

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: P517356

Luminaire Tested: HVL12-2-LD4-2LO-30-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: P517356
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2LO-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2695.0 lumens
Efficiency: N/A
Efficacy: 113.7 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

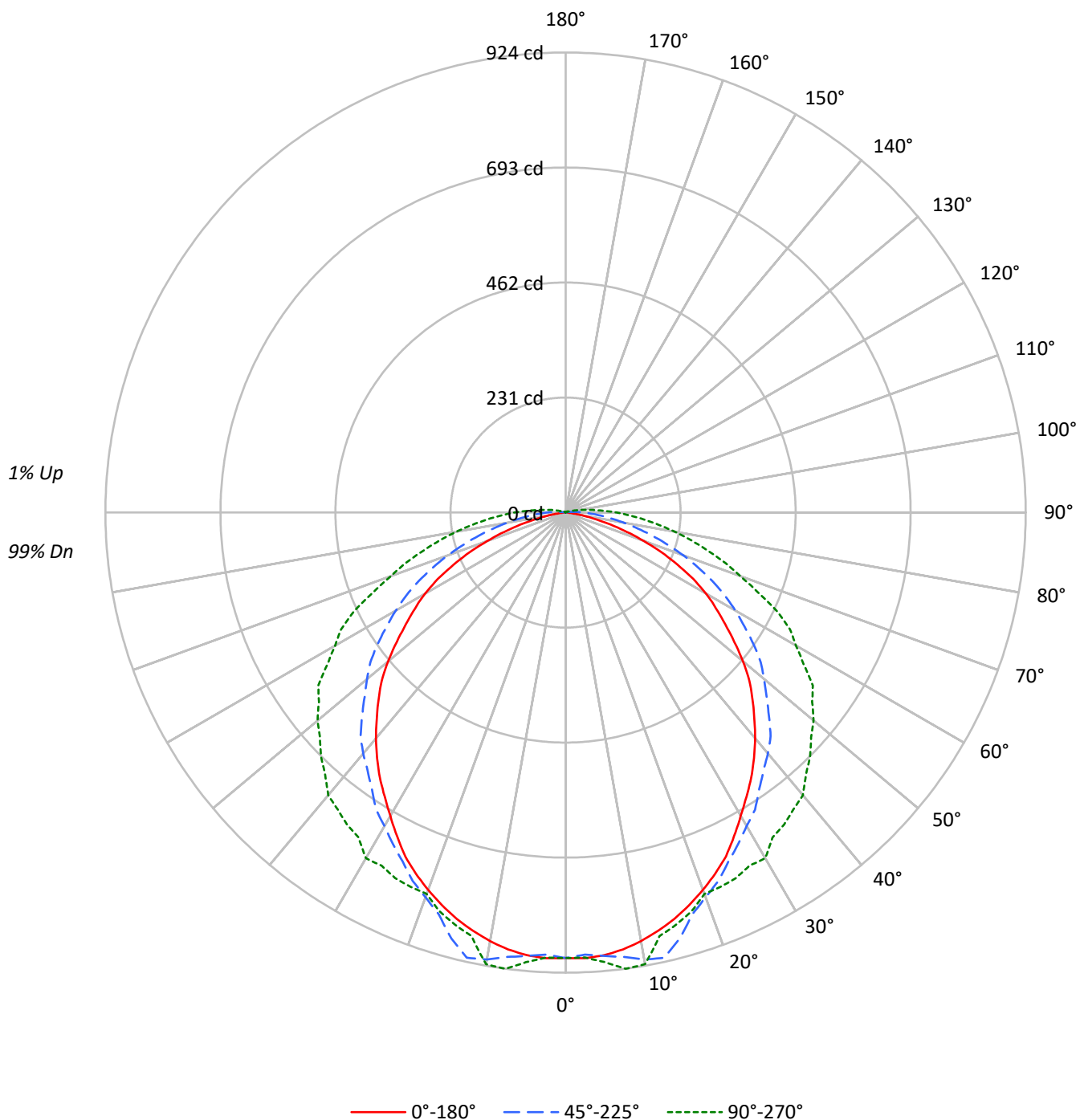
Input Watts (W): 23.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4815	4815	4815
5°	4786	4755	4826
10°	4706	4831	4890
15°	4604	4712	4570
20°	4483	4424	4401
25°	4355	4244	4461
30°	4172	4100	4545
35°	4035	3964	4500
40°	3889	3865	4567
45°	3732	3735	4527
50°	3545	3598	4540
55°	3281	3451	4594
60°	3068	3245	4461
65°	2676	2997	4395
70°	2142	2669	4030
75°	1486	2268	3789
80°	793	1862	3548
85°	266	1441	3339

