

FTP access to CAMS global data

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Scope

The ECMWF FTP service provides access to real-time data from the CAMS global atmospheric composition system. For product documentation please see [here](#). For a description of the current global model please see [here](#) (including information on [system upgrades](#)). For other data access options please see [here](#).

Please see the list of available atmospheric composition variables below and make sure your variables of interest are available. Please [contact us](#) if you require any additional species.

User accounts

To get access to CAMS global data, you need user accounts on the ECMWF website, and on the ECMWF FTP service.

1. Log on to www.ecmwf.int. (If you do not have an account create one)
2. Read the [CAMS data licence](#) and accept the license at the bottom of the page.
3. Send an email to copernicus-support@ecmwf.int, providing
 - a. the user name you used to log into www.ecmwf.int and accept the license
 - b. for our service planning, a brief description of how you intend to use the data, and which chemical species are most relevant for you

Data location

FTP server	ftp://dissemination.ecmwf.int
Data directory	/DATA/CAMS_GLOBAL/\${YYYYMMDDhh}
Retention policy	Forecast are kept for 3 days

File naming convention

The file naming convention is based on [WMO guidelines](#) as follows:

```
z_cams_c_ecmf_yyyyymmddhhmmss_vvvv_tt_lt_sss_param.[grib|nc]
```

Where:

<code>ecmf</code>	is the WMO location indicators. The list can be found here .
<code>yyyymmddhhmmss</code>	is the base date and time of the forecast.
<code>vvvv</code>	is a version or experiment identifier. <code>prod</code> will be used for operational products, <code>test</code> (or experiment ID) will be used for testing purposes, <code>rean</code> for reanalysis if needed.
<code>tt</code>	type of data, <code>fc</code> - forecast, <code>an</code> - analysis
<code>lt</code>	is the type of level. <code>pl</code> for pressure level products, <code>sfc</code> for surface fields, <code>ml</code> for model level fields
<code>sss</code>	is the forecast hour time step. For accumulation and averages, it is the end time. This number must be zero padded to 3 digits, e.g. step 24 is given as 024
<code>param</code>	is the parameter short name as defined here
<code>grib, nc</code>	is the format of a file, GRIB or NETCDF

Data organisation

The dataset is grouped by type of product (analysis or forecast), level type (surface parameter, pressure level or model level), by step or forecast range and by parameter.

Examples:

`z_cams_c_ecmf_20160704000000_prod_an_sfc_000_tchcho.grib` contains analysis field of total column formaldehyde computed on 7 July 2016 at 00:00 UTC.

`z_cams_c_ecmf_20160704000000_prod_fc_pl_012_co.grib` contains all the pressure levels of +12 step CO fields from a forecast started on 7 July 2016 at 00:00 UTC.

`z_cams_c_ecmf_20160704120000_prod_fc_ml_012_go3.nc` contains all the model levels of step 12 O3 fields from a forecast which was started on 7 July 2016 at 12:00 UTC in NetCDF format.

Data availability

The latest model cycle based on the 00 UTC analysis is normally available by **10:00 UTC**, the cycle based on 12 UTC analysis is available by **22:00 UTC**.

After the data transfer to the ftp server is completed a manifest file is uploaded:

`z_cams_c_ecmf_yyyymmddhhmmss_vvvv.manifest`

The file is uploaded to the server **only after all the data files have been successfully uploaded**. The file contains a list of all the GRIB and NetCDF files in the cycle and their MD5 checksums in case you would like to verify data integrity.

