

BRINGING CERTAINTY TO AIR MEASUREMENT



High-Converter Efficiency - Defensible Data - Simple Installation - Patented

PhoNO™ - PHOTOLYTIC NO₂ CONVERTER

Upgrade your existing NO_x analyzer with Direct Optics' PhoNO™ Converter.

Regulating nitrogen dioxide (NO₂) is vital for safeguarding public health and the environment. However, the challenge lies in the accuracy of measurements. Traditional analyzers employing Heated Metal Converters (HMC) frequently overestimate NO₂ levels, creating emissions control concerns.

The PhoNO is a game-changer in the field of NO₂ measurement using chemiluminescent technologies. PhoNO precisely measures True NO₂ concentrations and selectively separates them from other nitrates present in the air enabling existing analyzers to meet the accuracy needs of the compliance industry.

Its patented conversion process eradicates the problem of NO₂ overestimation.

Get accurate and fast measurements with Direct Optics PhoNO.

INNOVATION IN NITROGEN DIOXIDE MEASUREMENT

WHY CHOOSE DIRECT OPTICS?

Direct Optics PhoNO™ offers:

- Eliminate erroneous over reporting of NO₂ /NO_x (can be >100%)
- Conversion rate independent of concentration
- Selective high conversion of NO₂ at reduced pressures
- Direct replacement for thermal converters typical of NO_x analyzers
- Outputs for real-time converter performance monitoring
- Long service life (>4 years) with no memory effects on converter performance
- Cost-effective long-term solution saving users >\$20,000 in new analyzer costs
- Simple installation and user-friendly
- Designed to scrub ozone prior to sample vent and eliminates the need for heaters



- ✓ Size: 4.5"(w) x 6.5"(h) x 8.5"(d)
- ✓ Weight: 5 lb (2.0 kg)
- ✓ Power: 100-240 VAC (50-60 Hz), 35W

- ✓ Repeatability and High Conversion Rate of NO₂ to NO (>96%, <0.1% variance per month)
- ✓ Linear Conversion of NO₂ to NO over entire operating range ($r^2 = 0.99998$)
- ✓ Operating Range: < 0.5 ppb >200 ppm NO₂
- ✓ Residence Time: 0.8 - 2 seconds
- ✓ Operating Flow Rate and Pressure:
 - 0.3 - 0.8 slpm at 100 - 220 mmHG
 - 0.3 - 0.45 slpm at 50 - 115 mmHG

- ✓ US Patent #11,435,291 B2
- ✓ US Patent Pending (App #16/612,135)



ABOUT US

Direct Optics is redefining how air emissions are measured. Backed by proven performance and specialized knowledge in engineering, air sciences, and environmental regulations, we deliver technologies that strive to exceed expectations. Our commitment goes further, providing long-term support that safeguards your investment and ensures lasting value. At our core, we aim to provide certainty in every measurement.