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Combined Module

Z3T^M

EDEL

version 1.0 - 02/20 - subject to modifications without previous notice

EDEL

Z3T™ COMBINED MODULE

The Z3T™ is enlarging the portfolio of modules serving motion platforms. This module adds four independent degrees of freedom, namely along one rotary, one vertical and two oblique axes.



By design, this optional module enables complete fulfillment of wafer motion profiles for advanced semiconductor applications, thus providing OEMs with a turn-key solution for any semiconductor technology. The product compactness establishes record density in terms of number of functions per volume, while its performance set new market standards for wafer level accuracies and dynamics.

Z3T™ COMBINED MODULE

The Z3T™ combined module can be integrated to the CHARON2 stacked platform.



The Z3T™ allows OEMs' migration from expensive and obsolete piezoelectric solutions, eliminating their hysteresis problems while supporting nanometer level resolution, accuracy and repeatability, at even higher dynamics. With embedded support to proper sample alignment, the module then allows further control of wafers planarity, with respect to equipment heads, by means of its additional "tip" and "tilt" axes.

Such unique functionality enables users with a next-level of process controls, for instance planarity, nominal Angle Of Incidence (AOI), focal plane straightness and many more, all of which result in unparalleled opportunity to yield wafer-level performance by the OEM technique.

Today adopters not only simplify their design efforts for higher precision, moreover materialize dramatic reductions in equipment complexity, reliability, integration efforts and overall cost, thus enabling much faster time-to-market at improved price-per-performance ratios.

The Z3T™ addition stems from ETEL continuous innovation and vertical integration, based on proprietary IP for motors, electronics and controlling know-how, and synergy with HEIDENHAIN when relating to world-class positioning accuracy feedback.

MAIN SPECIFICATIONS

	FINE Z	TIP-TILT	THETA
Total stroke	±2 mm	±0.08°	infinite
Position stability	±3 nm	-	±0.08 arcsec
Bidirectional repeatability	±30 nm	-	±2 arcsec
Move and settle time (100 µm within ±30 nm)	60 ms	-	-
Move and settle time (180° within ±40 µ")	-	-	525 ms

PRODUCT HIGHLIGHTS

- Infinite Theta rotation
- Tip and tilt correction over ±0.08° for planarity and for advanced motion control
- Vacuum feed-through to the interface level
- ISO class 2 clean room compatibility
- Radial runout of ±3.5 µm

TYPICAL APPLICATIONS

Suited for diverse industries (Medical, Instrumentation, Pharmaceutical, Automation) and on advanced semiconductor equipment for process control.