

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: P517689

Luminaire Tested: HVL12-8-LD4-3HI-50-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: P517689
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-50-UNV-O-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23933.0 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

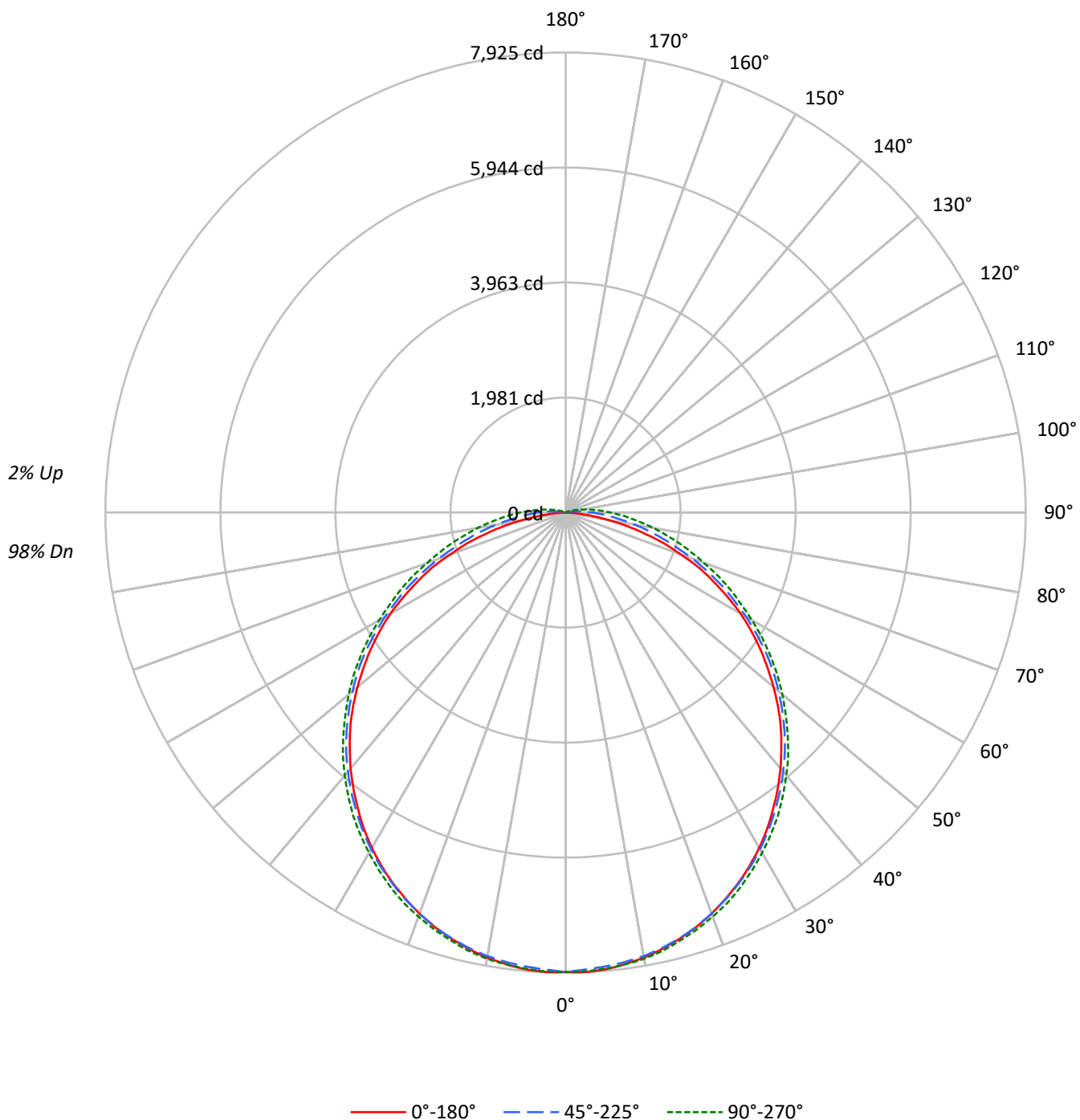
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10650	10650	10650
5°	10649	10479	10498
10°	10597	10356	10360
15°	10525	10211	10176
20°	10448	10040	9998
25°	10351	9862	9814
30°	10238	9668	9595
35°	10090	9449	9378
40°	9937	9217	9115
45°	9774	8960	8826
50°	9555	8655	8511
55°	9322	8317	8160
60°	9044	7857	7738
65°	8570	7336	7330
70°	7873	6709	6847
75°	6868	6022	6447
80°	5327	5380	6146
85°	3071	4798	5979

