

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: P517428

Luminaire Tested: HVL12-2-LD4-3STD-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: P517428
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3STD-40-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5804.0 lumens
Efficiency: N/A
Efficacy: 118.2 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

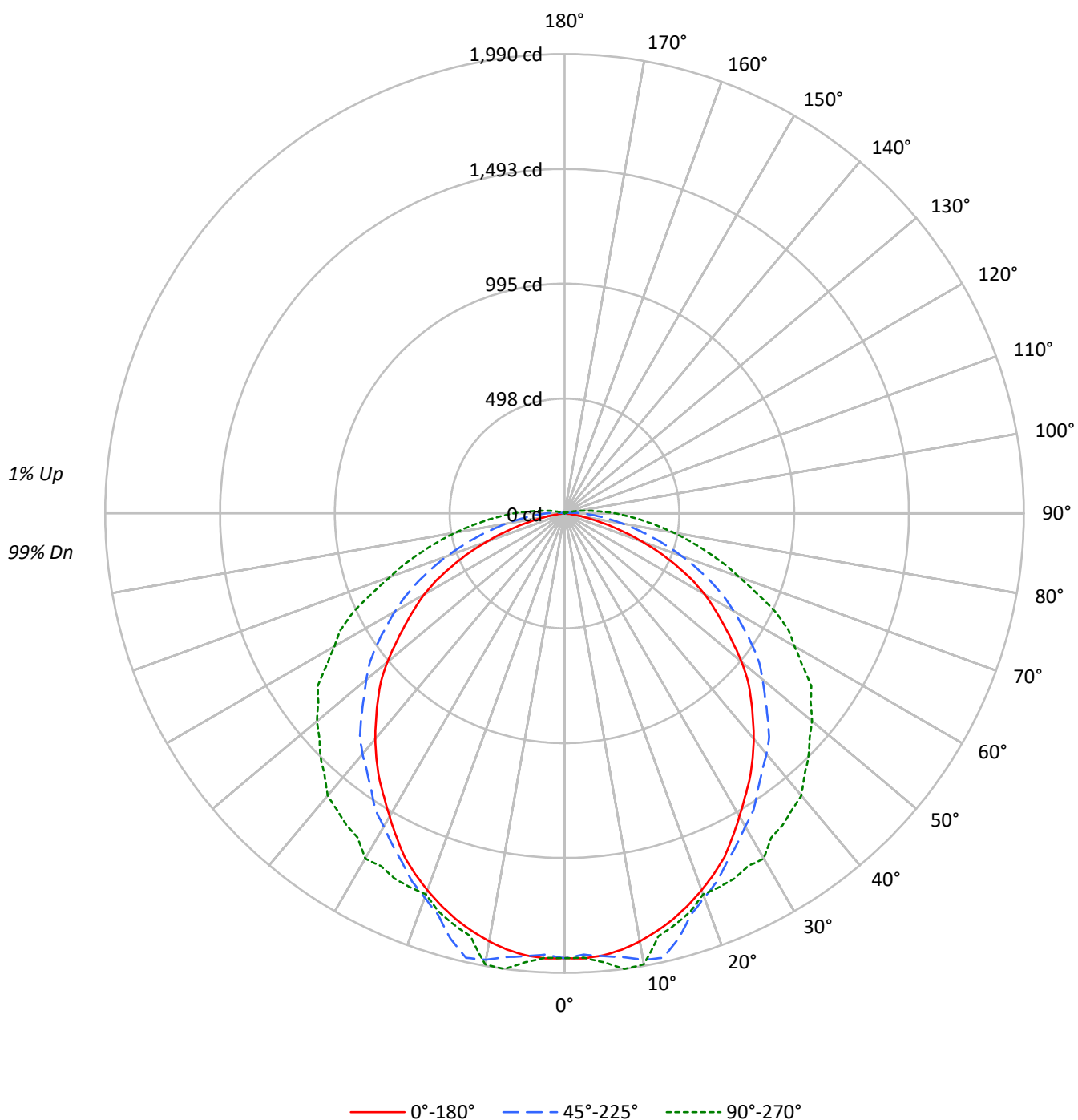
Input Watts (W): 49.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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					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°	10369	10369	10369
5°	10308	10239	10393
10°	10136	10404	10530
15°	9914	10147	9843
20°	9654	9529	9479
25°	9380	9140	9608
30°	8985	8830	9787
35°	8690	8538	9691
40°	8375	8325	9836
45°	8037	8044	9750
50°	7635	7749	9778
55°	7065	7433	9893
60°	6608	6989	9608
65°	5763	6454	9466
70°	4613	5749	8679
75°	3199	4882	8161
80°	1709	4008	7641
85°	572	3105	7190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9893 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.2	3.2
10°-20°	527.3	9.1
20°-30°	784.6	13.5
30°-40°	943.1	16.2
40°-50°	992.6	17.1
50°-60°	921.1	15.9
60°-70°	728.3	12.5
70°-80°	444.8	7.7
80°-90°	193.8	3.3
90°-100°	60.3	1.0
100°-110°	13.6	0.2
110°-120°	5.5	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°	1497.1	25.8
0°-40°	2440.1	42.0
0°-60°	4353.9	75.0
0°-90°	5720.8	98.6
90°-120°	79.3	1.4
90°-150°	83.2	1.4
90°-180°	83.0	1.4
0°-180°	5804.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1927	1927	1927	1927	1927	
5°	1922	1918	1925	1946	1952	182
15°	1819	1889	1907	1844	1845	512
25°	1641	1746	1666	1716	1744	753
35°	1400	1439	1460	1593	1647	875
45°	1144	1149	1244	1441	1494	882
55°	843	856	992	1209	1305	757
65°	533	550	699	925	1009	528
75°	202	267	390	599	637	220
85°	18	63	152	295	338	28
90°	0	19	80	187	220	1
95°	0	5	35	102	125	0
105°	0	3	7	20	28	1
115°	0	2	6	9	9	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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CATALOG NUMBER: HVL12-2-LD4-3STD-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1926.6	1926.6	1926.6	1926.6	1926.6
