

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: P517751

Luminaire Tested: HVL8-1-LD4-1LO-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: P517751
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-50-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 637.0 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

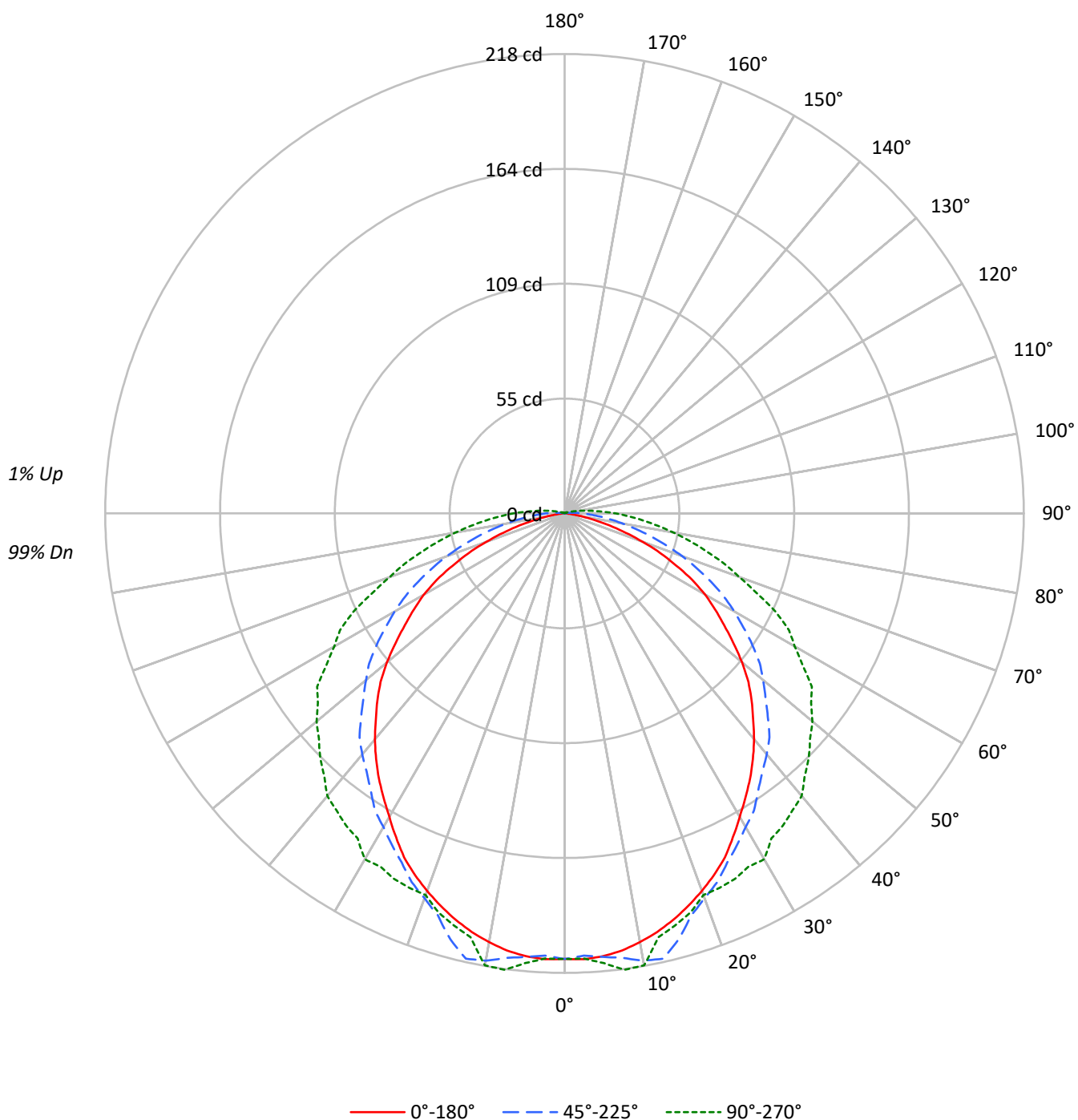
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517751

CATALOG NUMBER: HVL8-1-LD4-1LO-50-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517751

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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°	3413	3413	3413
5°	3369	3337	3397
10°	3289	3359	3418
15°	3194	3243	3172
20°	3088	3015	3035
25°	2977	2863	3054
30°	2828	2739	3087
35°	2711	2619	3033
40°	2589	2523	3051
45°	2458	2407	2996
50°	2305	2287	2972
55°	2103	2157	2972
60°	1932	1990	2844
65°	1646	1796	2753
70°	1279	1555	2471
75°	850	1272	2256
80°	425	989	2023
85°	128	708	1781

