

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: P517444

Luminaire Tested: HVL12-4-LD4-1HI-40-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: P517444
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-1HI-40-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4987.0 lumens
Efficiency: N/A
Efficacy: 113.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.17')
CIE Type: Direct

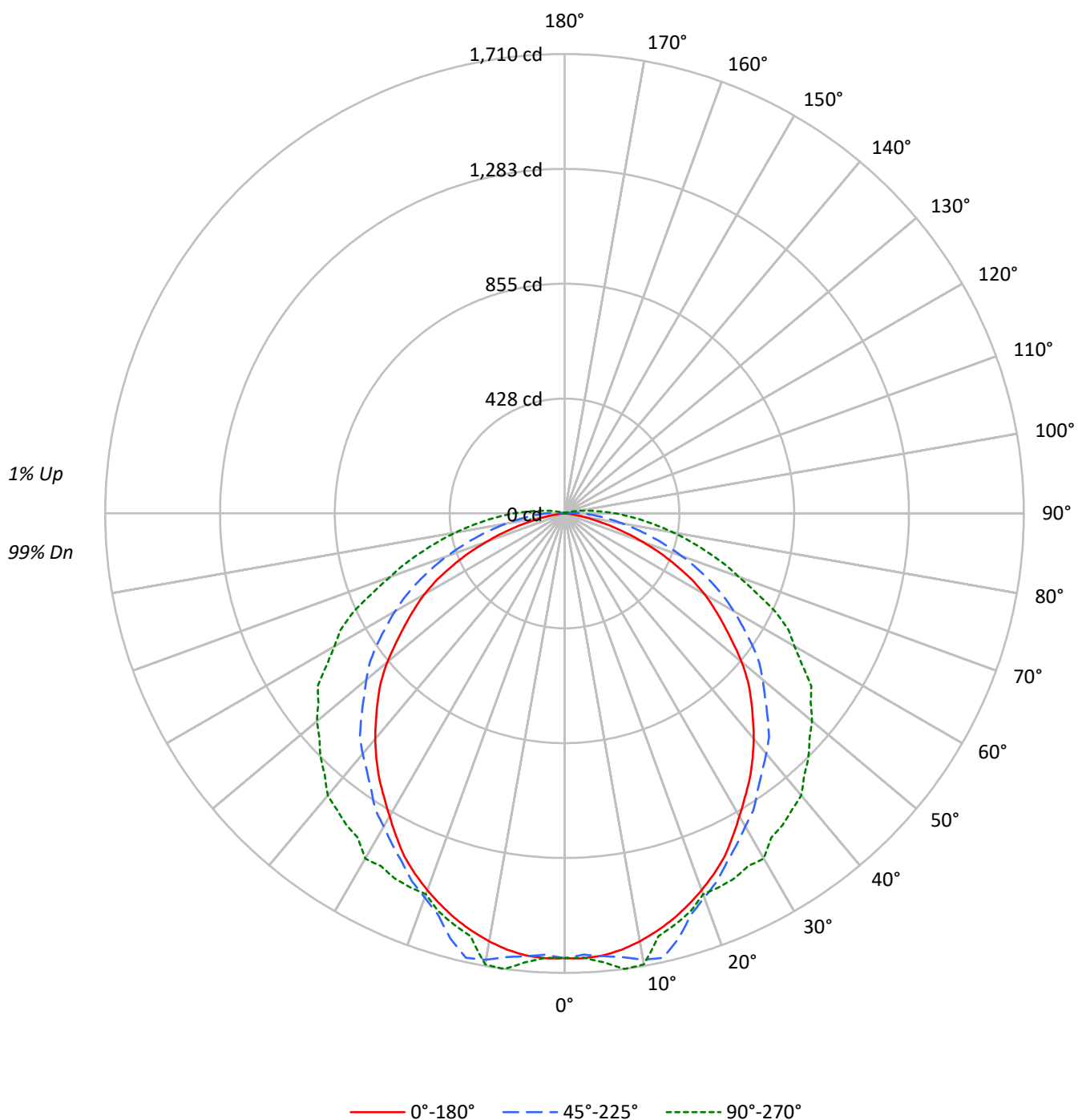
Input Watts (W): 44.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4455	4455	4455
5°	4445	4410	4465
10°	4386	4492	4524
15°	4306	4392	4228
20°	4209	4135	4072
25°	4106	3977	4128
30°	3951	3853	4205
35°	3840	3737	4163
40°	3720	3655	4225
45°	3591	3545	4189
50°	3435	3429	4201
55°	3206	3304	4250
60°	3030	3124	4128
65°	2679	2906	4067
70°	2186	2612	3729
75°	1559	2247	3506
80°	875	1879	3283
85°	324	1501	3089

