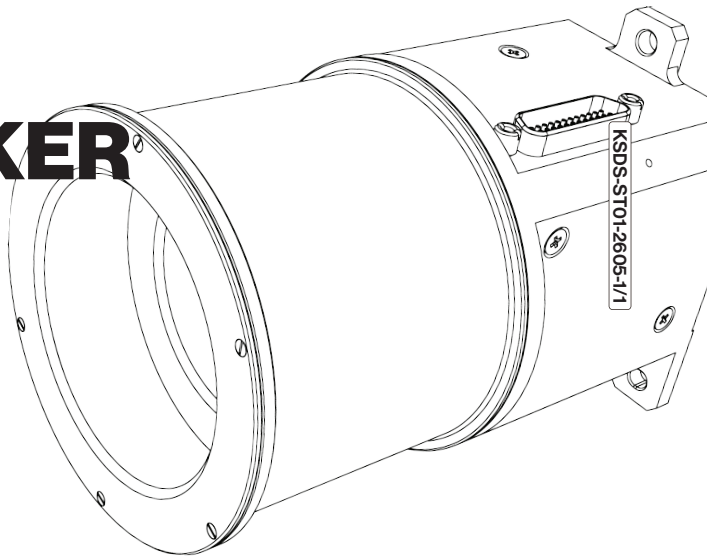
KSST-01 STAR TRACKER

DATASHEET



KSST-01 is a compact size, fully autonomous star tracker, ideal for CubeSat and NanoSat missions. It is designed with minimized dimensions, mass and power consumption while maintaining high accuracy.

SPACE PROVEN
- Internal accelerometer
- Compact size
- Ability to take images on-the-fly
- Dark current calibration
- Unique internal cooling system to increase sensor accuracy

Performance

Accuracy	Pointing < 5 arcsec @ 3σ Rolling < 60 arcsec @ 3σ Thermo-elastic error <0.1 arcsec/°C FOV spatial error <0.78 arcsec @ 3σ Pixel spatial error <2.5 arcsec @ 3σ Temporal NEA <0.8 arcsec/ vHz @ 3σ
Acquisition time	< 2 seconds, at 5° / sec up to 10 mins
Update rate	10 Hz
Maximum slew rate	5° / sec
The angular width of the FOV	22° (± 11 arc degree)
Sun exclusion angle	30°
Earth limb exclusion angle	25°
Volume of stellar catalogue	1800 stars up to 5.5m. Total number of stars in catalogue is about 5000

Mechanical

Dimensions with baffle	56 x 60 x 92.8 mm
Weight	175 g (without cable, MLI and protective covers)

Electrical

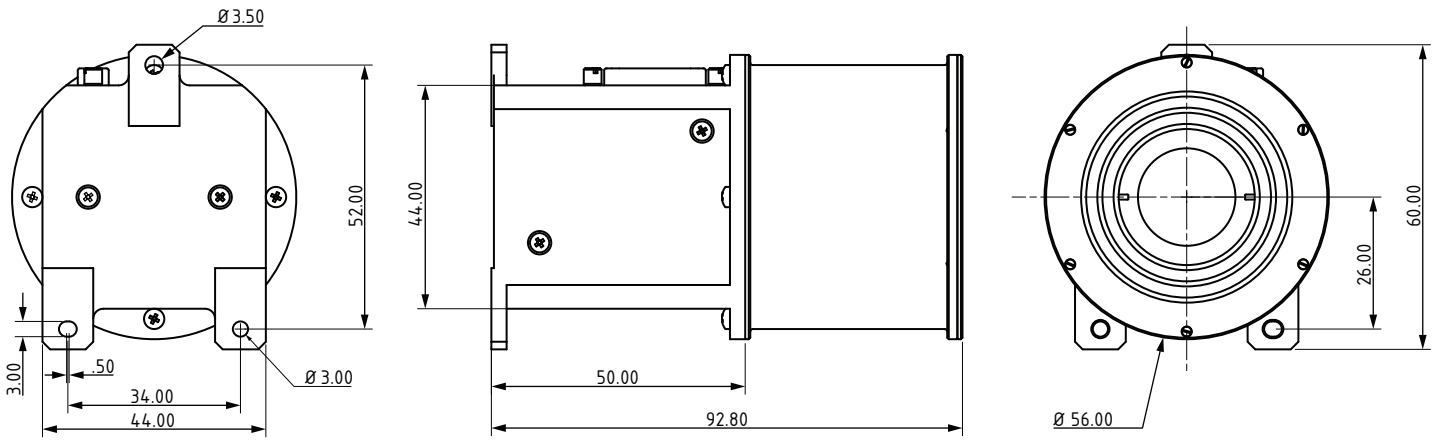
Power consumption	regular mode 0.3 W / thermoelectric cooler on / calibration mode 0.8 W
Operational voltage	5V (optional 12V or 3.3V)
Connector type	Micro D-sub DB-25
Data interface	RS-485 (optional RS-422, UART, CAN)

Optic system

Aperture	18.6 mm
Focal length	20.44 mm
CMOS geometry	1024 x 1280 pixels
Pixel size	5.3 μm×5.3 μm
Working range of wevelengths	400 ~ 900 nm

Environment

Operating temperature	-40 °C ~ +60 °C
Storage temperature	-40 °C ~ +70 °C
Mechanical loads	Random 30 gRMS, Shocks 2350 gSRS in all directions
Life time	up to 7 years on LEO



*Units: Metric mm

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