

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: P517891

Luminaire Tested: HVL8-2-LD4-1LO-40-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: P517891
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1LO-40-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1211.1 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

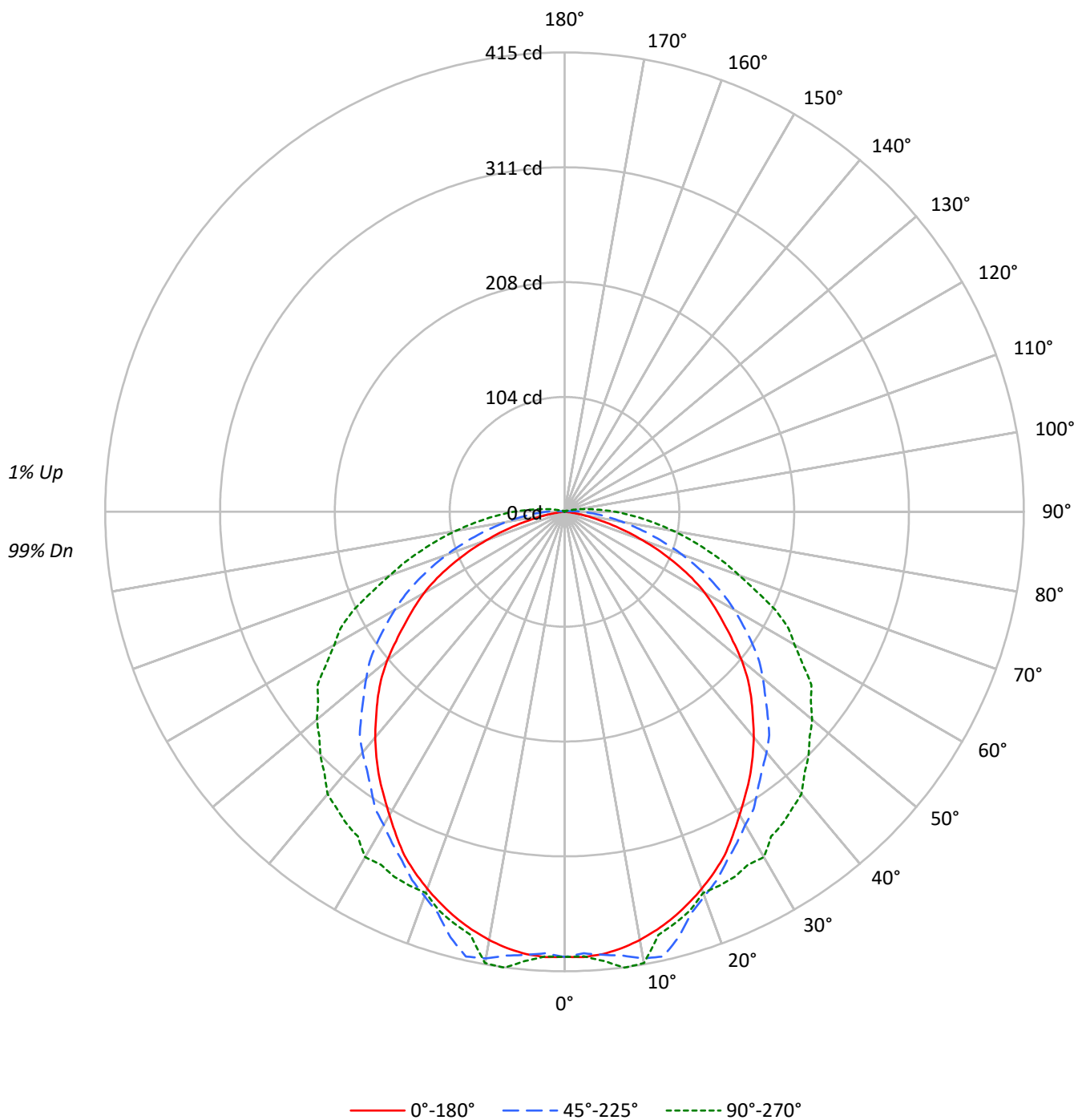
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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	44	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°	3245	3245	3245
5°	3226	3189	3229
10°	3173	3224	3250
15°	3102	3129	3016
20°	3022	2924	2884
25°	2936	2790	2902
30°	2812	2681	2934
35°	2720	2577	2883
40°	2621	2498	2901
45°	2516	2397	2848
50°	2389	2292	2826
55°	2211	2180	2825
60°	2068	2029	2704
65°	1804	1850	2617
70°	1444	1623	2348
75°	1002	1349	2143
80°	537	1074	1925
85°	180	795	1695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 2848 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.6	3.2
10°-20°	110.0	9.1
20°-30°	163.7	13.5
30°-40°	196.8	16.2
40°-50°	207.1	17.1
50°-60°	192.2	15.9
60°-70°	152.0	12.5
70°-80°	92.8	7.7
80°-90°	40.4	3.3
90°-100°	12.6	1.0
100°-110°	2.8	0.2
110°-120°	1.1	0.1
120°-130°	0.6	0.1
130°-140°	0.2	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°	312.4	25.8
0°-40°	509.1	42.0
0°-60°	908.4	75.0
0°-90°	1193.7	98.6
90°-120°	16.6	1.4
90°-150°	17.4	1.4
90°-180°	17.0	1.4
0°-180°	1211.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	402	402	402	402	402	
5°	401	400	402	406	407	38
15°	380	394	398	385	385	107
25°	342	364	348	358	364	157
35°	292	300	305	332	344	183
45°	239	240	260	301	312	184
55°	176	179	207	252	272	158
65°	111	115	146	193	210	110
75°	42	56	81	125	133	46
85°	4	13	32	62	71	6
90°	0	4	17	39	46	0
95°	0	1	7	21	26	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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

