

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: P517619

Luminaire Tested: HVL12-8-LD4-1STD-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: P517619
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1STD-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7751.0 lumens
Efficiency: N/A
Efficacy: 115.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

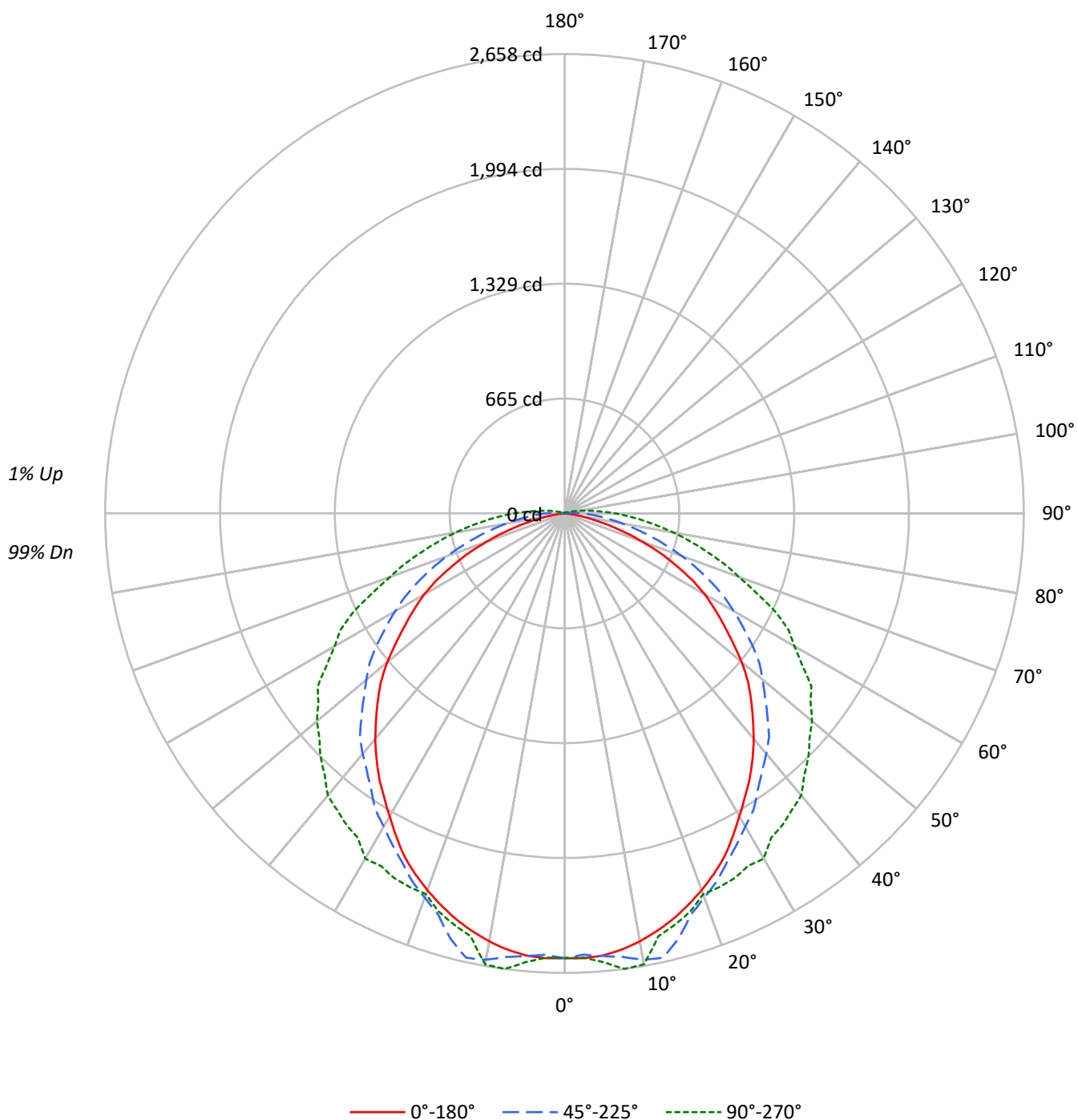
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	3462	3462	3462
5°	3460	3432	3470
10°	3421	3500	3516
15°	3365	3426	3286
20°	3296	3230	3165
25°	3222	3111	3208
30°	3107	3018	3268
35°	3027	2931	3235
40°	2940	2872	3284
45°	2848	2790	3255
50°	2734	2705	3265
55°	2563	2613	3303
60°	2437	2479	3208
65°	2171	2314	3160
70°	1790	2090	2898
75°	1299	1810	2724
80°	752	1530	2551
85°	300	1244	2401

