

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: P517943

Luminaire Tested: HVL8-2-LD4-2LO-50-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: P517943
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2421.0 lumens
Efficiency: N/A
Efficacy: 104.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

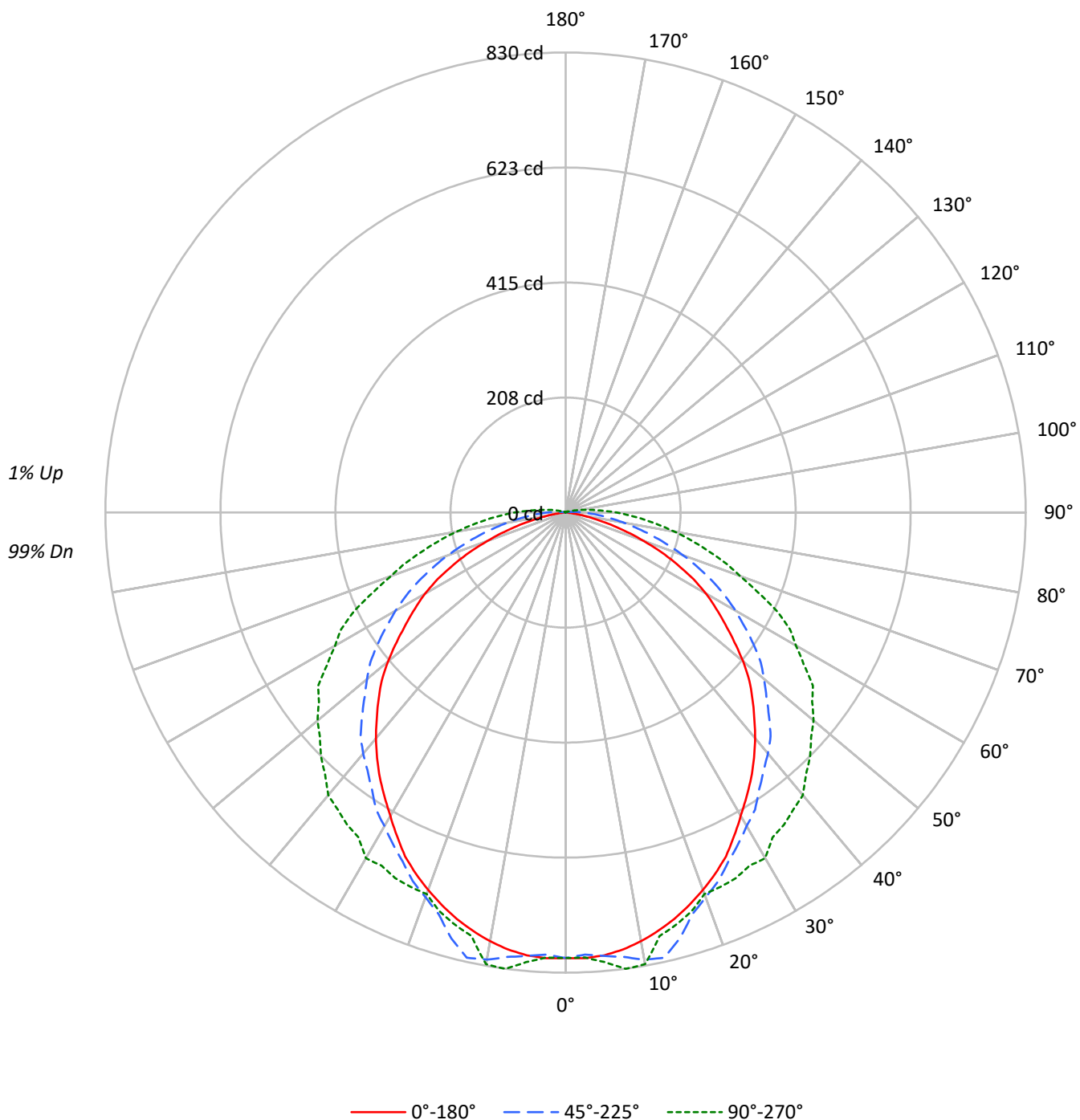
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6487	6487	6487
5°	6450	6374	6456
10°	6342	6445	6496
15°	6203	6254	6030
20°	6040	5844	5766
25°	5869	5577	5803
30°	5622	5360	5866
35°	5437	5153	5763
40°	5240	4994	5798
45°	5029	4793	5694
50°	4777	4583	5650
55°	4421	4358	5647
60°	4134	4056	5406
65°	3606	3700	5234
70°	2887	3243	4693
75°	2001	2698	4284
80°	1070	2148	3847
85°	356	1589	3388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5694 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.2	3.2
10°-20°	220.0	9.1
20°-30°	327.3	13.5
30°-40°	393.4	16.2
40°-50°	414.1	17.1
50°-60°	384.2	15.9
60°-70°	303.8	12.5
70°-80°	185.5	7.7
80°-90°	80.8	3.3
90°-100°	25.2	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°	624.5	25.8
0°-40°	1017.9	42.0
0°-60°	1816.1	75.0
0°-90°	2386.3	98.6
90°-120°	33.1	1.4
90°-150°	34.7	1.4
90°-180°	35.0	1.4
0°-180°	2421.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	804	804	804	804	804	
5°	802	800	803	812	814	76
15°	759	788	796	769	770	214
25°	684	728	695	716	727	314
35°	584	600	609	664	687	365
45°	477	479	519	601	623	368
55°	352	357	414	504	544	316
65°	222	230	292	386	421	220
75°	84	112	163	250	266	92
85°	8	26	63	123	141	12
90°	0	8	33	78	92	0
95°	0	2	15	43	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: HVL8-2-LD4-2LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	803.6	803.6	803.6	803.6	803.6
