

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: P517195

Luminaire Tested: HVL12-1-LD4-2HI-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: P517195
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2HI-30-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1936.0 lumens
Efficiency: N/A
Efficacy: 87.6 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

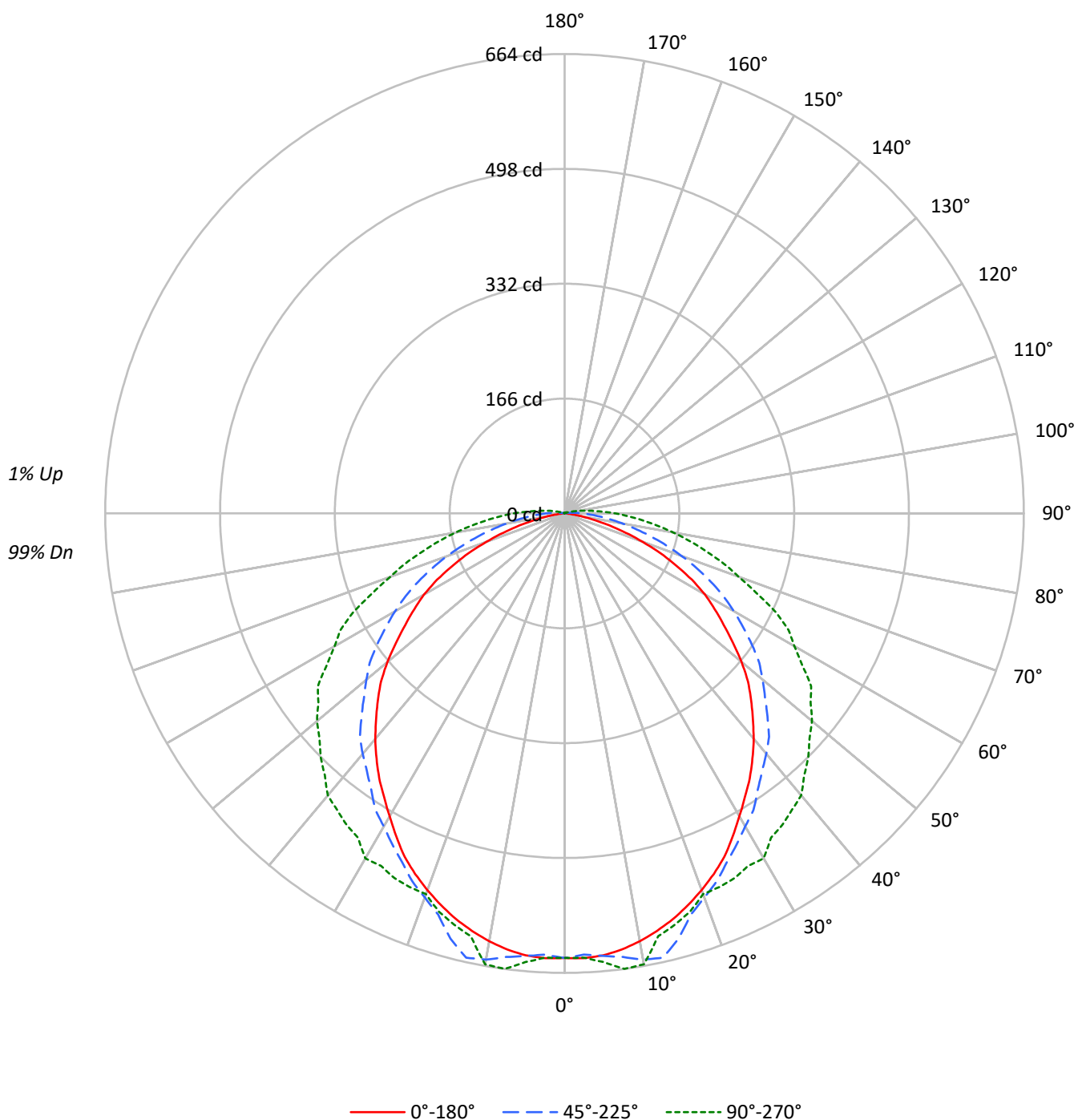
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6917	6917	6917
5°	6828	6797	6933
10°	6665	6871	7025
15°	6473	6668	6566
20°	6256	6232	6324
25°	6031	5946	6409
30°	5731	5714	6529
35°	5495	5494	6465
40°	5245	5325	6562
45°	4979	5111	6504
50°	4670	4887	6524
55°	4261	4646	6600
60°	3914	4324	6410
65°	3338	3945	6315
70°	2595	3459	5789
75°	1725	2876	5443
80°	863	2292	5098
85°	255	1695	4795

