

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: P517925

Luminaire Tested: HVL8-2-LD4-2HI-40-UNV-O-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: P517925
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-40-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3451.0 lumens
Efficiency: N/A
Efficacy: 80.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

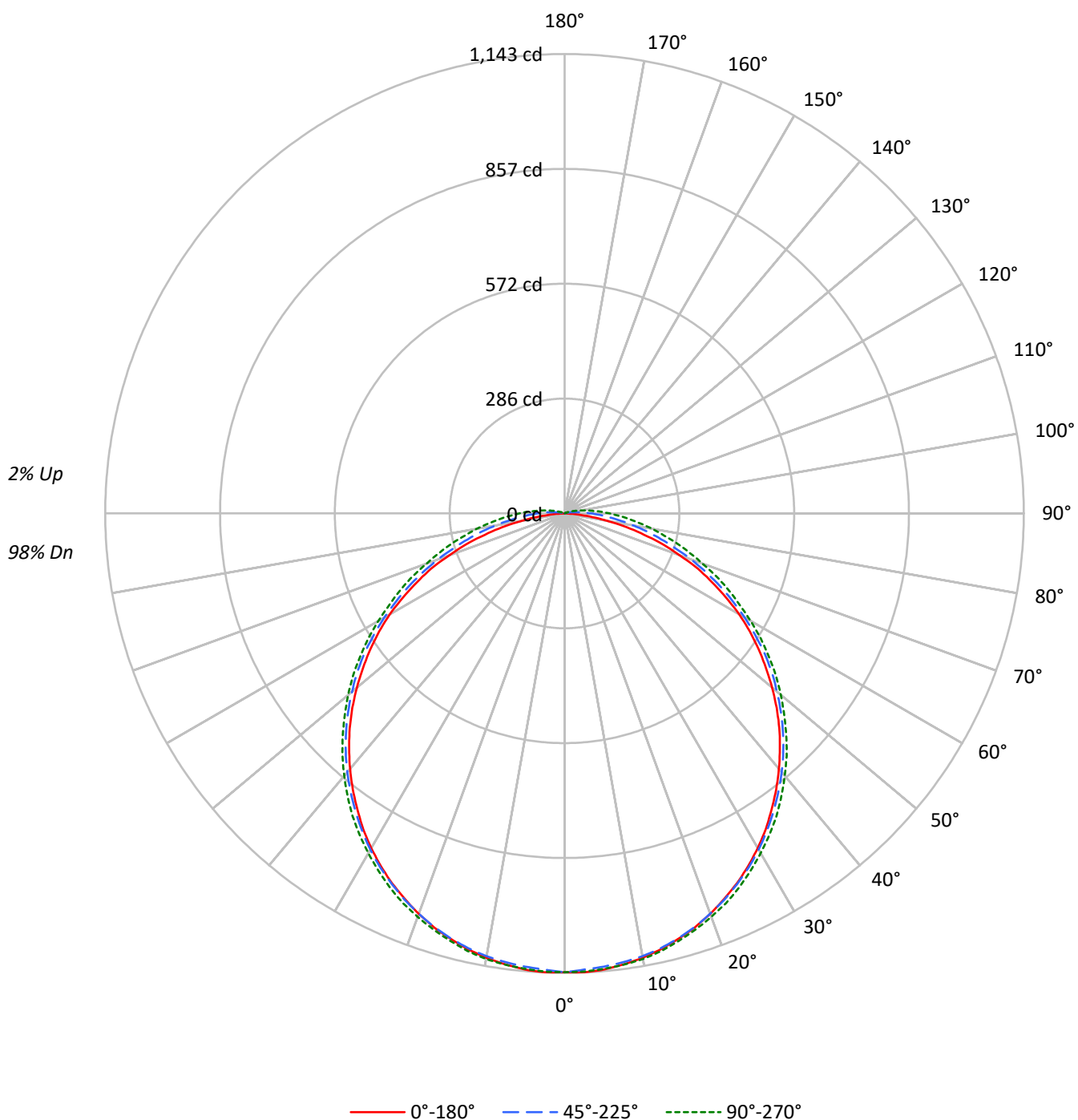
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9214	9214	9214
5°	9163	8986	9018
10°	9068	8803	8837
15°	8957	8605	8620
20°	8839	8386	8409
25°	8705	8162	8195
30°	8552	7926	7952
35°	8368	7668	7711
40°	8176	7397	7429
45°	7968	7105	7127
50°	7707	6769	6800
55°	7422	6403	6440
60°	7084	5935	6021
65°	6571	5414	5604
70°	5860	4806	5119
75°	4884	4143	4681
80°	3501	3489	4278
85°	1684	2825	3894

