

File revision date:

August 2026

Data Set Description:

PI: Ankie Pitters
Site(s): De Bilt 52.1N 5.18E; Cabauw 51.97N 4.93E
Measurement Quantities: NO₂, aerosol, O₃

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Reference Articles:

Van Roozendaal et al, 2024, Rem. Sens., 16-23, A4523, doi: 10.3390/rs16234523
Kreher et al, 2020, AMT 13, 2169, doi: 10.5194/amt-13-2169-2020
Roscoe et al, 2010, AMT 3, 1629, doi: 10.5194/amt-3-1629-2010

Instrument Description:

The MAX-DOAS instrument in De Bilt is a commercial systems, SkySpec Compact System, obtained from Airyx. It has a high grade Avantes spectrometer with back thinned detector, a wavelength range of 330-490 nm and a spectral resolution of about 0.6 nm. The instrument is temperature stabilized and maintains a self-corrected viewing elevation angle.
The Pandora instrument #118, purchased from SciGlob, is at Cabauw since 2016, and has been completely revised in 2020. It has a temperature controlled Avantes spectrometer with a wavelength range of 272-538 nm. The calibration (lab and in-operation) and data processing is performed by Pandonia Global Network (PGN).

Algorithm Description:

The off-axis spectra from both MAX-DOAS and Pandora are corrected for electronic offset and dark current and sent to the FRM4DOAS central processing system. It produces low-vertical resolution profiles of tropospheric NO₂ and aerosol (off-axis products) and total columns of ozone (zenith products). The FRM4DOAS algorithm is described in detail in this document:
https://frm4doas.aeronomie.be/ProjectDir/Deliverables/FRM4DOAS_D6_MAXDOAS_Algorithm_ATB_D_v02_20180130.pdf

Location of L0/L1 files:

All level0 and level1 files are permanently stored on KNMI's archive at surfsara.nl (not public). Pandora level0 and level1 files are also stored at the Pandonia Global Network data archive (publicly available).

License type:

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DOI:

<https://doi.org/10.21336/5nz3-t091>

Instrument history

Cabauw-Pandora:
data since 2020

DeBilt-MAXDOAS:
data since 2020