

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: P518142

Luminaire Tested: HVL8-4-LD4-3STD-30-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: P518142
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3STD-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8230.0 lumens
Efficiency: N/A
Efficacy: 86.2 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

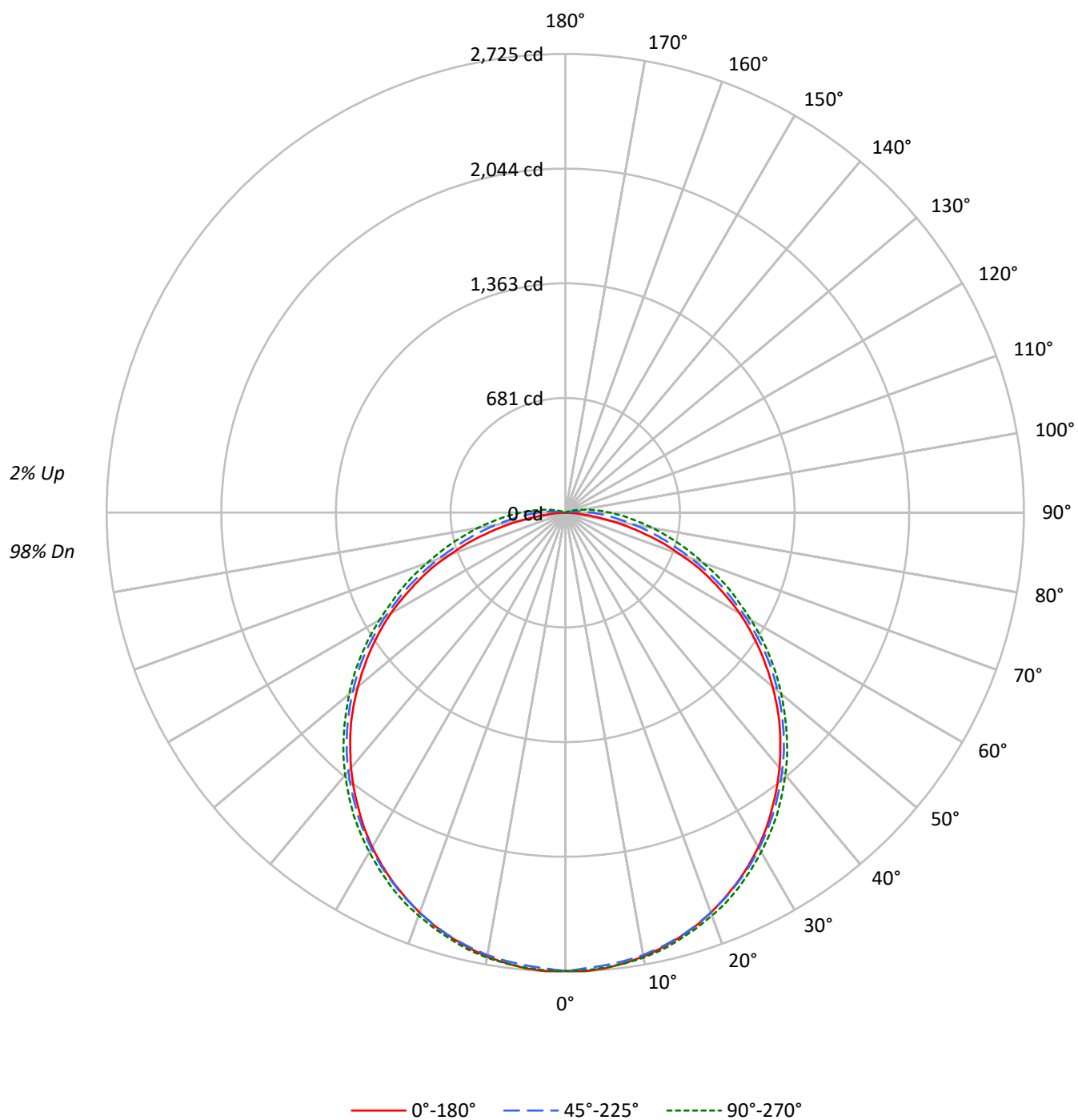
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10987	10987	10987
5°	10966	10742	10752
10°	10893	10549	10537
15°	10798	10337	10279
20°	10698	10099	10027
25°	10577	9855	9772
30°	10438	9594	9482
35°	10261	9308	9194
40°	10079	9007	8859
45°	9881	8678	8498
50°	9624	8299	8109
55°	9347	7883	7680
60°	9016	7343	7179
65°	8478	6739	6682
70°	7706	6028	6105
75°	6608	5247	5580
80°	4971	4482	5102
85°	2657	3709	4644

