

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: P518084

Luminaire Tested: HVL8-4-LD4-2LO-40-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P518084
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-40-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5473.0 lumens
Efficiency: N/A
Efficacy: 118.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

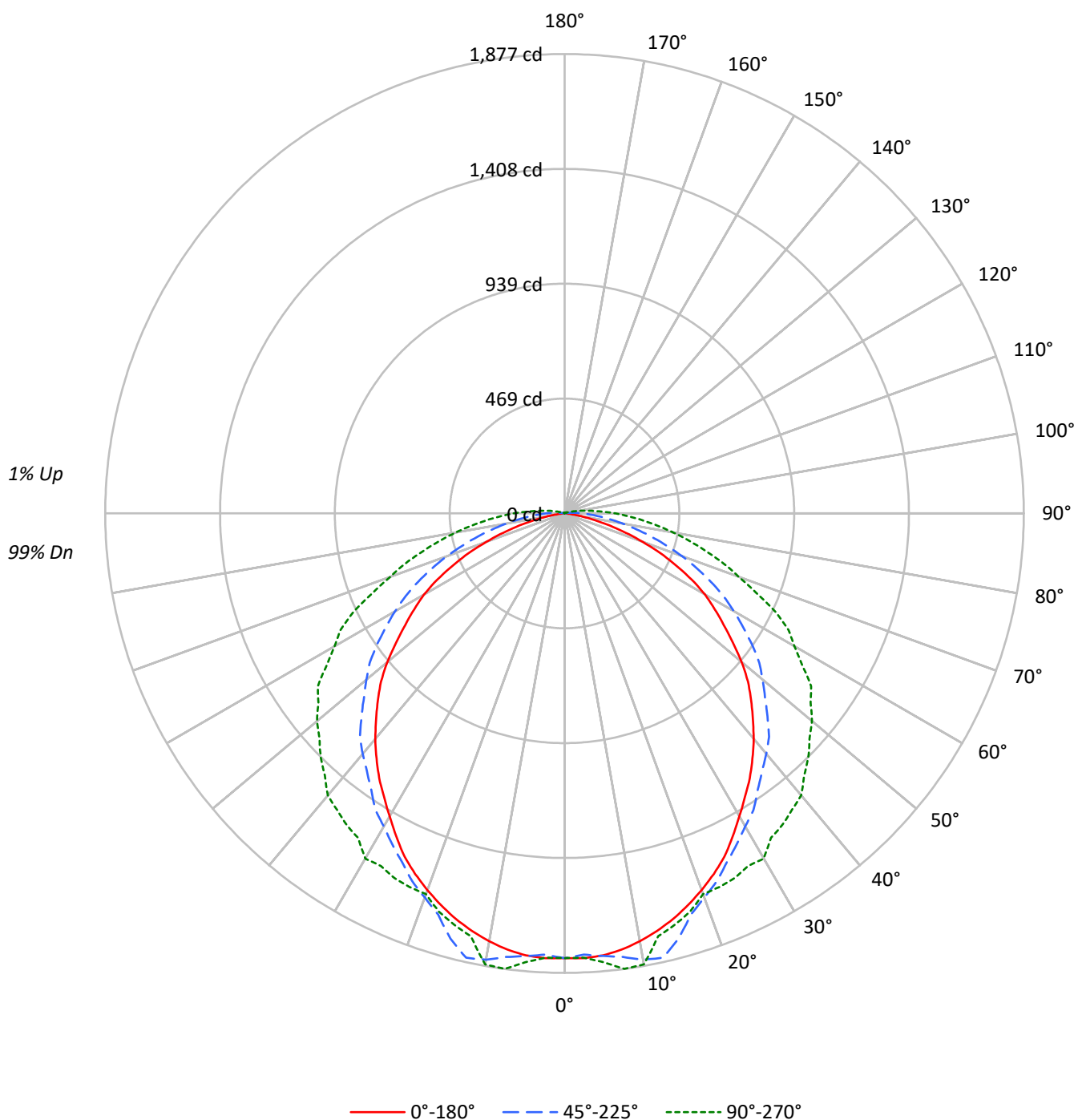
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518084

CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518084

CATALOG NUMBER: HVL8-4-LD4-2LO-40-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°	7333	7333	7333
5°	7317	7223	7297
10°	7220	7321	7343
15°	7089	7122	6815
20°	6929	6672	6518
25°	6760	6383	6559
30°	6503	6150	6631
35°	6321	5929	6513
40°	6124	5763	6554
45°	5912	5550	6436
50°	5655	5326	6387
55°	5278	5086	6383
60°	4987	4756	6110
65°	4409	4364	5916
70°	3597	3855	5305
75°	2567	3238	4843
80°	1440	2617	4347
85°	533	1975	3829

