

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: P517312

Luminaire Tested: HVL12-2-LD4-1LO-35-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: P517312
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1489.0 lumens
Efficiency: N/A
Efficacy: 126.2 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

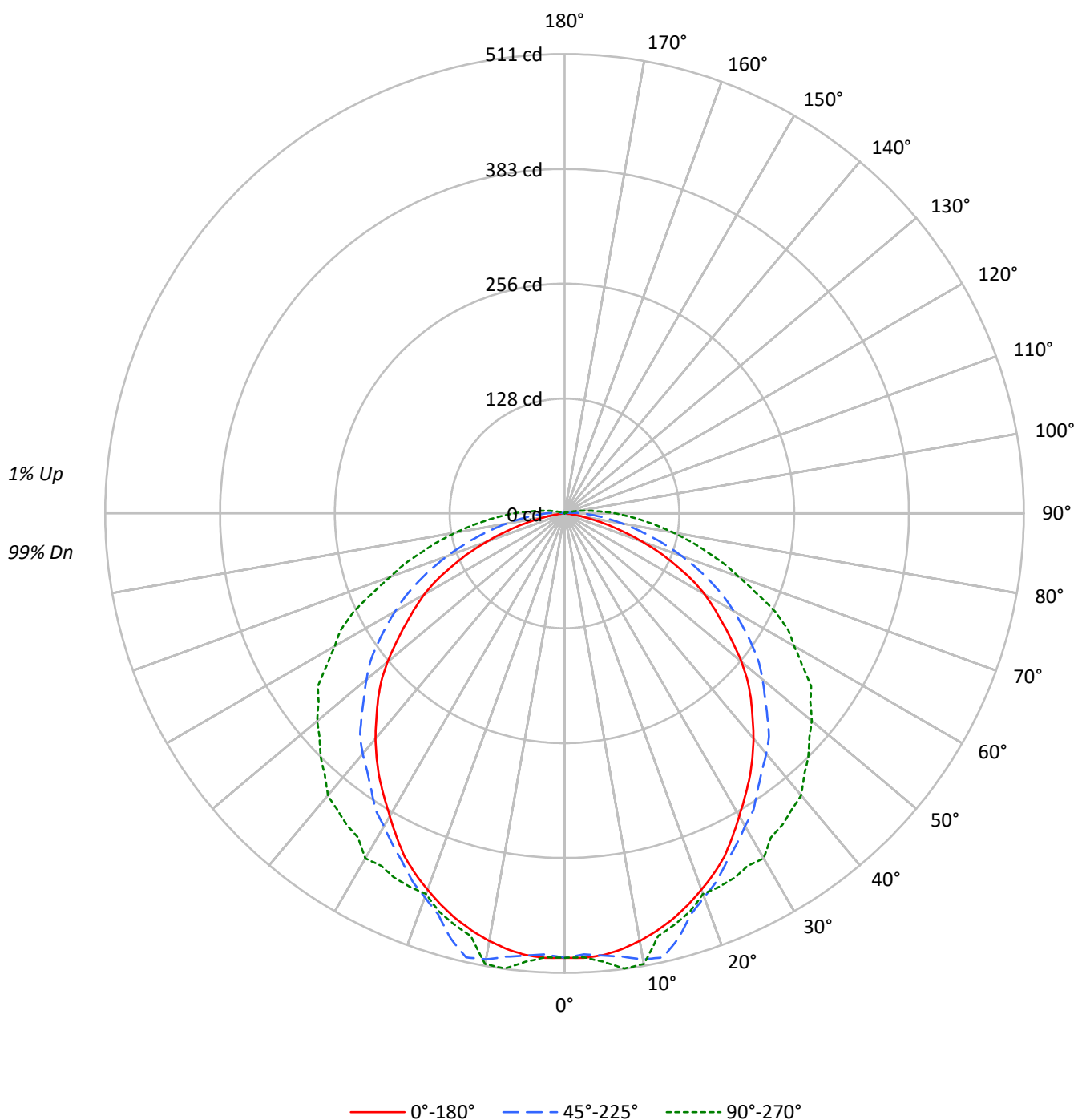
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2660	2660	2660
5°	2645	2627	2666
10°	2600	2669	2702
15°	2544	2603	2525
20°	2476	2445	2432
25°	2407	2345	2465
30°	2305	2265	2511
35°	2229	2191	2486
40°	2149	2136	2523
45°	2062	2064	2501
50°	1959	1988	2508
55°	1813	1907	2538
60°	1695	1793	2465
65°	1478	1656	2429
70°	1183	1474	2227
75°	822	1253	2093
80°	438	1029	1960
85°	145	797	1845

