

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: P517684

Luminaire Tested: HVL12-8-LD4-3HI-40-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: P517684
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-40-UNV-C-EDD
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25101.0 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

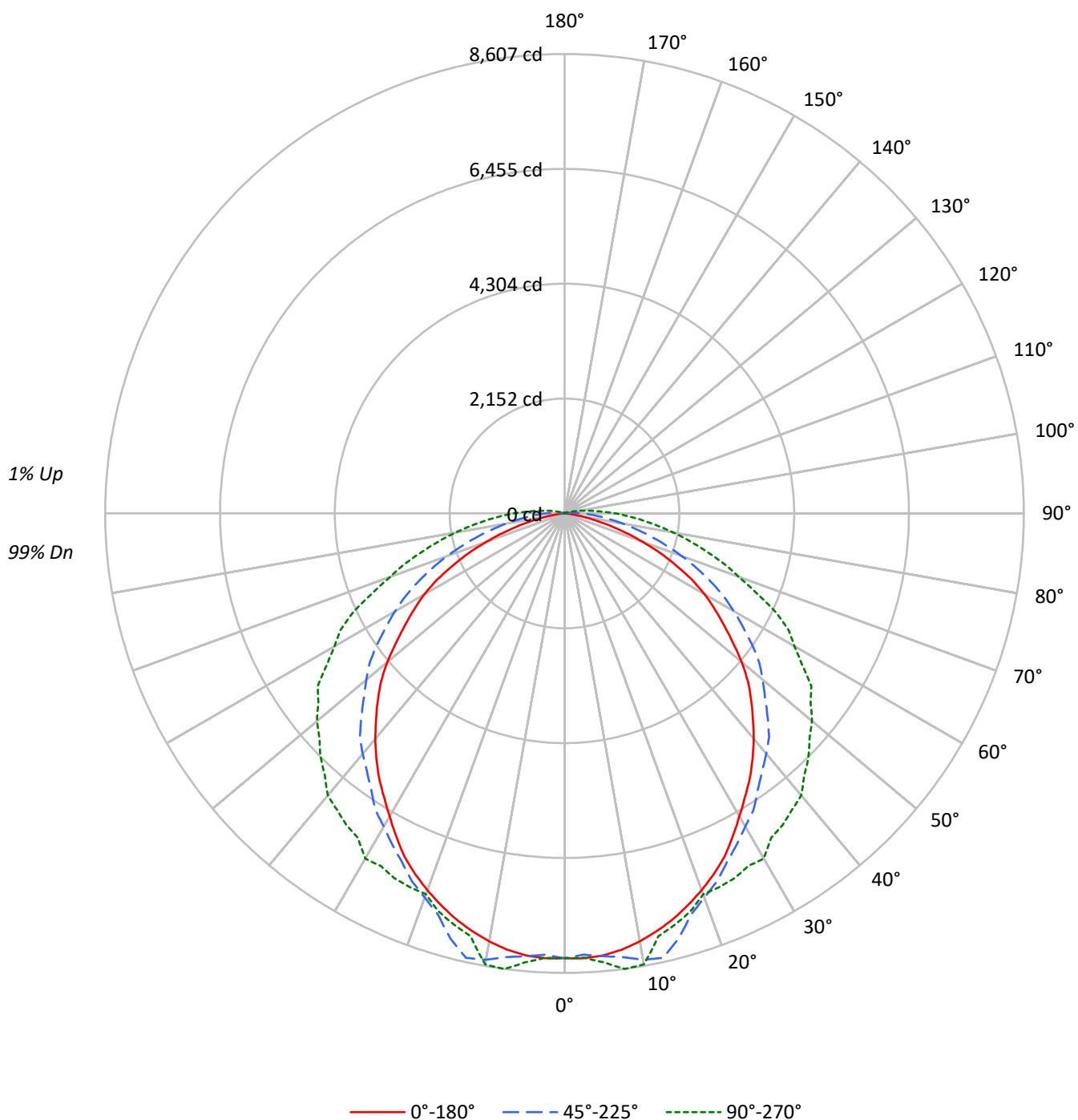
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	11211	11211	11211
5°	11206	11113	11237
10°	11079	11334	11385
15°	10898	11096	10642
20°	10673	10461	10249
25°	10434	10074	10388
30°	10061	9773	10582
35°	9802	9492	10478
40°	9522	9301	10634
45°	9222	9037	10541
50°	8854	8759	10573
55°	8301	8463	10696
60°	7891	8027	10388
65°	7030	7493	10234
70°	5798	6769	9384
75°	4208	5861	8823
80°	2434	4954	8261
85°	974	4031	7774

