

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: P517351

Luminaire Tested: HVL12-2-LD4-2HI-50-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: P517351
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2HI-50-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4190.0 lumens
Efficiency: N/A
Efficacy: 94.8 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

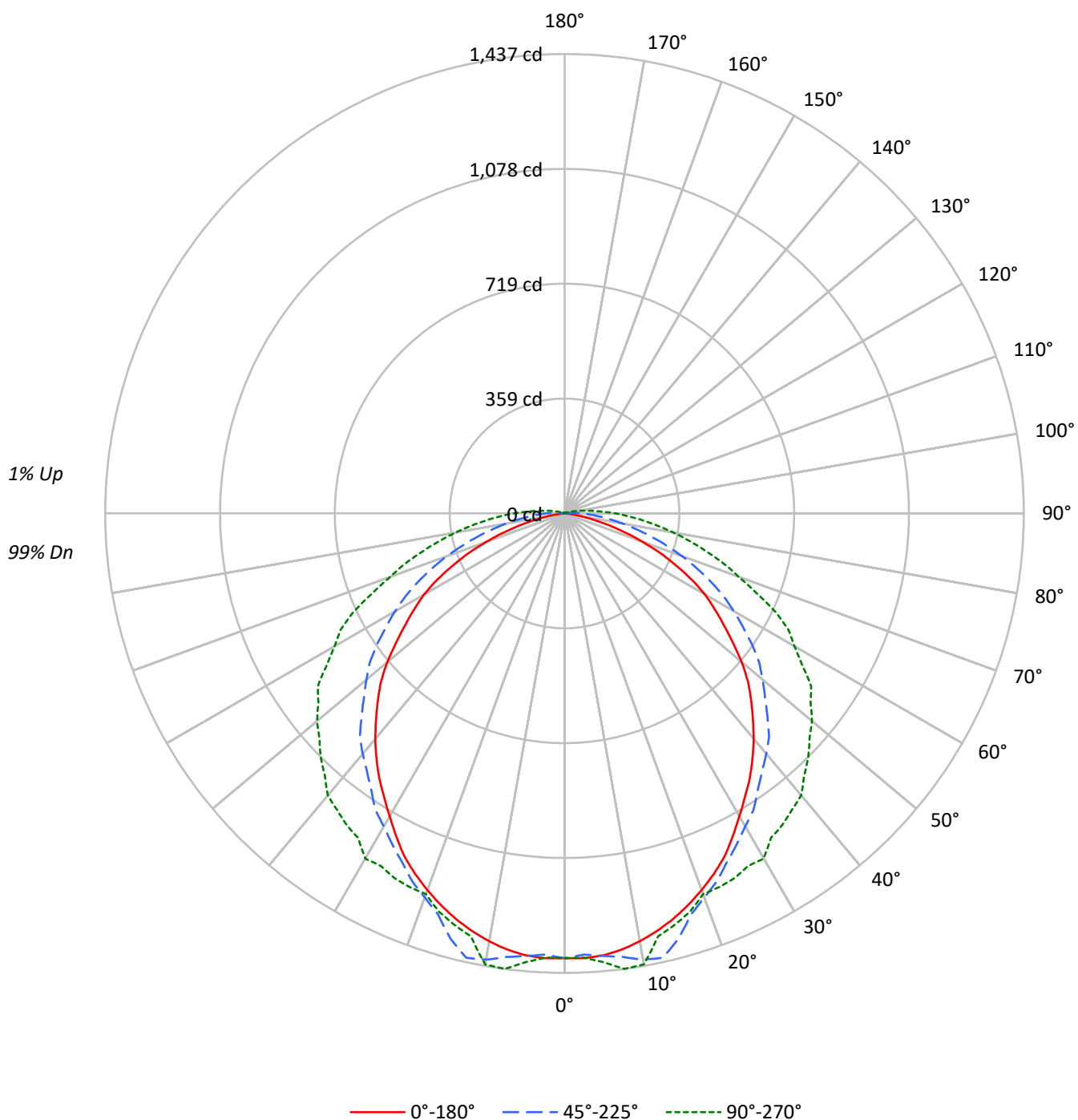
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7486	7486	7486
5°	7442	7392	7503
10°	7317	7511	7602
15°	7157	7325	7105
20°	6969	6879	6843
25°	6771	6598	6936
30°	6486	6375	7066
35°	6274	6164	6996
40°	6046	6010	7100
45°	5802	5807	7038
50°	5511	5594	7059
55°	5101	5366	7142
60°	4771	5046	6936
65°	4159	4659	6833
70°	3330	4150	6265
75°	2309	3524	5892
80°	1233	2894	5516
85°	411	2240	5190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7142 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.7	3.2
10°-20°	380.7	9.1
20°-30°	566.4	13.5
30°-40°	680.8	16.2
40°-50°	716.6	17.1
50°-60°	664.9	15.9
60°-70°	525.7	12.5
70°-80°	321.1	7.7
80°-90°	139.9	3.3
90°-100°	43.6	1.0
100°-110°	9.8	0.2
110°-120°	3.9	0.1
120°-130°	2.2	0.1
130°-140°	0.6	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°	1080.8	25.8
0°-40°	1761.6	42.0
0°-60°	3143.1	75.0
0°-90°	4129.9	98.6
90°-120°	57.3	1.4
90°-150°	60.1	1.4
90°-180°	60.0	1.4
0°-180°	4190.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1391	1391	1391	1391	1391	
5°	1388	1385	1389	1405	1409	131
15°	1313	1364	1377	1331	1332	370
25°	1185	1260	1203	1239	1259	544
35°	1011	1039	1054	1150	1189	632
45°	826	830	898	1040	1079	637
55°	608	618	716	873	942	547
65°	385	397	505	668	728	381
75°	146	193	281	432	460	159
85°	13	45	110	213	244	20
90°	0	14	58	135	159	1
95°	0	3	25	74	90	0
105°	0	2	5	14	20	0
115°	0	1	4	6	7	0
125°	0	1	2	4	6	0
135°	1	1	1	1	2	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-LD4-2HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1390.9	1390.9	1390.9	1390.9	1390.9
