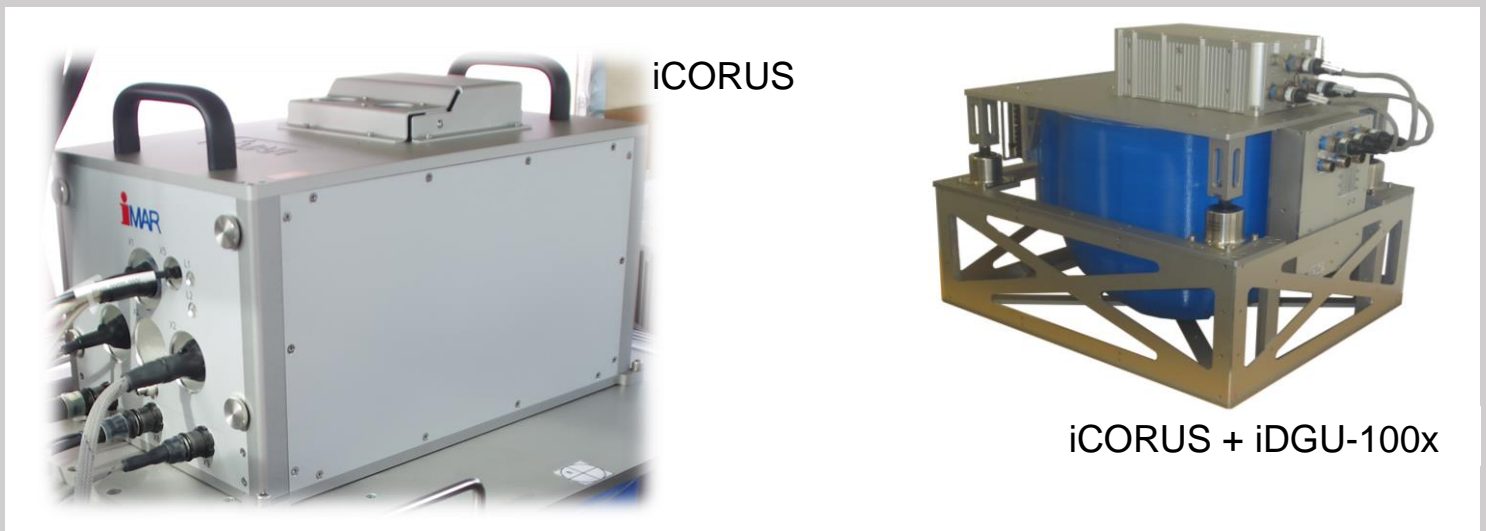


## iCORUS for Gravity Measurements *lightweight – highly accurate – easy to operate*



iCORUS optimally responds to today's requirements in airborne and shipborne gravity measurements. It allows an unsupervised operation, with reliable and highly accurate measurements. All raw sensor data is stored on the integrated 32 GByte non-volatile memory (option: up to 128 GByte). Being based on the well-known iNAT navigation & timing system family, it also provides motion data (position, velocity, attitude, heading, angular rates and acceleration) in real-time, useful for vehicle guidance.

Data processing and analysis fully remains under the customer's control, supported by iMAR's consulting and support. The [iCORUS](#) is part of the IMS product family of systems with gyro compassing capability for inertial navigation, surveying, guidance and stabilization with high resolution gyros and accelerometers. It is lightweight, highly accurate and easy to operate.

### **CAPABILITIES & FEATURES**

- Best suitable gyro & accelerometer technology for gravity measurements, incl. temperature stabilization
- Designed for airborne and shipborne gravimetry
- Simple and fully autonomous operation: no operator is required during the flights.
- Post-processing-software "[iPosCAL-GRAV](#)" for determination of gravimetric disturbances
- User access to all raw sensor data
- No recovery time required after turn flight (as known from conventional airborne gravimeters)
- Internal non-volatile data memory → storage of all mission data for subsequent evaluation and processing; raw data acquisition and storage with up to 500 Hz to cover *all* carrier vehicle motion even under dynamic conditions
- A version with even lower weight & space consumption is available on request (e.g. for UAV applications).
- Maintenance-free
- Measurement range covers even disturbances up to 2 g (2,000,000 mGal) – very high robustness against turbulence
- Training and support by iMAR according to customer's request
- iCORUS is available in ITAR-free variants.

