

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: P517228

Luminaire Tested: HVL12-1-LD4-2STD-30-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: P517228
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2STD-30-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1736.0 lumens
Efficiency: N/A
Efficacy: 103.3 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

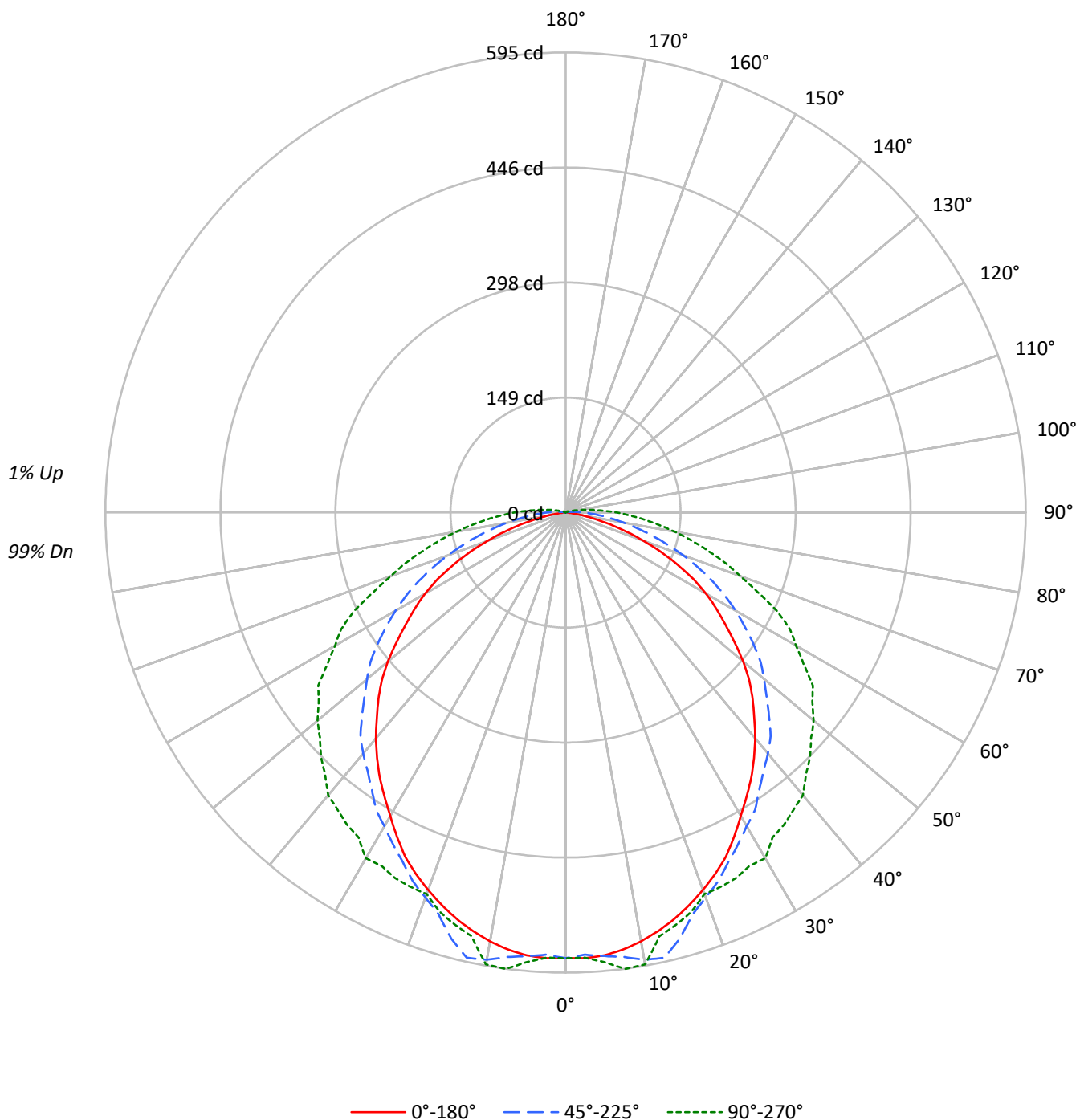
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
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°	6203	6203	6203
5°	6121	6095	6217
10°	5977	6162	6300
15°	5804	5980	5888
20°	5609	5588	5671
25°	5409	5332	5748
30°	5138	5124	5855
35°	4927	4926	5798
40°	4703	4774	5884
45°	4465	4582	5832
50°	4188	4381	5849
55°	3820	4167	5918
60°	3510	3878	5748
65°	2993	3537	5662
70°	2327	3100	5191
75°	1546	2580	4882
80°	774	2056	4569
85°	230	1518	4302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 5918 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.4	3.2
10°-20°	157.7	9.1
20°-30°	234.7	13.5
30°-40°	282.1	16.2
40°-50°	296.9	17.1
50°-60°	275.5	15.9
60°-70°	217.8	12.5
70°-80°	133.1	7.7
80°-90°	58.0	3.3
90°-100°	18.0	1.0
100°-110°	4.1	0.2
110°-120°	1.6	0.1
120°-130°	0.9	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°	447.8	25.8
0°-40°	729.9	42.0
0°-60°	1302.3	75.0
0°-90°	1711.1	98.6
90°-120°	23.7	1.4
90°-150°	24.9	1.4
90°-180°	25.0	1.4
0°-180°	1736.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	576	576	576	576	576	
5°	575	574	576	582	584	54
15°	544	565	570	552	552	153
25°	491	522	498	513	522	225
35°	419	430	437	476	493	262
45°	342	344	372	431	447	264
55°	252	256	297	362	390	226
65°	160	165	209	277	302	158
75°	60	80	117	179	190	66
85°	5	19	45	88	101	8
90°	0	6	24	56	66	0
95°	0	1	10	31	37	0
105°	0	1	2	6	8	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	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°	576.3	576.3	576.3	576.3	576.3
