

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: P517276

Luminaire Tested: HVL12-1-LD4-3STD-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: P517276
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-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: 2737.0 lumens
Efficiency: N/A
Efficacy: 111.7 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

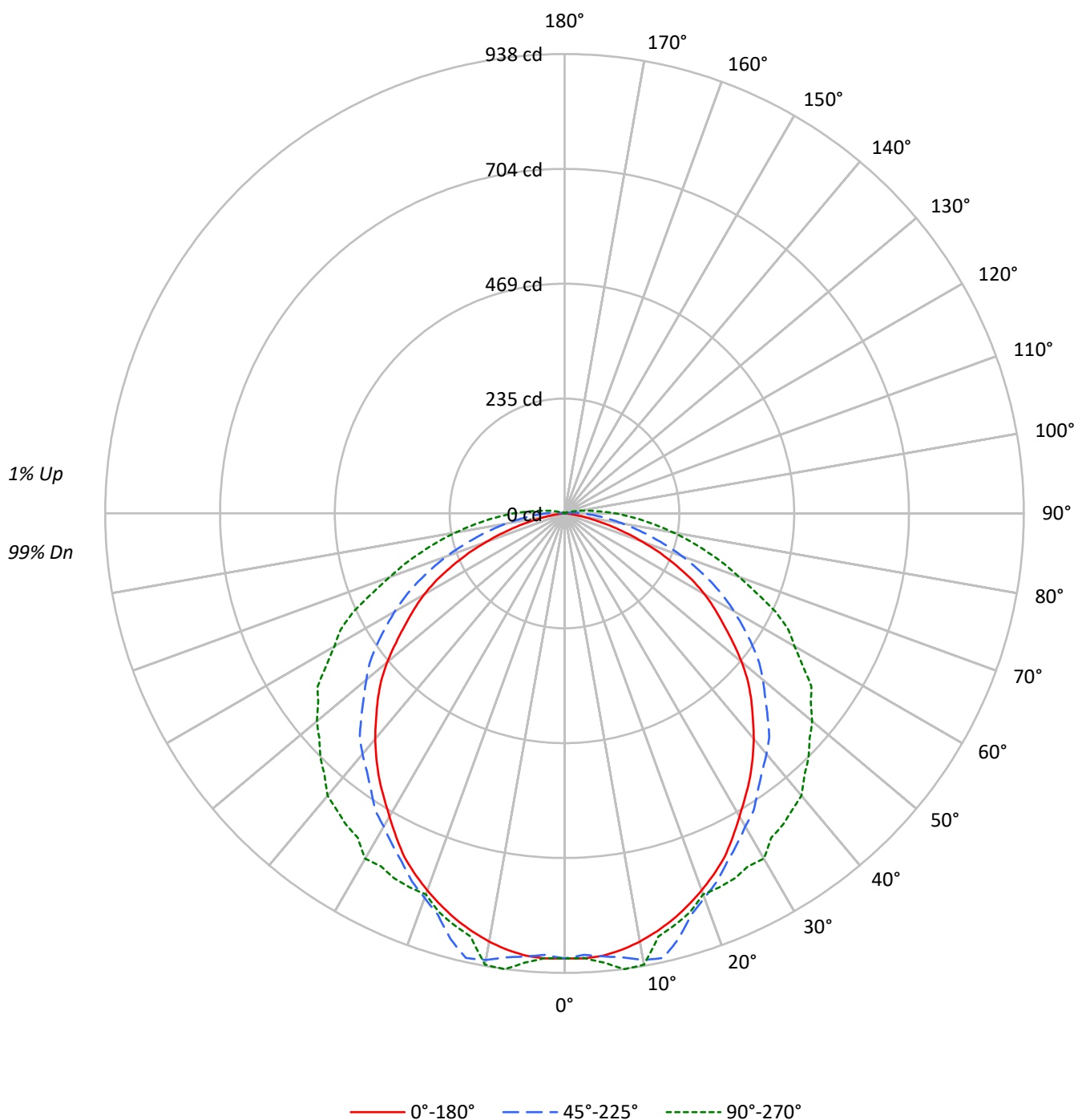
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9779	9779	9779
5°	9652	9608	9802
10°	9422	9714	9932
15°	9150	9428	9283
20°	8845	8810	8940
25°	8527	8406	9062
30°	8102	8079	9230
35°	7768	7768	9140
40°	7415	7528	9276
45°	7039	7225	9196
50°	6604	6908	9223
55°	6024	6569	9331
60°	5534	6113	9062
65°	4719	5576	8927
70°	3667	4890	8185
75°	2438	4066	7697
80°	1220	3239	7207
85°	361	2393	6780

