

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: P517311

Luminaire Tested: HVL12-2-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: P517311
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-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: 1246.0 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: 2' x H: 0.17')
CIE Type: Direct

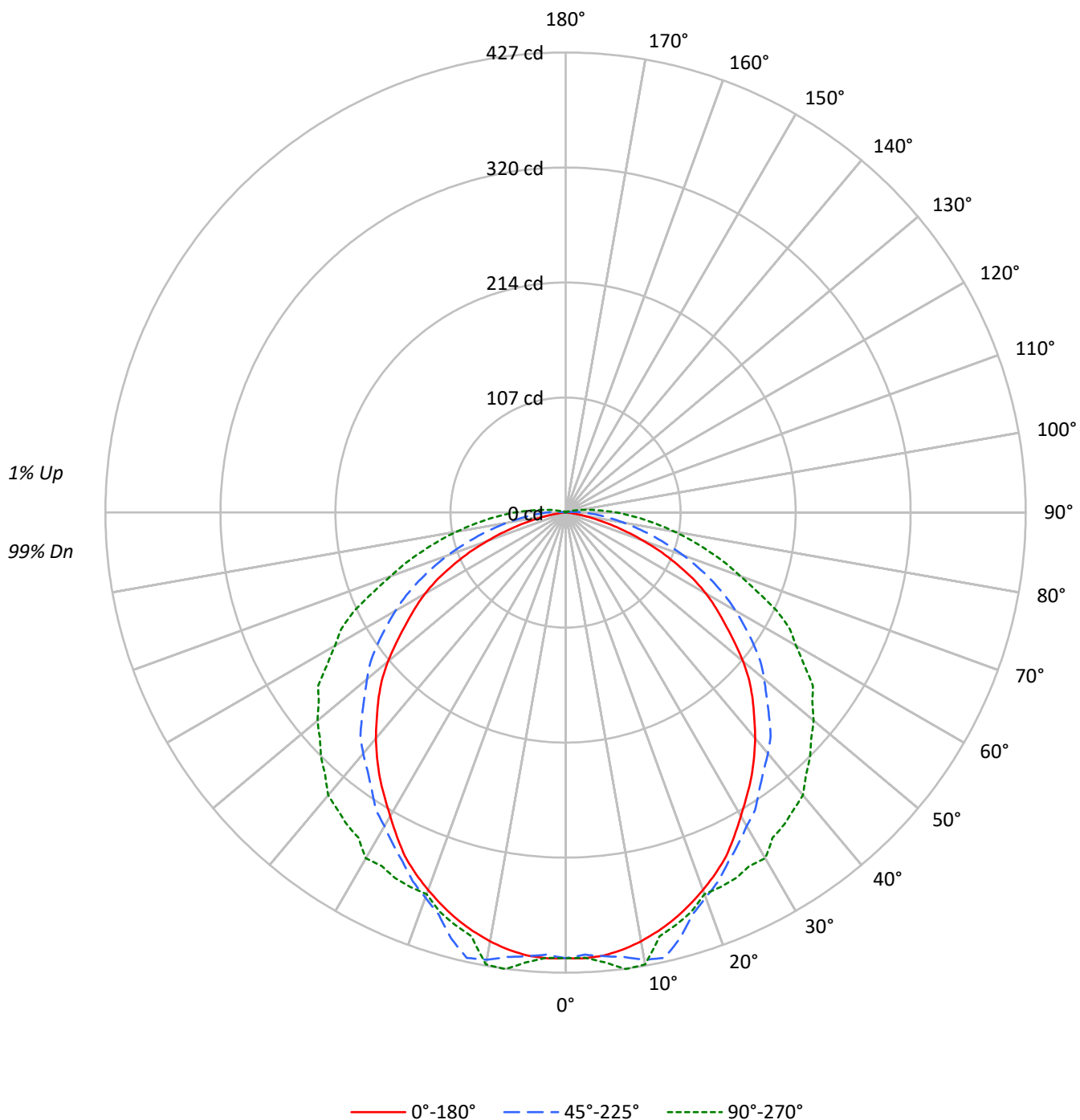
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2226	2226	2226
5°	2213	2198	2231
10°	2176	2233	2261
15°	2128	2178	2113
20°	2072	2046	2035
25°	2014	1962	2062
30°	1929	1896	2101
35°	1865	1833	2080
40°	1798	1787	2112
45°	1725	1727	2093
50°	1639	1663	2099
55°	1517	1596	2124
60°	1418	1501	2062
65°	1237	1386	2032
70°	990	1234	1863
75°	687	1049	1752
80°	366	860	1641
85°	123	666	1543

