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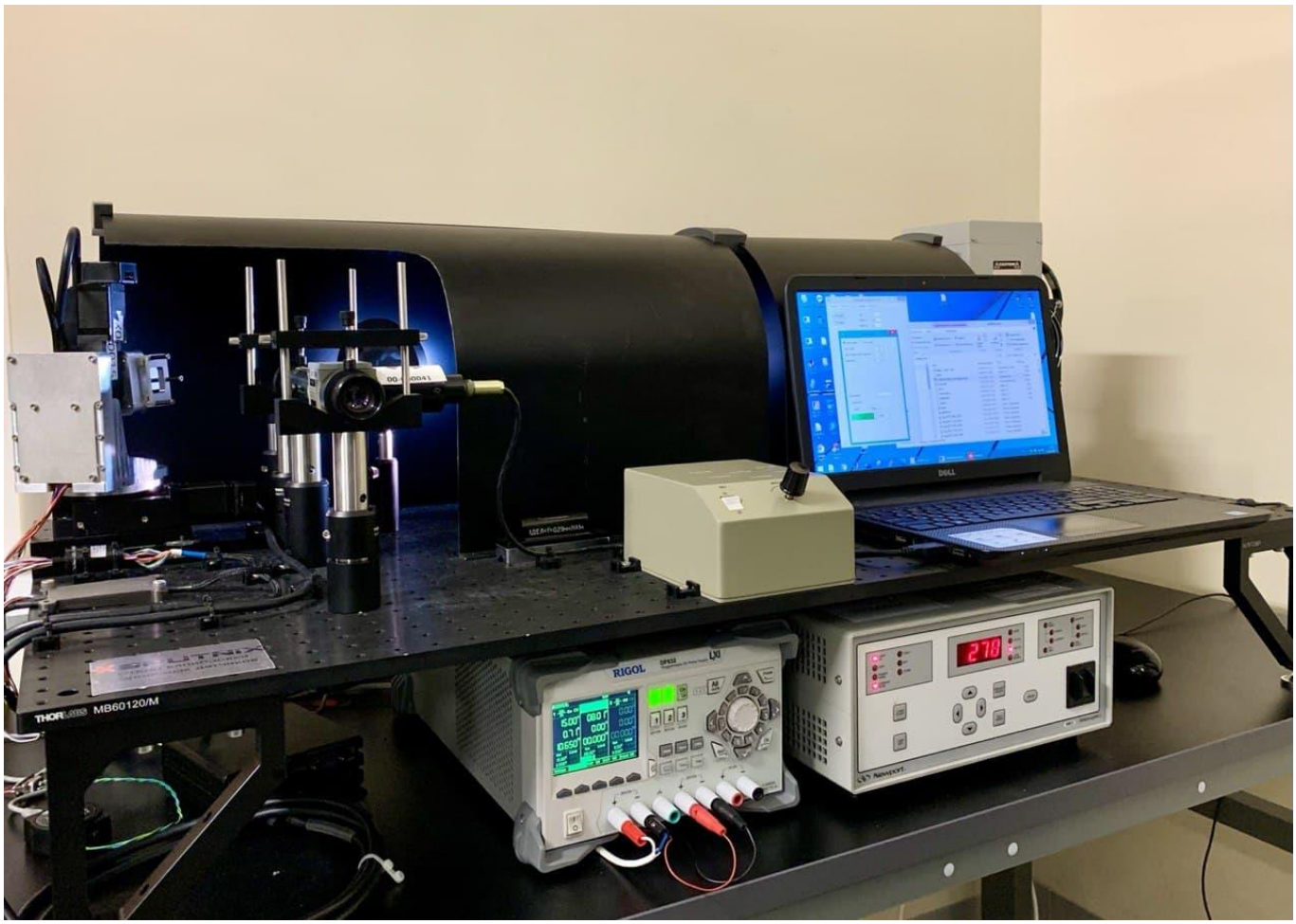
