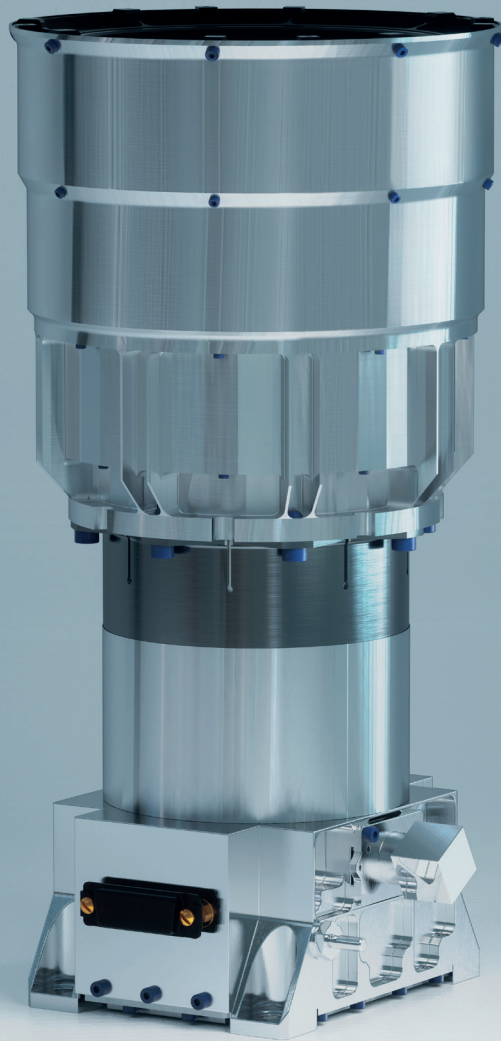
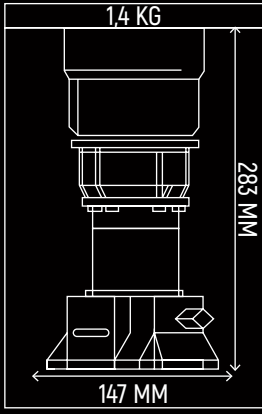


HYDRA CP

HIGH-END HYDRA STAR TRACKER IN CENTRALIZED PROCESSING



- PROVEN PERFORMANCES, ACCURACY AND ROBUSTNESS
- EMBEDDED FDIR FUNCTIONS
- HYDRA OPTICAL HEAD ALONG WITH DEDICATED SOFTWARE HOSTED IN SPACECRAFT'S ON-BOARD COMPUTER
- EXTRA MASS & COST OPTIMIZATION AT SYSTEM LEVEL
- FLIGHT-PROVEN (TRL9) SINCE 2014
- 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)
- Software integrated in the spacecraft processor processes multiple OH data and can be made available for any processor
- Optics made of rad-hard materials
- Export control EU Dual Use 7A004a - ITAR Free

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 | ≤6 deg/s in Acquisition ≤8 deg/s in Tracking |
| Acceleration | ≤2 deg/s ² in Acquisition ≤3 deg/s ² in Tracking (10Hz) |
| 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) / Level 2: 190FIT (OH) |
| Lifetime | 10 years LEO / 18 years GEO |

Robust to solar flare in acquisition and tracking

| | |
|-------------------------------------|-----------------------------|
| Power supply | 5V±10% |
| Power consumption @ 30°C, 5V | OH: 0.7W typ (TEC OFF) |
| Output data | SpaceWire (MIL 1355) |
| Output rate | 8Hz (10Hz option available) |

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

RELIABILITY AND LIFETIME

INTERFACES

ENVIRONMENTS