



SURFACING SCIENCE



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www.universalphotonics.com

EMAIL: info@universalphotonics.com

UNIVERSAL PHOTONICS ADVANCED SURFACING PRODUCTS & TECHNOLOGY

WINTER 2017

GLOBAL HEADQUARTERS
UNIVERSAL PHOTONICS
INCORPORATED
85 Jetson Lane
Central Islip, NY 11722 USA
T: 516.935.4000
F: 516.935.4039

DISTRIBUTION FACILITIES
New York • California • Hong Kong

MANUFACTURING FACILITIES
85 Jetson Lane
Central Islip, NY 11722 USA
T: 516.935.4000
10 Ward Street
Vernon, New York 13476 USA
T: 315.829.3600

FAR EAST OFFICES

JAPAN: TOKYO
T: +81 3 6205 4121

HONG KONG
T: +852 9456 8628

CHINA: NANJING
T: +86 25 5287 6893

CHINA: SHENZHEN
T: +86 755 2584 9294

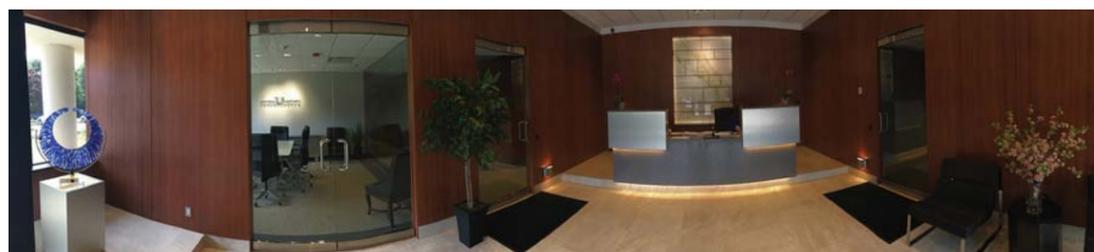
KOREA
T: +82 31 789 3970

TAIWAN
T: +886 (0)920 189 762

Nuvite
CHEMICAL COMPOUNDS
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CDGM GLASS, USA
World's largest supplier of optical glass.



UPI SETS UP NEW GLOBAL HEADQUARTERS IN CENTRAL ISLIP, NEW YORK

UNIVERSAL PHOTONICS has moved its corporate offices, and a portion of its manufacturing operation from the Hicksville, NY location, where it had been for over 40 years, to a new Central Islip, NY location. The facility, located about 20 miles east of the old one, has over 58,000 square feet of office and manufacturing space. Combined with the upstate NY polyurethane pad manufacturing facility, this gives UPI over 135,000 square feet of office and manufacturing space in NY. Richard Nastasi, UPI Executive VP,

who was in charge of the relocation said, "After 40 years in one place it was amazing how much 'stuff' we collected that had to be sorted and packed. The fit out of the building was a true UPI team effort, with key people from Facilities and Marketing playing a huge role in designing the entire interior, not to mention coordinating the move itself." After years of sharing offices and bumping into each other on the production floor, the new facility has the space and environment for increased efficiency and productivity.

Managing Efficiency with SAP

At a time when businesses must be nimble and attentive to customer needs UNIVERSAL PHOTONICS invested in the future by implementing cutting edge technology to support and run its businesses. "We focused on technology with an eye on efficiency and chose SAP's Business ByDesign (ByD)," said John Colon, Vice President of Operations. SAP is the world leader of enterprise applications in terms of software and software-related services. ByDesign, SAP's cloud-based enterprise solution, was built based on best business practices from Fortune 500 companies. From R&D to invoicing, ByDesign now manages all aspects of UPI's business and as a cloud-based solution, the company is able to access and run the business anywhere with an internet connection. Access to business information is now immediate and not subject to "being in the office." At this level of technology and efficiency UPI can continue to offer best-in-class customer service as they also continue to grow the company.

