

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: P517152

Luminaire Tested: HVL12-1-LD4-1HI-35-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: P517152
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1HI-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1235.0 lumens
Efficiency: N/A
Efficacy: 112.3 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

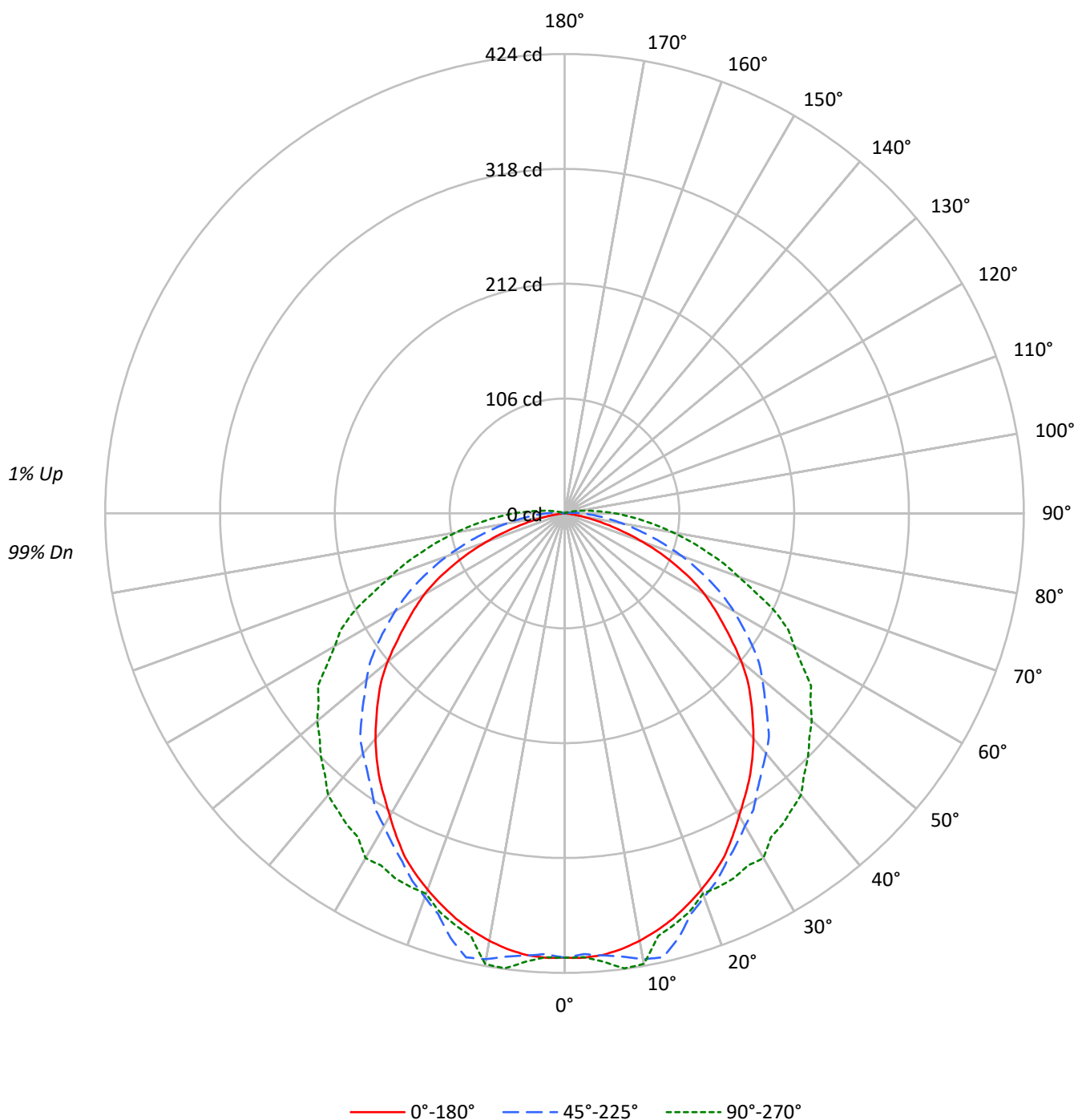
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	4413	4413	4413
5°	4356	4335	4423
10°	4251	4383	4482
15°	4129	4254	4189
20°	3990	3975	4034
25°	3848	3793	4088
30°	3655	3645	4166
35°	3505	3504	4124
40°	3346	3396	4186
45°	3176	3259	4149
50°	2980	3117	4162
55°	2718	2964	4211
60°	2497	2759	4089
65°	2130	2516	4028
70°	1656	2206	3693
75°	1100	1834	3474
80°	551	1461	3250
85°	162	1080	3061

