

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: P517403

Luminaire Tested: HVL12-2-LD4-3LO-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: P517403
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3LO-30-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3683.0 lumens
Efficiency: N/A
Efficacy: 106.4 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

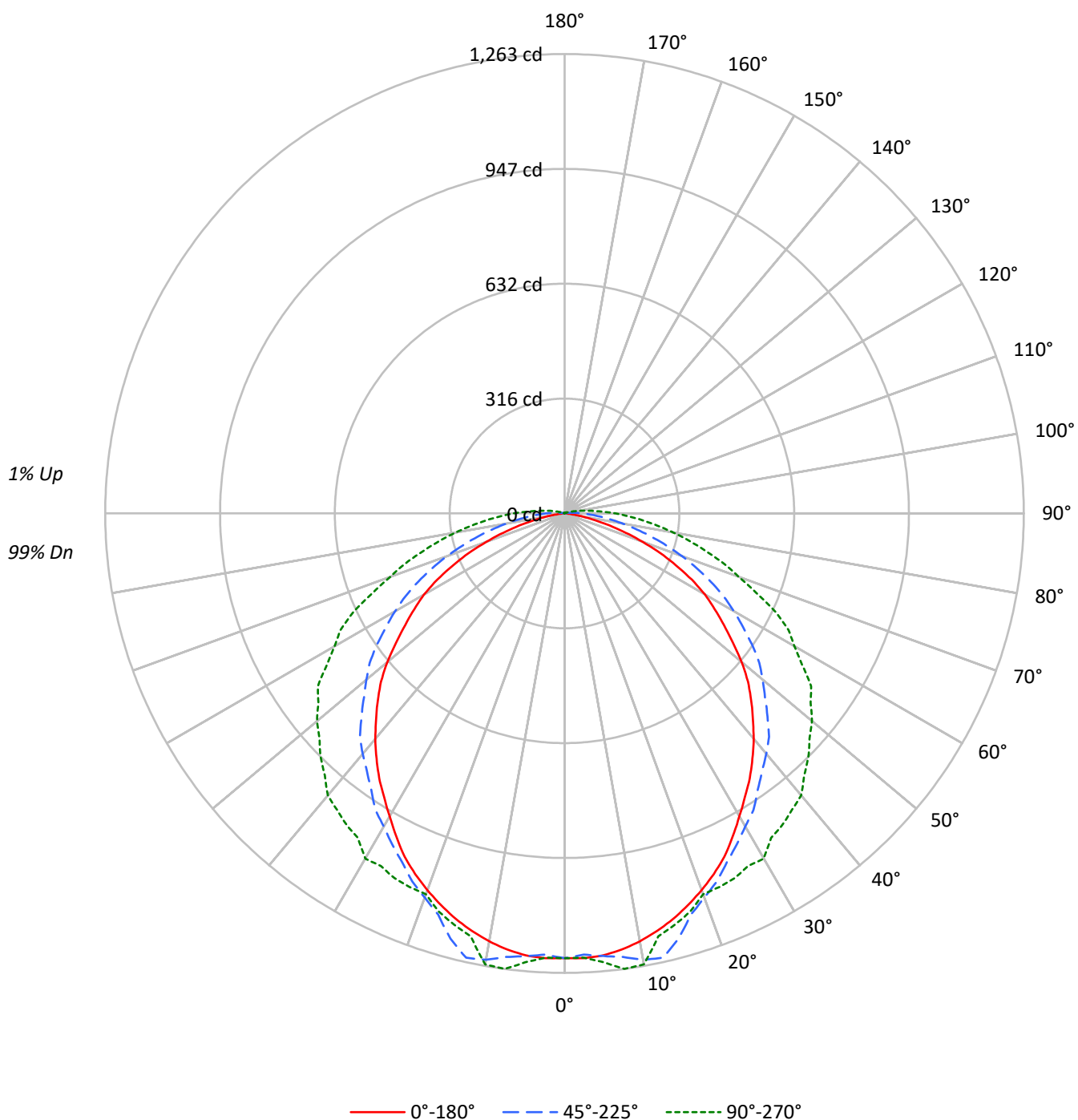
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	6580	6580	6580
5°	6541	6498	6595
10°	6432	6602	6682
15°	6291	6439	6246
20°	6126	6047	6015
25°	5952	5800	6097
30°	5702	5603	6210
35°	5514	5418	6149
40°	5315	5282	6241
45°	5101	5104	6187
50°	4845	4917	6205
55°	4483	4717	6278
60°	4193	4435	6096
65°	3657	4095	6007
70°	2927	3647	5508
75°	2030	3098	5178
80°	1086	2544	4848
85°	364	1970	4563

