

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: P517179

Luminaire Tested: HVL12-1-LD4-1STD-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: P517179
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-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: 792.0 lumens
Efficiency: N/A
Efficacy: 94.3 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

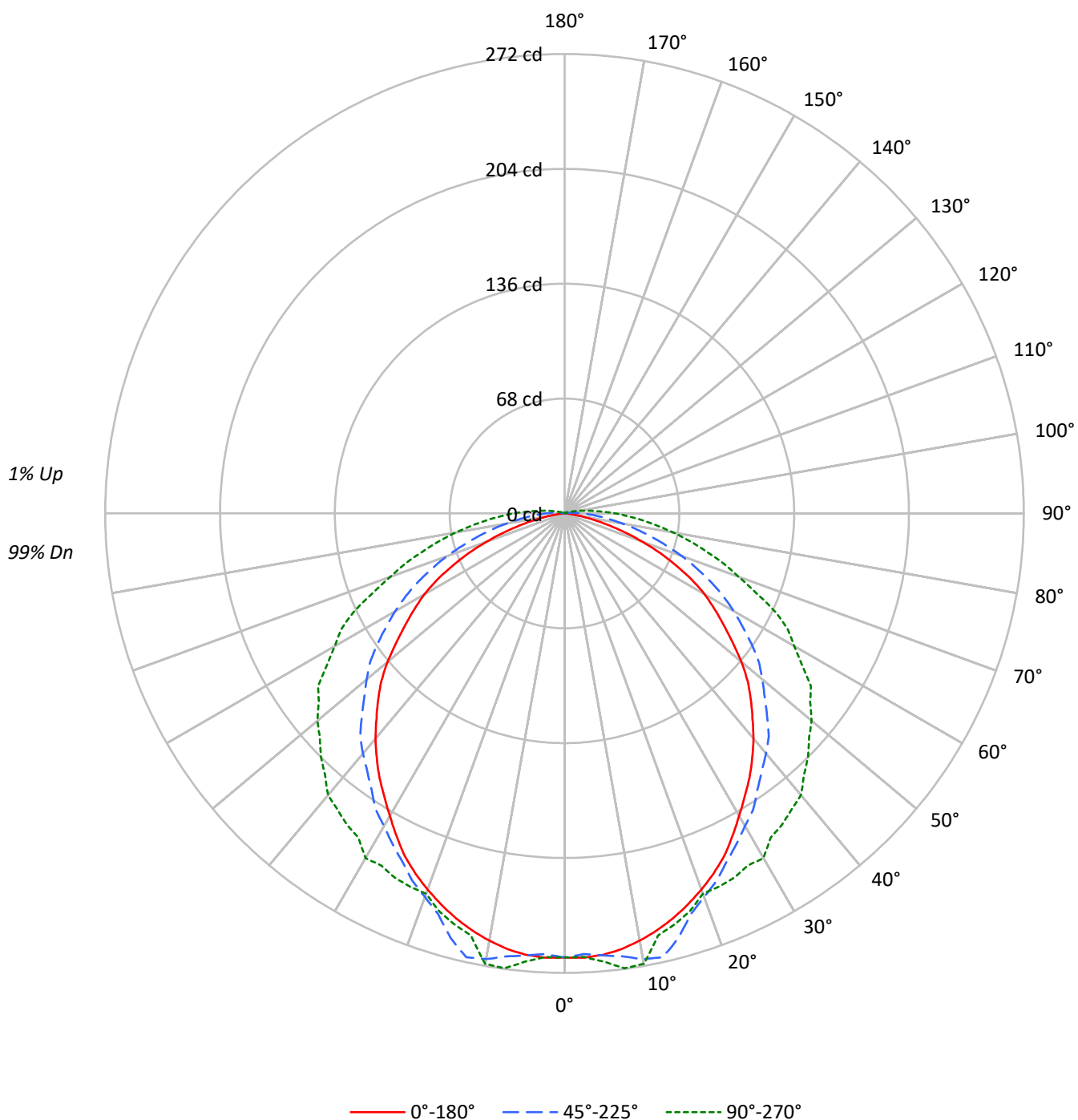
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	44	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	33	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°	2830	2830	2830
5°	2793	2780	2836
10°	2727	2811	2874
15°	2648	2728	2686
20°	2559	2549	2588
25°	2467	2432	2622
30°	2345	2338	2671
35°	2247	2248	2645
40°	2146	2178	2685
45°	2037	2090	2660
50°	1911	1999	2668
55°	1743	1901	2700
60°	1602	1769	2623
65°	1366	1614	2584
70°	1062	1415	2368
75°	705	1177	2228
80°	354	936	2084
85°	106	692	1964

