

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: P517416

Luminaire Tested: HVL12-2-LD4-3LO-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: P517416
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3LO-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: 4582.0 lumens
Efficiency: N/A
Efficacy: 132.4 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

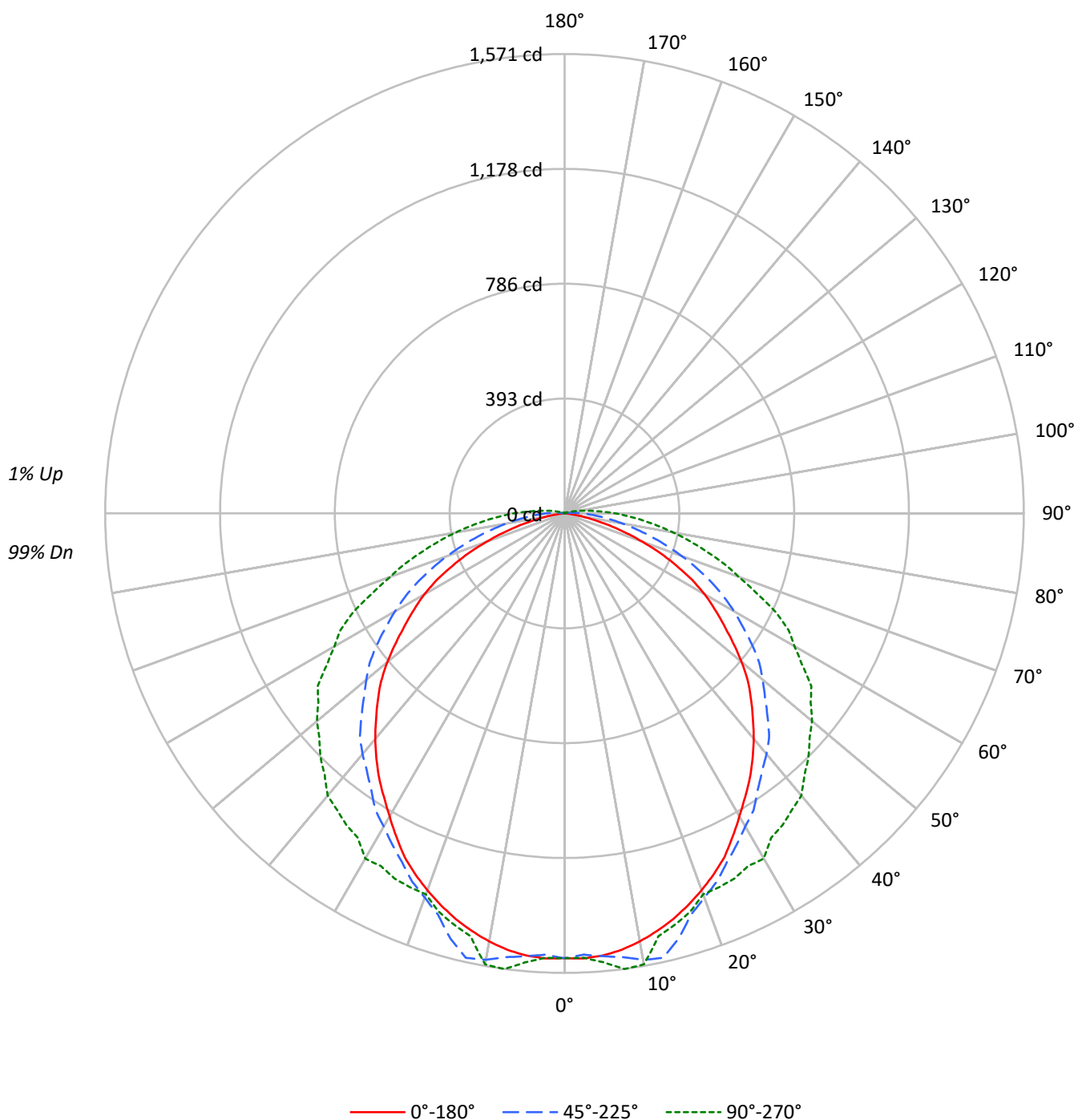
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	8186	8186	8186
5°	8138	8084	8205
10°	8002	8214	8313
15°	7827	8011	7770
20°	7621	7523	7483
25°	7405	7215	7585
30°	7093	6971	7727
35°	6861	6740	7651
40°	6612	6572	7765
45°	6346	6351	7697
50°	6027	6118	7720
55°	5578	5868	7810
60°	5217	5518	7585
65°	4549	5095	7473
70°	3641	4538	6851
75°	2527	3855	6443
80°	1349	3165	6032
85°	452	2451	5677

