

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: P517227

Luminaire Tested: HVL12-1-LD4-2STD-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: P517227
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2STD-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: 1504.0 lumens
Efficiency: N/A
Efficacy: 89.5 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

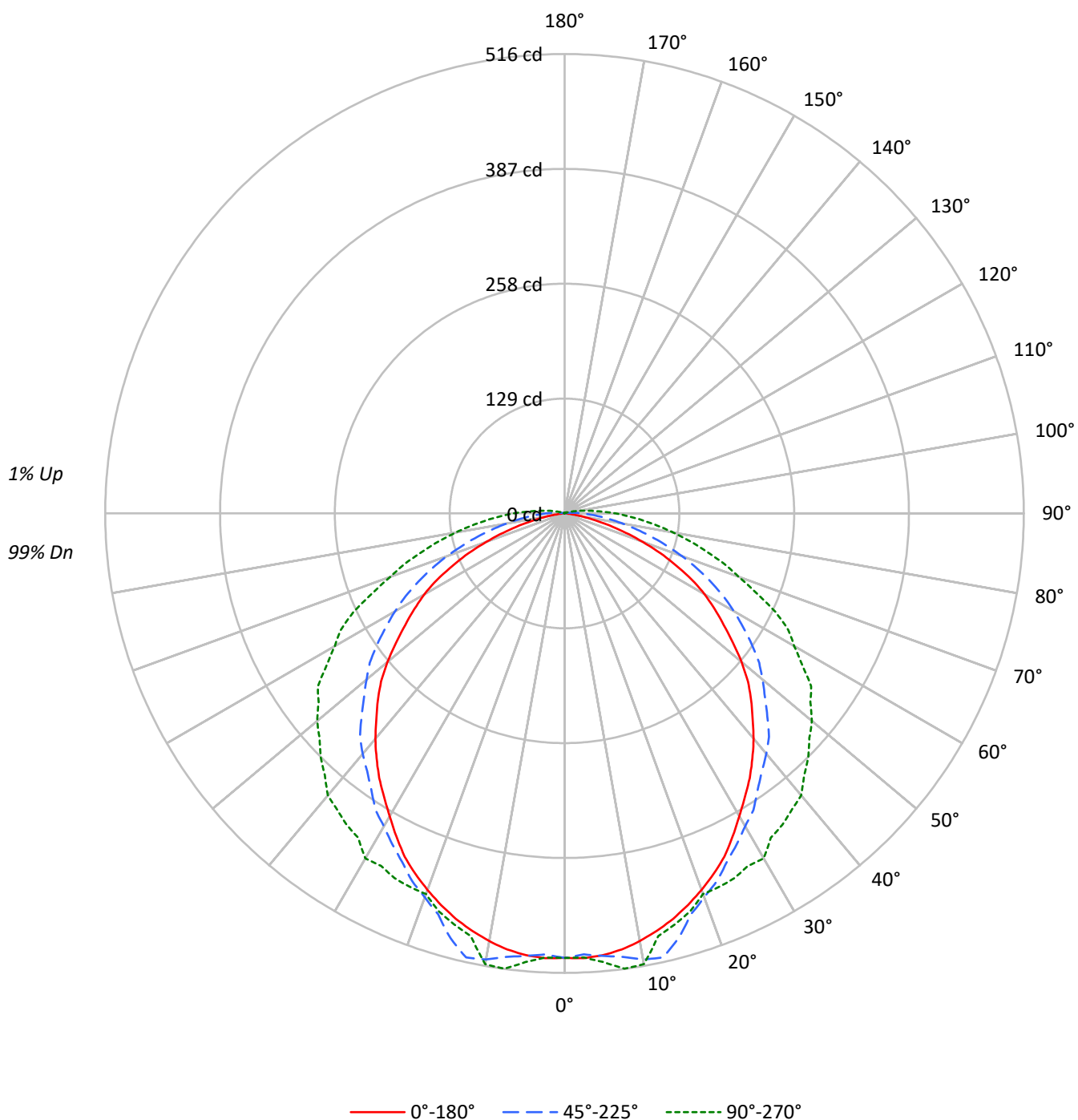
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
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	45	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°	5373	5373	5373
5°	5304	5280	5387
10°	5178	5338	5458
15°	5028	5181	5101
20°	4860	4841	4913
25°	4686	4619	4980
30°	4452	4439	5073
35°	4269	4268	5022
40°	4074	4136	5097
45°	3869	3970	5053
50°	3628	3796	5068
55°	3310	3610	5128
60°	3040	3360	4980
65°	2593	3064	4906
70°	2016	2687	4498
75°	1341	2234	4230
80°	672	1780	3961
85°	200	1317	3728

