

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: P517611

Luminaire Tested: HVL12-8-LD4-1STD-30-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: P517611
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1STD-30-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7312.0 lumens
Efficiency: N/A
Efficacy: 109.1 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

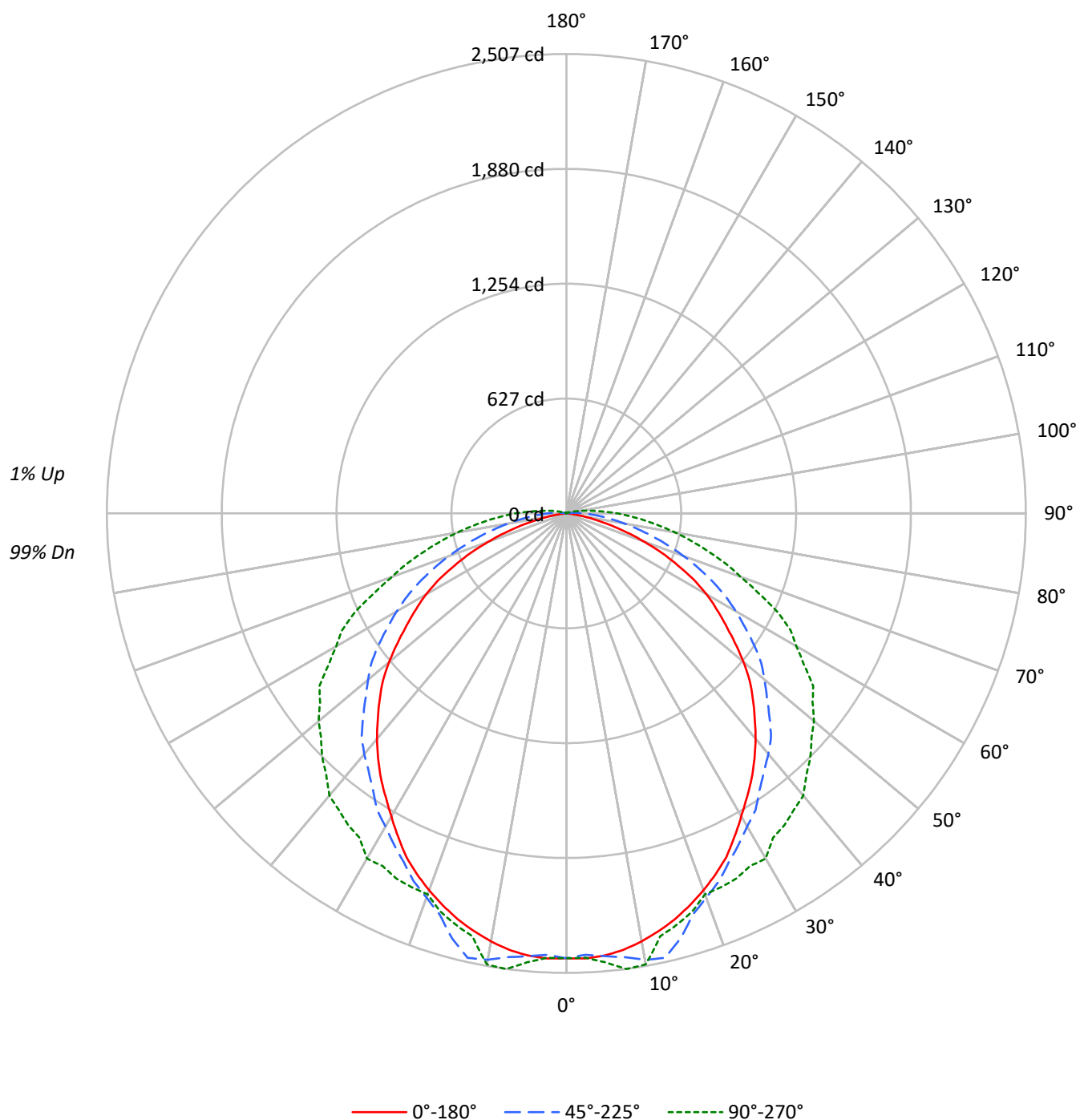
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3266	3266	3266
5°	3264	3237	3273
10°	3227	3302	3317
15°	3175	3232	3100
20°	3109	3047	2986
25°	3039	2935	3026
30°	2931	2847	3082
35°	2855	2765	3052
40°	2774	2709	3098
45°	2687	2632	3071
50°	2579	2552	3080
55°	2418	2465	3116
60°	2299	2338	3026
65°	2048	2183	2981
70°	1689	1972	2734
75°	1226	1707	2570
80°	709	1443	2406
85°	283	1174	2265

