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Core Lab

# Multi-Stage Flash Separator Datasheet

## Fluid Characteristics



## Multi-Stage Flash Separator

Designed to simulate a full-scale field separation unit the MFS-200 operates from atmospheric pressure up to 2,000 psig and temperatures from 40 °F to 200 °F. The MFS-200 is used to determine the optimum conditions for field separation by calculating the changes in Formation Volume Factor and gas-oil ratios with relation to changes in separator pressure and temperature. The complete system comprises two high accuracy gasometers for gas volume determination, high accuracy digital pressure transducer, high pressure mercury pump, temperature controlled bath with high accuracy digital circulating pump and variable pressure piston.

In the field, reservoir fluid at an elevated state of pressure and temperature flows from the well head into the field separator which is at a lower temperature and pressure and is separated (flashes) into its liquid and gas phases. The liquid phase is then flows into a stock tank at ambient pressure and temperature and evolves dissolved gases to form two phases. The MFS-200 Multi- Phase Flash Separator simulates this process in the laboratory and can be used to measure the volume of gas liberated at each stage. Samples of the liberated gas can be taken at each stage and analyzed for composition and specific gravity. At the completion of the test the liquid, equivalent to the stock tank liquid can be analyzed for composition and specific gravity.

### Specifications

#### Separator:

- Maximum Operating Pressure: 2,000 psig
- Maximum Operating Temperature: 200 °F
- Volume 300cc
- Variable Pressure Piston Cell Volume: 500cc

#### Mercury Pump:

- Volume: 200cc
- Resolution: 0.01cc
- Construction: 17-4PH and 316 Stainless Steel

#### Gasometers:

- Volumetric Accuracy: 0.2% of reading
- Total Capacity: 3,000cc (2,000cc/1,000cc)
- H<sub>2</sub>S Resistant