

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: P517344

Luminaire Tested: HVL12-2-LD4-2HI-35-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: P517344
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2HI-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4689.0 lumens
Efficiency: N/A
Efficacy: 106.1 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

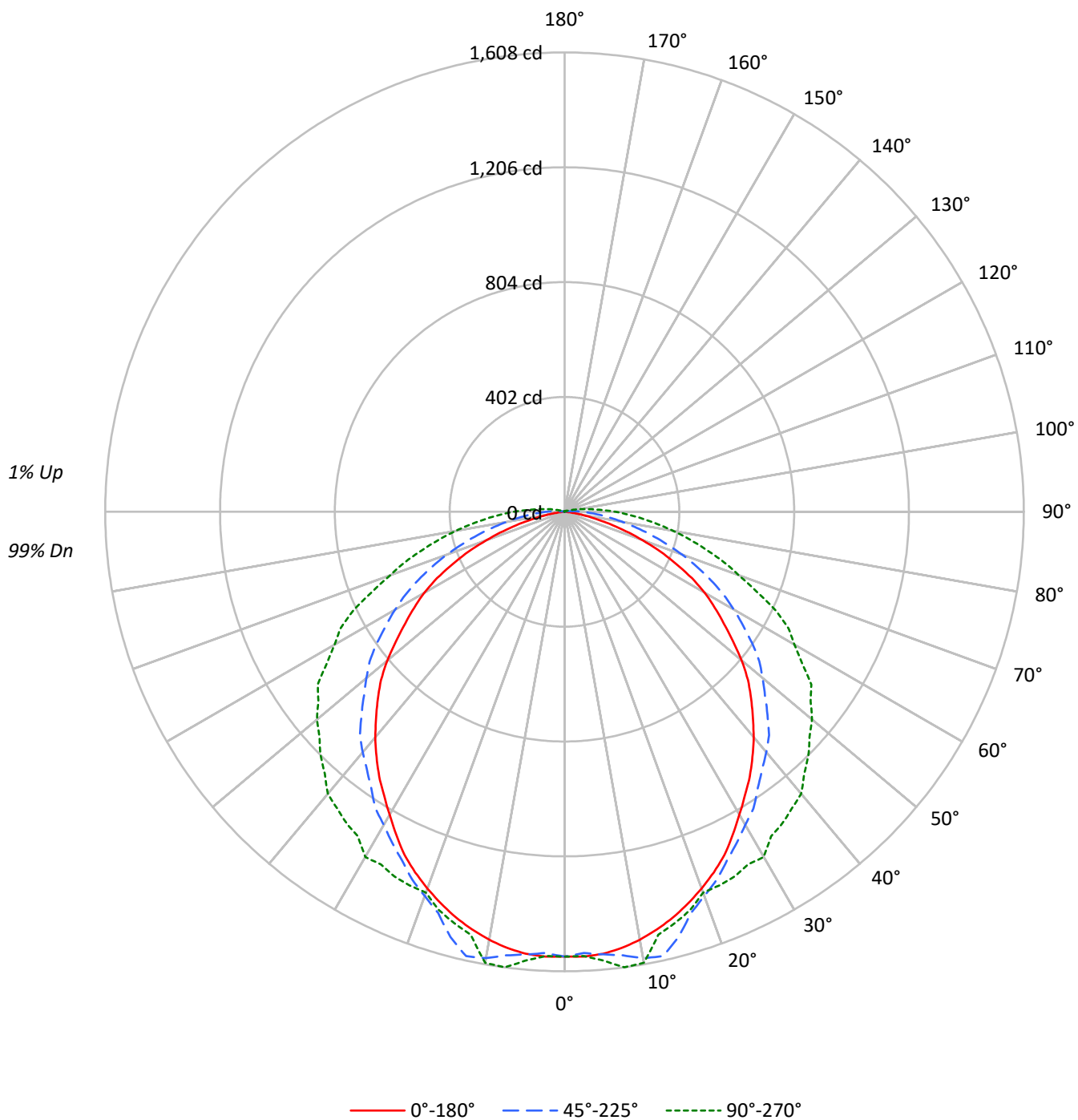
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517344

CATALOG NUMBER: HVL12-2-LD4-2HI-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517344

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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°	8377	8377	8377
5°	8328	8272	8396
10°	8188	8405	8508
15°	8009	8198	7952
20°	7799	7698	7658
25°	7578	7384	7762
30°	7259	7134	7907
35°	7021	6898	7829
40°	6767	6725	7946
45°	6494	6499	7877
50°	6168	6260	7900
55°	5708	6005	7993
60°	5339	5646	7762
65°	4655	5214	7648
70°	3727	4644	7012
75°	2585	3944	6593
80°	1381	3239	6174
85°	462	2508	5809

