

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: P517292

Luminaire Tested: HVL12-2-LD4-1HI-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: P517292
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1HI-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: 2352.0 lumens
Efficiency: N/A
Efficacy: 106.4 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

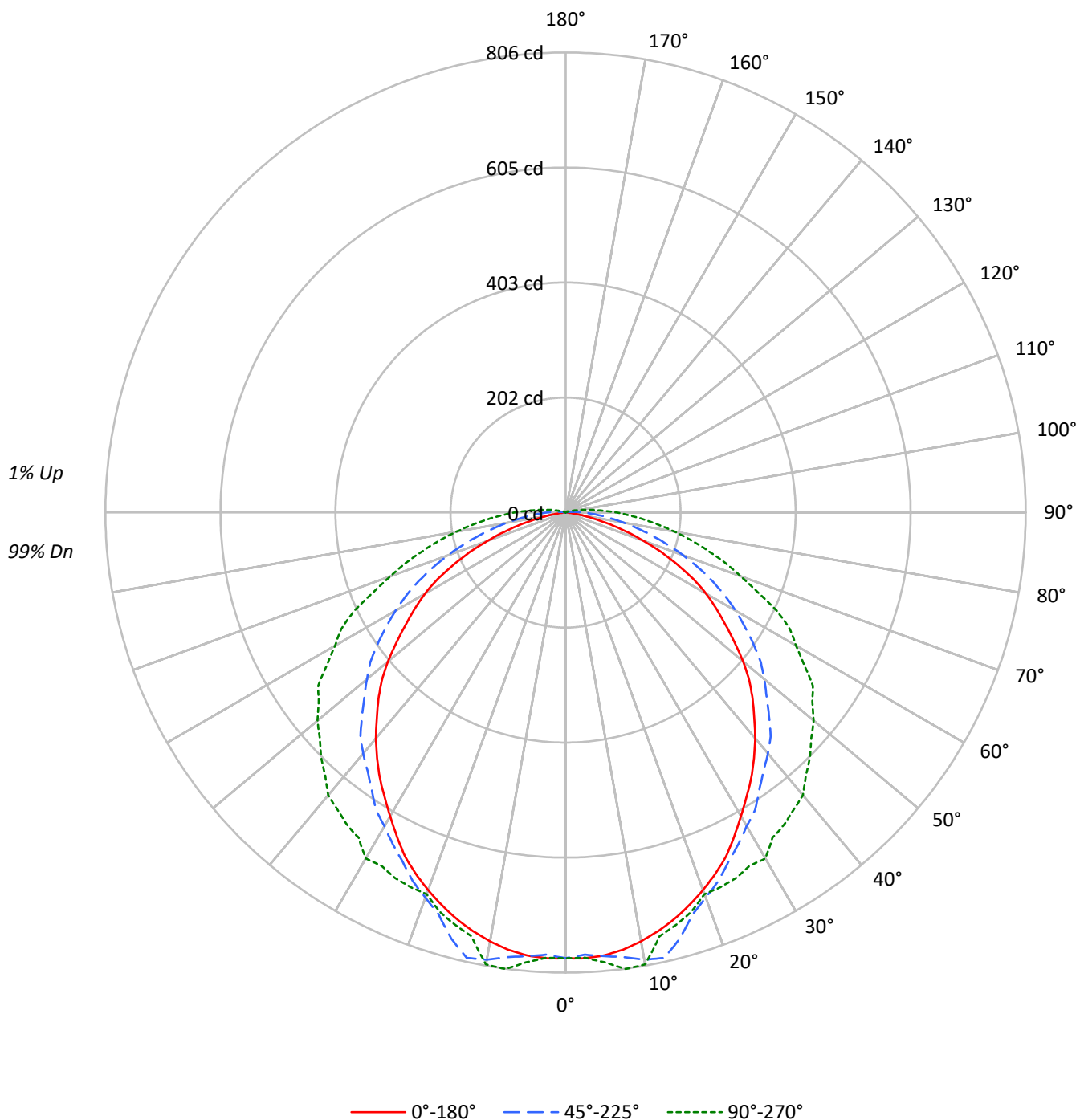
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4202	4202	4202
5°	4177	4149	4211
10°	4107	4216	4267
15°	4018	4112	3988
20°	3912	3861	3841
25°	3801	3704	3893
30°	3641	3578	3966
35°	3522	3460	3927
40°	3394	3373	3986
45°	3257	3260	3951
50°	3094	3140	3963
55°	2863	3012	4009
60°	2678	2832	3894
65°	2335	2616	3836
70°	1869	2330	3517
75°	1296	1978	3307
80°	692	1625	3096
85°	231	1257	2914

