

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: P518131

Luminaire Tested: HVL8-4-LD4-3LO-40-UNV-C-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: P518131
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-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 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

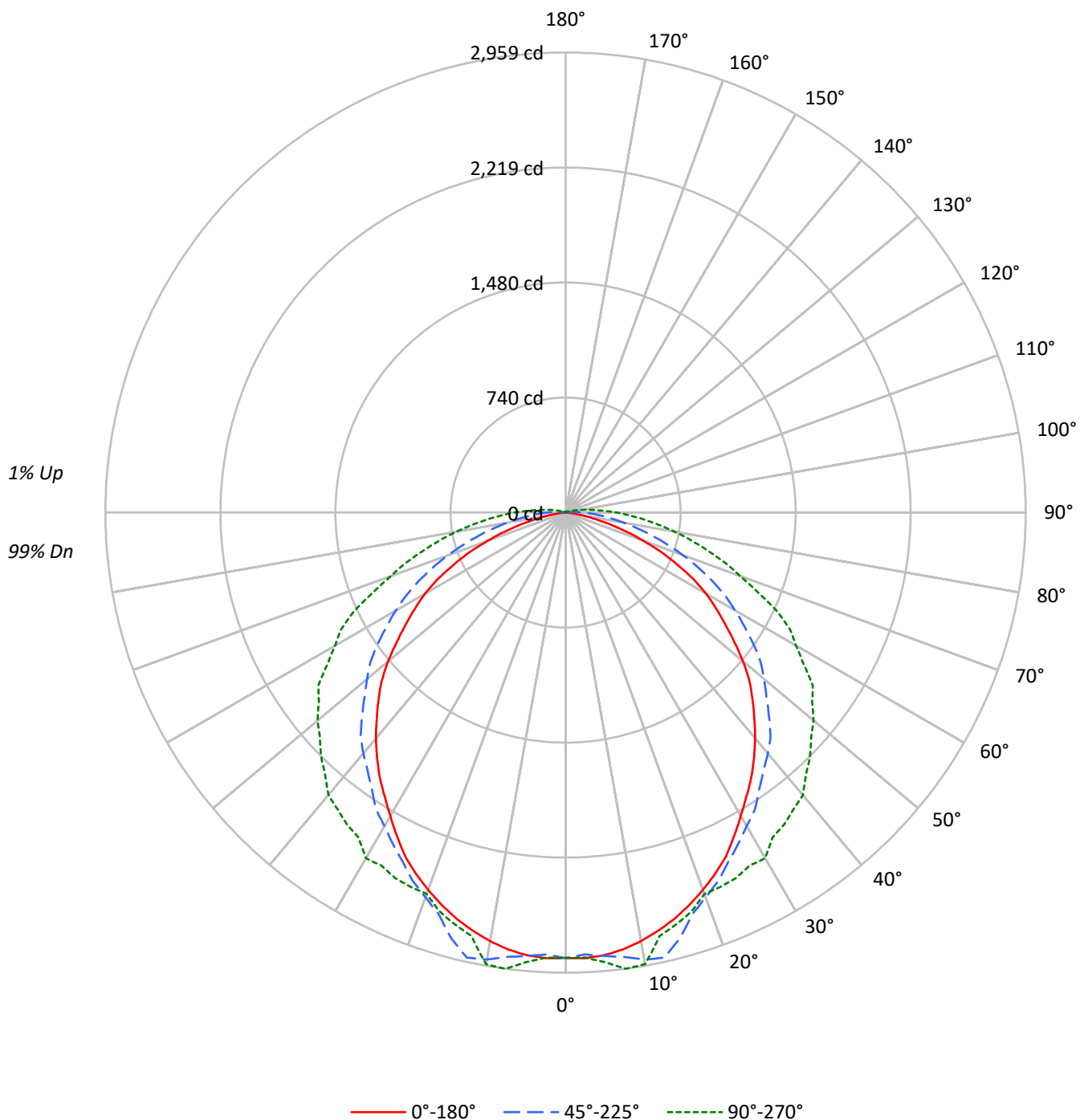
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

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

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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

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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

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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)