

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: P518005

Luminaire Tested: HVL8-2-LD4-3STD-40-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P518005
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-40-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5033.0 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

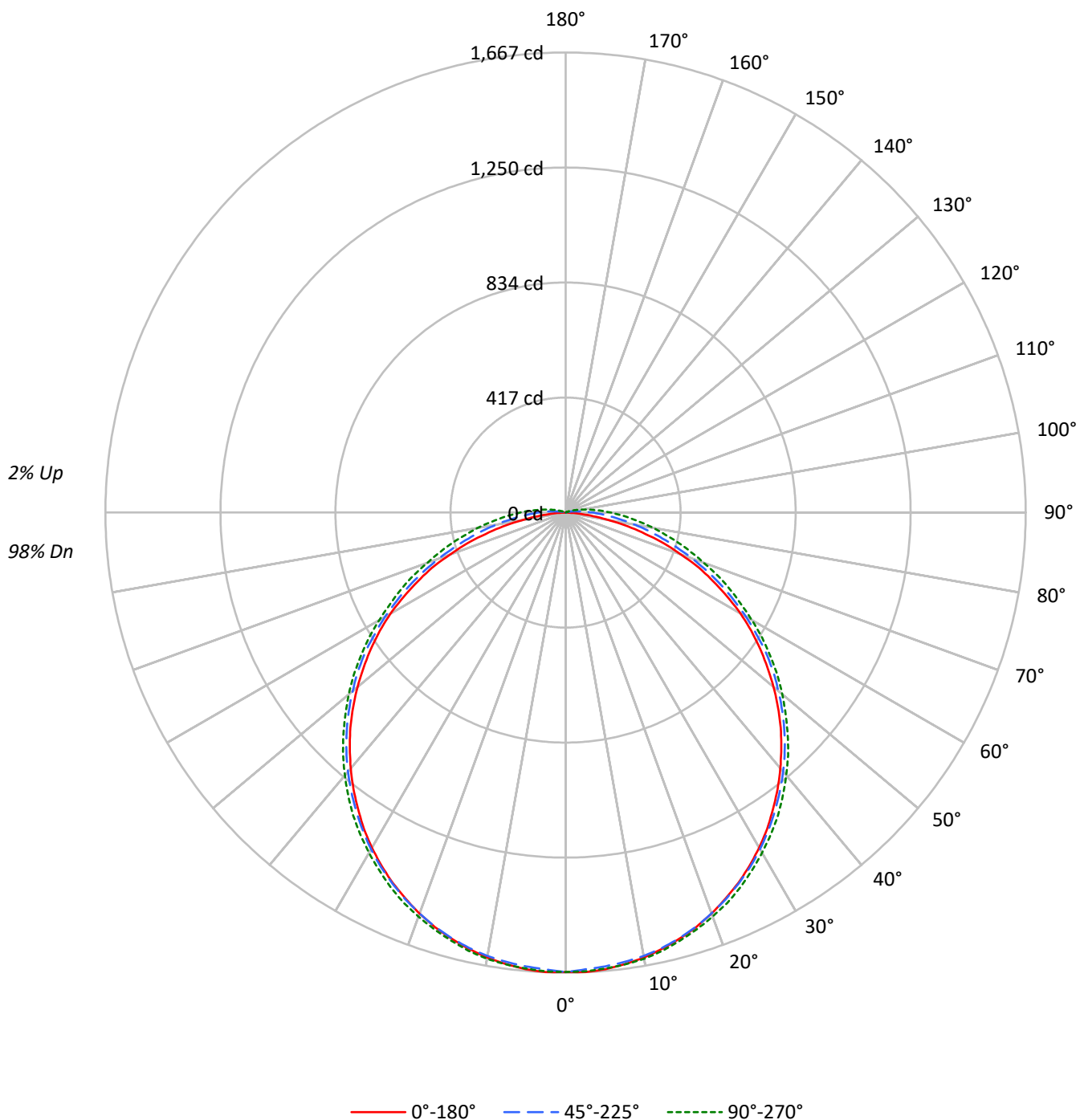
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518005

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518005

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-O-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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	13438	13438	13438
5°	13364	13105	13151
10°	13226	12839	12888
15°	13063	12549	12572
20°	12892	12230	12264
25°	12695	11904	11952
30°	12474	11559	11597
35°	12205	11183	11246
40°	11924	10789	10835
45°	11621	10361	10393
50°	11239	9872	9918
55°	10824	9339	9393
60°	10331	8656	8780
65°	9584	7897	8173
70°	8546	7009	7467
75°	7123	6043	6825
80°	5105	5091	6239
85°	2457	4122	5680

