

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: P517432

Luminaire Tested: HVL12-2-LD4-3STD-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: P517432
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3STD-50-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

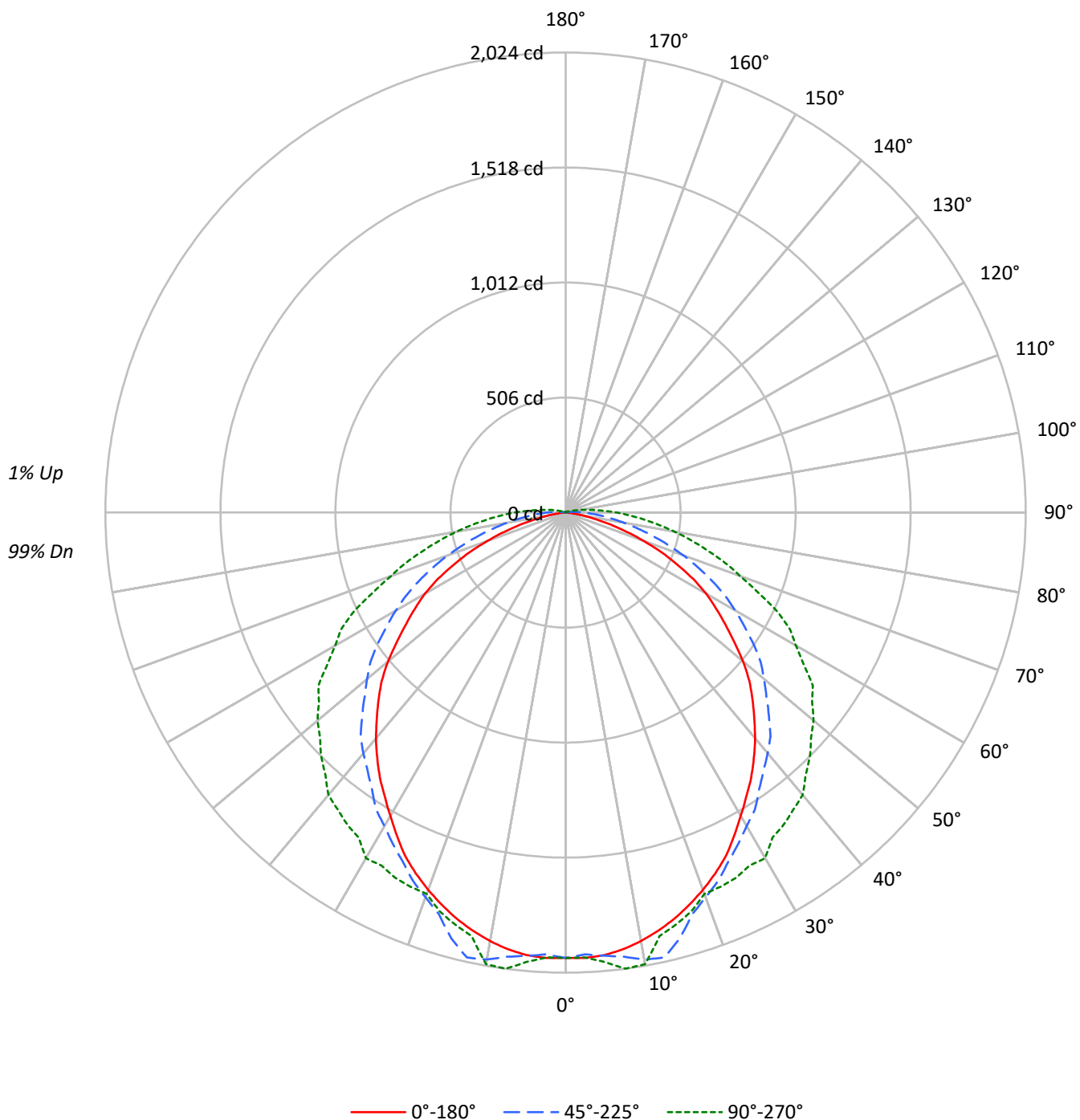
Lumens per Lamp: N/A
Luminaire Lumens: 5902.0 lumens
Efficiency: N/A
Efficacy: 120.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

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

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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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10544	10544	10544
5°	10482	10412	10568
10°	10306	10580	10708
15°	10082	10318	10008
20°	9817	9690	9639
25°	9538	9294	9770
30°	9136	8979	9952
35°	8837	8682	9855
40°	8517	8465	10002
45°	8174	8180	9914
50°	7763	7880	9944
55°	7185	7558	10060
60°	6720	7106	9770
65°	5860	6563	9626
70°	4691	5845	8825
75°	3253	4965	8298
80°	1738	4076	7770
85°	582	3156	7311

