

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: P517468

Luminaire Tested: HVL12-4-LD4-1STD-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P517468
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-1STD-30-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3656.0 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.17')
CIE Type: Direct

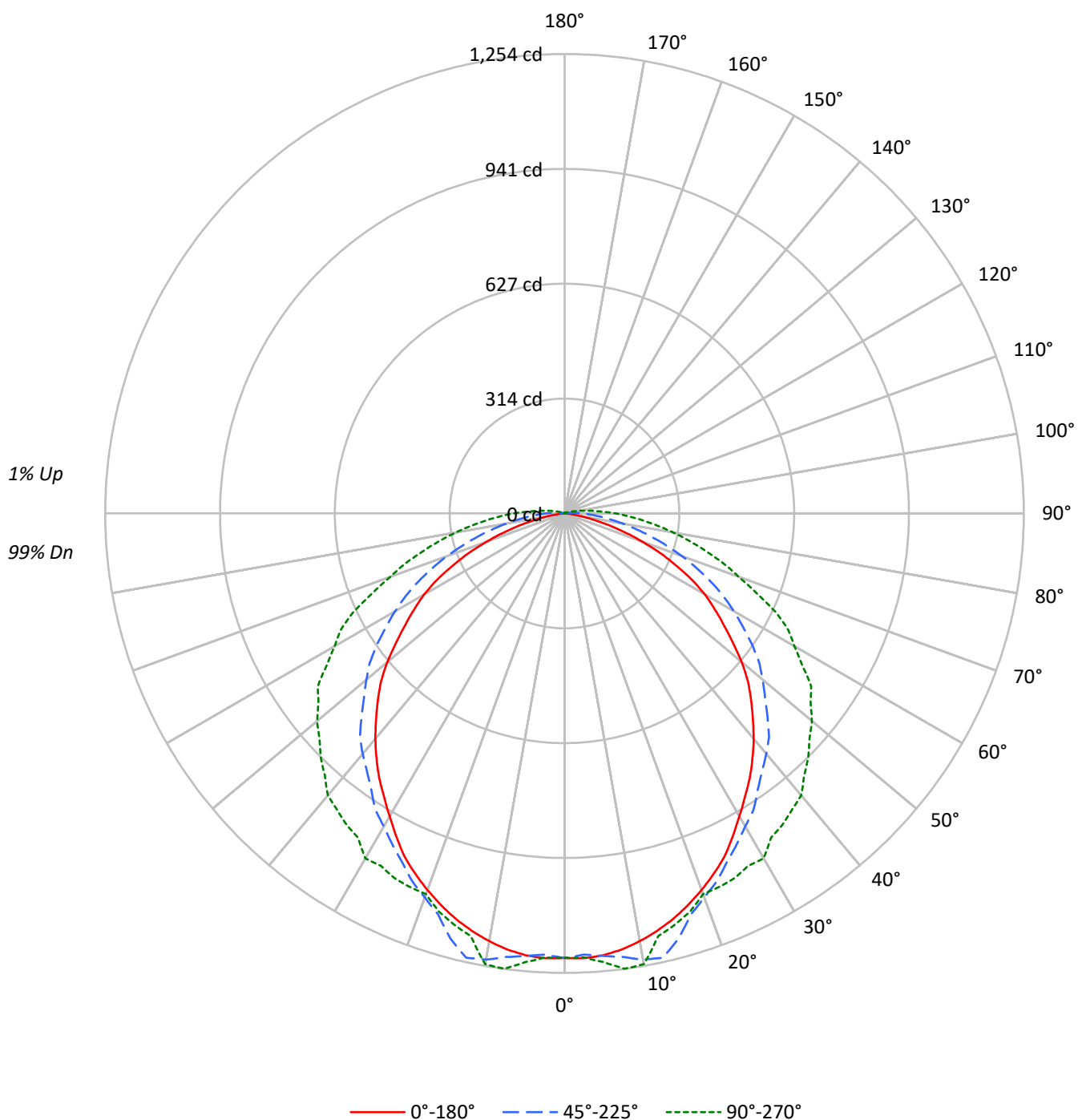
Input Watts (W): 33.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517468

CATALOG NUMBER: HVL12-4-LD4-1STD-30-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517468

CATALOG NUMBER: HVL12-4-LD4-1STD-30-UNV-C-EDD

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°	3266	3266	3266
5°	3258	3233	3273
10°	3215	3293	3316
15°	3157	3220	3100
20°	3086	3032	2986
25°	3010	2916	3026
30°	2896	2825	3082
35°	2815	2739	3052
40°	2727	2680	3098
45°	2633	2598	3071
50°	2518	2513	3080
55°	2350	2422	3116
60°	2221	2290	3026
65°	1964	2130	2981
70°	1602	1915	2733
75°	1144	1647	2570
80°	642	1378	2406
85°	238	1101	2265

