Fox Valley Metrology
3114 Medalist Drive
Oshkosh, WI 54902
(920) 426-5894 • Fax (920) 426-8120
https://www.FoxValleyMetrology.com

CERTIFICATE OF CALIBRATION

ilac-MRA
ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT
Certificate No. ACT-1272

CERTIFICATION NUMBER	CP134-00175-840
FOR	Sample Manufacturing 3121 Medalist Drive Oshkosh, WI 54902
TEST INSTRUMENT	Analyzer Defibrillator
MAKE	Fluke Biomedical
MODEL	Impulse 7000DP
CUSTOMER LOCATION	Location1 Location2
CONDITION RECEIVED	In Tolerance
CONDITION RETURNED	In Tolerance
CALIBRATED BY	Jim Peterson
REVIEWED/ISSUED	D.P. 07/29/2025
CALIBRATION LOCATION	FVM
ENVIRONMENT	69.0°F, 31.0%RH, 28.92inHg
CALIBRATION DATE	05/14/2025
RECALIBRATION DUE	05/14/2026

IDENTIFICATION	EL-068A
SERIAL NUMBER	175
PURCHASE ORDER #	

PROCEDURES FOLLOWED

EL-068A rev. 1

STANDARDS USED

INSTRUMENT	SERIAL NUMBER	TRACE NUMBER	NEXT CAL
AG2-029	MY41012571	CO323-53897-833	11/30/2025
AG2-034	39280376	CO183-27776-833	07/31/2025
AG2-036	1779	CO183-31141-833	07/31/2025
STS-320	ZS42E35101313	CO339-48956-690	12/31/2025

CALIBRATION RESULTS

* DENOTES "OUT OF TOLERANCE"

FEATURE	NOMINAL	LOWER LIMIT	UPPER LIMIT	AS FOUND	AS LEFT	UNCERTAINTY
LOAD RESISTANCE VERIFICATION						
Defibrillator Load Resistance						
50.000 ohm	50.000	49.500	50.500	50.059	50.059	9.8E-1
Pacer Load Resistance						
50.00 ohm	50.00	49.00	51.00	50.46	50.46	9.8E-1
100.00 ohm	100.00	98.00	102.00	100.16	100.16	1.2E+0
150.00 ohm	150.00	147.00	153.00	150.11	150.11	1.4E+0
250.00 ohm	250.00	245.00	255.00	249.39	249.39	1.8E+0
450.00 ohm	450.00	441.00	459.00	448.54	448.54	2.6E+0
850.00 ohm	850.00	833.00	867.00	846.53	846.53	4.3E+0
1500.00 ohm	1500.00	1470.00	1530.00	1493.27	1493.27	6.9E+0
ECG AND PACER VERIFICATION						
Lead I						
7.000 mV	7.000	6.510	7.490	7.018	7.018	8.0E-1
0.7000 mV	0.7000	0.6510	0.7490	0.7022	0.7022	7.7E-1
-6.700 mV	-6.700	-7.035	-6.365	-6.665	-6.665	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46769	-0.46769	7.7E-1
10.000 mV	10.000	9.700	10.300	10.059	10.059	8.1E-1
Lead II						
10.000 mV	10.000	9.800	10.200	9.997	9.997	8.1E-1
1.000 mV	1.000	0.979	1.021	0.999	0.999	7.7E-1

