

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: P517256

Luminaire Tested: HVL12-1-LD4-3HI-50-UNV-C-EDD

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: P517256
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3HI-50-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3798.0 lumens
Efficiency: N/A
Efficacy: 117.6 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

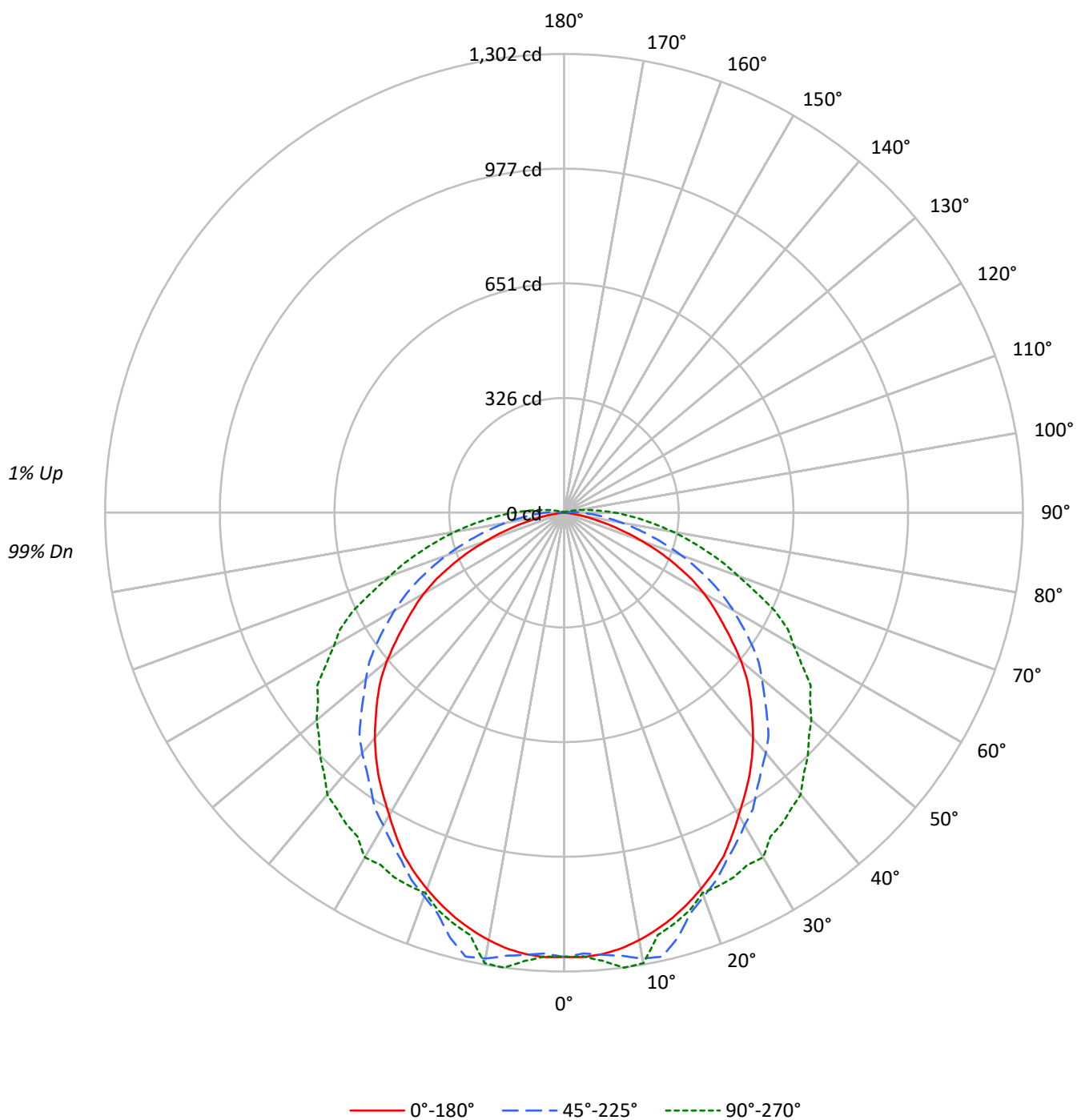
Input Watts (W): 32.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13570	13570	13570
5°	13393	13333	13602
10°	13076	13480	13782
15°	12698	13082	12882
20°	12273	12225	12406
25°	11833	11666	12575
30°	11243	11210	12810
35°	10780	10778	12683
40°	10289	10445	12872
45°	9767	10026	12760
50°	9163	9585	12798
55°	8358	9114	12948
60°	7679	8484	12574
65°	6548	7738	12389
70°	5090	6784	11358
75°	3384	5642	10681
80°	1695	4496	9999
85°	502	3323	9411

