

Advanced Probing Systems, Inc. – Data Sheet

Silver Plated Tungsten and Tungsten-Rhenium Probe Needles

Material DC Resistivity

Tungsten	Tungsten-Rhenium	Plated Nickel	Plated Silver
5.5 to 5.9 $\mu\Omega$ -cm	9.2 to 10.1 $\mu\Omega$ -cm	7 to 40 $\mu\Omega$ -cm	1.6 to 3.2 $\mu\Omega$ -cm

DC Resistance and Current Carrying Capacity

Plated Probe <i>(200-μm thickness on a 2.0 inch long probe needle)</i>	Nominal Nickel Plated Probe Resistance (m Ω)	Nominal Silver Plated Probe Resistance (m Ω)	% Resistance Reduction	% Ampacity Increase
<i>Tungsten</i>				
5	229.4	148.7	35.2	19.5
6	158.9	109.6	30.9	16.9
7	114.8	83.4	27.3	14.8
<i>Tungsten-Rhenium</i>				
5	376.1	198.9	47.1	27.3
6	260.0	149.9	42.3	24.1
7	188.7	116.6	38.2	21.4

Note 1: *The resistance values were calculated using Ohm's Law for parallel resistors. There was a statistically significant correlation between the "theoretical values" in the table and direct measurements from the various probe needle diameters.*

Note 2: *The current carrying capacity was determined based on the power dissipated by heat.*