

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: P518124

Luminaire Tested: HVL8-4-LD4-3LO-30-UNV-C-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: P518124
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-30-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

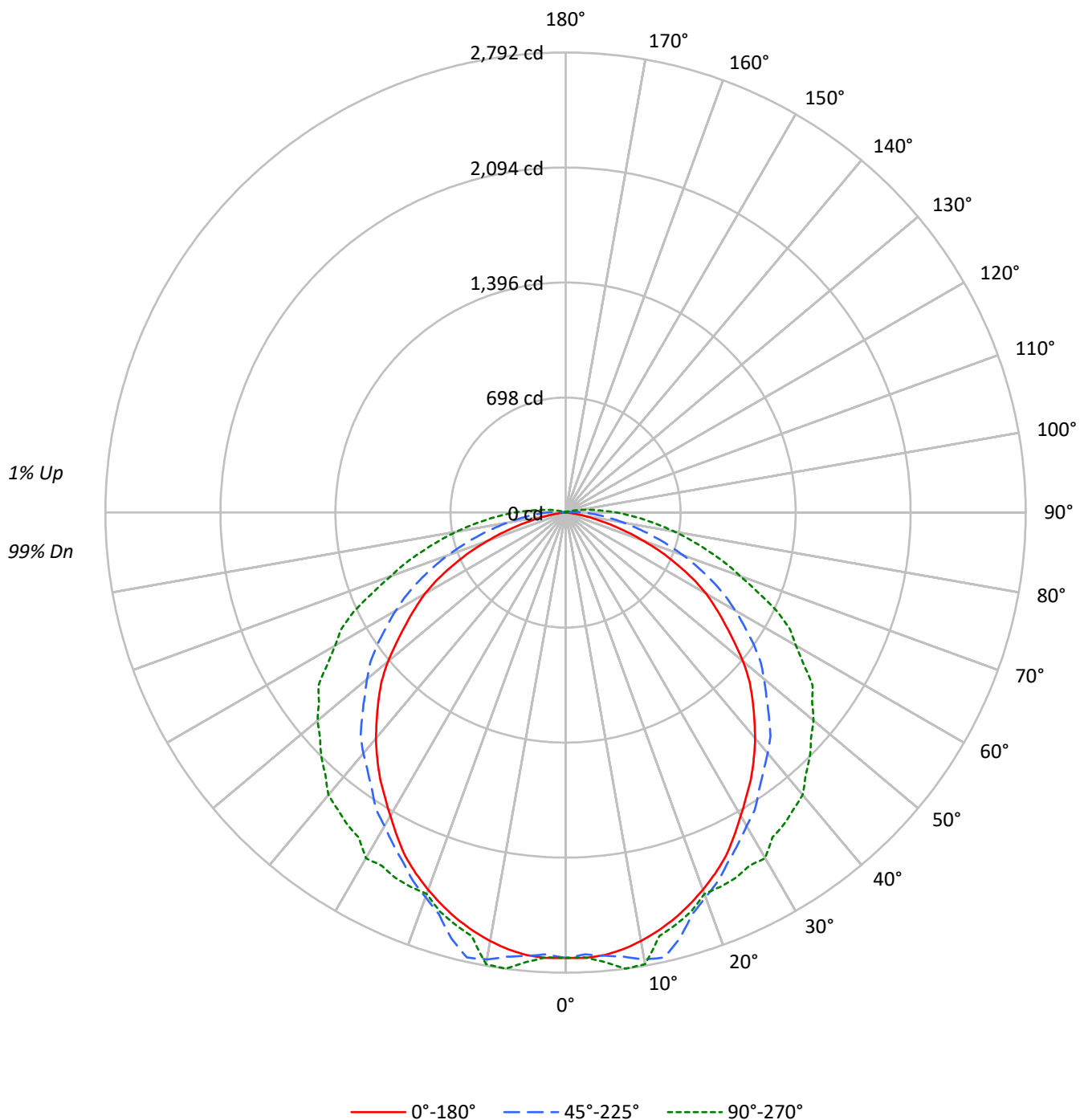
Lumens per Lamp: N/A
Luminaire Lumens: 8141.1 lumens
Efficiency: N/A
Efficacy: 120.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 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	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°	10908	10908	10908
5°	10883	10745	10855
10°	10740	10890	10922
15°	10545	10595	10137
20°	10307	9924	9695
25°	10055	9494	9755
30°	9674	9148	9863
35°	9402	8820	9688
40°	9109	8573	9749
45°	8794	8255	9573
50°	8411	7922	9500
55°	7850	7565	9494
60°	7420	7076	9089
65°	6559	6492	8799
70°	5352	5735	7891
75°	3820	4817	7203
80°	2143	3892	6467
85°	794	2938	5696

