

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: P517260

Luminaire Tested: HVL12-1-LD4-3LO-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: P517260
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3LO-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: 2125.0 lumens
Efficiency: N/A
Efficacy: 122.8 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

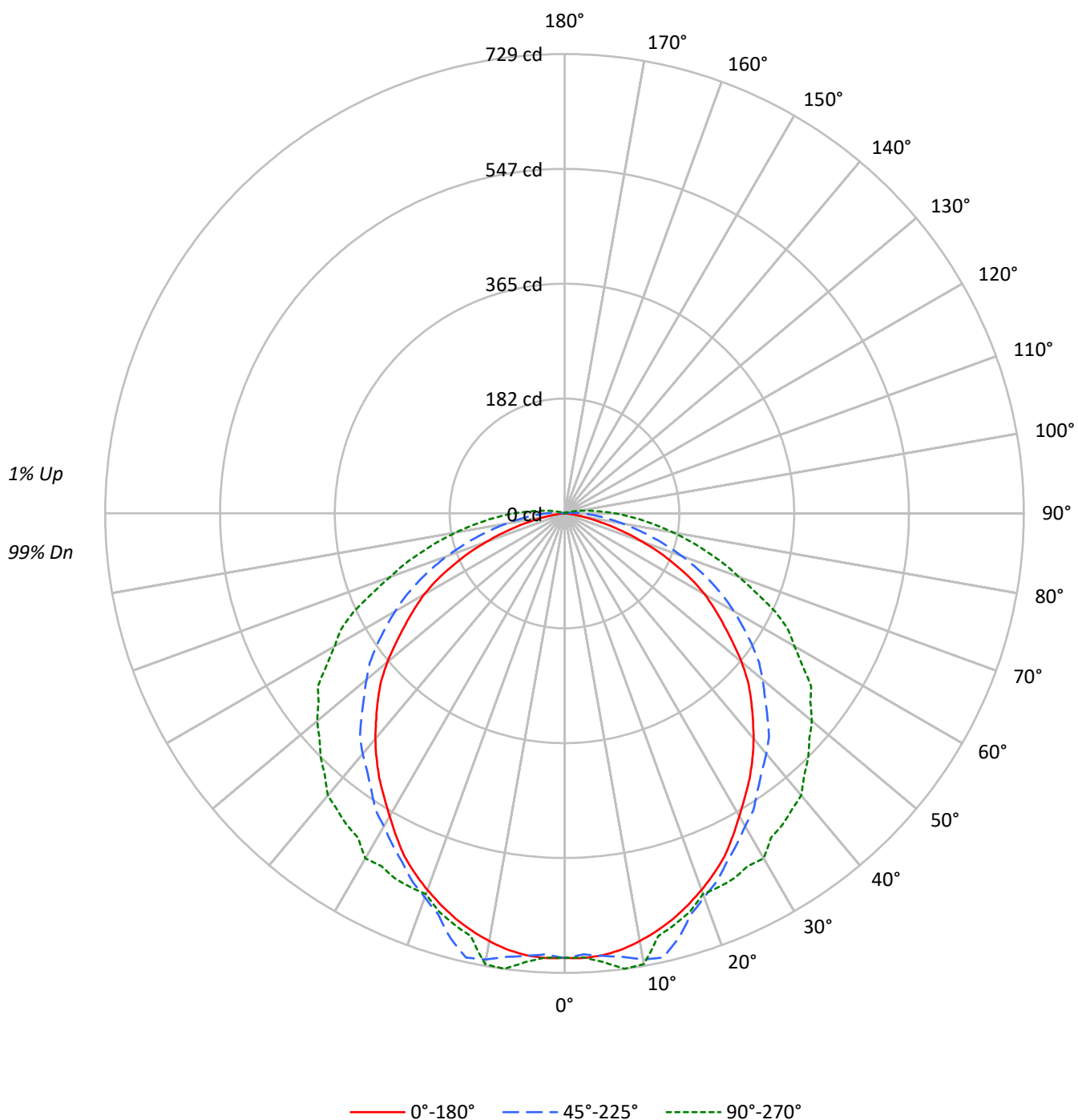
Input Watts (W): 17.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7593	7593	7593
5°	7494	7460	7610
10°	7316	7542	7711
15°	7104	7319	7207
20°	6866	6839	6941
25°	6621	6527	7035
30°	6290	6272	7167
35°	6031	6031	7097
40°	5757	5844	7203
45°	5466	5610	7140
50°	5127	5362	7160
55°	4676	5101	7244
60°	4296	4746	7036
65°	3664	4329	6931
70°	2847	3795	6355
75°	1895	3157	5976
80°	946	2514	5595
85°	281	1859	5267

