

Nitric Acid (HNO₃)

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Principle of the Measurement

Chemical Ionization Mass Spectrometry
(CIMS) using SiF₅⁻ ion chemistry

Species Measured

Nitric Acid

Time Response

1 Second

Detection Limit

Precision on 1s data: 20 pptv (1 sigma) depending on field project

Accuracy

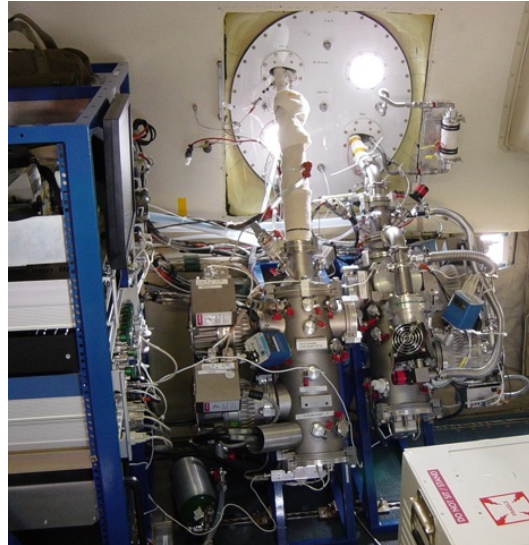
±(15% + 100 pptv) depending on field project

Manufacturer

custom built

Field Projects

SOS 1999
TexAQS 2000
ITCT 2002
ICARTT 2004
Mesa 2005
TexAQS 2006



2008 ARCPAC (used to measure halogens)
CalNex 2010

Key Publications

Neuman, J. A., L. G. Huey, R. W. Dissly, F. C. Fehsenfeld, F. Flocke, J. C. Holecek, J. S. Holloway, G. Hübler, R. Jakoubek, D. K. Nicks Jr., D. D. Parrish, T.B. Ryerson, D. T. Sueper, and A. J. Weinheimer, Fast-response airborne in situ measurements of HNO₃ during the Texas 2000 Air Quality Study, *J. Geophys. Res.*, 107(D20), 4436, doi:10.1029/2001JD001437, 2002.

Neuman, J. A., T. B. Ryerson, L. G. Huey, R. Jakoubek, J. B. Nowak, C. Simons, and F. C. Fehsenfeld, Calibration and evaluation of nitric acid and ammonia permeation tubes by UV optical absorption, *Environ. Sci. Technol.*, 37, 1975-2981, doi:10.1021/ES06422L, 2003.