

## ANNEXURE-A

### Specifications for Nitrogen Gas Generation System for Waters QDA

#### LCMS:-

- High throughput proven membrane technology for imported nitrogen generator with in-built compressor to support the generation of nitrogen. In-built compressor should be insulated in compressor compartment to minimise the noise in lab.
- Should be able to **generate  $\geq 24$  LPM with max 116 psi pressure (at 22 LPM) of LCMS grade** nitrogen gas.
- Nitrogen generator should be approved by all the major LCMS manufacturers – **Waters** (a certificate from leading OEM's should be submitted in this regard).
- Should have minimum of 5 installation of nitrogen gas generators of similar / approved nitrogen gas generator with LCMS across Govt. Academic & research institutes across North India & at least 100 installations with WATERS LCMS & user list has to be provided by the company to ensure the quality & establishment of LCMS.
- System must come with visual alarms to avoid unexpected breakdown.
- Generator must have inbuilt power saver mode to save the continues operations of gas generator to save the generator life.
- Maximum relative humidity should be 80% RH @ 35°C.
- Generator should have Particles < 0.01  $\mu\text{m}$ ; Phthalates---- None & Suspended liquids also None.
- The heat output (BTU) of the system should be max. 5016 @ 50Hz & 4231 @ 60Hz to prevent the lab environment for LCMS use.
- Minimum Operating Ambient Temperature: 5 °C (41 °F)
- Maximum Operating Ambient Temperature: 35 °C (95 °F)
- Generator weight should not be more than 105 Kg & should be available with caster wheels to allow smooth movement within lab if needed.
- Company must have dedicated engineers for gas generators & proven service record to support the critical application.
- Sufficient consumable & spares stock should be available at local regional office to support timely service.
- Generator must have compact size to even fit under standard lab bench to save the lab space and should have wheels for necessary movement in lab.
- Standard Certifications: - the company must have CE & CSA certification to ensure the product / equipment's standard of quality with high quality equipment LCMS.

#### Others:

1. Service- should have all the spares stock in Local service office.
2. International Certifications: - the company must have CE & CSA certification to ensure the product / equipment's standard of quality in international market.
3. Company should have a proven track record of at least 150 generators (similar / or others models of approved gas generators with waters/ Agilent/ Thermofisher installation since last 5 years.

4. Serviceability- vendor must have local stationed engineer in the region to ensure the direct service support with-in 24-48 hours of service issues.
5. Installation at the desired place suggested by the institute