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3303 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	247.3	3.2
10°-20°	704.2	9.1
20°-30°	1047.8	13.5
30°-40°	1259.4	16.2
40°-50°	1325.6	17.1
50°-60°	1230.0	15.9
60°-70°	972.6	12.5
70°-80°	594.1	7.7
80°-90°	258.8	3.3
90°-100°	80.6	1.0
100°-110°	18.1	0.2
110°-120°	7.3	0.1
120°-130°	4.1	0.1
130°-140°	1.1	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°	1999.3	25.8
0°-40°	3258.7	42.0
0°-60°	5814.4	75.0
0°-90°	7639.8	98.6
90°-120°	106.0	1.4
90°-150°	111.1	1.4
90°-180°	111.0	1.4
0°-180°	7751.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2573	2573	2573	2573	2573	
5°	2567	2561	2570	2599	2606	243
15°	2429	2523	2547	2463	2464	684
25°	2191	2331	2225	2292	2329	1006
35°	1870	1921	1950	2127	2200	1168
45°	1528	1535	1661	1924	1996	1178
55°	1125	1144	1325	1615	1743	1011
65°	712	735	934	1235	1348	705
75°	269	357	520	800	850	294
85°	24	84	203	394	452	37
90°	0	25	106	250	294	1
95°	0	6	47	137	167	0
105°	0	4	9	27	38	1
115°	0	2	7	12	13	1
125°	0	1	3	8	11	1
135°	1	1	1	3	4	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2572.9	2572.9	2572.9	2572.9	2572.9
2.5°	2576.1	2569.2	2555.1	2568.7	2572.4
5°	2566.6	2561.4	2570.3	2599.1	2606.5
7.5°	2545.1	2565.0	2588.6	2641.0	2657.8
10°	2513.2	2550.9	2621.7	2666.2	2648.9
12.5°	2474.4	2538.3	2633.2	2546.2	2505.8
15°	2429.3	2522.6	2547.2	2462.8	2464.4
17.5°	2376.4	2509.5	2433.5	2431.4	2416.2
20°	2319.2	2465.5	2364.8	2360.6	2344.4
22.5°	2257.9	2407.3	2304.0	2295.7	2339.7
25°	2191.4	2331.3	2224.9	2291.5	2328.7
27.5°	2108.0	2231.7	2158.9	2253.2	2299.8
30°	2023.6	2129.0	2091.2	2222.8	2305.6
32.5°	1944.5	2021.5	2035.7	2211.3	2224.9
35°	1869.5	1921.4	1950.3	2127.4	2199.7
37.5°	1787.3	1801.4	1877.9	2092.3	2162.0
40°	1703.4	1694.5	1817.1	2034.6	2131.1
42.5°	1613.2	1610.1	1752.7	2005.8	2054.0
45°	1527.8	1534.6	1660.9	1924.0	1995.9
47.5°	1440.3	1449.2	1573.9	1834.4	1923.5
50°	1338.6	1350.1	1496.4	1754.8	1869.5
52.5°	1228.5	1250.6	1420.9	1679.3	1795.1
55°	1125.3	1143.6	1325.0	1614.8	1743.2
57.5°	1030.9	1042.0	1225.9	1533.6	1630.5
60°	938.2	940.8	1132.6	1443.4	1536.2
62.5°	831.8	836.5	1036.7	1337.0	1461.2
65°	712.3	734.8	933.5	1235.4	1347.5
67.5°	600.6	640.0	828.1	1142.1	1200.8
70°	481.1	547.7	724.9	1032.5	1073.9
72.5°	371.6	449.7	619.0	909.9	968.1
75°	269.4	356.9	520.5	799.8	850.1
77.5°	181.3	270.4	428.2	678.2	744.8
80°	108.5	197.6	345.9	565.5	640.5
82.5°	55.6	132.6	268.3	474.3	541.4
85°	24.1	83.9	202.8	393.6	451.8
87.5°	6.8	47.7	149.4	318.1	367.4
90°	0.5	25.2	106.4	249.5	294.0
92.5°	0.5	12.1	74.9	188.7	222.8
95°	0.5	6.3	46.6	136.8	167.2
97.5°	0.5	3.7	28.3	97.0	122.6
100°	0.5	3.1	16.8	64.5	87.5
102.5°	0.5	3.7	11.5	40.9	57.1
105°	0.5	3.7	9.4	26.7	37.7
107.5°	1.0	3.7	8.4	19.9	26.2
110°	0.5	3.1	8.9	15.2	20.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.6	8.4	12.6	15.2
115°	0.5	2.1	7.3	12.1	12.6
117.5°	1.0	1.6	5.8	12.1	12.6
120°	1.0	1.0	4.7	11.5	13.1
122.5°	1.0	1.0	3.7	10.5	12.6
125°	0.5	1.0	3.1	7.9	11.0
127.5°	1.0	1.0	2.6	6.3	8.4
130°	1.0	1.0	2.1	4.7	6.3
132.5°	1.0	1.0	1.6	3.7	4.7
135°	1.0	1.0	1.0	2.6	3.7
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)