

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: P518086

Luminaire Tested: HVL8-4-LD4-2LO-40-UNV-O-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: P518086
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-O-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: 4164.0 lumens
Efficiency: N/A
Efficacy: 90.3 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

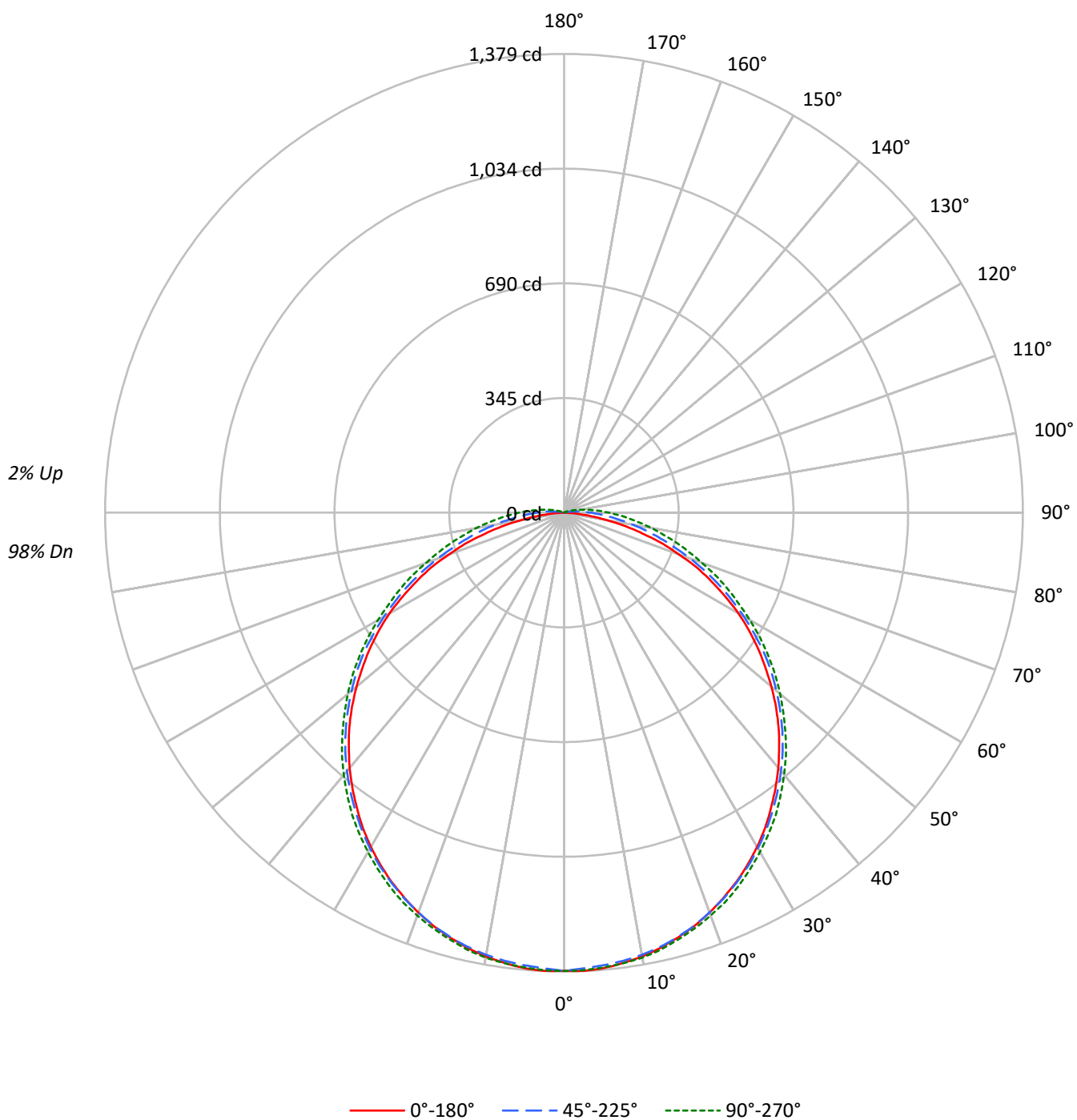
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518086

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

Luminous Intensity Polar Plot



TEST NUMBER: P518086

CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-O-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			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°	5559	5559	5559
5°	5548	5435	5440
10°	5511	5338	5331
15°	5463	5230	5201
20°	5413	5109	5073
25°	5351	4986	4944
30°	5281	4854	4797
35°	5192	4710	4652
40°	5099	4557	4483
45°	4999	4391	4299
50°	4869	4199	4103
55°	4729	3988	3886
60°	4561	3715	3632
65°	4290	3410	3381
70°	3899	3049	3089
75°	3343	2655	2824
80°	2516	2268	2581
85°	1346	1876	2350

