

ARGO

MULTICAMERA STAR TRACKERS

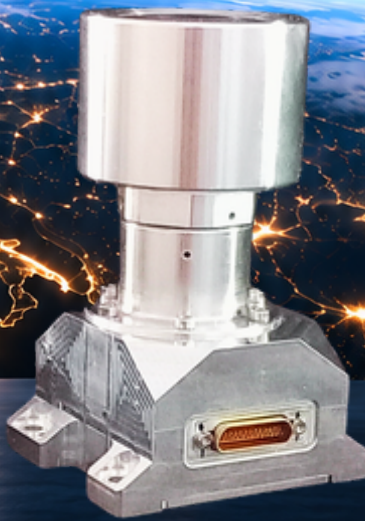
High-performance attitude determination for SmallSats



ARGO FA

2 / 12 arcsec

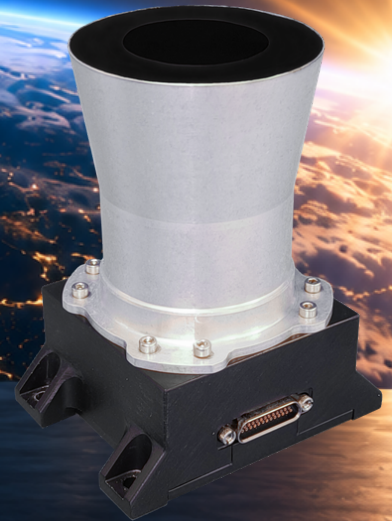
XY / Z accuracy*



ARGO SA

Up to 10 Hz

Output update rate



ARGO INTERPLANETARY SA

Up to 20

Tracked stars

*Accuracy at 0.1°/s, end of life, 3 σ

A multicamera architecture combining performance, robustness, reliability and flexibility with efficient size, weight and power (SWaP) and competitive cost

Single or multicamera configurations

Flexible camera placement

High accuracy, even with one camera

Real-time multicamera data fusion

In-flight camera-model and relative-attitude calibration

Smart platform jitter filtering

Choose your ARGO configuration

Compare architecture, performance and integration requirements

SPECIFICATION	ARGO FA	ARGO SA	ARGO INTERPLANETARY SA
ARCHITECTURE & OUTPUT			
Main features	Fully autonomous, plug & play; multicamera; embedded FDIR	Low SWaP-C optical head with pre-processing; ARGO Software Library (including data fusion) on host OBC	Hi-Rel optical head with pre-processing; ARGO Software Library (including data fusion) on host OBC
Tracked stars / update rate	Up to 20 / up to 10 Hz	Up to 20 / up to 10 Hz	Up to 20 / up to 10 Hz
Output	Attitude quaternion, rate vector, status and health telemetry	Attitude quaternion, rate vector, status and health telemetry	Attitude quaternion, rate vector, status and health telemetry
PERFORMANCE & ROBUSTNESS			
Accuracy at 0.1°/s, EOL (3 σ)	2 (XY) / 12 (Z) arcsec	2 (XY) / 12 (Z) arcsec	2 (XY) / 12 (Z) arcsec
Time from lost in space	< 4 s	< 4 s	< 4 s
Max. slew rate	3°/s	3°/s	5°/s
Max. angular acceleration	1°/s ²	1°/s ²	2.5°/s ²
Sun exclusion angle	33°	33°	30°
Full moon in field of view	No performance degradation	No performance degradation	No performance degradation
Solar flares	5000 p+/cm ² /s	5000 p+/cm ² /s	5000 p+/cm ² /s
RELIABILITY			
Failure rate	500 FIT (FIDES @ 20°C)	300 FIT (FIDES @ 20°C)	< 100 FIT (MIL @ 30°C)
Lenses	COTS / rad-tolerant grades	COTS / rad-tolerant grades	COTS / rad-tolerant grades
EEE component class	Rad-tolerant / automotive / flight-proven COTS	Rad-tolerant / automotive / flight-proven COTS	Space-grade active components
MECHANICAL & ELECTRICAL INTERFACES			
Dimensions (mm)	58 × 58 × 110	66 × 58 × 102	57 × 81 × 130
Mass, including baffle	320 g	250 g	400 g
Power supply / consumption	5 V / 1.5 W	5 V / 1.0 W	5 V / 1.1 W
Data interface	RS422 / CanBus (Red)	SpaceWire	SpaceWire
ENVIRONMENTAL FEATURES			
Operating temperature	-25°C to +55°C	-25°C to +55°C	-30°C to +50°C
Storage temperature	-35°C to +65°C	-35°C to +65°C	-40°C to +70°C
Random vibration	21.31 g RMS	21.31 g RMS	21.31 g RMS
Shock	2000 g @ 1000 Hz	2000 g @ 1000 Hz	2000 g @ 1000 Hz

HIPPARCOS HERITAGE

HIPPARCOS develops high-accuracy attitude determination and control systems for SmallSats. A spin-off of EICAS AUTOMAZIONE S.p.A., it draws on 40 years of star-based attitude-determination experience, starting with the ESA HIPPARCOS mission.

Legacy-product flight heritage since 2021 | www.hipparcos.space/heritage/