

Marquette University

Electrical Safety Testing of Devices

Marquette University uses a Fluke Biomedical ESA612 Electrical Safety Analyzer to check and verify the electrical safety of devices. The analyzer tests to the following electrical safety standards:

- Domestic: ANSI/AAMI ES1 and NFPA 99
- International: IEC62353, AN/NZS 3551, and parts of IEC 60601-1

The integrated ANSI/AAMI ES1 and IEC60601-1 patient loads are available and selectable.

The analyzer provides electronic and printed copies of test results.

The analyzer performs the following tests:

- Line voltage
- Ground (protective earth) resistance
- Equipment current
- Insulation resistance
- Ground (earth) leakage
- Chassis (enclosure) leakage
- Lead to Ground (Patient) and Lead to Lead (Patient Auxiliary) leakage
- Lead isolation (mains on applied parts leakage)
- Differential Leakage
- Direct Equipment Leakage
- Direct Applied Part Leakage
- Alternative Equipment Leakage
- Point to Point Leakage, Voltage, and Resistance
- ECG Simulation and Performance Waveforms