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4250 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.1	3.2
10°-20°	453.1	9.1
20°-30°	674.1	13.5
30°-40°	810.3	16.2
40°-50°	852.9	17.1
50°-60°	791.4	15.9
60°-70°	625.7	12.5
70°-80°	382.2	7.7
80°-90°	166.5	3.3
90°-100°	51.8	1.0
100°-110°	11.7	0.2
110°-120°	4.7	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°	1286.3	25.8
0°-40°	2096.7	42.0
0°-60°	3741.0	75.0
0°-90°	4915.5	98.6
90°-120°	68.2	1.4
90°-150°	71.5	1.4
90°-180°	72.0	1.4
0°-180°	4987.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1655	1655	1655	1655	1655	
5°	1651	1648	1654	1672	1677	157
15°	1563	1623	1639	1585	1586	440
25°	1410	1500	1432	1474	1498	647
35°	1203	1236	1255	1369	1415	752
45°	983	987	1069	1238	1284	758
55°	724	736	852	1039	1122	651
65°	458	473	601	795	867	454
75°	173	230	335	515	547	189
85°	16	54	130	253	291	24
90°	0	16	68	160	189	1
95°	0	4	30	88	108	0
105°	0	2	6	17	24	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: HVL12-4-LD4-1HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1655.4	1655.4	1655.4	1655.4	1655.4
2.5°	1657.4	1653.1	1643.9	1652.7	1655.1
5°	1651.4	1648.0	1653.7	1672.3	1677.0
7.5°	1637.5	1650.4	1665.5	1699.3	1710.0
10°	1617.0	1641.2	1686.8	1715.4	1704.3
12.5°	1592.0	1633.2	1694.2	1638.2	1612.2
15°	1563.0	1623.0	1638.9	1584.6	1585.6
17.5°	1529.0	1614.6	1565.7	1564.4	1554.6
20°	1492.2	1586.3	1521.5	1518.8	1508.4
22.5°	1452.7	1548.9	1482.4	1477.0	1505.3
25°	1409.9	1500.0	1431.5	1474.3	1498.3
27.5°	1356.3	1435.9	1389.0	1449.7	1479.7
30°	1302.0	1369.8	1345.5	1430.1	1483.4
32.5°	1251.1	1300.7	1309.8	1422.7	1431.5
35°	1202.9	1236.2	1254.8	1368.8	1415.3
37.5°	1149.9	1159.0	1208.3	1346.2	1391.0
40°	1096.0	1090.2	1169.1	1309.1	1371.1
42.5°	1038.0	1035.9	1127.7	1290.5	1321.6
45°	983.0	987.4	1068.7	1237.9	1284.1
47.5°	926.7	932.4	1012.7	1180.3	1237.6
50°	861.3	868.7	962.8	1129.0	1202.9
52.5°	790.4	804.6	914.2	1080.5	1155.0
55°	724.0	735.8	852.5	1039.0	1121.6
57.5°	663.3	670.4	788.8	986.7	1049.1
60°	603.6	605.3	728.7	928.7	988.4
62.5°	535.2	538.2	667.0	860.2	940.2
65°	458.3	472.8	600.6	794.8	867.0
67.5°	386.5	411.7	532.8	734.8	772.6
70°	309.6	352.4	466.4	664.3	691.0
72.5°	239.1	289.3	398.3	585.4	622.8
75°	173.3	229.6	334.9	514.6	547.0
77.5°	116.7	174.0	275.5	436.4	479.2
80°	69.8	127.1	222.6	363.9	412.1
82.5°	35.7	85.3	172.7	305.2	348.3
85°	15.5	54.0	130.5	253.3	290.7
87.5°	4.4	30.7	96.1	204.7	236.4
90°	0.3	16.2	68.5	160.5	189.2
92.5°	0.3	7.8	48.2	121.4	143.3
95°	0.3	4.0	30.0	88.0	107.6
97.5°	0.3	2.4	18.2	62.4	78.9
100°	0.3	2.0	10.8	41.5	56.3
102.5°	0.3	2.4	7.4	26.3	36.8
105°	0.3	2.4	6.1	17.2	24.3
107.5°	0.7	2.4	5.4	12.8	16.9
110°	0.3	2.0	5.7	9.8	13.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.7	5.4	8.1	9.8
115°	0.3	1.3	4.7	7.8	8.1
117.5°	0.7	1.0	3.7	7.8	8.1
120°	0.7	0.7	3.0	7.4	8.4
122.5°	0.7	0.7	2.4	6.7	8.1
125°	0.3	0.7	2.0	5.1	7.1
127.5°	0.7	0.7	1.7	4.0	5.4
130°	0.7	0.7	1.3	3.0	4.0
132.5°	0.7	0.7	1.0	2.4	3.0
135°	0.7	0.7	0.7	1.7	2.4
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)