

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: P517352

Luminaire Tested: HVL12-2-LD4-2HI-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: P517352
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
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4816.0 lumens
Efficiency: N/A
Efficacy: 109.0 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

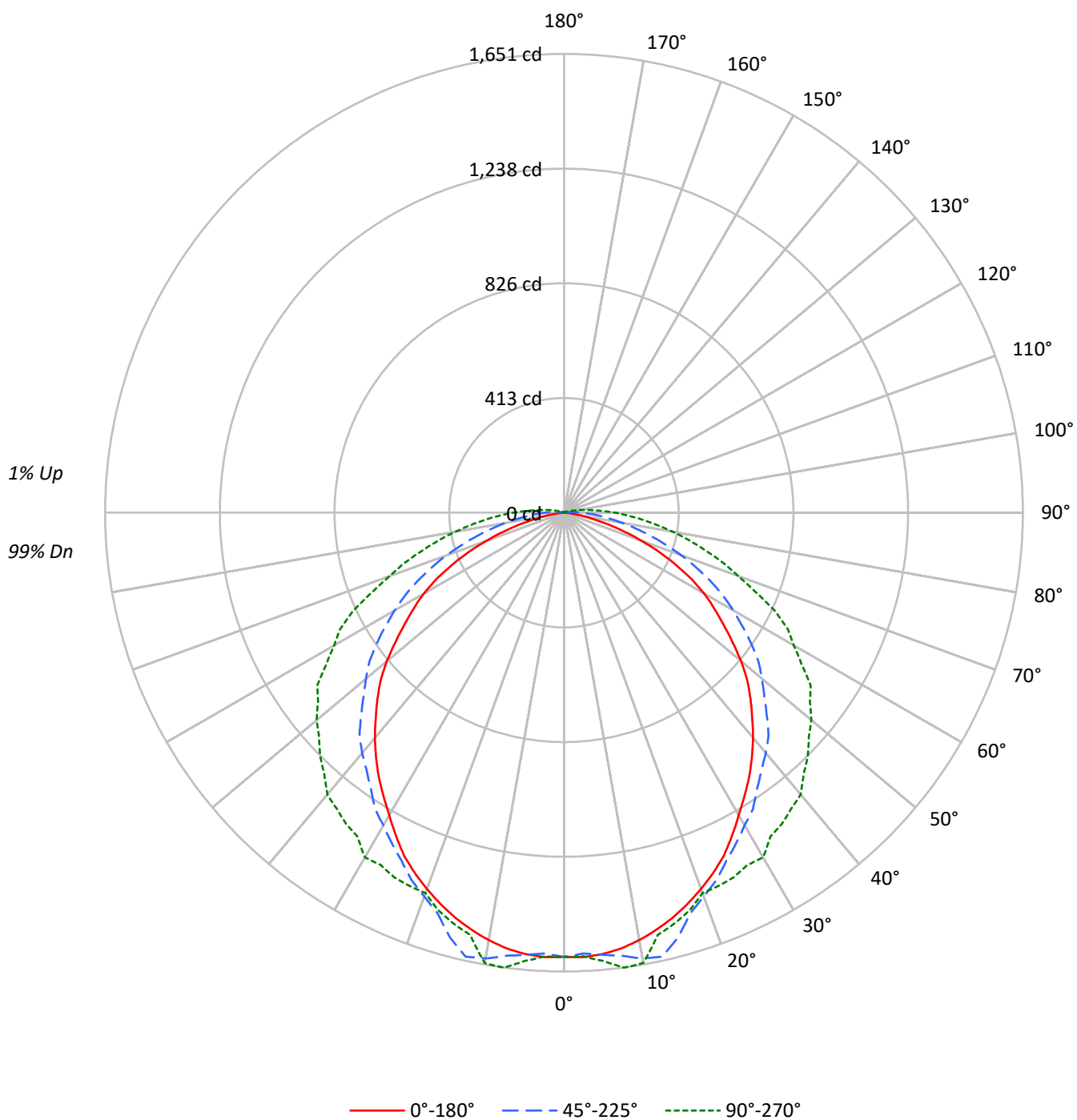
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8604	8604	8604
5°	8553	8496	8624
10°	8410	8633	8738
15°	8226	8420	8167
20°	8010	7907	7866
25°	7783	7584	7972
30°	7455	7327	8121
35°	7211	7085	8041
40°	6950	6908	8161
45°	6669	6675	8090
50°	6334	6430	8114
55°	5863	6168	8209
60°	5483	5799	7972
65°	4782	5356	7855
70°	3828	4770	7202
75°	2655	4051	6771
80°	1418	3326	6341
85°	474	2576	5966