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 2996 cd/sqm

TEST NUMBER: P517751

CATALOG NUMBER: HVL8-1-LD4-1LO-50-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.3	3.2
10°-20°	57.9	9.1
20°-30°	86.1	13.5
30°-40°	103.5	16.2
40°-50°	108.9	17.1
50°-60°	101.1	15.9
60°-70°	79.9	12.5
70°-80°	48.8	7.7
80°-90°	21.3	3.3
90°-100°	6.6	1.0
100°-110°	1.5	0.2
110°-120°	0.6	0.1
120°-130°	0.3	0.1
130°-140°	0.1	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°	164.3	25.8
0°-40°	267.8	42.0
0°-60°	477.8	75.0
0°-90°	627.9	98.6
90°-120°	8.7	1.4
90°-150°	9.1	1.4
90°-180°	9.0	1.4
0°-180°	637.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	211	211	211	211	211	
5°	211	210	211	214	214	20
15°	200	207	209	202	202	56
25°	180	192	183	188	191	83
35°	154	158	160	175	181	96
45°	126	126	136	158	164	97
55°	92	94	109	133	143	83
65°	58	60	77	102	111	58
75°	22	29	43	66	70	24
85°	2	7	17	32	37	3
90°	0	2	9	20	24	0
95°	0	0	4	11	14	0
105°	0	0	1	2	3	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	0
135°	0	0	0	0	0	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: P517751

CATALOG NUMBER: HVL8-1-LD4-1LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	211.4	211.4	211.4	211.4	211.4
2.5°	211.7	211.1	210.0	211.1	211.4
5°	210.9	210.5	211.2	213.6	214.2
7.5°	209.2	210.8	212.7	217.0	218.4
10°	206.5	209.6	215.5	219.1	217.7
12.5°	203.4	208.6	216.4	209.3	205.9
15°	199.6	207.3	209.3	202.4	202.5
17.5°	195.3	206.2	200.0	199.8	198.6
20°	190.6	202.6	194.3	194.0	192.7
22.5°	185.6	197.8	189.4	188.7	192.3
25°	180.1	191.6	182.8	188.3	191.4
27.5°	173.2	183.4	177.4	185.2	189.0
30°	166.3	175.0	171.9	182.7	189.5
32.5°	159.8	166.1	167.3	181.7	182.8
35°	153.6	157.9	160.3	174.8	180.8
37.5°	146.9	148.0	154.3	172.0	177.7
40°	140.0	139.3	149.3	167.2	175.1
42.5°	132.6	132.3	144.0	164.8	168.8
45°	125.6	126.1	136.5	158.1	164.0
47.5°	118.4	119.1	129.4	150.8	158.1
50°	110.0	111.0	123.0	144.2	153.6
52.5°	101.0	102.8	116.8	138.0	147.5
55°	92.5	94.0	108.9	132.7	143.3
57.5°	84.7	85.6	100.7	126.0	134.0
60°	77.1	77.3	93.1	118.6	126.2
62.5°	68.4	68.7	85.2	109.9	120.1
65°	58.5	60.4	76.7	101.5	110.7
67.5°	49.4	52.6	68.1	93.9	98.7
70°	39.5	45.0	59.6	84.9	88.3
72.5°	30.5	37.0	50.9	74.8	79.6
75°	22.1	29.3	42.8	65.7	69.9
77.5°	14.9	22.2	35.2	55.7	61.2
80°	8.9	16.2	28.4	46.5	52.6
82.5°	4.6	10.9	22.1	39.0	44.5
85°	2.0	6.9	16.7	32.3	37.1
87.5°	0.6	3.9	12.3	26.1	30.2
90°	0.0	2.1	8.7	20.5	24.2
92.5°	0.0	1.0	6.2	15.5	18.3
95°	0.0	0.5	3.8	11.2	13.7
97.5°	0.0	0.3	2.3	8.0	10.1
100°	0.0	0.3	1.4	5.3	7.2
102.5°	0.0	0.3	0.9	3.4	4.7
105°	0.0	0.3	0.8	2.2	3.1
107.5°	0.1	0.3	0.7	1.6	2.2
110°	0.0	0.3	0.7	1.2	1.7

TEST NUMBER: P517751

CATALOG NUMBER: HVL8-1-LD4-1LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.7	1.0	1.2
115°	0.0	0.2	0.6	1.0	1.0
117.5°	0.1	0.1	0.5	1.0	1.0
120°	0.1	0.1	0.4	0.9	1.1
122.5°	0.1	0.1	0.3	0.9	1.0
125°	0.0	0.1	0.3	0.6	0.9
127.5°	0.1	0.1	0.2	0.5	0.7
130°	0.1	0.1	0.2	0.4	0.5
132.5°	0.1	0.1	0.1	0.3	0.4
135°	0.1	0.1	0.1	0.2	0.3
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)