

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: P517820

Luminaire Tested: HVL8-1-LD4-3HI-30-UNV-C-EDD

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: P517820
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-30-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3374.0 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

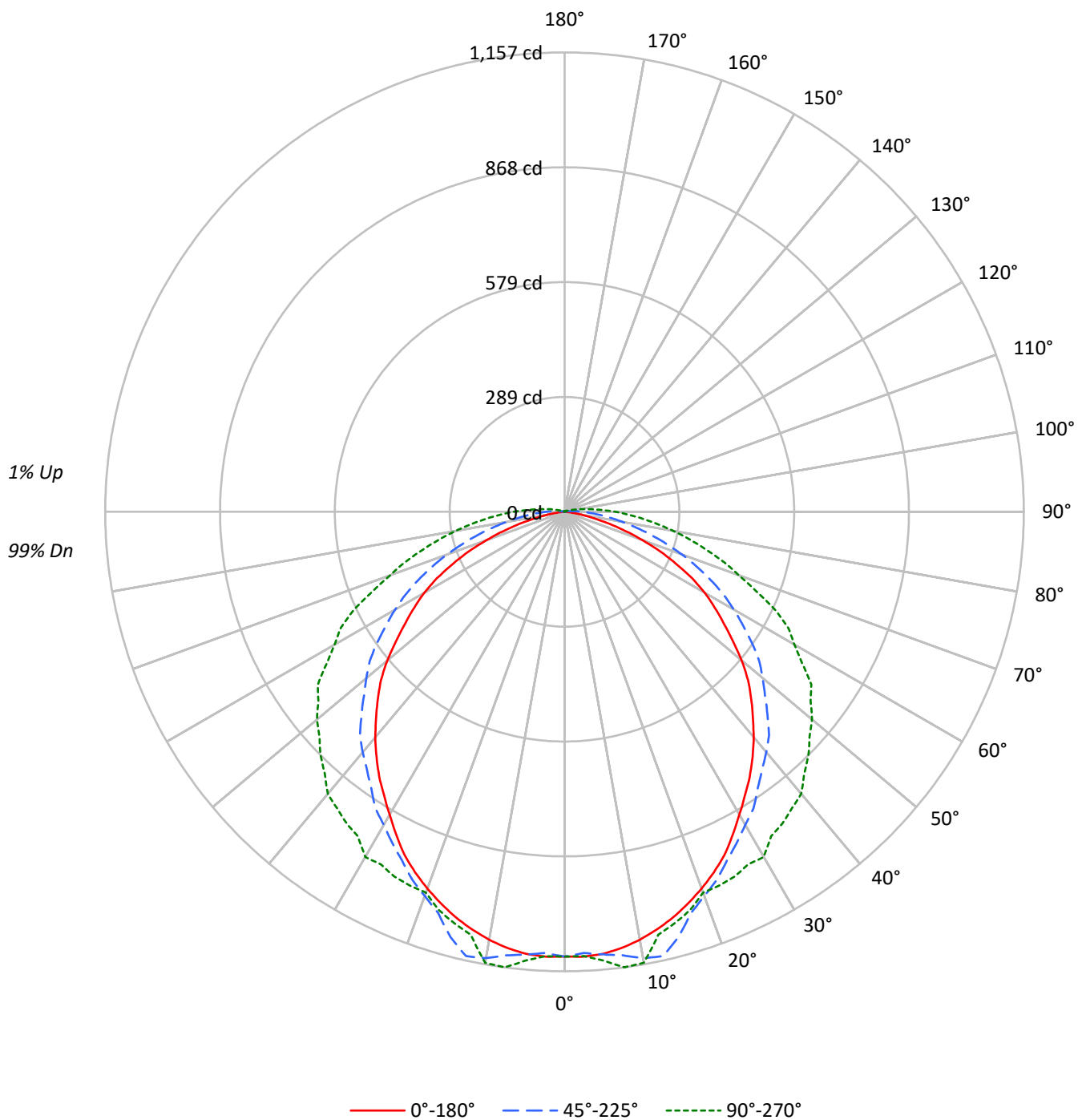
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	18083	18083	18083
5°	17847	17677	17995
10°	17424	17786	18107
15°	16921	17178	16806
20°	16355	15974	16072
25°	15768	15169	16173
30°	14981	14504	16350
35°	14364	13870	16061
40°	13711	13367	16162
45°	13017	12751	15870
50°	12211	12109	15748
55°	11136	11427	15739
60°	10233	10540	15068
65°	8727	9512	14588
70°	6780	8230	13082
75°	4511	6732	11943
80°	2256	5242	10720
85°	669	3745	9445

