Quantum Legacy
Bioelectrical Impedance Analyzer (BIA)

An Affordable Multilingual Body Composition Assessment Tool

For more than 20 years RJL Systems has delivered the Quantum II and Quantum X as the least expensive BIA instrument to worldwide customers. Both BIA instruments had a single line display where resistance and reactance was selected by pressing tactile buttons. The Quantum II had a resolution of 1.0 ohms while the Quantum X had a resolution of 0.1 ohms. Phase angle had to be manually calculated and battery life was not indicated except when the battery was low. These two BIA products have now been replaced by the Quantum Legacy.

Body Composition

Included with the Quantum Legacy is BC (body composition) software. BC software is ideal for the healthcare professionals monitoring and recording changes in body composition. After testing with the Quantum Legacy the measurements are manually entered into the BC software which performs the body composition analysis. The results can provide suggestions for effective lifestyle changes to improve body composition by using food and fitness ideas included in the software. Body composition changes can be easily monitored over time with historical graphic and/or numeric reporting.

Specifications:

Battery	Replaceable 9 Volt Alkaline
Alkaline Battery Life	2 Hours continuous use
Automatic shut-off	inactive 2 minute shutdown
Weight	315 grams (11.1 Oz)
Width	19 cm (7.5 inch)
Height	10 cm (3.9 inch)
Depth	33 cm (1.3 inch)
Resistance range	0.0 to 1000.0 ohms ± 1.0 %
Reactance range	0.0 to 500.0 ohms ± 1.0 %
Phase angle range	0.20 to 89.5 degrees ± 1.0%
Operating frequency	50 kHz crystal control
50 kHz current	250 micro amps AC
BIA measurement	True tetra-polar (4 electrode)
Constant current range	0 to 8K Ohms
Detection impedance	> 1 meg-ohm at 50 kHz
Subject Isolation	transformer coupled
Subject DC leakage	zero
Subject Lead Set	182.9 cm (6 foot) 4 conductor

Standard accessories

Phase Angle

Phase angle has been documented in many scientific peer review papers using RJL Systems' analyzers for many years[1,2,3,4,5]. The Quantum Legacy maintains the same BIA specifications referenced in these papers from earlier studies to today. Therefore, the normal or average ranges documented in these papers can be used as a reference. In addition, phase angle does not depend on height or weight or any demographic information. It is basically a ratio of reactance and resistance only. Phase angle is greater in men than women, and decreases with increasing age[1].

1. Maria Cristina G Barbosa-Silva, AluÃsio JD Barros, Jack Wang, Steven B Heymsfield, and Richard N Pierson Jr Bioelectrical impedance analysis: population reference values for phase angle by age and sex. Am J Clin Nutr 2005;82:49-52.

2. Sandra N. Stapel, Wilhelmus G. P. M. Looijaard, Ingeborg M. Dekker, Armand R. J. Girbes, Peter J. M. Weijs, Heleen M Oudemans-van Straaten Bioelectrical impedance analysis-derived phase angle at admission as a predictor of 90-day mortality in intensive care patients. European Journal of Clinical Nutrition https://doi.org/10.1038/s41430-018-0167-1 (note: The Akern BIA 101 Anniversar is built by RJL Systems)

3. Eloisa Colin-Ramirez Ph.D. Lilia Castillo-Martinez MSc., Arturo Orea-Tejeda M.D., Marisela Vaz-zquez-Duran BSc, Ana E. RodrÄ±guez B.Sc. Candace Keirns-Davis M.D. Bioelectrical impedance phase angle as a prognostic marker in chronic heart failure J.nut.2011.11.033

4. Digant Gupta, Carolyn A Lammersfeld, Jessica L Burrows, Sadie L Dahlk, Pankaj G Vashi, James F Grutsch, Sara Hoffman, and Christopher G Lis Bioelectrical impedance phase angle in clinical practice: implications for prognosis in advanced colorectal cancer 1â3 Am J Clin Nutr 2004;80:1634-8

5. Silvana Iturriet Paiva, Lucia R. Borges, Denise Halpern-Silveira, M. CecÃlia F. Assuncao, Aluisio J. D. Barros, M. Cristina Gonzalez Standardized phase angle from bioelectrical impedance analysis as prognostic factor for survival Support Care Cancer DOI 10.1007/00520-009-0798-9