

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: P517974

Luminaire Tested: HVL8-2-LD4-3HI-40-UNV-O-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: P517974
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-40-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5442.0 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

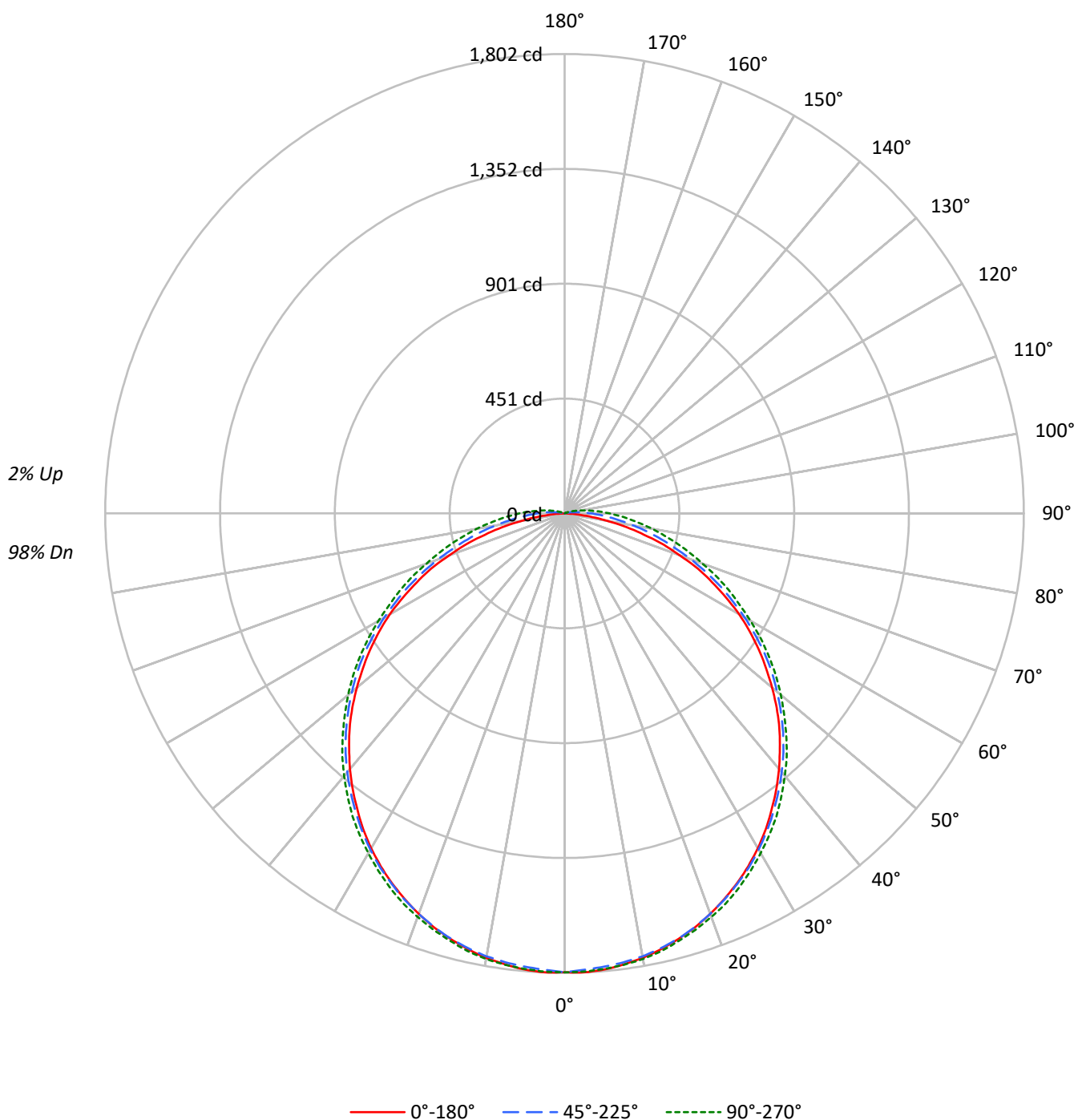
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	14530	14530	14530
5°	14450	14170	14220
10°	14301	13882	13935
15°	14125	13569	13593
20°	13939	13224	13261
25°	13727	12872	12923
30°	13487	12498	12540
35°	13197	12092	12159
40°	12893	11665	11716
45°	12565	11204	11238
50°	12152	10675	10724
55°	11703	10097	10156
60°	11170	9360	9494
65°	10362	8538	8837
70°	9242	7579	8073
75°	7701	6534	7380
80°	5518	5502	6746
85°	2656	4458	6144

