

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: P518154

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

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: P518154
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3STD-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8906.0 lumens
Efficiency: N/A
Efficacy: 93.3 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

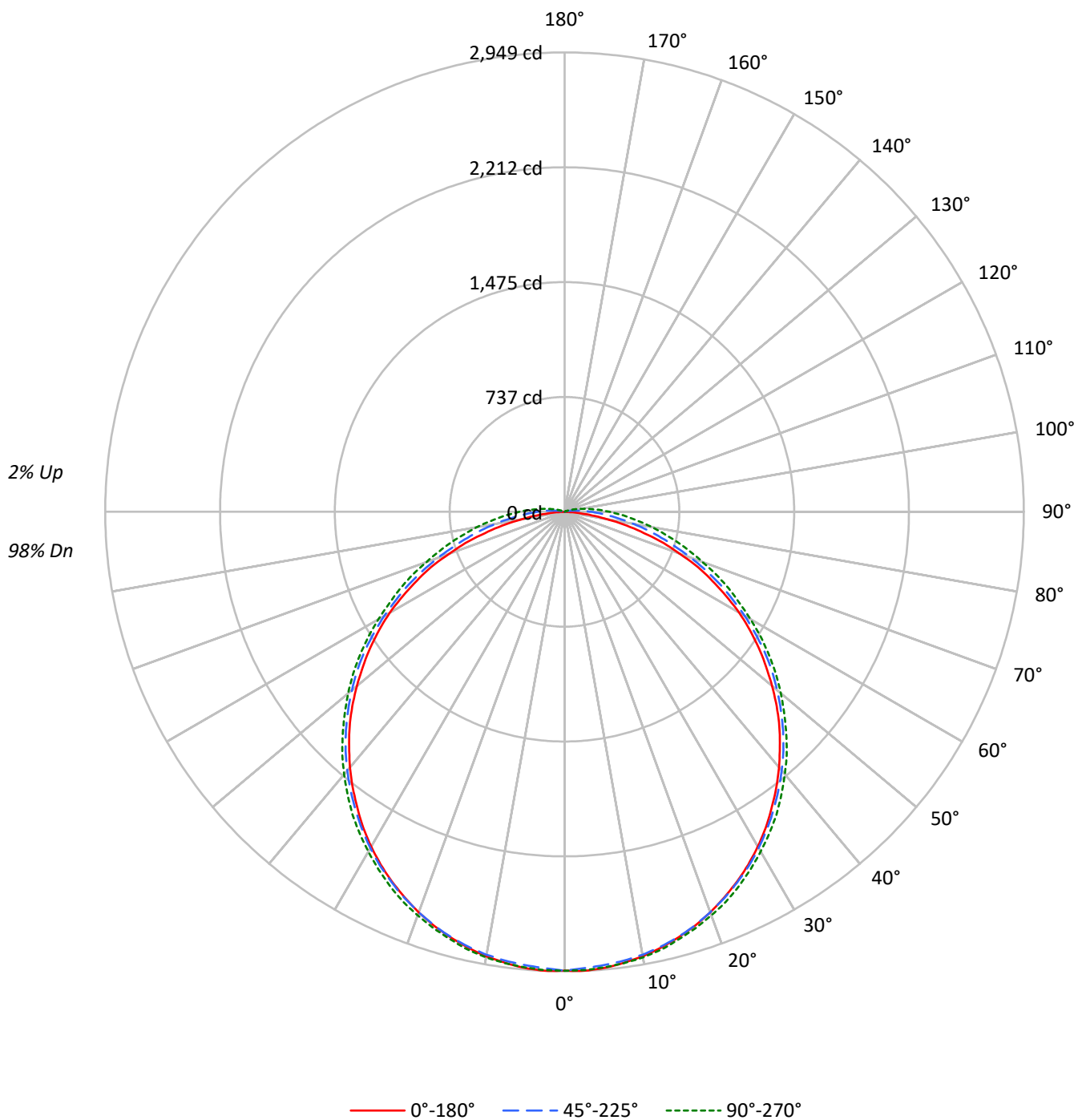
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11890	11890	11890
5°	11866	11624	11636
10°	11787	11416	11402
15°	11685	11186	11123
20°	11577	10929	10851
25°	11446	10664	10574
30°	11295	10382	10260
35°	11104	10073	9950
40°	10906	9747	9587
45°	10693	9391	9196
50°	10414	8981	8775
55°	10115	8531	8310
60°	9756	7946	7768
65°	9174	7293	7231
70°	8338	6523	6607
75°	7150	5678	6038
80°	5379	4850	5521
85°	2877	4012	5026

