

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: P518072

Luminaire Tested: HVL8-4-LD4-2HI-50-UNV-C-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: P518072
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-C-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: 9225.9 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

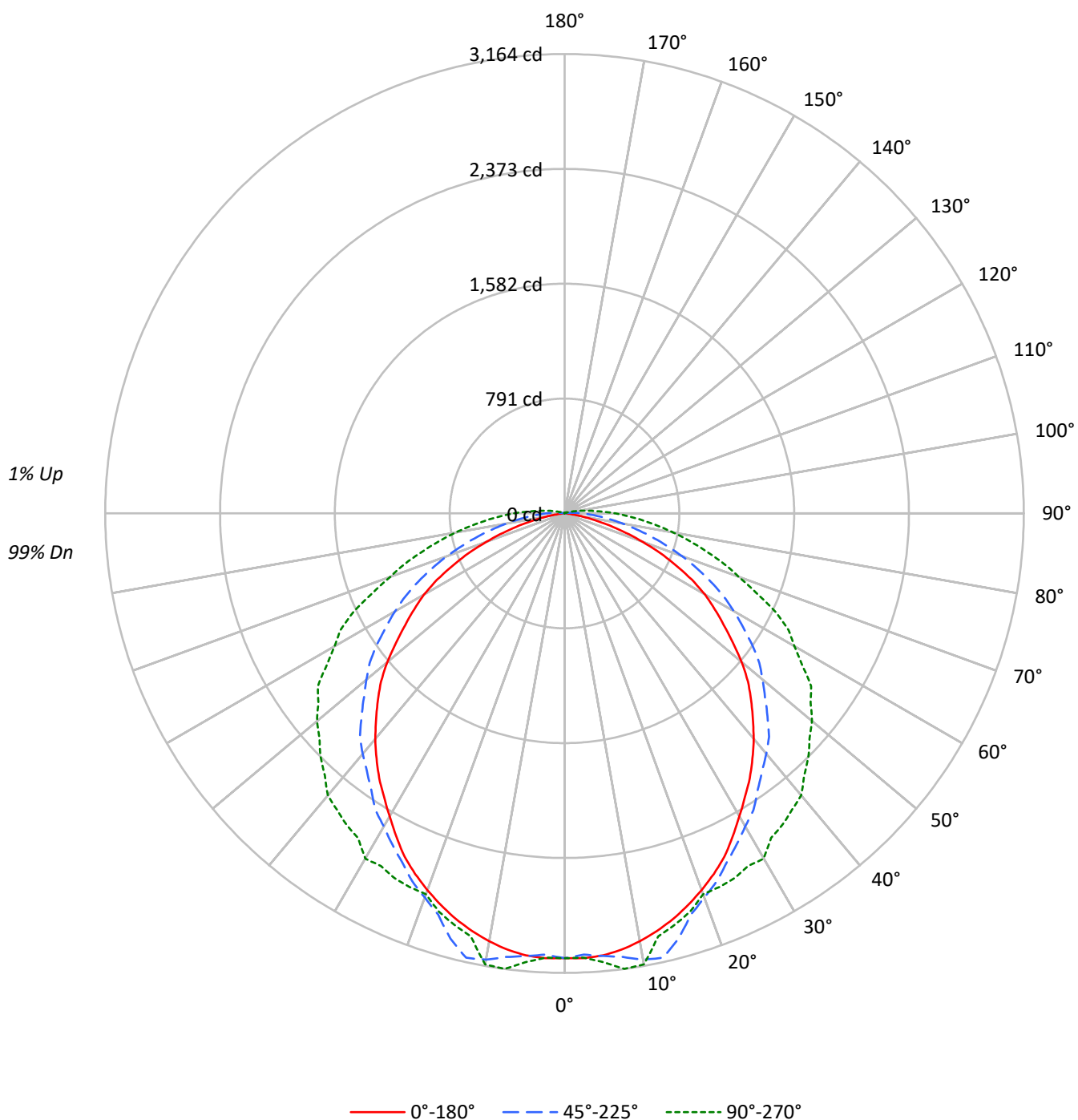
Input Watts (W): 86.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518072

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

Luminous Intensity Polar Plot



TEST NUMBER: P518072

CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-C-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			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°	12362	12362	12362
5°	12334	12177	12302
10°	12172	12341	12378
15°	11950	12007	11489
20°	11681	11247	10987
25°	11396	10760	11056
30°	10963	10367	11178
35°	10655	9995	10980
40°	10322	9715	11048
45°	9966	9356	10849
50°	9532	8978	10766
55°	8896	8573	10760
60°	8408	8019	10300
65°	7433	7357	9972
70°	6065	6499	8943
75°	4328	5459	8163
80°	2427	4410	7329
85°	900	3330	6456