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7993 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.6	3.2
10°-20°	426.0	9.1
20°-30°	633.9	13.5
30°-40°	761.9	16.2
40°-50°	801.9	17.1
50°-60°	744.1	15.9
60°-70°	588.3	12.5
70°-80°	359.4	7.7
80°-90°	156.6	3.3
90°-100°	48.7	1.0
100°-110°	10.9	0.2
110°-120°	4.4	0.1
120°-130°	2.5	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°	1209.5	25.8
0°-40°	1971.4	42.0
0°-60°	3517.4	75.0
0°-90°	4621.7	98.6
90°-120°	64.1	1.4
90°-150°	67.2	1.4
90°-180°	67.0	1.4
0°-180°	4689.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1553	1550	1555	1572	1577	147
15°	1470	1526	1541	1490	1491	414
25°	1326	1410	1346	1386	1409	609
35°	1131	1162	1180	1287	1331	707
45°	924	928	1005	1164	1207	712
55°	681	692	802	977	1055	612
65°	431	444	565	747	815	427
75°	163	216	315	484	514	178
85°	15	51	123	238	273	23
90°	0	15	64	151	178	1
95°	0	4	28	83	101	0
105°	0	2	6	16	23	0
115°	0	1	4	7	8	0
125°	0	1	2	5	7	0
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

TEST NUMBER: P517344

CATALOG NUMBER: HVL12-2-LD4-2HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.5	1556.5	1556.5	1556.5	1556.5
2.5°	1558.4	1554.3	1545.7	1554.0	1556.2
5°	1552.7	1549.5	1554.9	1572.3	1576.8
7.5°	1539.7	1551.7	1566.0	1597.7	1607.9
10°	1520.3	1543.2	1586.0	1612.9	1602.5
12.5°	1496.9	1535.6	1593.0	1540.3	1515.9
15°	1469.6	1526.1	1541.0	1489.9	1490.9
17.5°	1437.6	1518.1	1472.2	1470.9	1461.7
20°	1403.0	1491.5	1430.6	1428.1	1418.3
22.5°	1365.9	1456.3	1393.8	1388.8	1415.4
25°	1325.7	1410.3	1346.0	1386.2	1408.7
27.5°	1275.3	1350.1	1306.0	1363.1	1391.3
30°	1224.2	1287.9	1265.1	1344.7	1394.8
32.5°	1176.3	1222.9	1231.5	1337.7	1346.0
35°	1131.0	1162.4	1179.8	1287.0	1330.7
37.5°	1081.2	1089.8	1136.1	1265.7	1307.9
40°	1030.5	1025.1	1099.3	1230.9	1289.2
42.5°	975.9	974.0	1060.3	1213.4	1242.6
45°	924.3	928.4	1004.8	1164.0	1207.4
47.5°	871.3	876.7	952.2	1109.7	1163.6
50°	809.8	816.8	905.2	1061.5	1131.0
52.5°	743.2	756.5	859.6	1015.9	1086.0
55°	680.7	691.8	801.6	976.9	1054.6
57.5°	623.7	630.3	741.6	927.7	986.4
60°	567.6	569.1	685.2	873.2	929.3
62.5°	503.2	506.0	627.2	808.8	884.0
65°	430.9	444.5	564.7	747.3	815.2
67.5°	363.4	387.1	501.0	690.9	726.4
70°	291.1	331.3	438.5	624.6	649.7
72.5°	224.8	272.0	374.5	550.4	585.6
75°	163.0	215.9	314.8	483.8	514.3
77.5°	109.7	163.6	259.0	410.3	450.6
80°	65.6	119.5	209.3	342.1	387.5
82.5°	33.6	80.2	162.3	286.9	327.5
85°	14.6	50.7	122.7	238.1	273.3
87.5°	4.1	28.9	90.4	192.5	222.3
90°	0.3	15.2	64.4	150.9	177.9
92.5°	0.3	7.3	45.3	114.1	134.8
95°	0.3	3.8	28.2	82.8	101.1
97.5°	0.3	2.2	17.1	58.7	74.2
100°	0.3	1.9	10.1	39.0	53.0
102.5°	0.3	2.2	7.0	24.7	34.6
105°	0.3	2.2	5.7	16.2	22.8
107.5°	0.6	2.2	5.1	12.0	15.9
110°	0.3	1.9	5.4	9.2	12.4

TEST NUMBER: P517344

CATALOG NUMBER: HVL12-2-LD4-2HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.6	5.1	7.6	9.2
115°	0.3	1.3	4.4	7.3	7.6
117.5°	0.6	1.0	3.5	7.3	7.6
120°	0.6	0.6	2.9	7.0	7.9
122.5°	0.6	0.6	2.2	6.3	7.6
125°	0.3	0.6	1.9	4.8	6.7
127.5°	0.6	0.6	1.6	3.8	5.1
130°	0.6	0.6	1.3	2.9	3.8
132.5°	0.6	0.6	1.0	2.2	2.9
135°	0.6	0.6	0.6	1.6	2.2
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)