

UNO6 GM

Precision Positioning System
for Antenna Measurements



FEATURES

Grid Mast Design for Large and Heavy AUTs

For spherical (roll-azimuth) or single-arm (azimuth-elevation) precision antenna tests.
Suitable for AUTs / DUTs up to 25 kg (55 lb).
Translational stage for mast offset 0 - 35 cm (14") from center.

High-Quality Design

Heavy-duty instrument turntables, high-torque motors, and precision gears.
Aluminum Grid Mast AUT/DUT mast for high strength and rigidity.
Autonomous closed-loop motor control system for repeatable accuracy.

INTRODUCTION

UNO6 GM (Grid Mast) is designed for professional over-the-air (OTA) antenna measurements and is designed for high-load applications like weather multi-element radars and parabolic antennas with sizeable height and stickout from the roll-axis.

Paired with a roll-enabled antenna mast, the UNO6 GM SPHERICAL KIT allows spherical measurements and eliminates blocking of the radiation path.



HARDWARE

The UNO6 GM uses a sturdy 6082 aluminum grid mast construction. The azimuth base has been reinforced, allowing the UNO6 GM to support antennas up to 25 kg (55 lb) and 120 cm (4 ft.) in diameter.

The grid mast roll head features a precision roll motor mechanism and a 70 mm through-hole, providing ample space for cables, rotary joints, and slip rings.

The roll head offset attachment plates, also in 6082 aluminum, ensures rigidity while offering multiple mounting and alignment points, which makes integration flexible and efficient.

For applications requiring frequency extenders, a dedicated bracket system is positioned at the rear of the roll head. This design provides a low-loss connection from the antenna to the extender.

A unique bearing cassette surrounds the frequency extender, allowing it to rotate 360 degrees, driven by the roll head, and eliminates the need for waveguide rotary joints between the antenna and the extender. It improves reliability and performance, and eliminates the need for costly rotary joints at the highest frequencies.

UNO6 GM SPHERICAL KIT

The UNO6 SPHERICAL KIT offers a full solution for your spherical measurement needs.

This kit includes the UNO6 GM 2-axis roll-azimuth grid mast positioner, a matching 1-axis roll antenna glassfiber mast, control cables, a fanless 100-240 Volt power supply, an intelligent multi-axis controller, and reference Python application code for seamless integration.

Similar to the stand-alone UNO6 GM, the spherical kit can be fitted with an absorber package for both the positioner and the roll mast.

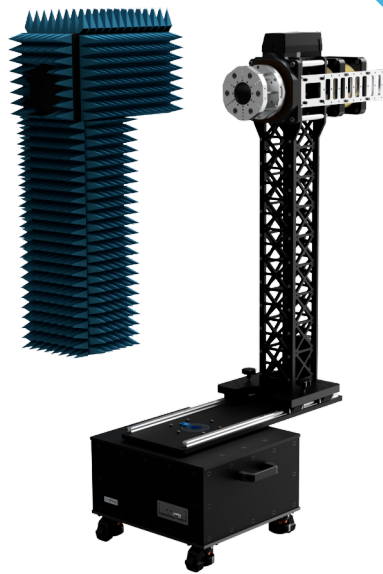


NF-FF SOFTWARE SUITE

This option converts the UNO6 GM far field setup to a complete near field capture system. It includes a comprehensive NF-FF software package, an RTOS multi-axis controller for continuous fast-scanning data acquisition, and is installed and preconfigured on a Linux PC for instant deployment.

Spherical measurements are done at high speed, an order of magnitude faster than well known brandname systems. The RTOS controller triggers the VNA, and receives triggers directly back from the VNA, that are all timestamped. The NF-FF software suite post-processes and realigns the data captured in the continuous movement, perform near-to-far field transformations, and full probe-corrected transformations.

The speedy data capture and data oversampling allows the software suite to also perform post-process chamber removal, effectively filtering out the chambers reflections.



