

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: P518075

Luminaire Tested: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

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: P518075
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-30-UNV-C-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5163.0 lumens
Efficiency: N/A
Efficacy: 112.0 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

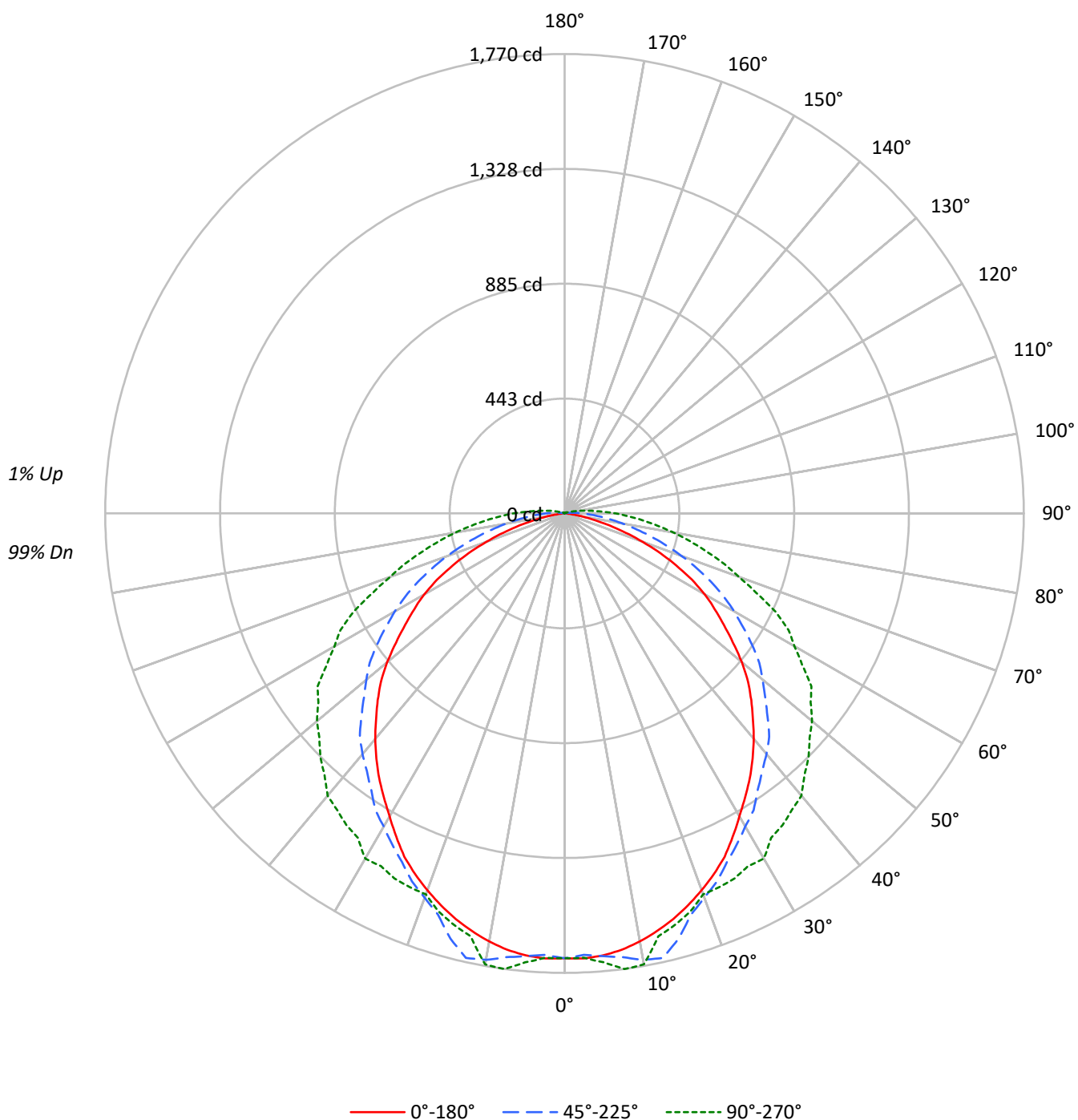
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518075

CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518075

CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

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°	6918	6918	6918
5°	6902	6814	6884
10°	6811	6906	6927
15°	6688	6719	6429
20°	6537	6294	6148
25°	6377	6021	6187
30°	6135	5802	6255
35°	5962	5594	6145
40°	5776	5437	6182
45°	5577	5236	6071
50°	5335	5024	6025
55°	4979	4798	6021
60°	4705	4488	5764
65°	4160	4117	5581
70°	3394	3637	5004
75°	2421	3055	4569
80°	1359	2468	4101
85°	505	1863	3612

