

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: P517419

Luminaire Tested: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

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: P517419
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3STD-30-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4745.0 lumens
Efficiency: N/A
Efficacy: 96.6 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

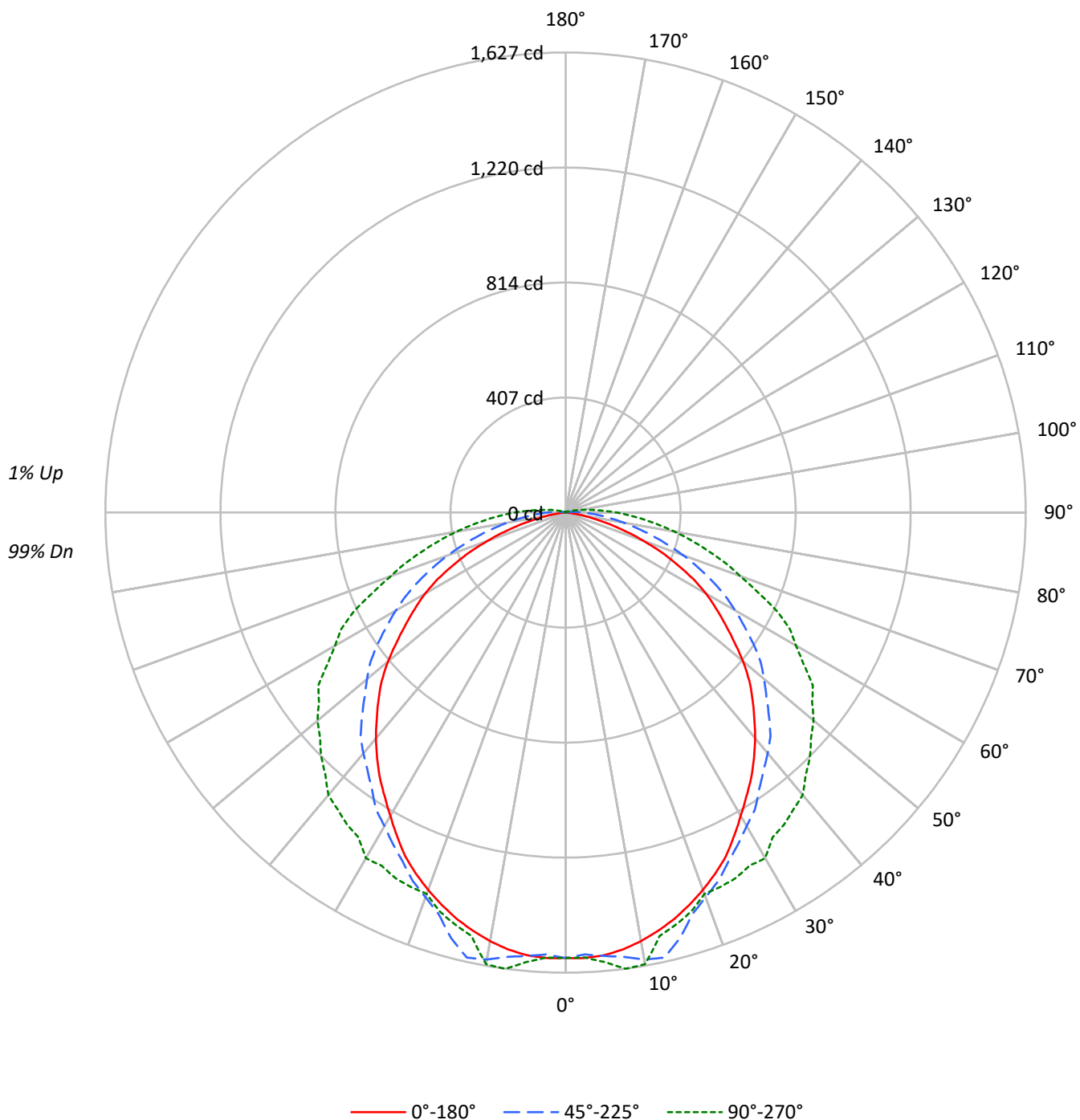
Input Watts (W): 49.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517419

CATALOG NUMBER: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517419

CATALOG NUMBER: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

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°	8477	8477	8477
5°	8427	8371	8496
10°	8286	8506	8609
15°	8105	8296	8047
20°	7892	7790	7750
25°	7668	7472	7855
30°	7345	7219	8001
35°	7105	6980	7923
40°	6847	6806	8041
45°	6571	6576	7971
50°	6242	6335	7994
55°	5776	6076	8088
60°	5402	5714	7855
65°	4710	5276	7739
70°	3771	4699	7095
75°	2615	3991	6671
80°	1397	3278	6247
85°	468	2539	5879

