

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: P518132

Luminaire Tested: HVL8-4-LD4-3LO-40-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: P518132
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-C-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: 8630.0 lumens
Efficiency: N/A
Efficacy: 128.0 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

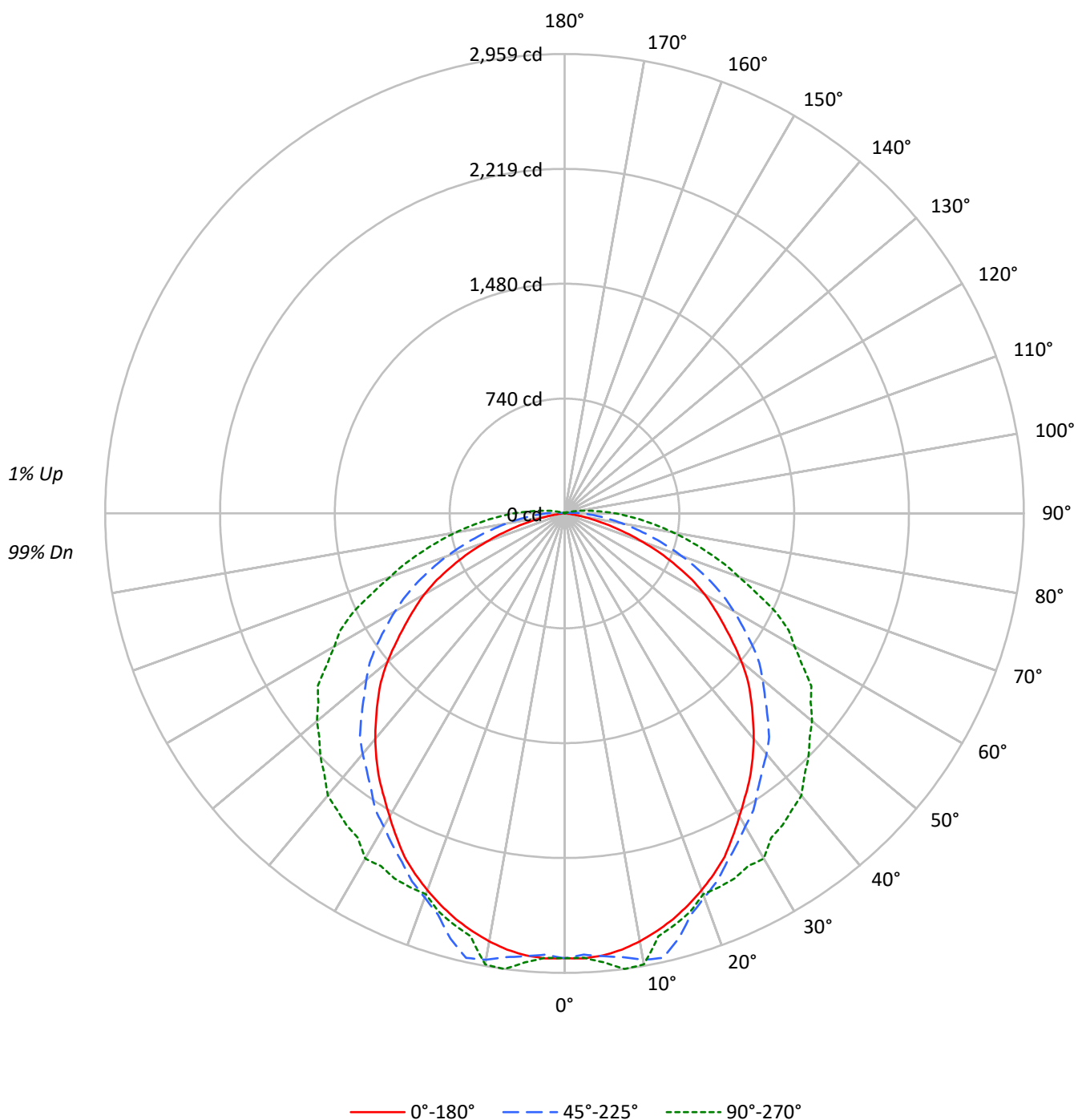
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518132

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

Luminous Intensity Polar Plot



TEST NUMBER: P518132

CATALOG NUMBER: HVL8-4-LD4-3LO-40-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°	11563	11563	11563
5°	11537	11390	11507
10°	11385	11544	11578
15°	11178	11231	10746
20°	10926	10520	10277
25°	10660	10065	10342
30°	10255	9698	10456
35°	9966	9349	10270
40°	9656	9088	10334
45°	9322	8751	10148
50°	8916	8398	10071
55°	8322	8019	10065
60°	7865	7501	9635
65°	6954	6882	9328
70°	5673	6080	8365
75°	4048	5106	7636
80°	2271	4125	6855
85°	841	3114	6038

