

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: P517376

Luminaire Tested: HVL12-2-LD4-2STD-35-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: P517376
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2STD-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3644.0 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

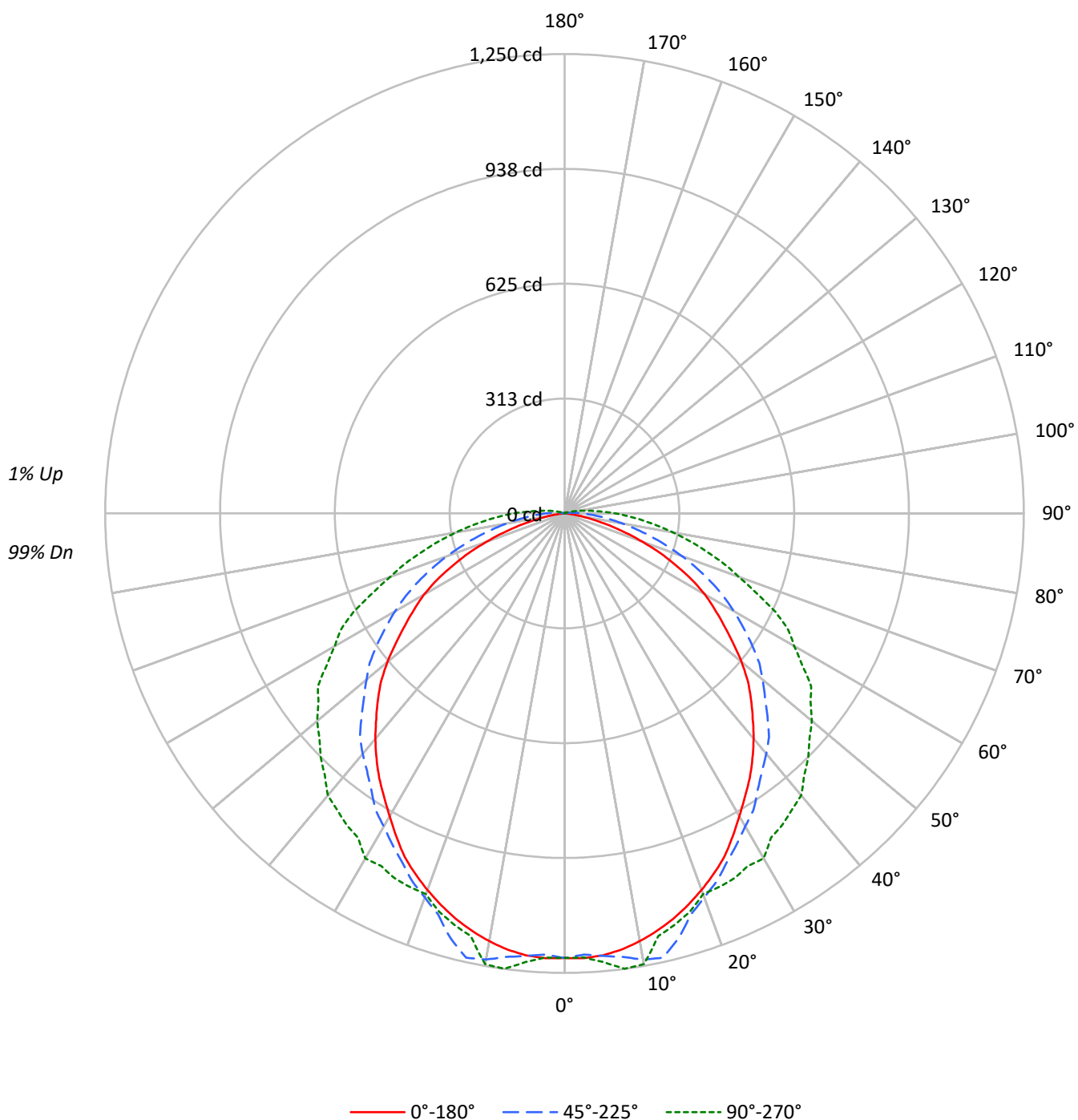
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6510	6510	6510
5°	6472	6429	6525
10°	6363	6532	6611
15°	6225	6370	6179
20°	6061	5983	5952
25°	5889	5738	6032
30°	5641	5544	6145
35°	5456	5361	6085
40°	5258	5227	6175
45°	5047	5051	6121
50°	4793	4865	6139
55°	4436	4666	6211
60°	4149	4388	6032
65°	3618	4053	5943
70°	2896	3609	5449
75°	2010	3066	5124
80°	1073	2516	4797
85°	357	1950	4514

