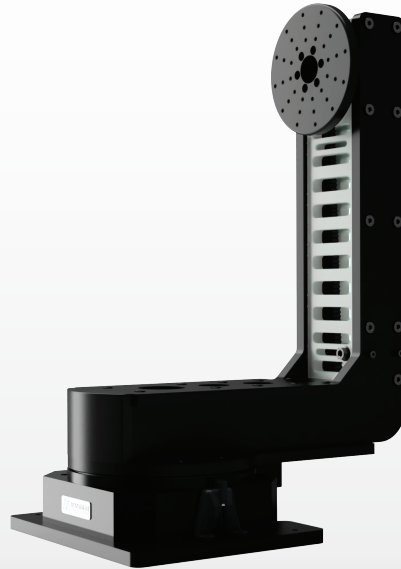


UN05

Precision Positioner System
for Antenna Measurements



FEATURES

Mono-Mast Design for Large Device-Under-Test

For spherical (roll-azimuth) or single-arm (azimuth-elevation) precision antenna tests. Suitable for antennas up to 10 kg (22 lb). Offset depth 20 cm (8") from the center.

High-Quality Design

Heavy-duty instrument turntable, high-torque motors, and precision gears. Metal-free AUT/DUT mast construction. Autonomous closed-loop motor control system for positioning accuracy.

INTRODUCTION

UNO5 is a compact positioner for professional over-the-air (OTA) antenna measurements. With its spherical roll design, it provides the broadest clear field of view possible.

Paired with a roll-enabled antenna mast, the UNO5 SPHERICAL KIT offers full spherical measurements and eliminates blocking of the radiation path.

In addition to the spherical measurement setup, the UNO5 can be used as stand-alone azimuth-elevation positioner.



HARDWARE

The UNO5 positioner is derived from the DUO5, and uses the same high-quality components to ensure best-in-class performance. Careful component selection ensures precision even under maximum load, and all motors operate in a closed-loop feedback through digital encoders to maintain measurement quality.

The instrument-grade azimuth turntable offers both high precision and high torque, and is itself rated for 55 kg load. The overhead ensures high performance in the most demanding applications.

The mast design is CNC-machined in Polyoxymethylene (POM/Acetal/Delrin™) and Polyethylene terephthalate (PET) to offer low dielectric constant to limit stray reflections. To offer maximum strength, no 3D-printed parts are used in the mechanical construction.

The mast combines a closed-loop motor with quality single-stage gears for high precision, low backlash and high holding torque. The belt drive system uses 9mm High-Torque timing belts, a significant upgrade from the ordinary 6 mm type, maintaining performance under high load.

The UNO5 is delivered with a USB-connected controller utilizing a serial-over-USB interface and controlled by a Python reference application code. The combination offers an easy approach for using as-is, minor modifications, or developing own applications.