2.5°	1392.6	1388.9	1381.2	1388.6	1390.6
5°	1387.5	1384.6	1389.4	1405.0	1409.0
7.5°	1375.8	1386.6	1399.4	1427.7	1436.8
10°	1358.6	1379.0	1417.2	1441.3	1431.9
12.5°	1337.6	1372.2	1423.4	1376.4	1354.6
15°	1313.2	1363.7	1377.0	1331.4	1332.2
17.5°	1284.6	1356.6	1315.5	1314.4	1306.1
20°	1253.7	1332.8	1278.4	1276.1	1267.3
22.5°	1220.6	1301.3	1245.5	1241.0	1264.8
25°	1184.6	1260.2	1202.7	1238.7	1258.8
27.5°	1139.5	1206.4	1167.0	1218.0	1243.2
30°	1093.9	1150.9	1130.5	1201.6	1246.4
32.5°	1051.1	1092.8	1100.4	1195.4	1202.7
35°	1010.6	1038.7	1054.3	1150.0	1189.1
37.5°	966.1	973.8	1015.2	1131.0	1168.7
40°	920.8	916.0	982.3	1099.9	1152.0
42.5°	872.1	870.4	947.4	1084.3	1110.4
45°	825.9	829.6	897.9	1040.1	1078.9
47.5°	778.6	783.4	850.8	991.6	1039.8
50°	723.6	729.9	808.9	948.6	1010.6
52.5°	664.1	676.0	768.1	907.8	970.4
55°	608.3	618.2	716.3	872.9	942.3
57.5°	557.3	563.3	662.7	829.0	881.4
60°	507.2	508.6	612.3	780.3	830.4
62.5°	449.6	452.2	560.4	722.8	789.9
65°	385.0	397.2	504.6	667.8	728.4
67.5°	324.7	345.9	447.7	617.4	649.1
70°	260.1	296.1	391.8	558.2	580.5
72.5°	200.9	243.1	334.6	491.9	523.3
75°	145.6	192.9	281.3	432.4	459.6
77.5°	98.0	146.2	231.5	366.6	402.6
80°	58.6	106.8	187.0	305.7	346.2
82.5°	30.0	71.7	145.1	256.4	292.7
85°	13.0	45.3	109.6	212.8	244.2
87.5°	3.7	25.8	80.7	172.0	198.6
90°	0.3	13.6	57.5	134.9	158.9
92.5°	0.3	6.5	40.5	102.0	120.4
95°	0.3	3.4	25.2	73.9	90.4
97.5°	0.3	2.0	15.3	52.4	66.3
100°	0.3	1.7	9.1	34.8	47.3
102.5°	0.3	2.0	6.2	22.1	30.9
105°	0.3	2.0	5.1	14.4	20.4
107.5°	0.6	2.0	4.5	10.8	14.2
110°	0.3	1.7	4.8	8.2	11.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.4	4.5	6.8	8.2
115°	0.3	1.1	4.0	6.5	6.8
117.5°	0.6	0.8	3.1	6.5	6.8
120°	0.6	0.6	2.5	6.2	7.1
122.5°	0.6	0.6	2.0	5.7	6.8
125°	0.3	0.6	1.7	4.2	5.9
127.5°	0.6	0.6	1.4	3.4	4.5
130°	0.6	0.6	1.1	2.5	3.4
132.5°	0.6	0.6	0.8	2.0	2.5
135°	0.6	0.6	0.6	1.4	2.0
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)