

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: P517159

Luminaire Tested: HVL12-1-LD4-1HI-50-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: P517159
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-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1103.0 lumens
Efficiency: N/A
Efficacy: 100.3 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

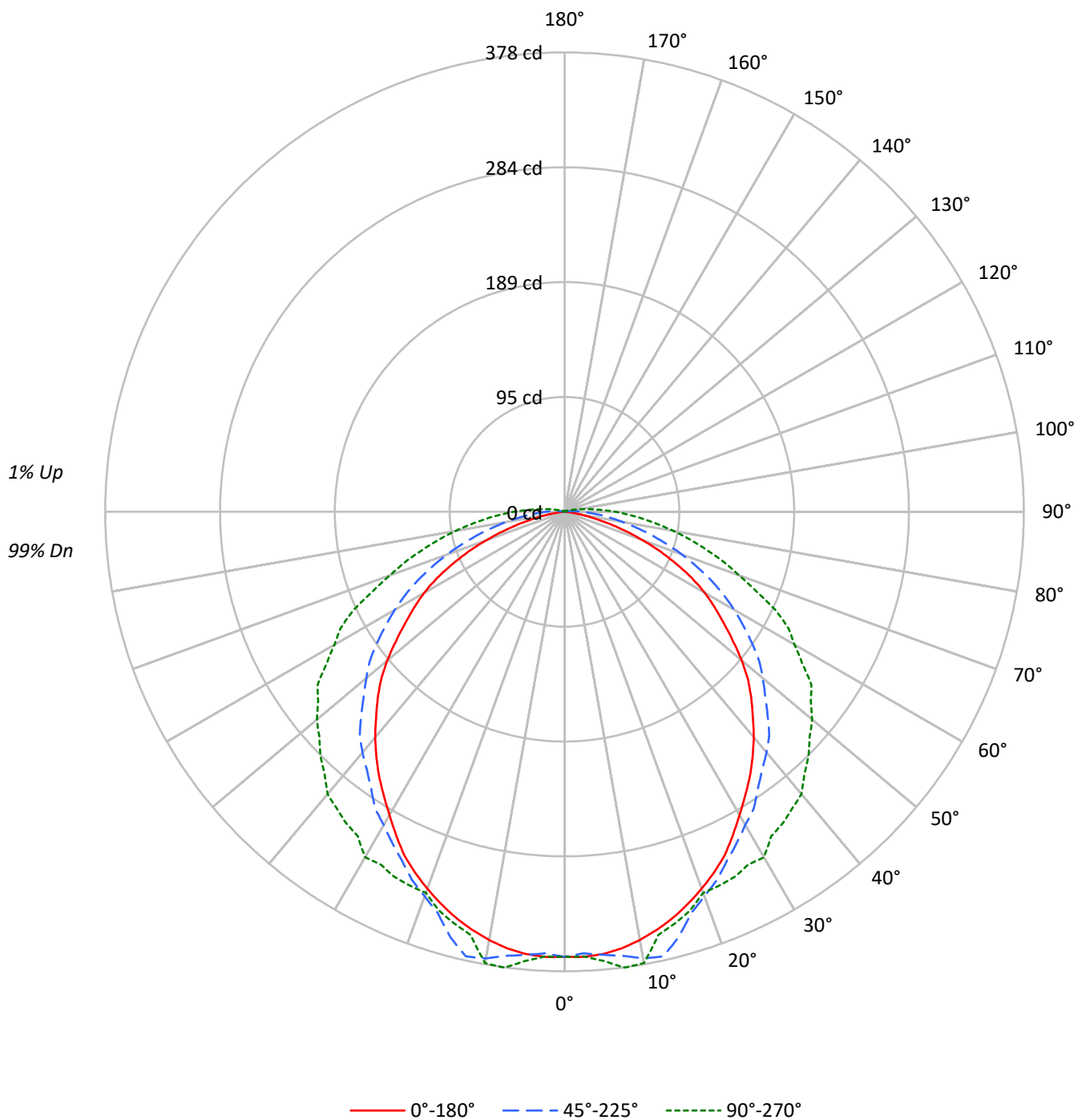
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3941	3941	3941
5°	3889	3873	3950
10°	3797	3915	4003
15°	3688	3800	3741
20°	3564	3550	3603
25°	3436	3388	3652
30°	3265	3256	3720
35°	3130	3130	3683
40°	2988	3034	3739
45°	2837	2912	3705
50°	2661	2783	3716
55°	2427	2646	3761
60°	2230	2464	3652
65°	1902	2247	3599
70°	1479	1971	3298
75°	982	1639	3102
80°	491	1305	2903
85°	145	966	2733