UNO5 SPHERICAL KIT

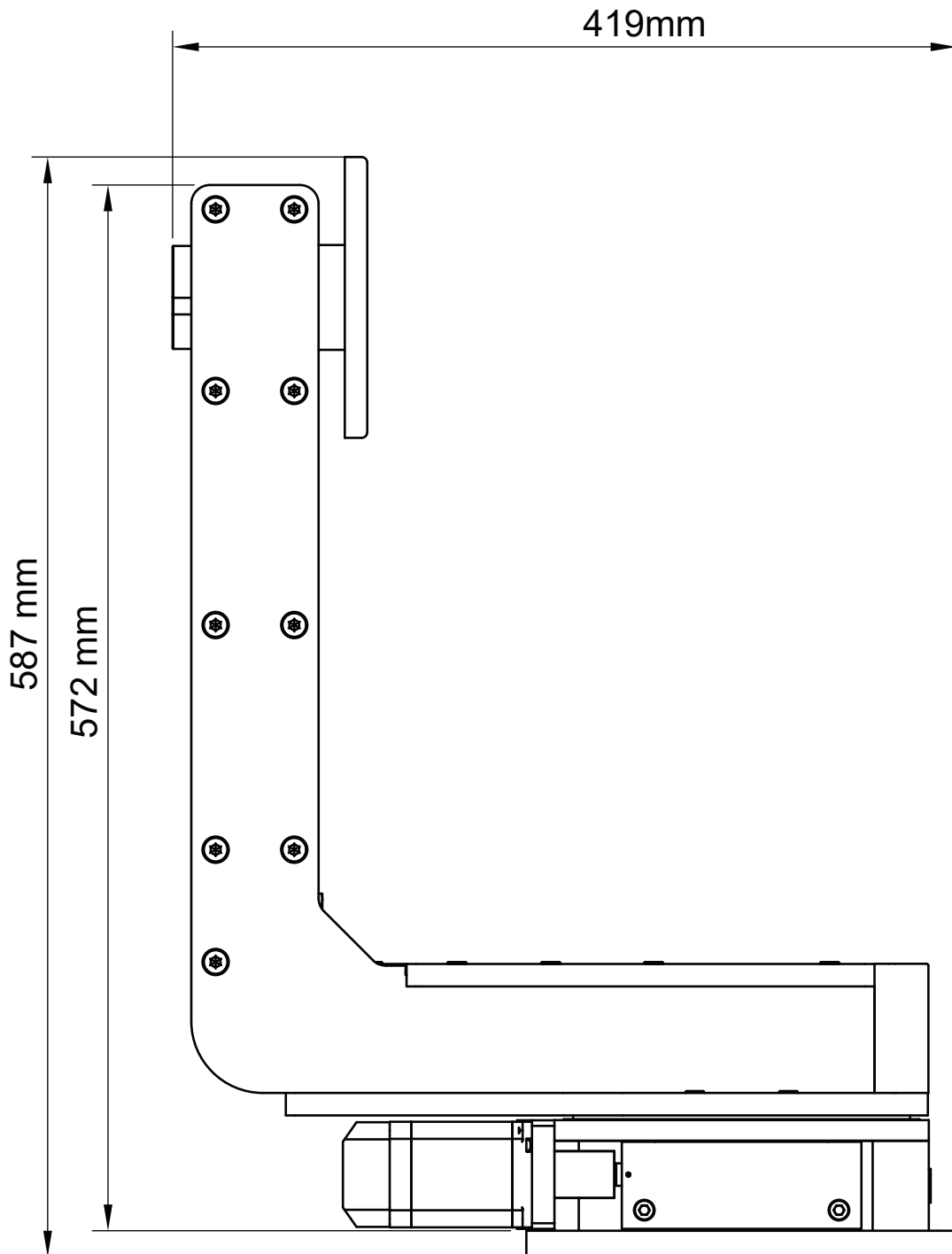


The UNO5 SPHERICAL KIT offers a fully integrated solution for your spherical measurement needs. This kit includes the UNO5 2-axis roll-azimuth positioner, plus a matching 1-axis roll antenna mast, all control cables, a fanless 100-240 Volt power supply, an intelligent motor controller, reference Python application code for seamless integration, as well as tools for initial leveling and adjustment.

The UNO5 spherical kit fits with the AC1120 anechoic chamber. This chamber is prepared for various positioners, including the UNO5, and we deliver all needed fittings to mount the kit securely and place the roll axis equidistant from the ceiling, floor, and walls.

