

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: P517347

Luminaire Tested: HVL12-2-LD4-2HI-40-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: P517347
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2HI-40-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3979.0 lumens
Efficiency: N/A
Efficacy: 90.0 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

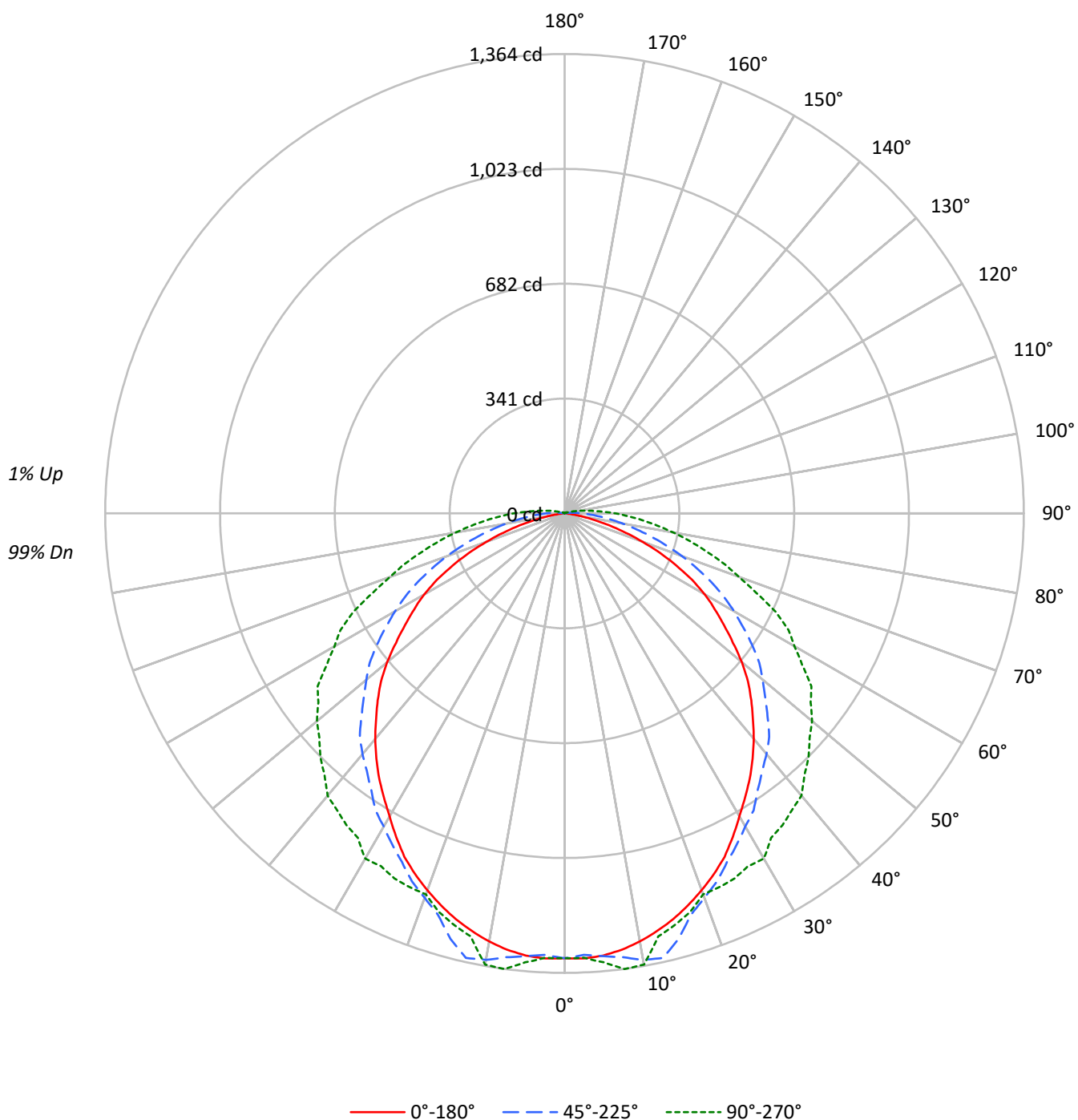
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7108	7108	7108
5°	7067	7020	7125
10°	6948	7132	7219
15°	6797	6956	6748
20°	6618	6533	6499
25°	6430	6266	6587
30°	6159	6053	6710
35°	5958	5853	6644
40°	5742	5707	6743
45°	5510	5514	6684
50°	5234	5313	6704
55°	4844	5096	6782
60°	4530	4791	6587
65°	3951	4425	6490
70°	3163	3941	5950
75°	2194	3347	5594
80°	1172	2748	5238
85°	392	2128	4929

