

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: P517216

Luminaire Tested: HVL12-1-LD4-2LO-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: P517216
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2LO-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1414.0 lumens
Efficiency: N/A
Efficacy: 119.8 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

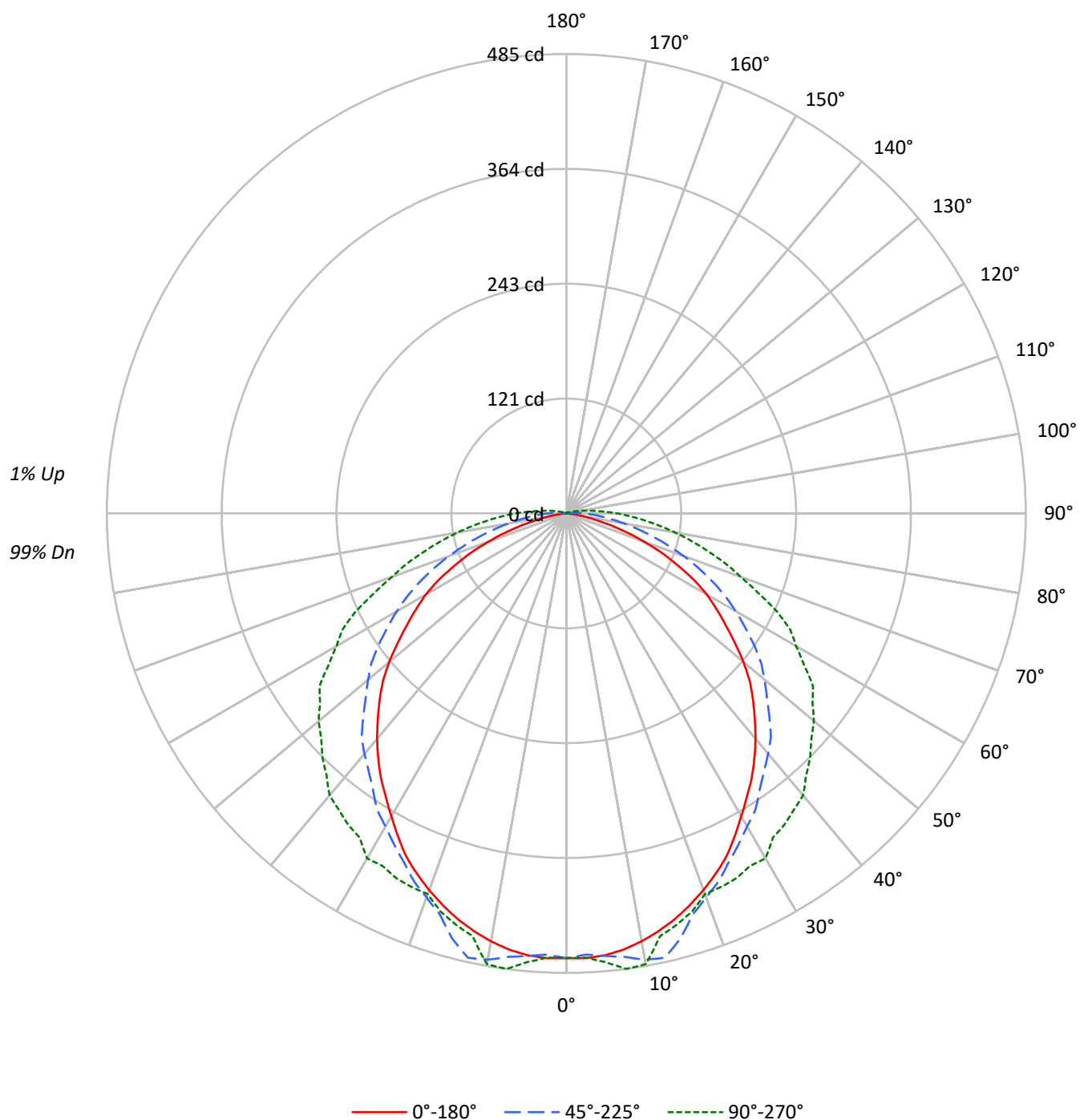
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	5053	5053	5053
5°	4986	4964	5064
10°	4868	5019	5131
15°	4728	4871	4796
20°	4569	4551	4619
25°	4406	4343	4681
30°	4186	4174	4769
35°	4014	4013	4722
40°	3830	3889	4793
45°	3636	3732	4751
50°	3412	3569	4765
55°	3112	3393	4820
60°	2858	3158	4681
65°	2437	2881	4612
70°	1895	2525	4229
75°	1259	2100	3976
80°	631	1674	3722
85°	187	1237	3503