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12948 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.2	3.2
10°-20°	345.1	9.1
20°-30°	513.4	13.5
30°-40°	617.1	16.2
40°-50°	649.6	17.1
50°-60°	602.7	15.9
60°-70°	476.6	12.5
70°-80°	291.1	7.7
80°-90°	126.8	3.3
90°-100°	39.5	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°	979.6	25.8
0°-40°	1596.8	42.0
0°-60°	2849.1	75.0
0°-90°	3743.6	98.6
90°-120°	51.9	1.4
90°-150°	54.5	1.4
90°-180°	54.0	1.4
0°-180°	3798.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1261	1261	1261	1261	1261	
5°	1258	1255	1259	1274	1277	119
15°	1190	1236	1248	1207	1208	335
25°	1074	1142	1090	1123	1141	493
35°	916	942	956	1042	1078	573
45°	749	752	814	943	978	577
55°	551	560	649	791	854	495
65°	349	360	457	605	660	346
75°	132	175	255	392	417	144
85°	12	41	99	193	221	18
90°	0	12	52	122	144	1
95°	0	3	23	67	82	0
105°	0	2	5	13	18	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1260.7	1260.7	1260.7	1260.7	1260.7
2.5°	1262.3	1258.9	1252.0	1258.7	1260.5
5°	1257.6	1255.1	1259.4	1273.6	1277.2
7.5°	1247.1	1256.9	1268.4	1294.1	1302.3
10°	1231.5	1249.9	1284.6	1306.4	1298.0
12.5°	1212.4	1243.8	1290.3	1247.6	1227.9
15°	1190.4	1236.1	1248.1	1206.8	1207.6
17.5°	1164.4	1229.7	1192.4	1191.4	1183.9
20°	1136.4	1208.1	1158.8	1156.7	1148.8
22.5°	1106.4	1179.6	1129.0	1124.9	1146.4
25°	1073.8	1142.3	1090.2	1122.8	1141.1
27.5°	1032.9	1093.5	1057.8	1104.1	1126.9
30°	991.6	1043.2	1024.7	1089.2	1129.8
32.5°	952.8	990.6	997.5	1083.5	1090.2
35°	916.1	941.5	955.6	1042.4	1077.9
37.5°	875.8	882.7	920.2	1025.2	1059.4
40°	834.7	830.3	890.4	997.0	1044.2
42.5°	790.5	789.0	858.8	982.9	1006.5
45°	748.6	752.0	813.9	942.8	978.0
47.5°	705.7	710.1	771.2	898.9	942.5
50°	655.9	661.6	733.2	859.8	916.1
52.5°	602.0	612.8	696.2	822.9	879.6
55°	551.4	560.4	649.2	791.3	854.2
57.5°	505.2	510.6	600.7	751.5	799.0
60°	459.7	461.0	555.0	707.3	752.7
62.5°	407.6	409.9	508.0	655.1	716.0
65°	349.0	360.1	457.4	605.3	660.3
67.5°	294.3	313.6	405.8	559.6	588.4
70°	235.8	268.4	355.2	505.9	526.2
72.5°	182.1	220.4	303.3	445.8	474.3
75°	132.0	174.9	255.0	391.9	416.6
77.5°	88.9	132.5	209.8	332.3	364.9
80°	53.2	96.8	169.5	277.1	313.8
82.5°	27.2	65.0	131.5	232.4	265.3
85°	11.8	41.1	99.4	192.9	221.4
87.5°	3.3	23.4	73.2	155.9	180.0
90°	0.3	12.3	52.1	122.2	144.1
92.5°	0.3	5.9	36.7	92.5	109.1
95°	0.3	3.1	22.9	67.0	81.9
97.5°	0.3	1.8	13.9	47.5	60.1
100°	0.3	1.5	8.2	31.6	42.9
102.5°	0.3	1.8	5.7	20.0	28.0
105°	0.3	1.8	4.6	13.1	18.5
107.5°	0.5	1.8	4.1	9.8	12.8
110°	0.3	1.5	4.4	7.4	10.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.1	6.2	7.4
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	6.4
122.5°	0.5	0.5	1.8	5.1	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)