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The RJL Systems Bioelectrical Impedance Analyzer (BIA) serves as a reference point for educators, doctors and health care professionals. Our goal is to offer innovative BIA instruments to help define the best body composition analysis solutions.

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RJL Systems was founded by Rudolph J. Liedtke in 1979 and pioneered the Bioelectrical Impedance Analysis (BIA) science. After 40 years, RJL Systems remains the leader in engineering and new BIA applications. The RJL Systems engineering team continues to establish the standards of reliability and accuracy for the use of Total Body and Segmental body composition assessments.

Adhering to engineering and regulatory standards has made BIA instruments designed and built by RJL Systems the global standard, with over 40,000 devices sold to professional doctors, hospitals and universities world wide.

RJL Systems is ISO-13485 certified since 2010 and our BIA products are cited in many studies, abstracts and peer review articles for the last 30 years.
### Quantum IV BIA

Precise assessment of whole body composition by measuring biological resistance and reactance with a resolution of 0.1 ohms and phase angle from 0 to 90 degrees.

**Directly Displays in Real Time:**
1. Resistance: 0 to 1000 Ω
2. Reactance: 0 to 500 Ω
3. Phase Angle: 0 to 90°
4. Battery life: 0 to 100%

**Features:**
- Accurate and Repeatable
- 4 line green/black display
- Lithium Ion Batteries
- 9 hour continued use
- USB Communications
- Ergonomic design
- Multilingual
- BC software with 1 seat
- 3 year warranty
- Two Double packs of electrodes (400 tabs 100 BIA tests).

**Price** $2,490.00  
Additional yr warranty $99.00  
Plus Package $3,390.00

### Quantum Legacy BIA

Precise assessment of whole body composition by measuring biological resistance and reactance with a resolution of 0.1 ohms and phase angle from 0 to 90 degrees.

**Directly Displays in Real Time:**
1. Resistance: 0 to 1000 Ω
2. Reactance: 0 to 500 Ω
3. Phase Angle: 0 to 90°
4. Battery life: 0 to 100%

**Features:**
- Accurate and Repeatable
- 4 line green/black display
- 9 volt replaceable battery
- 3 hour continued use
- Easy handheld design
- Multilingual
- BC software with 1 seat
- 3 year warranty
- One Double pack of electrodes (200 tabs 50 BIA tests).

**Price** $2,190.00  
Additional yr warranty $99.00  
Plus Package $3,090.00

### Quantum V Segmental BIA

Precise assessment of segmental and whole body composition by measuring the resistance and reactance of 13 biological zones. This results in the composition of each arm, leg, right - left torso, whole body, upper and lower body.

**Directly Displays Real Time:**
1. Resistance: 0 to 1000 Ω
2. Reactance: 0 to 500 Ω
3. Phase Angle: 0 to 90°
4. Impedance 0 to 1000 Ω

**Features:**
- The sum of the parts equals the whole (body)
- Accurate and Repeatable
- 4 line green/black display
- Lithium Ion Batteries
- 9 hour continued use
- USB Communications
- Multilingual
- BC and Segmental software with 1 seat
- 3 year warranty
- Two Double packs of electrodes (400 tabs 50 BIA tests).

**Price** $3,490.00  
Additional yr warranty $149.00  
Plus Package $4,690.00
Included with all BIA instruments:

1. BIA Instrument
2. “How to test cable” card
3. Subject Cables with protective pouch
4. Test resistor in protective tube
5. Users manual, BC software and videos on USB drive
6. Dust tight carrying case
7. Three year unconditional warranty

Included with Plus package Quantum IV and Legacy

- Two year extended warranty, total of five (5) years. $198.00 value
- Two spare sets of subject cables. $120.00 value
- Extra years of software upgrade protection and telephone support, total of three (3) years. $200.00 value
- Two additional software seats (three seats total) $100.00 value
- Ten (10) boxes of electrodes (500 tabs - 125 BIA tests) each box or 5,000 total tabs 1,250 BIA tests. Each box is held in escrow until needed by calling RJL Systems ext 101. $1,000.00 value