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7968 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.0	3.1
10°-20°	309.8	9.0
20°-30°	470.1	13.6
30°-40°	568.4	16.5
40°-50°	593.1	17.2
50°-60°	542.3	15.7
60°-70°	422.7	12.2
70°-80°	264.4	7.7
80°-90°	120.1	3.5
90°-100°	40.3	1.2
100°-110°	10.1	0.3
110°-120°	1.6	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	887.9	25.7
0°-40°	1456.4	42.2
0°-60°	2591.8	75.1
0°-90°	3399.1	98.5
90°-120°	52.0	1.5
90°-150°	52.0	1.5
90°-180°	52.0	1.5
0°-180°	3451.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1141	1141	1141	1141	1141	
5°	1139	1137	1132	1137	1137	108
15°	1096	1098	1095	1101	1100	309
25°	1015	1016	1017	1026	1027	468
35°	899	903	906	916	919	562
45°	756	763	769	776	780	583
55°	590	597	608	617	621	527
65°	406	412	427	444	451	401
75°	205	218	250	280	290	219
85°	36	66	113	149	162	45
90°	0	24	66	100	112	1
95°	0	6	34	62	72	0
105°	0	1	6	17	22	1
115°	1	1	1	3	4	1
125°	0	0	0	0	0	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°	1141.4	1141.4	1141.4	1141.4	1141.4
2.5°	1142.7	1141.1	1136.0	1141.1	1140.8
5°	1139.0	1136.8	1131.7	1137.1	1137.1
7.5°	1131.4	1130.6	1126.0	1132.2	1132.2
10°	1122.5	1122.3	1118.5	1125.2	1125.5
12.5°	1110.2	1111.2	1107.7	1114.2	1115.0
15°	1095.6	1097.5	1094.6	1100.8	1100.5
17.5°	1079.8	1080.8	1078.7	1085.7	1085.4
20°	1060.1	1061.5	1059.9	1067.1	1067.9
22.5°	1038.3	1040.2	1039.9	1047.5	1049.6
25°	1015.2	1016.0	1017.1	1025.7	1027.3
27.5°	989.6	991.0	992.9	1000.7	1002.3
30°	961.6	963.8	966.0	974.0	976.2
32.5°	932.0	934.2	936.9	947.4	948.5
35°	898.7	902.7	906.5	915.6	919.4
37.5°	865.3	870.4	873.9	883.6	886.6
40°	830.1	835.2	840.8	851.1	852.9
42.5°	793.2	799.1	805.9	815.0	818.2
45°	756.1	762.8	769.0	776.5	780.3
47.5°	716.0	722.7	730.2	738.9	741.3
50°	674.6	682.4	690.4	698.5	702.8
52.5°	632.0	641.5	650.6	659.2	663.3
55°	590.1	597.1	608.1	617.0	621.0
57.5°	546.5	552.4	562.4	576.9	579.0
60°	502.1	507.5	517.7	529.5	534.4
62.5°	453.1	460.4	471.1	486.2	490.5
65°	405.5	412.5	426.7	443.7	450.7
67.5°	359.5	361.9	380.2	398.0	409.3
70°	305.1	314.3	335.5	357.3	365.9
72.5°	258.3	267.5	290.9	316.4	327.2
75°	205.3	217.9	249.7	279.6	290.1
77.5°	158.7	172.7	212.0	242.2	254.3
80°	110.9	132.7	175.4	209.3	222.5
82.5°	69.7	96.6	142.3	177.9	189.4
85°	35.5	65.7	112.7	149.1	162.2
87.5°	9.4	42.5	87.7	122.4	135.9
90°	0.3	24.5	66.5	99.8	111.9
92.5°	0.3	13.7	49.5	79.4	91.8
95°	0.3	6.5	34.4	62.4	72.1
97.5°	0.3	2.7	23.7	47.1	56.8
100°	0.3	1.3	15.1	34.2	42.5
102.5°	0.5	0.8	9.4	24.5	31.2
105°	0.5	0.8	5.7	16.7	22.3
107.5°	0.5	0.8	3.2	11.3	15.3
110°	0.8	0.8	1.9	7.0	10.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.1	4.6	6.7
115°	0.8	0.8	1.1	3.0	4.3
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)