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9331 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.3	3.2
10°-20°	248.7	9.1
20°-30°	370.0	13.5
30°-40°	444.7	16.2
40°-50°	468.1	17.1
50°-60°	434.3	15.9
60°-70°	343.4	12.5
70°-80°	209.8	7.7
80°-90°	91.4	3.3
90°-100°	28.5	1.0
100°-110°	6.4	0.2
110°-120°	2.6	0.1
120°-130°	1.5	0.1
130°-140°	0.4	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°	706.0	25.8
0°-40°	1150.7	42.0
0°-60°	2053.2	75.0
0°-90°	2697.7	98.6
90°-120°	37.4	1.4
90°-150°	39.3	1.4
90°-180°	39.0	1.4
0°-180°	2737.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	908	908	908	908	908	
5°	906	904	908	918	920	86
15°	858	891	900	870	870	242
25°	774	823	786	809	822	355
35°	660	678	689	751	777	413
45°	540	542	586	679	705	416
55°	397	404	468	570	616	357
65°	252	260	330	436	476	249
75°	95	126	184	282	300	104
85°	8	30	72	139	160	13
90°	0	9	38	88	104	0
95°	0	2	16	48	59	0
105°	0	1	3	9	13	0
115°	0	1	3	4	4	0
125°	0	0	1	3	4	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°	908.5	908.5	908.5	908.5	908.5
2.5°	909.6	907.2	902.2	907.1	908.4
5°	906.3	904.5	907.6	917.8	920.4
7.5°	898.7	905.8	914.1	932.6	938.5
10°	887.4	900.8	925.7	941.5	935.4
12.5°	873.7	896.3	929.8	899.1	884.8
15°	857.8	890.8	899.5	869.7	870.2
17.5°	839.1	886.1	859.3	858.6	853.2
20°	819.0	870.6	835.1	833.6	827.8
22.5°	797.3	850.1	813.6	810.6	826.2
25°	773.8	823.2	785.6	809.1	822.3
27.5°	744.4	788.1	762.3	795.6	812.1
30°	714.6	751.8	738.5	784.9	814.1
32.5°	686.6	713.8	718.8	780.8	785.6
35°	660.2	678.5	688.7	751.2	776.8
37.5°	631.1	636.1	663.1	738.8	763.4
40°	601.5	598.3	641.7	718.5	752.5
42.5°	569.7	568.6	618.9	708.3	725.3
45°	539.5	541.9	586.5	679.4	704.8
47.5°	508.6	511.7	555.8	647.8	679.2
50°	472.7	476.8	528.4	619.6	660.2
52.5°	433.8	441.6	501.7	593.0	633.9
55°	397.4	403.8	467.9	570.2	615.6
57.5°	364.0	367.9	432.9	541.5	575.8
60°	331.3	332.2	399.9	509.7	542.5
62.5°	293.7	295.4	366.1	472.1	516.0
65°	251.5	259.5	329.6	436.2	475.8
67.5°	212.1	226.0	292.4	403.3	424.0
70°	169.9	193.4	256.0	364.6	379.2
72.5°	131.2	158.8	218.6	321.3	341.8
75°	95.1	126.0	183.8	282.4	300.2
77.5°	64.0	95.5	151.2	239.5	263.0
80°	38.3	69.8	122.1	199.7	226.2
82.5°	19.6	46.8	94.8	167.5	191.2
85°	8.5	29.6	71.6	139.0	159.5
87.5°	2.4	16.8	52.7	112.3	129.7
90°	0.2	8.9	37.6	88.1	103.8
92.5°	0.2	4.3	26.5	66.6	78.7
95°	0.2	2.2	16.5	48.3	59.0
97.5°	0.2	1.3	10.0	34.2	43.3
100°	0.2	1.1	5.9	22.8	30.9
102.5°	0.2	1.3	4.1	14.4	20.2
105°	0.2	1.3	3.3	9.4	13.3
107.5°	0.4	1.3	3.0	7.0	9.3
110°	0.2	1.1	3.1	5.4	7.2

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CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.9	3.0	4.4	5.4
115°	0.2	0.7	2.6	4.3	4.4
117.5°	0.4	0.6	2.0	4.3	4.4
120°	0.4	0.4	1.7	4.1	4.6
122.5°	0.4	0.4	1.3	3.7	4.4
125°	0.2	0.4	1.1	2.8	3.9
127.5°	0.4	0.4	0.9	2.2	3.0
130°	0.4	0.4	0.7	1.7	2.2
132.5°	0.4	0.4	0.6	1.3	1.7
135°	0.4	0.4	0.4	0.9	1.3
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)