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3761 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.2	3.2
10°-20°	100.2	9.1
20°-30°	149.1	13.5
30°-40°	179.2	16.2
40°-50°	188.6	17.1
50°-60°	175.0	15.9
60°-70°	138.4	12.5
70°-80°	84.5	7.7
80°-90°	36.8	3.3
90°-100°	11.5	1.0
100°-110°	2.6	0.2
110°-120°	1.0	0.1
120°-130°	0.6	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°	284.5	25.8
0°-40°	463.7	42.0
0°-60°	827.4	75.0
0°-90°	1087.2	98.6
90°-120°	15.1	1.4
90°-150°	15.8	1.4
90°-180°	16.0	1.5
0°-180°	1103.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	366	366	366	366	366	
5°	365	364	366	370	371	35
15°	346	359	362	350	351	97
25°	312	332	317	326	331	143
35°	266	273	278	303	313	166
45°	217	218	236	274	284	168
55°	160	163	188	230	248	144
65°	101	105	133	176	192	100
75°	38	51	74	114	121	42
85°	3	12	29	56	64	5
90°	0	4	15	36	42	0
95°	0	1	7	20	24	0
105°	0	0	1	4	5	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	366.1	366.1	366.1	366.1	366.1
2.5°	366.6	365.6	363.6	365.5	366.1
5°	365.2	364.5	365.8	369.9	370.9
7.5°	362.2	365.0	368.4	375.8	378.2
10°	357.6	363.0	373.1	379.4	377.0
12.5°	352.1	361.2	374.7	362.3	356.6
15°	345.7	359.0	362.5	350.5	350.7
17.5°	338.2	357.1	346.3	346.0	343.8
20°	330.0	350.8	336.5	335.9	333.6
22.5°	321.3	342.6	327.9	326.7	332.9
25°	311.8	331.8	316.6	326.1	331.4
27.5°	300.0	317.6	307.2	320.6	327.3
30°	288.0	303.0	297.6	316.3	328.1
32.5°	276.7	287.7	289.7	314.7	316.6
35°	266.0	273.4	277.5	302.7	313.0
37.5°	254.3	256.3	267.2	297.7	307.7
40°	242.4	241.1	258.6	289.5	303.3
42.5°	229.6	229.1	249.4	285.4	292.3
45°	217.4	218.4	236.4	273.8	284.0
47.5°	205.0	206.2	224.0	261.0	273.7
50°	190.5	192.1	212.9	249.7	266.0
52.5°	174.8	178.0	202.2	239.0	255.5
55°	160.1	162.7	188.5	229.8	248.1
57.5°	146.7	148.3	174.5	218.2	232.0
60°	133.5	133.9	161.2	205.4	218.6
62.5°	118.4	119.0	147.5	190.3	207.9
65°	101.4	104.6	132.8	175.8	191.8
67.5°	85.5	91.1	117.8	162.5	170.9
70°	68.5	77.9	103.2	146.9	152.8
72.5°	52.9	64.0	88.1	129.5	137.8
75°	38.3	50.8	74.1	113.8	121.0
77.5°	25.8	38.5	60.9	96.5	106.0
80°	15.4	28.1	49.2	80.5	91.1
82.5°	7.9	18.9	38.2	67.5	77.0
85°	3.4	11.9	28.9	56.0	64.3
87.5°	1.0	6.8	21.3	45.3	52.3
90°	0.1	3.6	15.1	35.5	41.8
92.5°	0.1	1.7	10.7	26.9	31.7
95°	0.1	0.9	6.6	19.5	23.8
97.5°	0.1	0.5	4.0	13.8	17.5
100°	0.1	0.4	2.4	9.2	12.5
102.5°	0.1	0.5	1.6	5.8	8.1
105°	0.1	0.5	1.3	3.8	5.4
107.5°	0.1	0.5	1.2	2.8	3.7
110°	0.1	0.4	1.3	2.2	2.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.4	1.2	1.8	2.2
115°	0.1	0.3	1.0	1.7	1.8
117.5°	0.1	0.2	0.8	1.7	1.8
120°	0.1	0.1	0.7	1.6	1.9
122.5°	0.1	0.1	0.5	1.5	1.8
125°	0.1	0.1	0.4	1.1	1.6
127.5°	0.1	0.1	0.4	0.9	1.2
130°	0.1	0.1	0.3	0.7	0.9
132.5°	0.1	0.1	0.2	0.5	0.7
135°	0.1	0.1	0.1	0.4	0.5
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)