

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: P517315

Luminaire Tested: HVL12-2-LD4-1LO-40-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: P517315
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-40-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1264.0 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

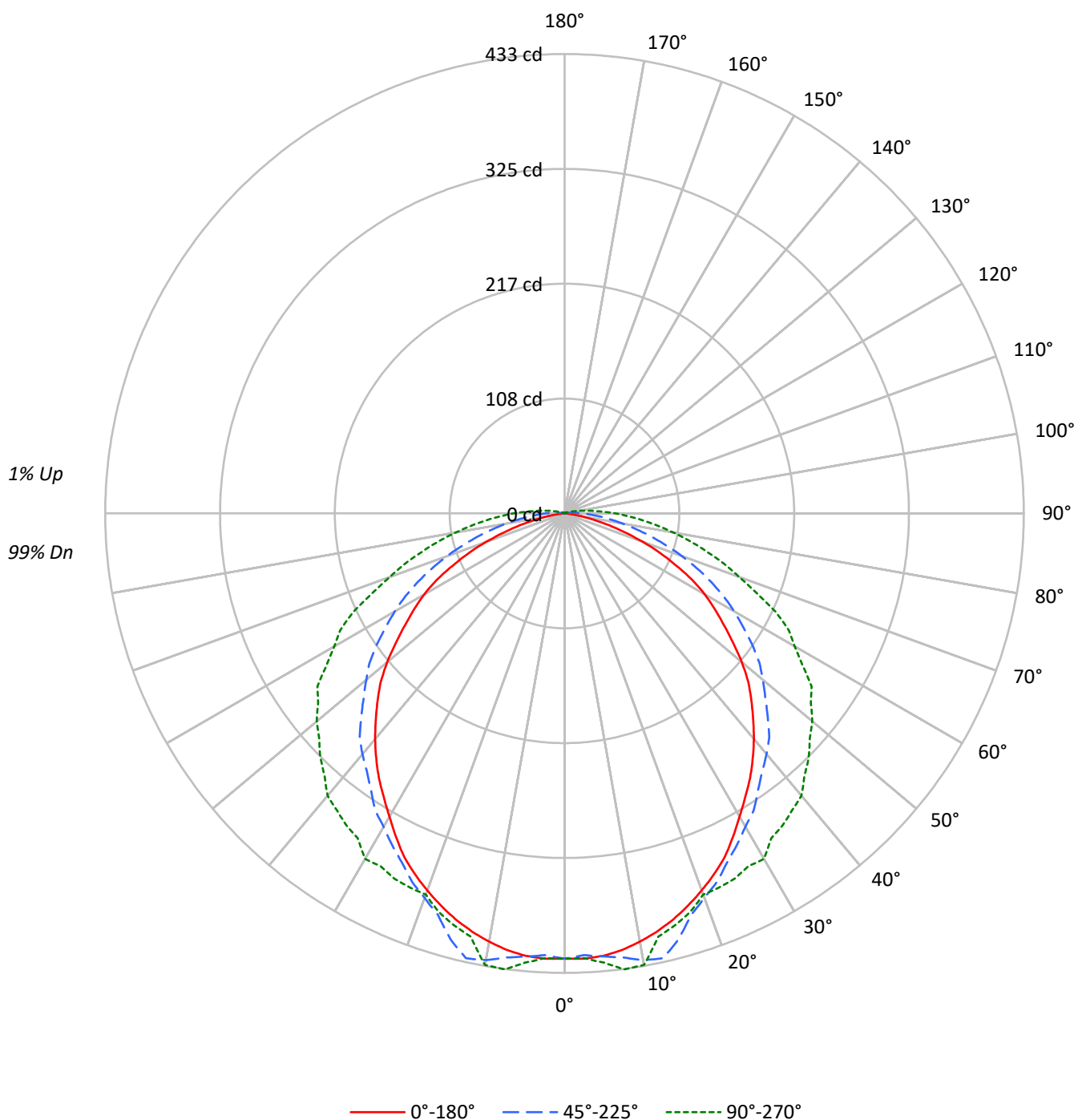
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	39	67	54	46	39	52	44	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2258	2258	2258
5°	2245	2230	2263
10°	2207	2266	2293
15°	2159	2210	2144
20°	2102	2075	2064
25°	2043	1990	2092
30°	1957	1923	2132
35°	1893	1859	2110
40°	1824	1813	2142
45°	1750	1752	2123
50°	1663	1687	2130
55°	1539	1619	2155
60°	1439	1522	2092
65°	1255	1405	2061
70°	1005	1252	1890
75°	696	1064	1777
80°	373	873	1663
85°	123	677	1566

