

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: P517991

Luminaire Tested: HVL8-2-LD4-3LO-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: P517991
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3818.0 lumens
Efficiency: N/A
Efficacy: 113.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

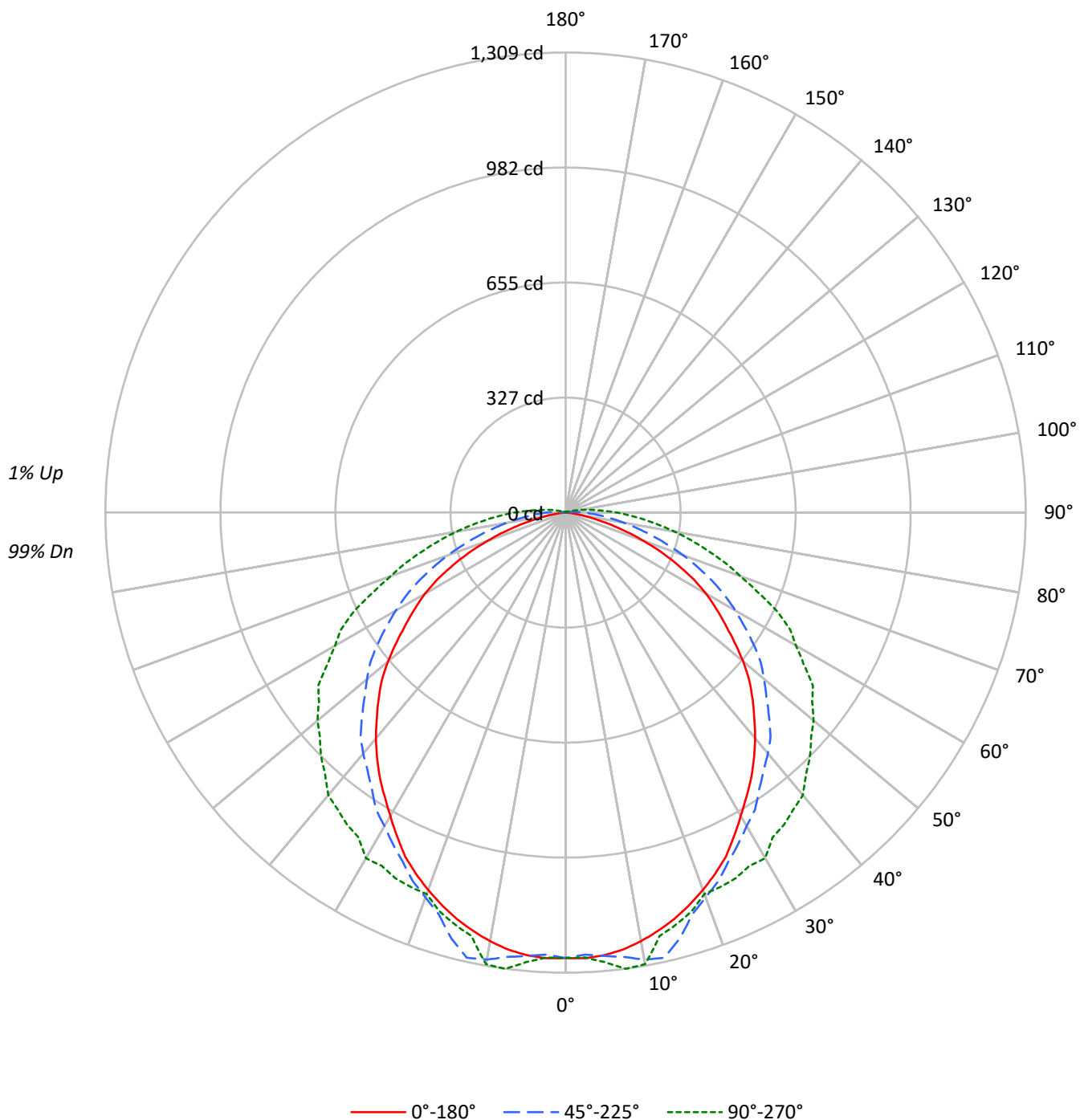
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10232	10232	10232
5°	10171	10053	10182
10°	10001	10164	10244
15°	9782	9863	9508
20°	9525	9217	9093
25°	9255	8795	9151
30°	8865	8452	9251
35°	8575	8126	9087
40°	8265	7875	9144
45°	7931	7558	8979
50°	7533	7227	8911
55°	6972	6873	8906
60°	6520	6396	8525
65°	5687	5834	8254
70°	4552	5115	7401
75°	3157	4254	6757
80°	1686	3390	6066
85°	564	2505	5342