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4820 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.1	3.2
10°-20°	128.5	9.1
20°-30°	191.1	13.5
30°-40°	229.8	16.2
40°-50°	241.8	17.1
50°-60°	224.4	15.9
60°-70°	177.4	12.5
70°-80°	108.4	7.7
80°-90°	47.2	3.3
90°-100°	14.7	1.0
100°-110°	3.3	0.2
110°-120°	1.3	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°	364.7	25.8
0°-40°	594.5	42.0
0°-60°	1060.7	75.0
0°-90°	1393.7	98.6
90°-120°	19.4	1.4
90°-150°	20.3	1.4
90°-180°	20.0	1.4
0°-180°	1414.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	469	469	469	469	469	
5°	468	467	469	474	476	44
15°	443	460	465	449	450	125
25°	400	425	406	418	425	184
35°	341	350	356	388	401	213
45°	279	280	303	351	364	215
55°	205	209	242	295	318	184
65°	130	134	170	225	246	129
75°	49	65	95	146	155	54
85°	4	15	37	72	82	7
90°	0	5	19	46	54	0
95°	0	1	8	25	30	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	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°	469.4	469.4	469.4	469.4	469.4
2.5°	469.9	468.7	466.1	468.6	469.3
5°	468.2	467.3	468.9	474.2	475.5
7.5°	464.3	467.9	472.2	481.8	484.9
10°	458.5	465.4	478.3	486.4	483.2
12.5°	451.4	463.1	480.4	464.5	457.1
15°	443.2	460.2	464.7	449.3	449.6
17.5°	433.5	457.8	443.9	443.6	440.8
20°	423.1	449.8	431.4	430.6	427.7
22.5°	411.9	439.2	420.3	418.8	426.8
25°	399.8	425.3	405.9	418.0	424.8
27.5°	384.6	407.1	393.8	411.0	419.6
30°	369.2	388.4	381.5	405.5	420.6
32.5°	354.7	368.8	371.4	403.4	405.9
35°	341.1	350.5	355.8	388.1	401.3
37.5°	326.0	328.6	342.6	381.7	394.4
40°	310.7	309.1	331.5	371.2	388.8
42.5°	294.3	293.7	319.7	365.9	374.7
45°	278.7	280.0	303.0	351.0	364.1
47.5°	262.7	264.4	287.1	334.7	350.9
50°	244.2	246.3	273.0	320.1	341.1
52.5°	224.1	228.1	259.2	306.3	327.5
55°	205.3	208.6	241.7	294.6	318.0
57.5°	188.1	190.1	223.6	279.8	297.5
60°	171.1	171.6	206.6	263.3	280.2
62.5°	151.7	152.6	189.1	243.9	266.6
65°	129.9	134.1	170.3	225.4	245.8
67.5°	109.6	116.7	151.1	208.3	219.1
70°	87.8	99.9	132.2	188.4	195.9
72.5°	67.8	82.0	112.9	166.0	176.6
75°	49.1	65.1	94.9	145.9	155.1
77.5°	33.1	49.3	78.1	123.7	135.9
80°	19.8	36.0	63.1	103.2	116.8
82.5°	10.1	24.2	49.0	86.5	98.8
85°	4.4	15.3	37.0	71.8	82.4
87.5°	1.2	8.7	27.3	58.0	67.0
90°	0.1	4.6	19.4	45.5	53.6
92.5°	0.1	2.2	13.7	34.4	40.6
95°	0.1	1.1	8.5	25.0	30.5
97.5°	0.1	0.7	5.2	17.7	22.4
100°	0.1	0.6	3.1	11.8	16.0
102.5°	0.1	0.7	2.1	7.5	10.4
105°	0.1	0.7	1.7	4.9	6.9
107.5°	0.2	0.7	1.5	3.6	4.8
110°	0.1	0.6	1.6	2.8	3.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.3	2.8
115°	0.1	0.4	1.3	2.2	2.3
117.5°	0.2	0.3	1.1	2.2	2.3
120°	0.2	0.2	0.9	2.1	2.4
122.5°	0.2	0.2	0.7	1.9	2.3
125°	0.1	0.2	0.6	1.4	2.0
127.5°	0.2	0.2	0.5	1.1	1.5
130°	0.2	0.2	0.4	0.9	1.1
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)