

Technical Data Sheet:

CULTEX® RFS

Radial Flow System for Cell-based Exposure



This is a high-end exposure system for the direct exposure of cell culture inserts or Petri dishes. The modular system consists of two main parts, the aerosol-guiding module and the sampling module housing the cell culture inserts, or Petri dishes.

The aerosol-guiding module can be fitted tightly to the sampling module, thus realizing a close connection between the two parts before exposure. The sampling module houses three cell culture inserts (or Petri dishes), which can be separately supplied with medium.

Exposure systems

General features

- Direct exposure technology at the air-liquid interface of cell cultures
- Cellular systems: cell lines and primary cells from the respiratory tract as mono- or co-cultures
- Test compounds
 - Gases
 - Particles (fine to nanoparticles)
 - Complex mixtures (e.g. tobacco smoke)
- Application areas
 - Industrial chemicals (particulate & gaseous compounds)
 - Consumer products
 - Tobacco smoke
 - E-cigarette vapor
 - Pharmaceutical and therapeutic products
 - Pesticides
 - In- and outdoor analysis
- Clients
 - Universities
 - Regulatory bodies
 - Military
 - Pharmaceutical, chemical and tobacco industry
 - Contract research laboratories

Basic principles of the exposure systems

Module design

- Inlet adapter
- Exposure top – Aerosol guiding module
- Base module – Sampling module
- Socket module
- Locking module

Dilution

- Use of the system with or without dilution

Test atmosphere

- One sampling point
- Radial flow system
- Homogeneous distribution of the test atmosphere to the surface of the cells
- Reproducible deposition of the particles on the cell surface
- Establishment of dose-response relationships
- Repeated exposure studies

Biological test system

Cells

- Maintenance of cell viability
 - 37°C by a temperature-controlled flow of water
 - Medium supply from below the insert membrane (static, intermittent, continuous)
- Application of 6.5 mm, 12 mm and 24 mm Falcon® or Transwell® inserts via special adapters

Bacteria

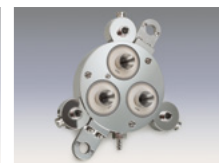
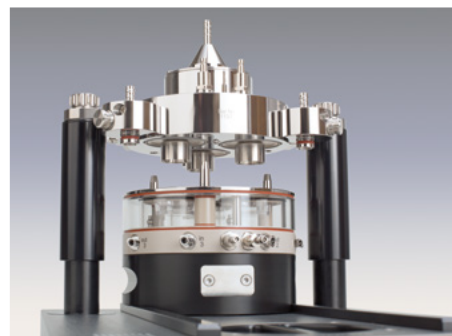
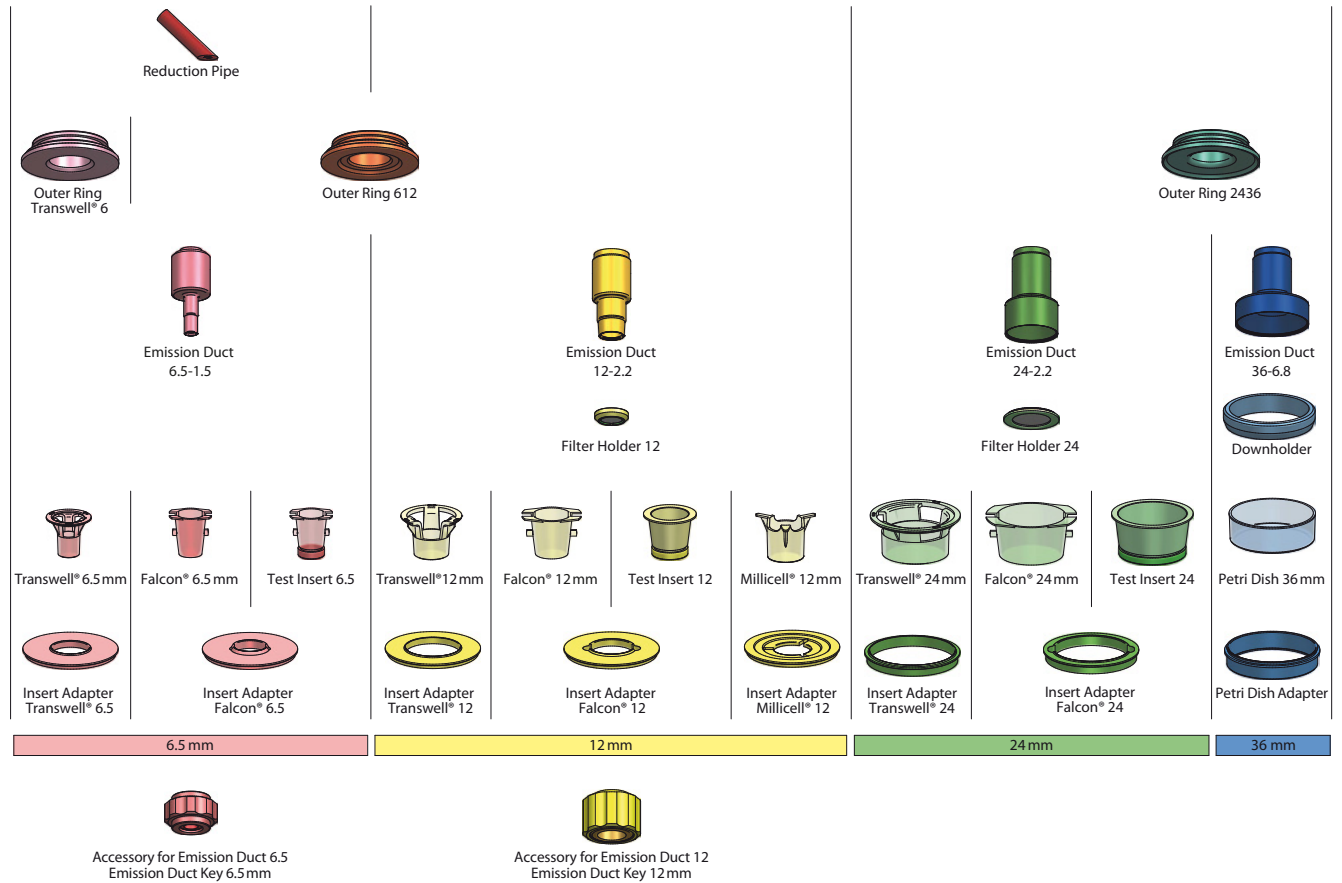
- Special adapter for 35 mm Petri dishes for running a modified Ames assay

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Air-liquid interface – *in vitro* exposure

Exposure systems – CULTEX® RFS – Radial Flow System

- Flexible design of the exposure top with aerosol inlets for commercially available membrane inserts (Falcon®/Transwell®) of different size and 35 mm Petri dishes
- 3 exposure positions
- Individual exposure chambers (3 membrane inserts)
- Tempering of the exposure chambers
- Individual medium supply of the independent exposure chambers



The Airborne Exposure Experts

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