Wind Simulator

CAPABILITY SHEET · WIND IS PAID FOR BY THE CUBE. · A FAN ARRAY, A FLOW CONDITIONER AND A SPEED SUR

THE ONE IDEA

PRINCIPLE	Wind is paid for by the cube.
WHY IT MATTERS	The power in a stream goes with the cube of its speed and the push on a body with the square, so a little more wind costs a great deal more power, and the supply is sized for the peak.

THE SIMULATOR

FAN ARRAY	An array of electrically driven fans on a welded frame, with guards, grouped so that the wind can be shaped across the jet.
FLOW CONDITIONER	A honeycomb and screens at the outlet straighten the jets and even the speed, so that the test article sits in air that is the same across it.
CONTROL	Recipes shape steady wind and gusts, with closed-loop control on sensors upstream of the article.
PROTECTION	Guards, restraints, a fence and an interlocked door, with a ramp and a controlled run-down.

THE METHOD

ORDER	Duty, fan array, flow conditioner, control, protection, survey and proof. The speed survey and the restraints are the two that a quick job skips.
LIMITS	Speeds, forces, powers and times come from the customer's test article and test, and are not printed here.

CONFIGURATIONS

STEADY	A steady-wind unit: one bank of fans on one drive, with a flow conditioner and upstream sensors.
GUST	A gust array: fans in groups, each on its own drive, with recipes for gusts and steps.
TURNTABLE	An array on a turntable: the article turns to the wind without moving the fans.

SCOPE

SCOPE BOUNDARY	It is the wind simulator: not a calibration wind tunnel, not a dust and sand chamber and not an environmental chamber.
STATUS	Neometrix engineers wind simulators to order, and no delivered wind simulator is claimed.

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