

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: P517981

Luminaire Tested: HVL8-2-LD4-3LO-30-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: P517981
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-30-UNV-O-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: 3686.0 lumens
Efficiency: N/A
Efficacy: 109.4 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

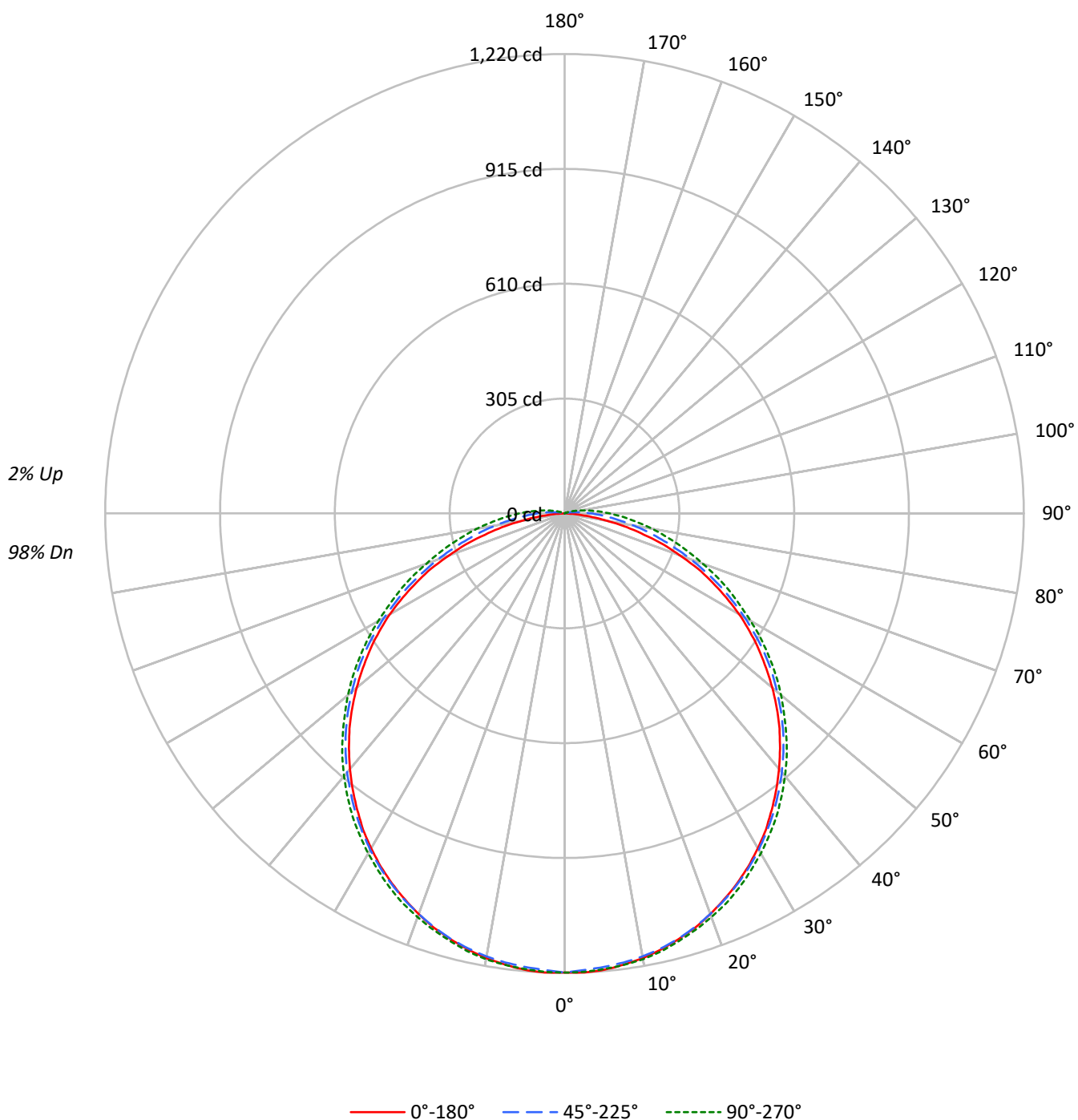
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9842	9842	9842
5°	9787	9598	9631
10°	9686	9403	9439
15°	9567	9190	9207
20°	9441	8957	8982
25°	9297	8718	8754
30°	9135	8465	8493
35°	8938	8190	8236
40°	8733	7902	7936
45°	8511	7589	7612
50°	8231	7230	7264
55°	7926	6839	6879
60°	7567	6339	6431
65°	7019	5783	5986
70°	6259	5134	5468
75°	5217	4425	4999
80°	3738	3728	4570
85°	1798	3019	4161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8511 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.4	3.1
10°-20°	330.9	9.0
20°-30°	502.1	13.6
30°-40°	607.1	16.5
40°-50°	633.5	17.2
50°-60°	579.2	15.7
60°-70°	451.5	12.2
70°-80°	282.5	7.7
80°-90°	128.3	3.5
90°-100°	43.0	1.2
100°-110°	10.8	0.3
110°-120°	1.7	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°	948.4	25.7
0°-40°	1555.5	42.2
0°-60°	2768.2	75.1
0°-90°	3630.5	98.5
90°-120°	55.5	1.5
90°-150°	55.5	1.5
90°-180°	56.0	1.5
0°-180°	3686.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1219	1219	1219	1219	1219	
5°	1216	1214	1209	1214	1214	116
15°	1170	1172	1169	1176	1175	330
25°	1084	1085	1086	1096	1097	500
35°	960	964	968	978	982	601
45°	808	815	821	829	833	622
55°	630	638	650	659	663	563
65°	433	441	456	474	481	429
75°	219	233	267	299	310	234
85°	38	70	120	159	173	48
90°	0	26	71	107	120	2
95°	0	7	37	67	77	0
105°	1	1	6	18	24	1
115°	1	1	1	3	5	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

