

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: P517167

Luminaire Tested: HVL12-1-LD4-1LO-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: P517167
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1LO-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: 623.0 lumens
Efficiency: N/A
Efficacy: 105.6 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

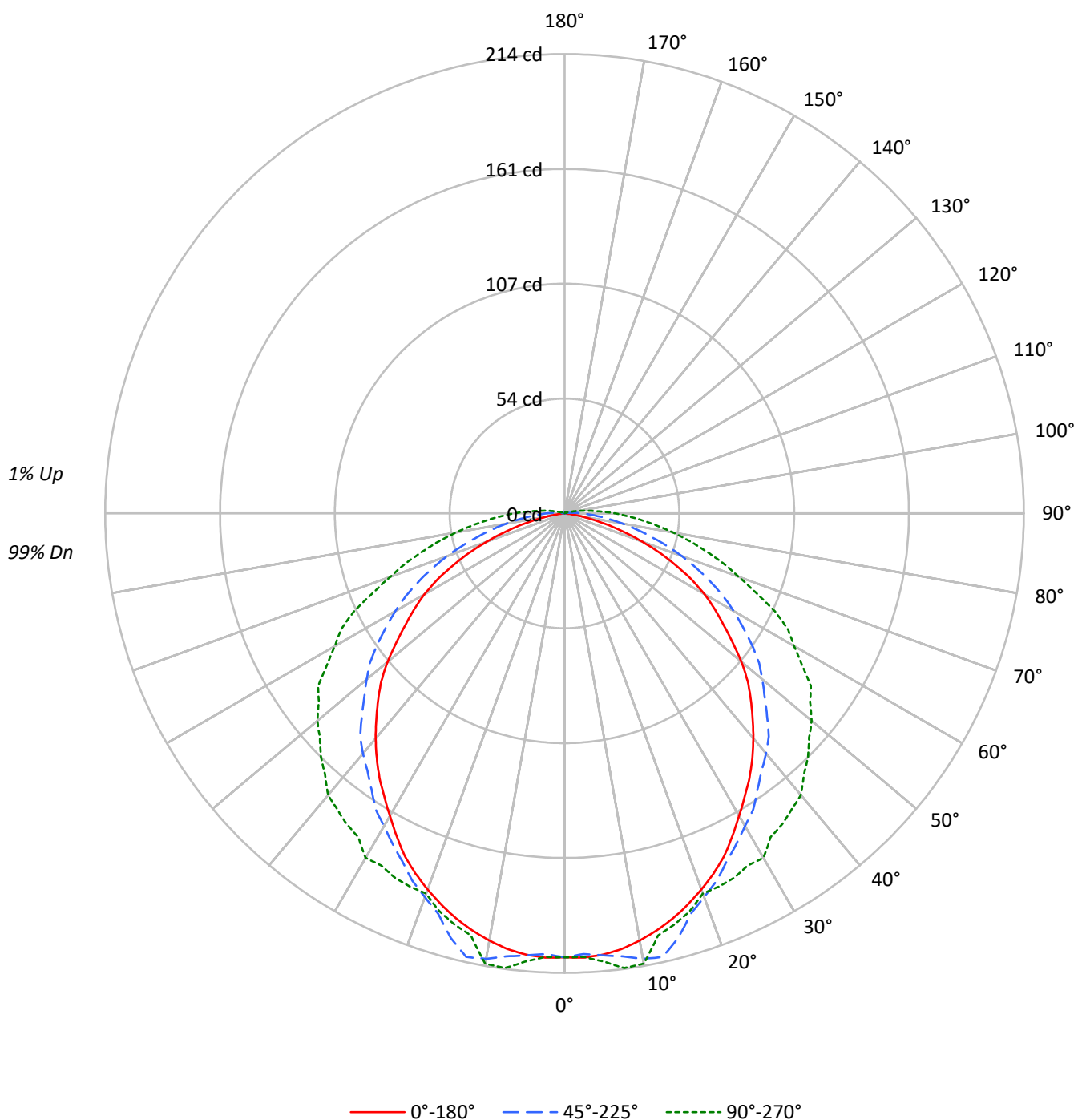
Input Watts (W): 5.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517167

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

Luminous Intensity Polar Plot



TEST NUMBER: P517167

CATALOG NUMBER: HVL12-1-LD4-1LO-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	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°	2226	2226	2226
5°	2197	2187	2231
10°	2145	2211	2261
15°	2083	2146	2113
20°	2013	2005	2035
25°	1941	1913	2063
30°	1845	1839	2101
35°	1769	1768	2080
40°	1688	1714	2112
45°	1602	1645	2093
50°	1503	1573	2100
55°	1370	1495	2124
60°	1260	1391	2063
65°	1075	1269	2032
70°	835	1114	1863
75°	556	925	1751
80°	277	737	1641
85°	81	545	1543

