

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: P517299

Luminaire Tested: HVL12-2-LD4-1HI-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: P517299
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1HI-40-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2095.0 lumens
Efficiency: N/A
Efficacy: 94.8 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

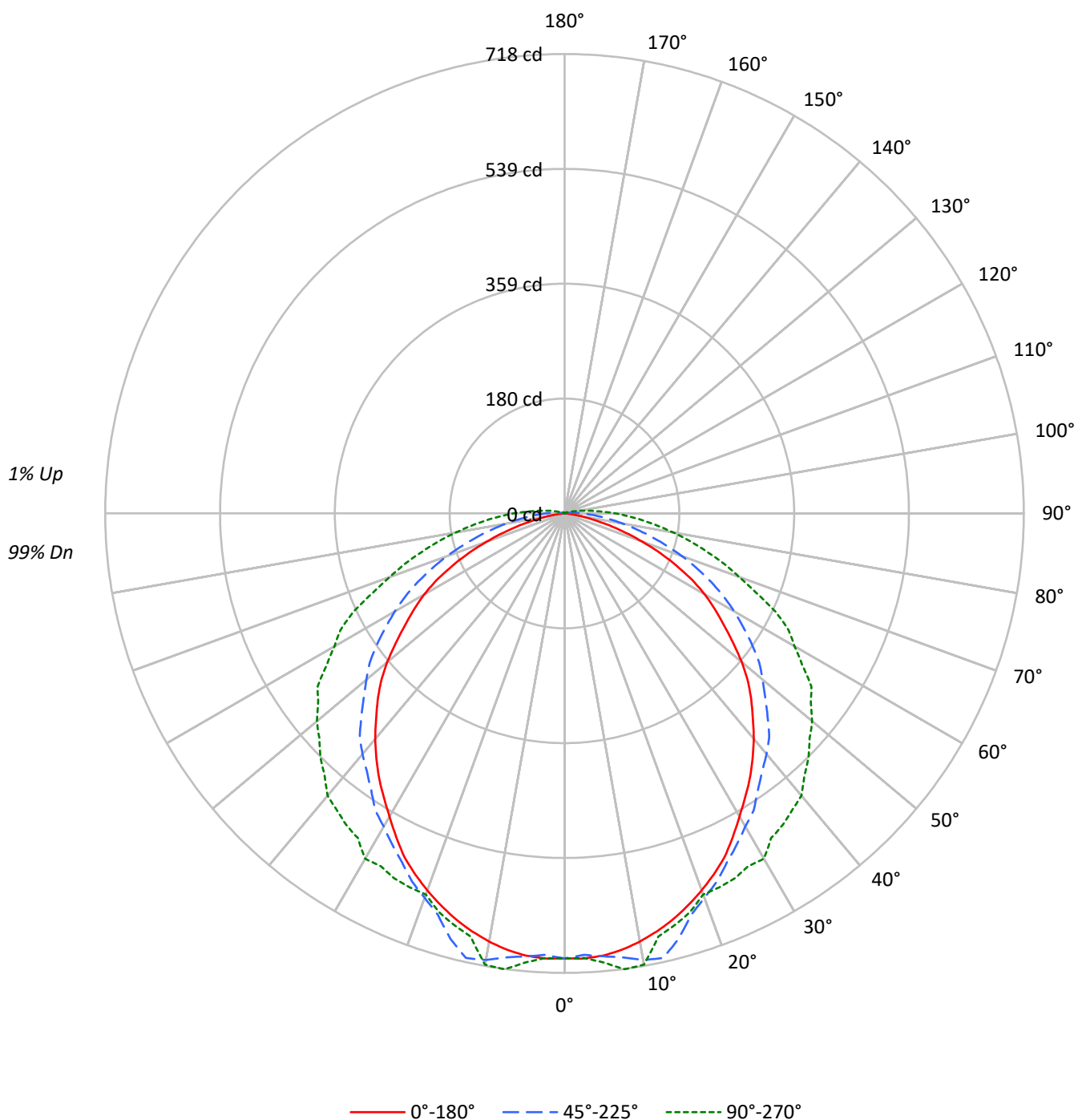
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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					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	40	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°	3743	3743	3743
5°	3721	3696	3751
10°	3659	3755	3801
15°	3579	3663	3553
20°	3485	3440	3422
25°	3386	3299	3468
30°	3243	3187	3533
35°	3137	3082	3498
40°	3023	3005	3550
45°	2901	2903	3520
50°	2756	2797	3530
55°	2551	2683	3571
60°	2385	2522	3468
65°	2080	2330	3417
70°	1664	2075	3133
75°	1155	1763	2946
80°	617	1447	2758
85°	206	1120	2595