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10693 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	278.7	3.1
10°-20°	799.6	9.0
20°-30°	1213.2	13.6
30°-40°	1466.9	16.5
40°-50°	1530.7	17.2
50°-60°	1399.5	15.7
60°-70°	1091.0	12.2
70°-80°	682.4	7.7
80°-90°	310.0	3.5
90°-100°	103.9	1.2
100°-110°	26.1	0.3
110°-120°	4.1	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°	2291.5	25.7
0°-40°	3758.4	42.2
0°-60°	6688.6	75.1
0°-90°	8771.9	98.5
90°-120°	134.1	1.5
90°-150°	134.1	1.5
90°-180°	134.0	1.5
0°-180°	8906.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2946	2946	2946	2946	2946	
5°	2939	2934	2921	2934	2934	279
15°	2828	2832	2825	2841	2840	798
25°	2620	2622	2625	2647	2651	1207
35°	2319	2330	2339	2363	2373	1452
45°	1951	1969	1984	2004	2014	1504
55°	1523	1541	1569	1592	1603	1360
65°	1046	1064	1101	1145	1163	1035
75°	530	562	644	722	748	565
85°	92	169	291	385	419	116
90°	1	63	172	258	289	4
95°	1	17	89	161	186	1
105°	1	2	15	43	58	1
115°	2	2	3	8	11	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2945.6	2945.6	2945.6	2945.6	2945.6
2.5°	2949.0	2944.9	2931.7	2944.9	2944.2
5°	2939.3	2933.8	2920.6	2934.5	2934.5
7.5°	2919.9	2917.8	2906.0	2922.0	2922.0
10°	2897.0	2896.3	2886.5	2903.9	2904.6
12.5°	2865.0	2867.8	2858.8	2875.4	2877.5
15°	2827.5	2832.4	2824.7	2840.7	2840.0
17.5°	2786.6	2789.3	2783.8	2801.8	2801.1
20°	2735.9	2739.3	2735.2	2753.9	2756.0
22.5°	2679.6	2684.5	2683.8	2703.2	2708.8
25°	2619.9	2622.0	2624.8	2647.0	2651.1
27.5°	2553.9	2557.4	2562.3	2582.4	2586.6
30°	2481.7	2487.3	2492.8	2513.7	2519.2
32.5°	2405.3	2410.9	2417.8	2444.9	2447.7
35°	2319.2	2329.7	2339.4	2363.0	2372.7
37.5°	2233.1	2246.3	2255.4	2280.3	2288.0
40°	2142.2	2155.4	2169.9	2196.3	2201.2
42.5°	2047.0	2062.3	2079.7	2103.3	2111.6
45°	1951.2	1968.6	1984.5	2004.0	2013.7
47.5°	1847.7	1865.1	1884.6	1906.8	1913.0
50°	1740.8	1761.0	1781.8	1802.6	1813.7
52.5°	1631.1	1655.4	1679.0	1701.2	1711.7
55°	1522.8	1540.8	1569.3	1592.2	1602.6
57.5°	1410.3	1425.6	1451.3	1488.8	1494.3
60°	1295.7	1309.6	1336.0	1366.5	1379.0
62.5°	1169.3	1188.1	1215.9	1254.7	1265.9
65°	1046.4	1064.5	1101.3	1145.0	1163.1
67.5°	927.7	933.9	981.2	1027.0	1056.2
70°	787.4	811.0	865.9	922.1	944.4
72.5°	666.6	690.2	750.6	816.6	844.4
75°	529.8	562.4	644.4	721.5	748.5
77.5°	409.7	445.8	547.2	624.9	656.2
80°	286.1	342.3	452.7	540.2	574.3
82.5°	179.8	249.3	367.3	459.0	488.8
85°	91.7	169.4	290.9	384.7	418.7
87.5°	24.3	109.7	226.4	315.9	350.7
90°	0.7	63.2	171.5	257.6	288.9
92.5°	0.7	35.4	127.8	204.8	236.8
95°	0.7	16.7	88.9	161.1	186.1
97.5°	0.7	6.9	61.1	121.5	146.5
100°	0.7	3.5	38.9	88.2	109.7
102.5°	1.4	2.1	24.3	63.2	80.5
105°	1.4	2.1	14.6	43.1	57.6
107.5°	1.4	2.1	8.3	29.2	39.6
110°	2.1	2.1	4.9	18.1	26.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.1	2.1	2.8	11.8	17.4
115°	2.1	2.1	2.8	7.6	11.1
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)