

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: P517615

Luminaire Tested: HVL12-8-LD4-1STD-35-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: P517615
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1STD-35-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7675.0 lumens
Efficiency: N/A
Efficacy: 114.6 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

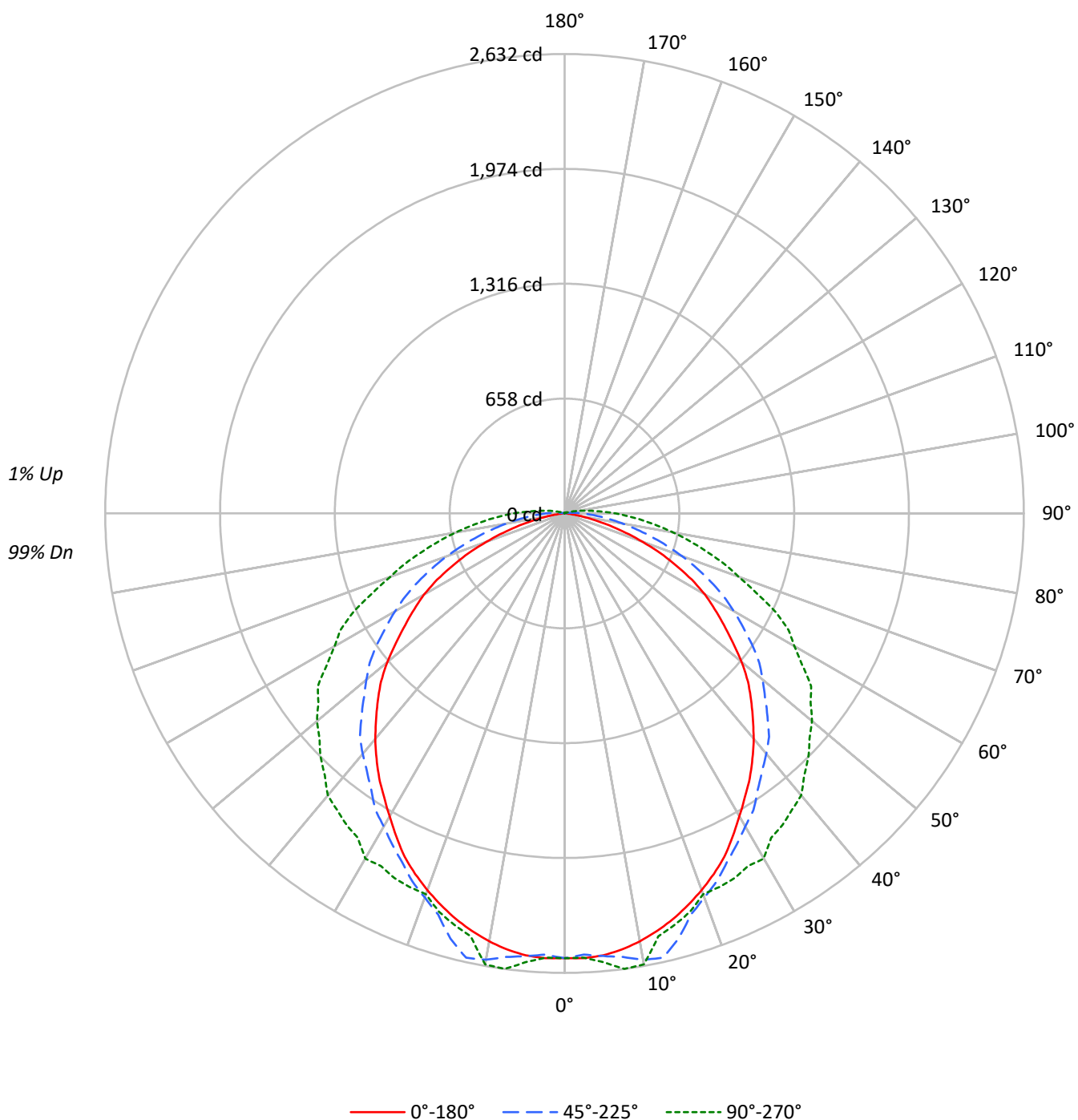
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3428	3428	3428
5°	3426	3398	3436
10°	3387	3466	3481
15°	3332	3393	3254
20°	3263	3198	3134
25°	3190	3080	3176
30°	3076	2988	3236
35°	2997	2902	3204
40°	2912	2844	3252
45°	2820	2763	3223
50°	2707	2678	3233
55°	2538	2588	3270
60°	2413	2454	3176
65°	2149	2291	3129
70°	1773	2070	2869
75°	1287	1792	2698
80°	744	1515	2526
85°	298	1232	2377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3270 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.9	3.2
10°-20°	697.3	9.1
20°-30°	1037.5	13.5
30°-40°	1247.1	16.2
40°-50°	1312.6	17.1
50°-60°	1218.0	15.9
60°-70°	963.0	12.5
70°-80°	588.3	7.7
80°-90°	256.3	3.3
90°-100°	79.8	1.0
100°-110°	17.9	0.2
110°-120°	7.2	0.1
120°-130°	4.0	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°	1979.7	25.8
0°-40°	3226.8	42.0
0°-60°	5757.4	75.0
0°-90°	7564.9	98.6
90°-120°	104.9	1.4
90°-150°	110.0	1.4
90°-180°	110.0	1.4
0°-180°	7675.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2548	2548	2548	2548	2548	
5°	2542	2536	2545	2574	2581	241
15°	2406	2498	2522	2439	2440	678
25°	2170	2308	2203	2269	2306	996
35°	1851	1903	1931	2106	2178	1157
45°	1513	1520	1645	1905	1976	1166
55°	1114	1132	1312	1599	1726	1001
65°	705	728	924	1223	1334	699
75°	267	353	515	792	842	291
85°	24	83	201	390	447	37
90°	0	25	105	247	291	1
95°	0	6	46	136	166	0
105°	0	4	9	26	37	1
115°	0	2	7	12	12	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°	2547.7	2547.7	2547.7	2547.7	2547.7
2.5°	2550.8	2544.0	2530.0	2543.5	2547.2
