APPENDIX 1

SPECIFICATIONS OF MACCOR SERIES 4000

Multi-Current Range
Range 1 150 μA Full Scale ±0.03 μA
Range 2 5 mA Full Scale ±1.0 μA
Range 3 150 mA Full Scale ±30.0 μA
Range 4 5000 mA Full Scale ±1.0 mA
Current Control Range 300 nA Amps to 5 Amps
Voltage (multi-current range channels)
Measurement Range ± 5 Volts or 0V to +10 Volts
Accuracy ±0.02% Full Scale Range
Resolution 16 bit

Single-Current Range
Current Range up to 2000A available
Current Accuracy ±0.05% Full Scale
Dual-Current Range
Current Range Any combination of two single-current ranges
Current Accuracy ±0.05% Full Scale Range
Voltage (single-current range and dual- current range channels)
Measurement Range Per Your Specifications, voltages up to 180V available
Accuracy ±0.02% Full Scale
Resolution 16 bit

Modes of Operation
Fixed (Constant) Current Fixed (Constant) Power
Fixed (Constant) Resistance Fixed (Constant) Voltage
1kHz AC Impedance Measurement
Voltage Ramp (Cyclic Voltammeter)
Time Minimum Step Time 10 ms
Control, Measurement, and Adjustment every 10 ms
APPENDIX 2

SPECIFICATION OF LITHIUM ION 18650 CELL

Rated Capacity 1800 m Ah
Nominal Voltage =3.7 V
Internal Resistance =70m Ω
Maximum Charge Current 1.0 C (1800 m A)
Charge Voltage 4.20 ± 0.05 V
Maximum Discharge Current 2.0 C (3600 m A)
End of Discharge Voltage 3.0 V
Temperature For charge 0 ~ 45 °C
    For discharge -20 ~ +60 °C