

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: P517160

Luminaire Tested: HVL12-1-LD4-1HI-50-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: P517160
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1HI-50-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1268.0 lumens
Efficiency: N/A
Efficacy: 115.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

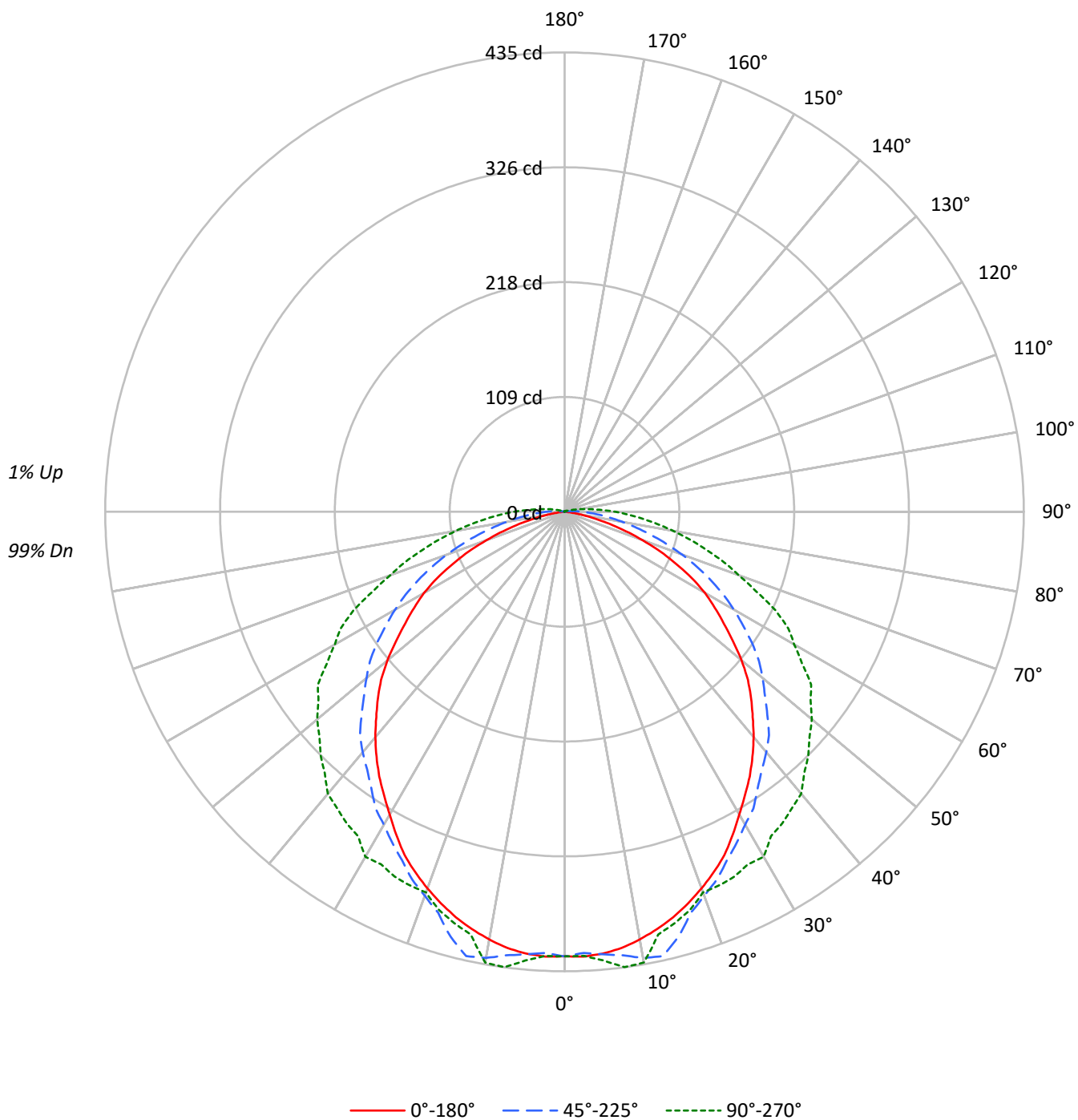
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4531	4531	4531
5°	4472	4452	4541
10°	4365	4501	4601
15°	4239	4368	4301
20°	4097	4082	4142
25°	3951	3895	4199
30°	3753	3743	4277
35°	3598	3598	4235
40°	3436	3488	4297
45°	3261	3347	4260
50°	3059	3200	4272
55°	2791	3044	4323
60°	2564	2833	4198
65°	2186	2583	4135
70°	1699	2265	3793
75°	1131	1883	3566
80°	564	1501	3339
85°	166	1110	3141

