

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: P518007

Luminaire Tested: HVL8-2-LD4-3STD-50-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: P518007
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4918.0 lumens
Efficiency: N/A
Efficacy: 102.9 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

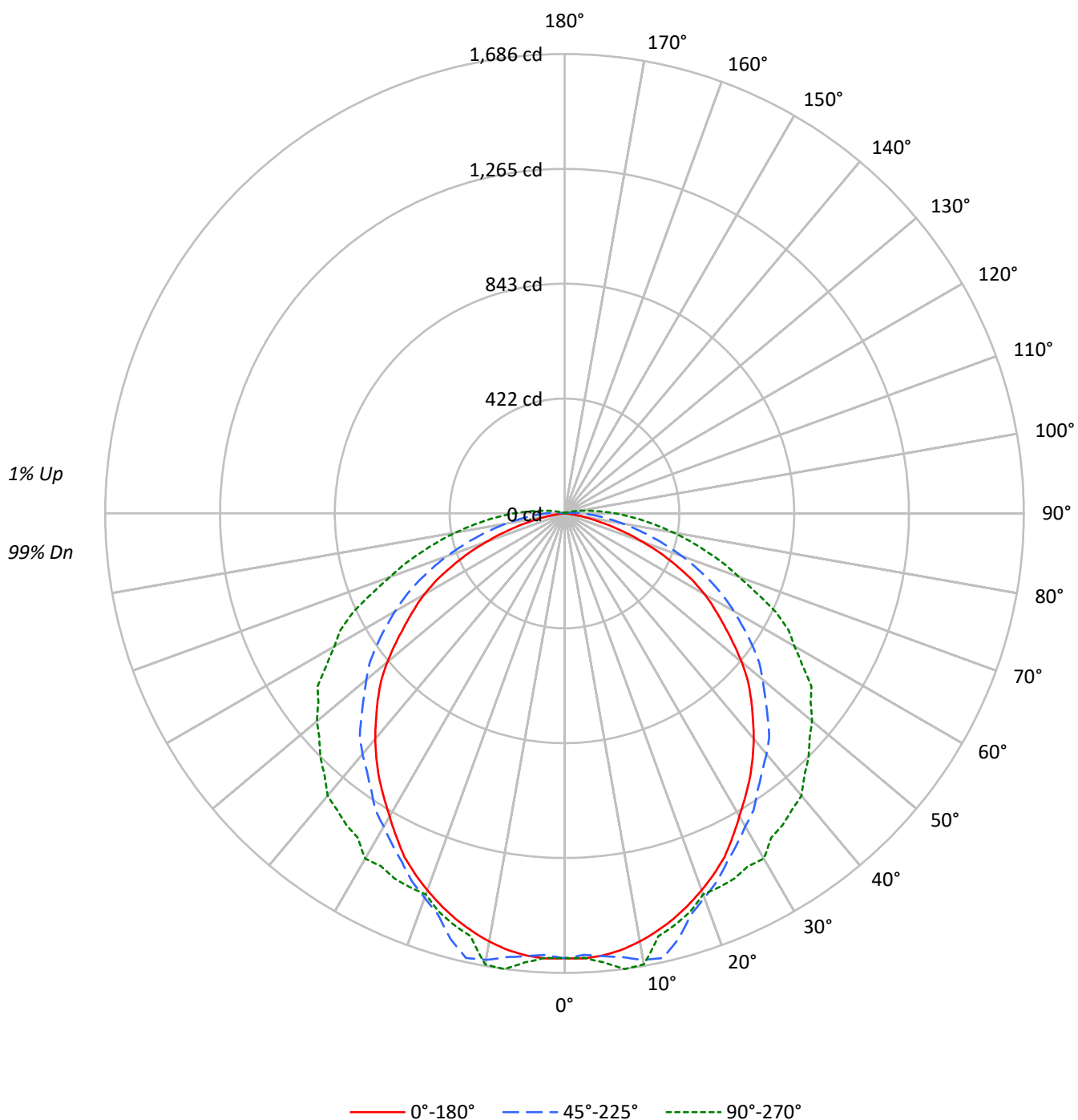
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	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	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	39	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°	13179	13179	13179
5°	13101	12949	13115
10°	12882	13091	13196
15°	12601	12705	12248
20°	12270	11872	11713
25°	11922	11329	11787
30°	11420	10887	11917
35°	11046	10467	11705
40°	10645	10144	11779
45°	10216	9737	11566
50°	9703	9308	11478
55°	8980	8852	11471
60°	8399	8238	10981
65°	7323	7515	10631
70°	5863	6588	9534
75°	4066	5479	8703
80°	2172	4367	7813
85°	726	3227	6883