TEST NUMBER: P517981

CATALOG NUMBER: HVL8-2-LD4-3LO-30-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1219.1	1219.1	1219.1	1219.1	1219.1
2.5°	1220.5	1218.8	1213.4	1218.8	1218.5
5°	1216.5	1214.2	1208.8	1214.5	1214.5
7.5°	1208.5	1207.6	1202.7	1209.3	1209.3
10°	1199.0	1198.7	1194.7	1201.9	1202.2
12.5°	1185.8	1186.9	1183.2	1190.1	1190.9
15°	1170.2	1172.3	1169.1	1175.7	1175.4
17.5°	1153.3	1154.4	1152.1	1159.6	1159.3
20°	1132.3	1133.8	1132.0	1139.8	1140.6
22.5°	1109.0	1111.0	1110.8	1118.8	1121.1
25°	1084.3	1085.2	1086.3	1095.5	1097.3
27.5°	1057.0	1058.5	1060.5	1068.8	1070.5
30°	1027.1	1029.4	1031.7	1040.3	1042.6
32.5°	995.5	997.8	1000.7	1011.9	1013.0
35°	959.9	964.2	968.2	978.0	982.0
37.5°	924.2	929.7	933.4	943.8	946.9
40°	886.6	892.1	898.1	909.0	911.0
42.5°	847.2	853.5	860.7	870.5	874.0
45°	807.6	814.7	821.4	829.4	833.4
47.5°	764.7	771.9	780.0	789.2	791.8
50°	720.5	728.8	737.4	746.1	750.7
52.5°	675.1	685.1	694.9	704.1	708.4
55°	630.2	637.7	649.5	659.0	663.3
57.5°	583.7	590.0	600.6	616.2	618.5
60°	536.3	542.0	552.9	565.6	570.8
62.5°	484.0	491.7	503.2	519.3	523.9
65°	433.1	440.6	455.8	473.9	481.4
67.5°	384.0	386.5	406.1	425.0	437.1
70°	325.9	335.7	358.4	381.7	390.8
72.5°	275.9	285.7	310.7	338.0	349.5
75°	219.3	232.8	266.7	298.6	309.8
77.5°	169.6	184.5	226.5	258.7	271.6
80°	118.4	141.7	187.4	223.6	237.7
82.5°	74.4	103.2	152.0	190.0	202.3
85°	37.9	70.1	120.4	159.2	173.3
87.5°	10.1	45.4	93.7	130.8	145.1
90°	0.3	26.2	71.0	106.6	119.6
92.5°	0.3	14.7	52.9	84.8	98.0
95°	0.3	6.9	36.8	66.7	77.0
97.5°	0.3	2.9	25.3	50.3	60.6
100°	0.3	1.4	16.1	36.5	45.4
102.5°	0.6	0.9	10.1	26.2	33.3
105°	0.6	0.9	6.0	17.8	23.9
107.5°	0.6	0.9	3.4	12.1	16.4
110°	0.9	0.9	2.0	7.5	10.9

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CATALOG NUMBER: HVL8-2-LD4-3LO-30-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.1	4.9	7.2
115°	0.9	0.9	1.1	3.2	4.6
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)