

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: P517984

Luminaire Tested: HVL8-2-LD4-3LO-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: P517984
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

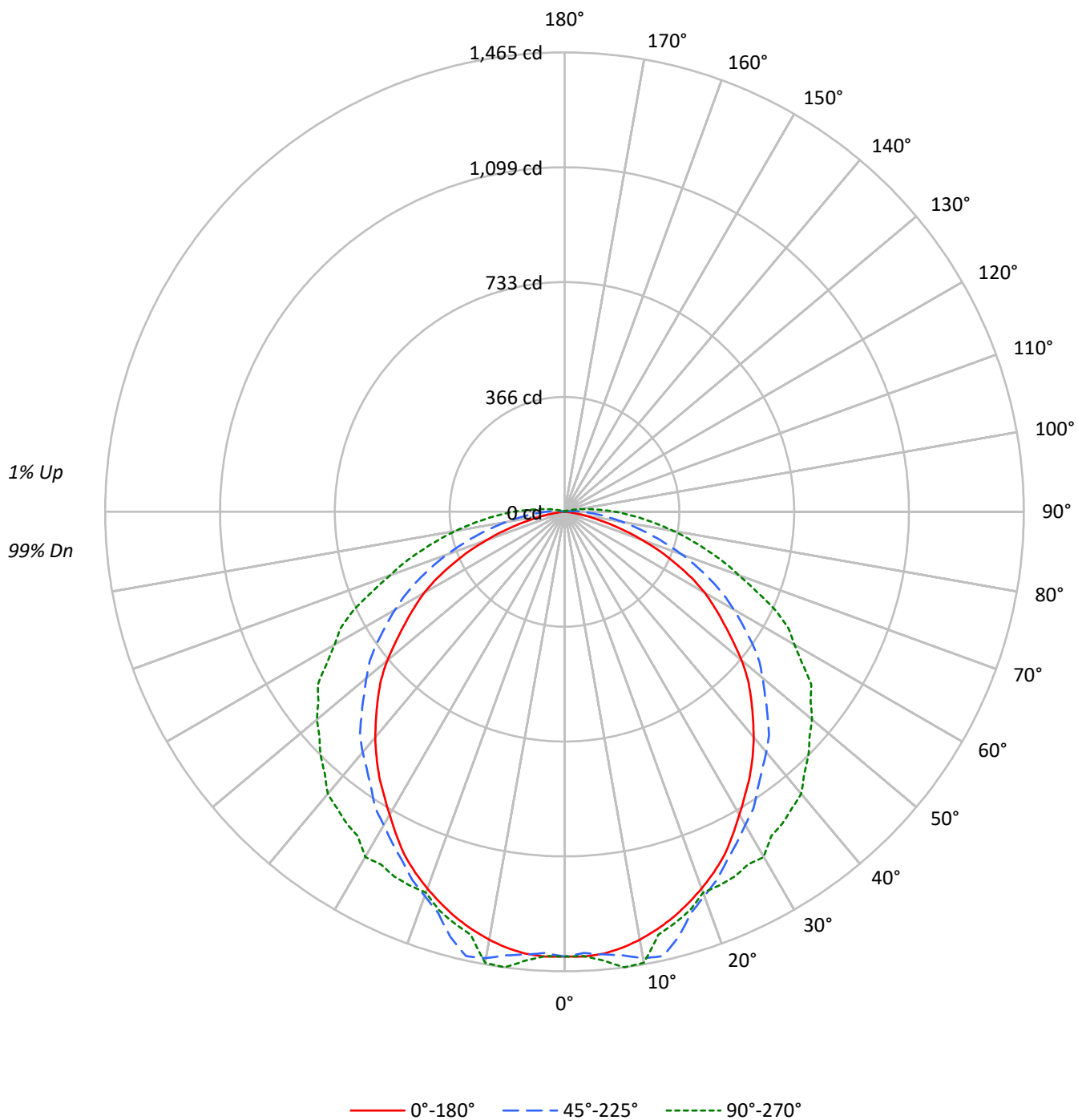
Lumens per Lamp: N/A
Luminaire Lumens: 4272.0 lumens
Efficiency: N/A
Efficacy: 126.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

Input Watts (W): 33.7
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: P517984
CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517984

CATALOG NUMBER: HVL8-2-LD4-3LO-35-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°	11448	11448	11448
5°	11381	11248	11393
10°	11190	11372	11463
15°	10946	11036	10639
20°	10659	10313	10174
25°	10356	9841	10239
30°	9919	9457	10351
35°	9595	9092	10168
40°	9247	8811	10232
45°	8874	8457	10046
50°	8429	8086	9970
55°	7801	7690	9965
60°	7296	7157	9539
65°	6362	6528	9235
70°	5093	5723	8282
75°	3533	4759	7561
80°	1888	3794	6787
85°	631	2803	5978