TEST NUMBER: P517891

CATALOG NUMBER: HVL8-2-LD4-1LO-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	402.0	402.0	402.0	402.0	402.0
2.5°	402.5	401.4	399.2	401.3	401.9
5°	401.0	400.2	401.6	406.1	407.2
7.5°	397.6	400.8	404.4	412.6	415.3
10°	392.7	398.5	409.6	416.6	413.9
12.5°	386.6	396.6	411.4	397.8	391.5
15°	379.5	394.1	398.0	384.8	385.0
17.5°	371.3	392.1	380.2	379.9	377.5
20°	362.4	385.2	369.5	368.8	366.3
22.5°	352.8	376.1	360.0	358.7	365.5
25°	342.4	364.2	347.6	358.0	363.8
27.5°	329.4	348.7	337.3	352.0	359.3
30°	316.2	332.6	326.7	347.3	360.2
32.5°	303.8	315.8	318.1	345.5	347.6
35°	292.1	300.2	304.7	332.4	343.7
37.5°	279.2	281.4	293.4	326.9	337.8
40°	266.1	264.7	283.9	317.9	333.0
42.5°	252.0	251.6	273.8	313.4	320.9
45°	238.7	239.8	259.5	300.6	311.8
47.5°	225.0	226.4	245.9	286.6	300.5
50°	209.1	210.9	233.8	274.2	292.1
52.5°	191.9	195.4	222.0	262.4	280.5
55°	175.8	178.7	207.0	252.3	272.4
57.5°	161.1	162.8	191.5	239.6	254.8
60°	146.6	147.0	177.0	225.5	240.0
62.5°	130.0	130.7	162.0	208.9	228.3
65°	111.3	114.8	145.8	193.0	210.5
67.5°	93.8	100.0	129.4	178.4	187.6
70°	75.2	85.6	113.3	161.3	167.8
72.5°	58.1	70.3	96.7	142.2	151.2
75°	42.1	55.8	81.3	125.0	132.8
77.5°	28.3	42.3	66.9	106.0	116.4
80°	17.0	30.9	54.0	88.4	100.1
82.5°	8.7	20.7	41.9	74.1	84.6
85°	3.8	13.1	31.7	61.5	70.6
87.5°	1.1	7.5	23.3	49.7	57.4
90°	0.1	3.9	16.6	39.0	45.9
92.5°	0.1	1.9	11.7	29.5	34.8
95°	0.1	1.0	7.3	21.4	26.1
97.5°	0.1	0.6	4.4	15.1	19.2
100°	0.1	0.5	2.6	10.1	13.7
102.5°	0.1	0.6	1.8	6.4	8.9
105°	0.1	0.6	1.5	4.2	5.9
107.5°	0.2	0.6	1.3	3.1	4.1
110°	0.1	0.5	1.4	2.4	3.2

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CATALOG NUMBER: HVL8-2-LD4-1LO-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	2.0	2.4
115°	0.1	0.3	1.1	1.9	2.0
117.5°	0.2	0.2	0.9	1.9	2.0
120°	0.2	0.2	0.7	1.8	2.0
122.5°	0.2	0.2	0.6	1.6	2.0
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)