

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: P518071

Luminaire Tested: HVL8-4-LD4-2HI-50-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: P518071
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2HI-50-UNV-C-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9225.9 lumens
Efficiency: N/A
Efficacy: 107.2 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

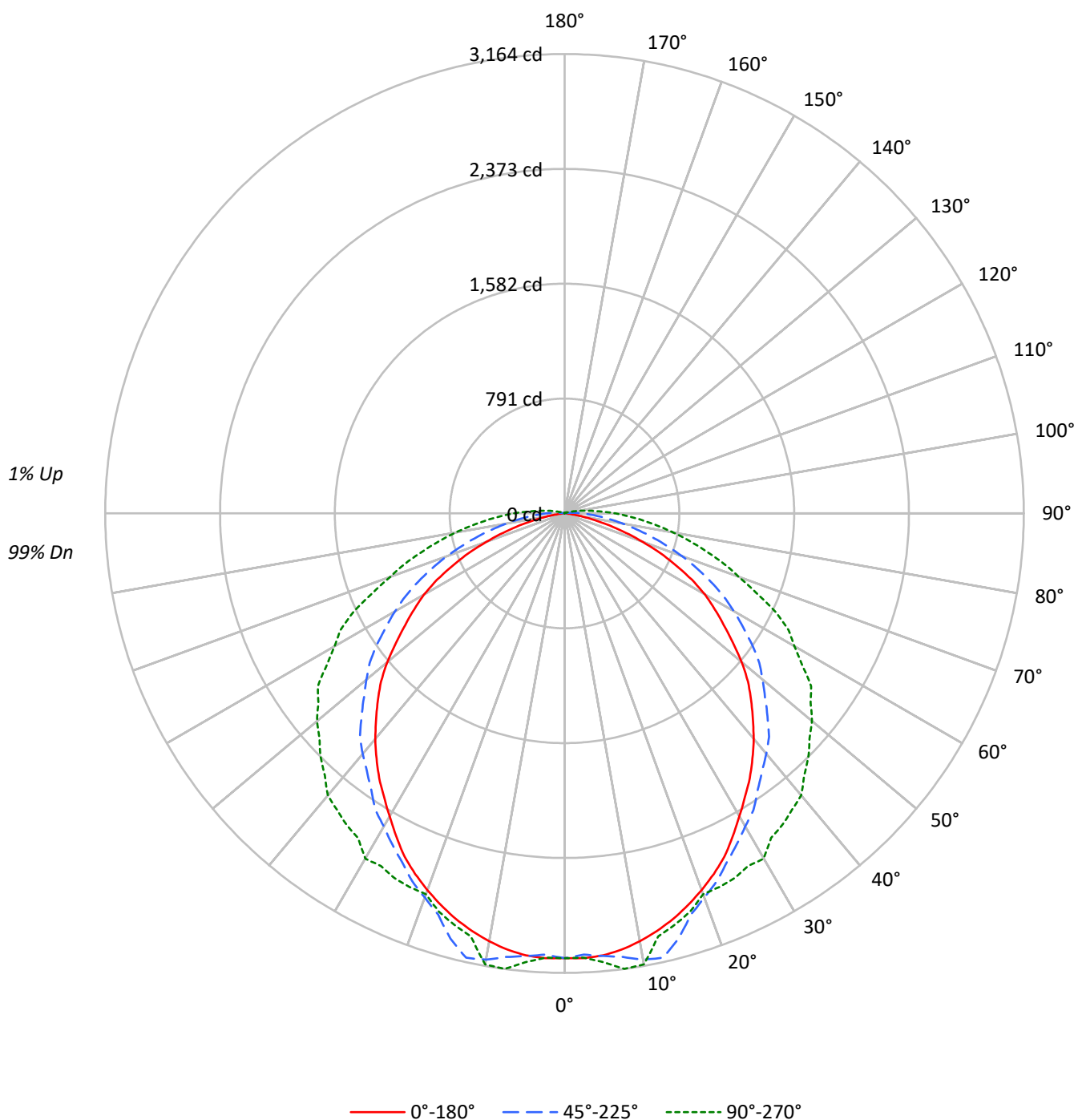
Input Watts (W): 86.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12362	12362	12362
5°	12334	12177	12302
10°	12172	12341	12378
15°	11950	12007	11489
20°	11681	11247	10987
25°	11396	10760	11056
30°	10963	10367	11178
35°	10655	9995	10980
40°	10322	9715	11048
45°	9966	9356	10849
50°	9532	8978	10766
55°	8896	8573	10760
60°	8408	8019	10300
65°	7433	7357	9972
70°	6065	6499	8943
75°	4328	5459	8163
80°	2427	4410	7329
85°	900	3330	6456

