

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: P517340

Luminaire Tested: HVL12-2-LD4-2HI-30-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: P517340
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2HI-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4467.0 lumens
Efficiency: N/A
Efficacy: 101.1 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

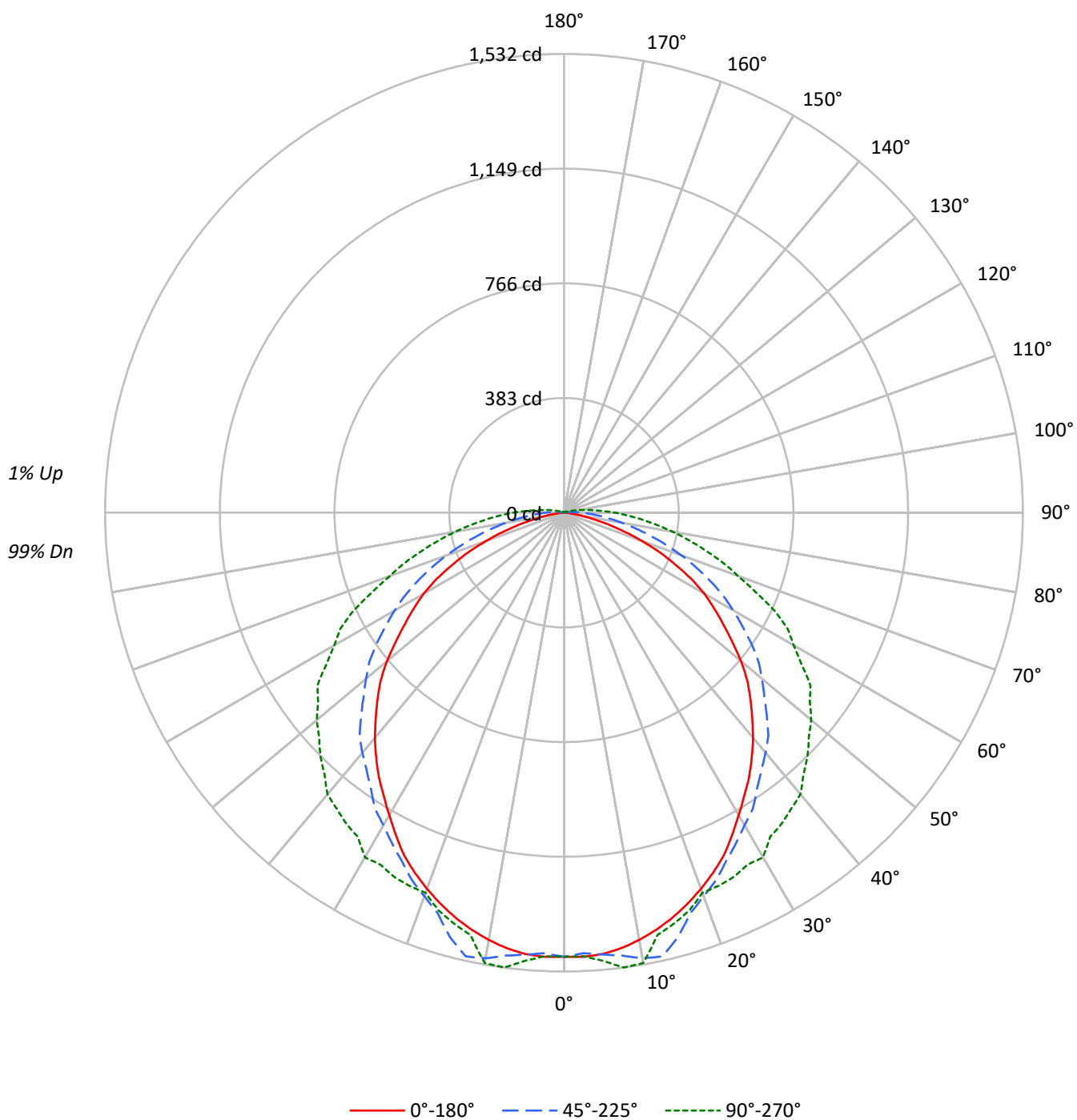
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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°	7980	7980	7980
5°	7934	7881	7998
10°	7801	8007	8105
15°	7630	7809	7575
20°	7430	7334	7296
25°	7219	7034	7394
30°	6915	6796	7533
35°	6688	6571	7458
40°	6446	6407	7570
45°	6186	6191	7504
50°	5876	5964	7526
55°	5438	5720	7614
60°	5086	5378	7394
65°	4435	4968	7285
70°	3550	4424	6680
75°	2463	3757	6280
80°	1315	3086	5880
85°	440	2390	5535

