

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: P517948

Luminaire Tested: HVL8-2-LD4-2STD-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: P517948
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-30-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3325.0 lumens
Efficiency: N/A
Efficacy: 101.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

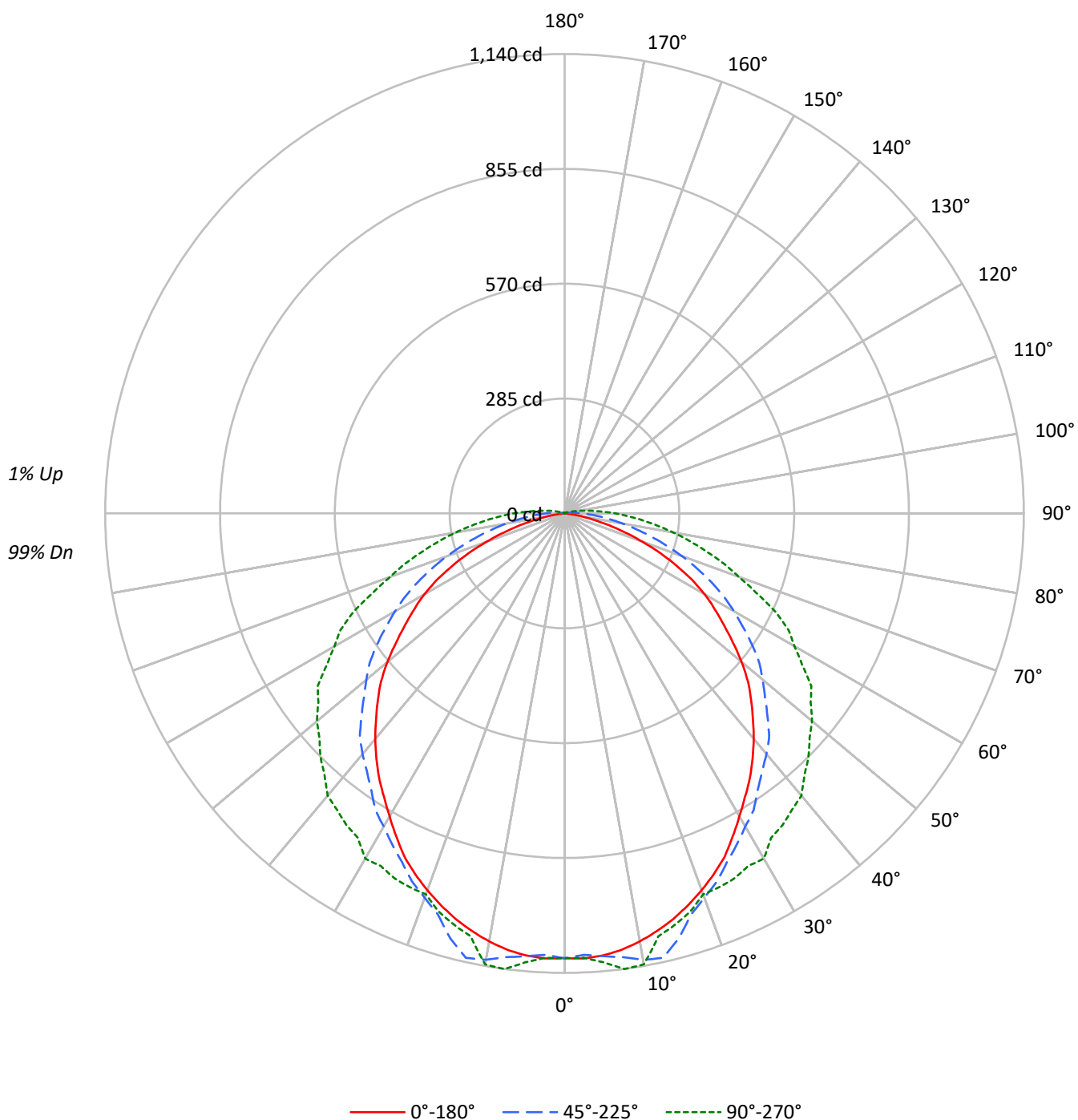
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8910	8910	8910
5°	8858	8755	8867
10°	8710	8851	8921
15°	8519	8590	8281
20°	8296	8027	7919
25°	8060	7659	7969
30°	7721	7361	8057
35°	7468	7077	7914
40°	7197	6858	7963
45°	6907	6583	7820
50°	6560	6294	7760
55°	6071	5985	7756
60°	5679	5571	7425
65°	4952	5080	7188
70°	3964	4454	6446
75°	2750	3705	5884
80°	1468	2952	5281
85°	489	2181	4653

