

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: P518134

Luminaire Tested: HVL8-4-LD4-3LO-40-UNV-O-EDD

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: P518134
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6566.0 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

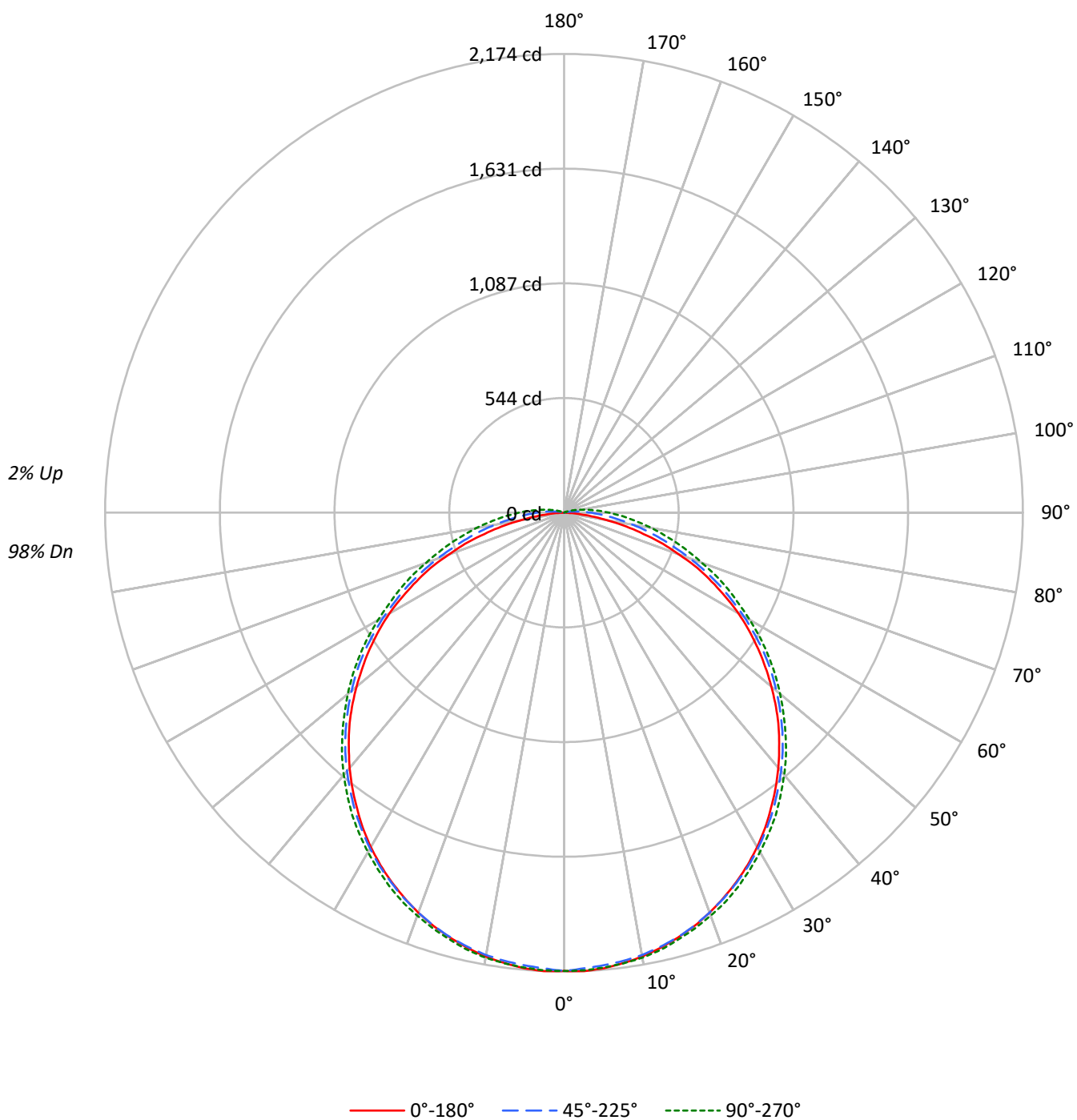
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518134

CATALOG NUMBER: HVL8-4-LD4-3LO-40-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518134

CATALOG NUMBER: HVL8-4-LD4-3LO-40-UNV-O-EDD

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°	8766	8766	8766
5°	8749	8570	8578
10°	8690	8416	8406
15°	8615	8247	8200
20°	8535	8057	8000
25°	8438	7862	7796
30°	8328	7655	7565
35°	8187	7426	7336
40°	8041	7186	7068
45°	7883	6924	6780
50°	7678	6621	6469
55°	7457	6289	6127
60°	7193	5859	5727
65°	6764	5376	5331
70°	6147	4809	4870
75°	5272	4187	4452
80°	3965	3576	4070
85°	2121	2959	3706

