

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: P518074

Luminaire Tested: HVL8-4-LD4-2HI-50-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: P518074
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2HI-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

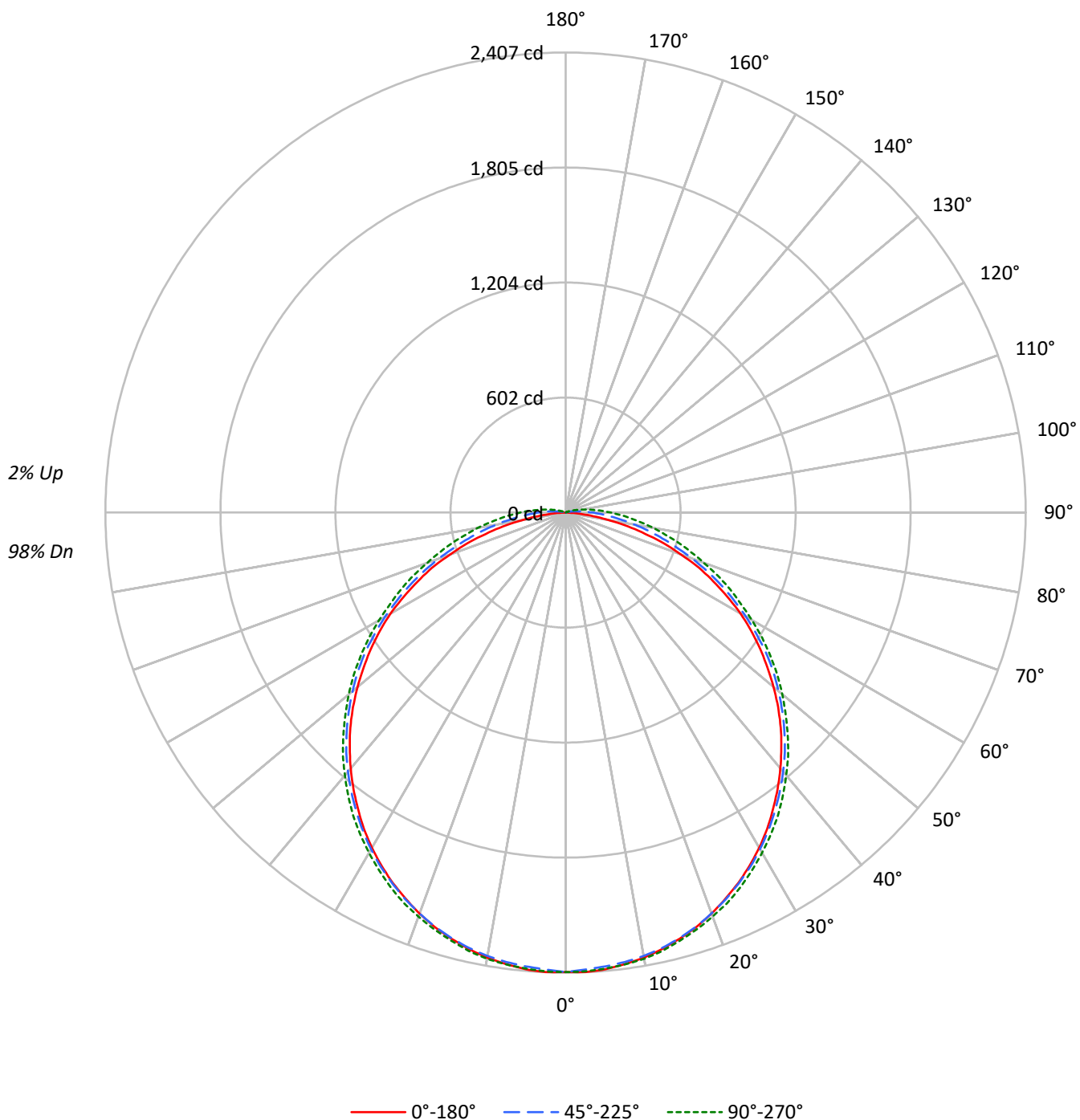
Lumens per Lamp: N/A
Luminaire Lumens: 7268.0 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 86.1
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

TEST NUMBER: P518074
CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518074

CATALOG NUMBER: HVL8-4-LD4-2HI-50-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°	9703	9703	9703
5°	9684	9486	9495
10°	9619	9316	9305
15°	9536	9129	9077
20°	9447	8918	8855
25°	9341	8703	8629
30°	9218	8473	8374
35°	9062	8220	8120
40°	8900	7954	7824
45°	8726	7664	7504
50°	8499	7329	7161
55°	8254	6962	6782
60°	7962	6485	6340
65°	7487	5951	5901
70°	6805	5323	5392
75°	5836	4634	4928
80°	4390	3958	4505
85°	2346	3274	4102