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4594 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.0	3.2
10°-20°	244.9	9.1
20°-30°	364.3	13.5
30°-40°	437.9	16.2
40°-50°	460.9	17.1
50°-60°	427.7	15.9
60°-70°	338.2	12.5
70°-80°	206.6	7.7
80°-90°	90.0	3.3
90°-100°	28.0	1.0
100°-110°	6.3	0.2
110°-120°	2.5	0.1
120°-130°	1.4	0.1
130°-140°	0.4	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°	695.1	25.8
0°-40°	1133.0	42.0
0°-60°	2021.6	75.0
0°-90°	2656.3	98.6
90°-120°	36.9	1.4
90°-150°	38.7	1.4
90°-180°	39.0	1.4
0°-180°	2695.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	895	895	895	895	895	
5°	892	891	894	904	906	85
15°	845	877	886	856	857	238
25°	762	811	774	797	810	350
35°	650	668	678	740	765	406
45°	531	534	578	669	694	409
55°	391	398	461	562	606	352
65°	248	256	325	430	468	245
75°	94	124	181	278	296	102
85°	8	29	70	137	157	13
90°	0	9	37	87	102	0
95°	0	2	16	48	58	0
105°	0	1	3	9	13	0
115°	0	1	3	4	4	0
125°	0	0	1	3	4	0
135°	0	0	0	1	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°	894.6	894.6	894.6	894.6	894.6
2.5°	895.7	893.3	888.4	893.1	894.4
5°	892.4	890.6	893.7	903.7	906.3
7.5°	884.9	891.9	900.1	918.3	924.1
10°	873.8	886.9	911.5	927.0	921.0
12.5°	860.3	882.6	915.6	885.3	871.3
15°	844.7	877.1	885.7	856.3	856.9
17.5°	826.3	872.5	846.1	845.4	840.1
20°	806.4	857.2	822.2	820.8	815.1
22.5°	785.1	837.0	801.1	798.2	813.5
25°	761.9	810.6	773.6	796.7	809.7
27.5°	733.0	776.0	750.6	783.4	799.6
30°	703.6	740.2	727.1	772.9	801.7
32.5°	676.1	702.9	707.8	768.9	773.6
35°	650.0	668.1	678.1	739.7	764.8
37.5°	621.4	626.3	652.9	727.5	751.7
40°	592.3	589.2	631.8	707.4	741.0
42.5°	560.9	559.8	609.4	697.4	714.2
45°	531.2	533.6	577.5	669.0	694.0
47.5°	500.8	503.9	547.3	637.8	668.8
50°	465.4	469.4	520.3	610.1	650.0
52.5°	427.2	434.8	494.0	583.9	624.2
55°	391.3	397.6	460.7	561.5	606.1
57.5°	358.5	362.3	426.2	533.2	566.9
60°	326.2	327.1	393.8	501.9	534.1
62.5°	289.2	290.8	360.5	464.9	508.1
65°	247.7	255.5	324.6	429.5	468.5
67.5°	208.8	222.5	287.9	397.1	417.5
70°	167.3	190.4	252.0	359.0	373.4
72.5°	129.2	156.4	215.2	316.4	336.6
75°	93.7	124.1	181.0	278.1	295.6
77.5°	63.1	94.0	148.9	235.8	259.0
80°	37.7	68.7	120.3	196.6	222.7
82.5°	19.3	46.1	93.3	164.9	188.2
85°	8.4	29.2	70.5	136.9	157.1
87.5°	2.4	16.6	51.9	110.6	127.7
90°	0.2	8.7	37.0	86.7	102.2
92.5°	0.2	4.2	26.1	65.6	77.5
95°	0.2	2.2	16.2	47.6	58.1
97.5°	0.2	1.3	9.8	33.7	42.6
100°	0.2	1.1	5.8	22.4	30.4
102.5°	0.2	1.3	4.0	14.2	19.9
105°	0.2	1.3	3.3	9.3	13.1
107.5°	0.4	1.3	2.9	6.9	9.1
110°	0.2	1.1	3.1	5.3	7.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.9	2.9	4.4	5.3
115°	0.2	0.7	2.6	4.2	4.4
117.5°	0.4	0.5	2.0	4.2	4.4
120°	0.4	0.4	1.6	4.0	4.6
122.5°	0.4	0.4	1.3	3.6	4.4
125°	0.2	0.4	1.1	2.7	3.8
127.5°	0.4	0.4	0.9	2.2	2.9
130°	0.4	0.4	0.7	1.6	2.2
132.5°	0.4	0.4	0.5	1.3	1.6
135°	0.4	0.4	0.4	0.9	1.3
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)