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7883 cd/sqm

TEST NUMBER: P518134

CATALOG NUMBER: HVL8-4-LD4-3LO-40-UNV-O-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.5	3.1
10°-20°	589.5	9.0
20°-30°	894.4	13.6
30°-40°	1081.5	16.5
40°-50°	1128.5	17.2
50°-60°	1031.8	15.7
60°-70°	804.3	12.2
70°-80°	503.1	7.7
80°-90°	228.5	3.5
90°-100°	76.6	1.2
100°-110°	19.2	0.3
110°-120°	3.0	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°	1689.4	25.7
0°-40°	2770.9	42.2
0°-60°	4931.2	75.1
0°-90°	6467.2	98.5
90°-120°	98.8	1.5
90°-150°	98.8	1.5
90°-180°	99.0	1.5
0°-180°	6566.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2172	2172	2172	2172	2172	
5°	2167	2163	2153	2163	2163	206
15°	2085	2088	2083	2094	2094	588
25°	1932	1933	1935	1952	1955	890
35°	1710	1718	1725	1742	1749	1070
45°	1438	1451	1463	1477	1485	1108
55°	1123	1136	1157	1174	1182	1003
65°	772	785	812	844	858	763
75°	391	415	475	532	552	416
85°	68	125	214	284	309	86
90°	0	47	126	190	213	3
95°	0	12	66	119	137	0
105°	1	2	11	32	42	1
115°	2	2	2	6	8	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: P518134

CATALOG NUMBER: HVL8-4-LD4-3LO-40-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2171.6	2171.6	2171.6	2171.6	2171.6
2.5°	2174.2	2171.1	2161.4	2171.1	2170.6
5°	2167.0	2162.9	2153.2	2163.4	2163.4
7.5°	2152.7	2151.2	2142.5	2154.2	2154.2
10°	2135.8	2135.3	2128.1	2140.9	2141.4
12.5°	2112.3	2114.3	2107.6	2119.9	2121.5
15°	2084.6	2088.2	2082.6	2094.3	2093.8
17.5°	2054.4	2056.5	2052.4	2065.7	2065.2
20°	2017.0	2019.6	2016.5	2030.3	2031.9
22.5°	1975.6	1979.1	1978.6	1993.0	1997.1
25°	1931.5	1933.1	1935.1	1951.5	1954.6
27.5°	1882.9	1885.5	1889.0	1903.9	1907.0
30°	1829.7	1833.8	1837.9	1853.2	1857.3
32.5°	1773.3	1777.4	1782.6	1802.5	1804.6
35°	1709.9	1717.5	1724.7	1742.1	1749.3
37.5°	1646.4	1656.1	1662.8	1681.2	1686.8
40°	1579.3	1589.1	1599.8	1619.3	1622.8
42.5°	1509.2	1520.5	1533.3	1550.7	1556.8
45°	1438.5	1451.3	1463.1	1477.4	1484.6
47.5°	1362.3	1375.1	1389.4	1405.8	1410.4
50°	1283.4	1298.3	1313.6	1329.0	1337.2
52.5°	1202.5	1220.5	1237.9	1254.2	1261.9
55°	1122.7	1136.0	1157.0	1173.9	1181.6
57.5°	1039.7	1051.0	1069.9	1097.6	1101.7
60°	955.3	965.5	985.0	1007.5	1016.7
62.5°	862.1	875.9	896.4	925.1	933.3
65°	771.5	784.8	811.9	844.2	857.5
67.5°	683.9	688.6	723.4	757.2	778.7
70°	580.5	597.9	638.4	679.9	696.2
72.5°	491.5	508.9	553.4	602.0	622.5
75°	390.6	414.7	475.1	531.9	551.9
77.5°	302.0	328.7	403.4	460.7	483.8
80°	210.9	252.4	333.8	398.3	423.4
82.5°	132.6	183.8	270.8	338.4	360.4
85°	67.6	124.9	214.5	283.6	308.7
87.5°	17.9	80.9	166.9	232.9	258.5
90°	0.5	46.6	126.4	189.9	213.0
92.5°	0.5	26.1	94.2	151.0	174.6
95°	0.5	12.3	65.5	118.8	137.2
97.5°	0.5	5.1	45.1	89.6	108.0
100°	0.5	2.6	28.7	65.0	80.9
102.5°	1.0	1.5	17.9	46.6	59.4
105°	1.0	1.5	10.8	31.7	42.5
107.5°	1.0	1.5	6.1	21.5	29.2
110°	1.5	1.5	3.6	13.3	19.5

TEST NUMBER: P518134

CATALOG NUMBER: HVL8-4-LD4-3LO-40-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	1.5	2.0	8.7	12.8
115°	1.5	1.5	2.0	5.6	8.2
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)