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 11621 cd/sqm

TEST NUMBER: P518005

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.5	3.1
10°-20°	451.9	9.0
20°-30°	685.6	13.6
30°-40°	829.0	16.5
40°-50°	865.0	17.2
50°-60°	790.9	15.7
60°-70°	616.5	12.2
70°-80°	385.7	7.7
80°-90°	175.2	3.5
90°-100°	58.7	1.2
100°-110°	14.7	0.3
110°-120°	2.3	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	1295.0	25.7
0°-40°	2124.0	42.2
0°-60°	3779.9	75.1
0°-90°	4957.3	98.5
90°-120°	75.8	1.5
90°-150°	75.8	1.5
90°-180°	76.0	1.5
0°-180°	5033.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1665	1665	1665	1665	1665	
5°	1661	1658	1650	1658	1658	158
15°	1598	1601	1596	1605	1605	451
25°	1481	1482	1483	1496	1498	682
35°	1311	1316	1322	1335	1341	820
45°	1103	1112	1122	1132	1138	850
55°	861	871	887	900	906	769
65°	591	602	622	647	657	585
75°	299	318	364	408	423	319
85°	52	96	164	217	237	66
90°	0	36	97	146	163	2
95°	0	9	50	91	105	0
105°	1	1	8	24	33	1
115°	1	1	2	4	6	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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: P518005

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1664.6	1664.6	1664.6	1664.6	1664.6
2.5°	1666.6	1664.2	1656.8	1664.2	1663.8
5°	1661.1	1657.9	1650.5	1658.3	1658.3
7.5°	1650.1	1648.9	1642.2	1651.3	1651.3
10°	1637.1	1636.8	1631.3	1641.1	1641.5
12.5°	1619.1	1620.7	1615.6	1625.0	1626.2
15°	1597.9	1600.6	1596.3	1605.4	1605.0
17.5°	1574.7	1576.3	1573.2	1583.4	1583.0
20°	1546.1	1548.1	1545.7	1556.3	1557.5
22.5°	1514.3	1517.1	1516.7	1527.7	1530.8
25°	1480.6	1481.7	1483.3	1495.9	1498.2
27.5°	1443.3	1445.3	1448.0	1459.4	1461.7
30°	1402.5	1405.6	1408.8	1420.5	1423.7
32.5°	1359.3	1362.5	1366.4	1381.7	1383.3
35°	1310.7	1316.5	1322.0	1335.4	1340.9
37.5°	1262.0	1269.5	1274.6	1288.7	1293.0
40°	1210.6	1218.0	1226.3	1241.2	1243.9
42.5°	1156.8	1165.5	1175.3	1188.6	1193.3
45°	1102.7	1112.5	1121.5	1132.5	1138.0
47.5°	1044.2	1054.0	1065.0	1077.6	1081.1
50°	983.8	995.2	1006.9	1018.7	1025.0
52.5°	921.8	935.5	948.9	961.4	967.3
55°	860.6	870.8	886.9	899.8	905.7
57.5°	797.0	805.6	820.1	841.3	844.5
60°	732.2	740.1	755.0	772.3	779.3
62.5°	660.8	671.4	687.1	709.1	715.4
65°	591.4	601.6	622.4	647.1	657.3
67.5°	524.3	527.8	554.5	580.4	596.9
70°	445.0	458.3	489.3	521.1	533.7
72.5°	376.7	390.1	424.2	461.5	477.2
75°	299.4	317.9	364.2	407.7	423.0
77.5°	231.5	251.9	309.2	353.2	370.8
80°	161.7	193.5	255.9	305.3	324.5
82.5°	101.6	140.9	207.6	259.4	276.3
85°	51.8	95.7	164.4	217.4	236.6
87.5°	13.7	62.0	127.9	178.5	198.2
90°	0.4	35.7	96.9	145.6	163.2
92.5°	0.4	20.0	72.2	115.8	133.8
95°	0.4	9.4	50.2	91.0	105.2
97.5°	0.4	3.9	34.5	68.7	82.8
100°	0.4	2.0	22.0	49.8	62.0
102.5°	0.8	1.2	13.7	35.7	45.5
105°	0.8	1.2	8.2	24.3	32.6
107.5°	0.8	1.2	4.7	16.5	22.4
110°	1.2	1.2	2.7	10.2	14.9

TEST NUMBER: P518005

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	1.2	1.6	6.7	9.8
115°	1.2	1.2	1.6	4.3	6.3
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)