

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: P517208

Luminaire Tested: HVL12-1-LD4-2HI-50-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: P517208
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2HI-50-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2408.0 lumens
Efficiency: N/A
Efficacy: 109.0 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

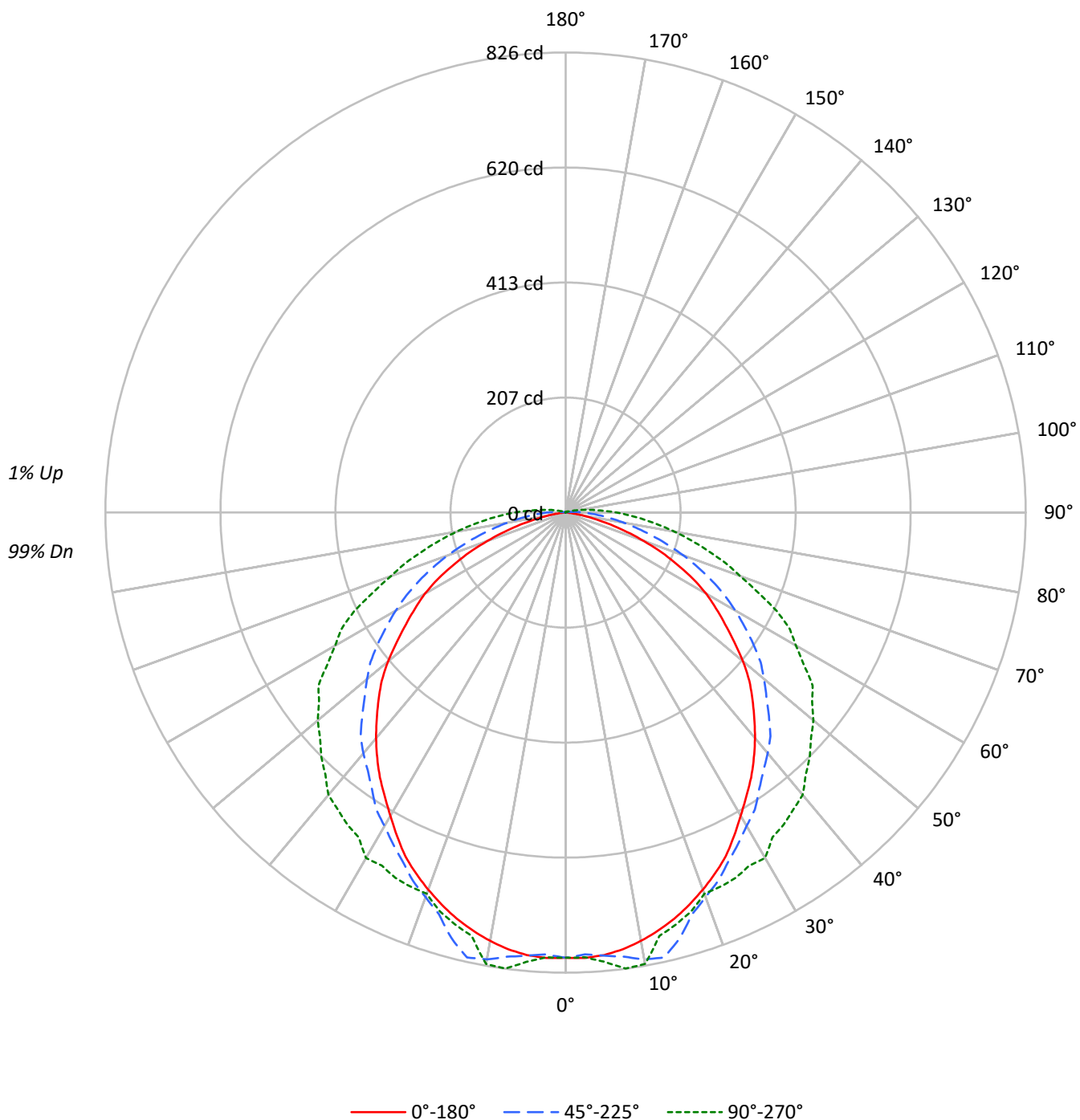
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8604	8604	8604
5°	8492	8453	8623
10°	8290	8547	8737
15°	8051	8294	8167
20°	7781	7751	7865
25°	7502	7396	7972
30°	7128	7108	8121
35°	6834	6834	8041
40°	6523	6622	8162
45°	6192	6356	8091
50°	5810	6078	8114
55°	5299	5779	8209
60°	4869	5379	7973
65°	4152	4906	7854
70°	3227	4301	7201
75°	2146	3577	6771
80°	1074	2851	6341
85°	319	2106	5968