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10148 cd/sqm

TEST NUMBER: P518132

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	275.3	3.2
10°-20°	784.1	9.1
20°-30°	1166.6	13.5
30°-40°	1402.3	16.2
40°-50°	1476.0	17.1
50°-60°	1369.5	15.9
60°-70°	1082.9	12.5
70°-80°	661.4	7.7
80°-90°	288.2	3.3
90°-100°	89.7	1.0
100°-110°	20.2	0.2
110°-120°	8.1	0.1
120°-130°	4.6	0.1
130°-140°	1.2	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°	2226.0	25.8
0°-40°	3628.3	42.0
0°-60°	6473.8	75.0
0°-90°	8506.2	98.6
90°-120°	118.0	1.4
90°-150°	123.8	1.4
90°-180°	124.0	1.4
0°-180°	8630.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2865	2865	2865	2865	2865	
5°	2858	2852	2862	2894	2902	271
15°	2705	2809	2836	2742	2744	762
25°	2440	2596	2477	2551	2593	1120
35°	2082	2139	2171	2369	2449	1301
45°	1701	1709	1849	2142	2222	1311
55°	1253	1273	1475	1798	1941	1126
65°	793	818	1039	1375	1500	785
75°	300	397	580	890	946	327
85°	27	93	226	438	503	42
90°	1	28	118	278	327	1
95°	1	7	52	152	186	0
105°	1	4	10	30	42	1
115°	1	2	8	13	14	1
125°	1	1	4	9	12	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: P518132

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2864.7	2864.7	2864.7	2864.7	2864.7
2.5°	2868.2	2860.6	2844.8	2860.0	2864.1
5°	2857.7	2851.9	2861.8	2893.9	2902.0
7.5°	2833.8	2855.9	2882.2	2940.6	2959.2
10°	2798.2	2840.2	2919.0	2968.6	2949.3
12.5°	2755.0	2826.2	2931.8	2834.9	2790.0
15°	2704.8	2808.7	2836.1	2742.1	2743.9
17.5°	2645.9	2794.1	2709.5	2707.1	2690.2
20°	2582.2	2745.1	2633.0	2628.3	2610.3
22.5°	2514.0	2680.3	2565.3	2556.0	2605.0
25°	2439.9	2595.7	2477.2	2551.3	2592.8
27.5°	2347.1	2484.8	2403.7	2508.7	2560.7
30°	2253.1	2370.4	2328.4	2474.9	2567.1
32.5°	2165.0	2250.8	2266.5	2462.0	2477.2
35°	2081.6	2139.3	2171.4	2368.7	2449.2
37.5°	1989.9	2005.7	2090.9	2329.6	2407.2
40°	1896.6	1886.6	2023.2	2265.4	2372.8
42.5°	1796.2	1792.7	1951.4	2233.3	2287.0
45°	1701.1	1708.7	1849.3	2142.2	2222.2
47.5°	1603.6	1613.5	1752.4	2042.5	2141.7
50°	1490.4	1503.2	1666.1	1953.8	2081.6
52.5°	1367.9	1392.4	1582.0	1869.7	1998.7
55°	1252.9	1273.3	1475.2	1797.9	1940.9
57.5°	1147.9	1160.1	1364.9	1707.5	1815.5
60°	1044.6	1047.5	1261.1	1607.1	1710.4
62.5°	926.1	931.4	1154.3	1488.7	1627.0
65°	793.1	818.1	1039.3	1375.4	1500.3
67.5°	668.8	712.5	922.0	1271.6	1336.9
70°	535.7	609.8	807.1	1149.6	1195.7
72.5°	413.7	500.7	689.2	1013.1	1077.8
75°	299.9	397.4	579.5	890.5	946.5
77.5°	201.9	301.1	476.8	755.1	829.2
80°	120.8	220.0	385.1	629.7	713.1
82.5°	61.9	147.6	298.8	528.1	602.8
85°	26.8	93.4	225.8	438.3	503.0
87.5°	7.6	53.1	166.3	354.2	409.1
90°	0.6	28.0	118.5	277.8	327.4
92.5°	0.6	13.4	83.4	210.1	248.0
95°	0.6	7.0	51.9	152.3	186.2
97.5°	0.6	4.1	31.5	108.0	136.6
100°	0.6	3.5	18.7	71.8	97.5
102.5°	0.6	4.1	12.8	45.5	63.6
105°	0.6	4.1	10.5	29.8	42.0
107.5°	1.2	4.1	9.3	22.2	29.2
110°	0.6	3.5	9.9	16.9	22.8

TEST NUMBER: P518132

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	2.9	9.3	14.0	16.9
115°	0.6	2.3	8.2	13.4	14.0
117.5°	1.2	1.8	6.4	13.4	14.0
120°	1.2	1.2	5.3	12.8	14.6
122.5°	1.2	1.2	4.1	11.7	14.0
125°	0.6	1.2	3.5	8.8	12.3
127.5°	1.2	1.2	2.9	7.0	9.3
130°	1.2	1.2	2.3	5.3	7.0
132.5°	1.2	1.2	1.8	4.1	5.3
135°	1.2	1.2	1.2	2.9	4.1
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)