Reviewed

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-10.000 mV	-10.000	-10.500	-9.500	-10.049	-10.049	7.3E-1
-0.7000 V	-0.7000	-0.7350	-0.6650	-0.7018	-0.7018	7.7E-1
10.000 mV	10.000	9.700	10.300	10.070	10.070	8.1E-1
Lead III						
3.000 mV	3.000	2.790	3.210	2.980	2.980	7.8E-1
0.3000 mV	0.3000	0.2790	0.3210	0.2970	0.2970	7.7E-1
-3.300 mV	-3.300	-3.465	-3.135	-3.387	-3.387	7.6E-1
-0.23100 V	-0.23100	-0.24255	-0.21945	-0.23417	-0.23417	7.7E-1
10.000 mV	10.000	9.700	10.300	10.088	10.088	8.1E-1
V1						
10.000 mV	10.000	9.300	10.700	10.056	10.056	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0036	1.0036	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.719	-6.719	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46981	-0.46981	7.7E-1
10.000 mV	10.000	9.700	10.300	10.091	10.091	8.1E-1
V2						
10.000 mV	10.000	9.300	10.700	10.060	10.060	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0048	1.0048	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.741	-6.741	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.47137	-0.47137	7.7E-1
10.000 mV	10.000	9.700	10.300	10.077	10.077	8.1E-1
V3						
10.000 mV	10.000	9.300	10.700	10.060	10.060	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0029	1.0029	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.696	-6.696	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46960	-0.46960	7.7E-1
10.000 mV	10.000	9.700	10.300	10.100	10.100	8.1E-1
V4						
10.000 mV	10.000	9.300	10.700	10.086	10.086	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0085	1.0085	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.734	-6.734	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46997	-0.46997	7.7E-1
10.000 mV	10.000	9.700	10.300	10.064	10.064	8.1E-1
V5						
10.000 mV	10.000	9.300	10.700	10.029	10.029	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0005	1.0005	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.714	-6.714	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46827	-0.46827	7.7E-1
10.000 mV	10.000	9.700	10.300	10.090	10.090	8.1E-1
V6						
10.000 mV	10.000	9.300	10.700	10.054	10.054	8.1E-1
1.0000 mV	1.0000	0.9300	1.0700	1.0015	1.0015	7.7E-1
-6.700 mV	-6.700	-7.055	-6.345	-6.718	-6.718	7.4E-1
-0.46900 V	-0.46900	-0.49245	-0.44555	-0.46883	-0.46883	7.7E-1

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10.000 mV	10.000	9.700	10.300	10.106	10.106	8.1E-1
Apex and Sternum						
7.000 mV	7.000	6.510	7.490	6.974	6.974	8.0E-1
0.7000 mV	0.7000	0.6510	0.7490	0.6968	0.6968	7.7E-1
10.000 mV	10.000	9.700	10.300	10.077	10.077	8.1E-1
SCOPE AND HI LEVEL ECG OUTPUT VERIFICATION						
Scope Output						
8.00 V	8.00	7.60	8.40	7.98	7.98	8.0E-1
0.8839 V	0.8839	0.8397	0.9281	0.8828	0.8828	7.7E-1
High Level ECG Output						
8.00 V	8.00	7.60	8.40	7.96	7.96	8.0E-1
0.8839 V	0.8839	0.8397	0.9281	0.8810	0.8810	7.7E-1
200.00 Hz	200.00	198.00	202.00	199.99	199.99	1.6E+0
ENERGY MEASUREMENT VERIFICATION						
Monophasic Energy						
10.0 J	10.0	9.9	10.1	10.0	10.0	0.81
50.0 J	50.0	49.5	50.5	50.3	50.3	0.97
100.0 J	100.0	99.0	101.0	100.7	100.7	1.2E+0
360.0 J	360.0	356.4	363.6	361.9	361.9	2.2E+0
Biphasic Energy						
15.0 J	15.0	14.8	15.2	14.9	14.9	0.83
50.0 J	50.0	49.3	50.8	49.6	49.6	0.98
100.0 J	100.0	98.5	101.5	99.4	99.4	1.2E+0
175.0 J	175.0	172.4	177.6	173.5	173.5	1.5E+0

COMMENTS

Example certificate, actual results and uncertainties will be reported at the time of calibration.
Nominal and limits may vary based on actual make/model.

■ This certificate shall not be altered in any form or reproduced, except in full, without prior written approval from originating lab. These results relate only to the item(s) calibrated. Form Revision 10: 06/04/2024
■ Total expanded measurement uncertainties expressed are based on a confidence level of 95%; coverage factor of (k=2). The statement of compliance in this certificate was issued without taking the uncertainty of measurement into consideration. The customer shall assess the results and uncertainty when determining if the results meet their needs. (This is considered “shared responsibility.”) Uncertainties expressed in base units.
■ The calibrations within the certificate/report are traceable through NIST or another National Metrology Institute to the International System of Units (SI). Calibration was completed in accordance with ISO/IEC 17025:2017, ANSI/NCSL Z540-1-1994 and ANSI/NCSL Z540.3-2006. Other standards listed upon request.