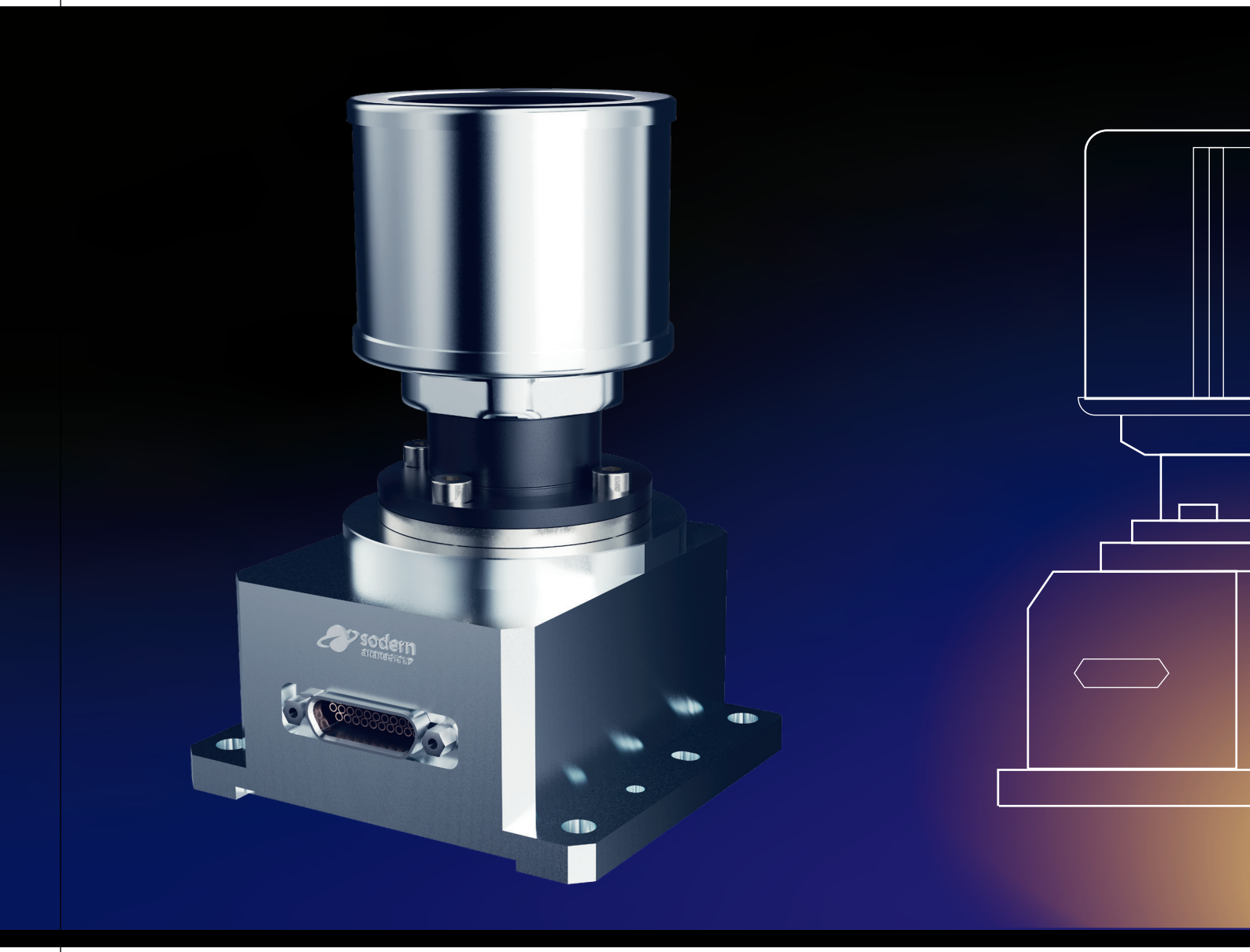
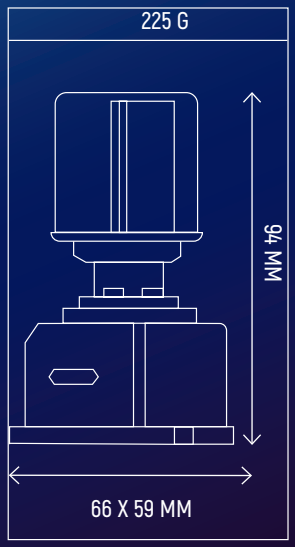
AURIGA CP

STAR TRACKER OPTICAL HEAD WITH SOFTWARE HOSTED IN SPACECRAFT'S ON BOARD COMPUTER



- SPECIFICALLY DESIGNED FOR SMALL SATELLITES MISSIONS
- LOW COST, HIGH PRODUCTION RATE, REDUCED WEIGHT AND VOLUME
- GUARANTEED FOR 10 YEARS LIFETIME IN LEO ORBIT
- FLIGHT PROVEN SINCE 2019 WITH ONEWEB MEGA-CONSTELLATION
- SIMPLE ARCHITECTURE USING VALIDATED COTS
- HIGH ACCURACY AND EXCELLENT ROBUSTNESS
- 500+ OPTICAL HEAD IN ORBIT

GENERAL DESCRIPTION



• Fast acquisition and arcsec tracking • Excellent robustness especially at End Of life and for high detector temperatures conditions in both acquisition and tracking modes • EU Dual Use 7A104 – ITAR Free

OPTICAL HEAD (OH)

Baffle protection for direct Sun and Earth illumination • Up to 3 Optical Heads may be connected to the spacecraft On Board Computer • Connected to the spacecraft's processor through SpaceWire interface with Power Converter Supplying

CENTRALIZED SOFTWARE

Integrated software ican be made available for any processor

• Operating frequency up to 10 Hz according to host processor performances

• Embedded Star Catalog, Algorithms and Software library

END OF LIFE WORST CONDITIONS DATA

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range (°C)	- 20 / + 40
Storage temperature (°C)	- 30 / + 70
Mechanical environment (in/out of plane)	33 gRMS / 2000gSRS @2000 Hz

RELIABILITY, AVAILABILITY AND LIFETIME

EEE parts class for OH	ECSS Class 3 equivalent and Automotive
Reliability for OH	230 FIT (FIDES method @20°C)
Lifetime (years)	0 in LEO 400-1200km / 15 in GEO with EOR

ELECTRICAL INTERFACES

OH Power supply (V)	5 (±10%)
OH Power consumption (W, typ/max)	0.8 / 1.1
Output data	OH : SpaceWire (50 Mbps signaling rate)
Output rate (Hz)	10 (5 Hz possible to relax CPU load)

PERFORMANCES AND ROBUSTNESS

Bias (worst case)	0.017 deg
Thermo-elastic Error (worst case)	< 1.5 arcsec/°C
Low Frequency spatial (FOV) error XY / Z @ 3σ	9 / 51 arcsec
High Frequency spatial (Pixel) error XY / Z @ 3σ	6.6 / 38 arcsec
Temporal noise on XY / Z @ 3σ	11 / 70 arcsec
Time from lost-in-space (typ)	3.8 s
Slew rate in Acquisition	0.3 deg/s in baseline Up to 2 deg/s
Slew rate in Tracking	Up to 3 deg/s
Acceleration in Acquisition	Up to 1 deg/s2
Acceleration in Tracking at 10 Hz	Up to 2.5 deg/s2
Full Moon in the Field of View	No performance degradation
Baffle Sun Exclusion Angle	35 deg
Baffle Earth Exclusion Angle	22 deg
Solar flare Acquisition/Tracking	Robust