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2700 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.3	3.2
10°-20°	72.0	9.1
20°-30°	107.1	13.5
30°-40°	128.7	16.2
40°-50°	135.5	17.1
50°-60°	125.7	15.9
60°-70°	99.4	12.5
70°-80°	60.7	7.7
80°-90°	26.5	3.3
90°-100°	8.2	1.0
100°-110°	1.9	0.2
110°-120°	0.7	0.1
120°-130°	0.4	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°	204.3	25.8
0°-40°	333.0	42.0
0°-60°	594.1	75.0
0°-90°	780.7	98.6
90°-120°	10.9	1.4
90°-150°	11.4	1.4
90°-180°	11.0	1.4
0°-180°	792.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	263	263	263	263	263	
5°	262	262	263	266	266	25
15°	248	258	260	252	252	70
25°	224	238	227	234	238	103
35°	191	196	199	217	225	119
45°	156	157	170	197	204	120
55°	115	117	135	165	178	103
65°	73	75	95	126	138	72
75°	28	36	53	82	87	30
85°	2	9	21	40	46	4
90°	0	3	11	26	30	0
95°	0	1	5	14	17	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	262.9	262.9	262.9	262.9	262.9
2.5°	263.2	262.5	261.1	262.5	262.8
5°	262.3	261.7	262.6	265.6	266.3
7.5°	260.1	262.1	264.5	269.9	271.6
10°	256.8	260.7	267.9	272.4	270.7
12.5°	252.8	259.4	269.1	260.2	256.0
15°	248.2	257.8	260.3	251.7	251.8
17.5°	242.8	256.4	248.7	248.4	246.9
20°	237.0	251.9	241.6	241.2	239.6
22.5°	230.7	246.0	235.4	234.6	239.1
25°	223.9	238.2	227.3	234.1	237.9
27.5°	215.4	228.0	220.6	230.2	235.0
30°	206.8	217.5	213.7	227.1	235.6
32.5°	198.7	206.6	208.0	225.9	227.3
35°	191.0	196.3	199.3	217.4	224.8
37.5°	182.6	184.1	191.9	213.8	220.9
40°	174.1	173.1	185.7	207.9	217.8
42.5°	164.8	164.5	179.1	205.0	209.9
45°	156.1	156.8	169.7	196.6	203.9
47.5°	147.2	148.1	160.8	187.4	196.5
50°	136.8	138.0	152.9	179.3	191.0
52.5°	125.5	127.8	145.2	171.6	183.4
55°	115.0	116.9	135.4	165.0	178.1
57.5°	105.3	106.5	125.3	156.7	166.6
60°	95.9	96.1	115.7	147.5	157.0
62.5°	85.0	85.5	105.9	136.6	149.3
65°	72.8	75.1	95.4	126.2	137.7
67.5°	61.4	65.4	84.6	116.7	122.7
70°	49.2	56.0	74.1	105.5	109.7
72.5°	38.0	46.0	63.2	93.0	98.9
75°	27.5	36.5	53.2	81.7	86.9
77.5°	18.5	27.6	43.8	69.3	76.1
80°	11.1	20.2	35.3	57.8	65.4
82.5°	5.7	13.5	27.4	48.5	55.3
85°	2.5	8.6	20.7	40.2	46.2
87.5°	0.7	4.9	15.3	32.5	37.5
90°	0.1	2.6	10.9	25.5	30.0
92.5°	0.1	1.2	7.7	19.3	22.8
95°	0.1	0.6	4.8	14.0	17.1
97.5°	0.1	0.4	2.9	9.9	12.5
100°	0.1	0.3	1.7	6.6	8.9
102.5°	0.1	0.4	1.2	4.2	5.8
105°	0.1	0.4	1.0	2.7	3.9
107.5°	0.1	0.4	0.9	2.0	2.7
110°	0.1	0.3	0.9	1.6	2.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.9	1.3	1.6
115°	0.1	0.2	0.7	1.2	1.3
117.5°	0.1	0.2	0.6	1.2	1.3
120°	0.1	0.1	0.5	1.2	1.3
122.5°	0.1	0.1	0.4	1.1	1.3
125°	0.1	0.1	0.3	0.8	1.1
127.5°	0.1	0.1	0.3	0.6	0.9
130°	0.1	0.1	0.2	0.5	0.6
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)