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10060 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.3	3.2
10°-20°	536.2	9.1
20°-30°	797.8	13.5
30°-40°	959.0	16.2
40°-50°	1009.4	17.1
50°-60°	936.6	15.9
60°-70°	740.6	12.5
70°-80°	452.3	7.7
80°-90°	197.1	3.3
90°-100°	61.4	1.0
100°-110°	13.8	0.2
110°-120°	5.6	0.1
120°-130°	3.1	0.1
130°-140°	0.8	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°	1522.3	25.8
0°-40°	2481.3	42.0
0°-60°	4427.4	75.0
0°-90°	5817.4	98.6
90°-120°	80.7	1.4
90°-150°	84.7	1.4
90°-180°	85.0	1.4
0°-180°	5902.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1959	1959	1959	1959	1959	
5°	1954	1950	1957	1979	1985	185
15°	1850	1921	1940	1875	1876	521
25°	1669	1775	1694	1745	1773	766
35°	1424	1463	1485	1620	1675	890
45°	1163	1168	1265	1465	1520	897
55°	857	871	1009	1230	1327	770
65°	542	560	711	941	1026	537
75°	205	272	396	609	647	224
85°	18	64	154	300	344	28
90°	0	19	81	190	224	1
95°	0	5	36	104	127	0
105°	0	3	7	20	29	1
115°	0	2	6	9	10	1
125°	0	1	2	6	8	1
135°	1	1	1	2	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1959.1	1959.1	1959.1	1959.1	1959.1
2.5°	1961.5	1956.3	1945.6	1956.0	1958.7
5°	1954.4	1950.4	1957.1	1979.1	1984.7
7.5°	1938.0	1953.2	1971.1	2011.0	2023.8
10°	1913.6	1942.4	1996.3	2030.2	2017.0
12.5°	1884.1	1932.8	2005.0	1938.8	1908.1
15°	1849.8	1920.8	1939.6	1875.3	1876.5
17.5°	1809.5	1910.9	1853.0	1851.4	1839.8
20°	1766.0	1877.3	1800.7	1797.5	1785.1
22.5°	1719.3	1833.0	1754.4	1748.0	1781.5
25°	1668.6	1775.2	1694.1	1744.8	1773.2
27.5°	1605.1	1699.3	1643.9	1715.7	1751.2
30°	1540.9	1621.1	1592.4	1692.5	1755.6
32.5°	1480.6	1539.3	1550.1	1683.8	1694.1
35°	1423.6	1463.1	1485.0	1619.9	1675.0
37.5°	1360.9	1371.7	1429.9	1593.2	1646.3
40°	1297.0	1290.3	1383.7	1549.3	1622.7
42.5°	1228.4	1226.0	1334.6	1527.3	1564.0
45°	1163.4	1168.5	1264.7	1465.1	1519.7
47.5°	1096.7	1103.5	1198.5	1396.8	1464.7
50°	1019.3	1028.1	1139.4	1336.2	1423.6
52.5°	935.5	952.2	1081.9	1278.7	1366.9
55°	856.9	870.8	1008.9	1229.6	1327.4
57.5°	785.0	793.4	933.5	1167.7	1241.6
60°	714.4	716.4	862.4	1099.1	1169.7
62.5°	633.4	637.0	789.4	1018.1	1112.7
65°	542.4	559.5	710.8	940.7	1026.1
67.5°	457.4	487.3	630.6	869.6	914.3
70°	366.4	417.1	551.9	786.2	817.7
72.5°	283.0	342.4	471.3	692.8	737.1
75°	205.1	271.8	396.3	609.0	647.3
77.5°	138.1	205.9	326.1	516.4	567.1
80°	82.6	150.5	263.4	430.6	487.7
82.5°	42.3	101.0	204.3	361.2	412.3
85°	18.4	63.9	154.4	299.7	344.0
87.5°	5.2	36.3	113.7	242.2	279.8
90°	0.4	19.2	81.0	190.0	223.9
92.5°	0.4	9.2	57.1	143.7	169.6
95°	0.4	4.8	35.5	104.2	127.3
97.5°	0.4	2.8	21.6	73.8	93.4
100°	0.4	2.4	12.8	49.1	66.6
102.5°	0.4	2.8	8.8	31.1	43.5
105°	0.4	2.8	7.2	20.4	28.7
107.5°	0.8	2.8	6.4	15.2	20.0
110°	0.4	2.4	6.8	11.6	15.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.0	6.4	9.6	11.6
115°	0.4	1.6	5.6	9.2	9.6
117.5°	0.8	1.2	4.4	9.2	9.6
120°	0.8	0.8	3.6	8.8	10.0
122.5°	0.8	0.8	2.8	8.0	9.6
125°	0.4	0.8	2.4	6.0	8.4
127.5°	0.8	0.8	2.0	4.8	6.4
130°	0.8	0.8	1.6	3.6	4.8
132.5°	0.8	0.8	1.2	2.8	3.6
135°	0.8	0.8	0.8	2.0	2.8
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)