

Application Notes:

EZMatix Instrumentation for Wind Tunnel

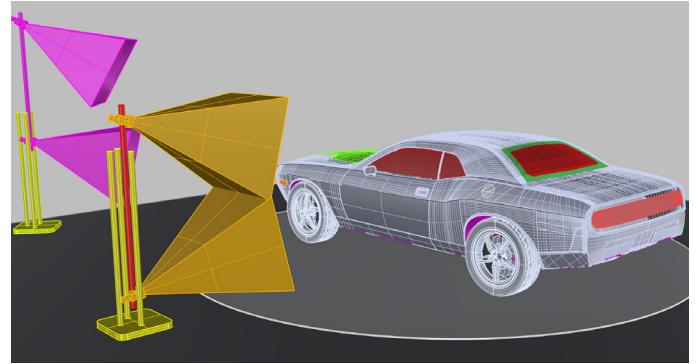
Introduction

Wind tunnels have been around to determine aerodynamic behavior of objects such as building, vehicles, airplanes. Analysis can be based on force measurements, video material. Applications are more and more demanding in the understanding of the fluid dynamics and require innovative solutions for getting the most out of every test. Capturing and understanding the structural behavior, is a next step to enhance the results and boost feedback to simulation.

“Perfect bandwidth for any kinematic structure under load.”

Technology

EZMatix is a camera-based 3D measurement system that has capabilities to measure anything from slow deflections or displacements all the way up to higher mechanical vibrations even beyond the 50Hz band. This excellent low frequency response combined with the easy of use make it an efficient instrumentation for when time is of essence.



Exclusive Advantages

The system, designed with your specifications in mind, can be safely fitted outside the airflow, and therefore not interfere with the laminar flow.

The basically unlimited number of measurement points, both available in 3 in 6 dimensions or with angular information. On top of the fact that these measurement points, being adhesive or painted optical patterns do not interfere with the flow. And even on this aspect the design can be adopted to match any special criteria you might require to capture for example a cross section.



Operation

In case of a fixed setup, applying optical targets to the object is all what is required to set up the measurement. Knowing that each target would replace 3 individual string gauges or other linear sensors, the time saved to prepare the measurement is reduced to a maximum. An optional step can consist of define one or more coordinate systems and if desired, establish the definition of a relative movement between multiple parts of the assembly.

“3D Point or Rigid Body data. Absolute or Relative.”

Integration

As the parts and structures increase in complexity, the added value from 3D measurement data in function of time is extremely valuable. Especially when this data is synchronized with any other sensor you might already have on your test site. Combined with force, structural flexibility, low frequency resonance can be accurately captured.

Flexible Investment

EZMatix can be configured for any size wind tunnel. With a wide range of available camera sensors, the solution can be fitted to provide the best resolution, speed and field of view to match your layout. Even after installation, EZMatix can at any point in time be expanded to meet your ever-increasing requirements. An extra camera can provide you with a larger volume or with higher accuracy. This modularity will insure that any investment can be match your long term needs.

For more details, please visit our **EZMatix** product group page at www.ezmetrology.com.

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