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 (U.K.A.S. 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 4-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.

**Relative Humidity:** 20-70%: 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.

**Expanded *Relative Measurement Uncertainty** at 40ugm⁻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.

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