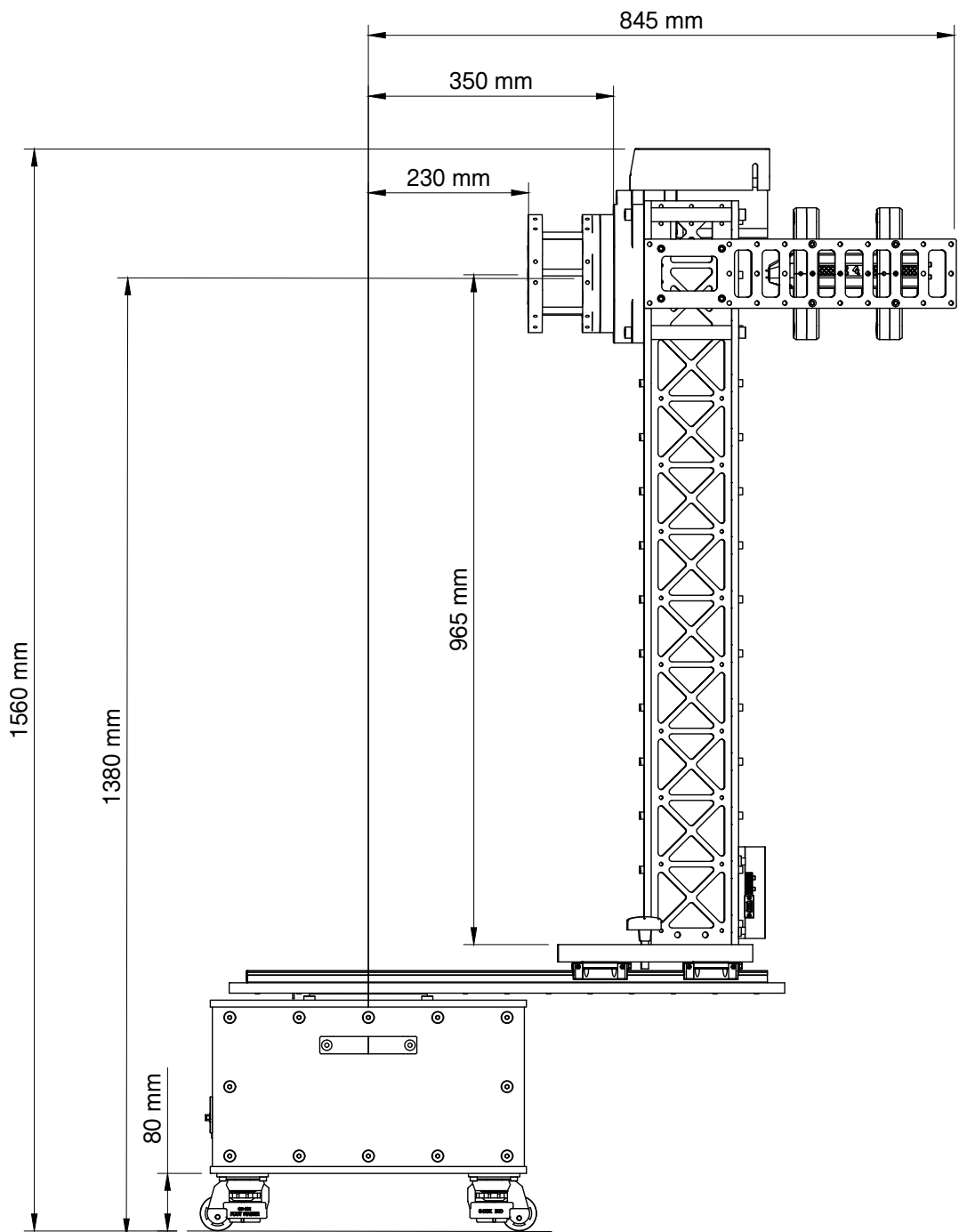
UNO6 GM SPECIFICATIONS

AUT Dimensions	120 cm AUT diameter in spherical mount (roll-azimuth) AUT weight 25 kg (55 lbs)
Positioner Dimensions	W 50 x H 156 x D 85 cm (W 20" H 62" x D 33") weight 59 kg (130 lbs)
Horizontal / Azimuth Platform	Resolution 0.1° full-step (maximum holding torque) Holding torque 76 N-m (56 lb-ft) Weight capacity 80 kg (176 lbs) Maximum angular velocity > 150° per second (load dependent)
Roll / Elevation Mast	Resolution 0.1° full step (maximum holding torque) Holding torque 75.6 N-m (55 lb-ft) AUT weight capacity 25 kg (55 lbs) Maximum angular velocity > 150° per second (load dependent) 12-channel hollow slipring. 6 wires in use, 6 wires available.
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	48 Volt, 100-240 Volt mains
Configuration Options	Custom hole patterns for DUT / AUT mounting Custom adapters for mounting and rotary joints Absorber kit for DUO6 GM or DUO6 GM SPHERICAL KIT Mechanical modifications for higher load applications

