

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: P517215

Luminaire Tested: HVL12-1-LD4-2LO-35-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: P517215
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2LO-35-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1183.1 lumens
Efficiency: N/A
Efficacy: 100.3 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

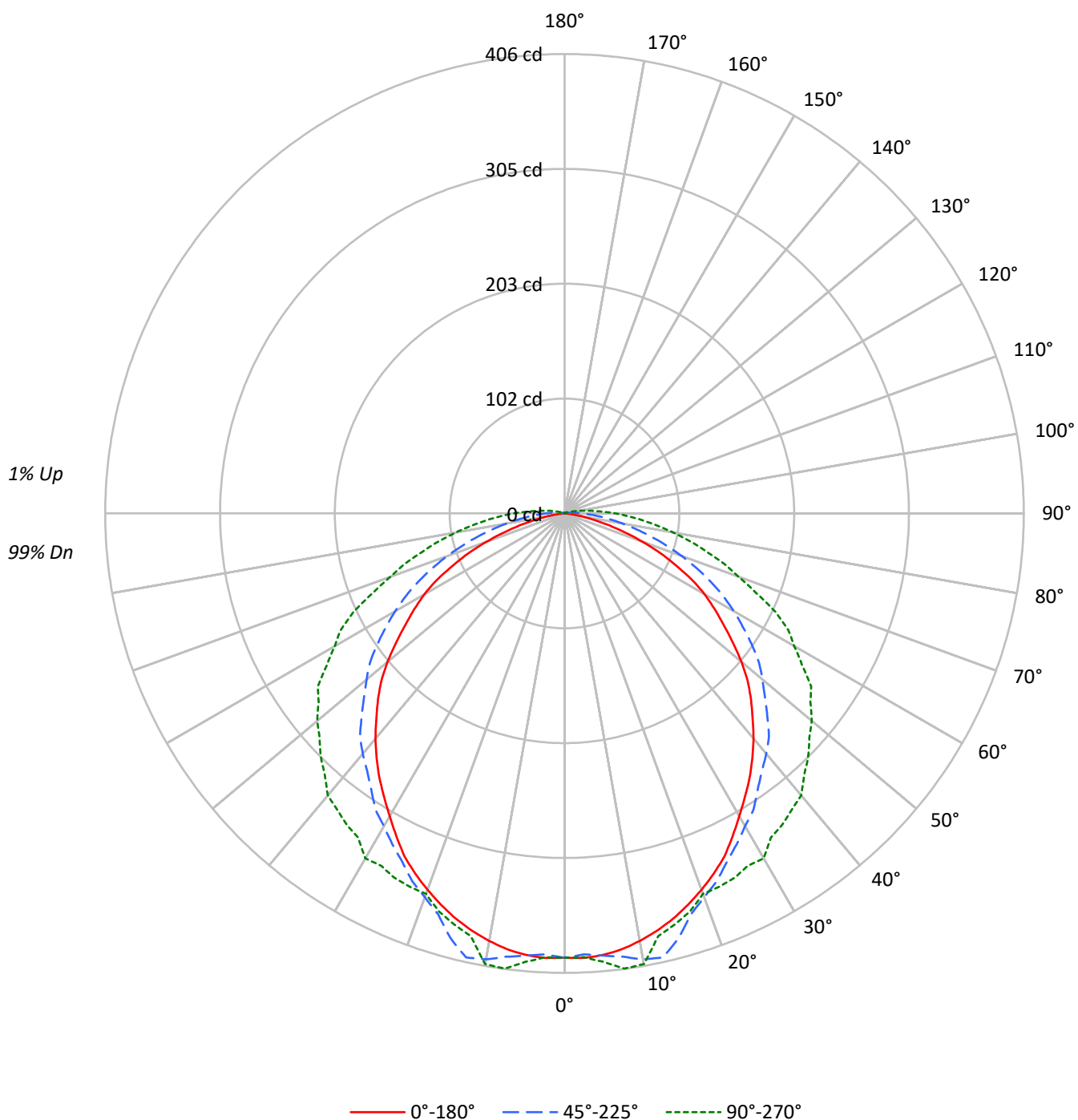
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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	44	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	33	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°	4227	4227	4227
5°	4171	4153	4236
10°	4073	4199	4293
15°	3955	4075	4012
20°	3823	3807	3864
25°	3686	3634	3917
30°	3502	3492	3990
35°	3357	3358	3950
40°	3205	3253	4010
45°	3043	3123	3974
50°	2854	2986	3986
55°	2603	2839	4033
60°	2392	2643	3917
65°	2039	2411	3859
70°	1584	2112	3538
75°	1054	1757	3328
80°	529	1400	3116
85°	157	1036	2933

