

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: P518137

Luminaire Tested: HVL8-4-LD4-3LO-50-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518137
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-50-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7947.0 lumens
Efficiency: N/A
Efficacy: 117.9 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

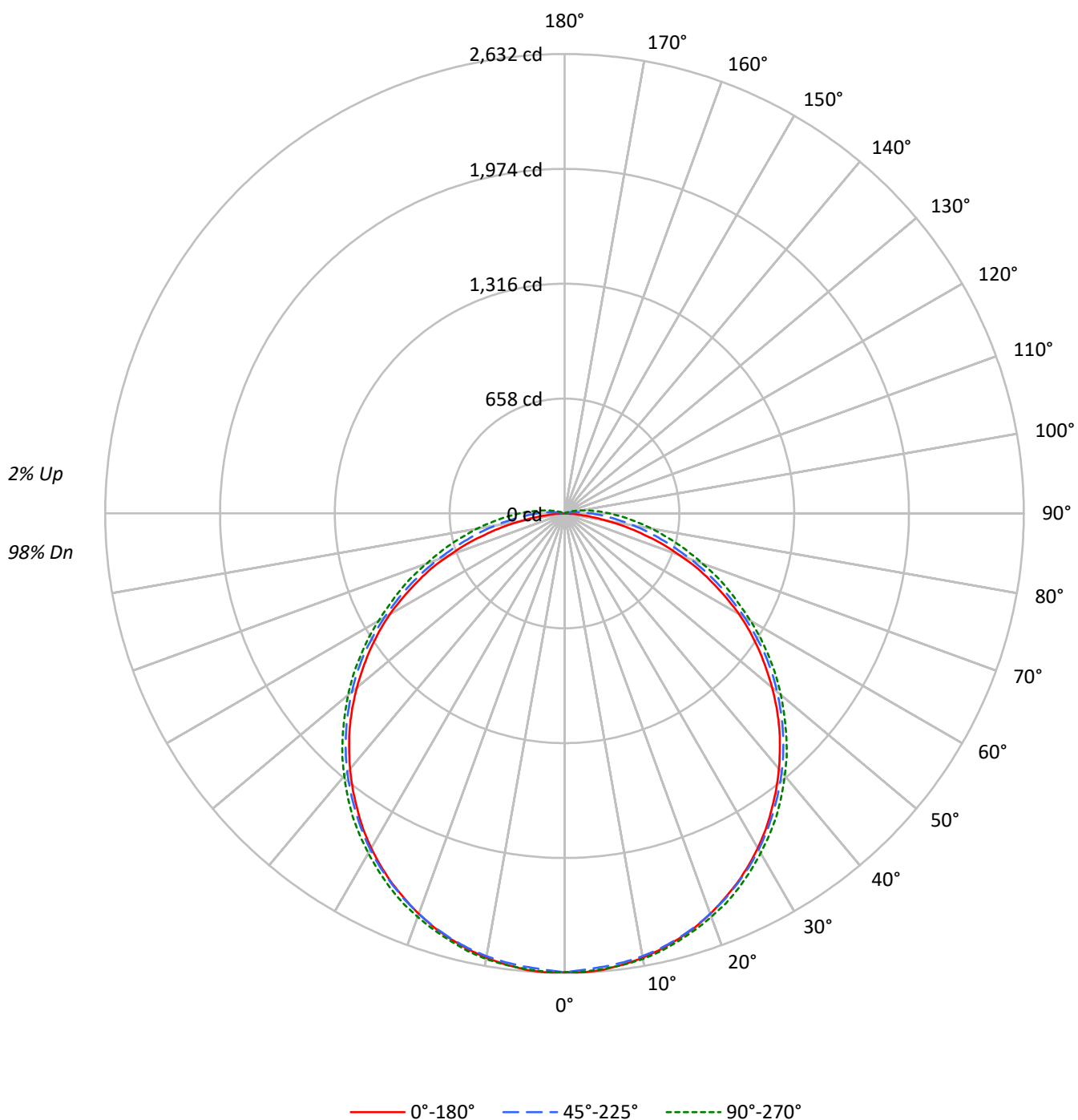
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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Luminous Intensity Polar Plot



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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°	10609	10609	10609
5°	10589	10372	10383
10°	10518	10187	10175
15°	10427	9982	9925
20°	10330	9752	9682
25°	10213	9516	9436
30°	10079	9264	9156
35°	9909	8988	8878
40°	9732	8697	8555
45°	9541	8380	8206
50°	9293	8014	7830
55°	9025	7612	7416
60°	8706	7090	6932
65°	8187	6507	6452
70°	7440	5821	5895
75°	6381	5067	5388
80°	4800	4328	4926
85°	2566	3581	4485