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2124 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.8	3.2
10°-20°	113.2	9.1
20°-30°	168.4	13.5
30°-40°	202.5	16.2
40°-50°	213.1	17.1
50°-60°	197.7	15.9
60°-70°	156.3	12.5
70°-80°	95.5	7.7
80°-90°	41.6	3.3
90°-100°	12.9	1.0
100°-110°	2.9	0.2
110°-120°	1.2	0.1
120°-130°	0.7	0.1
130°-140°	0.2	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°	321.4	25.8
0°-40°	523.9	42.0
0°-60°	934.7	75.0
0°-90°	1228.1	98.6
90°-120°	17.0	1.4
90°-150°	17.9	1.4
90°-180°	18.0	1.4
0°-180°	1246.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	414	414	414	414	414	
5°	413	412	413	418	419	39
15°	390	406	410	396	396	110
25°	352	375	358	368	374	162
35°	300	309	314	342	354	188
45°	246	247	267	309	321	189
55°	181	184	213	260	280	163
65°	114	118	150	199	217	113
75°	43	57	84	129	137	47
85°	4	14	33	63	73	6
90°	0	4	17	40	47	0
95°	0	1	8	22	27	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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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CATALOG NUMBER: HVL12-2-LD4-1LO-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	413.6	413.6	413.6	413.6	413.6
2.5°	414.1	413.0	410.7	412.9	413.5
5°	412.6	411.8	413.2	417.8	419.0
7.5°	409.1	412.3	416.1	424.6	427.3
10°	404.0	410.1	421.4	428.6	425.8
12.5°	397.8	408.0	423.3	409.3	402.8
15°	390.5	405.5	409.5	395.9	396.2
17.5°	382.0	403.4	391.2	390.9	388.4
20°	372.8	396.3	380.2	379.5	376.9
22.5°	363.0	387.0	370.4	369.0	376.1
25°	352.3	374.8	357.7	368.4	374.3
27.5°	338.9	358.8	347.0	362.2	369.7
30°	325.3	342.2	336.2	357.3	370.6
32.5°	312.6	325.0	327.2	355.5	357.7
35°	300.5	308.9	313.5	342.0	353.6
37.5°	287.3	289.6	301.9	336.3	347.5
40°	273.8	272.4	292.1	327.1	342.6
42.5°	259.3	258.8	281.7	322.4	330.2
45°	245.6	246.7	267.0	309.3	320.8
47.5°	231.5	233.0	253.0	294.9	309.2
50°	215.2	217.0	240.5	282.1	300.5
52.5°	197.5	201.0	228.4	270.0	288.6
55°	180.9	183.8	213.0	259.6	280.2
57.5°	165.7	167.5	197.1	246.5	262.1
60°	150.8	151.2	182.1	232.0	246.9
62.5°	133.7	134.5	166.7	214.9	234.9
65°	114.5	118.1	150.1	198.6	216.6
67.5°	96.6	102.9	133.1	183.6	193.0
70°	77.3	88.0	116.5	166.0	172.6
72.5°	59.7	72.3	99.5	146.3	155.6
75°	43.3	57.4	83.7	128.6	136.7
77.5°	29.2	43.5	68.8	109.0	119.7
80°	17.4	31.8	55.6	90.9	103.0
82.5°	8.9	21.3	43.1	76.3	87.0
85°	3.9	13.5	32.6	63.3	72.6
87.5°	1.1	7.7	24.0	51.1	59.1
90°	0.1	4.0	17.1	40.1	47.3
92.5°	0.1	1.9	12.0	30.3	35.8
95°	0.1	1.0	7.5	22.0	26.9
97.5°	0.1	0.6	4.5	15.6	19.7
100°	0.1	0.5	2.7	10.4	14.1
102.5°	0.1	0.6	1.9	6.6	9.2
105°	0.1	0.6	1.5	4.3	6.1
107.5°	0.2	0.6	1.3	3.2	4.2
110°	0.1	0.5	1.4	2.4	3.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	2.0	2.4
115°	0.1	0.3	1.2	1.9	2.0
117.5°	0.2	0.3	0.9	1.9	2.0
120°	0.2	0.2	0.8	1.9	2.1
122.5°	0.2	0.2	0.6	1.7	2.0
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.8	1.0
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.4	0.6
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)