

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: P517735

Luminaire Tested: HVL8-1-LD4-1HI-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: P517735
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1HI-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: 1057.0 lumens
Efficiency: N/A
Efficacy: 98.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

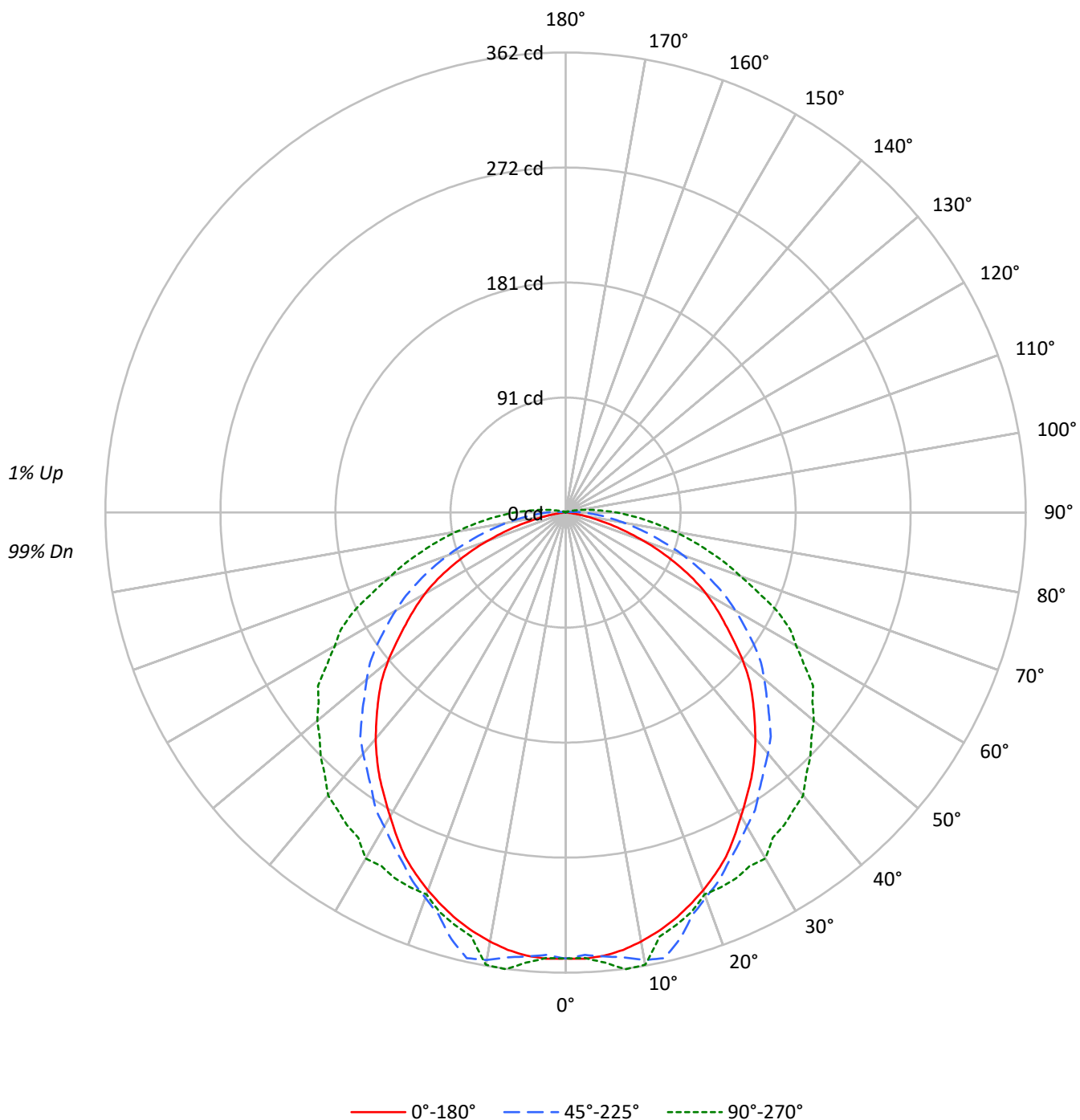
Input Watts (W): 10.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5666	5666	5666
5°	5591	5538	5637
10°	5458	5572	5672
15°	5301	5382	5265
20°	5124	5004	5035
25°	4939	4752	5067
30°	4694	4544	5122
35°	4499	4346	5032
40°	4295	4187	5063
45°	4077	3995	4972
50°	3824	3794	4933
55°	3490	3580	4930
60°	3205	3303	4721
65°	2733	2980	4571
70°	2124	2577	4099
75°	1411	2109	3740
80°	707	1643	3357
85°	210	1175	2958