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 15870 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.6	3.2
10°-20°	306.5	9.1
20°-30°	456.1	13.5
30°-40°	548.2	16.2
40°-50°	577.0	17.1
50°-60°	535.4	15.9
60°-70°	423.4	12.5
70°-80°	258.6	7.7
80°-90°	112.7	3.3
90°-100°	35.1	1.0
100°-110°	7.9	0.2
110°-120°	3.2	0.1
120°-130°	1.8	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°	870.3	25.8
0°-40°	1418.5	42.0
0°-60°	2531.0	75.0
0°-90°	3325.6	98.6
90°-120°	46.1	1.4
90°-150°	48.4	1.4
90°-180°	48.0	1.4
0°-180°	3374.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1120	1120	1120	1120	1120	
5°	1117	1115	1119	1131	1135	106
15°	1058	1098	1109	1072	1073	298
25°	954	1015	968	998	1014	438
35°	814	836	849	926	958	509
45°	665	668	723	838	869	513
55°	490	498	577	703	759	440
65°	310	320	406	538	587	307
75°	117	155	227	348	370	128
85°	10	36	88	171	197	16
90°	0	11	46	109	128	0
95°	0	3	20	60	73	0
105°	0	2	4	12	16	0
115°	0	1	3	5	6	0
125°	0	0	1	3	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°	1120.0	1120.0	1120.0	1120.0	1120.0
2.5°	1121.4	1118.4	1112.2	1118.2	1119.8
5°	1117.2	1115.0	1118.8	1131.4	1134.6
7.5°	1107.9	1116.6	1126.8	1149.6	1156.9
10°	1094.0	1110.4	1141.2	1160.6	1153.1
12.5°	1077.1	1104.9	1146.2	1108.3	1090.8
15°	1057.5	1098.1	1108.8	1072.1	1072.8
17.5°	1034.4	1092.4	1059.3	1058.4	1051.8
20°	1009.6	1073.2	1029.4	1027.6	1020.5
22.5°	982.9	1047.9	1002.9	999.3	1018.5
25°	953.9	1014.8	968.5	997.5	1013.7
27.5°	917.6	971.5	939.7	980.8	1001.1
30°	880.9	926.7	910.3	967.6	1003.6
32.5°	846.4	880.0	886.1	962.6	968.5
35°	813.8	836.4	848.9	926.1	957.5
37.5°	778.0	784.1	817.5	910.8	941.1
40°	741.5	737.6	791.0	885.7	927.7
42.5°	702.2	700.9	762.9	873.1	894.1
45°	665.1	668.0	723.0	837.5	868.8
47.5°	627.0	630.8	685.1	798.5	837.3
50°	582.7	587.7	651.4	763.8	813.8
52.5°	534.8	544.4	618.5	731.0	781.4
55°	489.8	497.8	576.8	702.9	758.8
57.5°	448.8	453.6	533.6	667.6	709.8
60°	408.4	409.5	493.0	628.3	668.7
62.5°	362.1	364.1	451.3	582.0	636.1
65°	310.1	319.9	406.3	537.7	586.6
67.5°	261.5	278.6	360.5	497.1	522.7
70°	209.4	238.4	315.5	449.5	467.5
72.5°	161.8	195.8	269.4	396.1	421.4
75°	117.3	155.4	226.6	348.2	370.1
77.5°	78.9	117.7	186.4	295.2	324.2
80°	47.2	86.0	150.6	246.2	278.8
82.5°	24.2	57.7	116.8	206.5	235.7
85°	10.5	36.5	88.3	171.3	196.7
87.5°	3.0	20.8	65.0	138.5	159.9
90°	0.2	11.0	46.3	108.6	128.0
92.5°	0.2	5.2	32.6	82.1	97.0
95°	0.2	2.7	20.3	59.5	72.8
97.5°	0.2	1.6	12.3	42.2	53.4
100°	0.2	1.4	7.3	28.1	38.1
102.5°	0.2	1.6	5.0	17.8	24.9
105°	0.2	1.6	4.1	11.6	16.4
107.5°	0.5	1.6	3.7	8.7	11.4
110°	0.2	1.4	3.9	6.6	8.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.1	3.7	5.5	6.6
115°	0.2	0.9	3.2	5.2	5.5
117.5°	0.5	0.7	2.5	5.2	5.5
120°	0.5	0.5	2.1	5.0	5.7
122.5°	0.5	0.5	1.6	4.6	5.5
125°	0.2	0.5	1.4	3.4	4.8
127.5°	0.5	0.5	1.1	2.7	3.7
130°	0.5	0.5	0.9	2.1	2.7
132.5°	0.5	0.5	0.7	1.6	2.1
135°	0.5	0.5	0.5	1.1	1.6
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)