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2124 cd/sqm

TEST NUMBER: P517167

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.9	3.2
10°-20°	56.6	9.1
20°-30°	84.2	13.5
30°-40°	101.2	16.2
40°-50°	106.5	17.1
50°-60°	98.9	15.9
60°-70°	78.2	12.5
70°-80°	47.7	7.7
80°-90°	20.8	3.3
90°-100°	6.5	1.0
100°-110°	1.5	0.2
110°-120°	0.6	0.1
120°-130°	0.3	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°	160.7	25.8
0°-40°	261.9	42.0
0°-60°	467.3	75.0
0°-90°	614.1	98.6
90°-120°	8.5	1.4
90°-150°	8.9	1.4
90°-180°	9.0	1.4
0°-180°	623.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	207	207	207	207	207	
5°	206	206	207	209	210	20
15°	195	203	205	198	198	55
25°	176	187	179	184	187	81
35°	150	154	157	171	177	94
45°	123	123	134	155	160	95
55°	90	92	106	130	140	81
65°	57	59	75	99	108	57
75°	22	29	42	64	68	24
85°	2	7	16	32	36	3
90°	0	2	9	20	24	0
95°	0	0	4	11	13	0
105°	0	0	1	2	3	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: P517167

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	206.8	206.8	206.8	206.8	206.8
2.5°	207.1	206.5	205.4	206.5	206.8
5°	206.3	205.9	206.6	208.9	209.5
7.5°	204.6	206.2	208.1	212.3	213.6
10°	202.0	205.0	210.7	214.3	212.9
12.5°	198.9	204.0	211.6	204.7	201.4
15°	195.3	202.8	204.7	198.0	198.1
17.5°	191.0	201.7	195.6	195.4	194.2
20°	186.4	198.2	190.1	189.7	188.4
22.5°	181.5	193.5	185.2	184.5	188.1
25°	176.1	187.4	178.8	184.2	187.2
27.5°	169.4	179.4	173.5	181.1	184.9
30°	162.7	171.1	168.1	178.7	185.3
32.5°	156.3	162.5	163.6	177.7	178.8
35°	150.3	154.4	156.8	171.0	176.8
37.5°	143.7	144.8	150.9	168.2	173.8
40°	136.9	136.2	146.1	163.5	171.3
42.5°	129.7	129.4	140.9	161.2	165.1
45°	122.8	123.3	133.5	154.6	160.4
47.5°	115.8	116.5	126.5	147.4	154.6
50°	107.6	108.5	120.3	141.0	150.3
52.5°	98.7	100.5	114.2	135.0	144.3
55°	90.4	91.9	106.5	129.8	140.1
57.5°	82.9	83.7	98.5	123.3	131.1
60°	75.4	75.6	91.0	116.0	123.5
62.5°	66.9	67.2	83.3	107.5	117.5
65°	57.3	59.1	75.0	99.3	108.3
67.5°	48.3	51.4	66.6	91.8	96.5
70°	38.7	44.0	58.3	83.0	86.3
72.5°	29.9	36.1	49.8	73.1	77.8
75°	21.7	28.7	41.8	64.3	68.3
77.5°	14.6	21.7	34.4	54.5	59.9
80°	8.7	15.9	27.8	45.5	51.5
82.5°	4.5	10.7	21.6	38.1	43.5
85°	1.9	6.7	16.3	31.6	36.3
87.5°	0.5	3.8	12.0	25.6	29.5
90°	0.0	2.0	8.6	20.1	23.6
92.5°	0.0	1.0	6.0	15.2	17.9
95°	0.0	0.5	3.7	11.0	13.4
97.5°	0.0	0.3	2.3	7.8	9.9
100°	0.0	0.3	1.3	5.2	7.0
102.5°	0.0	0.3	0.9	3.3	4.6
105°	0.0	0.3	0.8	2.1	3.0
107.5°	0.1	0.3	0.7	1.6	2.1
110°	0.0	0.3	0.7	1.2	1.6

TEST NUMBER: P517167

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.7	1.0	1.2
115°	0.0	0.2	0.6	1.0	1.0
117.5°	0.1	0.1	0.5	1.0	1.0
120°	0.1	0.1	0.4	0.9	1.1
122.5°	0.1	0.1	0.3	0.8	1.0
125°	0.0	0.1	0.3	0.6	0.9
127.5°	0.1	0.1	0.2	0.5	0.7
130°	0.1	0.1	0.2	0.4	0.5
132.5°	0.1	0.1	0.1	0.3	0.4
135°	0.1	0.1	0.1	0.2	0.3
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)