

# Kuhner TOM

## Off-gas data from your shaken culture

Kuhner TOM (Transfer-Rate Online Measurement) measures online oxygen transfer rate (OTR), carbon dioxide transfer rate (CTR) and the respiratory quotient (RQ) in up to 16 individual shake flasks for better process understanding and informed process development. Kuhner TOM is easily installed in any Kuhner shaker and can be operated with various flask types and sizes including single use shake flasks.

## Learn more about your cells

- growth rate
- oxygen limitation and  $k_L a$  measurement
- carbon balancing
- substrate limitations
- cell viability
- glucose consumption



## Facts about Kuhner TOM

- Measures online OTR, CTR and RQ in up to 16 shake flasks
- Modular design: choose between 4, 8, 12 or 16 shake flasks
- Works with complex media, solids and foaming conditions
- Robust: Durable sensors and static electronics
- Available for Kuhner ISF1-Z, LT-X and Kuhner Kelvin+ incubators
- Various glass and single use flasks can be connected
- Individual aeration for each shake flask with humidity and CO<sub>2</sub> controlled air from the incubator (cell culture version)

# Check if Kuhner TOM is suitable for your process

## Technical Data

Temperature range	15-40°C (58°C on request)
Shaking Speed	< 600 rpm
Orbital shaking diameter	3 mm - 70 mm
Flask size	125 mL - 5000 mL (restricted by shaker height) 125 mL - 1000 mL Corning single use flasks (other flasks on request)
Filling volume	> 4% of nominal flask volume
Humidity	< 85% rel. humidity
Concentration range	CO <sub>2</sub> < 16% O <sub>2</sub> > 30%
Maintenance	CO <sub>2</sub> sensor calibration once per month Pump adjustment after 2 years
Expected lifetime	O <sub>2</sub> Sensor < 4 years CO <sub>2</sub> Sensor < 3 years Pumps < 4 years

Technical data subject to change

## Order information

Kuhner TOM is individually configured depending on your application, flask type and shaking conditions. Hesitating? Kuhner TOM can be tested to check its' suitability for your application.



## Contacts us

Feel free to ask our team of global Kuhner TOM experts for detailed information

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