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4211 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.4	3.2
10°-20°	112.2	9.1
20°-30°	167.0	13.5
30°-40°	200.7	16.2
40°-50°	211.2	17.1
50°-60°	196.0	15.9
60°-70°	155.0	12.5
70°-80°	94.7	7.7
80°-90°	41.2	3.3
90°-100°	12.8	1.0
100°-110°	2.9	0.2
110°-120°	1.2	0.1
120°-130°	0.7	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°	318.6	25.8
0°-40°	519.2	42.0
0°-60°	926.4	75.0
0°-90°	1217.3	98.6
90°-120°	16.9	1.4
90°-150°	17.7	1.4
90°-180°	18.0	1.5
0°-180°	1235.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	410	410	410	410	410	
5°	409	408	410	414	415	39
15°	387	402	406	392	393	109
25°	349	372	354	365	371	160
35°	298	306	311	339	350	186
45°	243	244	265	307	318	188
55°	179	182	211	257	278	161
65°	114	117	149	197	215	112
75°	43	57	83	127	136	47
85°	4	13	32	63	72	6
90°	0	4	17	40	47	0
95°	0	1	7	22	27	0
105°	0	1	2	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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CATALOG NUMBER: HVL12-1-LD4-1HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	410.0	410.0	410.0	410.0	410.0
2.5°	410.5	409.4	407.1	409.3	409.9
5°	409.0	408.1	409.5	414.1	415.3
7.5°	405.5	408.7	412.5	420.8	423.5
10°	400.4	406.4	417.7	424.8	422.1
12.5°	394.3	404.4	419.6	405.7	399.3
15°	387.1	401.9	405.9	392.4	392.7
17.5°	378.6	399.8	387.7	387.4	385.0
20°	369.5	392.8	376.8	376.1	373.5
22.5°	359.8	383.6	367.1	365.8	372.8
25°	349.2	371.5	354.5	365.1	371.0
27.5°	335.9	355.6	344.0	359.0	366.4
30°	322.4	339.2	333.2	354.2	367.4
32.5°	309.8	322.1	324.4	352.3	354.5
35°	297.9	306.1	310.7	339.0	350.5
37.5°	284.8	287.0	299.2	333.4	344.5
40°	271.4	270.0	289.5	324.2	339.6
42.5°	257.0	256.5	279.3	319.6	327.3
45°	243.4	244.5	264.6	306.6	318.0
47.5°	229.5	230.9	250.8	292.3	306.5
50°	213.3	215.1	238.4	279.6	297.9
52.5°	195.7	199.3	226.4	267.6	286.0
55°	179.3	182.2	211.1	257.3	277.8
57.5°	164.3	166.0	195.3	244.4	259.8
60°	149.5	149.9	180.5	230.0	244.8
62.5°	132.5	133.3	165.2	213.0	232.8
65°	113.5	117.1	148.7	196.8	214.7
67.5°	95.7	102.0	131.9	182.0	191.3
70°	76.7	87.3	115.5	164.5	171.1
72.5°	59.2	71.7	98.6	145.0	154.2
75°	42.9	56.9	82.9	127.4	135.5
77.5°	28.9	43.1	68.2	108.1	118.7
80°	17.3	31.5	55.1	90.1	102.0
82.5°	8.9	21.1	42.8	75.6	86.3
85°	3.8	13.4	32.3	62.7	72.0
87.5°	1.1	7.6	23.8	50.7	58.5
90°	0.1	4.0	17.0	39.8	46.8
92.5°	0.1	1.9	11.9	30.1	35.5
95°	0.1	1.0	7.4	21.8	26.6
97.5°	0.1	0.6	4.5	15.4	19.5
100°	0.1	0.5	2.7	10.3	13.9
102.5°	0.1	0.6	1.8	6.5	9.1
105°	0.1	0.6	1.5	4.3	6.0
107.5°	0.2	0.6	1.3	3.2	4.2
110°	0.1	0.5	1.4	2.4	3.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	2.0	2.4
115°	0.1	0.3	1.2	1.9	2.0
117.5°	0.2	0.3	0.9	1.9	2.0
120°	0.2	0.2	0.8	1.8	2.1
122.5°	0.2	0.2	0.6	1.7	2.0
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.8	1.0
132.5°	0.2	0.2	0.3	0.6	0.8
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)