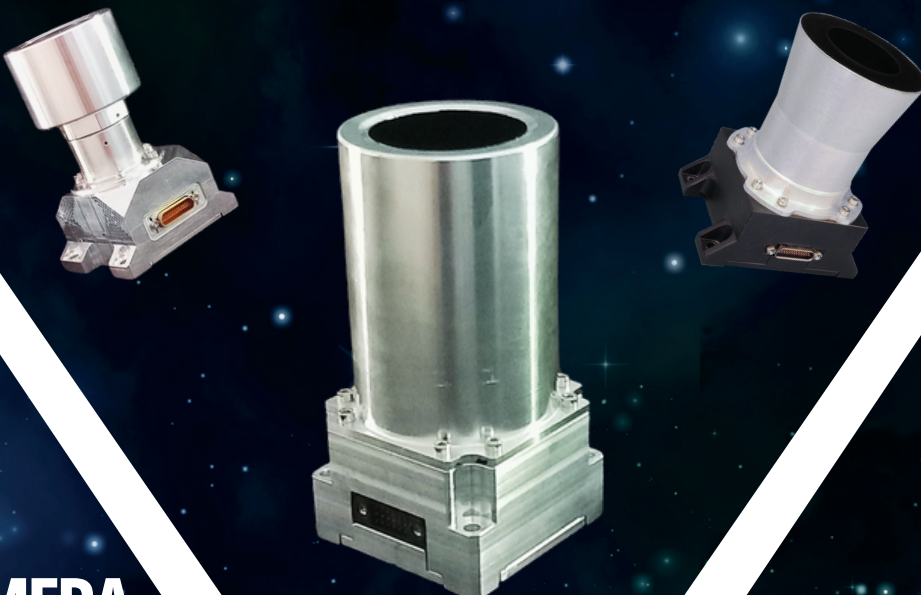




ARGO

MULTICAMERA STAR TRACKERS

High performance
Robustness
Reliability
Flexibility
Low Cost

Flight heritage with
Legacy Products

ARGO Star Trackers are built on a breakthrough multicamera architecture specifically developed to meet the evolving needs of the SmallSat market, offering an unrivalled combination of performance, reliability, SWaP efficiency, and cost competitiveness

Flexible configuration according to customer needs, from monocamera to multicamera

Flexible camera accommodation in the platform

High accuracy also in monocamera version

Intelligent real-time data fusion of data measurements of all cameras (multicamera)

Smart in-flight camera model calibration

Smart in-flight relative camera attitude calibration (multicamera)

Smart data processing to filter platform jitter

Output up to 10 Hz: attitude quaternion, angular speed, angular acceleration

HIPPARCOS S.r.l. develops high accuracy attitude determination and control systems for SmallSats. Our product portfolio includes several architecture of multicamera star trackers, having flight heritage since 2021. HIPPARCOS is a spinoff company of EICAS AUTOMAZIONE S.p.a. and leverages on a 40 years' heritage in the field of attitude determination from star measurement, starting from the ESA HIPPARCOS Mission. Discover our heritage in detail at www.hipparcos.space/heritage/



ARGO STAR TRACKER PORTFOLIO

ARGO
MULTICAMERA
STAR TRACKERS

Targeting the different needs of the emerging small satellites industry, ARGO star trackers provide a unique combination of **performance** and **reliability**, **SWaP** and **cost competitiveness**.



PRODUCT NAME	ARGO FA	ARGO SA	ARGO INTERPLANETARY SA
MAIN FEATURES	Fully autonomous, plug & play solution available in multicamera configuration Embedded FDIR	Low SWaP-C Optical Head (pre-processing) with ARGO Software (including data fusion) running on hosting OBC	Hi-Rel Optical Head (pre-processing) with ARGO Software (including data fusion) running on hosting OBC
NUMBER OF TRACKED STARS	Up to 20	Up to 20	Up to 20
UPDATE RATE	Up to 10 Hz	Up to 10 Hz	Up to 10 Hz
OUTPUT	Attitude Quaternion and Rate Vector, Status and Health Telemetry		
		Output from ARGO SW Library	
PERFORMANCE AND ROBUSTNESS			
ACCURACY@0.1°/s - EOL (3σ)	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 ACCELERATION RATE	1°/s ²	1°/s ²	2.5°/s ²
SUN EXCLUSION ANGLE	33°	33°	30°
FULL MOON IN FOV	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	Available in COTS/rad-tolerant grades		
EEE COMPONENTS CLASS	Rad-tolerant/ Automotive/ Flight-proven COTS		Space-grade active components
MECHANICAL INTERFACE			
SIZE (mm ³)	58 x 58 x 110	66 x 58 x 102	57 x 81 x 130
MASS – INCLUDING BAFFLE(g)	320	250	400
ELECTRICAL INTERFACE			
POWER SUPPLY	5V	5V	5V
POWER CONSUMPTION	1.5 W	1.0 W	1.1 W
OUPUT DATA	RS422/CanBus (Red)	SpaceWire	SpaceWire
ENVIRONMENTAL FEATURES			
OPERATIONAL 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
VIBRATION LEVELS (RANDOM)	21,31 g RMS	21,31 g RMS	21,31 g RMS
SHOCK	2000g@1000 Hz	2000g@1000 Hz	2000g@1000 Hz