

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: P517743

Luminaire Tested: HVL8-1-LD4-1LO-35-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: P517743
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-35-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 597.0 lumens
Efficiency: N/A
Efficacy: 102.9 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

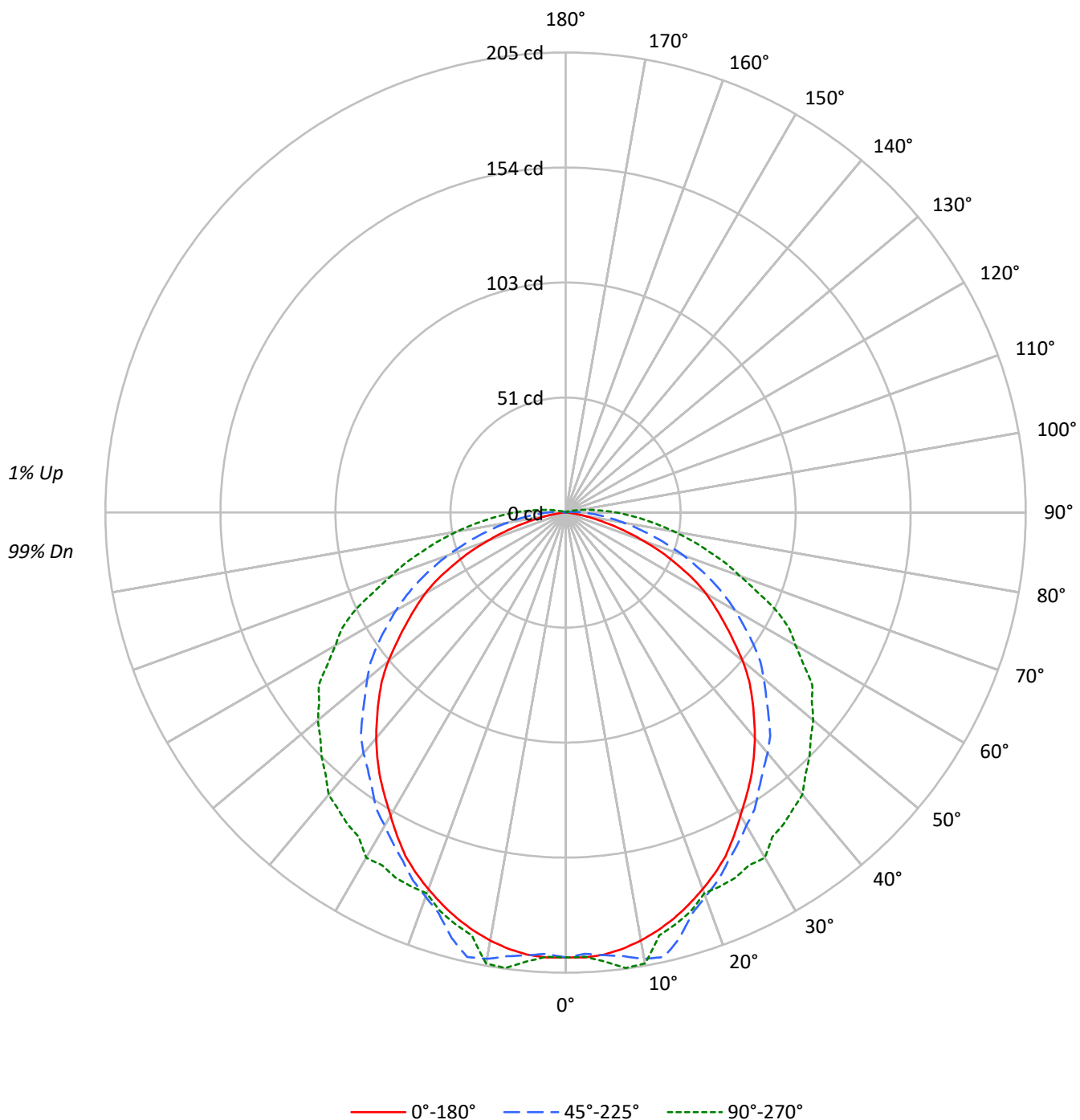
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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°	3200	3200	3200
5°	3158	3128	3185
10°	3083	3147	3203
15°	2994	3040	2973
20°	2893	2826	2844
25°	2790	2685	2862
30°	2651	2567	2893
35°	2542	2454	2841
40°	2426	2366	2859
45°	2304	2256	2808
50°	2161	2143	2787
55°	1971	2023	2786
60°	1812	1864	2666
65°	1545	1683	2581
70°	1201	1456	2314
75°	796	1191	2114
80°	401	926	1896
85°	121	662	1671