UPI: The Road To ISO Certification

While all of UPI's polyurethane pad manufacturing has been certified under ISO 9001, the Long Island, NY operation has been operating as ISO, but has yet to be formally certified. With the release of the new ISO 9001:2015 requirements, UNIVERSAL PHOTONICS has decided to secure certification for every aspect of the company. ISO 9001 is an international quality management system standard. Certification tells the world that your company follows fundamental management and quality assurance practices across the organization, which present a foundation for planning, control, and improvement for the enterprise. UPI has contracted with a consulting firm to make sure that ISO required documentation and performance levels are consistently met while the company continues to provide products and services that meet customer and regulatory requirements. Certification of the entire company will further show UPI customers that they can always rely on UNIVERSAL PHOTONICS manufactured products.

WHAT'S NEW...

NOW Available For SAPPHIRE... PRECISION POLISHING PADS

New polyurethane polishing pads designed to meet challenges of polishing hard materials such as Sapphire and Alon. **Page 2**

UPI CARRIERS Expanding Manufacturing

With addition of numerically-controlled machinery to its production center, UNIVERSAL PHOTONICS will double production of carriers used in the manufacture of precision optics. **Page 2**

XL Continuous Polishers Up to 96" OD

UNAJEC designs, builds, and delivers a family of continuous polishers for very high quality optical manufacturing applications. **Page 3**

UPI Acquires NUVITE Chemical Compounds

UNIVERSAL PHOTONICS' commitment to advanced surfacing and polishing technology is further realized with acquisition of NUVITE CHEMICAL COMPOUNDS. **Page 3**

QUESTIONS?
ANSWERS:
516.935.4000
info@universalphotonics.com

World's Largest Double-Sided Polisher Slated for Delivery to North American OEM



The largest double-sided polisher is scheduled to be delivered by UNIVERSAL PHOTONICS to a North American customer in the first quarter of 2017. Manufactured by

SOMOS in Europe, this 100,000 pound system will have polishing plates a colossal 2500 mm (8.2 feet) in diameter and be able to polish optics up to 37 inches in diameter. Specially designed features include cooled upper and lower plates, specifically engineered to minimize deformation and maintain part flatness, and fully integrated loading, unloading, and slurry distribution systems. Additionally, several proprietary, customer specific innovations have been included which will...Continued on page 2

Whole Lab Centrifuge Solutions Efficient Waste Processing Systems

HKS Centrifuge systems are filtering and cleaning optical waste all over the world. UNIVERSAL PHOTONICS, together with HKS, has just finished installation of two new large centrifuge systems. While they regularly install smaller systems, which can handle one or two machines, the large systems are generally made to clean the fluids of the entire lab. These same systems are very popular in precision optics shops, ...Continued on page 3



The Trade Show Connection

A key reason UPI annually exhibits at global trade events like Photonics West, 1/31-2/2, booth #2217, is to sharpen its focus on the critical surfacing systems, products, and equipment required to meet the demands of the latest technology. Each year designers and manufacturers visit UPI's booth for the on-site Q&A. Our application engineers are on hand to address questions and the challenges unique surfacing applications present. See us also at SPIE Defense + Commercial Sensing, April 2017, booth #537. For a full schedule of UPI attended trade shows visit www.universalphotonics.com/events.



UNIVERSAL PHOTONICS

91 Years of Surfacing Expertise

UNIVERSAL PHOTONICS is celebrating its 91st year in business in 2017. Starting from a small business in Brooklyn, NY producing shellac sticks primarily for the furniture industry, UPI today is a world leader in manufacturing and distributing a full range of products used in the manufacture of photonics related items. UPI products are in labs all over the world, which turn out everything from the most demanding optics used in space and military surveillance, to everyday items like bedroom mirrors. Chances are at some point during the day, you'll use an optic that was impacted by a product from UPI; from the office window, to your cell phone, computer screen, watch face, and on and on.