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10696 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	800.8	3.2
10°-20°	2280.5	9.1
20°-30°	3393.2	13.5
30°-40°	4078.6	16.2
40°-50°	4293.0	17.1
50°-60°	3983.4	15.9
60°-70°	3149.6	12.5
70°-80°	1923.8	7.7
80°-90°	838.2	3.3
90°-100°	261.0	1.0
100°-110°	58.6	0.2
110°-120°	23.6	0.1
120°-130°	13.3	0.1
130°-140°	3.6	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°	6474.5	25.8
0°-40°	10553.1	42.0
0°-60°	18829.4	75.0
0°-90°	24741.0	98.6
90°-120°	343.2	1.4
90°-150°	360.0	1.4
90°-180°	360.0	1.4
0°-180°	25101.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8332	8332	8332	8332	8332	
5°	8312	8295	8324	8417	8441	788
15°	7867	8169	8249	7976	7981	2216
25°	7096	7550	7205	7421	7541	3258
35°	6054	6222	6316	6889	7124	3784
45°	4948	4970	5379	6231	6463	3814
55°	3644	3704	4291	5230	5645	3274
65°	2307	2380	3023	4001	4364	2284
75°	872	1156	1685	2590	2753	952
85°	78	272	657	1275	1463	121
90°	2	82	345	808	952	4
95°	2	20	151	443	541	1
105°	2	12	31	87	122	2
115°	2	7	24	39	41	3
125°	2	3	10	26	36	3
135°	3	3	3	8	12	2
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°	8332.2	8332.2	8332.2	8332.2	8332.2
2.5°	8342.4	8320.3	8274.5	8318.6	8330.5
5°	8311.8	8294.8	8323.7	8417.0	8440.8
7.5°	8242.2	8306.7	8383.1	8552.8	8607.1
10°	8138.7	8260.9	8490.0	8634.3	8578.3
12.5°	8013.1	8220.1	8527.4	8245.6	8114.9
15°	7867.1	8169.2	8249.0	7975.7	7980.8
17.5°	7695.7	8126.8	7880.7	7873.9	7824.7
20°	7510.7	7984.2	7658.3	7644.8	7592.1
22.5°	7312.1	7795.8	7461.4	7434.3	7576.9
25°	7096.5	7549.7	7205.1	7420.7	7541.2
27.5°	6826.6	7227.2	6991.3	7296.8	7447.9
30°	6553.4	6894.5	6772.3	7198.4	7466.5
32.5°	6297.1	6546.6	6592.4	7161.0	7205.1
35°	6054.4	6222.4	6315.7	6889.4	7123.7
37.5°	5787.9	5833.7	6081.5	6775.7	7001.5
40°	5516.3	5487.5	5884.6	6589.0	6901.3
42.5°	5224.4	5214.2	5675.9	6495.7	6651.8
45°	4947.7	4969.8	5378.8	6230.9	6463.4
47.5°	4664.2	4693.1	5097.1	5940.6	6229.2
50°	4335.0	4372.3	4845.9	5682.6	6054.4
52.5°	3978.5	4049.8	4601.4	5438.2	5813.3
55°	3644.2	3703.6	4290.8	5229.5	5645.3
57.5°	3338.6	3374.3	3970.0	4966.4	5280.4
60°	3038.2	3046.7	3667.9	4674.4	4974.9
62.5°	2693.7	2708.9	3357.3	4329.9	4732.1
65°	2306.7	2379.6	3022.9	4000.6	4363.8
67.5°	1945.1	2072.4	2681.8	3698.5	3888.6
70°	1558.1	1773.7	2347.4	3343.7	3477.8
72.5°	1203.4	1456.3	2004.5	2946.6	3135.0
75°	872.4	1155.9	1685.4	2590.1	2753.1
77.5°	587.3	875.8	1386.7	2196.3	2411.9
80°	351.3	639.9	1120.2	1831.4	2074.1
82.5°	179.9	429.4	869.0	1536.1	1753.3
85°	78.1	271.6	656.9	1274.7	1463.1
87.5°	22.1	154.5	483.7	1030.3	1189.8
90°	1.7	81.5	344.6	807.9	952.2
92.5°	1.7	39.0	242.7	611.0	721.4
95°	1.7	20.4	151.1	443.0	541.4
97.5°	1.7	11.9	91.7	314.0	397.2
100°	1.7	10.2	54.3	208.8	283.5
102.5°	1.7	11.9	37.3	132.4	185.0
105°	1.7	11.9	30.6	86.6	122.2
107.5°	3.4	11.9	27.2	64.5	84.9
110°	1.7	10.2	28.9	49.2	66.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.4	8.5	27.2	40.7	49.2
115°	1.7	6.8	23.8	39.0	40.7
117.5°	3.4	5.1	18.7	39.0	40.7
120°	3.4	3.4	15.3	37.3	42.4
122.5°	3.4	3.4	11.9	33.9	40.7
125°	1.7	3.4	10.2	25.5	35.6
127.5°	3.4	3.4	8.5	20.4	27.2
130°	3.4	3.4	6.8	15.3	20.4
132.5°	3.4	3.4	5.1	11.9	15.3
135°	3.4	3.4	3.4	8.5	11.9
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)