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7810 cd/sqm

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CATALOG NUMBER: HVL12-2-LD4-3LO-50-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.2	3.2
10°-20°	416.3	9.1
20°-30°	619.4	13.5
30°-40°	744.5	16.2
40°-50°	783.6	17.1
50°-60°	727.1	15.9
60°-70°	574.9	12.5
70°-80°	351.2	7.7
80°-90°	153.0	3.3
90°-100°	47.6	1.0
100°-110°	10.7	0.2
110°-120°	4.3	0.1
120°-130°	2.4	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°	1181.9	25.8
0°-40°	1926.4	42.0
0°-60°	3437.2	75.0
0°-90°	4516.3	98.6
90°-120°	62.6	1.4
90°-150°	65.7	1.4
90°-180°	66.0	1.4
0°-180°	4582.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1521	1521	1521	1521	1521	
5°	1517	1514	1519	1536	1541	144
15°	1436	1491	1506	1456	1457	405
25°	1295	1378	1315	1355	1377	595
35°	1105	1136	1153	1258	1300	691
45°	903	907	982	1137	1180	696
55°	665	676	783	955	1030	598
65°	421	434	552	730	797	417
75°	159	211	308	473	503	174
85°	14	50	120	233	267	22
90°	0	15	63	148	174	1
95°	0	4	28	81	99	0
105°	0	2	6	16	22	0
115°	0	1	4	7	7	0
125°	0	1	2	5	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-LD4-3LO-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1521.0	1521.0	1521.0	1521.0	1521.0
2.5°	1522.8	1518.8	1510.4	1518.5	1520.7
5°	1517.3	1514.2	1519.4	1536.5	1540.8
7.5°	1504.6	1516.3	1530.3	1561.3	1571.2
10°	1485.7	1508.0	1549.8	1576.1	1565.9
12.5°	1462.7	1500.5	1556.6	1505.2	1481.3
15°	1436.1	1491.2	1505.8	1455.9	1456.8
17.5°	1404.8	1483.5	1438.6	1437.3	1428.3
20°	1371.0	1457.5	1398.0	1395.5	1385.9
22.5°	1334.8	1423.1	1362.0	1357.1	1383.1
25°	1295.4	1378.1	1315.2	1354.6	1376.6
27.5°	1246.2	1319.3	1276.2	1332.0	1359.6
30°	1196.3	1258.5	1236.2	1314.0	1363.0
32.5°	1149.5	1195.0	1203.4	1307.2	1315.2
35°	1105.2	1135.9	1152.9	1257.6	1300.4
37.5°	1056.5	1064.9	1110.1	1236.9	1278.1
40°	1007.0	1001.7	1074.2	1202.8	1259.8
42.5°	953.7	951.8	1036.1	1185.7	1214.2
45°	903.2	907.2	981.9	1137.4	1179.8
47.5°	851.4	856.7	930.4	1084.4	1137.1
50°	791.3	798.1	884.6	1037.3	1105.2
52.5°	726.3	739.3	840.0	992.7	1061.2
55°	665.2	676.1	783.3	954.6	1030.5
57.5°	609.4	615.9	724.7	906.6	963.9
60°	554.6	556.2	669.6	853.3	908.1
62.5°	491.7	494.5	612.9	790.4	863.8
65°	421.1	434.4	551.8	730.3	796.6
67.5°	355.1	378.3	489.5	675.1	709.8
70°	284.4	323.8	428.5	610.4	634.8
72.5°	219.7	265.8	365.9	537.9	572.3
75°	159.3	211.0	307.7	472.8	502.6
77.5°	107.2	159.9	253.1	400.9	440.3
80°	64.1	116.8	204.5	334.3	378.6
82.5°	32.8	78.4	158.6	280.4	320.1
85°	14.3	49.6	119.9	232.7	267.1
87.5°	4.0	28.2	88.3	188.1	217.2
90°	0.3	14.9	62.9	147.5	173.8
92.5°	0.3	7.1	44.3	111.5	131.7
95°	0.3	3.7	27.6	80.9	98.8
97.5°	0.3	2.2	16.7	57.3	72.5
100°	0.3	1.9	9.9	38.1	51.7
102.5°	0.3	2.2	6.8	24.2	33.8
105°	0.3	2.2	5.6	15.8	22.3
107.5°	0.6	2.2	5.0	11.8	15.5
110°	0.3	1.9	5.3	9.0	12.1

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CATALOG NUMBER: HVL12-2-LD4-3LO-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	5.0	7.4	9.0
115°	0.3	1.2	4.3	7.1	7.4
117.5°	0.6	0.9	3.4	7.1	7.4
120°	0.6	0.6	2.8	6.8	7.7
122.5°	0.6	0.6	2.2	6.2	7.4
125°	0.3	0.6	1.9	4.6	6.5
127.5°	0.6	0.6	1.5	3.7	5.0
130°	0.6	0.6	1.2	2.8	3.7
132.5°	0.6	0.6	0.9	2.2	2.8
135°	0.6	0.6	0.6	1.5	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)