

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: P517183

Luminaire Tested: HVL12-1-LD4-1STD-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: P517183
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-35-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 803.0 lumens
Efficiency: N/A
Efficacy: 95.6 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

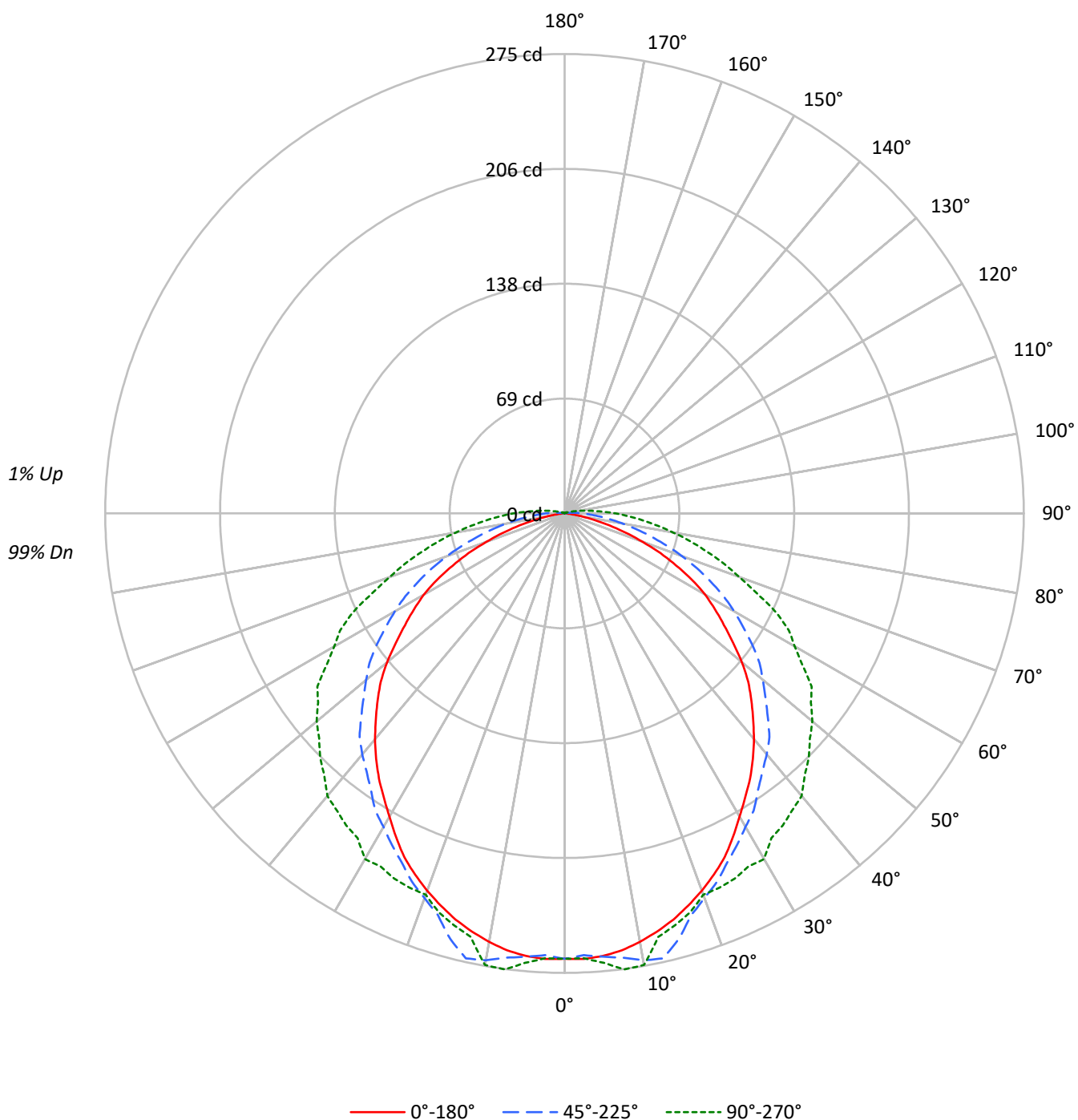
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517183

CATALOG NUMBER: HVL12-1-LD4-1STD-35-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517183

CATALOG NUMBER: HVL12-1-LD4-1STD-35-UNV-C-EDD-90

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	44	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°	2870	2870	2870
5°	2832	2819	2875
10°	2765	2850	2914
15°	2685	2766	2723
20°	2595	2585	2623
25°	2502	2466	2658
30°	2376	2371	2709
35°	2279	2278	2682
40°	2176	2209	2722
45°	2065	2120	2698
50°	1938	2026	2706
55°	1767	1928	2737
60°	1624	1793	2658
65°	1385	1636	2619
70°	1075	1434	2402
75°	715	1192	2259
80°	357	950	2116
85°	106	702	1989