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7614 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.5	3.2
10°-20°	405.8	9.1
20°-30°	603.9	13.5
30°-40°	725.8	16.2
40°-50°	764.0	17.1
50°-60°	708.9	15.9
60°-70°	560.5	12.5
70°-80°	342.4	7.7
80°-90°	149.2	3.3
90°-100°	46.4	1.0
100°-110°	10.4	0.2
110°-120°	4.2	0.1
120°-130°	2.3	0.1
130°-140°	0.6	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°	1152.2	25.8
0°-40°	1878.0	42.0
0°-60°	3350.9	75.0
0°-90°	4403.0	98.6
90°-120°	61.0	1.4
90°-150°	64.0	1.4
90°-180°	64.0	1.4
0°-180°	4467.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1483	1483	1483	1483	1483	
5°	1479	1476	1481	1498	1502	140
15°	1400	1454	1468	1419	1420	394
25°	1263	1344	1282	1321	1342	580
35°	1077	1107	1124	1226	1268	673
45°	880	884	957	1109	1150	679
55°	648	659	764	931	1005	583
65°	410	424	538	712	777	407
75°	155	206	300	461	490	169
85°	14	48	117	227	260	21
90°	0	14	61	144	170	1
95°	0	4	27	79	96	0
105°	0	2	5	15	22	0
115°	0	1	4	7	7	0
125°	0	1	2	4	6	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

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CATALOG NUMBER: HVL12-2-LD4-2HI-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1482.8	1482.8	1482.8	1482.8	1482.8
2.5°	1484.6	1480.7	1472.5	1480.4	1482.5
5°	1479.2	1476.2	1481.3	1497.9	1502.1
7.5°	1466.8	1478.3	1491.9	1522.1	1531.7
10°	1448.4	1470.1	1510.9	1536.6	1526.6
12.5°	1426.0	1462.9	1517.5	1467.4	1444.1
15°	1400.0	1453.8	1468.0	1419.4	1420.3
17.5°	1369.5	1446.3	1402.5	1401.2	1392.5
20°	1336.6	1420.9	1362.9	1360.5	1351.1
22.5°	1301.3	1387.4	1327.8	1323.0	1348.4
25°	1262.9	1343.6	1282.2	1320.6	1342.0
27.5°	1214.9	1286.2	1244.2	1298.5	1325.4
30°	1166.2	1227.0	1205.2	1281.0	1328.8
32.5°	1120.6	1165.0	1173.2	1274.4	1282.2
35°	1077.4	1107.3	1124.0	1226.1	1267.7
37.5°	1030.0	1038.2	1082.3	1205.8	1246.0
40°	981.7	976.6	1047.2	1172.6	1228.2
42.5°	929.7	927.9	1010.1	1156.0	1183.8
45°	880.5	884.4	957.2	1108.9	1150.2
47.5°	830.1	835.2	907.1	1057.2	1108.6
50°	771.5	778.1	862.4	1011.3	1077.4
52.5°	708.0	720.7	818.9	967.8	1034.5
55°	648.5	659.1	763.6	930.6	1004.6
57.5°	594.1	600.5	706.5	883.8	939.7
60°	540.7	542.2	652.7	831.9	885.3
62.5°	479.4	482.1	597.5	770.5	842.1
65°	410.5	423.5	538.0	711.9	776.6
67.5°	346.2	368.8	477.3	658.2	692.0
70°	277.3	315.7	417.7	595.1	618.9
72.5°	214.2	259.2	356.7	524.4	557.9
75°	155.3	205.7	299.9	460.9	489.9
77.5°	104.5	155.9	246.8	390.9	429.2
80°	62.5	113.9	199.4	325.9	369.1
82.5°	32.0	76.4	154.7	273.4	312.0
85°	13.9	48.3	116.9	226.8	260.4
87.5°	3.9	27.5	86.1	183.3	211.7
90°	0.3	14.5	61.3	143.8	169.5
92.5°	0.3	6.9	43.2	108.7	128.4
95°	0.3	3.6	26.9	78.8	96.4
97.5°	0.3	2.1	16.3	55.9	70.7
100°	0.3	1.8	9.7	37.2	50.4
102.5°	0.3	2.1	6.6	23.6	32.9
105°	0.3	2.1	5.4	15.4	21.7
107.5°	0.6	2.1	4.8	11.5	15.1
110°	0.3	1.8	5.1	8.8	11.8

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CATALOG NUMBER: HVL12-2-LD4-2HI-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	4.8	7.2	8.8
115°	0.3	1.2	4.2	6.9	7.2
117.5°	0.6	0.9	3.3	6.9	7.2
120°	0.6	0.6	2.7	6.6	7.6
122.5°	0.6	0.6	2.1	6.0	7.2
125°	0.3	0.6	1.8	4.5	6.3
127.5°	0.6	0.6	1.5	3.6	4.8
130°	0.6	0.6	1.2	2.7	3.6
132.5°	0.6	0.6	0.9	2.1	2.7
135°	0.6	0.6	0.6	1.5	2.1
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)