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6071 cd/sqm

TEST NUMBER: P518075

CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.7	3.2
10°-20°	469.1	9.1
20°-30°	697.9	13.5
30°-40°	838.9	16.2
40°-50°	883.0	17.1
50°-60°	819.3	15.9
60°-70°	647.8	12.5
70°-80°	395.7	7.7
80°-90°	172.4	3.3
90°-100°	53.7	1.0
100°-110°	12.0	0.2
110°-120°	4.8	0.1
120°-130°	2.7	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°	1331.7	25.8
0°-40°	2170.7	42.0
0°-60°	3873.0	75.0
0°-90°	5089.0	98.6
90°-120°	70.6	1.4
90°-150°	74.0	1.4
90°-180°	74.0	1.4
0°-180°	5163.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1714	1714	1714	1714	1714	
5°	1710	1706	1712	1731	1736	162
15°	1618	1680	1697	1640	1642	456
25°	1460	1553	1482	1526	1551	670
35°	1245	1280	1299	1417	1465	778
45°	1018	1022	1106	1282	1330	784
55°	750	762	883	1076	1161	673
65°	474	490	622	823	898	470
75°	179	238	347	533	566	196
85°	16	56	135	262	301	25
90°	0	17	71	166	196	1
95°	0	4	31	91	111	0
105°	0	2	6	18	25	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

TEST NUMBER: P518075

CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1713.8	1713.8	1713.8	1713.8	1713.8
2.5°	1715.9	1711.4	1702.0	1711.0	1713.5
5°	1709.6	1706.2	1712.1	1731.3	1736.2
7.5°	1695.3	1708.6	1724.3	1759.2	1770.4
10°	1674.0	1699.2	1746.3	1776.0	1764.5
12.5°	1648.2	1690.8	1754.0	1696.0	1669.1
15°	1618.2	1680.3	1696.7	1640.5	1641.6
17.5°	1582.9	1671.6	1621.0	1619.6	1609.4
20°	1544.9	1642.3	1575.2	1572.4	1561.6
22.5°	1504.0	1603.5	1534.7	1529.2	1558.5
25°	1459.7	1552.9	1482.0	1526.4	1551.1
27.5°	1404.2	1486.6	1438.0	1500.9	1531.9
30°	1348.0	1418.1	1393.0	1480.6	1535.8
32.5°	1295.2	1346.6	1356.0	1472.9	1482.0
35°	1245.3	1279.9	1299.1	1417.1	1465.3
37.5°	1190.5	1199.9	1250.9	1393.7	1440.1
40°	1134.6	1128.7	1210.4	1355.3	1419.5
42.5°	1074.6	1072.5	1167.5	1336.1	1368.2
45°	1017.7	1022.2	1106.4	1281.6	1329.5
47.5°	959.4	965.3	1048.4	1221.9	1281.3
50°	891.7	899.3	996.7	1168.9	1245.3
52.5°	818.3	833.0	946.5	1118.6	1195.7
55°	749.6	761.8	882.6	1075.6	1161.2
57.5°	686.7	694.1	816.6	1021.5	1086.1
60°	624.9	626.7	754.5	961.5	1023.3
62.5°	554.1	557.2	690.6	890.6	973.3
65°	474.5	489.5	621.8	822.9	897.6
67.5°	400.1	426.3	551.6	760.7	799.8
70°	320.5	364.8	482.8	687.8	715.3
72.5°	247.5	299.5	412.3	606.1	644.8
75°	179.4	237.8	346.7	532.8	566.3
77.5°	120.8	180.1	285.2	451.8	496.1
80°	72.3	131.6	230.4	376.7	426.6
82.5°	37.0	88.3	178.7	316.0	360.6
85°	16.1	55.9	135.1	262.2	300.9
87.5°	4.5	31.8	99.5	211.9	244.7
90°	0.3	16.8	70.9	166.2	195.9
92.5°	0.3	8.0	49.9	125.7	148.4
95°	0.3	4.2	31.1	91.1	111.4
97.5°	0.3	2.4	18.9	64.6	81.7
100°	0.3	2.1	11.2	42.9	58.3
102.5°	0.3	2.4	7.7	27.2	38.1
105°	0.3	2.4	6.3	17.8	25.1
107.5°	0.7	2.4	5.6	13.3	17.5
110°	0.3	2.1	5.9	10.1	13.6

TEST NUMBER: P518075

CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.7	5.6	8.4	10.1
115°	0.3	1.4	4.9	8.0	8.4
117.5°	0.7	1.0	3.8	8.0	8.4
120°	0.7	0.7	3.1	7.7	8.7
122.5°	0.7	0.7	2.4	7.0	8.4
125°	0.3	0.7	2.1	5.2	7.3
127.5°	0.7	0.7	1.7	4.2	5.6
130°	0.7	0.7	1.4	3.1	4.2
132.5°	0.7	0.7	1.0	2.4	3.1
135°	0.7	0.7	0.7	1.7	2.4
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)