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4033 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	3.2
10°-20°	107.5	9.1
20°-30°	159.9	13.5
30°-40°	192.2	16.2
40°-50°	202.3	17.1
50°-60°	187.7	15.9
60°-70°	148.4	12.5
70°-80°	90.7	7.7
80°-90°	39.5	3.3
90°-100°	12.3	1.0
100°-110°	2.8	0.2
110°-120°	1.1	0.1
120°-130°	0.6	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°	305.1	25.8
0°-40°	497.4	42.0
0°-60°	887.4	75.0
0°-90°	1166.1	98.6
90°-120°	16.2	1.4
90°-150°	17.0	1.4
90°-180°	17.0	1.4
0°-180°	1183.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	393	393	393	393	393	
5°	392	391	392	397	398	37
15°	371	385	389	376	376	104
25°	334	356	340	350	355	154
35°	285	293	298	325	336	178
45°	233	234	254	294	305	180
55°	172	174	202	246	266	154
65°	109	112	142	188	206	108
75°	41	54	79	122	130	45
85°	4	13	31	60	69	6
90°	0	4	16	38	45	0
95°	0	1	7	21	26	0
105°	0	1	1	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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°	392.7	392.7	392.7	392.7	392.7
2.5°	393.2	392.1	390.0	392.1	392.6
5°	391.7	390.9	392.3	396.7	397.8
7.5°	388.5	391.5	395.1	403.1	405.7
10°	383.6	389.3	400.1	406.9	404.3
12.5°	377.7	387.4	401.9	388.6	382.5
15°	370.8	385.0	388.8	375.9	376.1
17.5°	362.7	383.0	371.4	371.1	368.8
20°	354.0	376.3	360.9	360.3	357.8
22.5°	344.6	367.4	351.7	350.4	357.1
25°	334.5	355.8	339.6	349.7	355.4
27.5°	321.7	340.6	329.5	343.9	351.0
30°	308.9	324.9	319.2	339.3	351.9
32.5°	296.8	308.5	310.7	337.5	339.6
35°	285.3	293.3	297.7	324.7	335.7
37.5°	272.8	274.9	286.6	319.3	330.0
40°	260.0	258.6	277.3	310.5	325.3
42.5°	246.2	245.7	267.5	306.1	313.5
45°	233.2	234.2	253.5	293.7	304.6
47.5°	219.8	221.2	240.2	280.0	293.6
50°	204.3	206.1	228.4	267.8	285.3
52.5°	187.5	190.9	216.9	256.3	274.0
55°	171.7	174.5	202.2	246.5	266.1
57.5°	157.3	159.0	187.1	234.1	248.9
60°	143.2	143.6	172.9	220.3	234.5
62.5°	127.0	127.7	158.2	204.1	223.0
65°	108.7	112.2	142.5	188.5	205.7
67.5°	91.7	97.7	126.4	174.3	183.3
70°	73.4	83.6	110.6	157.6	163.9
72.5°	56.7	68.6	94.5	138.9	147.7
75°	41.1	54.5	79.4	122.1	129.8
77.5°	27.7	41.3	65.4	103.5	113.7
80°	16.6	30.2	52.8	86.3	97.8
82.5°	8.5	20.2	41.0	72.4	82.6
85°	3.7	12.8	31.0	60.1	69.0
87.5°	1.0	7.3	22.8	48.6	56.1
90°	0.1	3.8	16.2	38.1	44.9
92.5°	0.1	1.8	11.4	28.8	34.0
95°	0.1	1.0	7.1	20.9	25.5
97.5°	0.1	0.6	4.3	14.8	18.7
100°	0.1	0.5	2.6	9.8	13.4
102.5°	0.1	0.6	1.8	6.2	8.7
105°	0.1	0.6	1.4	4.1	5.8
107.5°	0.2	0.6	1.3	3.0	4.0
110°	0.1	0.5	1.4	2.3	3.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	1.9	2.3
115°	0.1	0.3	1.1	1.8	1.9
117.5°	0.2	0.2	0.9	1.8	1.9
120°	0.2	0.2	0.7	1.8	2.0
122.5°	0.2	0.2	0.6	1.6	1.9
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)