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3116 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.3	3.2
10°-20°	664.3	9.1
20°-30°	988.4	13.5
30°-40°	1188.1	16.2
40°-50°	1250.6	17.1
50°-60°	1160.4	15.9
60°-70°	917.5	12.5
70°-80°	560.4	7.7
80°-90°	244.2	3.3
90°-100°	76.0	1.0
100°-110°	17.1	0.2
110°-120°	6.9	0.1
120°-130°	3.9	0.1
130°-140°	1.0	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°	1886.0	25.8
0°-40°	3074.1	42.0
0°-60°	5485.1	75.0
0°-90°	7207.1	98.6
90°-120°	100.0	1.4
90°-150°	104.9	1.4
90°-180°	105.0	1.4
0°-180°	7312.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2427	2427	2427	2427	2427	
5°	2421	2416	2425	2452	2459	229
15°	2292	2380	2403	2323	2325	646
25°	2067	2199	2099	2162	2197	949
35°	1764	1813	1840	2007	2075	1102
45°	1441	1448	1567	1815	1883	1111
55°	1062	1079	1250	1523	1644	954
65°	672	693	881	1165	1271	665
75°	254	337	491	754	802	277
85°	23	79	191	371	426	35
90°	0	24	100	235	277	1
95°	0	6	44	129	158	0
105°	0	4	9	25	36	1
115°	0	2	7	11	12	1
125°	0	1	3	7	10	1
135°	1	1	1	2	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°	2427.2	2427.2	2427.2	2427.2	2427.2
2.5°	2430.2	2423.7	2410.4	2423.2	2426.7
5°	2421.3	2416.3	2424.7	2451.9	2458.8
7.5°	2401.0	2419.8	2442.0	2491.5	2507.3
10°	2370.8	2406.4	2473.2	2515.2	2498.9
12.5°	2334.2	2394.6	2484.0	2402.0	2363.9
15°	2291.7	2379.7	2403.0	2323.4	2324.8
17.5°	2241.8	2367.4	2295.7	2293.7	2279.3
20°	2187.9	2325.8	2230.9	2226.9	2211.6
22.5°	2130.0	2270.9	2173.5	2165.6	2207.2
25°	2067.2	2199.3	2098.9	2161.7	2196.8
27.5°	1988.6	2105.3	2036.6	2125.6	2169.6
30°	1909.0	2008.4	1972.8	2096.9	2175.0
32.5°	1834.4	1907.0	1920.4	2086.0	2098.9
35°	1763.7	1812.6	1839.8	2006.9	2075.1
37.5°	1686.0	1699.4	1771.6	1973.8	2039.5
40°	1606.9	1598.5	1714.2	1919.4	2010.4
42.5°	1521.9	1518.9	1653.4	1892.2	1937.7
45°	1441.3	1447.7	1566.9	1815.1	1882.8
47.5°	1358.7	1367.1	1484.8	1730.5	1814.6
50°	1262.8	1273.7	1411.6	1655.4	1763.7
52.5°	1159.0	1179.7	1340.4	1584.2	1693.4
55°	1061.6	1078.9	1249.9	1523.4	1644.5
57.5°	972.6	982.9	1156.5	1446.7	1538.2
60°	885.0	887.5	1068.5	1361.7	1449.2
62.5°	784.7	789.1	978.0	1261.3	1378.5
65°	671.9	693.2	880.6	1165.4	1271.2
67.5°	566.6	603.7	781.2	1077.4	1132.8
70°	453.9	516.7	683.8	974.0	1013.1
72.5°	350.6	424.2	583.9	858.3	913.2
75°	254.1	336.7	491.0	754.5	802.0
77.5°	171.1	255.1	404.0	639.8	702.6
80°	102.3	186.4	326.3	533.5	604.2
82.5°	52.4	125.1	253.2	447.5	510.8
85°	22.7	79.1	191.3	371.3	426.2
87.5°	6.4	45.0	140.9	300.1	346.6
90°	0.5	23.7	100.4	235.4	277.4
92.5°	0.5	11.4	70.7	178.0	210.1
95°	0.5	5.9	44.0	129.0	157.7
97.5°	0.5	3.5	26.7	91.5	115.7
100°	0.5	3.0	15.8	60.8	82.6
102.5°	0.5	3.5	10.9	38.6	53.9
105°	0.5	3.5	8.9	25.2	35.6
107.5°	1.0	3.5	7.9	18.8	24.7
110°	0.5	3.0	8.4	14.3	19.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.5	7.9	11.9	14.3
115°	0.5	2.0	6.9	11.4	11.9
117.5°	1.0	1.5	5.4	11.4	11.9
120°	1.0	1.0	4.4	10.9	12.4
122.5°	1.0	1.0	3.5	9.9	11.9
125°	0.5	1.0	3.0	7.4	10.4
127.5°	1.0	1.0	2.5	5.9	7.9
130°	1.0	1.0	2.0	4.4	5.9
132.5°	1.0	1.0	1.5	3.5	4.4
135°	1.0	1.0	1.0	2.5	3.5
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)