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6782 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.9	3.2
10°-20°	361.5	9.1
20°-30°	537.9	13.5
30°-40°	646.5	16.2
40°-50°	680.5	17.1
50°-60°	631.4	15.9
60°-70°	499.3	12.5
70°-80°	305.0	7.7
80°-90°	132.9	3.3
90°-100°	41.4	1.0
100°-110°	9.3	0.2
110°-120°	3.7	0.1
120°-130°	2.1	0.1
130°-140°	0.6	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°	1026.3	25.8
0°-40°	1672.9	42.0
0°-60°	2984.8	75.0
0°-90°	3922.0	98.6
90°-120°	54.4	1.4
90°-150°	57.0	1.4
90°-180°	57.0	1.4
0°-180°	3979.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1321	1321	1321	1321	1321	
5°	1318	1315	1320	1334	1338	125
15°	1247	1295	1308	1264	1265	351
25°	1125	1197	1142	1176	1195	516
35°	960	986	1001	1092	1129	600
45°	784	788	853	988	1025	605
55°	578	587	680	829	895	519
65°	366	377	479	634	692	362
75°	138	183	267	411	436	151
85°	12	43	104	202	232	19
90°	0	13	55	128	151	1
95°	0	3	24	70	86	0
105°	0	2	5	14	19	0
115°	0	1	4	6	6	0
125°	0	0	2	4	6	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-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1320.8	1320.8	1320.8	1320.8	1320.8
2.5°	1322.4	1318.9	1311.7	1318.7	1320.5
5°	1317.6	1314.9	1319.5	1334.3	1338.0
7.5°	1306.6	1316.8	1328.9	1355.8	1364.4
10°	1290.1	1309.5	1345.8	1368.7	1359.8
12.5°	1270.2	1303.1	1351.8	1307.1	1286.4
15°	1247.1	1295.0	1307.6	1264.3	1265.1
17.5°	1219.9	1288.3	1249.2	1248.2	1240.4
20°	1190.6	1265.7	1214.0	1211.8	1203.5
22.5°	1159.1	1235.8	1182.8	1178.5	1201.1
25°	1124.9	1196.8	1142.2	1176.3	1195.4
27.5°	1082.2	1145.7	1108.3	1156.7	1180.6
30°	1038.8	1092.9	1073.5	1141.1	1183.6
32.5°	998.2	1037.8	1045.0	1135.2	1142.2
35°	959.7	986.4	1001.2	1092.1	1129.2
37.5°	917.5	924.8	964.0	1074.1	1109.9
40°	874.4	869.9	932.8	1044.5	1094.0
42.5°	828.2	826.5	899.7	1029.7	1054.4
45°	784.3	787.8	852.6	987.7	1024.6
47.5°	739.4	743.9	808.0	941.7	987.4
50°	687.2	693.1	768.2	900.8	959.7
52.5°	630.7	642.0	729.4	862.1	921.5
55°	577.7	587.1	680.2	829.0	894.9
57.5°	529.2	534.9	629.3	787.3	837.0
60°	481.6	483.0	581.4	741.0	788.6
62.5°	427.0	429.4	532.2	686.4	750.1
65°	365.7	377.2	479.2	634.2	691.8
67.5°	308.3	328.5	425.1	586.3	616.4
70°	247.0	281.2	372.1	530.0	551.3
72.5°	190.8	230.9	317.8	467.1	497.0
75°	138.3	183.2	267.2	410.6	436.4
77.5°	93.1	138.8	219.8	348.2	382.3
80°	55.7	101.4	177.6	290.3	328.8
82.5°	28.5	68.1	137.8	243.5	277.9
85°	12.4	43.0	104.1	202.1	231.9
87.5°	3.5	24.5	76.7	163.3	188.6
90°	0.3	12.9	54.6	128.1	150.9
92.5°	0.3	6.2	38.5	96.9	114.4
95°	0.3	3.2	23.9	70.2	85.8
97.5°	0.3	1.9	14.5	49.8	63.0
100°	0.3	1.6	8.6	33.1	44.9
102.5°	0.3	1.9	5.9	21.0	29.3
105°	0.3	1.9	4.8	13.7	19.4
107.5°	0.5	1.9	4.3	10.2	13.5
110°	0.3	1.6	4.6	7.8	10.5

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CATALOG NUMBER: HVL12-2-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.3	6.5	7.8
115°	0.3	1.1	3.8	6.2	6.5
117.5°	0.5	0.8	3.0	6.2	6.5
120°	0.5	0.5	2.4	5.9	6.7
122.5°	0.5	0.5	1.9	5.4	6.5
125°	0.3	0.5	1.6	4.0	5.7
127.5°	0.5	0.5	1.3	3.2	4.3
130°	0.5	0.5	1.1	2.4	3.2
132.5°	0.5	0.5	0.8	1.9	2.4
135°	0.5	0.5	0.5	1.3	1.9
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)