

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: P517155

Luminaire Tested: HVL12-1-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: P517155
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1HI-40-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1048.0 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

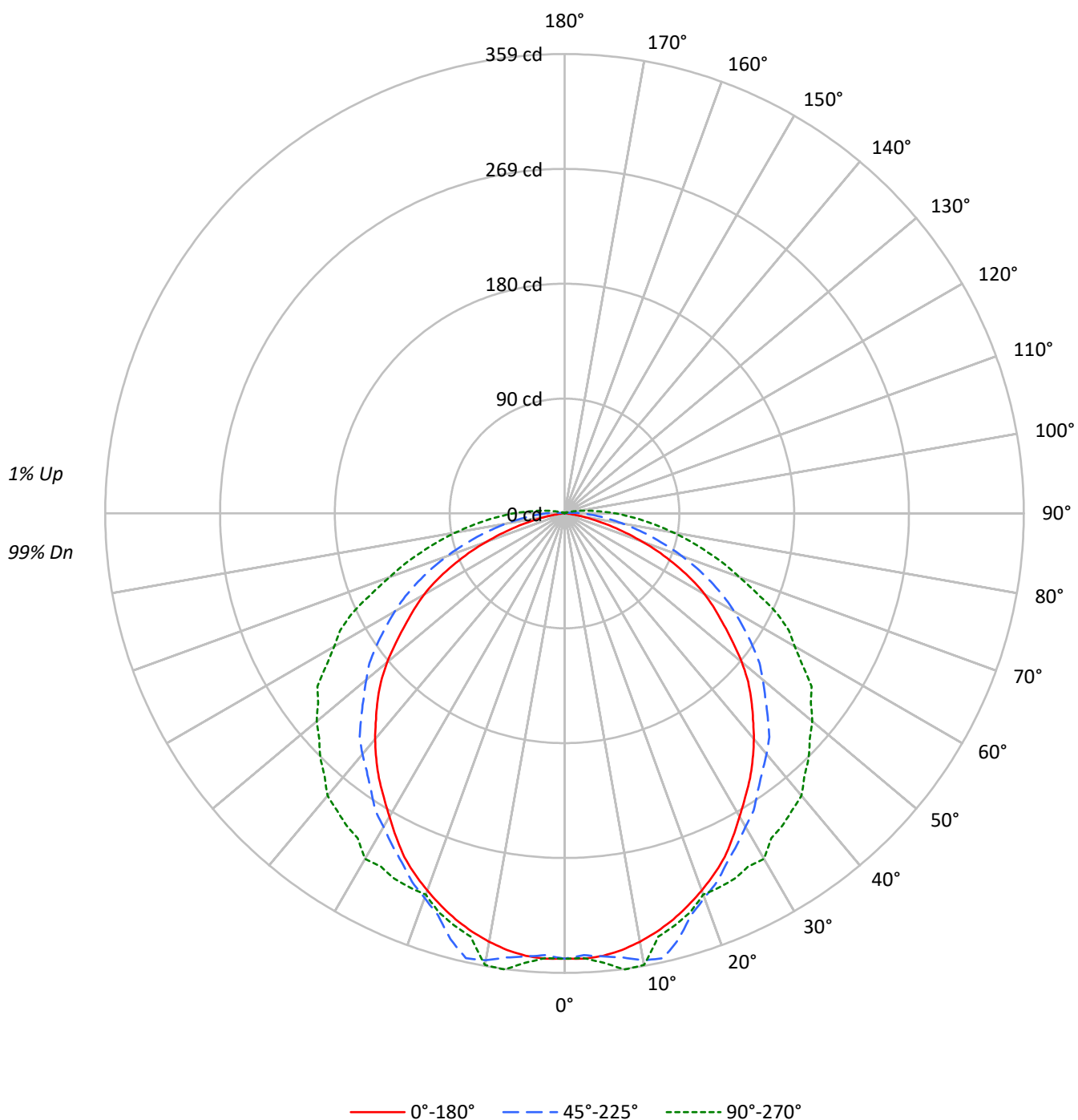
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517155

CATALOG NUMBER: HVL12-1-LD4-1HI-40-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517155

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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°	3745	3745	3745
5°	3695	3679	3753
10°	3608	3720	3803
15°	3504	3610	3554
20°	3387	3373	3423
25°	3265	3219	3470
30°	3102	3094	3534
35°	2975	2974	3499
40°	2839	2882	3551
45°	2696	2767	3522
50°	2529	2645	3532
55°	2305	2514	3573
60°	2118	2340	3470
65°	1807	2135	3418
70°	1405	1872	3134
75°	933	1558	2946
80°	468	1241	2759
85°	140	916	2597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3573 cd/sqm