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7244 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.8	3.2
10°-20°	193.1	9.1
20°-30°	287.3	13.5
30°-40°	345.3	16.2
40°-50°	363.4	17.1
50°-60°	337.2	15.9
60°-70°	266.6	12.5
70°-80°	162.9	7.7
80°-90°	71.0	3.3
90°-100°	22.1	1.0
100°-110°	5.0	0.2
110°-120°	2.0	0.1
120°-130°	1.1	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°	548.1	25.8
0°-40°	893.4	42.0
0°-60°	1594.0	75.0
0°-90°	2094.5	98.6
90°-120°	29.0	1.4
90°-150°	30.5	1.4
90°-180°	30.0	1.4
0°-180°	2125.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	705	705	705	705	705	
5°	704	702	705	713	715	67
15°	666	692	698	675	676	188
25°	601	639	610	628	638	276
35°	512	527	535	583	603	320
45°	419	421	455	528	547	323
55°	308	314	363	443	478	277
65°	195	202	256	339	369	193
75°	74	98	143	219	233	81
85°	7	23	56	108	124	10
90°	0	7	29	68	81	0
95°	0	2	13	38	46	0
105°	0	1	3	7	10	0
115°	0	1	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°	705.4	705.4	705.4	705.4	705.4
2.5°	706.2	704.4	700.5	704.2	705.2
5°	703.7	702.2	704.7	712.6	714.6
7.5°	697.8	703.2	709.7	724.1	728.7
10°	689.0	699.3	718.7	731.0	726.2
12.5°	678.4	695.9	721.9	698.1	687.0
15°	666.0	691.6	698.3	675.2	675.6
17.5°	651.5	688.0	667.2	666.6	662.4
20°	635.8	675.9	648.3	647.2	642.7
22.5°	619.0	660.0	631.7	629.4	641.4
25°	600.8	639.1	610.0	628.2	638.4
27.5°	577.9	611.8	591.9	617.7	630.5
30°	554.8	583.7	573.3	609.4	632.1
32.5°	533.1	554.2	558.1	606.2	610.0
35°	512.5	526.8	534.7	583.2	603.1
37.5°	490.0	493.9	514.8	573.6	592.7
40°	467.0	464.6	498.2	557.8	584.3
42.5°	442.3	441.4	480.5	549.9	563.1
45°	418.9	420.7	455.4	527.5	547.2
47.5°	394.9	397.3	431.5	502.9	527.3
50°	367.0	370.2	410.2	481.1	512.5
52.5°	336.8	342.8	389.5	460.4	492.1
55°	308.5	313.5	363.3	442.7	477.9
57.5°	282.6	285.7	336.1	420.4	447.0
60°	257.2	257.9	310.5	395.7	421.2
62.5°	228.0	229.3	284.2	366.6	400.6
65°	195.3	201.5	255.9	338.7	369.4
67.5°	164.7	175.4	227.0	313.1	329.2
70°	131.9	150.2	198.7	283.1	294.4
72.5°	101.9	123.3	169.7	249.4	265.4
75°	73.9	97.9	142.7	219.3	233.1
77.5°	49.7	74.1	117.4	185.9	204.2
80°	29.7	54.2	94.8	155.0	175.6
82.5°	15.2	36.4	73.6	130.0	148.4
85°	6.6	23.0	55.6	107.9	123.9
87.5°	1.9	13.1	41.0	87.2	100.7
90°	0.1	6.9	29.2	68.4	80.6
92.5°	0.1	3.3	20.5	51.7	61.1
95°	0.1	1.7	12.8	37.5	45.8
97.5°	0.1	1.0	7.8	26.6	33.6
100°	0.1	0.9	4.6	17.7	24.0
102.5°	0.1	1.0	3.2	11.2	15.7
105°	0.1	1.0	2.6	7.3	10.3
107.5°	0.3	1.0	2.3	5.5	7.2
110°	0.1	0.9	2.4	4.2	5.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.3	3.4	4.2
115°	0.1	0.6	2.0	3.3	3.4
117.5°	0.3	0.4	1.6	3.3	3.4
120°	0.3	0.3	1.3	3.2	3.6
122.5°	0.3	0.3	1.0	2.9	3.4
125°	0.1	0.3	0.9	2.2	3.0
127.5°	0.3	0.3	0.7	1.7	2.3
130°	0.3	0.3	0.6	1.3	1.7
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)