

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: P518078

Luminaire Tested: HVL8-4-LD4-2LO-30-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: P518078
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-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4051.0 lumens
Efficiency: N/A
Efficacy: 87.9 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

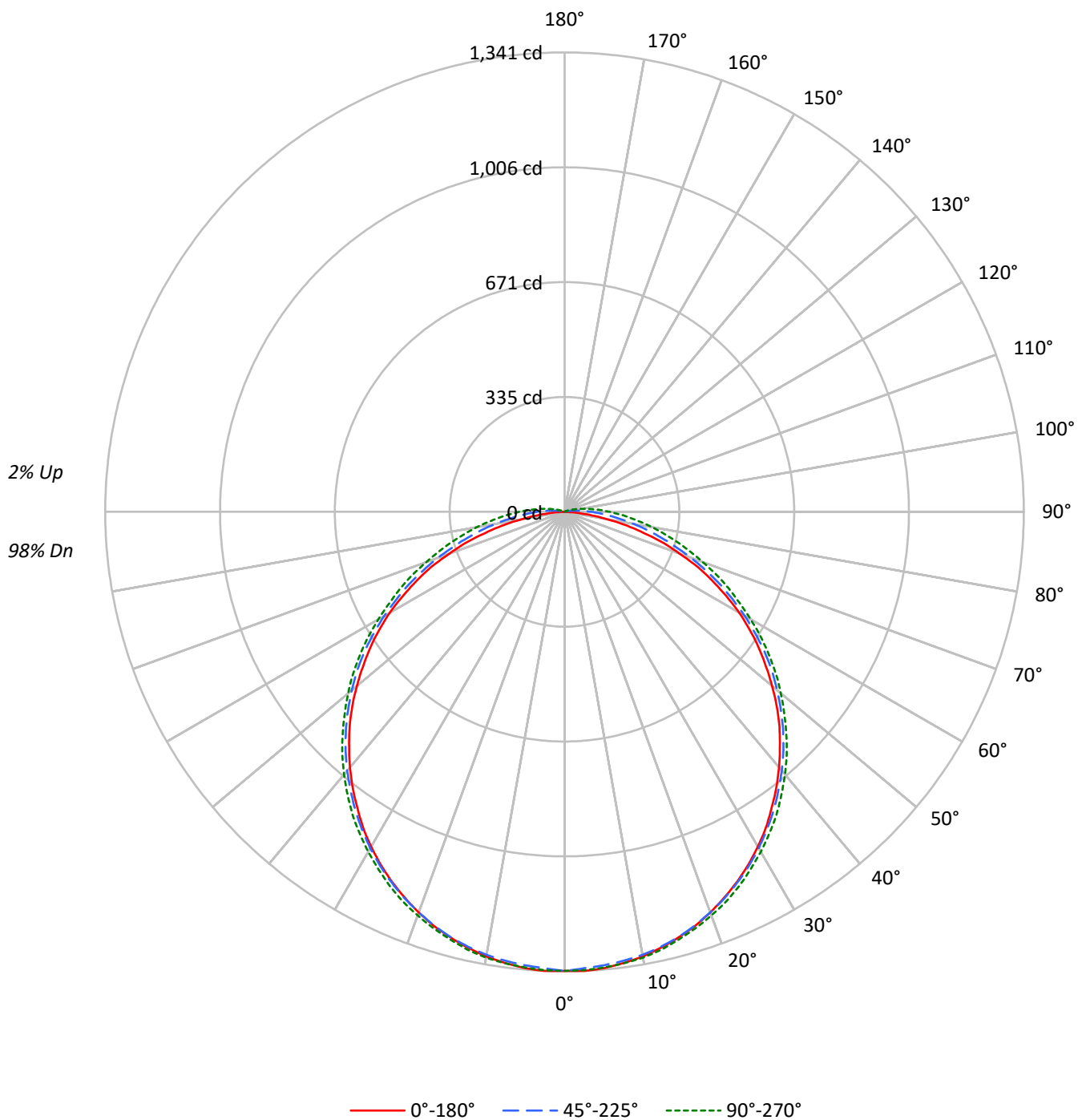
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518078

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

Luminous Intensity Polar Plot



TEST NUMBER: P518078

CATALOG NUMBER: HVL8-4-LD4-2LO-30-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°	5408	5408	5408
5°	5398	5288	5293
10°	5362	5193	5187
15°	5315	5088	5059
20°	5265	4971	4936
25°	5206	4851	4810
30°	5138	4723	4667
35°	5051	4582	4526
40°	4961	4433	4361
45°	4864	4272	4183
50°	4737	4085	3991
55°	4601	3880	3780
60°	4438	3615	3534
65°	4173	3317	3289
70°	3793	2967	3005
75°	3253	2583	2747
80°	2446	2206	2511
85°	1308	1825	2287