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 9573 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	259.7	3.2
10°-20°	739.6	9.1
20°-30°	1100.5	13.5
30°-40°	1322.8	16.2
40°-50°	1392.3	17.1
50°-60°	1291.9	15.9
60°-70°	1021.5	12.5
70°-80°	624.0	7.7
80°-90°	271.9	3.3
90°-100°	84.6	1.0
100°-110°	19.0	0.2
110°-120°	7.7	0.1
120°-130°	4.3	0.1
130°-140°	1.2	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°	2099.9	25.8
0°-40°	3422.7	42.0
0°-60°	6106.9	75.0
0°-90°	8024.3	98.6
90°-120°	111.3	1.4
90°-150°	116.8	1.4
90°-180°	117.0	1.4
0°-180°	8141.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2702	2702	2702	2702	2702	
5°	2696	2690	2700	2730	2738	255
15°	2552	2650	2675	2587	2588	719
25°	2302	2449	2337	2407	2446	1057
35°	1964	2018	2048	2234	2310	1227
45°	1605	1612	1744	2021	2096	1237
55°	1182	1201	1392	1696	1831	1062
65°	748	772	980	1298	1415	741
75°	283	375	547	840	893	309
85°	25	88	213	413	474	39
90°	1	26	112	262	309	1
95°	1	7	49	144	176	0
105°	1	4	10	28	40	1
115°	1	2	8	13	13	1
125°	1	1	3	8	12	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

TEST NUMBER: P518124

CATALOG NUMBER: HVL8-4-LD4-3LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2702.4	2702.4	2702.4	2702.4	2702.4
2.5°	2705.7	2698.5	2683.7	2698.0	2701.8
5°	2695.8	2690.3	2699.6	2729.9	2737.6
7.5°	2673.2	2694.1	2718.9	2773.9	2791.5
10°	2639.6	2679.2	2753.6	2800.4	2782.2
12.5°	2598.9	2666.0	2765.7	2674.3	2631.9
15°	2551.5	2649.5	2675.4	2586.8	2588.4
17.5°	2495.9	2635.8	2555.9	2553.7	2537.8
20°	2435.9	2589.5	2483.8	2479.4	2462.4
22.5°	2371.5	2528.4	2420.0	2411.2	2457.4
25°	2301.6	2448.6	2336.8	2406.8	2445.8
27.5°	2214.1	2344.0	2267.5	2366.6	2415.6
30°	2125.5	2236.1	2196.5	2334.6	2421.6
32.5°	2042.3	2123.3	2138.1	2322.5	2336.8
35°	1963.6	2018.1	2048.4	2234.5	2310.4
37.5°	1877.2	1892.0	1972.4	2197.6	2270.8
40°	1789.1	1779.7	1908.6	2137.0	2238.3
42.5°	1694.4	1691.1	1840.8	2106.7	2157.4
45°	1604.7	1611.8	1744.5	2020.9	2096.3
47.5°	1512.8	1522.1	1653.1	1926.7	2020.3
50°	1406.0	1418.1	1571.7	1843.0	1963.6
52.5°	1290.4	1313.5	1492.4	1763.8	1885.4
55°	1181.9	1201.2	1391.6	1696.1	1830.9
57.5°	1082.8	1094.4	1287.6	1610.7	1712.6
60°	985.4	988.1	1189.6	1516.1	1613.5
62.5°	873.6	878.6	1088.9	1404.3	1534.8
65°	748.1	771.8	980.4	1297.5	1415.3
67.5°	630.9	672.2	869.8	1199.5	1261.2
70°	505.4	575.3	761.3	1084.5	1128.0
72.5°	390.3	472.3	650.1	955.7	1016.8
75°	283.0	374.9	546.6	840.1	892.9
77.5°	190.5	284.1	449.8	712.3	782.3
80°	114.0	207.5	363.3	594.0	672.7
82.5°	58.4	139.3	281.9	498.2	568.7
85°	25.3	88.1	213.0	413.4	474.5
87.5°	7.2	50.1	156.9	334.1	385.9
90°	0.6	26.4	111.8	262.0	308.8
92.5°	0.6	12.7	78.7	198.2	234.0
95°	0.6	6.6	49.0	143.7	175.6
97.5°	0.6	3.9	29.7	101.8	128.8
100°	0.6	3.3	17.6	67.7	91.9
102.5°	0.6	3.9	12.1	42.9	60.0
105°	0.6	3.9	9.9	28.1	39.6
107.5°	1.1	3.9	8.8	20.9	27.5
110°	0.6	3.3	9.4	16.0	21.5

TEST NUMBER: P518124

CATALOG NUMBER: HVL8-4-LD4-3LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	2.8	8.8	13.2	16.0
115°	0.6	2.2	7.7	12.7	13.2
117.5°	1.1	1.7	6.1	12.7	13.2
120°	1.1	1.1	5.0	12.1	13.8
122.5°	1.1	1.1	3.9	11.0	13.2
125°	0.6	1.1	3.3	8.3	11.6
127.5°	1.1	1.1	2.8	6.6	8.8
130°	1.1	1.1	2.2	5.0	6.6
132.5°	1.1	1.1	1.7	3.9	5.0
135°	1.1	1.1	1.1	2.8	3.9
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)