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4009 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.0	3.2
10°-20°	213.7	9.1
20°-30°	317.9	13.5
30°-40°	382.2	16.2
40°-50°	402.3	17.1
50°-60°	373.3	15.9
60°-70°	295.1	12.5
70°-80°	180.3	7.7
80°-90°	78.5	3.3
90°-100°	24.5	1.0
100°-110°	5.5	0.2
110°-120°	2.2	0.1
120°-130°	1.2	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°	606.7	25.8
0°-40°	988.8	42.0
0°-60°	1764.3	75.0
0°-90°	2318.3	98.6
90°-120°	32.2	1.4
90°-150°	33.7	1.4
90°-180°	34.0	1.4
0°-180°	2352.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	781	781	781	781	781	
5°	779	777	780	789	791	74
15°	737	766	773	747	748	208
25°	665	707	675	695	707	305
35°	567	583	592	646	668	355
45°	464	466	504	584	606	357
55°	342	347	402	490	529	307
65°	216	223	283	375	409	214
75°	82	108	158	243	258	89
85°	7	25	62	119	137	11
90°	0	8	32	76	89	0
95°	0	2	14	42	51	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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CATALOG NUMBER: HVL12-2-LD4-1HI-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	780.7	780.7	780.7	780.7	780.7
2.5°	781.7	779.6	775.3	779.5	780.6
5°	778.8	777.2	779.9	788.7	790.9
7.5°	772.3	778.4	785.5	801.4	806.5
10°	762.6	774.1	795.5	809.0	803.8
12.5°	750.8	770.2	799.0	772.6	760.4
15°	737.2	765.5	772.9	747.3	747.8
17.5°	721.1	761.5	738.4	737.8	733.2
20°	703.8	748.1	717.6	716.3	711.4
22.5°	685.2	730.5	699.1	696.6	710.0
25°	665.0	707.4	675.1	695.3	706.6
27.5°	639.7	677.2	655.1	683.7	697.9
30°	614.1	646.0	634.6	674.5	699.6
32.5°	590.0	613.4	617.7	671.0	675.1
35°	567.3	583.0	591.8	645.6	667.5
37.5°	542.3	546.6	569.8	634.9	656.0
40°	516.9	514.2	551.4	617.4	646.7
42.5°	489.5	488.6	531.8	608.7	623.3
45°	463.6	465.7	504.0	583.8	605.6
47.5°	437.0	439.8	477.6	556.6	583.7
50°	406.2	409.7	454.1	532.5	567.3
52.5°	372.8	379.5	431.2	509.6	544.7
55°	341.5	347.0	402.1	490.0	529.0
57.5°	312.8	316.2	372.0	465.4	494.8
60°	284.7	285.5	343.7	438.0	466.2
62.5°	252.4	253.8	314.6	405.7	443.4
65°	216.1	223.0	283.3	374.9	408.9
67.5°	182.3	194.2	251.3	346.6	364.4
70°	146.0	166.2	220.0	313.3	325.9
72.5°	112.8	136.5	187.8	276.1	293.8
75°	81.7	108.3	157.9	242.7	258.0
77.5°	55.0	82.1	129.9	205.8	226.0
80°	32.9	60.0	105.0	171.6	194.3
82.5°	16.9	40.2	81.4	143.9	164.3
85°	7.3	25.4	61.5	119.4	137.1
87.5°	2.1	14.5	45.3	96.5	111.5
90°	0.2	7.6	32.3	75.7	89.2
92.5°	0.2	3.7	22.7	57.3	67.6
95°	0.2	1.9	14.2	41.5	50.7
97.5°	0.2	1.1	8.6	29.4	37.2
100°	0.2	1.0	5.1	19.6	26.6
102.5°	0.2	1.1	3.5	12.4	17.3
105°	0.2	1.1	2.9	8.1	11.5
107.5°	0.3	1.1	2.5	6.0	8.0
110°	0.2	1.0	2.7	4.6	6.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.8	4.6
115°	0.2	0.6	2.2	3.7	3.8
117.5°	0.3	0.5	1.7	3.7	3.8
120°	0.3	0.3	1.4	3.5	4.0
122.5°	0.3	0.3	1.1	3.2	3.8
125°	0.2	0.3	1.0	2.4	3.3
127.5°	0.3	0.3	0.8	1.9	2.5
130°	0.3	0.3	0.6	1.4	1.9
132.5°	0.3	0.3	0.5	1.1	1.4
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)