

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: P517915

Luminaire Tested: HVL8-2-LD4-2HI-30-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: P517915
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-30-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3708.1 lumens
Efficiency: N/A
Efficacy: 86.0 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

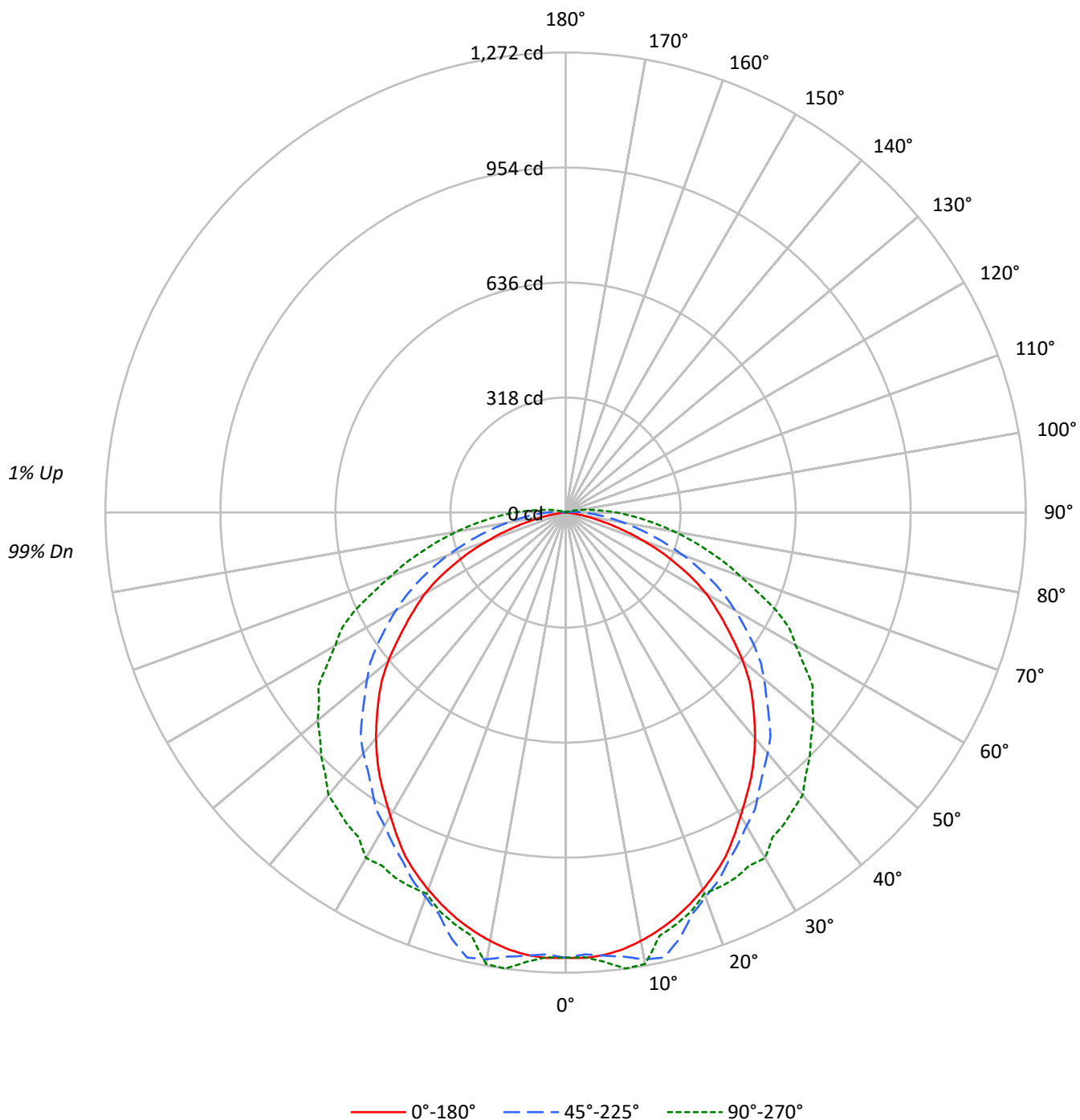
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9937	9937	9937
5°	9878	9763	9888
10°	9713	9871	9949
15°	9501	9580	9235
20°	9251	8951	8831
25°	8988	8542	8887
30°	8610	8208	8985
35°	8328	7892	8825
40°	8026	7648	8881
45°	7703	7341	8720
50°	7316	7018	8654
55°	6770	6675	8648
60°	6332	6211	8280
65°	5521	5666	8015
70°	4421	4968	7189
75°	3067	4132	6562
80°	1638	3292	5891
85°	546	2432	5188

