

xDevs.com CALFEST July 2022

All uncertainty values are $k=2$ 95%

All resistance standards measured in air baths at $+23.0\text{ }^{\circ}\text{C} \pm 0.05\text{ }^{\circ}\text{C}$

Member labs color legend

TheSignalPath, USA

NLab standards
USA, NJ

MM Lab standards
USA, FL

xDevs HQ standards
USA, NJ

Measurements International Canada

MINTL ESI SR104
10000.03588 Ω

MINTL 1k Ω OIL STD
999.989691 Ω

17.OCT.2021
Calibration

A=1.00000547

Process Instruments
Lab calibration
OCT.2017
MAR.2020



MMLab SR104
804040
10000.0524 Ω
 $\pm 0.10\text{ ppm}$
17.OCT.2021

MMLab SR104
G206128830104
9999.9977 Ω
 $\pm 0.10\text{ ppm}$
17.OCT.2021

9.99986597 $\pm 0.26\text{ ppm}$
18.17V, 33 μW

Quantum Resistance Realization

QHE system
 $R_K = h/e^2 =$
25 812.807 45... Ω

Quantum Voltage Realization

PJVS system
10 V

DEC.2020
Calibration

Datron 4910A
9.99991544 V
9.99991227 V
 $\pm 0.90\text{ ppm}$
JUL.2022 CF

Datron 4910B
9.99996553 V
9.99996558 V
 $\pm 0.60\text{ ppm}$
JUL.2022 CF

Datron 4910C
9.99998606 V
9.99998378 V
 $\pm 0.60\text{ ppm}$
JUL.2022 CF

Datron 4910D
9.99997163 V
9.99996903 V
 $\pm 0.90\text{ ppm}$
JUL.2021 CF

Zener array voltage matrix

Fluke 732B MM
#3
Process bank calibration
9.99992591 V $\pm \text{TBC ppm}$
JUL.2022
 $+23\text{ }^{\circ}\text{C Ambient}$

Fluke 732A LC
4390002
Process bank calibration
10.0002207 V $\pm \text{TBC ppm}$
13.JUL.2022
 $+23\text{ }^{\circ}\text{C Ambient}$

Fluke/xDevs 792FX
Process bank calibration
9.9999802 V $\pm 0.95\text{ ppm}$
9.JUL.2022
Battery operated
 $+23\text{ }^{\circ}\text{C Ambient}$

Fluke 732A LC
3795038
Process bank calibration
10.0001320 V $\pm \text{TBC ppm}$
13.JUL.2022
 $+23\text{ }^{\circ}\text{C Ambient}$

MINTL 4310AF
999.992968 Ω
 $\pm 0.20\text{ ppm}$
26.OCT.2021

6.JUN.2021
Calibration



A=10.00012327

A=10.00006747

300 μA

A=10.00007162 316 μA

xDevs.com ESI SR104
G202088930104
10000.0028 Ω
 $\pm 0.10\text{ ppm}$ 6.JUN.2021
10000.00128 Ω
 $\pm 0.2\text{ ppm}$ 25.FEB.2022
LTD: $<0.08\text{ ppm/year}$

Process Instruments
Lab calibration
2020 REJECTED



TRS accredited
calibration
2016 in AU

ITRI calibration
3.JUN.2019
vs MI 9210B



xDevs.com FSL935
SN 001
9999.9757 Ω
 $\pm 0.22\text{ ppm}$ 8.JUL.2022
LTD: $<0.1\text{ ppm/year}$

DC Current path

HP 3458A LN/X02 Reference DMM
14.JUL.2022 calibration
 $+23\text{ }^{\circ}\text{C Ambient}$

DC Voltage path

Full calibration
and adjustment
15.JUL.2022

TSP's HP 3245A
6.5-digit Universal Source

Methods of transfer:
Resistance : 9.5-digit DCC and HSB Bridge system
Voltage: 8-digit NBS430 Opposition nanovoltmeter
comparison with TEMF cancellation