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2538 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.5	3.2
10°-20°	135.3	9.1
20°-30°	201.3	13.5
30°-40°	241.9	16.2
40°-50°	254.7	17.1
50°-60°	236.3	15.9
60°-70°	186.8	12.5
70°-80°	114.1	7.7
80°-90°	49.7	3.3
90°-100°	15.5	1.0
100°-110°	3.5	0.2
110°-120°	1.4	0.1
120°-130°	0.8	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°	384.1	25.8
0°-40°	626.0	42.0
0°-60°	1117.0	75.0
0°-90°	1467.7	98.6
90°-120°	20.3	1.4
90°-150°	21.3	1.4
90°-180°	21.0	1.4
0°-180°	1489.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	494	494	494	494	494	
5°	493	492	494	499	501	47
15°	467	485	489	473	473	131
25°	421	448	427	440	447	193
35°	359	369	375	409	423	224
45°	294	295	319	370	383	226
55°	216	220	254	310	335	194
65°	137	141	179	237	259	136
75°	52	69	100	154	163	56
85°	5	16	39	76	87	7
90°	0	5	20	48	56	0
95°	0	1	9	26	32	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	2	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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CATALOG NUMBER: HVL12-2-LD4-1LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	494.3	494.3	494.3	494.3	494.3
2.5°	494.9	493.6	490.8	493.5	494.2
5°	493.1	492.1	493.8	499.3	500.7
7.5°	488.9	492.8	497.3	507.4	510.6
10°	482.8	490.0	503.6	512.2	508.9
12.5°	475.3	487.6	505.8	489.1	481.4
15°	466.7	484.6	489.3	473.1	473.4
17.5°	456.5	482.1	467.5	467.1	464.2
20°	445.5	473.6	454.3	453.5	450.4
22.5°	433.8	462.5	442.6	441.0	449.5
25°	421.0	447.9	427.4	440.2	447.3
27.5°	405.0	428.7	414.7	432.8	441.8
30°	388.7	409.0	401.7	427.0	442.9
32.5°	373.5	388.3	391.1	424.8	427.4
35°	359.1	369.1	374.7	408.7	422.6
37.5°	343.3	346.1	360.8	401.9	415.3
40°	327.2	325.5	349.1	390.9	409.4
42.5°	309.9	309.3	336.7	385.3	394.6
45°	293.5	294.8	319.1	369.6	383.4
47.5°	276.7	278.4	302.4	352.4	369.5
50°	257.2	259.4	287.5	337.1	359.1
52.5°	236.0	240.2	273.0	322.6	344.8
55°	216.2	219.7	254.5	310.2	334.9
57.5°	198.0	200.2	235.5	294.6	313.2
60°	180.2	180.7	217.6	277.3	295.1
62.5°	159.8	160.7	199.2	256.8	280.7
65°	136.8	141.2	179.3	237.3	258.9
67.5°	115.4	122.9	159.1	219.4	230.7
70°	92.4	105.2	139.2	198.4	206.3
72.5°	71.4	86.4	118.9	174.8	186.0
75°	51.8	68.6	100.0	153.6	163.3
77.5°	34.8	52.0	82.3	130.3	143.1
80°	20.8	38.0	66.5	108.6	123.0
82.5°	10.7	25.5	51.6	91.1	104.0
85°	4.6	16.1	39.0	75.6	86.8
87.5°	1.3	9.2	28.7	61.1	70.6
90°	0.1	4.8	20.4	47.9	56.5
92.5°	0.1	2.3	14.4	36.2	42.8
95°	0.1	1.2	9.0	26.3	32.1
97.5°	0.1	0.7	5.4	18.6	23.6
100°	0.1	0.6	3.2	12.4	16.8
102.5°	0.1	0.7	2.2	7.9	11.0
105°	0.1	0.7	1.8	5.1	7.2
107.5°	0.2	0.7	1.6	3.8	5.0
110°	0.1	0.6	1.7	2.9	3.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.6	2.4	2.9
115°	0.1	0.4	1.4	2.3	2.4
117.5°	0.2	0.3	1.1	2.3	2.4
120°	0.2	0.2	0.9	2.2	2.5
122.5°	0.2	0.2	0.7	2.0	2.4
125°	0.1	0.2	0.6	1.5	2.1
127.5°	0.2	0.2	0.5	1.2	1.6
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)