

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: P517307

Luminaire Tested: HVL12-2-LD4-1LO-30-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: P517307
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-30-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1230.0 lumens
Efficiency: N/A
Efficacy: 104.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

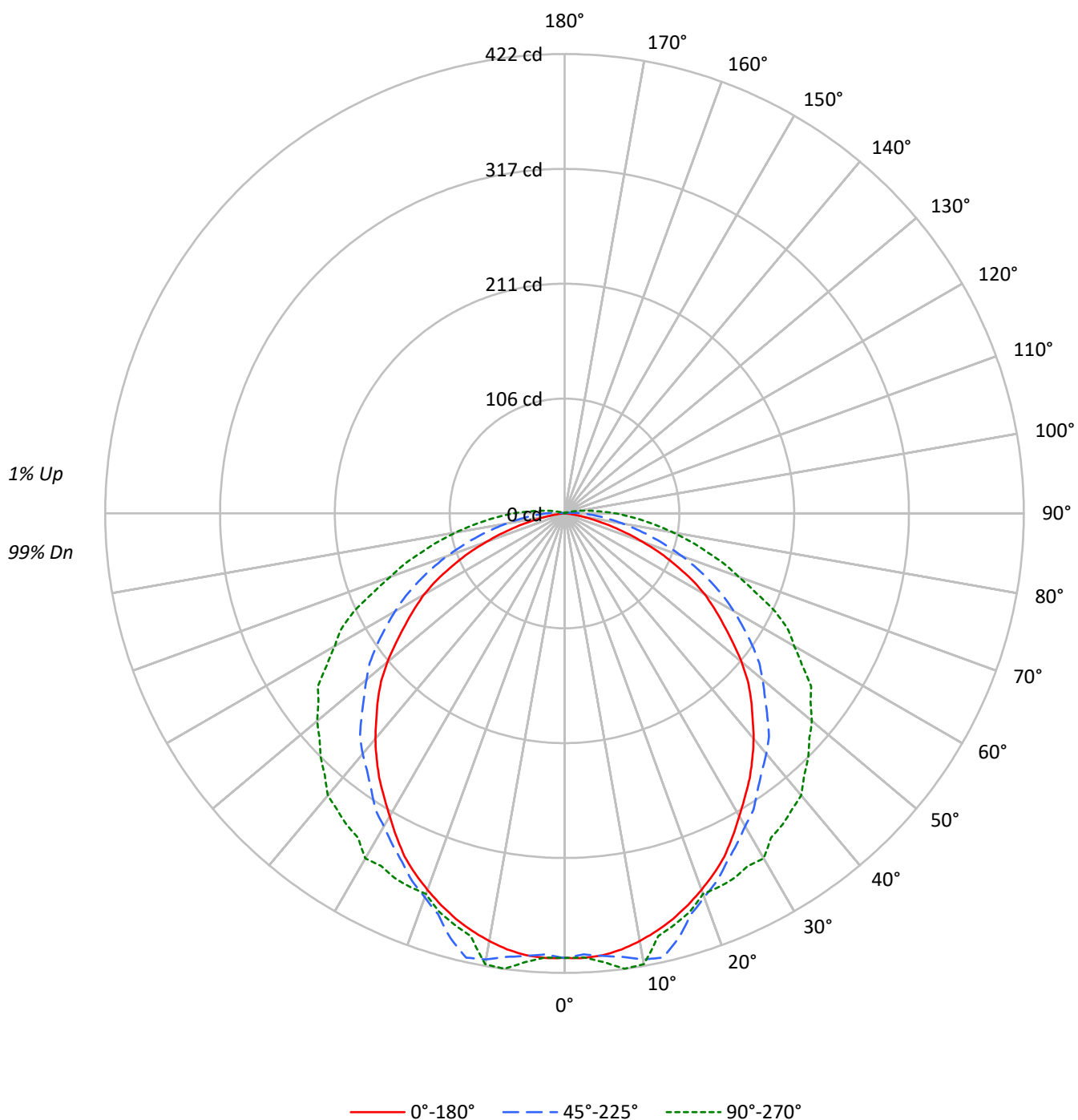
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2197	2197	2197
5°	2185	2170	2202
10°	2148	2205	2232
15°	2101	2150	2086
20°	2046	2020	2009
25°	1988	1937	2036
30°	1904	1872	2074
35°	1842	1809	2054
40°	1775	1764	2084
45°	1703	1705	2066
50°	1618	1642	2072
55°	1498	1575	2096
60°	1401	1481	2036
65°	1221	1368	2006
70°	978	1218	1839
75°	679	1035	1729
80°	362	850	1619
85°	120	658	1524