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CATALOG NUMBER: HVL12-1-LD4-1HI-40-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.4	3.2
10°-20°	95.2	9.1
20°-30°	141.7	13.5
30°-40°	170.3	16.2
40°-50°	179.2	17.1
50°-60°	166.3	15.9
60°-70°	131.5	12.5
70°-80°	80.3	7.7
80°-90°	35.0	3.3
90°-100°	10.9	1.0
100°-110°	2.4	0.2
110°-120°	1.0	0.1
120°-130°	0.5	0.1
130°-140°	0.1	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°	270.3	25.8
0°-40°	440.6	42.0
0°-60°	786.1	75.0
0°-90°	1033.0	98.6
90°-120°	14.3	1.4
90°-150°	15.0	1.4
90°-180°	15.0	1.4
0°-180°	1048.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	348	348	348	348	348	
5°	347	346	348	351	352	33
15°	328	341	344	333	333	93
25°	296	315	301	310	315	136
35°	253	260	264	288	297	158
45°	207	208	225	260	270	159
55°	152	155	179	218	236	137
65°	96	99	126	167	182	95
75°	36	48	70	108	115	40
85°	3	11	27	53	61	5
90°	0	3	14	34	40	0
95°	0	1	6	18	23	0
105°	0	0	1	4	5	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	0	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: P517155

CATALOG NUMBER: HVL12-1-LD4-1HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	347.9	347.9	347.9	347.9	347.9
2.5°	348.3	347.4	345.5	347.3	347.8
5°	347.0	346.3	347.5	351.4	352.4
7.5°	344.1	346.8	350.0	357.1	359.4
10°	339.8	344.9	354.5	360.5	358.2
12.5°	334.6	343.2	356.0	344.3	338.8
15°	328.5	341.1	344.4	333.0	333.2
17.5°	321.3	339.3	329.0	328.7	326.7
20°	313.6	333.4	319.7	319.2	317.0
22.5°	305.3	325.5	311.5	310.4	316.3
25°	296.3	315.2	300.8	309.8	314.9
27.5°	285.0	301.7	291.9	304.7	311.0
30°	273.6	287.9	282.8	300.5	311.7
32.5°	262.9	273.3	275.2	299.0	300.8
35°	252.8	259.8	263.7	287.6	297.4
37.5°	241.7	243.6	253.9	282.9	292.3
40°	230.3	229.1	245.7	275.1	288.1
42.5°	218.1	217.7	237.0	271.2	277.7
45°	206.6	207.5	224.6	260.1	269.9
47.5°	194.7	195.9	212.8	248.0	260.1
50°	181.0	182.5	202.3	237.3	252.8
52.5°	166.1	169.1	192.1	227.1	242.7
55°	152.1	154.6	179.1	218.3	235.7
57.5°	139.4	140.9	165.8	207.4	220.5
60°	126.8	127.2	153.1	195.2	207.7
62.5°	112.5	113.1	140.2	180.8	197.6
65°	96.3	99.4	126.2	167.0	182.2
67.5°	81.2	86.5	112.0	154.4	162.4
70°	65.1	74.1	98.0	139.6	145.2
72.5°	50.2	60.8	83.7	123.0	130.9
75°	36.4	48.3	70.4	108.1	114.9
77.5°	24.5	36.6	57.9	91.7	100.7
80°	14.7	26.7	46.8	76.5	86.6
82.5°	7.5	17.9	36.3	64.1	73.2
85°	3.3	11.3	27.4	53.2	61.1
87.5°	0.9	6.4	20.2	43.0	49.7
90°	0.1	3.4	14.4	33.7	39.8
92.5°	0.1	1.6	10.1	25.5	30.1
95°	0.1	0.9	6.3	18.5	22.6
97.5°	0.1	0.5	3.8	13.1	16.6
100°	0.1	0.4	2.3	8.7	11.8
102.5°	0.1	0.5	1.6	5.5	7.7
105°	0.1	0.5	1.3	3.6	5.1
107.5°	0.1	0.5	1.1	2.7	3.5
110°	0.1	0.4	1.2	2.1	2.8

TEST NUMBER: P517155

CATALOG NUMBER: HVL12-1-LD4-1HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.4	1.1	1.7	2.1
115°	0.1	0.3	1.0	1.6	1.7
117.5°	0.1	0.2	0.8	1.6	1.7
120°	0.1	0.1	0.6	1.6	1.8
122.5°	0.1	0.1	0.5	1.4	1.7
125°	0.1	0.1	0.4	1.1	1.5
127.5°	0.1	0.1	0.4	0.9	1.1
130°	0.1	0.1	0.3	0.6	0.9
132.5°	0.1	0.1	0.2	0.5	0.6
135°	0.1	0.1	0.1	0.4	0.5
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)