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2155 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.3	3.2
10°-20°	114.8	9.1
20°-30°	170.9	13.5
30°-40°	205.4	16.2
40°-50°	216.2	17.1
50°-60°	200.6	15.9
60°-70°	158.6	12.5
70°-80°	96.9	7.7
80°-90°	42.2	3.3
90°-100°	13.1	1.0
100°-110°	3.0	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°	326.0	25.8
0°-40°	531.4	42.0
0°-60°	948.2	75.0
0°-90°	1245.9	98.6
90°-120°	17.3	1.4
90°-150°	18.2	1.4
90°-180°	18.0	1.4
0°-180°	1264.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	420	420	420	420	420	
5°	419	418	419	424	425	40
15°	396	411	415	402	402	112
25°	357	380	363	374	380	164
35°	305	313	318	347	359	191
45°	249	250	271	314	326	192
55°	184	186	216	263	284	165
65°	116	120	152	202	220	115
75°	44	58	85	130	139	48
85°	4	14	33	64	74	6
90°	0	4	17	41	48	0
95°	0	1	8	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	419.6	419.6	419.6	419.6	419.6
2.5°	420.1	419.0	416.7	418.9	419.5
5°	418.6	417.7	419.2	423.9	425.0
7.5°	415.0	418.3	422.1	430.7	433.4
10°	409.8	416.0	427.5	434.8	432.0
12.5°	403.5	413.9	429.4	415.2	408.6
15°	396.2	411.4	415.4	401.6	401.9
17.5°	387.5	409.2	396.8	396.5	394.0
20°	378.2	402.1	385.6	385.0	382.3
22.5°	368.2	392.6	375.7	374.4	381.5
25°	357.4	380.2	362.8	373.7	379.7
27.5°	343.8	363.9	352.1	367.4	375.0
30°	330.0	347.2	341.0	362.5	376.0
32.5°	317.1	329.7	332.0	360.6	362.8
35°	304.9	313.3	318.0	346.9	358.7
37.5°	291.5	293.8	306.2	341.2	352.6
40°	277.8	276.3	296.3	331.8	347.5
42.5°	263.1	262.6	285.8	327.1	335.0
45°	249.1	250.3	270.9	313.8	325.5
47.5°	234.9	236.3	256.7	299.2	313.7
50°	218.3	220.2	244.0	286.2	304.9
52.5°	200.3	203.9	231.7	273.9	292.7
55°	183.5	186.5	216.1	263.3	284.3
57.5°	168.1	169.9	199.9	250.1	265.9
60°	153.0	153.4	184.7	235.4	250.5
62.5°	135.6	136.4	169.1	218.0	238.3
65°	116.2	119.8	152.2	201.5	219.7
67.5°	98.0	104.4	135.0	186.2	195.8
70°	78.5	89.3	118.2	168.4	175.1
72.5°	60.6	73.3	100.9	148.4	157.9
75°	43.9	58.2	84.9	130.4	138.6
77.5°	29.6	44.1	69.8	110.6	121.5
80°	17.7	32.2	56.4	92.2	104.4
82.5°	9.1	21.6	43.8	77.4	88.3
85°	3.9	13.7	33.1	64.2	73.7
87.5°	1.1	7.8	24.4	51.9	59.9
90°	0.1	4.1	17.4	40.7	47.9
92.5°	0.1	2.0	12.2	30.8	36.3
95°	0.1	1.0	7.6	22.3	27.3
97.5°	0.1	0.6	4.6	15.8	20.0
100°	0.1	0.5	2.7	10.5	14.3
102.5°	0.1	0.6	1.9	6.7	9.3
105°	0.1	0.6	1.5	4.4	6.2
107.5°	0.2	0.6	1.4	3.2	4.3
110°	0.1	0.5	1.5	2.5	3.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.4	2.1	2.5
115°	0.1	0.3	1.2	2.0	2.1
117.5°	0.2	0.3	0.9	2.0	2.1
120°	0.2	0.2	0.8	1.9	2.1
122.5°	0.2	0.2	0.6	1.7	2.1
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.4
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)