

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: P517172

Luminaire Tested: HVL12-1-LD4-1LO-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: P517172
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1LO-40-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 752.1 lumens
Efficiency: N/A
Efficacy: 127.5 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

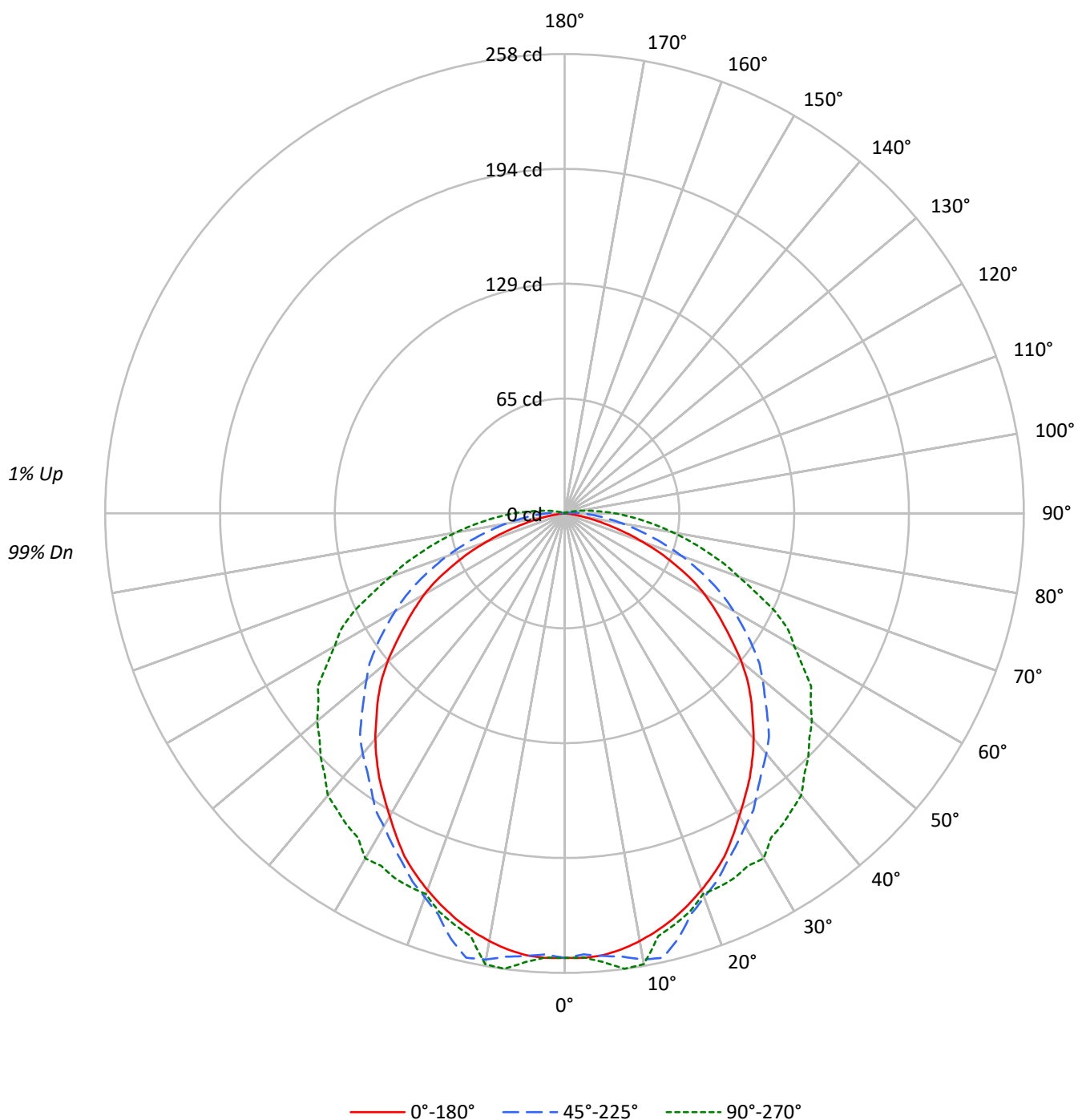
Input Watts (W): 5.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	44	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°	2687	2687	2687
5°	2652	2640	2693
10°	2589	2670	2729
15°	2514	2590	2551
20°	2430	2420	2457
25°	2343	2310	2489
30°	2226	2220	2536
35°	2135	2134	2511
40°	2038	2068	2549
45°	1934	1984	2526
50°	1815	1898	2534
55°	1655	1804	2563
60°	1520	1680	2489
65°	1296	1533	2452
70°	1008	1343	2249
75°	669	1117	2115
80°	335	891	1979
85°	98	659	1862