2.5°	577.0	575.4	572.3	575.3	576.1
5°	574.8	573.7	575.7	582.1	583.8
7.5°	570.0	574.5	579.8	591.5	595.3
10°	562.9	571.3	587.2	597.2	593.3
12.5°	554.2	568.5	589.8	570.3	561.2
15°	544.1	565.0	570.5	551.6	552.0
17.5°	532.2	562.1	545.0	544.6	541.2
20°	519.4	552.2	529.7	528.7	525.1
22.5°	505.7	539.2	516.0	514.2	524.0
25°	490.8	522.1	498.3	513.2	521.6
27.5°	472.1	499.8	483.5	504.7	515.1
30°	453.2	476.8	468.4	497.8	516.4
32.5°	435.5	452.8	455.9	495.3	498.3
35°	418.7	430.3	436.8	476.5	492.7
37.5°	400.3	403.5	420.6	468.6	484.2
40°	381.5	379.5	407.0	455.7	477.3
42.5°	361.3	360.6	392.5	449.2	460.0
45°	342.2	343.7	372.0	430.9	447.0
47.5°	322.6	324.6	352.5	410.9	430.8
50°	299.8	302.4	335.1	393.0	418.7
52.5°	275.2	280.1	318.2	376.1	402.1
55°	252.0	256.1	296.8	361.7	390.4
57.5°	230.9	233.4	274.6	343.5	365.2
60°	210.1	210.7	253.7	323.3	344.1
62.5°	186.3	187.4	232.2	299.5	327.3
65°	159.5	164.6	209.1	276.7	301.8
67.5°	134.5	143.3	185.5	255.8	268.9
70°	107.8	122.7	162.3	231.3	240.5
72.5°	83.2	100.7	138.6	203.8	216.8
75°	60.3	79.9	116.6	179.1	190.4
77.5°	40.6	60.6	95.9	151.9	166.8
80°	24.3	44.3	77.5	126.7	143.4
82.5°	12.4	29.7	60.1	106.2	121.3
85°	5.4	18.8	45.4	88.2	101.2
87.5°	1.5	10.7	33.5	71.3	82.3
90°	0.1	5.6	23.8	55.9	65.9
92.5°	0.1	2.7	16.8	42.3	49.9
95°	0.1	1.4	10.4	30.6	37.4
97.5°	0.1	0.8	6.3	21.7	27.5
100°	0.1	0.7	3.8	14.4	19.6
102.5°	0.1	0.8	2.6	9.2	12.8
105°	0.1	0.8	2.1	6.0	8.5
107.5°	0.2	0.8	1.9	4.5	5.9
110°	0.1	0.7	2.0	3.4	4.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.9	2.8	3.4
115°	0.1	0.5	1.6	2.7	2.8
117.5°	0.2	0.4	1.3	2.7	2.8
120°	0.2	0.2	1.1	2.6	2.9
122.5°	0.2	0.2	0.8	2.3	2.8
125°	0.1	0.2	0.7	1.8	2.5
127.5°	0.2	0.2	0.6	1.4	1.9
130°	0.2	0.2	0.5	1.1	1.4
132.5°	0.2	0.2	0.4	0.8	1.1
135°	0.2	0.2	0.2	0.6	0.8
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)