

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: P518159

Luminaire Tested: HVL8-8-LD4-1HI-35-UNV-C-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: P518159
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1HI-35-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9459.0 lumens
Efficiency: N/A
Efficacy: 110.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

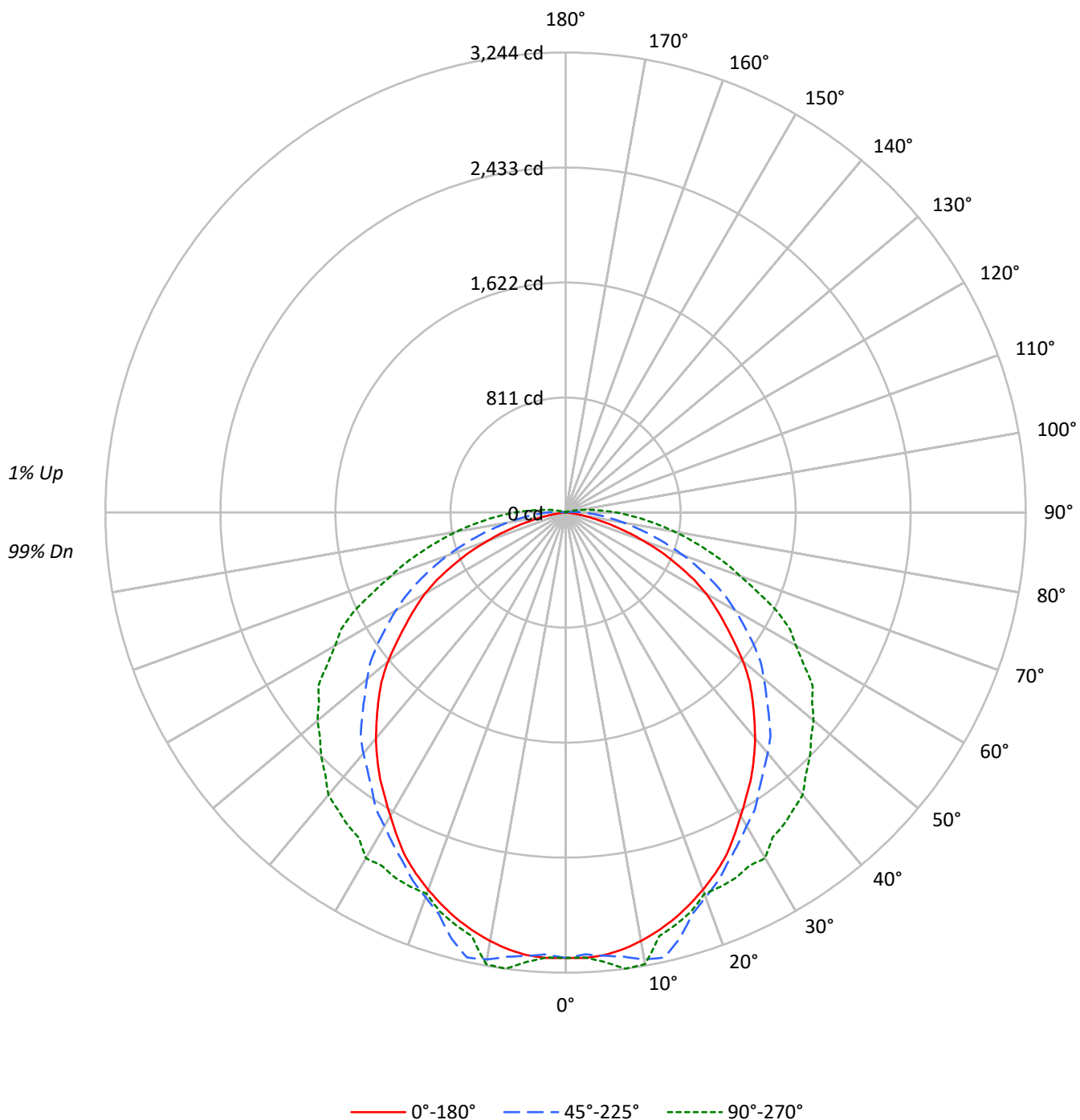
Input Watts (W): 86
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518159

CATALOG NUMBER: HVL8-8-LD4-1HI-35-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518159

CATALOG NUMBER: HVL8-8-LD4-1HI-35-UNV-C-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			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°	6337	6337	6337
5°	6334	6250	6306
10°	6262	6343	6345
15°	6160	6178	5889
20°	6033	5794	5632
25°	5898	5551	5668
30°	5687	5355	5730
35°	5540	5170	5629
40°	5383	5033	5664
45°	5213	4855	5561
50°	5005	4668	5519
55°	4693	4467	5516
60°	4460	4189	5280
65°	3973	3856	5112
70°	3277	3420	4584
75°	2379	2888	4185
80°	1376	2351	3757
85°	550	1797	3309