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3571 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.8	3.2
10°-20°	190.3	9.1
20°-30°	283.2	13.5
30°-40°	340.4	16.2
40°-50°	358.3	17.1
50°-60°	332.5	15.9
60°-70°	262.9	12.5
70°-80°	160.6	7.7
80°-90°	70.0	3.3
90°-100°	21.8	1.0
100°-110°	4.9	0.2
110°-120°	2.0	0.1
120°-130°	1.1	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°	540.4	25.8
0°-40°	880.8	42.0
0°-60°	1571.5	75.0
0°-90°	2064.9	98.6
90°-120°	28.6	1.4
90°-150°	30.0	1.4
90°-180°	30.0	1.4
0°-180°	2095.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	695	695	695	695	695	
5°	694	692	695	702	704	66
15°	657	682	688	666	666	185
25°	592	630	601	619	629	272
35°	505	519	527	575	595	316
45°	413	415	449	520	540	318
55°	304	309	358	436	471	273
65°	192	199	252	334	364	191
75°	73	96	141	216	230	79
85°	6	23	55	106	122	10
90°	0	7	29	67	80	0
95°	0	2	13	37	45	0
105°	0	1	2	7	10	0
115°	0	1	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	695.4	695.4	695.4	695.4	695.4
2.5°	696.3	694.4	690.6	694.3	695.3
5°	693.7	692.3	694.7	702.5	704.5
7.5°	687.9	693.3	699.7	713.8	718.4
10°	679.3	689.5	708.6	720.6	716.0
12.5°	668.8	686.1	711.7	688.2	677.3
15°	656.6	681.8	688.5	665.7	666.1
17.5°	642.3	678.3	657.7	657.2	653.1
20°	626.9	666.4	639.2	638.1	633.7
22.5°	610.3	650.7	622.8	620.5	632.4
25°	592.3	630.1	601.4	619.4	629.4
27.5°	569.8	603.2	583.5	609.0	621.6
30°	547.0	575.4	565.2	600.8	623.2
32.5°	525.6	546.4	550.2	597.7	601.4
35°	505.3	519.3	527.1	575.0	594.6
37.5°	483.1	486.9	507.6	565.5	584.4
40°	460.4	458.0	491.1	549.9	576.0
42.5°	436.0	435.2	473.7	542.1	555.2
45°	412.9	414.8	448.9	520.0	539.5
47.5°	389.3	391.7	425.4	495.8	519.9
50°	361.8	364.9	404.4	474.3	505.3
52.5°	332.1	338.0	384.0	453.9	485.2
55°	304.2	309.1	358.1	436.5	471.2
57.5°	278.7	281.6	331.4	414.5	440.7
60°	253.6	254.3	306.1	390.1	415.2
62.5°	224.8	226.1	280.2	361.4	395.0
65°	192.5	198.6	252.3	333.9	364.2
67.5°	162.3	173.0	223.8	308.7	324.6
70°	130.0	148.0	195.9	279.1	290.3
72.5°	100.4	121.5	167.3	245.9	261.7
75°	72.8	96.5	140.7	216.2	229.8
77.5°	49.0	73.1	115.7	183.3	201.3
80°	29.3	53.4	93.5	152.9	173.1
82.5°	15.0	35.8	72.5	128.2	146.3
85°	6.5	22.7	54.8	106.4	122.1
87.5°	1.8	12.9	40.4	86.0	99.3
90°	0.1	6.8	28.8	67.4	79.5
92.5°	0.1	3.3	20.3	51.0	60.2
95°	0.1	1.7	12.6	37.0	45.2
97.5°	0.1	1.0	7.6	26.2	33.1
100°	0.1	0.8	4.5	17.4	23.7
102.5°	0.1	1.0	3.1	11.0	15.4
105°	0.1	1.0	2.5	7.2	10.2
107.5°	0.3	1.0	2.3	5.4	7.1
110°	0.1	0.8	2.4	4.1	5.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.3	3.4	4.1
115°	0.1	0.6	2.0	3.3	3.4
117.5°	0.3	0.4	1.6	3.3	3.4
120°	0.3	0.3	1.3	3.1	3.5
122.5°	0.3	0.3	1.0	2.8	3.4
125°	0.1	0.3	0.8	2.1	3.0
127.5°	0.3	0.3	0.7	1.7	2.3
130°	0.3	0.3	0.6	1.3	1.7
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)