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2563 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.0	3.2
10°-20°	68.3	9.1
20°-30°	101.7	13.5
30°-40°	122.2	16.2
40°-50°	128.6	17.1
50°-60°	119.3	15.9
60°-70°	94.4	12.5
70°-80°	57.6	7.7
80°-90°	25.1	3.3
90°-100°	7.8	1.0
100°-110°	1.8	0.2
110°-120°	0.7	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°	194.0	25.8
0°-40°	316.2	42.0
0°-60°	564.1	75.0
0°-90°	741.2	98.6
90°-120°	10.3	1.4
90°-150°	10.8	1.4
90°-180°	11.0	1.5
0°-180°	752.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	250	250	250	250	250	
5°	249	248	249	252	253	24
15°	236	245	247	239	239	66
25°	213	226	216	222	226	98
35°	181	186	189	206	213	113
45°	148	149	161	187	194	114
55°	109	111	128	157	169	98
65°	69	71	91	120	131	68
75°	26	35	50	78	82	29
85°	2	8	20	38	44	4
90°	0	2	10	24	28	0
95°	0	1	4	13	16	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

TEST NUMBER: P517172

CATALOG NUMBER: HVL12-1-LD4-1LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	249.6	249.6	249.6	249.6	249.6
2.5°	249.9	249.3	247.9	249.2	249.6
5°	249.0	248.5	249.4	252.2	252.9
7.5°	246.9	248.9	251.1	256.2	257.9
10°	243.8	247.5	254.4	258.7	257.0
12.5°	240.1	246.3	255.5	247.0	243.1
15°	235.7	244.7	247.1	238.9	239.1
17.5°	230.6	243.5	236.1	235.9	234.4
20°	225.0	239.2	229.4	229.0	227.5
22.5°	219.1	233.6	223.5	222.7	227.0
25°	212.6	226.2	215.9	222.3	225.9
27.5°	204.5	216.5	209.5	218.6	223.1
30°	196.3	206.6	202.9	215.7	223.7
32.5°	188.7	196.1	197.5	214.5	215.9
35°	181.4	186.4	189.2	206.4	213.4
37.5°	173.4	174.8	182.2	203.0	209.8
40°	165.3	164.4	176.3	197.4	206.8
42.5°	156.5	156.2	170.0	194.6	199.3
45°	148.2	148.9	161.1	186.7	193.6
47.5°	139.7	140.6	152.7	178.0	186.6
50°	129.9	131.0	145.2	170.2	181.4
52.5°	119.2	121.3	137.9	162.9	174.2
55°	109.2	111.0	128.5	156.7	169.1
57.5°	100.0	101.1	118.9	148.8	158.2
60°	91.0	91.3	109.9	140.0	149.0
62.5°	80.7	81.2	100.6	129.7	141.8
65°	69.1	71.3	90.6	119.9	130.7
67.5°	58.3	62.1	80.3	110.8	116.5
70°	46.7	53.1	70.3	100.2	104.2
72.5°	36.1	43.6	60.1	88.3	93.9
75°	26.1	34.6	50.5	77.6	82.5
77.5°	17.6	26.2	41.5	65.8	72.3
80°	10.5	19.2	33.6	54.9	62.1
82.5°	5.4	12.9	26.0	46.0	52.5
85°	2.3	8.1	19.7	38.2	43.8
87.5°	0.7	4.6	14.5	30.9	35.6
90°	0.1	2.4	10.3	24.2	28.5
92.5°	0.1	1.2	7.3	18.3	21.6
95°	0.1	0.6	4.5	13.3	16.2
97.5°	0.1	0.4	2.7	9.4	11.9
100°	0.1	0.3	1.6	6.3	8.5
102.5°	0.1	0.4	1.1	4.0	5.5
105°	0.1	0.4	0.9	2.6	3.7
107.5°	0.1	0.4	0.8	1.9	2.5
110°	0.1	0.3	0.9	1.5	2.0

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CATALOG NUMBER: HVL12-1-LD4-1LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.8	1.2	1.5
115°	0.1	0.2	0.7	1.2	1.2
117.5°	0.1	0.2	0.6	1.2	1.2
120°	0.1	0.1	0.5	1.1	1.3
122.5°	0.1	0.1	0.4	1.0	1.2
125°	0.1	0.1	0.3	0.8	1.1
127.5°	0.1	0.1	0.3	0.6	0.8
130°	0.1	0.1	0.2	0.5	0.6
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)