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10849 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	294.3	3.2
10°-20°	838.2	9.1
20°-30°	1247.2	13.5
30°-40°	1499.1	16.2
40°-50°	1577.9	17.1
50°-60°	1464.1	15.9
60°-70°	1157.6	12.5
70°-80°	707.1	7.7
80°-90°	308.1	3.3
90°-100°	95.9	1.0
100°-110°	21.5	0.2
110°-120°	8.7	0.1
120°-130°	4.9	0.1
130°-140°	1.3	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°	2379.7	25.8
0°-40°	3878.8	42.0
0°-60°	6920.8	75.0
0°-90°	9093.7	98.6
90°-120°	126.1	1.4
90°-150°	132.3	1.4
90°-180°	132.0	1.4
0°-180°	9225.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3062	3062	3062	3062	3062	
5°	3055	3049	3059	3094	3102	290
15°	2892	3003	3032	2932	2933	815
25°	2608	2775	2648	2728	2772	1197
35°	2225	2287	2321	2532	2618	1391
45°	1819	1827	1977	2290	2376	1402
55°	1339	1361	1577	1922	2075	1203
65°	848	875	1111	1470	1604	840
75°	321	425	620	952	1012	350
85°	29	100	241	468	538	44
90°	1	30	127	297	350	1
95°	1	8	56	163	199	0
105°	1	4	11	32	45	1
115°	1	2	9	14	15	1
125°	1	1	4	9	13	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°	3062.5	3062.5	3062.5	3062.5	3062.5
2.5°	3066.3	3058.2	3041.3	3057.5	3061.9
5°	3055.0	3048.8	3059.4	3093.7	3102.5
7.5°	3029.5	3053.2	3081.2	3143.6	3163.6
10°	2991.4	3036.3	3120.5	3173.6	3153.0
12.5°	2945.2	3021.4	3134.3	3030.7	2982.7
15°	2891.6	3002.6	3032.0	2931.5	2933.4
17.5°	2828.6	2987.0	2896.6	2894.1	2876.0
20°	2760.6	2934.6	2814.9	2809.9	2790.5
22.5°	2687.6	2865.4	2742.5	2732.5	2784.9
25°	2608.4	2774.9	2648.3	2727.5	2771.8
27.5°	2509.2	2656.4	2569.7	2682.0	2737.5
30°	2408.7	2534.1	2489.2	2645.8	2744.4
32.5°	2314.5	2406.2	2423.1	2632.1	2648.3
35°	2225.3	2287.1	2321.4	2532.2	2618.3
37.5°	2127.4	2144.2	2235.3	2490.5	2573.4
40°	2027.5	2016.9	2162.9	2421.8	2536.6
42.5°	1920.2	1916.5	2086.2	2387.5	2444.9
45°	1818.6	1826.7	1977.0	2290.2	2375.7
47.5°	1714.4	1725.0	1873.5	2183.5	2289.6
50°	1593.3	1607.1	1781.1	2088.7	2225.3
52.5°	1462.3	1488.5	1691.3	1998.8	2136.7
55°	1339.4	1361.3	1577.1	1922.1	2075.0
57.5°	1227.1	1240.2	1459.2	1825.4	1940.8
60°	1116.7	1119.8	1348.2	1718.1	1828.5
62.5°	990.1	995.7	1234.0	1591.5	1739.3
65°	847.8	874.7	1111.1	1470.4	1603.9
67.5°	714.9	761.7	985.7	1359.4	1429.3
70°	572.7	651.9	862.8	1229.0	1278.3
72.5°	442.3	535.3	736.8	1083.0	1152.3
75°	320.7	424.8	619.5	952.0	1011.9
77.5°	215.9	321.9	509.7	807.3	886.5
80°	129.1	235.2	411.7	673.1	762.4
82.5°	66.1	157.8	319.4	564.6	644.4
85°	28.7	99.8	241.4	468.5	537.8
87.5°	8.1	56.8	177.8	378.7	437.3
90°	0.6	29.9	126.6	297.0	350.0
92.5°	0.6	14.3	89.2	224.6	265.1
95°	0.6	7.5	55.5	162.8	199.0
97.5°	0.6	4.4	33.7	115.4	146.0
100°	0.6	3.7	20.0	76.7	104.2
102.5°	0.6	4.4	13.7	48.7	68.0
105°	0.6	4.4	11.2	31.8	44.9
107.5°	1.2	4.4	10.0	23.7	31.2
110°	0.6	3.7	10.6	18.1	24.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	3.1	10.0	15.0	18.1
115°	0.6	2.5	8.7	14.3	15.0
117.5°	1.2	1.9	6.9	14.3	15.0
120°	1.2	1.2	5.6	13.7	15.6
122.5°	1.2	1.2	4.4	12.5	15.0
125°	0.6	1.2	3.7	9.4	13.1
127.5°	1.2	1.2	3.1	7.5	10.0
130°	1.2	1.2	2.5	5.6	7.5
132.5°	1.2	1.2	1.9	4.4	5.6
135°	1.2	1.2	1.2	3.1	4.4
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)