

# NOTHING TURNS LIKE THIS!



- AXIAL LOAD 1500 Kg. (3300 lb)
- RADIAL LOAD 350 Kg. (770 lb)
- RESOLUTION 0.01 degree
- REMOTE CONTROL & ETHERNET PORT



## ET 250-3D

## 3D ELECTRONIC TURNTABLE FOR POLAR MEASUREMENTS

### ET SYSTEM - BACKGROUND

**1990** - Outline introduces ET System, a turntable controlled via PC. The idea came from Guido Noselli, the company's founder, and was initially intended for in-house use, **in order to facilitate measurement of the polar dispersion of the firm's loudspeakers**. In fact, this device became the most sought-after work tool for (well-known and lesser known) competitors and the world's most famous sound designers (the [reference list](#) speaks for itself), as well as multinational companies such as Nokia, Microsoft, Lucasfilm Ltd. THX division, Philips, Bose, Harman International, Pioneer, Genelec, Infinity, AKG, Siemens etc. not to mention authoritative institutions such as MIT and Synergetic Audio Concept (to give just a couple of examples) and many universities teaching acoustics worldwide. After almost twenty years' life, the ET System is still one of Outline's best sellers.

**2007** - The introduction of the **ET250-3D**: The new Outline turntable is one of the first measurement systems able to be used in an "open plat-

form" context. Great care has been taken with the product's "usability" as far as its end users and the software able to control it are concerned.

In fact, **ET250-3D** is fitted with an input/output communications port based on TTL signals. Some software on the market is able to control it by means of sync signals based on this standard.

The new turntable is fitted with a network interface in compliance with TCP/IP protocol standards. The remote control software supplied with the turntable was also entirely developed in Outline's laboratories. This software enables to program 'macros' using an intuitive visual language, which enable articulated synchronized movement of two turntables.

Remote control is via **Ethernet (or Internet)** with **TCP/IP** protocol.

The control software offers the possibility of becoming a service 'server'. These services include the possibility of providing communication protocol for operating the turntable, by means of a **COM ActiveX Server** interface.

More precisely, by means of this communication protocol, users can develop software for controlling their own measurement instruments; at the same time, the software can also control simple turntable movement commands (Forward, Back, Stop), as well as complicated procedure such as running macros. It is therefore possible to synchronize measurement with the mechanical movements of the turntable.