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6436 cd/sqm

TEST NUMBER: P518084

CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.6	3.2
10°-20°	497.2	9.1
20°-30°	739.8	13.5
30°-40°	889.3	16.2
40°-50°	936.0	17.1
50°-60°	868.5	15.9
60°-70°	686.7	12.5
70°-80°	419.5	7.7
80°-90°	182.8	3.3
90°-100°	56.9	1.0
100°-110°	12.8	0.2
110°-120°	5.1	0.1
120°-130°	2.9	0.1
130°-140°	0.8	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°	1411.7	25.8
0°-40°	2301.0	42.0
0°-60°	4105.6	75.0
0°-90°	5394.5	98.6
90°-120°	74.8	1.4
90°-150°	78.5	1.4
90°-180°	78.0	1.4
0°-180°	5473.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1817	1817	1817	1817	1817	
5°	1812	1809	1815	1835	1840	172
15°	1715	1781	1799	1739	1740	483
25°	1547	1646	1571	1618	1644	710
35°	1320	1357	1377	1502	1553	825
45°	1079	1084	1173	1359	1409	832
55°	795	808	936	1140	1231	714
65°	503	519	659	872	952	498
75°	190	252	368	565	600	208
85°	17	59	143	278	319	26
90°	0	18	75	176	208	1
95°	0	4	33	97	118	0
105°	0	3	7	19	27	1
115°	0	2	5	8	9	1
125°	0	1	2	6	8	1
135°	1	1	1	2	3	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: P518084

CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1816.7	1816.7	1816.7	1816.7	1816.7
2.5°	1819.0	1814.1	1804.2	1813.8	1816.4
5°	1812.3	1808.6	1814.9	1835.2	1840.4
7.5°	1797.1	1811.2	1827.8	1864.8	1876.7
10°	1774.5	1801.2	1851.2	1882.6	1870.4
12.5°	1747.2	1792.3	1859.3	1797.9	1769.4
15°	1715.3	1781.2	1798.6	1739.0	1740.1
17.5°	1678.0	1772.0	1718.3	1716.8	1706.1
20°	1637.6	1740.9	1669.8	1666.9	1655.4
22.5°	1594.3	1699.8	1626.9	1621.0	1652.1
25°	1547.3	1646.1	1571.0	1618.0	1644.3
27.5°	1488.5	1575.8	1524.4	1591.0	1623.9
30°	1428.9	1503.3	1476.6	1569.5	1628.0
32.5°	1373.0	1427.4	1437.4	1561.4	1571.0
35°	1320.1	1356.7	1377.1	1502.2	1553.2
37.5°	1262.0	1272.0	1326.0	1477.4	1526.6
40°	1202.8	1196.5	1283.1	1436.7	1504.8
42.5°	1139.1	1136.9	1237.6	1416.3	1450.4
45°	1078.8	1083.6	1172.8	1358.6	1409.3
47.5°	1017.0	1023.3	1111.4	1295.3	1358.2
50°	945.2	953.3	1056.6	1239.0	1320.1
52.5°	867.5	883.0	1003.3	1185.7	1267.5
55°	794.6	807.5	935.6	1140.2	1230.9
57.5°	728.0	735.7	865.6	1082.9	1151.3
60°	662.4	664.3	799.7	1019.2	1084.7
62.5°	587.3	590.7	732.0	944.1	1031.8
65°	502.9	518.9	659.1	872.3	951.5
67.5°	424.1	451.9	584.7	806.4	847.9
70°	339.7	386.7	511.8	729.1	758.3
72.5°	262.4	317.5	437.1	642.5	683.5
75°	190.2	252.0	367.5	564.7	600.3
77.5°	128.0	191.0	302.4	478.9	525.9
80°	76.6	139.5	244.3	399.3	452.2
82.5°	39.2	93.6	189.5	334.9	382.3
85°	17.0	59.2	143.2	277.9	319.0
87.5°	4.8	33.7	105.5	224.6	259.4
90°	0.4	17.8	75.1	176.2	207.6
92.5°	0.4	8.5	52.9	133.2	157.3
95°	0.4	4.4	32.9	96.6	118.1
97.5°	0.4	2.6	20.0	68.5	86.6
100°	0.4	2.2	11.8	45.5	61.8
102.5°	0.4	2.6	8.1	28.9	40.3
105°	0.4	2.6	6.7	18.9	26.6
107.5°	0.7	2.6	5.9	14.1	18.5
110°	0.4	2.2	6.3	10.7	14.4

TEST NUMBER: P518084

CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.9	5.9	8.9	10.7
115°	0.4	1.5	5.2	8.5	8.9
117.5°	0.7	1.1	4.1	8.5	8.9
120°	0.7	0.7	3.3	8.1	9.3
122.5°	0.7	0.7	2.6	7.4	8.9
125°	0.4	0.7	2.2	5.6	7.8
127.5°	0.7	0.7	1.9	4.4	5.9
130°	0.7	0.7	1.5	3.3	4.4
132.5°	0.7	0.7	1.1	2.6	3.3
135°	0.7	0.7	0.7	1.9	2.6
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)