List of available parameters

short name	parameter ID	name	type of variable	type of data (an, fc)	type of level (pl,sfc, ml)
aod1240	210216	Total Aerosol Optical Depth at 1240nm	vertically-integrated	an + fc	sfc
aod469	210213	Total Aerosol Optical Depth at 469nm	vertically-integrated	an + fc	sfc
aod550	210207	Total Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
aod670	210214	Total Aerosol Optical Depth at 670nm	vertically-integrated	an + fc	sfc
aod865	210215	Total Aerosol Optical Depth at 865nm	vertically-integrated	an + fc	sfc
bcaod550	210211	Black Carbon Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
duaod550	210209	Dust Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
omaod550	210210	Organic Matter Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
ssaod550	210208	Sea Salt Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
suaod550	210212	Sulphate Aerosol Optical Depth at 550nm	vertically-integrated	an + fc	sfc
pm1	210072	Particulate matter d < 1 um	surface concentration	fc	sfc
pm10	210074	Particulate matter d < 10 um	surface concentration	fc	sfc
pm2p5	210073	Particulate matter d < 2.5 um	surface concentration	fc	sfc
aermr01	210001	Sea Salt Aerosol (0.03 - 0.5 um) Mixing Ratio	concentration in air	an + fc	pl
aermr02	210002	Sea Salt Aerosol (0.5 - 5 um) Mixing Ratio	concentration in air	an + fc	pl
aermr03	210003	Sea Salt Aerosol (5 - 20 um) Mixing Ratio	concentration in air	an + fc	pl
aermr04	210004	Dust Aerosol (0.03 - 0.55 um) Mixing Ratio	concentration in air	an + fc	pl
aermr05	210005	Dust Aerosol (0.55 - 0.9 um) Mixing Ratio	concentration in air	an + fc	pl
aermr06	210006	Dust Aerosol (0.9 - 20 um) Mixing Ratio	concentration in air	an + fc	pl
aermr07	210007	Hydrophilic Organic Matter Aerosol Mixing Ratio	concentration in air	an + fc	pl
aermr08	210008	Hydrophobic Organic Matter Aerosol Mixing Ratio	concentration in air	an + fc	pl

aermr09	210009	Hydrophilic Black Carbon Aerosol Mixing Ratio	concentration in air	an + fc	pl
aermr10	210010	Hydrophobic Black Carbon Aerosol Mixing Ratio	concentration in air	an + fc	pl
aermr11	210011	Sulphate Aerosol Mixing Ratio	concentration in air	an + fc	pl
aermr01	210001	Sea Salt Aerosol (0.03 - 0.5 um) Mixing Ratio	concentration in air	an + fc	ml
aermr02	210002	Sea Salt Aerosol (0.5 - 5 um) Mixing Ratio	concentration in air	an + fc	ml
aermr03	210003	Sea Salt Aerosol (5 - 20 um) Mixing Ratio	concentration in air	an + fc	ml
aermr04	210004	Dust Aerosol (0.03 - 0.55 um) Mixing Ratio	concentration in air	an + fc	ml
aermr05	210005	Dust Aerosol (0.55 - 0.9 um) Mixing Ratio	concentration in air	an + fc	ml
aermr06	210006	Dust Aerosol (0.9 - 20 um) Mixing Ratio	concentration in air	an + fc	ml
aermr07	210007	Hydrophilic Organic Matter Aerosol Mixing Ratio	concentration in air	an + fc	ml
aermr08	210008	Hydrophobic Organic Matter Aerosol Mixing Ratio	concentration in air	an + fc	ml
aermr09	210009	Hydrophilic Black Carbon Aerosol Mixing Ratio	concentration in air	an + fc	ml
aermr10	210010	Hydrophobic Black Carbon Aerosol Mixing Ratio	concentration in air	an + fc	ml
aermr11	210011	Sulphate Aerosol Mixing Ratio	concentration in air	an + fc	ml