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6600 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.8	3.2
10°-20°	175.9	9.1
20°-30°	261.7	13.5
30°-40°	314.6	16.2
40°-50°	331.1	17.1
50°-60°	307.2	15.9
60°-70°	242.9	12.5
70°-80°	148.4	7.7
80°-90°	64.6	3.3
90°-100°	20.1	1.0
100°-110°	4.5	0.2
110°-120°	1.8	0.1
120°-130°	1.0	0.1
130°-140°	0.3	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°	499.4	25.8
0°-40°	813.9	42.0
0°-60°	1452.3	75.0
0°-90°	1908.2	98.6
90°-120°	26.5	1.4
90°-150°	27.8	1.4
90°-180°	28.0	1.4
0°-180°	1936.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	643	643	643	643	643	
5°	641	640	642	649	651	61
15°	607	630	636	615	616	171
25°	547	582	556	572	582	251
35°	467	480	487	531	549	292
45°	382	383	415	481	498	294
55°	281	286	331	403	435	253
65°	178	184	233	309	337	176
75°	67	89	130	200	212	73
85°	6	21	51	98	113	9
90°	0	6	27	62	73	0
95°	0	2	12	34	42	0
105°	0	1	2	7	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	3	0
135°	0	0	0	1	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°	642.6	642.6	642.6	642.6	642.6
2.5°	643.4	641.7	638.2	641.6	642.5
5°	641.1	639.8	642.0	649.2	651.0
7.5°	635.7	640.7	646.6	659.7	663.9
10°	627.7	637.1	654.8	665.9	661.6
12.5°	618.0	634.0	657.7	636.0	625.9
15°	606.8	630.1	636.2	615.2	615.5
17.5°	593.6	626.8	607.8	607.3	603.5
20°	579.3	615.8	590.7	589.6	585.6
22.5°	564.0	601.3	575.5	573.4	584.4
25°	547.3	582.3	555.7	572.3	581.6
27.5°	526.5	557.4	539.2	562.8	574.4
30°	505.5	531.8	522.3	555.2	575.9
32.5°	485.7	504.9	508.5	552.3	555.7
35°	467.0	479.9	487.1	531.4	549.4
37.5°	446.4	449.9	469.1	522.6	540.0
40°	425.5	423.2	453.9	508.2	532.3
42.5°	402.9	402.2	437.8	501.0	513.0
45°	381.6	383.3	414.9	480.6	498.5
47.5°	359.7	362.0	393.1	458.2	480.4
50°	334.3	337.2	373.8	438.3	467.0
52.5°	306.9	312.4	354.9	419.4	448.4
55°	281.1	285.6	330.9	403.3	435.4
57.5°	257.5	260.3	306.2	383.0	407.3
60°	234.3	235.0	282.9	360.5	383.7
62.5°	207.8	208.9	258.9	334.0	365.0
65°	177.9	183.5	233.2	308.6	336.6
67.5°	150.0	159.8	206.8	285.3	299.9
70°	120.2	136.8	181.1	257.9	268.2
72.5°	92.8	112.3	154.6	227.3	241.8
75°	67.3	89.2	130.0	199.8	212.3
77.5°	45.3	67.6	107.0	169.4	186.0
80°	27.1	49.4	86.4	141.3	160.0
82.5°	13.9	33.1	67.0	118.5	135.2
85°	6.0	20.9	50.7	98.3	112.8
87.5°	1.7	11.9	37.3	79.5	91.8
90°	0.1	6.3	26.6	62.3	73.4
92.5°	0.1	3.0	18.7	47.1	55.6
95°	0.1	1.6	11.7	34.2	41.8
97.5°	0.1	0.9	7.1	24.2	30.6
100°	0.1	0.8	4.2	16.1	21.9
102.5°	0.1	0.9	2.9	10.2	14.3
105°	0.1	0.9	2.4	6.7	9.4
107.5°	0.3	0.9	2.1	5.0	6.5
110°	0.1	0.8	2.2	3.8	5.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.1	3.1	3.8
115°	0.1	0.5	1.8	3.0	3.1
117.5°	0.3	0.4	1.4	3.0	3.1
120°	0.3	0.3	1.2	2.9	3.3
122.5°	0.3	0.3	0.9	2.6	3.1
125°	0.1	0.3	0.8	2.0	2.7
127.5°	0.3	0.3	0.7	1.6	2.1
130°	0.3	0.3	0.5	1.2	1.6
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.7	0.9
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)