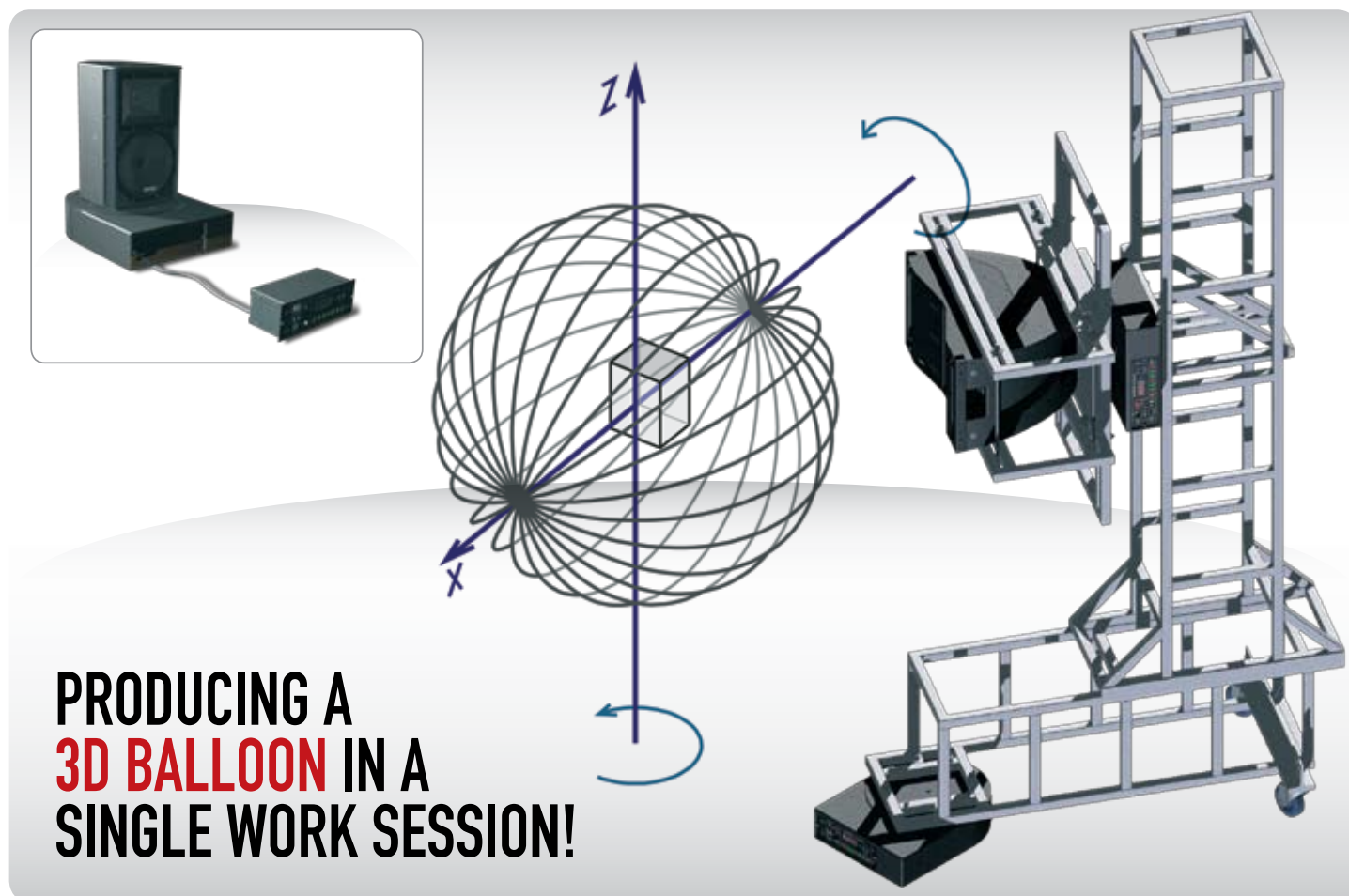
As if that was not enough, Outline provides an additional service that consists in supporting software developers with a DLL (dynamic link library) that facilitates interfacing with the turntable. In this case, there's no need for control software, but software developed by third parties can interface directly with the **ET250-3D**.

By using the functions implemented in the DLL, not only is it possible to have remote control of commands such as Forward, Back and Stop, but also to set all the variables controlling the turntable itself, such as delays, network addresses etc.

**The TCP/IP network protocol enables to control several turntables simultaneously.**

**This feature is extremely useful for loudspeaker enclosure designers, as by using a structure that allows two turntables to be mounted (one in a horizontal position and one in a vertical position), it enables to produce a 3D balloon in a single work session. This results in enormous time saving and greater precision in measurement logistics.**

However, thanks to its top-grade mechanical features (see technical spec sheet), it is also possible to use the ET250-3D in contexts unrelated to professional audio, such as (for example) photography studios and the automation industry.



## PRODUCING A 3D BALLOON IN A SINGLE WORK SESSION!

### ROTATION SYSTEM DATA

OPERATION	Can be mounted in any position, Ta -5° to 45°C
AXIAL LOAD	VHT 1500 kg. max. (3300 lb) - Bidirectional
RADIAL LOAD	VHT 350 kg. max. (770 lb)
DRIVE SYSTEM	Irreversible Worm Gear
SCALE	In ET Commander 3D software. Min. step 0.5 degree
DIRECTION	Clockwise or counter-clockwise

TORQUE	VHT (High Torque version) 25 kg-m (250 N-m)
BENDING MOMENT	VHT 50 kg-m
SPEED	VHT 1.6 RPM
ACCELERATION	Controlled by microprocessor
RESOLUTION	0.01 degree
STEP SIZE	0.5 degree min.
ACCURACY	0.05 degree (typical)
ORIGIN	Resets to current position