Contact us at info@mmwavetest.com for more information

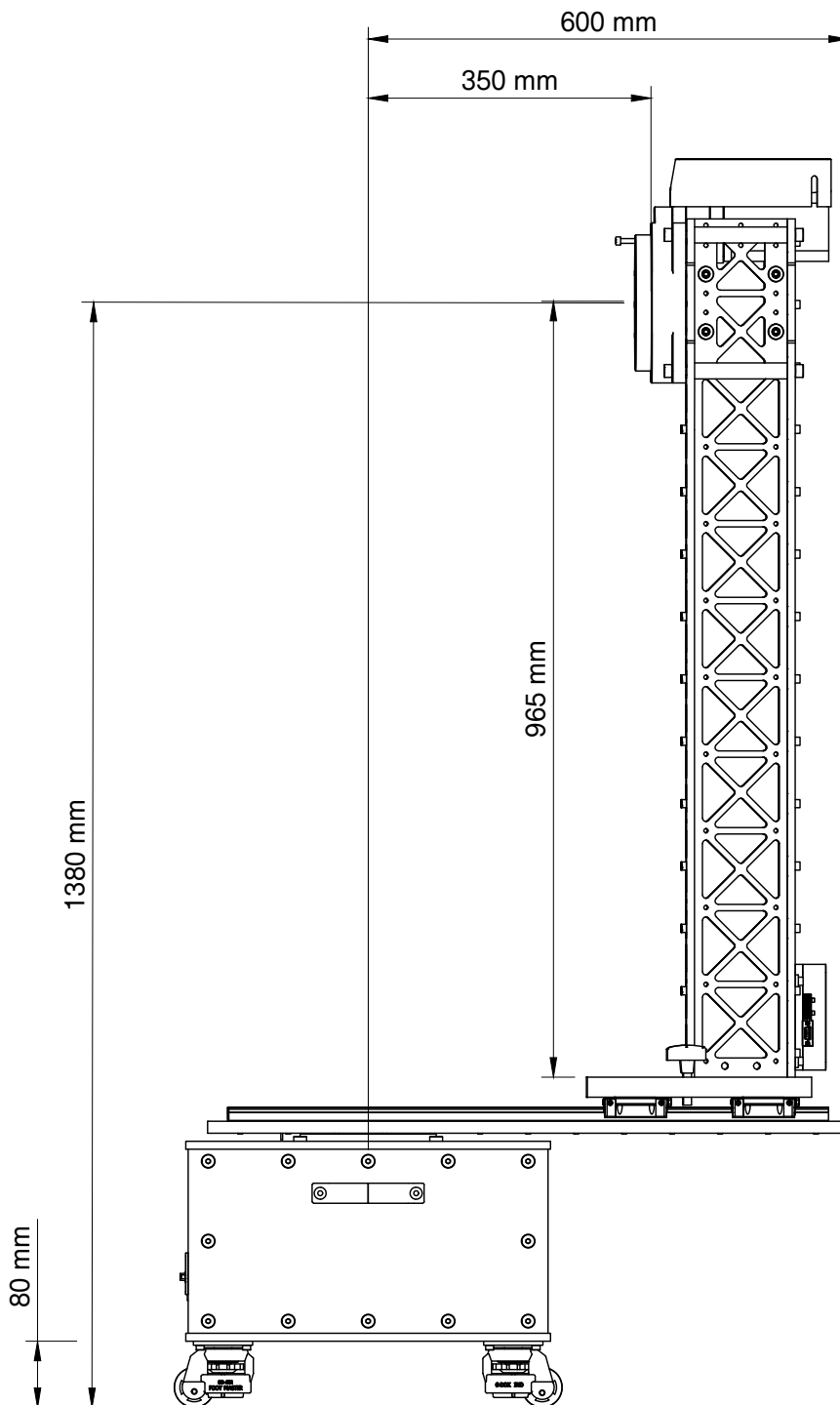
UNO6 GM DRAWING

SIDE VIEW (WITH ROLL OFFSET AND EXTENDER BRACKETS)