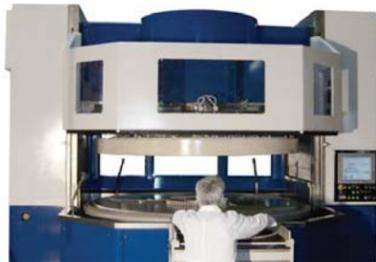
Advanced Polishing Slurries To Meet New Market Needs

Ever-emerging technologies demand new and improved processing materials engineered for specific surfacing applications. UPI meets these demands with a variety of advanced polishes optimized to produce critical surfaces not attainable by conventional polishing materials. Case in point - HASTILITE ALPHA 3, a fully formulated aluminum oxide-based slurry with >99% purity, targeted for Sapphire and other...Continued on page 3

World's Largest Double-Sided Polisher Slated for Delivery to North American OEM

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enable polishing times to be reduced from days or even weeks using traditional methods, to mere hours. UPI engineers will work closely with the customer after delivery to ensure the polishing process and consumables set combined with the machine, produce the optical properties required. This may not be the largest double-sided machine for very long. UPI and SOMOS are in the process of developing a 4000 mm (15.75 feet) double-sided polishing system, capable of polishing parts up to 60 inches in diameter for another North American customer.



This nearly quarter of a million pound behemoth, while still a year or two away, attests to the enormous presence UPI has in the precision polishing of very large optical components.



UPI CARRIERS Expanding Manufacturing

Traditional carrier materials include G10/FR4 and PVC. The thickness of the optic being polished is matched to the carrier material, which range in thicknesses from 0.005" to 0.750", however UPI engineers have designed specialty carriers of greater thicknesses to meet customer specifications. A full set of carriers is usually manufactured and shipped within three business days of customer drawing approval. These high tolerance carriers are used in the production of optics needed in many different applications from camera filters to telescopes.

UNIVERSAL PHOTONICS has acquired an additional numerically controlled machine which will double carrier production capacity. Used in the manufacture of precision optics, carriers hold the optic in place as they are polished on both single and double-sided polishing machines. Tradi-

PRECISION POLISHING PADS UNIQUELY ENGINEERED FOR HARD MATERIALS

UNIVERSAL PHOTONICS has just released a new polyurethane polishing pad designed specifically for polishing hard materials such as Sapphire and Alon. The new pads were developed for use on a variety of polishing machines and with different slurry combinations. The results delivered from these new pads are increased removal rates along with improved surface roughness. With these types of hard materials playing a more important role in optics design, continued innovation into ways to reduce polishing times is a must. For parts that can take hours or even days



SP-4331 & SP-66L
Custom PSA & Grooving Available

to polish, cutting even 10 percent off the time is quite significant. These pads, especially when combined with UPI's ALPHA 3 slurry, a unique formulation under the company's signature HASTILITE product line, will provide a finish good enough for most end user applications. When finer finishes are required, a final buff with one of the UNICOL products will get the job done.

SOMOS TPM: Breakthrough Technology Internally-Cooled, Temp-Controlled Plates

The high-powered TPM machines deliver advanced processing solutions with an entirely new range of capabilities including...



... Internally cooled top and bottom plates that are thermostatically-controlled, allowing continuous runs at high speed and pressure 24 hours a day, 7 days a week.



TPM 400A with Touch-Screen
PC Control Panel

While the TPM Series has many advantages, the most extraordinary feature is that it can be customized to meet specific application requirements. Choosing the features best suited to your application assures efficient, flawless processing.

ONSITE ENGINEERING SUPPORT

UPI's "Help Me Polish This" Model,
Unique in Industry, Receives Customer Accolades.

During 2016 UPI Applications Engineers spent about 75% of their time helping customers improve processes. Working one-on-one and side-by-side at the customers' locations, they were able to increase throughput, reduce runtime, lower surface roughness, and improve flatness. Engagements included reducing polishing time, 20% - 50% in most cases, on many types of glass, ceramic, and IR materials. With a line of advanced consumables and the latest surfacing technology, UPI engineers have managed surface roughness as low as 0.3 to 0.5 angstroms, for a true *super polish*. On-site technical support, at no cost to the customer, is an unprecedented service. UPI's "Help Me Polish This" model is truly unique and is available to customers either at UPI's in-house applications lab, via phone, or video chat. Contact your local UPI Technical Sales Representative or call the Account Services Team at (516) 935-4000, to arrange a private consultation. UPI's Applications Engineers will work with you on problem areas or work to introduce new and innovative solutions to your current polishing process with the goal of reducing process time and/or increasing polishing performance. UNIVERSAL PHOTONICS can be contacted anytime via email, info@universalphotonics.com.