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2096 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.2	3.2
10°-20°	111.7	9.1
20°-30°	166.3	13.5
30°-40°	199.9	16.2
40°-50°	210.4	17.1
50°-60°	195.2	15.9
60°-70°	154.3	12.5
70°-80°	94.3	7.7
80°-90°	41.1	3.3
90°-100°	12.8	1.0
100°-110°	2.9	0.2
110°-120°	1.1	0.1
120°-130°	0.7	0.1
130°-140°	0.2	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°	317.3	25.8
0°-40°	517.1	42.0
0°-60°	922.7	75.0
0°-90°	1212.4	98.6
90°-120°	16.8	1.4
90°-150°	17.6	1.4
90°-180°	18.0	1.5
0°-180°	1230.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	408	408	408	408	408	
5°	407	406	408	412	414	39
15°	386	400	404	391	391	109
25°	348	370	353	364	370	160
35°	297	305	310	338	349	185
45°	242	244	264	305	317	187
55°	179	182	210	256	277	160
65°	113	117	148	196	214	112
75°	43	57	83	127	135	47
85°	4	13	32	62	72	6
90°	0	4	17	40	47	0
95°	0	1	7	22	26	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	1	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°	408.3	408.3	408.3	408.3	408.3
2.5°	408.8	407.7	405.5	407.6	408.2
5°	407.3	406.5	407.9	412.5	413.6
7.5°	403.9	407.0	410.8	419.1	421.8
10°	398.8	404.8	416.0	423.1	420.4
12.5°	392.7	402.8	417.9	404.1	397.6
15°	385.5	400.3	404.2	390.8	391.1
17.5°	377.1	398.2	386.2	385.8	383.4
20°	368.0	391.2	375.3	374.6	372.0
22.5°	358.3	382.0	365.6	364.3	371.3
25°	347.7	370.0	353.1	363.6	369.5
27.5°	334.5	354.1	342.6	357.6	365.0
30°	321.1	337.8	331.9	352.7	365.9
32.5°	308.6	320.8	323.0	350.9	353.1
35°	296.7	304.9	309.5	337.6	349.1
37.5°	283.6	285.9	298.0	332.0	343.1
40°	270.3	268.9	288.4	322.9	338.2
42.5°	256.0	255.5	278.1	318.3	326.0
45°	242.4	243.5	263.6	305.3	316.7
47.5°	228.6	230.0	249.8	291.1	305.2
50°	212.4	214.3	237.5	278.5	296.7
52.5°	195.0	198.4	225.5	266.5	284.9
55°	178.6	181.5	210.3	256.3	276.6
57.5°	163.6	165.3	194.5	243.4	258.7
60°	148.9	149.3	179.7	229.1	243.8
62.5°	132.0	132.7	164.5	212.2	231.9
65°	113.0	116.6	148.1	196.0	213.8
67.5°	95.3	101.6	131.4	181.2	190.5
70°	76.4	86.9	115.0	163.8	170.4
72.5°	59.0	71.4	98.2	144.4	153.6
75°	42.8	56.6	82.6	126.9	134.9
77.5°	28.8	42.9	68.0	107.6	118.2
80°	17.2	31.4	54.9	89.7	101.6
82.5°	8.8	21.0	42.6	75.3	85.9
85°	3.8	13.3	32.2	62.5	71.7
87.5°	1.1	7.6	23.7	50.5	58.3
90°	0.1	4.0	16.9	39.6	46.7
92.5°	0.1	1.9	11.9	29.9	35.3
95°	0.1	1.0	7.4	21.7	26.5
97.5°	0.1	0.6	4.5	15.4	19.5
100°	0.1	0.5	2.7	10.2	13.9
102.5°	0.1	0.6	1.8	6.5	9.1
105°	0.1	0.6	1.5	4.2	6.0
107.5°	0.2	0.6	1.3	3.2	4.2
110°	0.1	0.5	1.4	2.4	3.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	2.0	2.4
115°	0.1	0.3	1.2	1.9	2.0
117.5°	0.2	0.2	0.9	1.9	2.0
120°	0.2	0.2	0.7	1.8	2.1
122.5°	0.2	0.2	0.6	1.7	2.0
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)