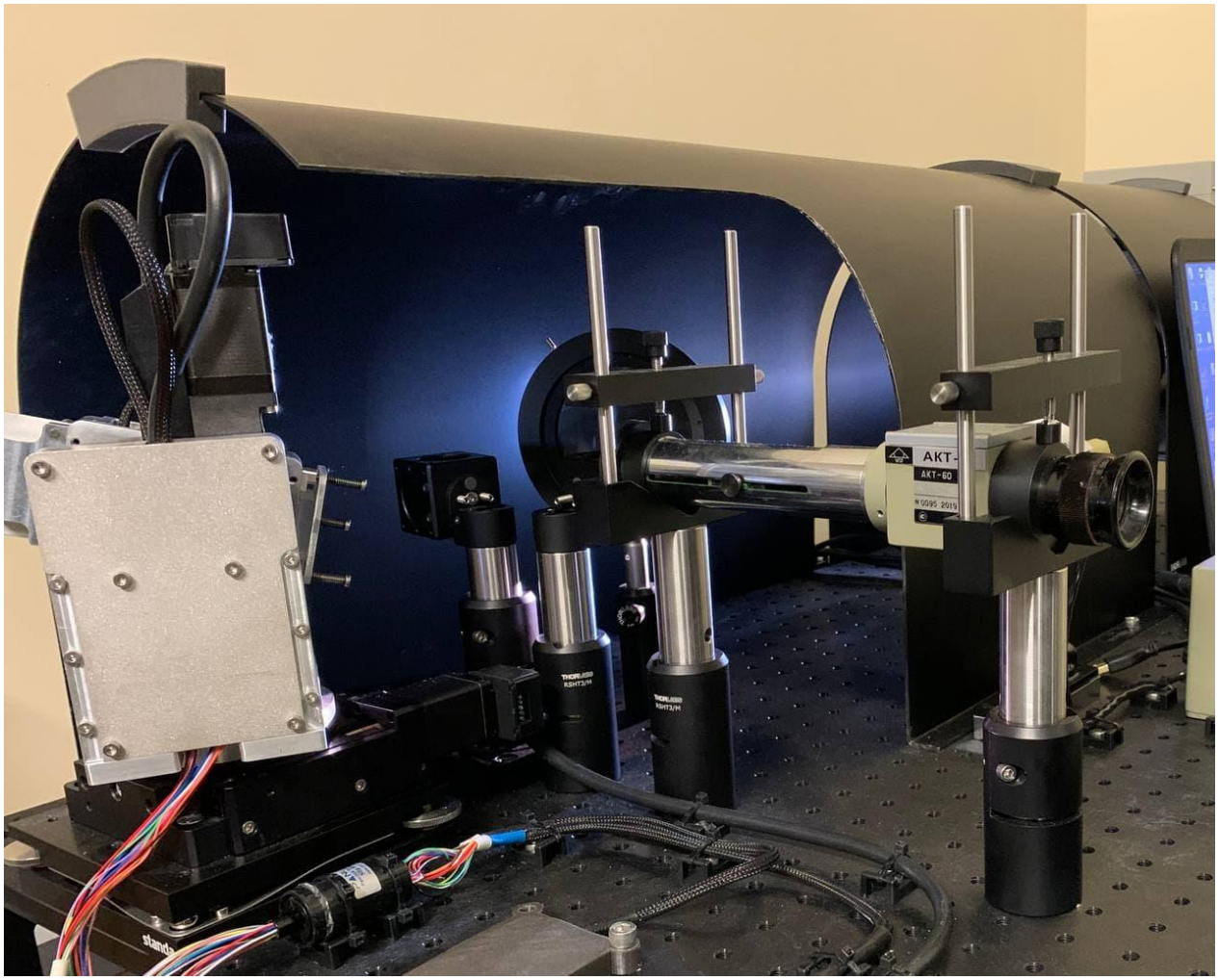
Sun sensor calibration and check-out equipment

