

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: P517959

Luminaire Tested: HVL8-2-LD4-2STD-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: P517959
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-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: 3119.0 lumens
Efficiency: N/A
Efficacy: 95.4 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

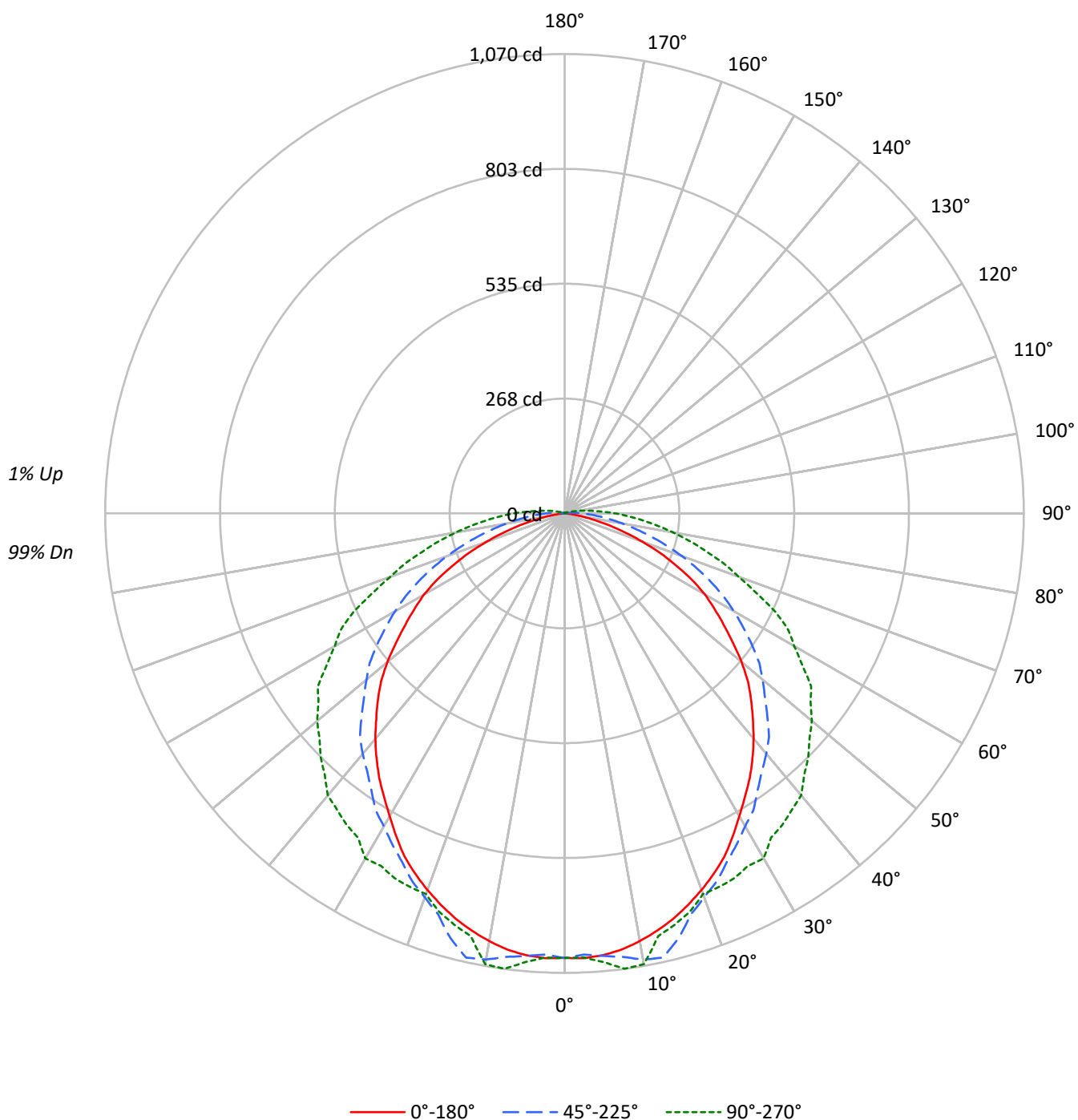
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8358	8358	8358
5°	8309	8212	8317
10°	8170	8303	8369
15°	7992	8058	7768
20°	7782	7529	7429
25°	7561	7185	7476
30°	7242	6905	7558
35°	7005	6639	7424
40°	6751	6433	7470
45°	6479	6175	7335
50°	6154	5903	7279
55°	5695	5614	7275
60°	5326	5226	6965
65°	4645	4766	6742
70°	3718	4179	6046
75°	2579	3475	5520
80°	1380	2769	4955
85°	460	2046	4365

