

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: P518133

Luminaire Tested: HVL8-4-LD4-3LO-40-UNV-O-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: P518133
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-40-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7815.0 lumens
Efficiency: N/A
Efficacy: 115.9 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

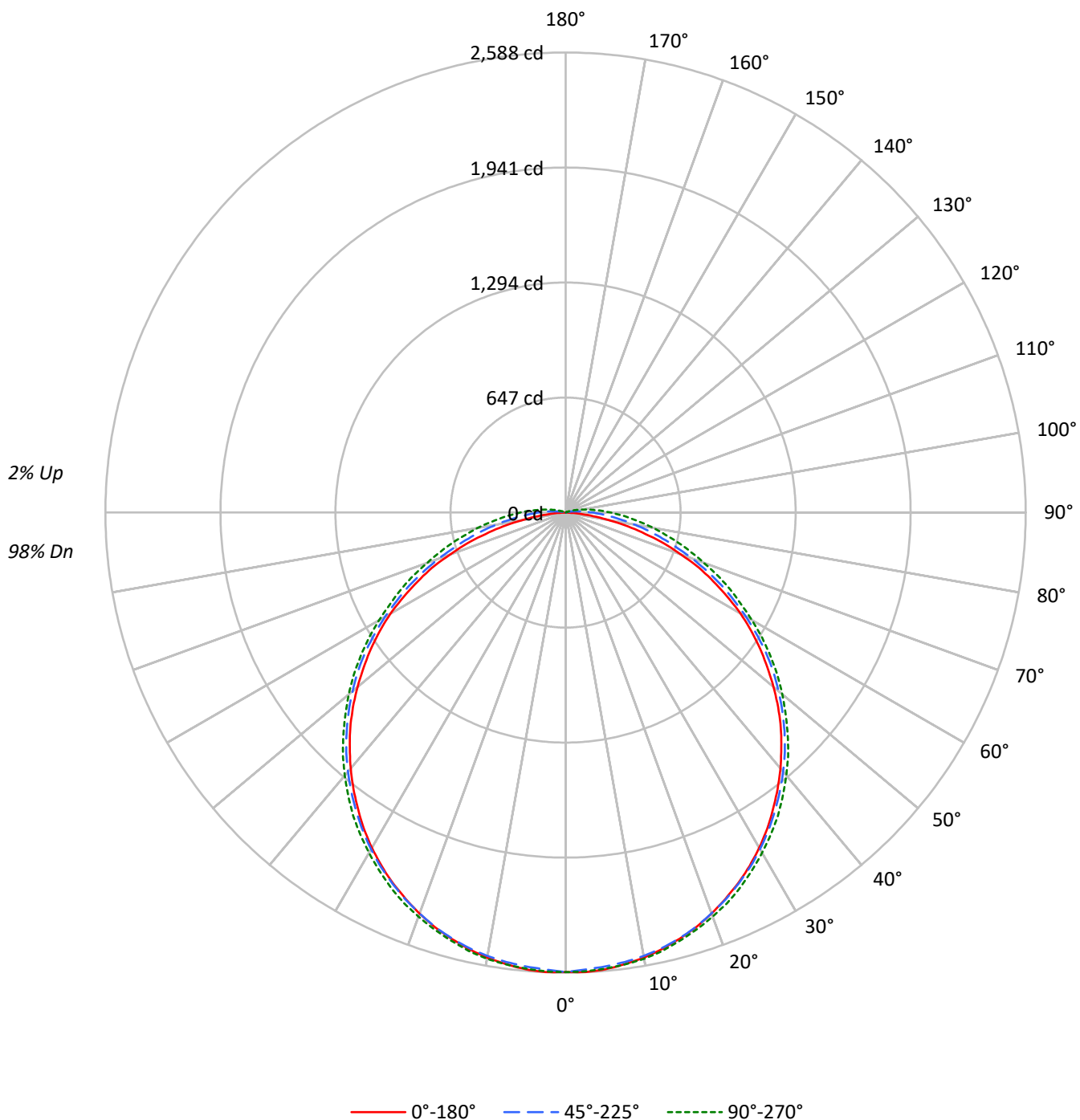
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10433	10433	10433
5°	10413	10200	10210
10°	10343	10017	10006
15°	10254	9816	9760
20°	10158	9590	9522
25°	10044	9358	9279
30°	9912	9111	9004
35°	9744	8839	8731
40°	9570	8553	8412
45°	9383	8241	8069
50°	9139	7881	7700
55°	8875	7486	7292
60°	8561	6973	6817
65°	8050	6399	6345
70°	7317	5723	5797
75°	6275	4982	5299
80°	4719	4256	4844
85°	2522	3521	4410