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 5128 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.0	3.2
10°-20°	136.6	9.1
20°-30°	203.3	13.5
30°-40°	244.4	16.2
40°-50°	257.2	17.1
50°-60°	238.7	15.9
60°-70°	188.7	12.5
70°-80°	115.3	7.7
80°-90°	50.2	3.3
90°-100°	15.6	1.0
100°-110°	3.5	0.2
110°-120°	1.4	0.1
120°-130°	0.8	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°	387.9	25.8
0°-40°	632.3	42.0
0°-60°	1128.2	75.0
0°-90°	1482.5	98.6
90°-120°	20.5	1.4
90°-150°	21.5	1.4
90°-180°	22.0	1.5
0°-180°	1504.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	499	499	499	499	499	
5°	498	497	499	504	506	47
15°	471	490	494	478	478	133
25°	425	452	432	445	452	195
35°	363	373	378	413	427	227
45°	296	298	322	373	387	229
55°	218	222	257	313	338	196
65°	138	143	181	240	262	137
75°	52	69	101	155	165	57
85°	5	16	39	76	88	7
90°	0	5	21	48	57	0
95°	0	1	9	26	32	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	2	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°	499.2	499.2	499.2	499.2	499.2
2.5°	499.9	498.5	495.8	498.4	499.1
5°	498.0	497.0	498.7	504.3	505.8
7.5°	493.9	497.7	502.3	512.5	515.7
10°	487.7	495.0	508.7	517.3	514.0
12.5°	480.1	492.5	510.9	494.1	486.2
15°	471.4	489.5	494.3	477.9	478.2
17.5°	461.1	486.9	472.2	471.8	468.8
20°	450.0	478.4	458.9	458.1	454.9
22.5°	438.1	467.1	447.1	445.4	454.0
25°	425.2	452.4	431.7	444.6	451.9
27.5°	409.0	433.0	418.9	437.2	446.3
30°	392.7	413.1	405.8	431.3	447.4
32.5°	377.3	392.3	395.0	429.1	431.7
35°	362.8	372.8	378.4	412.8	426.8
37.5°	346.8	349.5	364.4	406.0	419.5
40°	330.5	328.8	352.6	394.8	413.5
42.5°	313.0	312.4	340.1	389.2	398.6
45°	296.5	297.8	322.3	373.3	387.3
47.5°	279.5	281.2	305.4	356.0	373.2
50°	259.7	262.0	290.4	340.5	362.8
52.5°	238.4	242.7	275.7	325.8	348.3
55°	218.4	221.9	257.1	313.3	338.3
57.5°	200.0	202.2	237.9	297.6	316.4
60°	182.0	182.6	219.8	280.1	298.1
62.5°	161.4	162.3	201.2	259.4	283.5
65°	138.2	142.6	181.1	239.7	261.5
67.5°	116.5	124.2	160.7	221.6	233.0
70°	93.4	106.3	140.7	200.3	208.4
72.5°	72.1	87.3	120.1	176.6	187.8
75°	52.3	69.3	101.0	155.2	165.0
77.5°	35.2	52.5	83.1	131.6	144.5
80°	21.1	38.3	67.1	109.7	124.3
82.5°	10.8	25.7	52.1	92.0	105.1
85°	4.7	16.3	39.4	76.4	87.7
87.5°	1.3	9.3	29.0	61.7	71.3
90°	0.1	4.9	20.6	48.4	57.1
92.5°	0.1	2.3	14.5	36.6	43.2
95°	0.1	1.2	9.1	26.5	32.4
97.5°	0.1	0.7	5.5	18.8	23.8
100°	0.1	0.6	3.3	12.5	17.0
102.5°	0.1	0.7	2.2	7.9	11.1
105°	0.1	0.7	1.8	5.2	7.3
107.5°	0.2	0.7	1.6	3.9	5.1
110°	0.1	0.6	1.7	2.9	4.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.6	2.4	2.9
115°	0.1	0.4	1.4	2.3	2.4
117.5°	0.2	0.3	1.1	2.3	2.4
120°	0.2	0.2	0.9	2.2	2.5
122.5°	0.2	0.2	0.7	2.0	2.4
125°	0.1	0.2	0.6	1.5	2.1
127.5°	0.2	0.2	0.5	1.2	1.6
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)