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4864 cd/sqm

TEST NUMBER: P518078

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.8	3.1
10°-20°	363.7	9.0
20°-30°	551.8	13.6
30°-40°	667.3	16.5
40°-50°	696.2	17.2
50°-60°	636.6	15.7
60°-70°	496.2	12.2
70°-80°	310.4	7.7
80°-90°	141.0	3.5
90°-100°	47.3	1.2
100°-110°	11.8	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°	1042.3	25.7
0°-40°	1709.6	42.2
0°-60°	3042.4	75.1
0°-90°	3990.0	98.5
90°-120°	61.0	1.5
90°-150°	61.0	1.5
90°-180°	61.0	1.5
0°-180°	4051.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1337	1334	1328	1335	1335	127
15°	1286	1288	1285	1292	1292	363
25°	1192	1193	1194	1204	1206	549
35°	1055	1060	1064	1075	1079	660
45°	888	895	903	912	916	684
55°	693	701	714	724	729	619
65°	476	484	501	521	529	471
75°	241	256	293	328	340	257
85°	42	77	132	175	190	53
90°	0	29	78	117	131	2
95°	0	8	40	73	85	0
105°	1	1	7	20	26	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: P518078

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1339.8	1339.8	1339.8	1339.8	1339.8
2.5°	1341.4	1339.5	1333.5	1339.5	1339.2
5°	1337.0	1334.5	1328.5	1334.8	1334.8
7.5°	1328.1	1327.2	1321.8	1329.1	1329.1
10°	1317.7	1317.4	1313.0	1320.9	1321.2
12.5°	1303.2	1304.5	1300.3	1307.9	1308.9
15°	1286.1	1288.3	1284.9	1292.1	1291.8
17.5°	1267.5	1268.8	1266.2	1274.4	1274.1
20°	1244.4	1246.0	1244.1	1252.7	1253.6
22.5°	1218.9	1221.1	1220.8	1229.6	1232.1
25°	1191.7	1192.6	1193.9	1204.0	1205.9
27.5°	1161.7	1163.3	1165.5	1174.6	1176.5
30°	1128.8	1131.4	1133.9	1143.4	1145.9
32.5°	1094.1	1096.6	1099.8	1112.1	1113.4
35°	1054.9	1059.7	1064.1	1074.8	1079.3
37.5°	1015.8	1021.8	1025.9	1037.2	1040.7
40°	974.4	980.4	987.0	999.0	1001.2
42.5°	931.1	938.1	946.0	956.7	960.5
45°	887.5	895.4	902.7	911.5	916.0
47.5°	840.5	848.4	857.2	867.3	870.2
50°	791.8	801.0	810.5	819.9	825.0
52.5°	741.9	753.0	763.7	773.8	778.6
55°	692.7	700.9	713.8	724.2	729.0
57.5°	641.5	648.4	660.1	677.2	679.7
60°	589.4	595.7	607.7	621.6	627.3
62.5°	531.9	540.4	553.0	570.7	575.8
65°	476.0	484.2	500.9	520.8	529.0
67.5°	422.0	424.8	446.3	467.1	480.4
70°	358.2	368.9	393.9	419.4	429.6
72.5°	303.2	314.0	341.4	371.4	384.1
75°	241.0	255.8	293.1	328.2	340.5
77.5°	186.4	202.8	248.9	284.3	298.5
80°	130.1	155.7	205.9	245.7	261.2
82.5°	81.8	113.4	167.1	208.8	222.4
85°	41.7	77.1	132.3	175.0	190.5
87.5°	11.1	49.9	103.0	143.7	159.5
90°	0.3	28.7	78.0	117.2	131.4
92.5°	0.3	16.1	58.1	93.2	107.7
95°	0.3	7.6	40.4	73.3	84.6
97.5°	0.3	3.2	27.8	55.3	66.6
100°	0.3	1.6	17.7	40.1	49.9
102.5°	0.6	0.9	11.1	28.7	36.6
105°	0.6	0.9	6.6	19.6	26.2
107.5°	0.6	0.9	3.8	13.3	18.0
110°	0.9	0.9	2.2	8.2	12.0

TEST NUMBER: P518078

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.3	5.4	7.9
115°	0.9	0.9	1.3	3.5	5.1
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)