

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: P517295

Luminaire Tested: HVL12-2-LD4-1HI-35-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: P517295
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1HI-35-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2066.0 lumens
Efficiency: N/A
Efficacy: 93.5 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

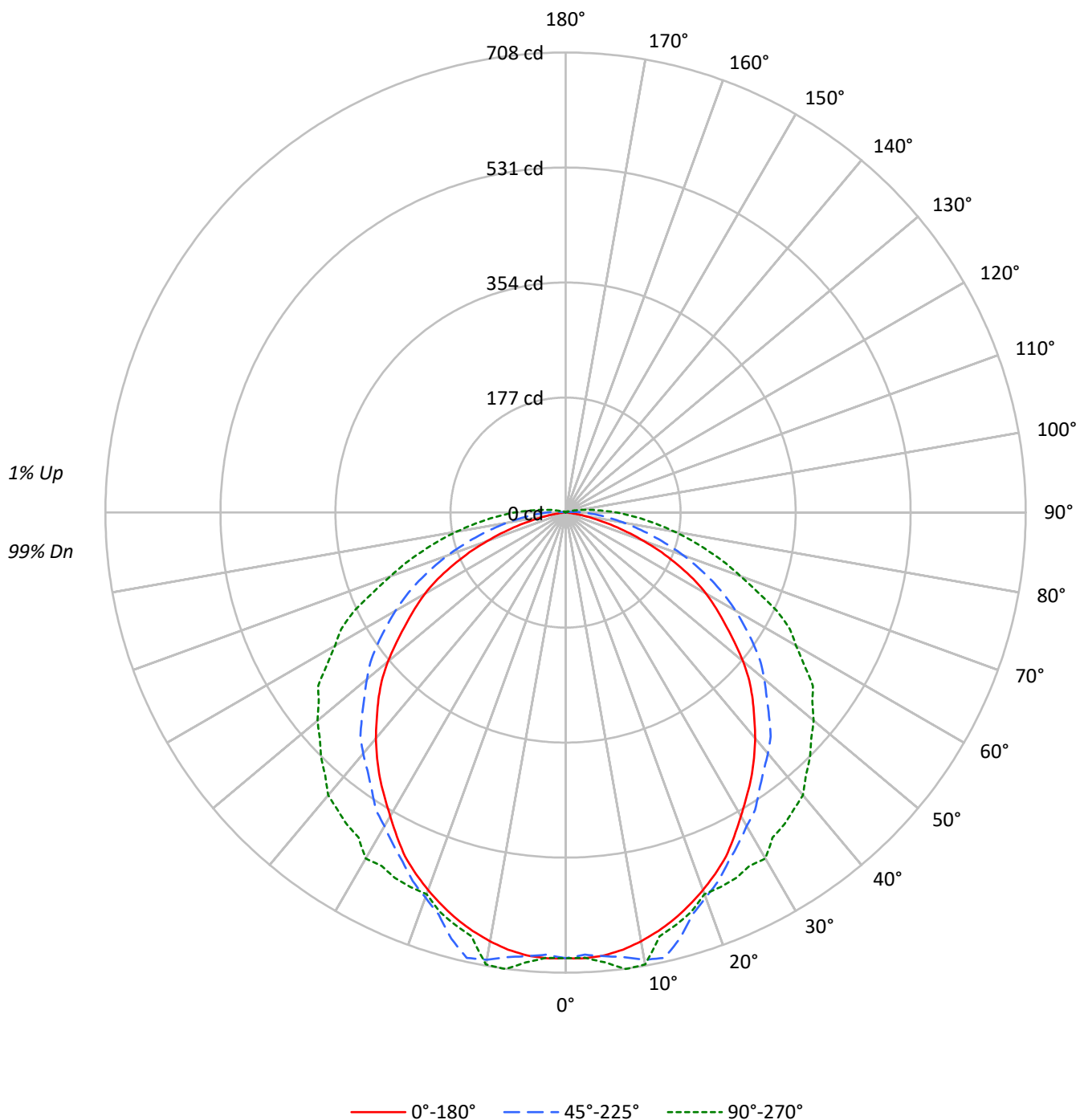
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	3691	3691	3691
5°	3669	3645	3699
10°	3608	3703	3749
15°	3529	3612	3504
20°	3436	3392	3374
25°	3339	3253	3420
30°	3198	3143	3484
35°	3093	3039	3449
40°	2981	2963	3501
45°	2861	2863	3471
50°	2717	2759	3481
55°	2515	2646	3522
60°	2352	2488	3420
65°	2052	2297	3370
70°	1641	2046	3090
75°	1139	1738	2905
80°	608	1427	2720
85°	202	1106	2559