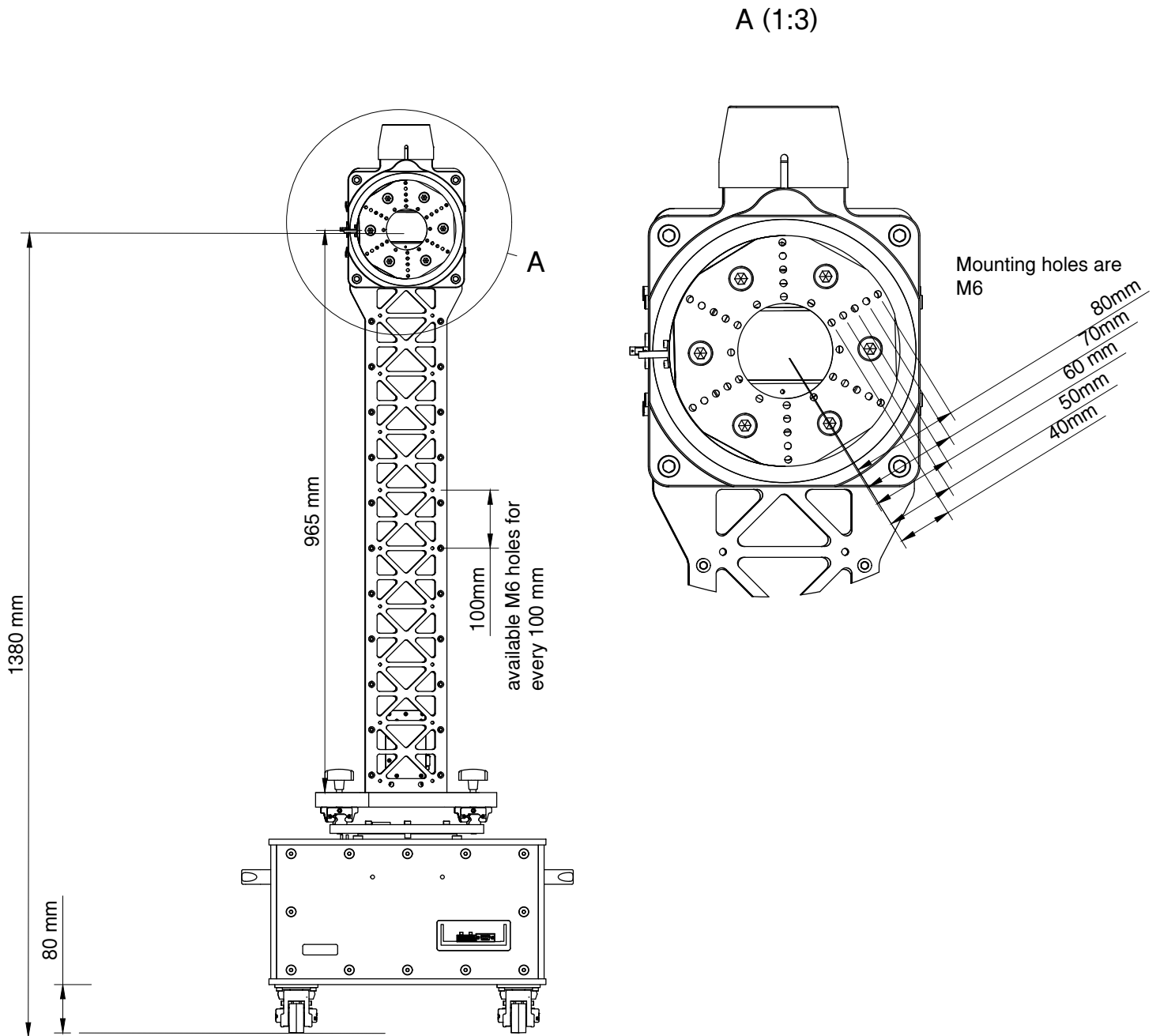
UNO6 GM DRAWING

SIDE VIEW (ROLL OFFSET AND EXTENDER BRACKETS REMOVED)



UNO6 GM DRAWING

FRONT VIEW

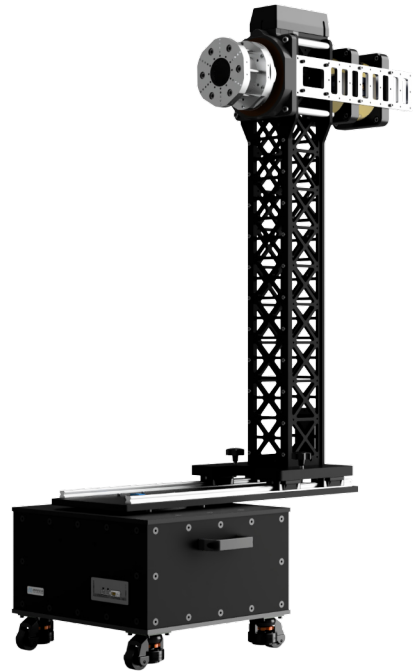
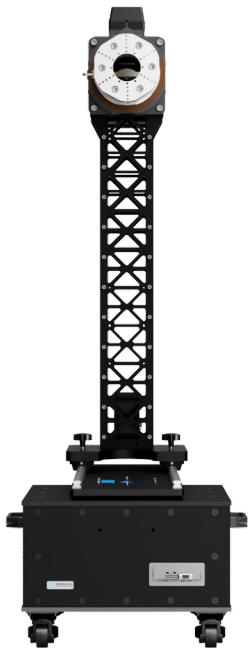


UNO6 GM GALLERY