5°	2541.5	2536.3	2545.1	2573.6	2580.9
7.5°	2520.2	2539.9	2563.3	2615.2	2631.8
10°	2488.5	2525.9	2595.9	2640.1	2622.9
12.5°	2450.1	2513.4	2607.4	2521.2	2481.3
15°	2405.5	2497.9	2522.3	2438.7	2440.3
17.5°	2353.1	2484.9	2409.6	2407.6	2392.5
20°	2296.5	2441.3	2341.6	2337.5	2321.4
22.5°	2235.8	2383.7	2281.4	2273.1	2316.7
25°	2169.9	2308.4	2203.1	2269.0	2305.8
27.5°	2087.3	2209.8	2137.7	2231.1	2277.3
30°	2003.8	2108.1	2070.7	2201.0	2283.0
32.5°	1925.4	2001.7	2015.7	2189.6	2203.1
35°	1851.2	1902.6	1931.1	2106.5	2178.2
37.5°	1769.7	1783.7	1859.5	2071.8	2140.8
40°	1686.7	1677.9	1799.3	2014.7	2110.2
42.5°	1597.4	1594.3	1735.5	1986.1	2033.9
45°	1512.8	1519.6	1644.7	1905.2	1976.3
47.5°	1426.2	1435.0	1558.5	1816.4	1904.7
50°	1325.5	1336.9	1481.7	1737.6	1851.2
52.5°	1216.5	1238.3	1407.0	1662.8	1777.5
55°	1114.3	1132.4	1312.0	1599.0	1726.1
57.5°	1020.8	1031.7	1213.9	1518.5	1614.6
60°	929.0	931.6	1121.5	1429.3	1521.1
62.5°	823.6	828.3	1026.5	1323.9	1446.9
65°	705.3	727.6	924.3	1223.2	1334.3
67.5°	594.8	633.7	820.0	1130.9	1189.0
70°	476.4	542.3	717.8	1022.4	1063.4
72.5°	368.0	445.3	612.9	901.0	958.6
75°	266.8	353.4	515.3	792.0	841.8
77.5°	179.6	267.8	424.0	671.6	737.5
80°	107.4	195.7	342.5	560.0	634.2
82.5°	55.0	131.3	265.7	469.7	536.1
85°	23.9	83.0	200.8	389.8	447.4
87.5°	6.7	47.2	147.9	315.0	363.8
90°	0.5	24.9	105.4	247.0	291.1
92.5°	0.5	11.9	74.2	186.8	220.6
95°	0.5	6.2	46.2	135.5	165.6
97.5°	0.5	3.6	28.0	96.0	121.4
100°	0.5	3.1	16.6	63.8	86.7
102.5°	0.5	3.6	11.4	40.5	56.6
105°	0.5	3.6	9.3	26.5	37.4
107.5°	1.0	3.6	8.3	19.7	25.9
110°	0.5	3.1	8.8	15.1	20.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.6	8.3	12.5	15.1
115°	0.5	2.1	7.3	11.9	12.5
117.5°	1.0	1.6	5.7	11.9	12.5
120°	1.0	1.0	4.7	11.4	13.0
122.5°	1.0	1.0	3.6	10.4	12.5
125°	0.5	1.0	3.1	7.8	10.9
127.5°	1.0	1.0	2.6	6.2	8.3
130°	1.0	1.0	2.1	4.7	6.2
132.5°	1.0	1.0	1.6	3.6	4.7
135°	1.0	1.0	1.0	2.6	3.6
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)