

Annex 1

Specifications and qualification requirements for the essential wine laboratory machine

Measurement specifications for wine:

Parameter	Units	Range	Repeatability
Ethanol	%v/v	6 to 20	0.02
Glucose	g/L	0 to 150	0.2
Fructose	g/L	0 to 160	0.1
Sucrose	g/L	1.5 to 50	0.2
Titrateable acidity	g/L	0 to 12	0.04
Volatile acids	g/L	0 to 1.5	0.02
Malic acid	g/L	0 to 7	0.06
Tartaric acid	g/L	0 to 5	0.05
Lactic acid	g/L	0 to 3	0.05
Gluconic acid	g/L	0 to 5.5	0.03
pH	-	3 to 4	0.01
Density	g/L	0.98 to 1.1	0.0001
Must weight	°Bx	-4 to 24	0.03
Extract	g/L	0 to 350	0.3
Glycerol	g/L	0 to 25	0.2
Total polyphenols	Mg/L	0 to 3	0.08

Qualification requirements:

- 1) Instrument uses FTIR technology and can be operated via an integrated touchscreen.
- 2) Cell temperature control with a minimum accuracy of +/- 0.03K.
- 3) Measurement cell based on high-intensity 12-bounce ATR (attenuated total reflection) principle.
- 4) Integration of values from connected U-Tube density meters, NIR alcohol meters into the measurement report of FTIR instrument.
- 5) Bidder Authorization Letter from manufacturer for this tender.

Other Terms:

Desired delivery time: Delivery Deadline is **20.07.2023**.

Offer validity period: not less than **30 days**.

Warranty: **2 years**

Place of delivery: **Telavi** (exact address will be provided later to the vendor);

Installation and commissioning of the equipment.