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 7820 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.1	3.2
10°-20°	302.1	9.1
20°-30°	449.5	13.5
30°-40°	540.3	16.2
40°-50°	568.7	17.1
50°-60°	527.7	15.9
60°-70°	417.2	12.5
70°-80°	254.8	7.7
80°-90°	111.0	3.3
90°-100°	34.6	1.0
100°-110°	7.8	0.2
110°-120°	3.1	0.1
120°-130°	1.7	0.1
130°-140°	0.5	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°	857.7	25.8
0°-40°	1397.9	42.0
0°-60°	2494.3	75.0
0°-90°	3277.3	98.6
90°-120°	45.4	1.4
90°-150°	47.6	1.4
90°-180°	48.0	1.4
0°-180°	3325.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1104	1104	1104	1104	1104	
5°	1101	1099	1103	1115	1118	104
15°	1042	1082	1093	1056	1057	294
25°	940	1000	954	983	999	432
35°	802	824	837	913	944	501
45°	655	658	712	825	856	505
55°	483	491	568	693	748	434
65°	306	315	400	530	578	303
75°	116	153	223	343	365	126
85°	10	36	87	169	194	16
90°	0	11	46	107	126	0
95°	0	3	20	59	72	0
105°	0	2	4	12	16	0
115°	0	1	3	5	5	0
125°	0	0	1	3	5	0
135°	0	0	0	1	2	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°	1103.7	1103.7	1103.7	1103.7	1103.7
2.5°	1105.1	1102.1	1096.1	1101.9	1103.5
5°	1101.0	1098.8	1102.6	1115.0	1118.1
7.5°	1091.8	1100.3	1110.5	1132.9	1140.1
10°	1078.1	1094.3	1124.6	1143.7	1136.3
12.5°	1061.5	1088.9	1129.6	1092.3	1074.9
15°	1042.1	1082.1	1092.7	1056.5	1057.2
17.5°	1019.4	1076.5	1043.9	1043.0	1036.5
20°	994.9	1057.6	1014.5	1012.7	1005.7
22.5°	968.6	1032.7	988.4	984.8	1003.7
25°	940.0	1000.1	954.4	983.0	998.9
27.5°	904.3	957.4	926.1	966.6	986.6
30°	868.1	913.3	897.1	953.5	989.1
32.5°	834.1	867.2	873.3	948.6	954.4
35°	802.0	824.2	836.6	912.6	943.6
37.5°	766.7	772.8	805.6	897.5	927.4
40°	730.7	726.9	779.5	872.8	914.2
42.5°	692.0	690.7	751.9	860.4	881.1
45°	655.4	658.3	712.5	825.4	856.2
47.5°	617.8	621.7	675.2	786.9	825.1
50°	574.2	579.2	641.9	752.8	802.0
52.5°	527.0	536.5	609.5	720.4	770.1
55°	482.7	490.6	568.4	692.7	747.8
57.5°	442.3	447.0	525.9	657.9	699.5
60°	402.5	403.6	485.9	619.2	659.0
62.5°	356.8	358.8	444.7	573.6	626.8
65°	305.6	315.2	400.4	529.9	578.1
67.5°	257.7	274.5	355.2	489.9	515.1
70°	206.4	235.0	310.9	442.9	460.7
72.5°	159.4	192.9	265.5	390.3	415.3
75°	115.6	153.1	223.3	343.1	364.7
77.5°	77.8	116.0	183.7	290.9	319.5
80°	46.5	84.8	148.4	242.6	274.7
82.5°	23.8	56.9	115.1	203.5	232.3
85°	10.3	36.0	87.0	168.9	193.8
87.5°	2.9	20.5	64.1	136.5	157.6
90°	0.2	10.8	45.6	107.0	126.1
92.5°	0.2	5.2	32.2	80.9	95.6
95°	0.2	2.7	20.0	58.7	71.7
97.5°	0.2	1.6	12.1	41.6	52.6
100°	0.2	1.3	7.2	27.7	37.5
102.5°	0.2	1.6	4.9	17.5	24.5
105°	0.2	1.6	4.0	11.5	16.2
107.5°	0.4	1.6	3.6	8.5	11.2
110°	0.2	1.3	3.8	6.5	8.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.1	3.6	5.4	6.5
115°	0.2	0.9	3.1	5.2	5.4
117.5°	0.4	0.7	2.5	5.2	5.4
120°	0.4	0.4	2.0	4.9	5.6
122.5°	0.4	0.4	1.6	4.5	5.4
125°	0.2	0.4	1.3	3.4	4.7
127.5°	0.4	0.4	1.1	2.7	3.6
130°	0.4	0.4	0.9	2.0	2.7
132.5°	0.4	0.4	0.7	1.6	2.0
135°	0.4	0.4	0.4	1.1	1.6
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)