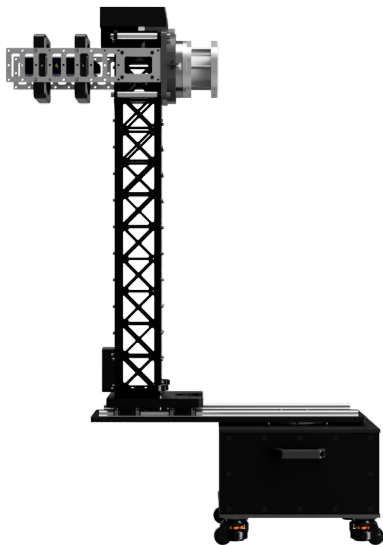
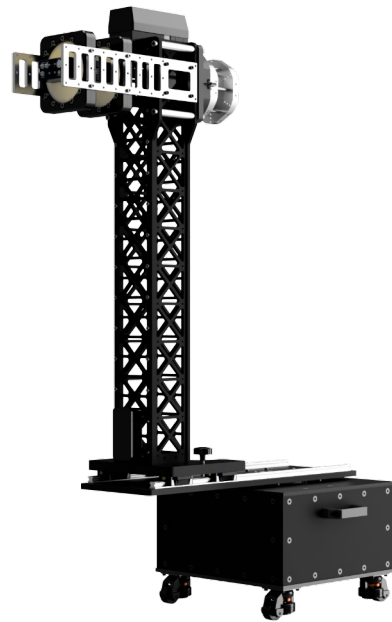
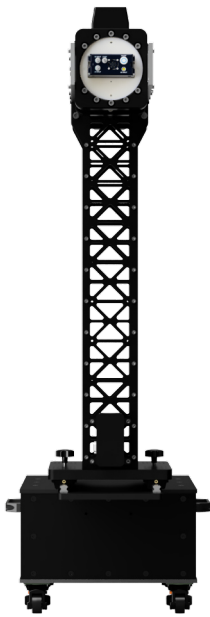
*All product images are renderings, actual product will deviate in appearance.
The requery extender is for visuals only, and is not included.*

