

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: P517191

Luminaire Tested: HVL12-1-LD4-1STD-50-UNV-C-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: P517191
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-50-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 857.0 lumens
Efficiency: N/A
Efficacy: 102.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

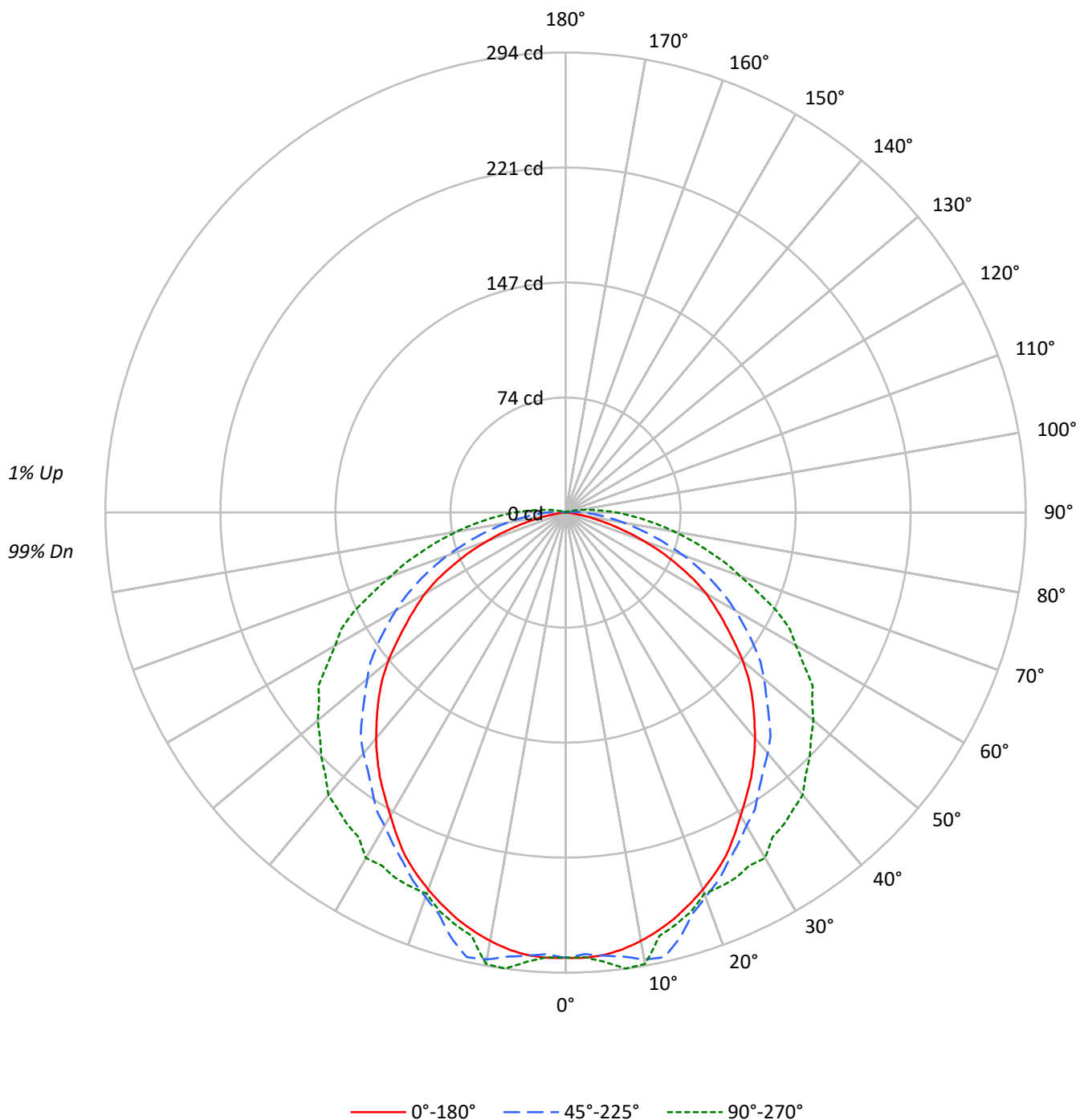
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	3062	3062	3062
5°	3022	3009	3069
10°	2951	3042	3110
15°	2865	2952	2907
20°	2769	2759	2799
25°	2670	2632	2838
30°	2536	2529	2890
35°	2432	2432	2862
40°	2321	2357	2904
45°	2204	2262	2880
50°	2068	2162	2888
55°	1886	2057	2921
60°	1732	1914	2838
65°	1478	1746	2796
70°	1148	1530	2562
75°	764	1272	2410
80°	382	1013	2256
85°	115	749	2125