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 11566 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.9	3.2
10°-20°	446.8	9.1
20°-30°	664.8	13.5
30°-40°	799.1	16.2
40°-50°	841.1	17.1
50°-60°	780.5	15.9
60°-70°	617.1	12.5
70°-80°	376.9	7.7
80°-90°	164.2	3.3
90°-100°	51.1	1.0
100°-110°	11.5	0.2
110°-120°	4.6	0.1
120°-130°	2.6	0.1
130°-140°	0.7	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°	1268.5	25.8
0°-40°	2067.6	42.0
0°-60°	3689.2	75.0
0°-90°	4847.5	98.6
90°-120°	67.2	1.4
90°-150°	70.5	1.4
90°-180°	71.0	1.4
0°-180°	4918.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1632	1632	1632	1632	1632	
5°	1628	1625	1631	1649	1654	154
15°	1541	1601	1616	1563	1564	434
25°	1390	1479	1412	1454	1478	638
35°	1186	1219	1237	1350	1396	741
45°	969	974	1054	1221	1266	747
55°	714	726	841	1025	1106	642
65°	452	466	592	784	855	448
75°	171	226	330	508	539	187
85°	15	53	129	250	287	24
90°	0	16	68	158	187	1
95°	0	4	30	87	106	0
105°	0	2	6	17	24	0
115°	0	1	5	8	8	1
125°	0	1	2	5	7	1
135°	1	1	1	2	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: HVL8-2-LD4-3STD-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1632.5	1632.5	1632.5	1632.5	1632.5
2.5°	1634.5	1630.2	1621.2	1629.8	1632.2
5°	1628.5	1625.2	1630.8	1649.1	1653.8
7.5°	1614.9	1627.5	1642.5	1675.7	1686.4
10°	1594.6	1618.5	1663.4	1691.7	1680.7
12.5°	1570.0	1610.6	1670.8	1615.5	1589.9
15°	1541.4	1600.6	1616.2	1562.7	1563.7
17.5°	1507.8	1592.3	1544.0	1542.7	1533.1
20°	1471.6	1564.3	1500.5	1497.8	1487.5
22.5°	1432.6	1527.4	1461.9	1456.6	1484.5
25°	1390.4	1479.2	1411.7	1453.9	1477.5
27.5°	1337.5	1416.0	1369.8	1429.7	1459.2
30°	1284.0	1350.8	1326.9	1410.4	1462.9
32.5°	1233.8	1282.7	1291.6	1403.0	1411.7
35°	1186.2	1219.1	1237.4	1349.8	1395.7
37.5°	1134.0	1143.0	1191.5	1327.6	1371.8
40°	1080.8	1075.1	1153.0	1291.0	1352.2
42.5°	1023.6	1021.6	1112.1	1272.7	1303.3
45°	969.4	973.7	1053.9	1220.8	1266.4
47.5°	913.9	919.5	998.7	1163.9	1220.5
50°	849.3	856.7	949.4	1113.4	1186.2
52.5°	779.5	793.5	901.6	1065.5	1139.0
55°	714.0	725.6	840.7	1024.6	1106.1
57.5°	654.1	661.1	777.8	973.1	1034.6
60°	595.3	596.9	718.6	915.9	974.7
62.5°	527.8	530.8	657.8	848.3	927.2
65°	451.9	466.2	592.3	783.8	855.0
67.5°	381.1	406.0	525.4	724.6	761.9
70°	305.3	347.5	459.9	655.1	681.4
72.5°	235.8	285.3	392.7	577.3	614.2
75°	170.9	226.5	330.2	507.5	539.4
77.5°	115.1	171.6	271.7	430.3	472.6
80°	68.8	125.4	219.5	358.8	406.4
82.5°	35.3	84.1	170.3	301.0	343.5
85°	15.3	53.2	128.7	249.7	286.7
87.5°	4.3	30.3	94.8	201.9	233.1
90°	0.3	16.0	67.5	158.3	186.6
92.5°	0.3	7.6	47.6	119.7	141.3
95°	0.3	4.0	29.6	86.8	106.1
97.5°	0.3	2.3	18.0	61.5	77.8
100°	0.3	2.0	10.6	40.9	55.5
102.5°	0.3	2.3	7.3	25.9	36.2
105°	0.3	2.3	6.0	17.0	23.9
107.5°	0.7	2.3	5.3	12.6	16.6
110°	0.3	2.0	5.7	9.6	13.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.7	5.3	8.0	9.6
115°	0.3	1.3	4.7	7.6	8.0
117.5°	0.7	1.0	3.7	7.6	8.0
120°	0.7	0.7	3.0	7.3	8.3
122.5°	0.7	0.7	2.3	6.7	8.0
125°	0.3	0.7	2.0	5.0	7.0
127.5°	0.7	0.7	1.7	4.0	5.3
130°	0.7	0.7	1.3	3.0	4.0
132.5°	0.7	0.7	1.0	2.3	3.0
135°	0.7	0.7	0.7	1.7	2.3
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)