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4999 cd/sqm

TEST NUMBER: P518086

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.3	3.1
10°-20°	373.8	9.0
20°-30°	567.2	13.6
30°-40°	685.9	16.5
40°-50°	715.7	17.2
50°-60°	654.3	15.7
60°-70°	510.1	12.2
70°-80°	319.1	7.7
80°-90°	144.9	3.5
90°-100°	48.6	1.2
100°-110°	12.2	0.3
110°-120°	1.9	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°	1071.4	25.7
0°-40°	1757.3	42.2
0°-60°	3127.2	75.1
0°-90°	4101.3	98.5
90°-120°	62.7	1.5
90°-150°	62.7	1.5
90°-180°	63.0	1.5
0°-180°	4164.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1377	1377	1377	1377	1377	
5°	1374	1372	1366	1372	1372	131
15°	1322	1324	1321	1328	1328	373
25°	1225	1226	1227	1238	1240	564
35°	1084	1089	1094	1105	1109	679
45°	912	920	928	937	942	703
55°	712	720	734	744	749	636
65°	489	498	515	535	544	484
75°	248	263	301	337	350	264
85°	43	79	136	180	196	54
90°	0	30	80	120	135	2
95°	0	8	42	75	87	0
105°	1	1	7	20	27	1
115°	1	1	1	4	5	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

TEST NUMBER: P518086

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1377.2	1377.2	1377.2	1377.2	1377.2
2.5°	1378.8	1376.9	1370.7	1376.9	1376.6
5°	1374.3	1371.7	1365.5	1372.0	1372.0
7.5°	1365.2	1364.2	1358.7	1366.2	1366.2
10°	1354.5	1354.1	1349.6	1357.7	1358.0
12.5°	1339.5	1340.8	1336.6	1344.4	1345.4
15°	1322.0	1324.3	1320.7	1328.2	1327.9
17.5°	1302.9	1304.2	1301.6	1310.0	1309.7
20°	1279.2	1280.8	1278.8	1287.6	1288.6
22.5°	1252.9	1255.1	1254.8	1263.9	1266.5
25°	1224.9	1225.9	1227.2	1237.6	1239.5
27.5°	1194.1	1195.7	1198.0	1207.4	1209.4
30°	1160.3	1162.9	1165.5	1175.3	1177.9
32.5°	1124.6	1127.2	1130.5	1143.1	1144.4
35°	1084.4	1089.2	1093.8	1104.8	1109.4
37.5°	1044.1	1050.3	1054.5	1066.2	1069.7
40°	1001.6	1007.7	1014.6	1026.9	1029.2
42.5°	957.1	964.2	972.4	983.4	987.3
45°	912.3	920.4	927.9	937.0	941.5
47.5°	863.9	872.0	881.1	891.5	894.4
50°	813.9	823.3	833.1	842.8	848.0
52.5°	762.6	774.0	785.0	795.4	800.3
55°	712.0	720.4	733.7	744.4	749.3
57.5°	659.4	666.5	678.5	696.1	698.7
60°	605.8	612.3	624.6	638.9	644.8
62.5°	546.7	555.5	568.5	586.7	591.9
65°	489.3	497.7	514.9	535.4	543.8
67.5°	433.7	436.7	458.7	480.2	493.8
70°	368.2	379.2	404.8	431.1	441.5
72.5°	311.7	322.7	351.0	381.8	394.8
75°	247.7	263.0	301.3	337.3	350.0
77.5°	191.5	208.4	255.8	292.2	306.8
80°	133.8	160.1	211.7	252.6	268.5
82.5°	84.1	116.6	171.7	214.6	228.6
85°	42.9	79.2	136.0	179.9	195.8
87.5°	11.4	51.3	105.8	147.7	164.0
90°	0.3	29.5	80.2	120.4	135.1
92.5°	0.3	16.6	59.7	95.8	110.7
95°	0.3	7.8	41.6	75.3	87.0
97.5°	0.3	3.2	28.6	56.8	68.5
100°	0.3	1.6	18.2	41.2	51.3
102.5°	0.6	1.0	11.4	29.5	37.7
105°	0.6	1.0	6.8	20.1	26.9
107.5°	0.6	1.0	3.9	13.6	18.5
110°	1.0	1.0	2.3	8.4	12.3

TEST NUMBER: P518086

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.3	5.5	8.1
115°	1.0	1.0	1.3	3.6	5.2
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)