SPECIFICATION
Portable NIR Spectrometer

1. Scope

1.1 This Specification describes the requirements for a Portable UV-VIS-NIR Spectrometer (hereinafter referred to as “The System”). The System will be used for detection of plant stresses by measuring the leaf and other plant components as part of the project NHE5002.

The System will contribute to high quality measurements that identify materials in real-time with minimal sample preparation required and perform non-destructive analyzes of plants.

1.2 Supplier may propose alternatives that differ from this Specification, but are intended to produce the same or better results for this application. In such cases, these must be clearly stated and justified in the offer and sufficient technical information has to be provided for assurance of compliance with this Specification.

2. Requirements

2.1. Functional and Performance Requirements

The System shall meet the following functional and performance requirements:

2.1.1. The System shall be portable and capable of use in crops field operations; and
2.1.2. The System shall be capable of operating on batteries for periods of not less than two hours.

2.2. Technical Requirements

The System shall meet the following technical requirements:

2.2.1. The System shall be capable of measuring in the spectral range of 350 to 2500 nm;
2.2.2. The System shall have a minimum scan speed of 100 milliseconds;
2.2.3. The System shall include detectors sufficient to cover the spectral range from 350 to 2500 nm;
2.2.4. The System shall have a wavelength reproducibility of 0.1 nm and wavelength accuracy of +/- 0.5 of the bandwidth;
2.2.5. The System shall have a rugged equipment body;
2.2.6. The System shall weigh less than 4.5 kg. without batteries;
2.2.7. The System shall include a durable carrying case for basic protection of the instrument from outside elements when not in use;
2.2.8. The System shall have an USB interface; and
2.2.9. The System shall include software for operation and interpretation of results.

3. Packing

The System, for the shipment by air to the End-User, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

4. Quality Requirements

4.1. The System shall be manufactured, shipped and installed in accordance with the Contractor's ISO quality assurance system or an equivalent quality assurance system.

4.2. The Contractor shall document the compliance with this quality assurance system.

5. Deliverable Data Items

The Contractor shall provide two complete sets of operation and servicing manuals in English, or if available, one complete set in English and one in Nepalese.
