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IPA Croatia – Serbia

CONTRACTING AUTHORITY'S CLARIFICATIONS No. 1

Contract title: **Supply of FTIR microscope system for determination of soil, plant, animal tissues and microplastics**

Publication Ref: **HRRS00018-2/FTIR microscope**

No.	Question	Answer
1.	Is it acceptable to the Contracting Authority that FT IR Imaging system consists next characteristics: 1. FT IR spectrometer that covers range from 8,300 to 350 cm-1, uses KBr beam splitter covered with germanium, has a DTGS detector, sensitivity at resolution of 4cm-1 better than 55.000:1, and resolution better than 0.4cm-1, that has Automatic Performance Verification and Automatic Atmospheric compensation, and scanning capability of 100scan/sec. 2. FT IR imaging system that has option for imaging system and microscope. Patented dual detector NB MCT array detector and WB MCT detector, has the possibility of working in Transmission and Reflectance mode with the array detector with ATR Imaging as an option. Transmission and Reflection mode with the single point detector with Micro ATR as an option. Pixel resolution is 1.56µ, much better than required. Wavelength range from 7800 to 600 cm-1, resolution better than 2 cm-1, with a typical sensitivity of 50,000:1 RMS. Provides automated control of the complete system from a single application to include visible image survey and determination of IR image area or point(s); collection of total absorbance IR image or IR spectral map, spectral manipulation, image manipulation, data extraction and reporting. Sample area of 75 x 50 mm, or optionally 160 x 60 mm. IR Imaging collection: 100 x 100µm, or 400 x 400µm, or 800 x 800µm Micro ATR with germanium. Spectrum Acquisition Rate: 170 full range spectra/second	Requested Compact FTIR microscope system should have all system components listed in the technical specification. It is acceptable that the offered device has better characteristics than requested. - Requested single point detector is MCT. MCT detector offers significantly better S/N ratios and exhibit much faster response times than DTGS detectors. This is a reason why MCT is requested as a single point detector solution. DTGS is not acceptable. - Requested detector range of covers area of interest for our research. It is acceptable that to offered device/detector has wider range than requested. - It is not acceptable for the beam splitter to be made of KBr because FT-IR microscope has to be inert to water vapour to be unaffected by humidity. All included IR-transparent window material and the beam splitter itself has to be made from ZnSe. KBr can absorb moisture, which can cause changes in its optical properties and reduce measurement accuracy. A durable material like ZnSe reduces the need for frequent maintenance and replacement, this improving system longevity. - Multy element detector requested is Focal plane array detector for use in ATR, reflection and transmission mode. Detector has to allow true imaging, meaning that all pixels of an IR image are acquired simultaneously. This is much faster and provides a higher accuracy as no moving part is required. Any line array is not acceptable. FPA assure greater spatial resolution, simultaneous recording of multiple points on the sample, better image quality and contrast, reduction in the number of measurements required - The specification requires that FTIR system has to be equipped with minimum two detectors. Switching between detectors must be automatic and controlled via software support. These are minimum requirements. It is possible to offer system with more than the required two detectors to fulfill requested.