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 2808 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.0	3.2
10°-20°	54.2	9.1
20°-30°	80.7	13.5
30°-40°	97.0	16.2
40°-50°	102.1	17.1
50°-60°	94.7	15.9
60°-70°	74.9	12.5
70°-80°	45.8	7.7
80°-90°	19.9	3.3
90°-100°	6.2	1.0
100°-110°	1.4	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°	154.0	25.8
0°-40°	251.0	42.0
0°-60°	447.8	75.0
0°-90°	588.4	98.6
90°-120°	8.1	1.4
90°-150°	8.6	1.4
90°-180°	9.0	1.5
0°-180°	597.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	198	198	198	198	198	
5°	198	197	198	200	201	19
15°	187	194	196	190	190	53
25°	169	180	171	176	179	77
35°	144	148	150	164	169	90
45°	118	118	128	148	154	91
55°	87	88	102	124	134	78
65°	55	57	72	95	104	54
75°	21	28	40	62	66	23
85°	2	6	16	30	35	3
90°	0	2	8	19	23	0
95°	0	0	4	10	13	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

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CATALOG NUMBER: HVL8-1-LD4-1LO-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	198.2	198.2	198.2	198.2	198.2
2.5°	198.4	197.9	196.8	197.8	198.1
5°	197.7	197.3	198.0	200.2	200.8
7.5°	196.0	197.6	199.4	203.4	204.7
10°	193.6	196.5	201.9	205.4	204.0
12.5°	190.6	195.5	202.8	196.1	193.0
15°	187.1	194.3	196.2	189.7	189.8
17.5°	183.0	193.3	187.4	187.3	186.1
20°	178.6	189.9	182.1	181.8	180.6
22.5°	173.9	185.4	177.5	176.8	180.2
25°	168.8	179.6	171.4	176.5	179.4
27.5°	162.4	171.9	166.3	173.5	177.1
30°	155.9	164.0	161.1	171.2	177.6
32.5°	149.8	155.7	156.8	170.3	171.4
35°	144.0	148.0	150.2	163.9	169.4
37.5°	137.7	138.7	144.6	161.2	166.5
40°	131.2	130.5	140.0	156.7	164.1
42.5°	124.3	124.0	135.0	154.5	158.2
45°	117.7	118.2	127.9	148.2	153.7
47.5°	110.9	111.6	121.2	141.3	148.2
50°	103.1	104.0	115.3	135.2	144.0
52.5°	94.6	96.3	109.4	129.3	138.3
55°	86.7	88.1	102.1	124.4	134.3
57.5°	79.4	80.3	94.4	118.1	125.6
60°	72.3	72.5	87.2	111.2	118.3
62.5°	64.1	64.4	79.8	103.0	112.5
65°	54.9	56.6	71.9	95.1	103.8
67.5°	46.3	49.3	63.8	88.0	92.5
70°	37.1	42.2	55.8	79.5	82.7
72.5°	28.6	34.6	47.7	70.1	74.6
75°	20.7	27.5	40.1	61.6	65.5
77.5°	14.0	20.8	33.0	52.2	57.4
80°	8.4	15.2	26.6	43.6	49.3
82.5°	4.3	10.2	20.7	36.5	41.7
85°	1.9	6.5	15.6	30.3	34.8
87.5°	0.5	3.7	11.5	24.5	28.3
90°	0.0	1.9	8.2	19.2	22.6
92.5°	0.0	0.9	5.8	14.5	17.2
95°	0.0	0.5	3.6	10.5	12.9
97.5°	0.0	0.3	2.2	7.5	9.4
100°	0.0	0.2	1.3	5.0	6.7
102.5°	0.0	0.3	0.9	3.1	4.4
105°	0.0	0.3	0.7	2.1	2.9
107.5°	0.1	0.3	0.6	1.5	2.0
110°	0.0	0.2	0.7	1.2	1.6

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CATALOG NUMBER: HVL8-1-LD4-1LO-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.6	1.0	1.2
115°	0.0	0.2	0.6	0.9	1.0
117.5°	0.1	0.1	0.4	0.9	1.0
120°	0.1	0.1	0.4	0.9	1.0
122.5°	0.1	0.1	0.3	0.8	1.0
125°	0.0	0.1	0.2	0.6	0.8
127.5°	0.1	0.1	0.2	0.5	0.6
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)