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10849 cd/sqm

TEST NUMBER: P518072

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	294.3	3.2
10°-20°	838.2	9.1
20°-30°	1247.2	13.5
30°-40°	1499.1	16.2
40°-50°	1577.9	17.1
50°-60°	1464.1	15.9
60°-70°	1157.6	12.5
70°-80°	707.1	7.7
80°-90°	308.1	3.3
90°-100°	95.9	1.0
100°-110°	21.5	0.2
110°-120°	8.7	0.1
120°-130°	4.9	0.1
130°-140°	1.3	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°	2379.7	25.8
0°-40°	3878.8	42.0
0°-60°	6920.8	75.0
0°-90°	9093.7	98.6
90°-120°	126.1	1.4
90°-150°	132.3	1.4
90°-180°	132.0	1.4
0°-180°	9225.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3062	3062	3062	3062	3062	
5°	3055	3049	3059	3094	3102	290
15°	2892	3003	3032	2932	2933	815
25°	2608	2775	2648	2728	2772	1197
35°	2225	2287	2321	2532	2618	1391
45°	1819	1827	1977	2290	2376	1402
55°	1339	1361	1577	1922	2075	1203
65°	848	875	1111	1470	1604	840
75°	321	425	620	952	1012	350
85°	29	100	241	468	538	44
90°	1	30	127	297	350	1
95°	1	8	56	163	199	0
105°	1	4	11	32	45	1
115°	1	2	9	14	15	1
125°	1	1	4	9	13	1
135°	1	1	1	3	4	1
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: P518072

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3062.5	3062.5	3062.5	3062.5	3062.5
2.5°	3066.3	3058.2	3041.3	3057.5	3061.9
5°	3055.0	3048.8	3059.4	3093.7	3102.5
7.5°	3029.5	3053.2	3081.2	3143.6	3163.6
10°	2991.4	3036.3	3120.5	3173.6	3153.0
12.5°	2945.2	3021.4	3134.3	3030.7	2982.7
15°	2891.6	3002.6	3032.0	2931.5	2933.4
17.5°	2828.6	2987.0	2896.6	2894.1	2876.0
20°	2760.6	2934.6	2814.9	2809.9	2790.5
22.5°	2687.6	2865.4	2742.5	2732.5	2784.9
25°	2608.4	2774.9	2648.3	2727.5	2771.8
27.5°	2509.2	2656.4	2569.7	2682.0	2737.5
30°	2408.7	2534.1	2489.2	2645.8	2744.4
32.5°	2314.5	2406.2	2423.1	2632.1	2648.3
35°	2225.3	2287.1	2321.4	2532.2	2618.3
37.5°	2127.4	2144.2	2235.3	2490.5	2573.4
40°	2027.5	2016.9	2162.9	2421.8	2536.6
42.5°	1920.2	1916.5	2086.2	2387.5	2444.9
45°	1818.6	1826.7	1977.0	2290.2	2375.7
47.5°	1714.4	1725.0	1873.5	2183.5	2289.6
50°	1593.3	1607.1	1781.1	2088.7	2225.3
52.5°	1462.3	1488.5	1691.3	1998.8	2136.7
55°	1339.4	1361.3	1577.1	1922.1	2075.0
57.5°	1227.1	1240.2	1459.2	1825.4	1940.8
60°	1116.7	1119.8	1348.2	1718.1	1828.5
62.5°	990.1	995.7	1234.0	1591.5	1739.3
65°	847.8	874.7	1111.1	1470.4	1603.9
67.5°	714.9	761.7	985.7	1359.4	1429.3
70°	572.7	651.9	862.8	1229.0	1278.3
72.5°	442.3	535.3	736.8	1083.0	1152.3
75°	320.7	424.8	619.5	952.0	1011.9
77.5°	215.9	321.9	509.7	807.3	886.5
80°	129.1	235.2	411.7	673.1	762.4
82.5°	66.1	157.8	319.4	564.6	644.4
85°	28.7	99.8	241.4	468.5	537.8
87.5°	8.1	56.8	177.8	378.7	437.3
90°	0.6	29.9	126.6	297.0	350.0
92.5°	0.6	14.3	89.2	224.6	265.1
95°	0.6	7.5	55.5	162.8	199.0
97.5°	0.6	4.4	33.7	115.4	146.0
100°	0.6	3.7	20.0	76.7	104.2
102.5°	0.6	4.4	13.7	48.7	68.0
105°	0.6	4.4	11.2	31.8	44.9
107.5°	1.2	4.4	10.0	23.7	31.2
110°	0.6	3.7	10.6	18.1	24.3

TEST NUMBER: P518072

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	3.1	10.0	15.0	18.1
115°	0.6	2.5	8.7	14.3	15.0
117.5°	1.2	1.9	6.9	14.3	15.0
120°	1.2	1.2	5.6	13.7	15.6
122.5°	1.2	1.2	4.4	12.5	15.0
125°	0.6	1.2	3.7	9.4	13.1
127.5°	1.2	1.2	3.1	7.5	10.0
130°	1.2	1.2	2.5	5.6	7.5
132.5°	1.2	1.2	1.9	4.4	5.6
135°	1.2	1.2	1.2	3.1	4.4
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)