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4323 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	3.2
10°-20°	115.2	9.1
20°-30°	171.4	13.5
30°-40°	206.0	16.2
40°-50°	216.9	17.1
50°-60°	201.2	15.9
60°-70°	159.1	12.5
70°-80°	97.2	7.7
80°-90°	42.3	3.3
90°-100°	13.2	1.0
100°-110°	3.0	0.2
110°-120°	1.2	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°	327.1	25.8
0°-40°	533.1	42.0
0°-60°	951.2	75.0
0°-90°	1249.8	98.6
90°-120°	17.4	1.4
90°-150°	18.2	1.4
90°-180°	18.0	1.4
0°-180°	1268.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	421	421	421	421	421	
5°	420	419	420	425	426	40
15°	397	413	417	403	403	112
25°	358	381	364	375	381	165
35°	306	314	319	348	360	191
45°	250	251	272	315	326	193
55°	184	187	217	264	285	165
65°	116	120	153	202	220	115
75°	44	58	85	131	139	48
85°	4	14	33	64	74	6
90°	0	4	17	41	48	0
95°	0	1	8	22	27	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°	420.9	420.9	420.9	420.9	420.9
2.5°	421.4	420.3	418.0	420.2	420.8
5°	419.9	419.0	420.5	425.2	426.4
7.5°	416.4	419.6	423.5	432.1	434.8
10°	411.1	417.3	428.9	436.2	433.3
12.5°	404.8	415.2	430.8	416.5	409.9
15°	397.4	412.7	416.7	402.9	403.2
17.5°	388.8	410.5	398.1	397.8	395.3
20°	379.4	403.3	386.9	386.2	383.5
22.5°	369.4	393.8	376.9	375.5	382.8
25°	358.5	381.4	364.0	374.9	381.0
27.5°	344.9	365.1	353.2	368.6	376.2
30°	331.0	348.3	342.1	363.6	377.2
32.5°	318.1	330.7	333.0	361.7	364.0
35°	305.8	314.3	319.0	348.0	359.9
37.5°	292.4	294.7	307.2	342.3	353.7
40°	278.7	277.2	297.3	332.9	348.6
42.5°	263.9	263.4	286.7	328.1	336.0
45°	249.9	251.1	271.7	314.8	326.5
47.5°	235.6	237.1	257.5	300.1	314.7
50°	219.0	220.9	244.8	287.1	305.8
52.5°	201.0	204.6	232.4	274.7	293.7
55°	184.1	187.1	216.8	264.2	285.2
57.5°	168.7	170.5	200.6	250.9	266.7
60°	153.5	153.9	185.3	236.1	251.3
62.5°	136.1	136.8	169.6	218.7	239.0
65°	116.5	120.2	152.7	202.1	220.4
67.5°	98.3	104.7	135.5	186.8	196.4
70°	78.7	89.6	118.6	168.9	175.7
72.5°	60.8	73.6	101.3	148.8	158.4
75°	44.1	58.4	85.1	130.8	139.1
77.5°	29.7	44.2	70.1	111.0	121.8
80°	17.7	32.3	56.6	92.5	104.8
82.5°	9.1	21.7	43.9	77.6	88.6
85°	3.9	13.7	33.2	64.4	73.9
87.5°	1.1	7.8	24.4	52.0	60.1
90°	0.1	4.1	17.4	40.8	48.1
92.5°	0.1	2.0	12.3	30.9	36.4
95°	0.1	1.0	7.6	22.4	27.4
97.5°	0.1	0.6	4.6	15.9	20.1
100°	0.1	0.5	2.7	10.5	14.3
102.5°	0.1	0.6	1.9	6.7	9.3
105°	0.1	0.6	1.5	4.4	6.2
107.5°	0.2	0.6	1.4	3.3	4.3
110°	0.1	0.5	1.5	2.5	3.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.4	2.1	2.5
115°	0.1	0.3	1.2	2.0	2.1
117.5°	0.2	0.3	0.9	2.0	2.1
120°	0.2	0.2	0.8	1.9	2.1
122.5°	0.2	0.2	0.6	1.7	2.1
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.4
130°	0.2	0.2	0.3	0.8	1.0
132.5°	0.2	0.2	0.3	0.6	0.8
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)