

Technical Data Sheet: TDS 15

DIFRAM100: RAPID AIR MONITOR - NITROGEN DIOXIDE (NO₂).



Description: A plastic (H.D.P.E.) circular diffusive sampler containing a sorbent for measuring gaseous Nitrogen dioxide in ambient air. This sampler is designed to provide a considerably higher uptake rate than the passive axial diffusion tube, which allows a higher flexibility of ambient air pollution measuring in outdoor and indoor environments. It can equally effectively be used as a personal sampler for health and safety monitoring in workplace and public/social environments.

It is recommended that one sampler is used as a blank for each batch of samplers ordered.

The concentrations of Nitrite ions and hence NO₂ chemically adsorbed are quantitatively determined by U.V. / Visible Spectrophotometry with reference to a calibration curve derived from the analysis of standard nitrite solutions (UKAS Accredited Methods).

RAM Dimensions: 44mm diameter, 18mm height, 28mm sampling surface diameter.

Absorbent: 20% Triethanolamine in De-Ionised Water.

Recommended Exposure Periods: 1 hour (high concentration areas) to 1-week (time-weighted average studies).

Uptake Rate: 28.6 ml/min at 20 °C.

Air Velocity: 0.2 to 0.7m/s: No statistical significance at 95% confidence levels.

Orientation (Normal / Perpendicular): No statistical significance.

Nominal Uptake Rate up to 4 weeks sampling: No statistical significance.

Temperature Range: -5 °C to 30 °C: Increase in uptake rates at higher temperature: Temperature correction to be applied in calculation. If the average temperature is not provided, the results will be corrected to 20°C.

Relative Humidity: 20 to 70%: Slight increase in uptake rate at higher humidity: Approx. 13%.

Back Diffusion: No evidence of back diffusion after 48 hours.

Storage: Store in a dark, cool environment preferably between 5-10 °C.

Shelf Life: 6 months when stored in accordance with published storage instructions.

Limit of detection: Less than 0.2 ug^m⁻³ over a 1 week exposure period. Specific values available upon request.

Expanded Relative Measurement Uncertainty at 40ug^m⁻³ limit value: +/-13. 0%.

Expanded Measurement Uncertainty based on laboratory validation tests: +/-24.8%.

Desorption Efficiency: d = 0.99 (determined using N.I.S.T. Standard Analytes).

Relevant Standards: The sampler has been validated for compliance to European Standard EN 13528-2: 2008 by an independent accredited laboratory.

Special Factors: Potential interference from Nitrous Acid, Peroxy Acetyl Nitrate, which could increase levels of nitrate.