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8979 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	3.2
10°-20°	346.9	9.1
20°-30°	516.1	13.5
30°-40°	620.4	16.2
40°-50°	653.0	17.1
50°-60°	605.9	15.9
60°-70°	479.1	12.5
70°-80°	292.6	7.7
80°-90°	127.5	3.3
90°-100°	39.7	1.0
100°-110°	8.9	0.2
110°-120°	3.6	0.1
120°-130°	2.0	0.1
130°-140°	0.5	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°	984.8	25.8
0°-40°	1605.2	42.0
0°-60°	2864.1	75.0
0°-90°	3763.3	98.6
90°-120°	52.2	1.4
90°-150°	54.7	1.4
90°-180°	55.0	1.4
0°-180°	3818.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1267	1267	1267	1267	1267	
5°	1264	1262	1266	1280	1284	120
15°	1197	1243	1255	1213	1214	337
25°	1079	1148	1096	1129	1147	496
35°	921	946	961	1048	1084	576
45°	753	756	818	948	983	580
55°	554	563	653	795	859	498
65°	351	362	460	608	664	347
75°	133	176	256	394	419	145
85°	12	41	100	194	222	18
90°	0	12	52	123	145	1
95°	0	3	23	67	82	0
105°	0	2	5	13	19	0
115°	0	1	4	6	6	0
125°	0	0	2	4	5	0
135°	0	0	0	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

TEST NUMBER: P517991

CATALOG NUMBER: HVL8-2-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1267.4	1267.4	1267.4	1267.4	1267.4
2.5°	1268.9	1265.6	1258.6	1265.3	1267.1
5°	1264.3	1261.7	1266.1	1280.3	1283.9
7.5°	1253.7	1263.5	1275.1	1300.9	1309.2
10°	1237.9	1256.5	1291.4	1313.3	1304.8
12.5°	1218.8	1250.3	1297.1	1254.2	1234.3
15°	1196.6	1242.6	1254.7	1213.2	1213.9
17.5°	1170.6	1236.1	1198.7	1197.7	1190.2
20°	1142.4	1214.4	1164.9	1162.8	1154.8
22.5°	1112.2	1185.8	1134.9	1130.8	1152.5
25°	1079.4	1148.4	1095.9	1128.7	1147.1
27.5°	1038.4	1099.3	1063.4	1109.9	1132.9
30°	996.8	1048.7	1030.1	1094.9	1135.7
32.5°	957.8	995.8	1002.7	1089.2	1095.9
35°	920.9	946.5	960.7	1047.9	1083.5
37.5°	880.4	887.3	925.0	1030.6	1065.0
40°	839.1	834.7	895.1	1002.2	1049.7
42.5°	794.7	793.1	863.3	988.0	1011.8
45°	752.6	755.9	818.1	947.8	983.1
47.5°	709.5	713.8	775.3	903.6	947.5
50°	659.4	665.1	737.1	864.4	920.9
52.5°	605.2	616.0	699.9	827.2	884.2
55°	554.3	563.3	652.7	795.4	858.7
57.5°	507.8	513.2	603.9	755.4	803.2
60°	462.1	463.4	557.9	711.0	756.7
62.5°	409.7	412.0	510.7	658.6	719.8
65°	350.9	362.0	459.8	608.5	663.8
67.5°	295.9	315.2	407.9	562.6	591.5
70°	237.0	269.8	357.1	508.6	529.0
72.5°	183.0	221.5	304.9	448.2	476.8
75°	132.7	175.8	256.4	394.0	418.8
77.5°	89.3	133.2	210.9	334.1	366.9
80°	53.4	97.3	170.4	278.6	315.5
82.5°	27.4	65.3	132.2	233.6	266.7
85°	11.9	41.3	99.9	193.9	222.5
87.5°	3.4	23.5	73.6	156.7	181.0
90°	0.3	12.4	52.4	122.9	144.8
92.5°	0.3	5.9	36.9	92.9	109.7
95°	0.3	3.1	23.0	67.4	82.4
97.5°	0.3	1.8	13.9	47.8	60.4
100°	0.3	1.5	8.3	31.8	43.1
102.5°	0.3	1.8	5.7	20.1	28.1
105°	0.3	1.8	4.6	13.2	18.6
107.5°	0.5	1.8	4.1	9.8	12.9
110°	0.3	1.5	4.4	7.5	10.1

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CATALOG NUMBER: HVL8-2-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.1	6.2	7.5
115°	0.3	1.0	3.6	5.9	6.2
117.5°	0.5	0.8	2.8	5.9	6.2
120°	0.5	0.5	2.3	5.7	6.5
122.5°	0.5	0.5	1.8	5.2	6.2
125°	0.3	0.5	1.5	3.9	5.4
127.5°	0.5	0.5	1.3	3.1	4.1
130°	0.5	0.5	1.0	2.3	3.1
132.5°	0.5	0.5	0.8	1.8	2.3
135°	0.5	0.5	0.5	1.3	1.8
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)