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6211 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.3	3.2
10°-20°	331.1	9.1
20°-30°	492.6	13.5
30°-40°	592.1	16.2
40°-50°	623.2	17.1
50°-60°	578.3	15.9
60°-70°	457.2	12.5
70°-80°	279.3	7.7
80°-90°	121.7	3.3
90°-100°	37.9	1.0
100°-110°	8.5	0.2
110°-120°	3.4	0.1
120°-130°	1.9	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°	939.9	25.8
0°-40°	1532.0	42.0
0°-60°	2733.5	75.0
0°-90°	3591.8	98.6
90°-120°	49.8	1.4
90°-150°	52.2	1.4
90°-180°	52.0	1.4
0°-180°	3644.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1210	1210	1210	1210	1210	
5°	1207	1204	1208	1222	1225	114
15°	1142	1186	1198	1158	1159	322
25°	1030	1096	1046	1077	1095	473
35°	879	903	917	1000	1034	549
45°	718	722	781	905	938	554
55°	529	538	623	759	820	475
65°	335	346	439	581	634	332
75°	127	168	245	376	400	138
85°	11	39	95	185	212	18
90°	0	12	50	117	138	1
95°	0	3	22	64	79	0
105°	0	2	4	13	18	0
115°	0	1	3	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°	1209.6	1209.6	1209.6	1209.6	1209.6
2.5°	1211.1	1207.9	1201.2	1207.6	1209.4
5°	1206.7	1204.2	1208.4	1221.9	1225.4
7.5°	1196.6	1205.9	1217.0	1241.6	1249.5
10°	1181.5	1199.3	1232.5	1253.5	1245.3
12.5°	1163.3	1193.3	1237.9	1197.0	1178.1
15°	1142.1	1186.0	1197.5	1157.9	1158.6
17.5°	1117.2	1179.8	1144.1	1143.1	1135.9
20°	1090.3	1159.1	1111.8	1109.8	1102.2
22.5°	1061.5	1131.7	1083.2	1079.3	1100.0
25°	1030.2	1096.0	1046.0	1077.3	1094.8
27.5°	991.0	1049.2	1014.9	1059.3	1081.2
30°	951.4	1000.9	983.2	1045.0	1083.9
32.5°	914.2	950.4	957.0	1039.6	1046.0
35°	878.9	903.3	916.9	1000.2	1034.2
37.5°	840.2	846.9	882.9	983.7	1016.4
40°	800.8	796.6	854.3	956.6	1001.9
42.5°	758.4	757.0	824.0	943.0	965.7
45°	718.3	721.5	780.9	904.6	938.3
47.5°	677.1	681.3	740.0	862.4	904.3
50°	629.3	634.7	703.5	825.0	878.9
52.5°	577.6	587.9	668.0	789.5	843.9
55°	529.0	537.7	622.9	759.2	819.5
57.5°	484.7	489.9	576.3	721.0	766.6
60°	441.1	442.3	532.5	678.6	722.2
62.5°	391.0	393.3	487.4	628.6	687.0
65°	334.9	345.5	438.9	580.8	633.5
67.5°	282.4	300.9	389.3	536.9	564.5
70°	226.2	257.5	340.8	485.4	504.9
72.5°	174.7	211.4	291.0	427.8	455.1
75°	126.7	167.8	244.7	376.0	399.7
77.5°	85.3	127.1	201.3	318.9	350.1
80°	51.0	92.9	162.6	265.9	301.1
82.5°	26.1	62.3	126.2	223.0	254.5
85°	11.3	39.4	95.4	185.1	212.4
87.5°	3.2	22.4	70.2	149.6	172.7
90°	0.2	11.8	50.0	117.3	138.2
92.5°	0.2	5.7	35.2	88.7	104.7
95°	0.2	3.0	21.9	64.3	78.6
97.5°	0.2	1.7	13.3	45.6	57.7
100°	0.2	1.5	7.9	30.3	41.1
102.5°	0.2	1.7	5.4	19.2	26.9
105°	0.2	1.7	4.4	12.6	17.7
107.5°	0.5	1.7	3.9	9.4	12.3
110°	0.2	1.5	4.2	7.1	9.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.9	5.9	7.1
115°	0.2	1.0	3.4	5.7	5.9
117.5°	0.5	0.7	2.7	5.7	5.9
120°	0.5	0.5	2.2	5.4	6.2
122.5°	0.5	0.5	1.7	4.9	5.9
125°	0.2	0.5	1.5	3.7	5.2
127.5°	0.5	0.5	1.2	3.0	3.9
130°	0.5	0.5	1.0	2.2	3.0
132.5°	0.5	0.5	0.7	1.7	2.2
135°	0.5	0.5	0.5	1.2	1.7
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)