Total $1,618 value

Included with Plus package Quantum V Segmental BIA

- Two year extended warranty, total of five (5) years. $298.00 value
- Four sets of subject cables (two spares). $240.00 value
- Two extra years of software upgrade protection and telephone support, total of three (3) years. $200.00 value
- Two additional software seats (three seats total, BC & Segmental) $200.00 value
- Ten (10) boxes of electrodes (500 tabs - 125 BIA tests) each box or 5,000 total tabs 1,250 BIA tests. Each box is held in escrow until needed by calling RJL Systems ext 101. $1,000.00 value

Total $1,938 value

Common Specifications:

- All RJL BIA instruments operate at 50 Khz with a subject constant current of 250 microamps maximum from 0 to 10K ohms.
- The subject is transformer isolated to reduce false readings from environment noise and ground.
- Subject connections are true four electrode (tetra-polar) measurements of electrical resistance and electrical reactance.
- Displays are bright green OLED on black background.
- All readings displayed are in real time with a resistance and reactance resolution of 0.1 ohms, phase angle to 0.01 degrees and battery level from 0 to 100%.
- Built-in languages: English, Spanish, German, French and Italian on all BIA instruments. This does not include BC or Segmental software.
### Electrodes

<table>
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<tr>
<th>Electrodes: Pack</th>
<th>Electrodes: Box</th>
<th>Electrodes: Case</th>
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<tr>
<td>100 Electrodes</td>
<td>500 Electrodes</td>
<td>5,000 Electrodes</td>
</tr>
<tr>
<td>25 BIA tests ($1.20 per test)</td>
<td>125 BIA tests ($0.80 per test)</td>
<td>1250 BIA tests ($0.72 per test)</td>
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<tr>
<td>Shipped in a sealed pack with 10 sheets of 10 electrodes each. The electrodes' expiration date is printed on the front of each package.</td>
<td>Contain five (5) electrode packs. The most economical way to buy electrodes when doing many BIA tests.</td>
<td>Contains ten boxes. The most economical way to buy electrodes when doing high volume BIA tests.</td>
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**Price**
- **$30.00 / Pack**
- **$45.00 Double pack (2 packs)**
- **$100.00 / Box**
- **$900.00 / Case**

### Cables – Charger

<table>
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<tr>
<th>DIN Subject Cable</th>
<th>Lemo Subject Cable</th>
<th>12.0 Volt Battery Charger</th>
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<tr>
<td>The standard subject cable is included with all instruments (Quantum Legacy, IV and V)</td>
<td>The Lemo subject cable is for older BIA instruments (Quantum II, X and Desktop) without a special serial number ending with a “D”.</td>
<td>Common battery charger for the Quantum IV and Segmental BIA instruments. Rated at 12.0 V volts 2.0 Amps regulated with 120 or 240 50-60 Hz universal input voltage.</td>
</tr>
<tr>
<td><strong>Price $60.00</strong></td>
<td><strong>Price $200.00</strong></td>
<td><strong>Price $75.00</strong></td>
</tr>
<tr>
<td>Four alligator clip set $4.00/set</td>
<td>Four alligator clip set $4.00/set</td>
<td></td>
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Glossary

What is electrical resistance
Friction is the mechanical analogy of electrical resistance and is similar to water flowing through a pipe. Electrical resistance, like water, is the difficulty to pass an electric current through a conductor. Resistance is measured as Ohms, named after George S. Ohm (1787-1854), and is proportional to the geometry of the conductor. Like a water pipe the larger the conductor or pipe the more electrical current flows.

What is electrical capacitance
Clouds during a thunder storm are like a capacitor. They store a charge and when the charge gets large enough lighting strikes and discharges the negatively charged cloud to the positive earth. Capacitors are two or more plates separated by an insulator (air between the cloud and earth) and can store a charge. Alternating current has a positive and negative charge that alternates at a specific frequency. When connected to a capacitor the plates get alternately charged and current flows due to the charges switching polarity.

What is Phase angle
Phase angle is the ratio or reactance over resistance corrected for degrees.

What is a four electrode (tetra-polar) measurement:
Four electrodes reduce electrode problems by not measuring the electrodes and contact between the electrode and subject skin. It does this by supplying a 50 Khz constant current to the more distal electrodes (near the toes and fingers) and measuring the voltage drop at 50 Khz between the the more proximal electrodes (wrist and ankle).