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3116 cd/sqm

TEST NUMBER: P517468

CATALOG NUMBER: HVL12-4-LD4-1STD-30-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.6	3.2
10°-20°	332.2	9.1
20°-30°	494.2	13.5
30°-40°	594.1	16.2
40°-50°	625.3	17.1
50°-60°	580.2	15.9
60°-70°	458.7	12.5
70°-80°	280.2	7.7
80°-90°	122.1	3.3
90°-100°	38.0	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°	943.0	25.8
0°-40°	1537.1	42.0
0°-60°	2742.5	75.0
0°-90°	3603.6	98.6
90°-120°	50.0	1.4
90°-150°	52.4	1.4
90°-180°	52.0	1.4
0°-180°	3656.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1214	1214	1214	1214	1214	
5°	1211	1208	1212	1226	1229	115
15°	1146	1190	1202	1162	1162	323
25°	1034	1100	1049	1081	1098	475
35°	882	906	920	1004	1038	551
45°	721	724	783	908	941	556
55°	531	539	625	762	822	477
65°	336	347	440	583	636	333
75°	127	168	246	377	401	139
85°	11	40	96	186	213	18
90°	0	12	50	118	139	1
95°	0	3	22	64	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

TEST NUMBER: P517468

CATALOG NUMBER: HVL12-4-LD4-1STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1213.6	1213.6	1213.6	1213.6	1213.6
2.5°	1215.1	1211.9	1205.2	1211.6	1213.3
5°	1210.6	1208.2	1212.4	1226.0	1229.4
7.5°	1200.5	1209.9	1221.0	1245.7	1253.6
10°	1185.4	1203.2	1236.6	1257.6	1249.4
12.5°	1167.1	1197.3	1242.0	1201.0	1181.9
15°	1145.9	1189.9	1201.5	1161.7	1162.4
17.5°	1120.9	1183.7	1147.8	1146.8	1139.7
20°	1093.9	1162.9	1115.4	1113.5	1105.8
22.5°	1065.0	1135.5	1086.8	1082.8	1103.6
25°	1033.6	1099.6	1049.4	1080.8	1098.4
27.5°	994.3	1052.7	1018.3	1062.8	1084.8
30°	954.5	1004.2	986.4	1048.5	1087.5
32.5°	917.2	953.5	960.2	1043.0	1049.4
35°	881.8	906.3	919.9	1003.5	1037.6
37.5°	843.0	849.7	885.8	986.9	1019.8
40°	803.5	799.3	857.1	959.7	1005.2
42.5°	760.9	759.5	826.7	946.1	968.8
45°	720.6	723.9	783.4	907.5	941.4
47.5°	679.4	683.6	742.4	865.3	907.3
50°	631.4	636.8	705.8	827.7	881.8
52.5°	579.5	589.9	670.2	792.1	846.7
55°	530.8	539.4	625.0	761.7	822.2
57.5°	486.3	491.5	578.2	723.4	769.1
60°	442.5	443.8	534.2	680.8	724.6
62.5°	392.3	394.6	489.0	630.7	689.2
65°	336.0	346.6	440.3	582.7	635.6
67.5°	283.3	301.9	390.6	538.7	566.4
70°	226.9	258.3	341.9	487.0	506.5
72.5°	175.3	212.1	292.0	429.2	456.6
75°	127.1	168.4	245.5	377.3	401.0
77.5°	85.5	127.6	202.0	319.9	351.3
80°	51.2	93.2	163.2	266.7	302.1
82.5°	26.2	62.5	126.6	223.7	255.4
85°	11.4	39.6	95.7	185.7	213.1
87.5°	3.2	22.5	70.5	150.1	173.3
90°	0.2	11.9	50.2	117.7	138.7
92.5°	0.2	5.7	35.4	89.0	105.1
95°	0.2	3.0	22.0	64.5	78.9
97.5°	0.2	1.7	13.3	45.7	57.8
100°	0.2	1.5	7.9	30.4	41.3
102.5°	0.2	1.7	5.4	19.3	26.9
105°	0.2	1.7	4.4	12.6	17.8
107.5°	0.5	1.7	4.0	9.4	12.4
110°	0.2	1.5	4.2	7.2	9.6

TEST NUMBER: P517468

CATALOG NUMBER: HVL12-4-LD4-1STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	4.0	5.9	7.2
115°	0.2	1.0	3.5	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	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)