2.5°	804.6	802.5	798.1	802.3	803.5
5°	801.7	800.0	802.8	811.8	814.1
7.5°	795.0	801.2	808.6	824.9	830.2
10°	785.0	796.8	818.9	832.8	827.4
12.5°	772.9	792.8	822.5	795.3	782.7
15°	758.8	787.9	795.6	769.3	769.8
17.5°	742.2	783.8	760.1	759.4	754.7
20°	724.4	770.1	738.6	737.3	732.3
22.5°	705.3	751.9	719.7	717.0	730.8
25°	684.5	728.2	694.9	715.7	727.4
27.5°	658.4	697.1	674.3	703.8	718.3
30°	632.1	665.0	653.2	694.3	720.1
32.5°	607.4	631.4	635.8	690.7	694.9
35°	583.9	600.2	609.2	664.5	687.1
37.5°	558.2	562.7	586.6	653.5	675.3
40°	532.0	529.3	567.6	635.5	665.6
42.5°	503.9	502.9	547.4	626.5	641.6
45°	477.2	479.3	518.8	601.0	623.4
47.5°	449.9	452.7	491.6	573.0	600.8
50°	418.1	421.7	467.4	548.1	583.9
52.5°	383.7	390.6	443.8	524.5	560.7
55°	351.5	357.2	413.9	504.4	544.5
57.5°	322.0	325.5	382.9	479.0	509.3
60°	293.0	293.9	353.8	450.9	479.8
62.5°	259.8	261.3	323.8	417.6	456.4
65°	222.5	229.5	291.6	385.9	420.9
67.5°	187.6	199.9	258.7	356.7	375.1
70°	150.3	171.1	226.4	322.5	335.4
72.5°	116.1	140.5	193.3	284.2	302.4
75°	84.1	111.5	162.6	249.8	265.5
77.5°	56.6	84.5	133.7	211.8	232.6
80°	33.9	61.7	108.0	176.6	200.1
82.5°	17.4	41.4	83.8	148.2	169.1
85°	7.5	26.2	63.4	122.9	141.1
87.5°	2.1	14.9	46.7	99.4	114.8
90°	0.2	7.9	33.2	77.9	91.8
92.5°	0.2	3.8	23.4	58.9	69.6
95°	0.2	2.0	14.6	42.7	52.2
97.5°	0.2	1.1	8.8	30.3	38.3
100°	0.2	1.0	5.2	20.1	27.3
102.5°	0.2	1.1	3.6	12.8	17.8
105°	0.2	1.1	2.9	8.3	11.8
107.5°	0.3	1.1	2.6	6.2	8.2
110°	0.2	1.0	2.8	4.7	6.4

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CATALOG NUMBER: HVL8-2-LD4-2LO-50-UNV-C-EDD-90

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	3.8	3.9
117.5°	0.3	0.5	1.8	3.8	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	2.5	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)