• short name	parameter ID	name	type of variable	type of data (an,fc)	type of level (pl,sfc,ml)
gtco3	210206	GEMS Total column ozone	vertically-integrated	an +fc	sfc
tc_c2h6	218045	Total column ethane	vertically-integrated	an +fc	sfc
tc_c3h8	218047	Total column propane	vertically-integrated	an +fc	sfc
tc_c5h8	218016	Total column isoprene	vertically-integrated	an +fc	sfc
tc_ch4	218004	Total column methane	vertically-integrated	an +fc	sfc
tc_hno3	218006	Total column nitric acid	vertically-integrated	an +fc	sfc
tc_no	218027	Total column nitrogen monoxide	vertically-integrated	an +fc	sfc
tc_oh	218030	Total column hydroxyl radical	vertically-integrated	an +fc	sfc
tc_pan	218013	Total column peroxyacetyl nitrate	vertically-integrated	an +fc	sfc
tcco	210127	Total column Carbon monoxide	vertically-integrated	an +fc	sfc
tchcho	210128	Total column Formaldehyde	vertically-integrated	an +fc	sfc
tcno2	210125	Total column Nitrogen dioxide	vertically-integrated	an +fc	sfc
tcso2	210126	Total column Sulphur dioxide	vertically-integrated	an +fc	sfc
c2h6	217045	Ethane	concentration in air	an +fc	pl
c3h8	217047	Propane	concentration in air	an +fc	pl
c5h8	217016	Isoprene	concentration in air	an +fc	pl
ch4_c	217004	Methane (chemistry)	concentration in air	an +fc	pl
co	210123	Carbon monoxide	concentration in air	an +fc	pl
go3	210203	GEMS Ozone	concentration in air	an +fc	pl
hcho	210124	Formaldehyde	concentration in air	an +fc	pl
hno3	217006	Nitric acid	concentration in air	an +fc	pl
no	217027	Nitrogen monoxide	concentration in air	an +fc	pl
no2	210121	Nitrogen dioxide	concentration in air	an +fc	pl
oh	217030	Hydroxyl radical	concentration in air	an +fc	pl
pan	217013	Peroxyacetyl nitrate	concentration in air	an +fc	pl
so2	210122	Sulphur dioxide	concentration in air	an + fc	pl
c2h6	217045	Ethane	concentration in air	an + fc	ml
c3h8	217047	Propane	concentration in air	an + fc	ml

c5h8	217016	Isoprene	concentration in air	an + fc	ml
ch4_c	217004	Methane (chemistry)	concentration in air	an + fc	ml
co	210123	Carbon monoxide	concentration in air	an + fc	ml
go3	210203	GEMS Ozone	concentration in air	an + fc	ml
hcho	210124	Formaldehyde	concentration in air	an + fc	ml
hno3	217006	Nitric acid	concentration in air	an + fc	ml
no	217027	Nitrogen monoxide	concentration in air	an + fc	ml
no2	210121	Nitrogen dioxide	concentration in air	an + fc	ml
oh	217030	Hydroxyl radical	concentration in air	an + fc	ml
pan	217013	Peroxyacetyl nitrate	concentration in air	an + fc	ml
so2	210122	Sulphur dioxide	concentration in air	an + fc	ml

short name	parameter ID	name	type of variable	type of data (an,fc)	type of level (pl,sfc,ml)
lsm	172	Land-sea mask	2D parameter	an	sfc
z	129	Geopotential	2D parameter	an	sfc
uvbed	214002	UV biologically effective dose	2D parameter	fc	sfc
uvbedcs	214003	UV biologically effective dose clear-sky	2D parameter	fc	sfc
den	3089	Density	3D parameter	an + fc	pl
den	3089	Density	3D parameter	an + fc	ml
lnsp	152	Logarithm of surface pressure	2D parameter	an + fc	ml

Data volumes per model cycle

The data volumes are based on the current CAMS experiment ([link](#)).

	file size (GRIB / NC)	No. of fields per file	No. of variables	No. of files (GRIB or NC)	Total size (GRIB)	Total size (NC)
an_sfc	1.2 MB / 800 kB	1	15	15	18 MB	12 MB
an_pl	30 MB / 20 MB	25	16	24	697 MB	465 MB
an_ml	70 MB / 47 MB	60	16	25	1,7 GB	1,1 GB
fc_sfc	1.2 MB / 800 kB	1	26	3388	3,9 GB	2,6 GB
fc_pl	30 MB / 20 MB	25	24	984	28 GB	19 GB
fc_ml	70 MB / 47 MB	60	25	1025	68 GB	45 GB
		Total		5461	102 GB	68 GB

Related articles

- [CAMS Reanalysis data documentation](#)
- [Regional \(European\) CAMS data: Convert from GRIB2 to NetCDF](#)
- [CAMSIRA, the CAMS interim Reanalysis](#)
- [FTP access to CAMS GFAS data](#)
- [FTP access to CAMS global data](#)