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9881 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.6	3.1
10°-20°	738.9	9.0
20°-30°	1121.1	13.6
30°-40°	1355.6	16.5
40°-50°	1414.5	17.2
50°-60°	1293.3	15.7
60°-70°	1008.2	12.2
70°-80°	630.7	7.7
80°-90°	286.4	3.5
90°-100°	96.0	1.2
100°-110°	24.1	0.3
110°-120°	3.8	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°	2117.6	25.7
0°-40°	3473.2	42.2
0°-60°	6180.9	75.1
0°-90°	8106.1	98.5
90°-120°	123.9	1.5
90°-150°	123.9	1.5
90°-180°	124.0	1.5
0°-180°	8230.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2722	2722	2722	2722	2722	
5°	2716	2711	2699	2712	2712	258
15°	2613	2617	2610	2625	2624	738
25°	2421	2423	2426	2446	2450	1116
35°	2143	2153	2162	2184	2193	1341
45°	1803	1819	1834	1852	1861	1389
55°	1407	1424	1450	1471	1481	1257
65°	967	984	1018	1058	1075	957
75°	490	520	596	667	692	522
85°	85	157	269	356	387	107
90°	1	58	158	238	267	3
95°	1	15	82	149	172	0
105°	1	2	14	40	53	1
115°	2	2	3	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°	2722.0	2722.0	2722.0	2722.0	2722.0
2.5°	2725.2	2721.3	2709.2	2721.3	2720.7
5°	2716.2	2711.1	2698.9	2711.7	2711.7
7.5°	2698.2	2696.3	2685.4	2700.2	2700.2
10°	2677.1	2676.4	2667.4	2683.5	2684.1
12.5°	2647.6	2650.1	2641.8	2657.2	2659.1
15°	2612.9	2617.4	2610.3	2625.1	2624.5
17.5°	2575.0	2577.6	2572.5	2589.2	2588.5
20°	2528.2	2531.4	2527.6	2544.9	2546.8
22.5°	2476.2	2480.7	2480.1	2498.0	2503.2
25°	2421.0	2423.0	2425.5	2446.1	2449.9
27.5°	2360.1	2363.3	2367.8	2386.4	2390.2
30°	2293.3	2298.5	2303.6	2322.9	2328.0
32.5°	2222.8	2227.9	2234.3	2259.3	2261.9
35°	2143.2	2152.8	2161.8	2183.6	2192.6
37.5°	2063.6	2075.8	2084.2	2107.3	2114.3
40°	1979.6	1991.8	2005.2	2029.6	2034.1
42.5°	1891.7	1905.8	1921.8	1943.6	1951.3
45°	1803.1	1819.1	1833.9	1851.9	1860.9
47.5°	1707.5	1723.5	1741.5	1762.0	1767.8
50°	1608.7	1627.3	1646.5	1665.8	1676.1
52.5°	1507.3	1529.8	1551.6	1572.1	1581.7
55°	1407.2	1423.9	1450.2	1471.4	1481.0
57.5°	1303.2	1317.4	1341.1	1375.8	1380.9
60°	1197.4	1210.2	1234.6	1262.8	1274.4
62.5°	1080.6	1097.9	1123.6	1159.5	1169.8
65°	967.0	983.7	1017.7	1058.1	1074.8
67.5°	857.3	863.1	906.7	949.0	976.0
70°	727.7	749.5	800.2	852.1	872.7
72.5°	616.0	637.8	693.7	754.6	780.3
75°	489.6	519.8	595.5	666.7	691.7
77.5°	378.6	412.0	505.6	577.5	606.4
80°	264.4	316.3	418.4	499.2	530.7
82.5°	166.2	230.4	339.4	424.1	451.7
85°	84.7	156.6	268.9	355.5	386.9
87.5°	22.5	101.4	209.2	292.0	324.0
90°	0.6	58.4	158.5	238.1	266.9
92.5°	0.6	32.7	118.1	189.3	218.8
95°	0.6	15.4	82.1	148.9	172.0
97.5°	0.6	6.4	56.5	112.3	135.4
100°	0.6	3.2	35.9	81.5	101.4
102.5°	1.3	1.9	22.5	58.4	74.4
105°	1.3	1.9	13.5	39.8	53.3
107.5°	1.3	1.9	7.7	27.0	36.6
110°	1.9	1.9	4.5	16.7	24.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	1.9	2.6	10.9	16.0
115°	1.9	1.9	2.6	7.1	10.3
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)