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8209 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.8	3.2
10°-20°	218.8	9.1
20°-30°	325.5	13.5
30°-40°	391.3	16.2
40°-50°	411.8	17.1
50°-60°	382.1	15.9
60°-70°	302.2	12.5
70°-80°	184.6	7.7
80°-90°	80.4	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°	621.1	25.8
0°-40°	1012.4	42.0
0°-60°	1806.3	75.0
0°-90°	2373.5	98.6
90°-120°	32.9	1.4
90°-150°	34.5	1.4
90°-180°	35.0	1.5
0°-180°	2408.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	799	799	799	799	799	
5°	797	796	798	808	810	76
15°	755	784	791	765	766	213
25°	681	724	691	712	723	313
35°	581	597	606	661	683	363
45°	475	477	516	598	620	366
55°	350	355	412	502	542	314
65°	221	228	290	384	419	219
75°	84	111	162	248	264	91
85°	8	26	63	122	140	12
90°	0	8	33	78	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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CATALOG NUMBER: HVL12-1-LD4-2HI-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	799.3	799.3	799.3	799.3	799.3
2.5°	800.3	798.2	793.8	798.0	799.2
5°	797.4	795.7	798.5	807.5	809.7
7.5°	790.7	796.9	804.2	820.5	825.7
10°	780.8	792.5	814.5	828.3	822.9
12.5°	768.7	788.6	818.1	791.0	778.5
15°	754.7	783.7	791.3	765.1	765.6
17.5°	738.3	779.6	756.0	755.4	750.6
20°	720.5	765.9	734.7	733.4	728.3
22.5°	701.5	747.9	715.8	713.2	726.9
25°	680.8	724.3	691.2	711.9	723.4
27.5°	654.9	693.3	670.7	700.0	714.5
30°	628.7	661.4	649.7	690.6	716.3
32.5°	604.1	628.0	632.4	687.0	691.2
35°	580.8	596.9	605.9	660.9	683.4
37.5°	555.2	559.6	583.4	650.0	671.7
40°	529.2	526.4	564.5	632.1	662.1
42.5°	501.2	500.2	544.5	623.1	638.1
45°	474.6	476.8	516.0	597.7	620.1
47.5°	447.5	450.2	489.0	569.9	597.6
50°	415.9	419.4	464.9	545.1	580.8
52.5°	381.7	388.5	441.4	521.7	557.7
55°	349.6	355.3	411.6	501.7	541.6
57.5°	320.3	323.7	380.9	476.4	506.6
60°	291.5	292.3	351.9	448.4	477.3
62.5°	258.4	259.9	322.1	415.4	454.0
65°	221.3	228.3	290.0	383.8	418.6
67.5°	186.6	198.8	257.3	354.8	373.0
70°	149.5	170.2	225.2	320.8	333.6
72.5°	115.4	139.7	192.3	282.7	300.7
75°	83.7	110.9	161.7	248.5	264.1
77.5°	56.3	84.0	133.0	210.7	231.4
80°	33.7	61.4	107.5	175.7	199.0
82.5°	17.3	41.2	83.4	147.4	168.2
85°	7.5	26.1	63.0	122.3	140.4
87.5°	2.1	14.8	46.4	98.8	114.1
90°	0.2	7.8	33.1	77.5	91.3
92.5°	0.2	3.7	23.3	58.6	69.2
95°	0.2	2.0	14.5	42.5	51.9
97.5°	0.2	1.1	8.8	30.1	38.1
100°	0.2	1.0	5.2	20.0	27.2
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	6.4

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CATALOG NUMBER: HVL12-1-LD4-2HI-50-UNV-C-EDD

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)