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2921 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.3	3.2
10°-20°	77.9	9.1
20°-30°	115.9	13.5
30°-40°	139.2	16.2
40°-50°	146.6	17.1
50°-60°	136.0	15.9
60°-70°	107.5	12.5
70°-80°	65.7	7.7
80°-90°	28.6	3.3
90°-100°	8.9	1.0
100°-110°	2.0	0.2
110°-120°	0.8	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	221.1	25.8
0°-40°	360.3	42.0
0°-60°	642.9	75.0
0°-90°	844.7	98.6
90°-120°	11.7	1.4
90°-150°	12.3	1.4
90°-180°	12.0	1.4
0°-180°	857.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	284	284	284	284	284	
5°	284	283	284	287	288	27
15°	269	279	282	272	272	76
25°	242	258	246	253	258	111
35°	207	212	216	235	243	129
45°	169	170	184	213	221	130
55°	124	126	146	178	193	112
65°	79	81	103	137	149	78
75°	30	40	58	88	94	33
85°	3	9	22	44	50	4
90°	0	3	12	28	32	0
95°	0	1	5	15	18	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	284.5	284.5	284.5	284.5	284.5
2.5°	284.8	284.1	282.5	284.0	284.4
5°	283.8	283.2	284.2	287.4	288.2
7.5°	281.4	283.6	286.2	292.0	293.9
10°	277.9	282.0	289.9	294.8	292.9
12.5°	273.6	280.7	291.1	281.5	277.1
15°	268.6	278.9	281.6	272.3	272.5
17.5°	262.7	277.5	269.1	268.8	267.2
20°	256.4	272.6	261.5	261.0	259.2
22.5°	249.6	266.2	254.7	253.8	258.7
25°	242.3	257.8	246.0	253.4	257.5
27.5°	233.1	246.8	238.7	249.1	254.3
30°	223.7	235.4	231.2	245.8	254.9
32.5°	215.0	223.5	225.1	244.5	246.0
35°	206.7	212.4	215.6	235.2	243.2
37.5°	197.6	199.2	207.6	231.3	239.0
40°	188.3	187.4	200.9	225.0	235.6
42.5°	178.4	178.0	193.8	221.8	227.1
45°	168.9	169.7	183.6	212.7	220.7
47.5°	159.2	160.2	174.0	202.8	212.7
50°	148.0	149.3	165.4	194.0	206.7
52.5°	135.8	138.3	157.1	185.7	198.5
55°	124.4	126.4	146.5	178.5	192.7
57.5°	114.0	115.2	135.5	169.6	180.3
60°	103.7	104.0	125.2	159.6	169.9
62.5°	92.0	92.5	114.6	147.8	161.6
65°	78.8	81.2	103.2	136.6	149.0
67.5°	66.4	70.8	91.6	126.3	132.8
70°	53.2	60.6	80.1	114.2	118.7
72.5°	41.1	49.7	68.4	100.6	107.0
75°	29.8	39.5	57.5	88.4	94.0
77.5°	20.1	29.9	47.3	75.0	82.3
80°	12.0	21.8	38.2	62.5	70.8
82.5°	6.1	14.7	29.7	52.4	59.9
85°	2.7	9.3	22.4	43.5	50.0
87.5°	0.8	5.3	16.5	35.2	40.6
90°	0.1	2.8	11.8	27.6	32.5
92.5°	0.1	1.3	8.3	20.9	24.6
95°	0.1	0.7	5.2	15.1	18.5
97.5°	0.1	0.4	3.1	10.7	13.6
100°	0.1	0.3	1.9	7.1	9.7
102.5°	0.1	0.4	1.3	4.5	6.3
105°	0.1	0.4	1.0	3.0	4.2
107.5°	0.1	0.4	0.9	2.2	2.9
110°	0.1	0.3	1.0	1.7	2.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.9	1.4	1.7
115°	0.1	0.2	0.8	1.3	1.4
117.5°	0.1	0.2	0.6	1.3	1.4
120°	0.1	0.1	0.5	1.3	1.4
122.5°	0.1	0.1	0.4	1.2	1.4
125°	0.1	0.1	0.3	0.9	1.2
127.5°	0.1	0.1	0.3	0.7	0.9
130°	0.1	0.1	0.2	0.5	0.7
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)