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6278 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.5	3.2
10°-20°	334.6	9.1
20°-30°	497.9	13.5
30°-40°	598.4	16.2
40°-50°	629.9	17.1
50°-60°	584.5	15.9
60°-70°	462.1	12.5
70°-80°	282.3	7.7
80°-90°	123.0	3.3
90°-100°	38.3	1.0
100°-110°	8.6	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°	950.0	25.8
0°-40°	1548.4	42.0
0°-60°	2762.8	75.0
0°-90°	3630.2	98.6
90°-120°	50.3	1.4
90°-150°	52.8	1.4
90°-180°	53.0	1.4
0°-180°	3683.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1223	1223	1223	1223	1223	
5°	1220	1217	1221	1235	1238	116
15°	1154	1199	1210	1170	1171	325
25°	1041	1108	1057	1089	1106	478
35°	888	913	927	1011	1045	555
45°	726	729	789	914	948	560
55°	535	543	630	767	828	480
65°	338	349	444	587	640	335
75°	128	170	247	380	404	140
85°	12	40	96	187	215	18
90°	0	12	51	118	140	1
95°	0	3	22	65	79	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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CATALOG NUMBER: HVL12-2-LD4-3LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1222.6	1222.6	1222.6	1222.6	1222.6
2.5°	1224.0	1220.8	1214.1	1220.6	1222.3
5°	1219.6	1217.1	1221.3	1235.0	1238.5
7.5°	1209.4	1218.8	1230.0	1254.9	1262.9
10°	1194.2	1212.1	1245.7	1266.9	1258.7
12.5°	1175.7	1206.1	1251.2	1209.9	1190.7
15°	1154.3	1198.6	1210.4	1170.3	1171.0
17.5°	1129.2	1192.4	1156.3	1155.3	1148.1
20°	1102.0	1171.5	1123.7	1121.7	1114.0
22.5°	1072.9	1143.9	1094.8	1090.8	1111.7
25°	1041.3	1107.7	1057.2	1088.8	1106.5
27.5°	1001.7	1060.4	1025.8	1070.6	1092.8
30°	961.6	1011.6	993.7	1056.2	1095.5
32.5°	924.0	960.6	967.3	1050.7	1057.2
35°	888.3	913.0	926.7	1010.9	1045.2
37.5°	849.2	856.0	892.3	994.2	1027.3
40°	809.4	805.2	863.4	966.8	1012.6
42.5°	766.6	765.1	832.8	953.1	976.0
45°	726.0	729.2	789.2	914.2	948.4
47.5°	684.4	688.6	747.9	871.7	914.0
50°	636.1	641.5	711.0	833.8	888.3
52.5°	583.8	594.2	675.2	797.9	853.0
55°	534.7	543.4	629.6	767.3	828.3
57.5°	489.9	495.1	582.5	728.7	774.8
60°	445.8	447.0	538.2	685.9	729.9
62.5°	395.2	397.5	492.6	635.3	694.3
65°	338.5	349.2	443.5	587.0	640.3
67.5°	285.4	304.1	393.5	542.7	570.6
70°	228.6	260.3	344.4	490.6	510.3
72.5°	176.6	213.7	294.1	432.3	460.0
75°	128.0	169.6	247.3	380.0	403.9
77.5°	86.2	128.5	203.5	322.3	353.9
80°	51.6	93.9	164.4	268.7	304.3
82.5°	26.4	63.0	127.5	225.4	257.3
85°	11.5	39.8	96.4	187.0	214.7
87.5°	3.2	22.7	71.0	151.2	174.6
90°	0.2	12.0	50.6	118.5	139.7
92.5°	0.2	5.7	35.6	89.7	105.8
95°	0.2	3.0	22.2	65.0	79.4
97.5°	0.2	1.7	13.4	46.1	58.3
100°	0.2	1.5	8.0	30.6	41.6
102.5°	0.2	1.7	5.5	19.4	27.1
105°	0.2	1.7	4.5	12.7	17.9
107.5°	0.5	1.7	4.0	9.5	12.5
110°	0.2	1.5	4.2	7.2	9.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	4.0	6.0	7.2
115°	0.2	1.0	3.5	5.7	6.0
117.5°	0.5	0.7	2.7	5.7	6.0
120°	0.5	0.5	2.2	5.5	6.2
122.5°	0.5	0.5	1.7	5.0	6.0
125°	0.2	0.5	1.5	3.7	5.2
127.5°	0.5	0.5	1.2	3.0	4.0
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)