

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: P517279

Luminaire Tested: HVL12-1-LD4-3STD-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: P517279
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-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: 2404.0 lumens
Efficiency: N/A
Efficacy: 98.1 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

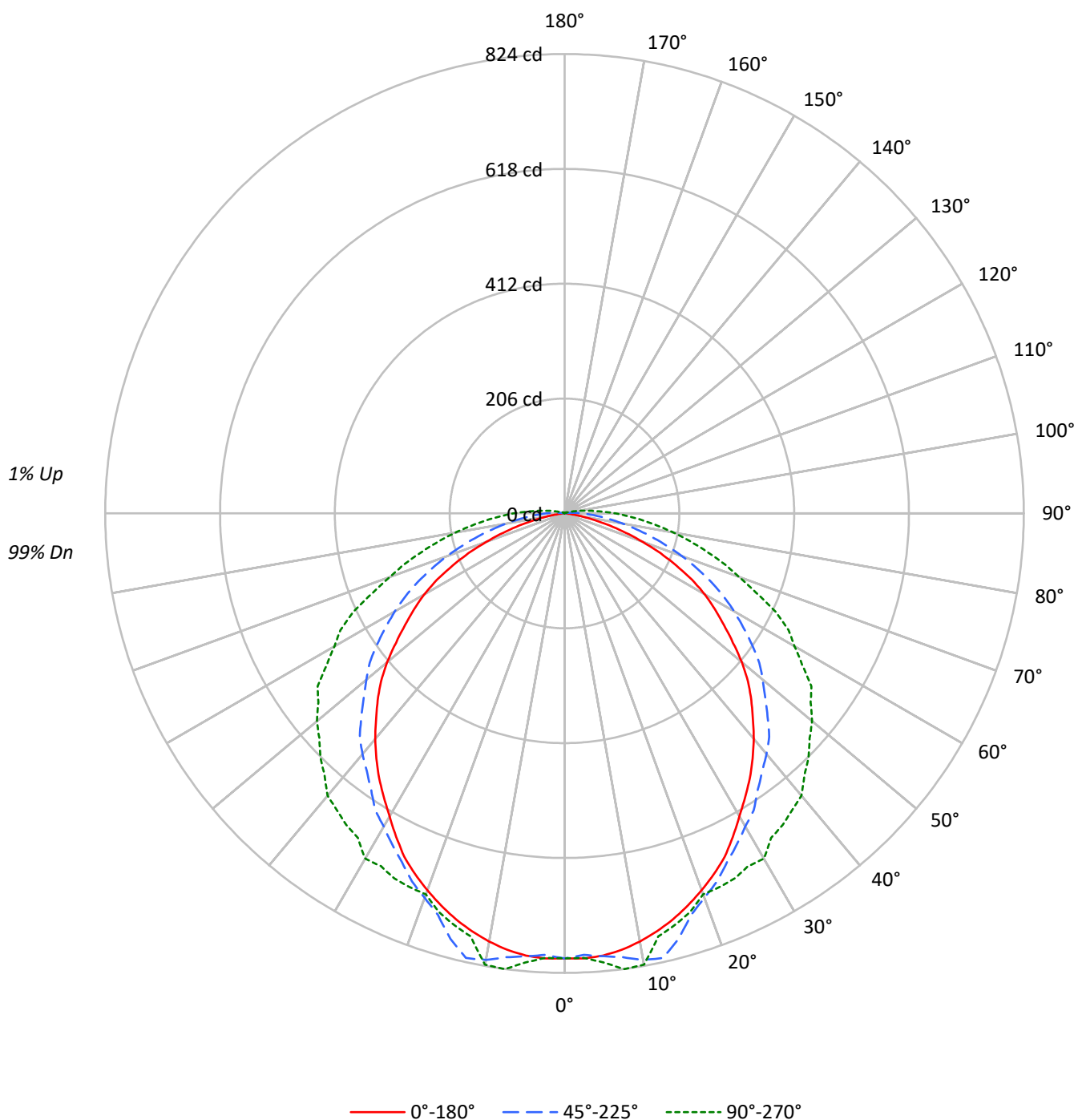
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8590	8590	8590
5°	8477	8440	8609
10°	8277	8532	8724
15°	8038	8280	8153
20°	7768	7738	7852
25°	7490	7384	7959
30°	7116	7096	8108
35°	6822	6822	8029
40°	6512	6611	8148
45°	6183	6345	8076
50°	5800	6067	8100
55°	5290	5769	8196
60°	4861	5370	7960
65°	4145	4897	7841
70°	3221	4294	7190
75°	2143	3571	6761
80°	1071	2846	6328
85°	319	2103	5955