2.5°	1929.0	1923.9	1913.3	1923.5	1926.2
5°	1921.9	1918.0	1924.6	1946.2	1951.7
7.5°	1905.8	1920.7	1938.4	1977.6	1990.2
10°	1881.9	1910.1	1963.1	1996.5	1983.5
12.5°	1852.8	1900.7	1971.7	1906.6	1876.4
15°	1819.1	1888.9	1907.4	1844.2	1845.4
17.5°	1779.4	1879.1	1822.2	1820.6	1809.3
20°	1736.7	1846.2	1770.8	1767.7	1755.5
22.5°	1690.7	1802.6	1725.3	1719.0	1752.0
25°	1640.9	1745.7	1666.0	1715.9	1743.7
27.5°	1578.5	1671.1	1616.6	1687.2	1722.1
30°	1515.3	1594.2	1565.9	1664.4	1726.5
32.5°	1456.0	1513.7	1524.3	1655.8	1666.0
35°	1399.9	1438.8	1460.4	1593.0	1647.2
37.5°	1338.3	1348.9	1406.2	1566.7	1618.9
40°	1275.5	1268.8	1360.7	1523.6	1595.8
42.5°	1208.0	1205.7	1312.4	1502.0	1538.1
45°	1144.0	1149.1	1243.7	1440.7	1494.5
47.5°	1078.5	1085.2	1178.6	1373.6	1440.3
50°	1002.4	1011.0	1120.5	1314.0	1399.9
52.5°	919.9	936.4	1064.0	1257.5	1344.2
55°	842.6	856.4	992.2	1209.2	1305.3
57.5°	772.0	780.2	918.0	1148.4	1221.0
60°	702.5	704.5	848.1	1080.8	1150.3
62.5°	622.8	626.4	776.3	1001.2	1094.2
65°	533.4	550.2	699.0	925.0	1009.0
67.5°	449.8	479.2	620.1	855.2	899.1
70°	360.3	410.1	542.8	773.2	804.2
72.5°	278.3	336.7	463.5	681.3	724.9
75°	201.7	267.3	389.7	598.9	636.6
77.5°	135.8	202.5	320.6	507.9	557.7
80°	81.2	148.0	259.0	423.5	479.6
82.5°	41.6	99.3	200.9	355.2	405.4
85°	18.1	62.8	151.9	294.7	338.3
87.5°	5.1	35.7	111.9	238.2	275.1
90°	0.4	18.8	79.7	186.8	220.2
92.5°	0.4	9.0	56.1	141.3	166.8
95°	0.4	4.7	34.9	102.4	125.2
97.5°	0.4	2.7	21.2	72.6	91.8
100°	0.4	2.4	12.6	48.3	65.5
102.5°	0.4	2.7	8.6	30.6	42.8
105°	0.4	2.7	7.1	20.0	28.3
107.5°	0.8	2.7	6.3	14.9	19.6
110°	0.4	2.4	6.7	11.4	15.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.0	6.3	9.4	11.4
115°	0.4	1.6	5.5	9.0	9.4
117.5°	0.8	1.2	4.3	9.0	9.4
120°	0.8	0.8	3.5	8.6	9.8
122.5°	0.8	0.8	2.7	7.8	9.4
125°	0.4	0.8	2.4	5.9	8.2
127.5°	0.8	0.8	2.0	4.7	6.3
130°	0.8	0.8	1.6	3.5	4.7
132.5°	0.8	0.8	1.2	2.7	3.5
135°	0.8	0.8	0.8	2.0	2.7
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)