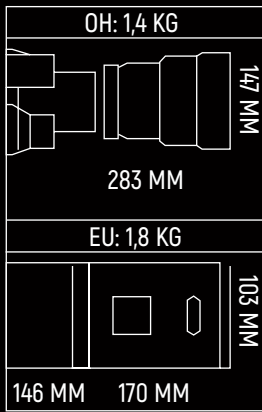


HYDRA BASELINE

THE MOST VERSATILE HIGH-END HYDRA STAR TRACKER



- PROVEN PERFORMANCE, ACCURACY AND ROBUSTNESS
- FLIGHT-PROVEN (TRL9) SINCE 2012 · EMBEDDED FDIR FUNCTIONS
- HIGHLY MODULAR SOLUTION: 1 TO 4 OPTICAL HEADS CONNECTED TO 1 OR 2 ELECTRONICS UNITS
- EXTRA MASS & COST OPTIMIZATION AT SYSTEM LEVEL
- 500+ OPTICAL HEAD IN ORBIT



ACCURACY AND PERFORMANCES

KEY FEATURES

- Up to 4 Optical Heads (OH) connected to spacecraft's on-board computer through SpaceWire interface (MIL 1355) with up to 8m- long cables
- HAS-2 CMOS sensor with Thermo-Electric Cooler (TEC)
- Electronics unit embedded software processes multiple OH data and delivers a fused quaternion • Optics made of rad-hard materials
- Export control EU Dual Use 7A004a - ITAR Free
- EU available in option with additional shielding for GEO missions

END OF LIFE WORST CONDITIONS DATA

Bias	<11 arcsec
Thermo-elastic error	<0.055 arcsec/°C
Low Frequency Spatial Error @ 3σ	0.6 arcsec (XY) 4.6 arcsec (Z)
High Frequency Spatial Error @ 3σ	3.4 arcsec (XY) 27 arcsec (Z)
Temporal noise @ 3σ	2.3 arcsec (XY) 18 arcsec (Z)
Slew rate	≤5 deg/s in Acquisition ≤8 deg/s in Tracking
Acceleration	≤2 deg/s ² in Acquisition ≤10 deg/s ² in Tracking (30Hz)
Time from lost-in-space	2.2s typ
Sun/Earth Exclusion Angle	26 deg / 18.5 deg

No performance degradation with full moon in the field of view

EEE parts class	Level 1 & Level 2
Reliability (MIL-HDBK-217F @ 30°C)	Level 1: 110FIT (OH) 585FIT (EU) Level 2: 190FIT (OH) 866FIT (EU)
Lifetime	10 years LEO / 18 years GEO

Robust to solar flare in acquisition and tracking

Power supply	21V to 52V
Power consumption @ 30°C, 5V	7.7W typ. (2 OH ON, TEC OFF)
Output data	IL1553B or RS422 (AS/CS16)
Output rate	8Hz, 10Hz, 12Hz, 16Hz, 20Hz, 30Hz

ENVIRONMENTS

Temperature Range	-30°C / +60°C (Operation) -40°C / +70°C (Storage)
Random vibrations	OH: 30g RMS EU: 28g RMS
Shocks	OH: 2000g SRS EU: 2000g SRS