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8196 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.7	3.2
10°-20°	218.4	9.1
20°-30°	325.0	13.5
30°-40°	390.6	16.2
40°-50°	411.2	17.1
50°-60°	381.5	15.9
60°-70°	301.6	12.5
70°-80°	184.3	7.7
80°-90°	80.3	3.3
90°-100°	25.0	1.0
100°-110°	5.6	0.2
110°-120°	2.3	0.1
120°-130°	1.3	0.1
130°-140°	0.3	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°	620.1	25.8
0°-40°	1010.7	42.0
0°-60°	1803.4	75.0
0°-90°	2369.5	98.6
90°-120°	32.9	1.4
90°-150°	34.5	1.4
90°-180°	34.0	1.4
0°-180°	2404.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	798	798	798	798	798	
5°	796	794	797	806	808	75
15°	754	782	790	764	764	212
25°	680	723	690	711	722	312
35°	580	596	605	660	682	362
45°	474	476	515	597	619	365
55°	349	355	411	501	541	314
65°	221	228	290	383	418	219
75°	84	111	161	248	264	91
85°	8	26	63	122	140	12
90°	0	8	33	77	91	0
95°	0	2	14	42	52	0
105°	0	1	3	8	12	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	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°	798.0	798.0	798.0	798.0	798.0
2.5°	799.0	796.9	792.5	796.7	797.8
5°	796.0	794.4	797.2	806.1	808.4
7.5°	789.4	795.6	802.9	819.1	824.3
10°	779.5	791.2	813.1	826.9	821.6
12.5°	767.4	787.3	816.7	789.7	777.2
15°	753.5	782.4	790.0	763.9	764.3
17.5°	737.0	778.3	754.8	754.1	749.4
20°	719.3	764.7	733.5	732.2	727.1
22.5°	700.3	746.6	714.6	712.0	725.7
25°	679.7	723.1	690.1	710.7	722.2
27.5°	653.8	692.2	669.6	698.8	713.3
30°	627.6	660.3	648.6	689.4	715.1
32.5°	603.1	627.0	631.4	685.8	690.1
35°	579.8	595.9	604.9	659.8	682.3
37.5°	554.3	558.7	582.4	648.9	670.6
40°	528.3	525.6	563.6	631.1	661.0
42.5°	500.4	499.4	543.6	622.1	637.1
45°	473.9	476.0	515.1	596.8	619.0
47.5°	446.7	449.5	488.2	569.0	596.6
50°	415.2	418.7	464.1	544.2	579.8
52.5°	381.0	387.9	440.7	520.8	556.8
55°	349.0	354.7	410.9	500.8	540.7
57.5°	319.8	323.2	380.2	475.6	505.7
60°	291.0	291.8	351.3	447.7	476.5
62.5°	258.0	259.4	321.5	414.7	453.2
65°	220.9	227.9	289.5	383.1	417.9
67.5°	186.3	198.5	256.8	354.2	372.4
70°	149.2	169.9	224.8	320.2	333.1
72.5°	115.3	139.5	192.0	282.2	300.2
75°	83.6	110.7	161.4	248.1	263.7
77.5°	56.2	83.9	132.8	210.4	231.0
80°	33.6	61.3	107.3	175.4	198.6
82.5°	17.2	41.1	83.2	147.1	167.9
85°	7.5	26.0	62.9	122.1	140.1
87.5°	2.1	14.8	46.3	98.7	114.0
90°	0.2	7.8	33.0	77.4	91.2
92.5°	0.2	3.7	23.2	58.5	69.1
95°	0.2	2.0	14.5	42.4	51.9
97.5°	0.2	1.1	8.8	30.1	38.0
100°	0.2	1.0	5.2	20.0	27.1
102.5°	0.2	1.1	3.6	12.7	17.7
105°	0.2	1.1	2.9	8.3	11.7
107.5°	0.3	1.1	2.6	6.2	8.1
110°	0.2	1.0	2.8	4.7	6.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.6	3.9	4.7
115°	0.2	0.7	2.3	3.7	3.9
117.5°	0.3	0.5	1.8	3.7	3.9
120°	0.3	0.3	1.5	3.6	4.1
122.5°	0.3	0.3	1.1	3.3	3.9
125°	0.2	0.3	1.0	2.4	3.4
127.5°	0.3	0.3	0.8	2.0	2.6
130°	0.3	0.3	0.7	1.5	2.0
132.5°	0.3	0.3	0.5	1.1	1.5
135°	0.3	0.3	0.3	0.8	1.1
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)