



High-Tech Distribution and Consulting

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NovaCentrix

NovaCentrix an Austin, Texas based company develops and manufactures equipment for annealing and sintering of thin film for printed electronics and related applications. NovaCentrix is offering equipment for high temperature processing on low temperature substrates. It also offers metal and metal-oxide based nano-inks.

PULSEFORGE® 3300

Designed for Printed Electronics: Semiconductors and Photovoltaics

NovaCentrix launched the PulseForge 3300 to address the need for processing printed Si inks, both for printed logic as well as for photovoltaic applications, on low-temperature substrates. In keeping with the modular architecture established for the PulseForge 3100, the PulseForge 3300 is designed for roll-to-roll and conveyor-based materials processing. The PulseForge 3300 is optimal for application development as well as full-volume production.

The PulseForge 3300 is designed to process the materials, such as silicon, zinc oxide, and CIGS, used for printed logic, display, and photovoltaic applications. The tools create the very high processing temperatures required for recrystallization and annealing, but without damaging low-temperature materials like polymeric substrates or adjacent organic materials. This is accomplished by using proprietary high-intensity lamps at very short pulse durations.

merconics is a competent and experienced partner for the distribution of advanced capital equipment and process materials for the European semiconductor and photovoltaic industry and related markets. The systems of our suppliers can be used in a variety of segments of the above-mentioned markets, such as advanced chip or solar components manufacturing and respective R&D activities. We focus our efforts on providing solutions that enable our customers to meet today's challenging technology and manufacturing requirements.

Performance

The PulseForge 3300 commercial processing tool is capable of delivering a maximum peak power to the target materials in excess of 100 kW/cm². This type of power delivery is required to achieve the very-high surface heating of the target semiconductor materials, without damaging the underlying low-temperature substrates such as plastic film.

The PulseForge 3300 is designed to deliver exposures as short as 30 microseconds. This range of process duration is too short for mechanical shuttering, so the PulseForge 3300 accomplishes this by exact control of the voltage and current delivered to the proprietary lamps.

The PulseForge 3300 has a maximum pulse rate of >1kHz. This enables production speeds far faster than most current applications require.



Fig. 1 NovaCentrix PulseForge 3300

The emitted spectrum is from 200 nm to 1000nm. The pulse conditions can be changed, however, to shift the spectral characteristics of the emission to favor red or blue even without the use of additional filtration. As a result, the PulseForge 3300 can deliver as much as 50% of the pulse energy at or below 400 nm, or as little as 5%. The tool can therefore effectively process materials requiring UV energy, and can process materials damaged by UV energy.

METALON®

Metalon conductive inks capitalize on advanced materials and formulation to provide conductivity options for additive manufacturing of printed electronics like photovoltaic devices, RFID, smart cards/labels, displays, and advanced packaging. Utilizing nanoparticles and flakes, Metalon inks are formulated for specific applications and print methods. Variants already developed include silver inks suitable for application by inkjet, flexographic printing, and gravure. True copper inks are also available for screen, flexographic, or gravure application. In conjunction with the PulseForge® technology also from NovaCentrix, these inks can be applied to substrates such as plastic films, and even paper.

Sheet resistances as low as 4 milliohms per square and resistivities as low as 3X bulk have been attained with silver ink. Sheet resistances below 100 milliohms per square and resistivities as low as 3X bulk have been attained with copper ink. Performance varies depending on print method and substrate.

Please contact merconics to learn more about the unique features of the NovaCentrix product lines.

Partners deliver success

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