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4972 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.7	3.2
10°-20°	96.0	9.1
20°-30°	142.9	13.5
30°-40°	171.7	16.2
40°-50°	180.8	17.1
50°-60°	167.7	15.9
60°-70°	132.6	12.5
70°-80°	81.0	7.7
80°-90°	35.3	3.3
90°-100°	11.0	1.0
100°-110°	2.5	0.2
110°-120°	1.0	0.1
120°-130°	0.5	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°	272.6	25.8
0°-40°	444.4	42.0
0°-60°	792.9	75.0
0°-90°	1041.9	98.6
90°-120°	14.4	1.4
90°-150°	15.1	1.4
90°-180°	15.0	1.4
0°-180°	1057.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	351	351	351	351	351	
5°	350	349	350	354	355	33
15°	331	344	347	336	336	93
25°	299	318	303	312	318	137
35°	255	262	266	290	300	159
45°	208	209	226	262	272	161
55°	154	156	181	220	238	138
65°	97	100	127	168	184	96
75°	37	49	71	109	116	40
85°	3	11	28	54	62	5
90°	0	3	14	34	40	0
95°	0	1	6	19	23	0
105°	0	0	1	4	5	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	350.9	350.9	350.9	350.9	350.9
2.5°	351.3	350.4	348.4	350.3	350.8
5°	350.0	349.3	350.5	354.4	355.4
7.5°	347.1	349.8	353.0	360.2	362.4
10°	342.7	347.9	357.5	363.6	361.2
12.5°	337.4	346.1	359.1	347.2	341.7
15°	331.3	344.0	347.4	335.9	336.1
17.5°	324.1	342.2	331.9	331.6	329.5
20°	316.3	336.2	322.5	321.9	319.7
22.5°	307.9	328.3	314.2	313.1	319.1
25°	298.8	317.9	303.4	312.5	317.6
27.5°	287.5	304.3	294.4	307.3	313.6
30°	276.0	290.3	285.2	303.1	314.4
32.5°	265.2	275.7	277.6	301.5	303.4
35°	254.9	262.0	266.0	290.1	300.0
37.5°	243.7	245.7	256.1	285.3	294.8
40°	232.3	231.1	247.8	277.5	290.6
42.5°	220.0	219.6	239.0	273.5	280.1
45°	208.3	209.3	226.5	262.4	272.2
47.5°	196.4	197.6	214.6	250.2	262.3
50°	182.5	184.1	204.1	239.3	254.9
52.5°	167.5	170.5	193.8	229.0	244.8
55°	153.5	156.0	180.7	220.2	237.7
57.5°	140.6	142.1	167.2	209.1	222.4
60°	127.9	128.3	154.5	196.8	209.5
62.5°	113.4	114.1	141.4	182.3	199.3
65°	97.1	100.2	127.3	168.5	183.8
67.5°	81.9	87.3	112.9	155.7	163.7
70°	65.6	74.7	98.8	140.8	146.5
72.5°	50.7	61.3	84.4	124.1	132.0
75°	36.7	48.7	71.0	109.1	115.9
77.5°	24.7	36.9	58.4	92.5	101.6
80°	14.8	26.9	47.2	77.1	87.3
82.5°	7.6	18.1	36.6	64.7	73.8
85°	3.3	11.4	27.7	53.7	61.6
87.5°	0.9	6.5	20.4	43.4	50.1
90°	0.1	3.4	14.5	34.0	40.1
92.5°	0.1	1.6	10.2	25.7	30.4
95°	0.1	0.9	6.4	18.7	22.8
97.5°	0.1	0.5	3.9	13.2	16.7
100°	0.1	0.4	2.3	8.8	11.9
102.5°	0.1	0.5	1.6	5.6	7.8
105°	0.1	0.5	1.3	3.6	5.1
107.5°	0.1	0.5	1.1	2.7	3.6
110°	0.1	0.4	1.2	2.1	2.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.4	1.1	1.7	2.1
115°	0.1	0.3	1.0	1.6	1.7
117.5°	0.1	0.2	0.8	1.6	1.7
120°	0.1	0.1	0.6	1.6	1.8
122.5°	0.1	0.1	0.5	1.4	1.7
125°	0.1	0.1	0.4	1.1	1.5
127.5°	0.1	0.1	0.4	0.9	1.1
130°	0.1	0.1	0.3	0.6	0.9
132.5°	0.1	0.1	0.2	0.5	0.6
135°	0.1	0.1	0.1	0.4	0.5
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)