Whole Lab Centrifuge Solutions - Efficient Waste Processing Systems ...Continued from page 1



offering much cleaner coolant, longer coolant and tooling life, and high coolant flow rates. One system installed in an ophthalmic lab, processing 20,000 lens daily, is removing a ton of waste per day from generators with full line and 100% coolant filtration 24 hours per day, 7 days a week. The resulting waste is compacted down to "bricks" that contain almost no fluid and which can be disposed of in normal trash with minimal environmental impact. UPI centrifuge systems are designed for redundancy and easy repair. In the event lab needs increase, system modularization allows for expansion.



XL CONTINUOUS POLISHERS UP TO 96" OD



UNAJEC, a partnership between UNIVERSAL PHOTONICS and AJEC Engineering, has designed and delivered a family of continuous polishers for very high quality optical manufacturing applications. These machines, up to 96 inches in diameter, are designed with high levels of rigidity in order to minimize any

motion of the critical pitch surface used to do the actual optical polishing. While typical machines use for example, 4 inch steel beams as their base structure, UPI machines use 8 inch beams, minimizing motion and deflection. Additionally, all bearings and motion components are designed to high tolerances and are tested to rotational speeds far in excess of what will be used during polishing. This ensures minimum vibration and noise. Machines are all custom designed in consultation with the customer, so that all cus-

tom requirements are included in the design process. As expectations continue to rise for sizable optics with very low surface roughness levels, UNAJEC's is designing a 144 inch version. In conjunction with UPI's polishing pitch and slurries, these machines produce some of the finest optics in the world.



UPI Acquires NUVITE Chemical Compounds

UPI continues its commitment to the advancement of surfacing and polishing technology with the acquisition of NUVITE CHEMICAL COMPOUNDS. NUVITE's longstanding history of innovation mirrors UPI's philosophy, bringing enhanced technology to the UPI suite of advanced materials. NUVITE has been manufacturing a full line of appearance maintenance products for the transportation industry since 1949. NUVITE products for bright-work polish, paint care, dry wash, wet wash and interior care are especially popular in the aviation after-market, as they are in sync with emerging surface technologies and meet

aviation's uncompromising demands for high quality, high performance, and task-specific products. "Our long history of combining unique technology with robust service and support networks has helped UPI meet the expectations of the critical surfacing industry. We are confident that NUVITE products will add value to our customers' processes and efficiency. Likewise, NUVITE customers can be assured that UPI's broad experience and manufacturing capabilities will continue to provide the same reliable, efficient and innovative benefits they have come to expect," assures Neil Johnson, President UNIVERSAL PHOTONICS.

Advanced Polishing Slurries To Meet New Market Needs

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hard exotics, ALPHA 3 delivers high performance, excellent dispersion, fast removal rate and excellent surface quality. For substrates like Zerodur, quartz, and optical glass there are HASTILITE's RS and RS-1, concentrated rare earth oxide-based compounds with uniform particle size, inherent, natural suspension, and yielding higher removal rates. RS-1 is ideal for pitch polishing where foaming action is desired. UPI's SUPERPOLISH, a virtually pure cerium oxide, was developed for extreme precision polishing applications, solely to deliver incomparable surface quality. In addition, UPI offers a comprehensive line of precision polishing compounds, with advanced formulations for cerium and rare earth oxides, colloidal silica, aluminum oxide, natural and man-made diamond, along with a distinctive collection of polishes for Nano processing. Each with properties uniquely suited to match a wide variety of polishing requirements for nearly all surfacing applications.

NEW DIGITAL MACHINING CENTERS

HAAS Automation, known for an extensive line of computer controlled machining centers, now counts UPI among their satisfied customers. With the purchase of two systems, a horizontal lathe and a vertical milling system, UPI will concentrate on molds and other optical tools used during in-house manufacture. Phase II transitions traditional machine shop manufacturing to computer controlled machines. Once the conversion program is complete, any tool previously manufactured will be stored digitally. Easy access to digital programming on the new machines will make manufacture of new tools and/or remakes, a quicker and more accurate process, resulting in faster delivery to the customer.