SXL-SCOE-SS-01



The Sun sensor calibration and check-out equipment is designed for calibration and verification of the operation of small-sized matrix and diode (SS) of linear and two-dimensional type.

The principle of SS calibration and verification consists in turning the SS at known angles when illuminated by a stationary radiation source. The rotary support device (RSD), controlled from the PC, rotates the rig with the fixed SS according to a given program. In the process of rotation, the angles of rotation of the control center and, at the same time, the telemetry of the SS are recorded, upon completion of the calibration / verification, a report file is generated, in which the angles of rotation of the control center and measurements of the SS are recorded for subsequent analysis.



The main components of the equipment include:

- Optical plate with adjustable supports.
- Optical system.
- A simulator of solar radiation based on a xenon lamp with adjustable focal length.

• Power supply for the solar simulator lamp.

• Two-coordinate support-rotary device with an accuracy of setting the angular position of the SS equipment up to 0.002 degrees.

• Power supply RSD, SS.

• Protective aluminum casing.

• Laptop with software of the control RSD.

Main functional features:

• Adjusting the focus of the solar simulator, adjusting the position of the simulator lamp inside the rig.

• Possibility of adjusting and setting the zero position of the SS rig and the solar radiation simulator using an autocollimator.

• Possibility of setting the angle of rotation of the RSD manually or in the form of an automatic program

• Possibility to install light filters to correct the emission spectrum of the simulator.

• A set of built-in programs for rotation of the RSD.

• Possibility of supplying SS from the customer's power supply unit.

• Availability of API for managing the RSD from the customer's software.

• Logging of SS telemetry (for SS "Sputnix") and RSD;

• 20 pins for connecting power supply or outputting SS telemetry

Integration of the customer's SS is possible on request.

Main technical characteristics:

RSD characteristics.

Angles of rotation of the RSD, degrees.	± 100 Around the vertical axis Unlimited around the horizontal axis
Accuracy of setting the angle of rotation of the horizontal rotary device, degrees.	0,002
Accuracy of setting the angle of rotation of the vertical rotary device, degrees.	0,002

Main characteristics of the light sourse

Parameter	Meaning
Lamp type	Xenon, Newport 6258 Xe arc lamp
Body type	Arc Lamp Housing 67005
Type of PSU lamp	Newport 69911
Light source color temperature, K	5800
Illumination in the plane of the SS installation	30000-140000 Lx
Power in the plane of installation of the SS	1000-3900 Wt/m^2

Characteristics of the sun radiation power supply:

Parameter	Meaning
The number of PSU channels available to the user	2
Maximum voltage, V	30
Maximum current, A	3

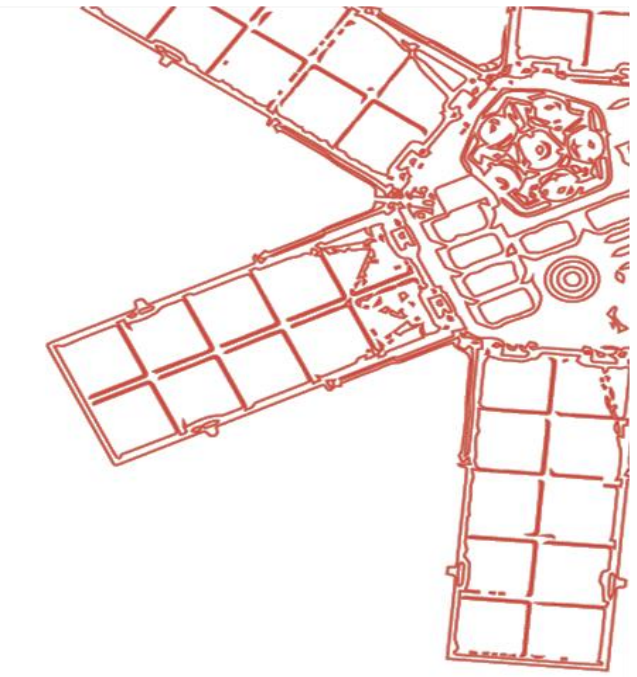
Accuracy characteristics of the equipment

Parameter	Meaning
Accuracy of installation of SS equipment relative to light source, degrees.	Not worse 0,05
The total maximum error of setting the angle of rotation of the SS equipment, degrees	No more 0,1

About company

SPUTNIX LLC is a Russian private company manufacturing high-tech small satellite components and platforms, as well as ground equipment for smallsat testing, ground-based satellite stations, and equipment for aerospace education. The company is part of SITRONICS Group.





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