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2737 cd/sqm

TEST NUMBER: P517183

CATALOG NUMBER: HVL12-1-LD4-1STD-35-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	3.2
10°-20°	73.0	9.1
20°-30°	108.6	13.5
30°-40°	130.5	16.2
40°-50°	137.3	17.1
50°-60°	127.4	15.9
60°-70°	100.8	12.5
70°-80°	61.6	7.7
80°-90°	26.8	3.3
90°-100°	8.3	1.0
100°-110°	1.9	0.2
110°-120°	0.8	0.1
120°-130°	0.4	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°	207.1	25.8
0°-40°	337.6	42.0
0°-60°	602.4	75.0
0°-90°	791.5	98.6
90°-120°	11.0	1.4
90°-150°	11.5	1.4
90°-180°	12.0	1.5
0°-180°	803.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	267	267	267	267	267	
5°	266	265	266	269	270	25
15°	252	261	264	255	255	71
25°	227	242	230	237	241	104
35°	194	199	202	220	228	121
45°	158	159	172	199	207	122
55°	117	118	137	167	181	105
65°	74	76	97	128	140	73
75°	28	37	54	83	88	30
85°	2	9	21	41	47	4
90°	0	3	11	26	30	0
95°	0	1	5	14	17	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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: P517183

CATALOG NUMBER: HVL12-1-LD4-1STD-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	266.6	266.6	266.6	266.6	266.6
2.5°	266.9	266.2	264.7	266.1	266.5
5°	265.9	265.4	266.3	269.3	270.0
7.5°	263.7	265.7	268.2	273.6	275.3
10°	260.4	264.3	271.6	276.2	274.4
12.5°	256.3	263.0	272.8	263.8	259.6
15°	251.7	261.3	263.9	255.1	255.3
17.5°	246.2	260.0	252.1	251.9	250.3
20°	240.3	255.4	245.0	244.6	242.9
22.5°	233.9	249.4	238.7	237.8	242.4
25°	227.0	241.5	230.5	237.4	241.2
27.5°	218.4	231.2	223.7	233.4	238.3
30°	209.6	220.6	216.7	230.3	238.9
32.5°	201.4	209.4	210.9	229.1	230.5
35°	193.7	199.1	202.0	220.4	227.9
37.5°	185.2	186.6	194.6	216.8	224.0
40°	176.5	175.5	188.3	210.8	220.8
42.5°	167.1	166.8	181.6	207.8	212.8
45°	158.3	159.0	172.1	199.3	206.8
47.5°	149.2	150.1	163.1	190.0	199.3
50°	138.7	139.9	155.0	181.8	193.7
52.5°	127.3	129.6	147.2	174.0	186.0
55°	116.6	118.5	137.3	167.3	180.6
57.5°	106.8	107.9	127.0	158.9	168.9
60°	97.2	97.5	117.3	149.5	159.1
62.5°	86.2	86.7	107.4	138.5	151.4
65°	73.8	76.1	96.7	128.0	139.6
67.5°	62.2	66.3	85.8	118.3	124.4
70°	49.8	56.7	75.1	107.0	111.3
72.5°	38.5	46.6	64.1	94.3	100.3
75°	27.9	37.0	53.9	82.9	88.1
77.5°	18.8	28.0	44.4	70.3	77.2
80°	11.2	20.5	35.8	58.6	66.4
82.5°	5.8	13.7	27.8	49.1	56.1
85°	2.5	8.7	21.0	40.8	46.8
87.5°	0.7	4.9	15.5	33.0	38.1
90°	0.1	2.6	11.0	25.8	30.5
92.5°	0.1	1.2	7.8	19.5	23.1
95°	0.1	0.7	4.8	14.2	17.3
97.5°	0.1	0.4	2.9	10.0	12.7
100°	0.1	0.3	1.7	6.7	9.1
102.5°	0.1	0.4	1.2	4.2	5.9
105°	0.1	0.4	1.0	2.8	3.9
107.5°	0.1	0.4	0.9	2.1	2.7
110°	0.1	0.3	0.9	1.6	2.1

TEST NUMBER: P517183

CATALOG NUMBER: HVL12-1-LD4-1STD-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.9	1.3	1.6
115°	0.1	0.2	0.8	1.2	1.3
117.5°	0.1	0.2	0.6	1.2	1.3
120°	0.1	0.1	0.5	1.2	1.4
122.5°	0.1	0.1	0.4	1.1	1.3
125°	0.1	0.1	0.3	0.8	1.1
127.5°	0.1	0.1	0.3	0.7	0.9
130°	0.1	0.1	0.2	0.5	0.7
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)