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3522 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.9	3.2
10°-20°	187.7	9.1
20°-30°	279.3	13.5
30°-40°	335.7	16.2
40°-50°	353.3	17.1
50°-60°	327.9	15.9
60°-70°	259.2	12.5
70°-80°	158.3	7.7
80°-90°	69.0	3.3
90°-100°	21.5	1.0
100°-110°	4.8	0.2
110°-120°	1.9	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°	532.9	25.8
0°-40°	868.6	42.0
0°-60°	1549.8	75.0
0°-90°	2036.4	98.6
90°-120°	28.2	1.4
90°-150°	29.7	1.4
90°-180°	30.0	1.5
0°-180°	2066.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	686	686	686	686	686	
5°	684	683	685	693	695	65
15°	648	672	679	656	657	182
25°	584	621	593	611	621	268
35°	498	512	520	567	586	311
45°	407	409	443	513	532	314
55°	300	305	353	430	465	270
65°	190	196	249	329	359	188
75°	72	95	139	213	227	78
85°	6	22	54	105	120	10
90°	0	7	28	66	78	0
95°	0	2	12	36	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°	685.8	685.8	685.8	685.8	685.8
2.5°	686.6	684.8	681.0	684.7	685.7
5°	684.1	682.7	685.1	692.8	694.7
7.5°	678.4	683.7	690.0	704.0	708.4
10°	669.9	679.9	698.8	710.7	706.1
12.5°	659.5	676.6	701.9	678.7	667.9
15°	647.5	672.4	679.0	656.5	656.9
17.5°	633.4	668.9	648.6	648.1	644.0
20°	618.2	657.2	630.3	629.2	624.9
22.5°	601.8	641.7	614.1	611.9	623.6
25°	584.1	621.4	593.0	610.8	620.7
27.5°	561.9	594.9	575.4	600.6	613.0
30°	539.4	567.5	557.4	592.5	614.6
32.5°	518.3	538.8	542.6	589.4	593.0
35°	498.3	512.1	519.8	567.1	586.3
37.5°	476.4	480.2	500.6	557.7	576.3
40°	454.0	451.7	484.3	542.3	568.0
42.5°	430.0	429.2	467.2	534.6	547.5
45°	407.2	409.0	442.7	512.8	532.0
47.5°	383.9	386.3	419.5	489.0	512.7
50°	356.8	359.9	398.9	467.7	498.3
52.5°	327.5	333.3	378.7	447.6	478.5
55°	299.9	304.8	353.2	430.4	464.7
57.5°	274.8	277.7	326.8	408.8	434.6
60°	250.1	250.8	301.9	384.7	409.5
62.5°	221.7	223.0	276.3	356.4	389.5
65°	189.9	195.9	248.8	329.3	359.2
67.5°	160.1	170.6	220.7	304.4	320.1
70°	128.2	146.0	193.2	275.2	286.3
72.5°	99.0	119.9	165.0	242.5	258.0
75°	71.8	95.1	138.7	213.2	226.6
77.5°	48.3	72.1	114.1	180.8	198.5
80°	28.9	52.7	92.2	150.7	170.7
82.5°	14.8	35.3	71.5	126.4	144.3
85°	6.4	22.4	54.1	104.9	120.4
87.5°	1.8	12.7	39.8	84.8	97.9
90°	0.1	6.7	28.4	66.5	78.4
92.5°	0.1	3.2	20.0	50.3	59.4
95°	0.1	1.7	12.4	36.5	44.6
97.5°	0.1	1.0	7.5	25.8	32.7
100°	0.1	0.8	4.5	17.2	23.3
102.5°	0.1	1.0	3.1	10.9	15.2
105°	0.1	1.0	2.5	7.1	10.1
107.5°	0.3	1.0	2.2	5.3	7.0
110°	0.1	0.8	2.4	4.1	5.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.2	3.4	4.1
115°	0.1	0.6	2.0	3.2	3.4
117.5°	0.3	0.4	1.5	3.2	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	2.9
127.5°	0.3	0.3	0.7	1.7	2.2
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)