

# Cast Scalar Profile Plot and Data

## Quality Control

**Data Product Options**

Sensors to include: ☐ Corrected ☒ Original

Quality Control: ☒ Clean Data ☐ Raw Data

File / plot breaks:

**Data Product Options**

Quality Control: ☒ Pre-processed cleaned corrected data (uses raw QAQC filter as pass through only)

File / plot breaks:

## Raw Data

When this option is selected, raw data will be supplied in the data products: no action is taken to modify the data. In general, all scalar data is associated with a [quality control flag](#). These flags are stored adjacent to the data values.

[Oceans 3.0 API filter](#): dpo\_qualityControl=0

## Clean Data

Selecting this option will cause any data values with quality control failures ([QAQC flags 3, 4 and 6](#)) to be replaced with NaNs. “-clean” is added at the end of the filename.

[Oceans 3.0 API filter](#): dpo\_qualityControl=0

## Pre-processed clean corrected data (uses raw QAQC filter as pass through only) *(Only available on corrected profilers and on corrected sensors only)*

There is no quality control option when corrected is chosen for the sensors to include option. The corrected data has already processed and cleaned, so the raw QAQC option is used as a pass-through. [Contact us](#) for more information on the processing done to clean and correct cast data from mobile deployments.

[Oceans 3.0 API filter](#): dpo\_qualityControl=0

## Sensors to Include (Device-level Only)

**Data Product Options**

Sensors to include: ☒ Corrected ☐ Original

Quality Control: ☒ Pre-processed cleaned corrected data (uses raw QAQC filter as pass through only)

File / plot breaks:

## Corrected

A corrected version of the original sensor data that has been re-calculated to factor in variables such as falling speed to improve accuracy. “-Corrected” is added at the end of the filename. Sensors without “Corrected” in their names are excluded from the device-level data products.

[Oceans 3.0 API filter](#): dpo\_sensorstoinclude=1

## Original

The original sensor data, excludes all sensors with “Corrected” in their name.

[Oceans 3.0 API filter](#): sensorstoinclude=0

## File / Plot Break

**Data Product Options**

Sensors to include: ☐ Corrected ☒ Original

Quality Control: ☒ Clean Data ☐ Raw Data

File / plot breaks: 

Daily

Daily

None (files break on size limits only)

### Daily

The time range specified will be broken up daily and a plot will be produced for each day. The break time is not strictly midnight, it is 0800 UTC (midnight PST, 0100 PDT).

Oceans 3.0 API filter: `dpo_fileplotbreaks=1`

### None (files break on size limits only)

The time range specified will only be broken up if it exceeds the file size limit (1 GB when loaded into matlab: 400 to 600 MB MAT file).

Oceans 3.0 API filter: `dpo_fileplotbreaks=0`

### Cast Delineation / Breaks:

**Data Product Options**

Quality Control: ☒ Clean Data ☐ Raw Data

Cast Delineation / Breaks: 

Down casts only

Up casts only

Down casts only

Stepped casts only

All casts

Daily (no cast delineation)

None (no cast delineation / files break on size limits only)

### Up casts only

Only data collected while the profiler is ascending the water column are selected. Individual up casts are identified and stored separately within one final data structure for file data products. A plot will be produced for each day consisting of all up casts that began during that day. The break time is not strictly midnight, it is 0800 UTC (midnight PST, 0100 PDT).

Oceans 3.0 API filter: `dpo_cast=up_casts`

### Down casts only

Only data collected while the profiler is descending the water column are selected. Individual down casts are identified and stored separately within one final data structure. The time range specified will be broken up daily and a plot will be produced for each day consisting of all down casts that began during that day. The break time is not strictly midnight, it is 0800 UTC (midnight PST, 0100 PDT).

Oceans 3.0 API filter: `dpo_cast=down_casts`

### Stepped casts only

Only data collected while the profiler is stepped mode are selected (currently unique to VPS). Individual stepped casts (all up casts and stationary segments during a stepped cast) are identified and stored separately within one final data structure. Individual plots will be produced for each stepped cast.

Oceans 3.0 API filter: `dpo_cast=stepped_casts`

### All casts

Only data collected while the profiler is ascending, descending, or stationary in the water column are selected. Individual casts (up, down, stationary) are identified and stored separately within one final data structure. The time range specified will be broken up daily and a plot will be produced for each day consisting of casts (up, down, stationary) that began during that day. The break time is not strictly midnight, it is 0800 UTC (midnight PST, 0100 PDT).

Oceans 3.0 API filter: `dpo_cast=all_casts`

## Daily

The time range specified will be broken up daily and a plot will be produced for each day. The break time is not strictly midnight, it is 0800 UTC (midnight PST, 0100 PDT). Note: this option isn't normally offered for file products.

**Oceans 3.0 API filter:** `dpo_cast=daily`

## None (files break on size limits only)

The time range specified will only be broken up if it exceeds the memory size limit (1 GB when loaded into matlab: 400 to 600 MB in MAT file). Note: this option isn't normally offered for file products.

**Oceans 3.0 API filter:** `dpo_cast_none`

## Mobile Position Sensor Integration Option

For time series scalar file data products on mobile deployments, including the standard [Time Series Scalar Data](#) products as well as [Cast Scalar Profile Plot and Data](#) and [Time Series Scalar Profile Plot and Gridded Data](#).

All scalar data products from mobile deployments have positioning data integrated into the their time series (where available/applicable) aside the target sensor or sensors (for device-level requests). Integration includes position (Latitude, Longitude, Depth) and orientation (Heading, Pitch, Roll).

This option will exclude orientation sensors from the mobile position integration in time series scalar file data products. The default option here can be many times faster as orientation data can have very high sample rates and be very slow to interpolate on to the target sensor time series (orientation data usually comes from optical gyroscopes on inertial navigation systems). Most scalar sensor measurements such as temperature, salinity and not sensitive to orientation and do not need orientation data. For directional / orientation sensitive data, such as current velocities, ONC standard practice is to correct that data to be relative to true North / horizontal, so orientation is redundant there as well. Orientation sensors are not excluded from any metadata, such as plot comments or the metadata structure in MAT file data products; this option only affects the integration of orientation data into the time series.

This data product option may appear on devices / deployments where orientation data is not available or applicable to the selected data product, for example, some time series scalar profile plots and drifter devices. In those cases, the option has no effect. All data products do document which options were applied in their file headers (as in this case) and/or in their file-names.

Mobile Position  
Sensor Integration  
(where applicable): ☒ Depth / Latitude / Longitude sensors only (faster) ☐ All mobile position and orientation sensors (Depth / Latitude / Longitude / Heading / Pitch / Roll / etc. - slower)

Depth / Latitude / Longitude sensors only (faster)

**Oceans 3.0 API filter:** `dpo_includeOrientationSensors=0`

All mobile position and orientation sensors (Depth / Latitude / Longitude / Heading / Pitch / Roll / etc. - slower)

**Oceans 3.0 API filter:** `dpo_includeOrientationSensors=1`