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8720 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.3	3.2
10°-20°	336.9	9.1
20°-30°	501.3	13.5
30°-40°	602.5	16.2
40°-50°	634.2	17.1
50°-60°	588.4	15.9
60°-70°	465.3	12.5
70°-80°	284.2	7.7
80°-90°	123.8	3.3
90°-100°	38.6	1.0
100°-110°	8.7	0.2
110°-120°	3.5	0.1
120°-130°	2.0	0.1
130°-140°	0.5	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°	956.4	25.8
0°-40°	1558.9	42.0
0°-60°	2781.6	75.0
0°-90°	3654.8	98.6
90°-120°	50.7	1.4
90°-150°	53.2	1.4
90°-180°	53.0	1.4
0°-180°	3708.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1231	1231	1231	1231	1231	
5°	1228	1225	1230	1243	1247	116
15°	1162	1207	1219	1178	1179	327
25°	1048	1115	1064	1096	1114	481
35°	894	919	933	1018	1052	559
45°	731	734	795	920	955	563
55°	538	547	634	772	834	484
65°	341	352	447	591	645	337
75°	129	171	249	383	407	141
85°	12	40	97	188	216	18
90°	0	12	51	119	141	1
95°	0	3	22	65	80	0
105°	0	2	4	13	18	0
115°	0	1	4	6	6	0
125°	0	0	2	4	5	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°	1230.9	1230.9	1230.9	1230.9	1230.9
2.5°	1232.4	1229.1	1222.3	1228.8	1230.6
5°	1227.8	1225.3	1229.6	1243.4	1246.9
7.5°	1217.6	1227.1	1238.4	1263.4	1271.5
10°	1202.3	1220.3	1254.2	1275.5	1267.2
12.5°	1183.7	1214.3	1259.7	1218.1	1198.8
15°	1162.2	1206.8	1218.6	1178.2	1179.0
17.5°	1136.8	1200.5	1164.2	1163.2	1155.9
20°	1109.5	1179.5	1131.3	1129.3	1121.5
22.5°	1080.2	1151.6	1102.2	1098.2	1119.3
25°	1048.3	1115.3	1064.4	1096.2	1114.0
27.5°	1008.5	1067.6	1032.8	1077.9	1100.2
30°	968.1	1018.5	1000.4	1063.4	1103.0
32.5°	930.2	967.1	973.9	1057.8	1064.4
35°	894.4	919.2	933.0	1017.7	1052.3
37.5°	855.0	861.8	898.4	1000.9	1034.3
40°	814.9	810.6	869.3	973.4	1019.5
42.5°	771.8	770.3	838.5	959.6	982.6
45°	730.9	734.1	794.6	920.4	954.8
47.5°	689.0	693.3	753.0	877.6	920.2
50°	640.4	645.9	715.8	839.5	894.4
52.5°	587.7	598.3	679.7	803.4	858.8
55°	538.3	547.1	633.9	772.5	833.9
57.5°	493.2	498.5	586.5	733.6	780.0
60°	448.8	450.1	541.8	690.5	734.9
62.5°	397.9	400.2	496.0	639.6	699.0
65°	340.7	351.5	446.6	591.0	644.6
67.5°	287.3	306.1	396.2	546.3	574.4
70°	230.2	262.0	346.8	493.9	513.8
72.5°	177.8	215.1	296.1	435.3	463.1
75°	128.9	170.8	249.0	382.6	406.7
77.5°	86.8	129.4	204.8	324.5	356.3
80°	51.9	94.5	165.5	270.5	306.4
82.5°	26.6	63.4	128.4	226.9	259.0
85°	11.5	40.1	97.0	188.3	216.1
87.5°	3.3	22.8	71.5	152.2	175.8
90°	0.3	12.0	50.9	119.3	140.7
92.5°	0.3	5.8	35.9	90.3	106.6
95°	0.3	3.0	22.3	65.4	80.0
97.5°	0.3	1.8	13.5	46.4	58.7
100°	0.3	1.5	8.0	30.8	41.9
102.5°	0.3	1.8	5.5	19.6	27.3
105°	0.3	1.8	4.5	12.8	18.1
107.5°	0.5	1.8	4.0	9.5	12.5
110°	0.3	1.5	4.3	7.3	9.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.0	6.0	7.3
115°	0.3	1.0	3.5	5.8	6.0
117.5°	0.5	0.8	2.8	5.8	6.0
120°	0.5	0.5	2.3	5.5	6.3
122.5°	0.5	0.5	1.8	5.0	6.0
125°	0.3	0.5	1.5	3.8	5.3
127.5°	0.5	0.5	1.3	3.0	4.0
130°	0.5	0.5	1.0	2.3	3.0
132.5°	0.5	0.5	0.8	1.8	2.3
135°	0.5	0.5	0.5	1.3	1.8
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)