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 7335 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.5	3.2
10°-20°	283.4	9.1
20°-30°	421.6	13.5
30°-40°	506.8	16.2
40°-50°	533.4	17.1
50°-60°	495.0	15.9
60°-70°	391.4	12.5
70°-80°	239.0	7.7
80°-90°	104.2	3.3
90°-100°	32.4	1.0
100°-110°	7.3	0.2
110°-120°	2.9	0.1
120°-130°	1.6	0.1
130°-140°	0.4	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°	804.5	25.8
0°-40°	1311.3	42.0
0°-60°	2339.7	75.0
0°-90°	3074.3	98.6
90°-120°	42.6	1.4
90°-150°	44.7	1.4
90°-180°	45.0	1.4
0°-180°	3119.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1035	1035	1035	1035	1035	
5°	1033	1031	1034	1046	1049	98
15°	978	1015	1025	991	992	275
25°	882	938	895	922	937	405
35°	752	773	785	856	885	470
45°	615	618	668	774	803	474
55°	453	460	533	650	702	407
65°	287	296	376	497	542	284
75°	108	144	209	322	342	118
85°	10	34	82	158	182	15
90°	0	10	43	100	118	0
95°	0	2	19	55	67	0
105°	0	2	4	11	15	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	2	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°	1035.3	1035.3	1035.3	1035.3	1035.3
2.5°	1036.6	1033.9	1028.2	1033.7	1035.1
5°	1032.8	1030.7	1034.3	1045.9	1048.8
7.5°	1024.2	1032.2	1041.7	1062.8	1069.5
10°	1011.3	1026.5	1055.0	1072.9	1065.9
12.5°	995.7	1021.4	1059.6	1024.6	1008.3
15°	977.6	1015.1	1025.0	991.0	991.7
17.5°	956.2	1009.8	979.2	978.4	972.3
20°	933.3	992.1	951.6	949.9	943.4
22.5°	908.6	968.7	927.1	923.8	941.5
25°	881.8	938.1	895.3	922.1	937.1
27.5°	848.3	898.0	868.7	906.7	925.5
30°	814.3	856.7	841.5	894.5	927.8
32.5°	782.5	813.5	819.2	889.8	895.3
35°	752.3	773.2	784.8	856.1	885.2
37.5°	719.2	724.9	755.7	841.9	870.0
40°	685.4	681.9	731.2	818.7	857.5
42.5°	649.2	647.9	705.3	807.1	826.5
45°	614.8	617.5	668.4	774.2	803.1
47.5°	579.6	583.2	633.4	738.2	774.0
50°	538.7	543.3	602.1	706.1	752.3
52.5°	494.4	503.2	571.8	675.7	722.4
55°	452.8	460.2	533.2	649.8	701.5
57.5°	414.9	419.3	493.3	617.1	656.1
60°	377.5	378.6	455.8	580.8	618.2
62.5°	334.7	336.6	417.2	538.0	588.0
65°	286.6	295.7	375.6	497.1	542.2
67.5°	241.7	257.5	333.2	459.6	483.2
70°	193.6	220.4	291.7	415.5	432.1
72.5°	149.5	181.0	249.1	366.1	389.5
75°	108.4	143.6	209.4	321.8	342.1
77.5°	73.0	108.8	172.3	272.9	299.7
80°	43.7	79.5	139.2	227.6	257.7
82.5°	22.4	53.4	108.0	190.9	217.9
85°	9.7	33.7	81.6	158.4	181.8
87.5°	2.7	19.2	60.1	128.0	147.8
90°	0.2	10.1	42.8	100.4	118.3
92.5°	0.2	4.9	30.2	75.9	89.6
95°	0.2	2.5	18.8	55.0	67.3
97.5°	0.2	1.5	11.4	39.0	49.4
100°	0.2	1.3	6.7	25.9	35.2
102.5°	0.2	1.5	4.6	16.5	23.0
105°	0.2	1.5	3.8	10.8	15.2
107.5°	0.4	1.5	3.4	8.0	10.5
110°	0.2	1.3	3.6	6.1	8.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.1	3.4	5.1	6.1
115°	0.2	0.8	3.0	4.9	5.1
117.5°	0.4	0.6	2.3	4.9	5.1
120°	0.4	0.4	1.9	4.6	5.3
122.5°	0.4	0.4	1.5	4.2	5.1
125°	0.2	0.4	1.3	3.2	4.4
127.5°	0.4	0.4	1.1	2.5	3.4
130°	0.4	0.4	0.8	1.9	2.5
132.5°	0.4	0.4	0.6	1.5	1.9
135°	0.4	0.4	0.4	1.1	1.5
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)