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8088 cd/sqm

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CATALOG NUMBER: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.4	3.2
10°-20°	431.1	9.1
20°-30°	641.4	13.5
30°-40°	771.0	16.2
40°-50°	811.5	17.1
50°-60°	753.0	15.9
60°-70°	595.4	12.5
70°-80°	363.7	7.7
80°-90°	158.5	3.3
90°-100°	49.3	1.0
100°-110°	11.1	0.2
110°-120°	4.5	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°	1223.9	25.8
0°-40°	1994.9	42.0
0°-60°	3559.4	75.0
0°-90°	4677.0	98.6
90°-120°	64.9	1.4
90°-150°	68.0	1.4
90°-180°	68.0	1.4
0°-180°	4745.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1575	1575	1575	1575	1575	
5°	1571	1568	1574	1591	1596	149
15°	1487	1544	1559	1508	1509	419
25°	1342	1427	1362	1403	1426	616
35°	1144	1176	1194	1302	1347	715
45°	935	940	1017	1178	1222	721
55°	689	700	811	989	1067	619
65°	436	450	571	756	825	432
75°	165	218	319	490	520	180
85°	15	51	124	241	277	23
90°	0	15	65	153	180	1
95°	0	4	29	84	102	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: P517419

CATALOG NUMBER: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1575.1	1575.1	1575.1	1575.1	1575.1
2.5°	1577.0	1572.8	1564.2	1572.5	1574.8
5°	1571.2	1568.0	1573.5	1591.1	1595.6
7.5°	1558.1	1570.3	1584.7	1616.8	1627.1
10°	1538.5	1561.6	1604.9	1632.2	1621.6
12.5°	1514.8	1553.9	1612.0	1558.7	1534.0
15°	1487.2	1544.3	1559.4	1507.7	1508.7
17.5°	1454.8	1536.3	1489.7	1488.5	1479.1
20°	1419.8	1509.3	1447.7	1445.1	1435.2
22.5°	1382.2	1473.7	1410.5	1405.3	1432.3
25°	1341.5	1427.2	1362.0	1402.8	1425.6
27.5°	1290.5	1366.2	1321.6	1379.4	1407.9
30°	1238.8	1303.3	1280.2	1360.8	1411.4
32.5°	1190.4	1237.5	1246.2	1353.7	1362.0
35°	1144.5	1176.3	1193.9	1302.4	1346.6
37.5°	1094.1	1102.8	1149.6	1280.9	1323.5
40°	1042.8	1037.3	1112.4	1245.6	1304.6
42.5°	987.6	985.7	1072.9	1227.9	1257.4
45°	935.3	939.5	1016.8	1177.9	1221.8
47.5°	881.7	887.2	963.5	1123.0	1177.5
50°	819.5	826.5	916.0	1074.2	1144.5
52.5°	752.1	765.6	869.8	1028.0	1098.9
55°	688.9	700.1	811.1	988.6	1067.2
57.5°	631.1	637.9	750.5	938.8	998.2
60°	574.3	575.9	693.4	883.6	940.4
62.5°	509.2	512.1	634.7	818.5	894.5
65°	436.0	449.8	571.4	756.3	824.9
67.5°	367.7	391.8	507.0	699.1	735.1
70°	294.5	335.3	443.7	632.1	657.4
72.5°	227.5	275.3	378.9	557.0	592.6
75°	164.9	218.5	318.6	489.6	520.4
77.5°	111.0	165.6	262.1	415.2	455.9
80°	66.4	121.0	211.8	346.2	392.1
82.5°	34.0	81.2	164.3	290.4	331.4
85°	14.8	51.3	124.2	241.0	276.6
87.5°	4.2	29.2	91.4	194.8	224.9
90°	0.3	15.4	65.1	152.7	180.0
92.5°	0.3	7.4	45.9	115.5	136.4
95°	0.3	3.9	28.6	83.7	102.4
97.5°	0.3	2.2	17.3	59.4	75.1
100°	0.3	1.9	10.3	39.5	53.6
102.5°	0.3	2.2	7.1	25.0	35.0
105°	0.3	2.2	5.8	16.4	23.1
107.5°	0.6	2.2	5.1	12.2	16.0
110°	0.3	1.9	5.5	9.3	12.5

TEST NUMBER: P517419

CATALOG NUMBER: HVL12-2-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.6	5.1	7.7	9.3
115°	0.3	1.3	4.5	7.4	7.7
117.5°	0.6	1.0	3.5	7.4	7.7
120°	0.6	0.6	2.9	7.1	8.0
122.5°	0.6	0.6	2.2	6.4	7.7
125°	0.3	0.6	1.9	4.8	6.7
127.5°	0.6	0.6	1.6	3.9	5.1
130°	0.6	0.6	1.3	2.9	3.9
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)