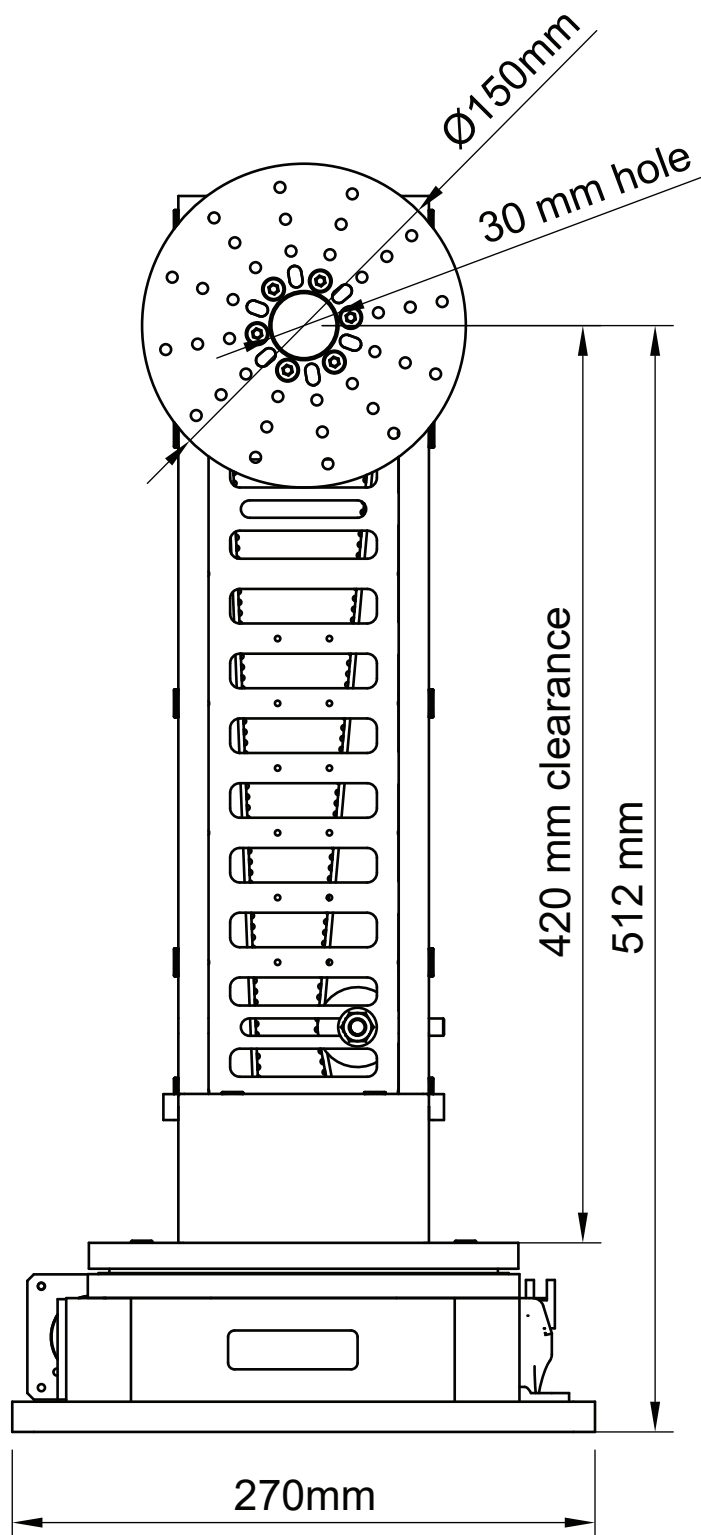
UNO5 DRAWING

SIDE VIEW



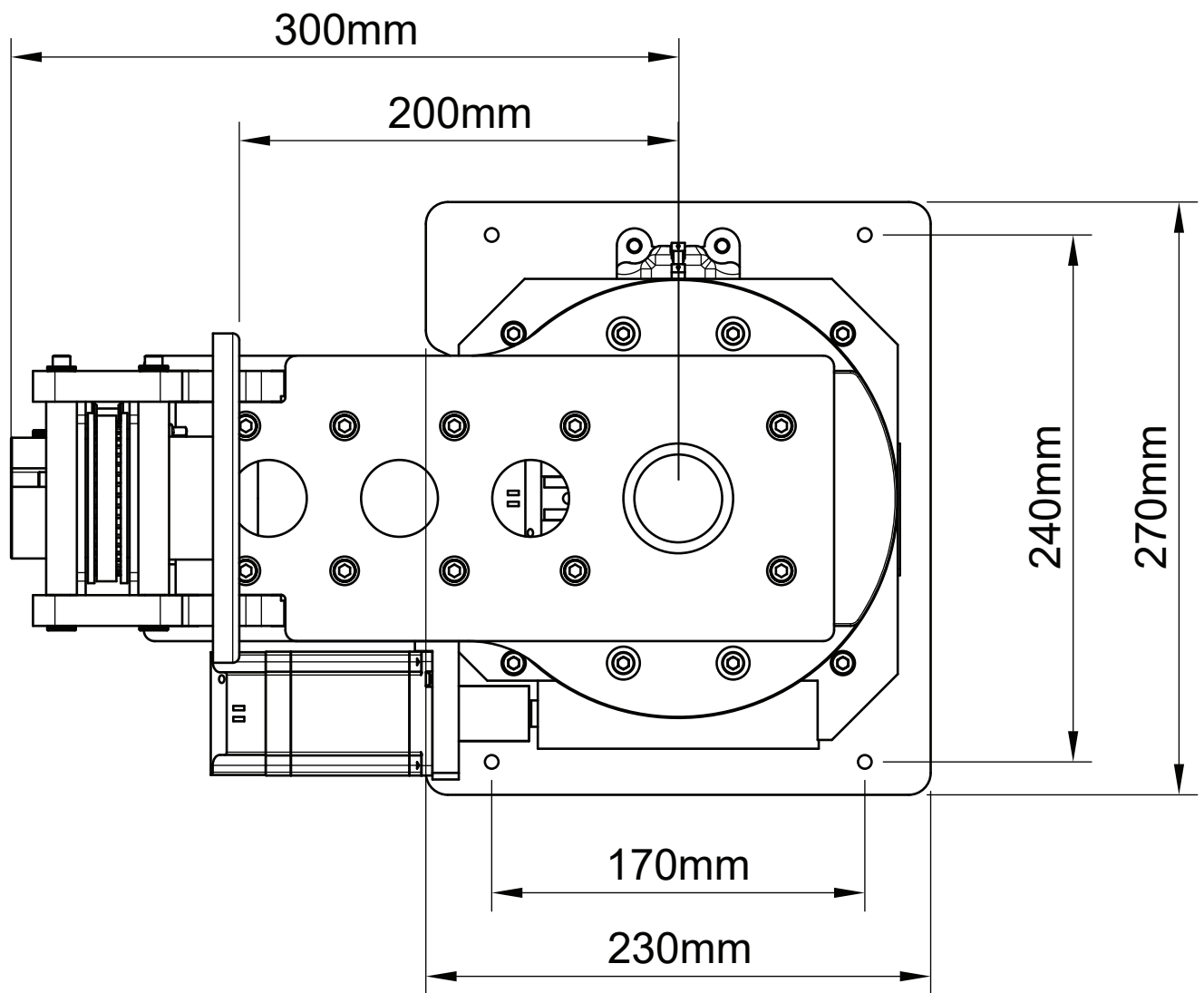
UNO5 DRAWING

FRONT VIEW



UNO5 DRAWING

TOP VIEW





UNO5 SPECIFICATIONS

AUT Dimensions	Up to 42 cm AUT width in spherical mount (roll-azimuth)
Positioner Dimensions	W 27 x H 59 x D 42 cm, weight 21 kg
Horizontal / Azimuth Platform	Resolution 0.01° full-step Holding torque 81.0 N-m (59.7 lb-ft) Weight capacity 55 kg (121 lbs) Angular velocity 25° per second
Roll / Elevation Mast	Resolution 0.1° full step Holding torque 39.0 N-m (28.8 lb-ft) Weight capacity 10 kg (22 lbs) Angular velocity > 100° per second Hollow slipping in Azimuth (power for the elevation axis) Mast and roll built from Delrin/POM, PET, FR4, and PEEK
Controller System	Multi-axis smart controller Controlled via Serial-over-USB Python control application USB 1.1 connected, Type A connector Closed-loop motor systems for both azimuth and roll
Power Supply	24 Volt, 100-240 Volt mains, fanless
Configuration Options	Custom hole patterns for roll plate Custom adapters for AUT/DUT mounting and rotary joints

Contact us at info@mmwavetest.com for more information