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9383 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.6	3.1
10°-20°	701.6	9.0
20°-30°	1064.6	13.6
30°-40°	1287.2	16.5
40°-50°	1343.1	17.2
50°-60°	1228.0	15.7
60°-70°	957.3	12.2
70°-80°	598.8	7.7
80°-90°	272.0	3.5
90°-100°	91.2	1.2
100°-110°	22.9	0.3
110°-120°	3.6	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°	2010.8	25.7
0°-40°	3298.0	42.2
0°-60°	5869.2	75.1
0°-90°	7697.3	98.5
90°-120°	117.6	1.5
90°-150°	117.6	1.5
90°-180°	118.0	1.5
0°-180°	7815.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2585	2585	2585	2585	2585	
5°	2579	2574	2563	2575	2575	245
15°	2481	2485	2479	2493	2492	700
25°	2299	2301	2303	2323	2326	1059
35°	2035	2044	2053	2074	2082	1274
45°	1712	1727	1741	1758	1767	1319
55°	1336	1352	1377	1397	1406	1194
65°	918	934	966	1005	1021	909
75°	465	494	565	633	657	496
85°	80	149	255	338	367	102
90°	1	55	150	226	254	3
95°	1	15	78	141	163	0
105°	1	2	13	38	51	1
115°	2	2	2	7	10	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°	2584.7	2584.7	2584.7	2584.7	2584.7
2.5°	2587.8	2584.1	2572.5	2584.1	2583.5
5°	2579.2	2574.4	2562.8	2575.0	2575.0
7.5°	2562.2	2560.4	2550.0	2564.0	2564.0
10°	2542.1	2541.5	2532.9	2548.2	2548.8
12.5°	2514.0	2516.5	2508.6	2523.2	2525.0
15°	2481.1	2485.4	2478.7	2492.7	2492.1
17.5°	2445.2	2447.6	2442.8	2458.6	2458.0
20°	2400.7	2403.8	2400.1	2416.6	2418.4
22.5°	2351.4	2355.6	2355.0	2372.1	2377.0
25°	2299.0	2300.8	2303.2	2322.7	2326.4
27.5°	2241.1	2244.1	2248.4	2266.1	2269.7
30°	2177.7	2182.6	2187.5	2205.7	2210.6
32.5°	2110.7	2115.6	2121.6	2145.4	2147.8
35°	2035.1	2044.3	2052.8	2073.5	2082.0
37.5°	1959.6	1971.1	1979.1	2001.0	2007.7
40°	1879.7	1891.3	1904.1	1927.3	1931.5
42.5°	1796.3	1809.7	1824.9	1845.6	1852.9
45°	1712.2	1727.4	1741.4	1758.5	1767.0
47.5°	1621.4	1636.6	1653.7	1673.2	1678.7
50°	1527.6	1545.2	1563.5	1581.8	1591.5
52.5°	1431.3	1452.6	1473.3	1492.8	1502.0
55°	1336.2	1352.1	1377.1	1397.2	1406.3
57.5°	1237.5	1250.9	1273.5	1306.4	1311.3
60°	1137.0	1149.2	1172.3	1199.1	1210.1
62.5°	1026.1	1042.5	1066.9	1101.0	1110.8
65°	918.2	934.1	966.4	1004.8	1020.6
67.5°	814.0	819.5	861.0	901.2	926.8
70°	691.0	711.7	759.8	809.2	828.7
72.5°	584.9	605.7	658.7	716.6	740.9
75°	464.9	493.5	565.4	633.1	656.8
77.5°	359.5	391.2	480.1	548.4	575.8
80°	251.0	300.4	397.3	474.0	503.9
82.5°	157.8	218.7	322.3	402.8	429.0
85°	80.4	148.7	255.3	337.6	367.4
87.5°	21.3	96.3	198.6	277.2	307.7
90°	0.6	55.4	150.5	226.1	253.5
92.5°	0.6	31.1	112.1	179.7	207.8
95°	0.6	14.6	78.0	141.4	163.3
97.5°	0.6	6.1	53.6	106.6	128.6
100°	0.6	3.0	34.1	77.4	96.3
102.5°	1.2	1.8	21.3	55.4	70.7
105°	1.2	1.8	12.8	37.8	50.6
107.5°	1.2	1.8	7.3	25.6	34.7
110°	1.8	1.8	4.3	15.8	23.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	1.8	2.4	10.4	15.2
115°	1.8	1.8	2.4	6.7	9.7
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)