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8209 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	3.2
10°-20°	437.6	9.1
20°-30°	651.0	13.5
30°-40°	782.5	16.2
40°-50°	823.7	17.1
50°-60°	764.3	15.9
60°-70°	604.3	12.5
70°-80°	369.1	7.7
80°-90°	160.8	3.3
90°-100°	50.1	1.0
100°-110°	11.3	0.2
110°-120°	4.5	0.1
120°-130°	2.6	0.1
130°-140°	0.7	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°	1242.2	25.8
0°-40°	2024.8	42.0
0°-60°	3612.7	75.0
0°-90°	4746.9	98.6
90°-120°	65.8	1.4
90°-150°	69.1	1.4
90°-180°	69.0	1.4
0°-180°	4816.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1599	1599	1599	1599	1599	
5°	1595	1592	1597	1615	1620	151
15°	1509	1567	1583	1530	1531	425
25°	1362	1448	1382	1424	1447	625
35°	1162	1194	1212	1322	1367	726
45°	949	954	1032	1196	1240	732
55°	699	711	823	1003	1083	628
65°	443	457	580	768	837	438
75°	167	222	323	497	528	183
85°	15	52	126	245	281	23
90°	0	16	66	155	183	1
95°	0	4	29	85	104	0
105°	0	2	6	17	23	0
115°	0	1	5	8	8	1
125°	0	1	2	5	7	1
135°	1	1	1	2	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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1598.7	1598.7	1598.7	1598.7	1598.7
2.5°	1600.6	1596.4	1587.6	1596.0	1598.3
5°	1594.7	1591.5	1597.0	1614.9	1619.5
7.5°	1581.4	1593.8	1608.4	1641.0	1651.4
10°	1561.5	1585.0	1628.9	1656.6	1645.9
12.5°	1537.4	1577.2	1636.1	1582.0	1557.0
15°	1509.4	1567.4	1582.7	1530.3	1531.2
17.5°	1476.5	1559.2	1512.0	1510.7	1501.3
20°	1441.0	1531.9	1469.4	1466.8	1456.7
22.5°	1402.9	1495.7	1431.6	1426.4	1453.7
25°	1361.6	1448.5	1382.4	1423.8	1446.9
27.5°	1309.8	1386.6	1341.4	1400.0	1429.0
30°	1257.4	1322.8	1299.4	1381.1	1432.6
32.5°	1208.2	1256.1	1264.9	1373.9	1382.4
35°	1161.6	1193.9	1211.8	1321.8	1366.8
37.5°	1110.5	1119.3	1166.8	1300.0	1343.3
40°	1058.4	1052.8	1129.1	1264.2	1324.1
42.5°	1002.4	1000.4	1089.0	1246.3	1276.2
45°	949.3	953.5	1032.0	1195.5	1240.1
47.5°	894.9	900.4	977.9	1139.8	1195.2
50°	831.7	838.9	929.8	1090.3	1161.6
52.5°	763.3	777.0	882.9	1043.4	1115.4
55°	699.2	710.6	823.3	1003.3	1083.1
57.5°	640.6	647.4	761.7	952.9	1013.1
60°	582.9	584.6	703.7	896.9	954.5
62.5°	516.8	519.7	644.1	830.8	907.9
65°	442.6	456.6	580.0	767.6	837.3
67.5°	373.2	397.6	514.5	709.6	746.1
70°	299.0	340.3	450.4	641.5	667.3
72.5°	230.9	279.4	384.6	565.3	601.5
75°	167.4	221.8	323.4	497.0	528.2
77.5°	112.7	168.0	266.1	421.4	462.8
80°	67.4	122.8	214.9	351.4	398.0
82.5°	34.5	82.4	166.7	294.7	336.4
85°	15.0	52.1	126.0	244.6	280.7
87.5°	4.2	29.6	92.8	197.7	228.3
90°	0.3	15.6	66.1	155.0	182.7
92.5°	0.3	7.5	46.6	117.2	138.4
95°	0.3	3.9	29.0	85.0	103.9
97.5°	0.3	2.3	17.6	60.2	76.2
100°	0.3	2.0	10.4	40.1	54.4
102.5°	0.3	2.3	7.2	25.4	35.5
105°	0.3	2.3	5.9	16.6	23.4
107.5°	0.7	2.3	5.2	12.4	16.3
110°	0.3	2.0	5.5	9.4	12.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.6	5.2	7.8	9.4
115°	0.3	1.3	4.6	7.5	7.8
117.5°	0.7	1.0	3.6	7.5	7.8
120°	0.7	0.7	2.9	7.2	8.1
122.5°	0.7	0.7	2.3	6.5	7.8
125°	0.3	0.7	2.0	4.9	6.8
127.5°	0.7	0.7	1.6	3.9	5.2
130°	0.7	0.7	1.3	2.9	3.9
132.5°	0.7	0.7	1.0	2.3	2.9
135°	0.7	0.7	0.7	1.6	2.3
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)