

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: P518025

Luminaire Tested: HVL8-4-LD4-1HI-50-UNV-O-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: P518025
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-50-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4399.0 lumens
Efficiency: N/A
Efficacy: 102.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

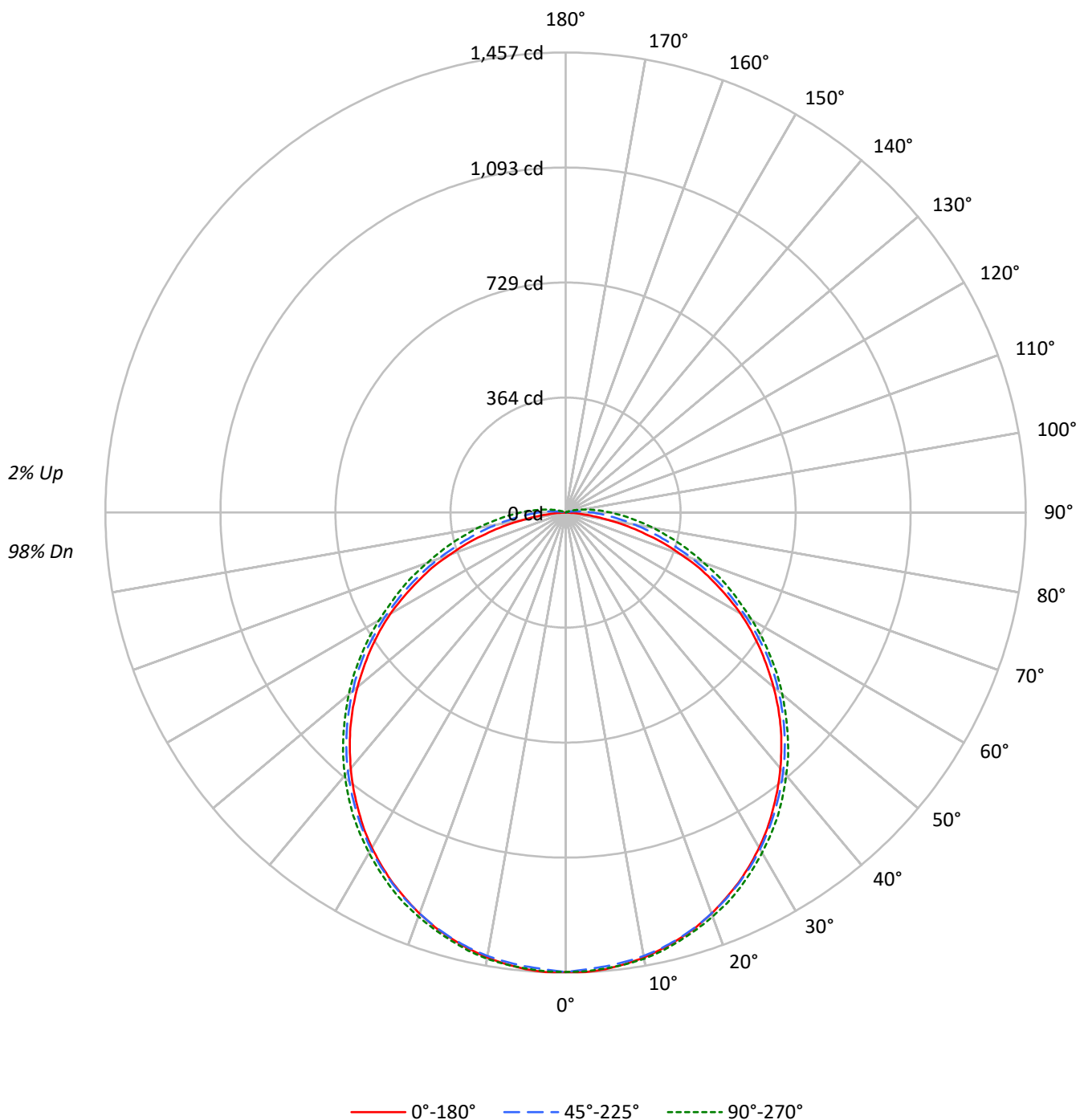
Input Watts (W): 43
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5873	5873	5873
5°	5861	5742	5747
10°	5822	5639	5632
15°	5772	5525	5494
20°	5718	5398	5360
25°	5654	5268	5223
30°	5579	5128	5068
35°	5485	4975	4915
40°	5387	4814	4735
45°	5282	4639	4542
50°	5144	4436	4334
55°	4996	4213	4105
60°	4819	3925	3837
65°	4532	3602	3572
70°	4118	3222	3264
75°	3532	2805	2982
80°	2657	2395	2726
85°	1421	1982	2482

