

Coarse Sun Sensor

Comtech AeroAstro's Coarse Sun Sensors are very low-cost, high reliability devices with over 20 years of flight heritage. They are designed to provide attitude determination information during various mission modes including launch vehicle separation, initial attitude acquisition, emergencies and off-nominal modes. They can also provide coarse sun vector determination as a backup to higher resolution sensors.

Each sensor contains a single photodiode, with the housing for the Coarse Sun Sensor assembly also serving as an aperture. This inexpensive, lightweight sensor (only 20g) draws no power and has an accuracy of better than ± 5 degrees over a full-angle 120-degree field of view. Sensors are available in panel mount or through-hole configurations.

Comtech AeroAstro's Coarse Sun Sensors were originally designed and built for the ALEXIS Space Program for the Los Alamos National Laboratory.

Our Coarse Sun Sensors have flown successfully on multiple spacecraft, including ALEXIS, HETE, MOST, CHIPSat and STPSat-1, and is compatible with virtually all launch environments. Additional deliveries are slated to support TacSat-5, JMAPS and the NASA COTS Programs.

The sensor design has changed little in its over two-decade product life, providing the same unparalleled simplicity and reliability. Expanding the versatility for use on STP-SIV, Comtech AeroAstro modified the unit to allow through-hole configurations. Further, with each delivery, we continue to fine tune our calibration sensor response curves providing even better accuracies and performance without changing the hardware.



Flight Heritage: ALEXIS, HETE, MOST, ChipSAT and STPSat-1 (partial list)

Field of View: 120° full-angle circular field of view

Accuracy: ±5° of 1-axis knowledge

Temperature Range: -40 to +93°C

Vibration Test Levels: 14.1g rms protoqual

Shock Test Levels: 60g protoqual

Interface: 0 to 3.5 mA (typical) current sources on two flying leads: 50" (1.27m) in length, M22759 / 33-26, 26 AWG wire

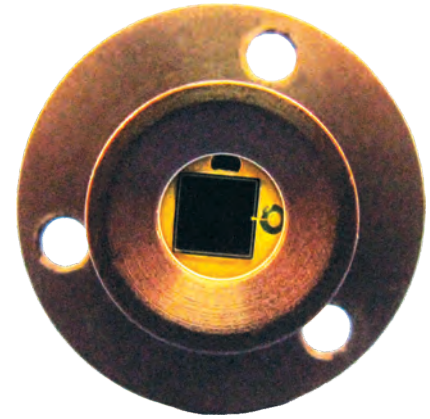
Mounting: Three #2 through holes, 120° apart on a 0.700" (1.78 cm) diameter pattern

Power: None required

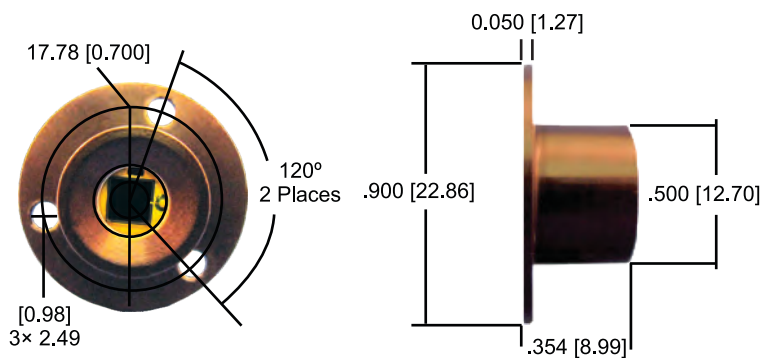
Size: Housing diameter: 0.500" (1.27 cm)
Flange diameter: 0.900" (2.286 cm)
Sensor height: 0.354" (0.899 cm)

Volume: 0.500" (1.27 cm) diameter × .354" (0.90 cm) height

Mass: 0.022 lbs (10g) with 1.27 cm flying leads



Single Photodiode with Housing Serving as Aperture



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