	304.2	309.6	351.8	415.8	444.4
55°	278.6	283.1	328.0	399.8	431.6
57.5°	255.2	258.0	303.5	379.7	403.7
60°	232.3	232.9	280.4	357.4	380.3
62.5°	205.9	207.1	256.7	331.0	361.8
65°	176.3	181.9	231.1	305.8	333.6
67.5°	148.7	158.4	205.0	282.8	297.3
70°	119.1	135.6	179.5	255.6	265.9
72.5°	92.0	111.3	153.2	225.3	239.7
75°	66.7	88.4	128.9	198.0	210.5
77.5°	44.9	67.0	106.0	167.9	184.4
80°	26.9	48.9	85.6	140.0	158.6
82.5°	13.8	32.8	66.4	117.4	134.0
85°	6.0	20.8	50.2	97.5	111.9
87.5°	1.7	11.8	37.0	78.8	91.0
90°	0.1	6.2	26.3	61.8	72.8
92.5°	0.1	3.0	18.6	46.7	55.1
95°	0.1	1.6	11.5	33.9	41.4
97.5°	0.1	0.9	7.0	24.0	30.4
100°	0.1	0.8	4.2	16.0	21.7
102.5°	0.1	0.9	2.9	10.1	14.1
105°	0.1	0.9	2.3	6.6	9.3
107.5°	0.3	0.9	2.1	4.9	6.5
110°	0.1	0.8	2.2	3.8	5.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.6	2.1	3.1	3.8
115°	0.1	0.5	1.8	3.0	3.1
117.5°	0.3	0.4	1.4	3.0	3.1
120°	0.3	0.3	1.2	2.9	3.2
122.5°	0.3	0.3	0.9	2.6	3.1
125°	0.1	0.3	0.8	1.9	2.7
127.5°	0.3	0.3	0.6	1.6	2.1
130°	0.3	0.3	0.5	1.2	1.6
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.6	0.9
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)