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5561 cd/sqm

TEST NUMBER: P518159

CATALOG NUMBER: HVL8-8-LD4-1HI-35-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	301.8	3.2
10°-20°	859.4	9.1
20°-30°	1278.7	13.5
30°-40°	1537.0	16.2
40°-50°	1617.7	17.1
50°-60°	1501.1	15.9
60°-70°	1186.9	12.5
70°-80°	725.0	7.7
80°-90°	315.9	3.3
90°-100°	98.3	1.0
100°-110°	22.1	0.2
110°-120°	8.9	0.1
120°-130°	5.0	0.1
130°-140°	1.4	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°	2439.8	25.8
0°-40°	3976.8	42.0
0°-60°	7095.6	75.0
0°-90°	9323.4	98.6
90°-120°	129.3	1.4
90°-150°	135.7	1.4
90°-180°	136.0	1.4
0°-180°	9459.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3140	3140	3140	3140	3140	
5°	3132	3126	3137	3172	3181	297
15°	2965	3078	3108	3006	3008	835
25°	2674	2845	2715	2796	2842	1228
35°	2282	2345	2380	2596	2684	1426
45°	1864	1873	2027	2348	2436	1437
55°	1373	1396	1617	1971	2127	1234
65°	869	897	1139	1508	1644	861
75°	329	436	635	976	1038	359
85°	29	102	248	480	551	46
90°	1	31	130	304	359	1
95°	1	8	57	167	204	0
105°	1	4	12	33	46	1
115°	1	3	9	15	15	1
125°	1	1	4	10	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: P518159

CATALOG NUMBER: HVL8-8-LD4-1HI-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3139.9	3139.9	3139.9	3139.9	3139.9
2.5°	3143.7	3135.4	3118.1	3134.8	3139.2
5°	3132.2	3125.8	3136.7	3171.9	3180.8
7.5°	3106.0	3130.3	3159.1	3223.0	3243.5
10°	3067.0	3113.0	3199.4	3253.7	3232.6
12.5°	3019.6	3097.7	3213.4	3107.3	3058.0
15°	2964.6	3078.5	3108.5	3005.6	3007.5
17.5°	2900.0	3062.5	2969.7	2967.2	2948.6
20°	2830.3	3008.8	2885.9	2880.8	2861.0
22.5°	2755.5	2937.8	2811.8	2801.5	2855.2
25°	2674.2	2845.0	2715.2	2796.4	2841.8
27.5°	2572.5	2723.5	2634.6	2749.7	2806.6
30°	2469.6	2598.1	2552.1	2712.6	2813.7
32.5°	2373.0	2467.0	2484.3	2698.5	2715.2
35°	2281.5	2344.8	2380.0	2596.2	2684.5
37.5°	2181.1	2198.4	2291.7	2553.3	2638.4
40°	2078.8	2067.9	2217.5	2483.0	2600.7
42.5°	1968.7	1964.9	2138.9	2447.8	2506.7
45°	1864.5	1872.8	2026.9	2348.0	2435.7
47.5°	1757.7	1768.5	1920.8	2238.7	2347.4
50°	1633.6	1647.7	1826.1	2141.4	2281.5
52.5°	1499.3	1526.1	1734.0	2049.3	2190.7
55°	1373.3	1395.6	1616.9	1970.7	2127.4
57.5°	1258.1	1271.6	1496.1	1871.5	1989.8
60°	1144.9	1148.1	1382.2	1761.5	1874.7
62.5°	1015.1	1020.8	1265.2	1631.7	1783.2
65°	869.2	896.7	1139.2	1507.6	1644.5
67.5°	733.0	781.0	1010.6	1393.7	1465.4
70°	587.2	668.4	884.6	1260.0	1310.6
72.5°	453.5	548.8	755.4	1110.4	1181.4
75°	328.8	435.6	635.1	976.1	1037.5
77.5°	221.3	330.0	522.6	827.7	908.9
80°	132.4	241.1	422.1	690.1	781.6
82.5°	67.8	161.8	327.5	578.9	660.7
85°	29.4	102.3	247.5	480.4	551.3
87.5°	8.3	58.2	182.3	388.2	448.4
90°	0.6	30.7	129.8	304.5	358.8
92.5°	0.6	14.7	91.5	230.3	271.8
95°	0.6	7.7	56.9	166.9	204.0
97.5°	0.6	4.5	34.5	118.3	149.7
100°	0.6	3.8	20.5	78.7	106.8
102.5°	0.6	4.5	14.1	49.9	69.7
105°	0.6	4.5	11.5	32.6	46.1
107.5°	1.3	4.5	10.2	24.3	32.0
110°	0.6	3.8	10.9	18.5	24.9

TEST NUMBER: P518159

CATALOG NUMBER: HVL8-8-LD4-1HI-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	3.2	10.2	15.4	18.5
115°	0.6	2.6	9.0	14.7	15.4
117.5°	1.3	1.9	7.0	14.7	15.4
120°	1.3	1.3	5.8	14.1	16.0
122.5°	1.3	1.3	4.5	12.8	15.4
125°	0.6	1.3	3.8	9.6	13.4
127.5°	1.3	1.3	3.2	7.7	10.2
130°	1.3	1.3	2.6	5.8	7.7
132.5°	1.3	1.3	1.9	4.5	5.8
135°	1.3	1.3	1.3	3.2	4.5
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)