

Higher Throughput in Photonic Chip Manufacturing: PI Halves Lead Time for F-712.HAx Fiber Alignment Systems

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By increasing personnel resources, improving processes, and investing in automation, Physik Instrumente (PI) has reduced the lead time for the fast multi-channel fiber alignment systems (FMPA) F-712.HA1 and F-712.HA2 by more than fifty percent in the fourth quarter of 2023. In comparison to conventional methods, the FMPA systems reduce the time required for the alignment of glass fibers / fiber arrays in quality assurance and the packaging of silicon photonic (SiPh) chips by the factor of 100 to around a second. This increases the throughput in SiPh manufacturing considerably.

The F-712.HAx fiber alignment systems from PI enable simultaneous multi-channel couplings of optical fibers to the inputs and outputs of SiPh chips in six degrees of freedom. Efficient algorithms for area scan and gradient search are currently setting the global benchmark for increasing throughput and thus lowering the production costs of SiPh components. The F-712.HAx alignment systems are based on the proven E-712 controller technology of PI and are available in both single-sided and double-sided versions. Several hundred of these systems are already in use at OEM and direct customers.

PI is currently expanding its production capacities as part of the largest investment program in the history of the company, investing more than sixty-three million euros. Through a targeted expansion of resources, investments in the automation of production facilities, and continuous process improvements, the company has already more than halved the lead time of the aforementioned fiber alignment

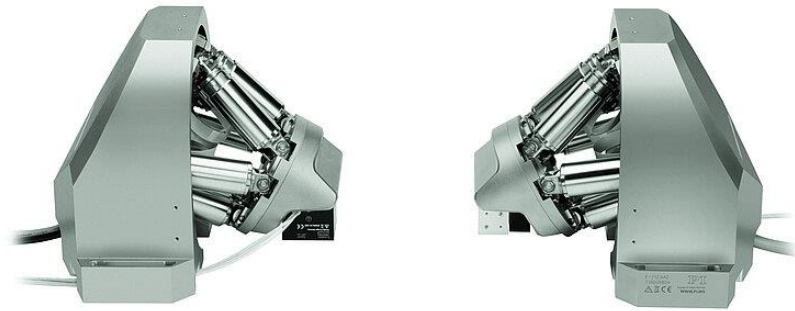
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systems in the fourth quarter of 2023 and announces further improvements.



Caption: The double-sided fiber alignment system F-712.HA2 features a H-811 hexapod and a P-616 NanoCube® nanopositioner as basis. The parallel-kinematic design provides high system stiffness. The motorized drives enable longer travel ranges while the NanoCube® nanopositioner ensures fast scanning movements. (Photo PI)

About Physik Instrumente (PI Group)

The PI Group with headquarters in Karlsruhe, Germany, is market and technology leader for high-precision positioning technology and piezo applications in the market segments Industrial Automation, Semiconductor Industry, and Photonics, as well as Microscopy & Life Sciences. In close cooperation with international customers, PI's approximately 1,500 specialists have been continuously pushing the boundaries of what is technically possible for more than fifty years. Various drive technologies, internally developed sensor technology and electronics, as well as control and regulation technology provide the basis for this. PI's portfolio ranges from components to subsystems to tailor-made complete solutions. 508 granted and pending patents underline the company's claim to

leadership in the fields of precision positioning and piezo technology. PI operates on a global scale, with nine production sites in Europe, North America, and Asia, as well as sixteen sales and service subsidiaries.

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