**lightweight – highly accurate – easy to operate – best price/performance ratio**

## Technical Data iCORUS

- any performance indicators given as RMS values, unless stated otherwise -

### Performance:

Gravity (post-proc.) < 1.5 mGal      Experienced gravity performance over the past years:

- without bias removal: 1.0 - 1.4 mGal
- after line-wise bias removal: 0.5 - 0.8 mGal

Resolution: 50 s (Spatial resolution depending on speed, e.g. 30 m/s \* 50 s = 1.5 km)

Operation range: +/- 2,000,000 mGal; very robust against turbulence



### Variants:

**iCORUS-01:** RLG-based strap-down gravimeter (ITAR) - PN: 00215-00221-0306

**iCORUS-01-wts:** RLG-based strap-down gravimeter (ITAR), without temperature stabilisation  
PN: 00215-00221-9306

**iCORUS-02:** RLG-based strap-down gravimeter (ITAR free) - PN: 00215-00202-0306

**iCORUS-02-wts:** RLG-based strap-down gravimeter (ITAR free), without temperature stabilisation  
PN: 00215-00202-9306

**iCORUS-03:** FOG-based strap-down gravimeter (ITAR free) - PN: 00215-00113-0306

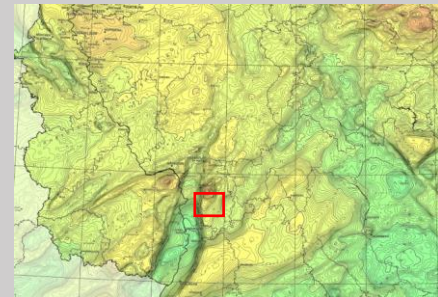


### Output:

**Data Output:** Heading, Roll, Pitch, Angular Rate, Velocity (Body and Nav frame), Position, Raw Data of IMS / GNSS incl. timestamps and system status;  
From post-processing: Gravity and Gravity Disturbances.

**Data Latency:** 1.2 ms (sampling accuracy better 1 μs, time-stamped acc. to PPS; jitter < 1 ms)

**Data Storage:** 32+ GByte (or more) on internal non-volatile memory (> 36 h flight data)



### Physical / Operating / Environmental Parameters:

**Power Supply:** 18...35 V DC, iCORUS with active temperature stabilization: < 150 W  
10...35 V DC, iCORUS without active temperature stabilization: < 25 W  
50 ms hold up time acc. to DO160G; continuous overvoltage protection up to 60 V for the INS

**Temperature Range:** Temperature Stabilization Range: Ambient temperature ± 15 K  
Ambient Temperature: -20...+55 °C (other as option)  
Temperature stabilization accuracy: < ± 0.5 K

**Weight:** iCORUS standard version < 20 kg; with optional iDGU-100 around 35 kg  
customized UAV adopted versions with weight reduced to less than 10 kg possible on request

**Installation:** Installation possible in any orientation, mounting flange  
downside preferred

### Accessories:

**Included:**

- [iXCOM-CMD](#) GUI software, available for MS Windows and Linux
- iXCOM communication protocol with **SDK** for integration in user applications
- integrated real-time Kalmanfilter based data fusion (42+ states)

**Options:**

- [iPosCal-GRAV](#): gravimetry post-proc software
- [iDGU-100x](#): 3-axis Gimbal stabilized add-on with continuous NED stabilization – allows in-situ calibration of the of integrated accelerometers for direct use as airborne gravimeter. Self-calibrating bias and scale factor of sensors. Designed for scientific evaluation; details on request only.
- [iPowerPack-F](#): UPS with 42 Ah capacity for Airborne applications

