

## Requirements Overview

### Measurement

- ☉ Air-sea equilibration method
- ☉ In situ calibration of nondispersive infrared (NDIR) CO<sub>2</sub> gas analyzer prior to each measurement
- ☉ Accompanying quality measurements of relative humidity, SST, SSS
- ☉ Additional details [here](#)



### Calibration

- ☉ Laboratory testing of accuracy over a range of [WMO-certified CO<sub>2</sub> reference gases](#)
- ☉ Laboratory stability check in a tank against a calibrated CO<sub>2</sub> system that meets Surface Ocean CO<sub>2</sub> Atlas (SOCAT) [quality flag A](#)
- ☉ Calibrated in situ with a 2-point calibration: zero and high WMO-certified CO<sub>2</sub> reference gas
- ☉ Proven total estimated uncertainty of pCO<sub>2</sub> of  $\leq 2 \mu\text{atm}$



### Data management and quality control

- ☉ Post-deployment calibration of raw NDIR detector counts based on calibration coefficients
- ☉ Data are quality-controlled, assigned WOCE flags, and submitted to [SOCAT](#)