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10046 cd/sqm

TEST NUMBER: P517984

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.3	3.2
10°-20°	388.1	9.1
20°-30°	577.5	13.5
30°-40°	694.1	16.2
40°-50°	730.6	17.1
50°-60°	677.9	15.9
60°-70°	536.0	12.5
70°-80°	327.4	7.7
80°-90°	142.6	3.3
90°-100°	44.4	1.0
100°-110°	10.0	0.2
110°-120°	4.0	0.1
120°-130°	2.3	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°	1101.9	25.8
0°-40°	1796.1	42.0
0°-60°	3204.6	75.0
0°-90°	4210.7	98.6
90°-120°	58.4	1.4
90°-150°	61.3	1.4
90°-180°	61.0	1.4
0°-180°	4272.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1418	1418	1418	1418	1418	
5°	1415	1412	1417	1432	1437	134
15°	1339	1390	1404	1357	1358	377
25°	1208	1285	1226	1263	1284	554
35°	1030	1059	1075	1172	1212	644
45°	842	846	915	1060	1100	649
55°	620	630	730	890	961	557
65°	393	405	514	681	743	389
75°	148	197	287	441	469	162
85°	13	46	112	217	249	21
90°	0	14	59	138	162	1
95°	0	4	26	75	92	0
105°	0	2	5	15	21	0
115°	0	1	4	7	7	0
125°	0	1	2	4	6	0
135°	1	1	1	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: P517984

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1418.1	1418.1	1418.1	1418.1	1418.1
2.5°	1419.8	1416.0	1408.2	1415.8	1417.8
5°	1414.6	1411.7	1416.6	1432.5	1436.6
7.5°	1402.8	1413.7	1426.7	1455.6	1464.9
10°	1385.1	1405.9	1444.9	1469.5	1460.0
12.5°	1363.8	1399.0	1451.3	1403.3	1381.1
15°	1338.9	1390.3	1403.9	1357.4	1358.3
17.5°	1309.7	1383.1	1341.2	1340.1	1331.7
20°	1278.3	1358.9	1303.4	1301.1	1292.1
22.5°	1244.5	1326.8	1269.9	1265.3	1289.5
25°	1207.8	1284.9	1226.3	1262.9	1283.5
27.5°	1161.8	1230.0	1189.9	1241.9	1267.6
30°	1115.3	1173.4	1152.6	1225.1	1270.7
32.5°	1071.7	1114.2	1122.0	1218.8	1226.3
35°	1030.4	1059.0	1074.9	1172.5	1212.4
37.5°	985.1	992.9	1035.0	1153.2	1191.6
40°	938.8	933.9	1001.5	1121.4	1174.6
42.5°	889.1	887.4	966.0	1105.5	1132.1
45°	842.1	845.8	915.4	1060.4	1100.0
47.5°	793.8	798.7	867.5	1011.1	1060.2
50°	737.8	744.1	824.7	967.1	1030.4
52.5°	677.1	689.2	783.1	925.5	989.4
55°	620.2	630.3	730.3	890.0	960.8
57.5°	568.2	574.3	675.7	845.2	898.7
60°	517.1	518.5	624.3	795.6	846.7
62.5°	458.4	461.0	571.4	736.9	805.4
65°	392.6	405.0	514.5	680.9	742.7
67.5°	331.0	352.7	456.4	629.5	661.8
70°	265.2	301.9	399.5	569.1	591.9
72.5°	204.8	247.9	341.2	501.5	533.5
75°	148.5	196.7	286.8	440.8	468.6
77.5°	99.9	149.1	236.0	373.8	410.5
80°	59.8	108.9	190.7	311.7	353.0
82.5°	30.6	73.1	147.9	261.4	298.4
85°	13.3	46.2	111.8	216.9	249.0
87.5°	3.8	26.3	82.3	175.3	202.5
90°	0.3	13.9	58.6	137.5	162.1
92.5°	0.3	6.6	41.3	104.0	122.8
95°	0.3	3.5	25.7	75.4	92.2
97.5°	0.3	2.0	15.6	53.4	67.6
100°	0.3	1.7	9.2	35.5	48.2
102.5°	0.3	2.0	6.4	22.5	31.5
105°	0.3	2.0	5.2	14.7	20.8
107.5°	0.6	2.0	4.6	11.0	14.4
110°	0.3	1.7	4.9	8.4	11.3

TEST NUMBER: P517984

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.4	4.6	6.9	8.4
115°	0.3	1.2	4.0	6.6	6.9
117.5°	0.6	0.9	3.2	6.6	6.9
120°	0.6	0.6	2.6	6.4	7.2
122.5°	0.6	0.6	2.0	5.8	6.9
125°	0.3	0.6	1.7	4.3	6.1
127.5°	0.6	0.6	1.4	3.5	4.6
130°	0.6	0.6	1.2	2.6	3.5
132.5°	0.6	0.6	0.9	2.0	2.6
135°	0.6	0.6	0.6	1.4	2.0
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)