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9541 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	248.7	3.1
10°-20°	713.5	9.0
20°-30°	1082.5	13.6
30°-40°	1309.0	16.5
40°-50°	1365.8	17.2
50°-60°	1248.8	15.7
60°-70°	973.5	12.2
70°-80°	609.0	7.7
80°-90°	276.6	3.5
90°-100°	92.7	1.2
100°-110°	23.3	0.3
110°-120°	3.7	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°	2044.7	25.7
0°-40°	3353.7	42.2
0°-60°	5968.3	75.1
0°-90°	7827.4	98.5
90°-120°	119.6	1.5
90°-150°	119.6	1.5
90°-180°	120.0	1.5
0°-180°	7947.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2628	2628	2628	2628	2628	
5°	2623	2618	2606	2618	2618	249
15°	2523	2527	2521	2535	2534	712
25°	2338	2340	2342	2362	2366	1077
35°	2070	2079	2088	2108	2117	1295
45°	1741	1757	1771	1788	1797	1342
55°	1359	1375	1400	1421	1430	1214
65°	934	950	983	1022	1038	924
75°	473	502	575	644	668	504
85°	82	151	260	343	374	103
90°	1	56	153	230	258	3
95°	1	15	79	144	166	0
105°	1	2	13	38	51	1
115°	2	2	2	7	10	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: P518137

CATALOG NUMBER: HVL8-4-LD4-3LO-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2628.4	2628.4	2628.4	2628.4	2628.4
2.5°	2631.5	2627.8	2616.0	2627.8	2627.1
5°	2622.8	2617.9	2606.1	2618.5	2618.5
7.5°	2605.5	2603.6	2593.1	2607.3	2607.3
10°	2585.0	2584.4	2575.7	2591.2	2591.8
12.5°	2556.5	2559.0	2550.9	2565.8	2567.7
15°	2523.1	2527.4	2520.6	2534.8	2534.2
17.5°	2486.5	2489.0	2484.0	2500.1	2499.5
20°	2441.3	2444.4	2440.6	2457.4	2459.2
22.5°	2391.1	2395.4	2394.8	2412.1	2417.1
25°	2337.8	2339.6	2342.1	2362.0	2365.7
27.5°	2278.9	2282.0	2286.4	2304.3	2308.0
30°	2214.5	2219.4	2224.4	2243.0	2247.9
32.5°	2146.3	2151.3	2157.5	2181.6	2184.1
35°	2069.5	2078.8	2087.5	2108.5	2117.2
37.5°	1992.7	2004.4	2012.5	2034.8	2041.6
40°	1911.5	1923.3	1936.3	1959.8	1964.2
42.5°	1826.6	1840.2	1855.7	1876.8	1884.2
45°	1741.1	1756.6	1770.8	1788.2	1796.9
47.5°	1648.8	1664.3	1681.6	1701.5	1707.0
50°	1553.4	1571.3	1589.9	1608.5	1618.4
52.5°	1455.5	1477.2	1498.2	1518.0	1527.3
55°	1358.8	1374.9	1400.3	1420.8	1430.1
57.5°	1258.4	1272.1	1295.0	1328.4	1333.4
60°	1156.2	1168.6	1192.1	1219.4	1230.5
62.5°	1043.4	1060.2	1084.9	1119.6	1129.5
65°	933.8	949.9	982.7	1021.7	1037.8
67.5°	827.8	833.4	875.5	916.4	942.4
70°	702.6	723.7	772.7	822.8	842.7
72.5°	594.8	615.9	669.8	728.7	753.4
75°	472.8	501.9	575.0	643.8	667.9
77.5°	365.6	397.8	488.3	557.6	585.5
80°	255.3	305.5	404.0	482.1	512.4
82.5°	160.5	222.4	327.8	409.6	436.2
85°	81.8	151.2	259.6	343.3	373.6
87.5°	21.7	97.9	202.0	281.9	312.9
90°	0.6	56.4	153.0	229.9	257.8
92.5°	0.6	31.6	114.0	182.8	211.3
95°	0.6	14.9	79.3	143.7	166.1
97.5°	0.6	6.2	54.5	108.4	130.7
100°	0.6	3.1	34.7	78.7	97.9
102.5°	1.2	1.9	21.7	56.4	71.9
105°	1.2	1.9	13.0	38.4	51.4
107.5°	1.2	1.9	7.4	26.0	35.3
110°	1.9	1.9	4.3	16.1	23.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	1.9	2.5	10.5	15.5
115°	1.9	1.9	2.5	6.8	9.9
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)