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8726 cd/sqm

TEST NUMBER: P518074

CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-O-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.5	3.1
10°-20°	652.5	9.0
20°-30°	990.0	13.6
30°-40°	1197.1	16.5
40°-50°	1249.1	17.2
50°-60°	1142.1	15.7
60°-70°	890.3	12.2
70°-80°	556.9	7.7
80°-90°	252.9	3.5
90°-100°	84.8	1.2
100°-110°	21.3	0.3
110°-120°	3.4	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°	1870.0	25.7
0°-40°	3067.2	42.2
0°-60°	5458.3	75.1
0°-90°	7158.5	98.5
90°-120°	109.4	1.5
90°-150°	109.4	1.5
90°-180°	109.0	1.5
0°-180°	7268.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2404	2404	2404	2404	2404	
5°	2399	2394	2383	2395	2395	228
15°	2308	2311	2305	2318	2318	651
25°	2138	2140	2142	2160	2164	985
35°	1893	1901	1909	1928	1936	1185
45°	1592	1606	1620	1635	1643	1227
55°	1243	1257	1281	1299	1308	1110
65°	854	869	899	934	949	845
75°	432	459	526	589	611	461
85°	75	138	237	314	342	95
90°	1	52	140	210	236	3
95°	1	14	72	132	152	0
105°	1	2	12	35	47	1
115°	2	2	2	6	9	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: P518074

CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2403.8	2403.8	2403.8	2403.8	2403.8
2.5°	2406.6	2403.2	2392.5	2403.2	2402.7
5°	2398.7	2394.2	2383.4	2394.7	2394.7
7.5°	2382.8	2381.1	2371.5	2384.5	2384.5
10°	2364.1	2363.6	2355.6	2369.8	2370.4
12.5°	2338.1	2340.3	2333.0	2346.6	2348.3
15°	2307.5	2311.4	2305.2	2318.2	2317.7
17.5°	2274.0	2276.3	2271.8	2286.5	2285.9
20°	2232.7	2235.5	2232.1	2247.4	2249.1
22.5°	2186.8	2190.7	2190.2	2206.0	2210.6
25°	2138.0	2139.7	2142.0	2160.1	2163.5
27.5°	2084.2	2087.0	2091.0	2107.4	2110.8
30°	2025.3	2029.8	2034.3	2051.3	2055.9
32.5°	1962.9	1967.5	1973.1	1995.2	1997.5
35°	1892.7	1901.2	1909.1	1928.4	1936.3
37.5°	1822.4	1833.2	1840.5	1860.9	1867.2
40°	1748.2	1758.9	1770.8	1792.4	1796.3
42.5°	1670.5	1683.0	1697.2	1716.4	1723.2
45°	1592.3	1606.5	1619.5	1635.4	1643.3
47.5°	1507.9	1522.1	1537.9	1556.1	1561.2
50°	1420.6	1437.1	1454.1	1471.1	1480.1
52.5°	1331.1	1350.9	1370.2	1388.3	1396.8
55°	1242.7	1257.4	1280.7	1299.4	1307.9
57.5°	1150.9	1163.4	1184.3	1214.9	1219.5
60°	1057.4	1068.7	1090.3	1115.2	1125.4
62.5°	954.3	969.6	992.2	1024.0	1033.0
65°	854.0	868.7	898.7	934.4	949.2
67.5°	757.1	762.2	800.7	838.1	861.9
70°	642.6	661.9	706.6	752.5	770.7
72.5°	544.0	563.3	612.6	666.4	689.1
75°	432.4	459.0	525.9	588.8	610.9
77.5°	334.3	363.8	446.5	510.0	535.5
80°	233.5	279.4	369.5	440.9	468.6
82.5°	146.8	203.4	299.8	374.6	398.9
85°	74.8	138.3	237.4	313.9	341.7
87.5°	19.8	89.5	184.7	257.8	286.2
90°	0.6	51.6	140.0	210.2	235.7
92.5°	0.6	28.9	104.3	167.2	193.2
95°	0.6	13.6	72.5	131.5	151.9
97.5°	0.6	5.7	49.9	99.2	119.6
100°	0.6	2.8	31.7	72.0	89.5
102.5°	1.1	1.7	19.8	51.6	65.7
105°	1.1	1.7	11.9	35.1	47.0
107.5°	1.1	1.7	6.8	23.8	32.3
110°	1.7	1.7	4.0	14.7	21.5

TEST NUMBER: P518074

CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	1.7	2.3	9.6	14.2
115°	1.7	1.7	2.3	6.2	9.1
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)