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9774 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	749.1	3.1
10°-20°	2148.6	9.0
20°-30°	3260.2	13.6
30°-40°	3942.1	16.5
40°-50°	4113.3	17.2
50°-60°	3760.8	15.7
60°-70°	2931.7	12.2
70°-80°	1833.9	7.7
80°-90°	833.0	3.5
90°-100°	279.2	1.2
100°-110°	70.1	0.3
110°-120°	11.0	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°	6157.9	25.7
0°-40°	10100.0	42.2
0°-60°	17974.1	75.1
0°-90°	23572.7	98.5
90°-120°	360.3	1.5
90°-150°	360.3	1.5
90°-180°	360.0	1.5
0°-180°	23933.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7916	7916	7916	7916	7916	
5°	7899	7884	7848	7886	7886	750
15°	7598	7611	7591	7634	7632	2145
25°	7040	7046	7054	7113	7124	3244
35°	6232	6260	6287	6350	6376	3901
45°	5244	5290	5333	5385	5411	4040
55°	4092	4141	4217	4279	4307	3656
65°	2812	2861	2960	3077	3126	2782
75°	1424	1512	1732	1939	2012	1518
85°	246	455	782	1034	1125	312
90°	2	170	461	692	776	10
95°	2	45	239	433	500	2
105°	4	6	39	116	155	4
115°	6	6	8	20	30	4
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°	7915.6	7915.6	7915.6	7915.6	7915.6
2.5°	7924.9	7913.7	7878.3	7913.7	7911.9
5°	7898.8	7883.9	7848.4	7885.7	7885.7
7.5°	7846.5	7841.0	7809.2	7852.1	7852.1
10°	7785.0	7783.1	7757.0	7803.6	7805.5
12.5°	7699.1	7706.6	7682.3	7727.1	7732.7
15°	7598.4	7611.4	7590.9	7633.8	7632.0
17.5°	7488.3	7495.7	7480.8	7529.3	7527.5
20°	7352.1	7361.4	7350.2	7400.6	7406.2
22.5°	7200.9	7214.0	7212.1	7264.4	7279.3
25°	7040.4	7046.0	7053.5	7113.2	7124.4
27.5°	6863.2	6872.5	6885.6	6939.7	6950.9
30°	6669.1	6684.0	6699.0	6754.9	6769.9
32.5°	6463.8	6478.8	6497.4	6570.2	6577.7
35°	6232.5	6260.4	6286.6	6350.0	6376.1
37.5°	6001.1	6036.5	6060.8	6128.0	6148.5
40°	5756.6	5792.1	5831.3	5902.2	5915.2
42.5°	5501.0	5542.0	5588.7	5652.1	5674.5
45°	5243.5	5290.1	5333.0	5385.3	5411.4
47.5°	4965.4	5012.1	5064.3	5124.0	5140.8
50°	4678.1	4732.2	4788.2	4844.1	4874.0
52.5°	4383.2	4448.6	4512.0	4571.7	4599.7
55°	4092.1	4140.7	4217.2	4278.7	4306.7
57.5°	3789.9	3830.9	3899.9	4000.7	4015.6
60°	3482.0	3519.3	3590.2	3672.3	3705.9
62.5°	3142.4	3192.7	3267.4	3371.9	3401.7
65°	2812.1	2860.6	2959.5	3077.0	3125.6
67.5°	2493.0	2509.8	2636.7	2759.8	2838.2
70°	2116.0	2179.5	2326.9	2478.1	2537.8
72.5°	1791.4	1854.8	2017.2	2194.4	2269.1
75°	1423.8	1511.5	1731.7	1938.8	2011.6
77.5°	1100.9	1198.0	1470.4	1679.4	1763.4
80°	768.8	919.9	1216.6	1451.8	1543.2
82.5°	483.3	669.9	987.1	1233.4	1313.7
85°	246.3	455.3	781.9	1033.8	1125.2
87.5°	65.3	294.8	608.3	849.0	942.3
90°	1.9	169.8	460.9	692.3	776.3
92.5°	1.9	95.2	343.3	550.5	636.3
95°	1.9	44.8	238.8	432.9	500.1
97.5°	1.9	18.7	164.2	326.6	393.7
100°	1.9	9.3	104.5	237.0	294.8
102.5°	3.7	5.6	65.3	169.8	216.5
105°	3.7	5.6	39.2	115.7	154.9
107.5°	3.7	5.6	22.4	78.4	106.4
110°	5.6	5.6	13.1	48.5	70.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	5.6	5.6	7.5	31.7	46.7
115°	5.6	5.6	7.5	20.5	29.9
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)