UNO6 GM GALLERY



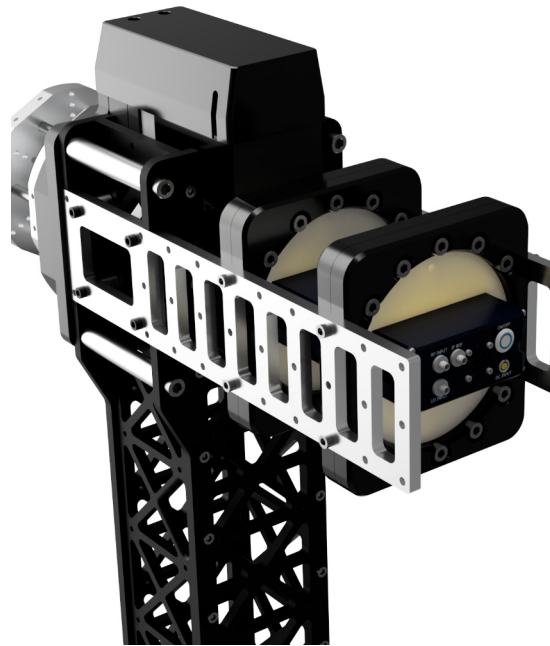
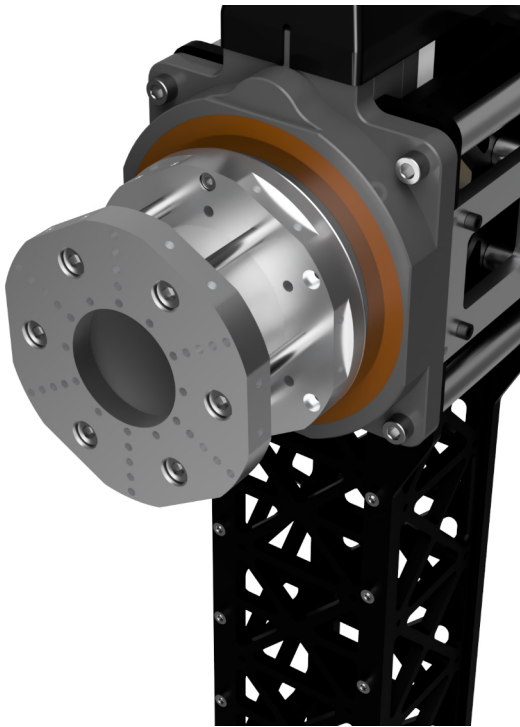
*All product images are renderings, actual product will deviate in appearance.
The frequency extender is for visuals only, and is not included.*

UNO6 GM GALLERY



*All product images are renderings, actual product will deviate in appearance.
The frequency extender is for visuals only, and is not included.*

UNO6 GM GALLERY



*All product images are renderings, actual product will deviate in appearance.
The frequency extender is for visuals only, and is not included.*