10. brake fluid displacement: 0.005 ... 4 L/min at least;

11. maximum temperature measured inside brake disc/drum: minimum 1000°C /at least 4 channels with telemetry system (no slip rings);

12. maximum temperature measured inside friction lining: minimum 1000°C /at least 4 channels;

13. interface for contactless measured temperature on the surface of the disc/drum: minimum 1000°C /1 channel;

14. microphone interface;

15. thermo-vision camera interface;

16. minimal test chamber dimensions (W x L x H): 1 m x 0.5 m x 0.8 m;

17. cooling air temperature: 15 ... 30 ± 5°C;

18. maximum cooling airflow: minimum 4000 m^3/h;

III) MEASUREMENT AND DATA ACQUISITION

Contractor has to provide industrial computer with flat panel color LCD monitor (at least 22") with operating system and basic software needed for operation. The Brake dynamometer must assure emergency power supply system for the user backend PC.

The Brake dynamometer measurement should provide at least the following parameters:

- data acquisition time base (resolution: 0.0005 s; accuracy: 0.0005 s);
- breaking torque (resolution: 1 Nm; accuracy min. ±0.5%);
- rotational speed (resolution: 0.1 rpm; accuracy min. ±0.2%);
- pressure (resolution: 0.1 bar; accuracy min. ±0.5%);
- temperature inside friction lining (resolution: 1°C; accuracy: min. ±1°C);
- temperature in the brake drum/disc (resolution: 1°C; accuracy: min. ±1°C);
- revolutions to stop (resolution: 0.1 rad; accuracy: min. ± 0.05 rad);
- braking applications done (resolution: 1; accuracy: 1);
- test chamber cooling air temperature and humidity (resolution: 1°C/1%RH; accuracy: min. ±2°C/±2%RH);
- test chamber cooling airflow: (resolution: min. 10 m^3/h; accuracy: min. 100 m^3/h);
- brake fluid displacement system: (resolution: 0.002 cm^3; accuracy: ±0.5%);
- other recognized by the Contractor as necessary.

The Brake dynamometer software must allow continuous acquisition of all the test parameters with a frequency of at least 2000 Hz to format recognized directly by Microsoft Excel standard by year 97. The Brake dynamometer must ensure continuous visualization of the current state of the measured parameters and the progress of the test trial with the possibility of graphic presentation (charts) of all or selected measuring parameters.

It is desired that the software allows to adjust the sampling rate of the measured channels separately for each of the channels, an evaluation criterion 3 – Table number 2 in §6.
It is desired that the software allows to time efficiently program customized test procedures in a visual programming language, an evaluation criterion 4 – Table number 2 in §6.
It is desired that the data acquisition system has one data base for all the measurement channels (such as speed, pressure, torque, but also temperature and humidity of air ventilation system, video camera, and also noise and thermo imaging camera measurements (if added subsequently), an evaluation criterion 5 – Table number 2 in §6.