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5282 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.7	3.1
10°-20°	394.9	9.0
20°-30°	599.2	13.6
30°-40°	724.6	16.5
40°-50°	756.0	17.2
50°-60°	691.3	15.7
60°-70°	538.9	12.3
70°-80°	337.1	7.7
80°-90°	153.1	3.5
90°-100°	51.3	1.2
100°-110°	12.9	0.3
110°-120°	2.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	1131.8	25.7
0°-40°	1856.4	42.2
0°-60°	3303.7	75.1
0°-90°	4332.8	98.5
90°-120°	66.2	1.5
90°-150°	66.2	1.5
90°-180°	66.0	1.5
0°-180°	4399.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1455	1455	1455	1455	1455	
5°	1452	1449	1443	1449	1449	138
15°	1397	1399	1395	1403	1403	394
25°	1294	1295	1296	1307	1310	596
35°	1146	1151	1156	1167	1172	717
45°	964	972	980	990	995	743
55°	752	761	775	786	792	672
65°	517	526	544	566	574	511
75°	262	278	318	356	370	279
85°	45	84	144	190	207	57
90°	0	31	85	127	143	2
95°	0	8	44	80	92	0
105°	1	1	7	21	28	1
115°	1	1	1	4	6	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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: HVL8-4-LD4-1HI-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1454.9	1454.9	1454.9	1454.9	1454.9
2.5°	1456.6	1454.6	1448.1	1454.6	1454.2
5°	1451.8	1449.1	1442.6	1449.4	1449.4
7.5°	1442.2	1441.2	1435.4	1443.3	1443.3
10°	1430.9	1430.6	1425.8	1434.3	1434.7
12.5°	1415.1	1416.5	1412.1	1420.3	1421.3
15°	1396.6	1399.0	1395.2	1403.1	1402.8
17.5°	1376.4	1377.8	1375.0	1383.9	1383.6
20°	1351.3	1353.1	1351.0	1360.3	1361.3
22.5°	1323.6	1326.0	1325.6	1335.2	1338.0
25°	1294.1	1295.1	1296.5	1307.4	1309.5
27.5°	1261.5	1263.2	1265.6	1275.5	1277.6
30°	1225.8	1228.6	1231.3	1241.6	1244.3
32.5°	1188.1	1190.8	1194.3	1207.6	1209.0
35°	1145.6	1150.7	1155.5	1167.2	1172.0
37.5°	1103.0	1109.5	1114.0	1126.3	1130.1
40°	1058.1	1064.6	1071.8	1084.8	1087.2
42.5°	1011.1	1018.7	1027.2	1038.9	1043.0
45°	963.8	972.3	980.2	989.8	994.6
47.5°	912.7	921.2	930.8	941.8	944.9
50°	859.9	869.8	880.1	890.4	895.9
52.5°	805.7	817.7	829.3	840.3	845.4
55°	752.2	761.1	775.1	786.5	791.6
57.5°	696.6	704.1	716.8	735.4	738.1
60°	640.0	646.9	659.9	675.0	681.2
62.5°	577.6	586.8	600.6	619.8	625.3
65°	516.9	525.8	544.0	565.6	574.5
67.5°	458.2	461.3	484.6	507.3	521.7
70°	388.9	400.6	427.7	455.5	466.5
72.5°	329.3	340.9	370.8	403.3	417.1
75°	261.7	277.8	318.3	356.4	369.7
77.5°	202.4	220.2	270.3	308.7	324.1
80°	141.3	169.1	223.6	266.8	283.6
82.5°	88.8	123.1	181.4	226.7	241.5
85°	45.3	83.7	143.7	190.0	206.8
87.5°	12.0	54.2	111.8	156.1	173.2
90°	0.3	31.2	84.7	127.2	142.7
92.5°	0.3	17.5	63.1	101.2	117.0
95°	0.3	8.2	43.9	79.6	91.9
97.5°	0.3	3.4	30.2	60.0	72.4
100°	0.3	1.7	19.2	43.6	54.2
102.5°	0.7	1.0	12.0	31.2	39.8
105°	0.7	1.0	7.2	21.3	28.5
107.5°	0.7	1.0	4.1	14.4	19.5
110°	1.0	1.0	2.4	8.9	13.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.4	5.8	8.6
115°	1.0	1.0	1.4	3.8	5.5
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)