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12565 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	170.3	3.1
10°-20°	488.6	9.0
20°-30°	741.3	13.6
30°-40°	896.4	16.5
40°-50°	935.3	17.2
50°-60°	855.1	15.7
60°-70°	666.6	12.2
70°-80°	417.0	7.7
80°-90°	189.4	3.5
90°-100°	63.5	1.2
100°-110°	15.9	0.3
110°-120°	2.5	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°	1400.2	25.7
0°-40°	2296.6	42.2
0°-60°	4087.0	75.1
0°-90°	5360.1	98.5
90°-120°	81.9	1.5
90°-150°	81.9	1.5
90°-180°	82.0	1.5
0°-180°	5442.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1800	1800	1800	1800	1800	
5°	1796	1793	1785	1793	1793	171
15°	1728	1731	1726	1736	1735	488
25°	1601	1602	1604	1617	1620	738
35°	1417	1424	1430	1444	1450	887
45°	1192	1203	1213	1224	1230	919
55°	930	942	959	973	979	831
65°	639	650	673	700	711	633
75°	324	344	394	441	457	345
85°	56	104	178	235	256	71
90°	0	39	105	157	176	2
95°	0	10	54	98	114	0
105°	1	1	9	26	35	1
115°	1	1	2	5	7	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: HVL8-2-LD4-3HI-40-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1799.9	1799.9	1799.9	1799.9	1799.9
2.5°	1802.0	1799.5	1791.4	1799.5	1799.0
5°	1796.1	1792.7	1784.6	1793.1	1793.1
7.5°	1784.2	1782.9	1775.7	1785.5	1785.5
10°	1770.2	1769.8	1763.8	1774.4	1774.9
12.5°	1750.7	1752.4	1746.8	1757.0	1758.3
15°	1727.8	1730.7	1726.1	1735.8	1735.4
17.5°	1702.7	1704.4	1701.0	1712.1	1711.6
20°	1671.7	1673.9	1671.3	1682.8	1684.1
22.5°	1637.4	1640.3	1639.9	1651.8	1655.2
25°	1600.9	1602.2	1603.9	1617.4	1620.0
27.5°	1560.6	1562.7	1565.7	1578.0	1580.5
30°	1516.5	1519.8	1523.2	1536.0	1539.4
32.5°	1469.8	1473.2	1477.4	1494.0	1495.7
35°	1417.2	1423.5	1429.5	1443.9	1449.8
37.5°	1364.6	1372.6	1378.1	1393.4	1398.1
40°	1309.0	1317.0	1325.9	1342.1	1345.0
42.5°	1250.8	1260.2	1270.8	1285.2	1290.3
45°	1192.3	1202.9	1212.7	1224.5	1230.5
47.5°	1129.1	1139.7	1151.6	1165.1	1168.9
50°	1063.7	1076.0	1088.8	1101.5	1108.3
52.5°	996.7	1011.5	1026.0	1039.5	1045.9
55°	930.5	941.5	958.9	972.9	979.3
57.5°	861.8	871.1	886.8	909.7	913.1
60°	791.7	800.2	816.4	835.0	842.7
62.5°	714.5	726.0	743.0	766.7	773.5
65°	639.4	650.5	672.9	699.7	710.7
67.5°	566.9	570.7	599.5	627.5	645.4
70°	481.2	495.6	529.1	563.5	577.0
72.5°	407.3	421.8	458.7	499.0	516.0
75°	323.7	343.7	393.8	440.8	457.4
77.5°	250.3	272.4	334.3	381.9	401.0
80°	174.8	209.2	276.6	330.1	350.9
82.5°	109.9	152.3	224.5	280.5	298.7
85°	56.0	103.5	177.8	235.1	255.9
87.5°	14.9	67.0	138.3	193.1	214.3
90°	0.4	38.6	104.8	157.4	176.5
92.5°	0.4	21.6	78.1	125.2	144.7
95°	0.4	10.2	54.3	98.4	113.7
97.5°	0.4	4.2	37.3	74.3	89.5
100°	0.4	2.1	23.8	53.9	67.0
102.5°	0.8	1.3	14.9	38.6	49.2
105°	0.8	1.3	8.9	26.3	35.2
107.5°	0.8	1.3	5.1	17.8	24.2
110°	1.3	1.3	3.0	11.0	16.1

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CATALOG NUMBER: HVL8-2-LD4-3HI-40-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	1.3	1.7	7.2	10.6
115°	1.3	1.3	1.7	4.7	6.8
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)