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OptoSigma: 'Our High Tech is Our High Touch'

SANTA ANA, Calif., Dec. 1, 2006 - Optical thin-film coating specialist OptoSigma Corp. has invested money in a lot of new technologies over its 11-year history, but an automated phone system isn't one of them.

"Our people are our best-kept secret," said Sales Manager Michelle Young. "We know what it's like to get transferred five times and enter the phone system 'black hole,' or you e-mail someone and they never get back to you or no one ever calls you. Here at OptoSigma, a live voice connects the customer to another live voice, and we get back to a customer within 24 hours of an e-mail or message. We feel our customers' sense of urgency ... that is how we offer great customer support, by being there for our customers with the resources they need when they need them."

OptoSigma is "small but mighty and growing," Young said. The premier supplier of precision optics and hardware is a part of the Sigma Koki Manufacturing Group of seven global manufacturing facilities which employs 400 globally, with 25 workers located at its Santa Ana headquarters. The company's primary manufacturing is done in Japan, while custom design work and global catalog component distribution is handled from Santa Ana.

"We started in research and development for universities and labs as we showed ourselves as a primary source for optical components," Young said. "Now our top 50 customers are OEM, with biomedical companies leading the top 20."



The OptoSigma team at company headquarters in Santa Ana, Calif.

Company History

OptoSigma was founded in 1995 as a joint venture between several industry veterans and Japan-based parent company Sigma Koki. It was founded on the basic principle of providing the best service and product value in the industry.

The headquarters in Santa Ana distributes its catalog products -- including optical components, thin-film coatings, optomechanical components and manual and motorized positioning stages -- and manufactures custom coatings and custom optical assembly work. Its coatings are produced in a cleanroom with six class-100 assembly flow booths.

OptoSigma's highest performance thin-film optical coatings are manufactured in its computer-

controlled ion-assisted deposition (IAD) and advanced plasma source ion-assist deposition (APS) chambers in Santa Ana. Optics are also fabricated and coated at its Sigma Koki facility in Japan. Volume throughput and Japanese manufacturing techniques provide high quality, low-cost coated optics for most catalog and OEM applications.

OptoSigma's 2006 catalog features over 400 pages of products.

The company began modestly, with its first catalog in 1995 being 152 pages. Today, its 2006 catalog, the company's fifth, is over 400 pages. The company has 18 international distributors to assist OptoSigma customers throughout Europe, Canada and Asia; the bulk of its business is OEM laser applications, including universities and labs.

"After the telecom bubble burst in 2001, we decided to take a hard turn and go after biomedical business and the up-and-coming business of security-defense," Young said. "Semiconductor was also taking a downturn and our biomed business started to soar, as did the defense and homeland security industry."

OptoSigma invested in some very sophisticated equipment to attract those customers, such as advanced plasma source coating equipment and a class-1000 cleanroom coating environment.

"When other companies were hanging back, waiting for something to happen, we invested in technology, coatings and optical assembly equipment. We became very aggressive when others decided to sell everything on eBay," she said. "That's the upside to being small and lean, in both horizontal and vertical markets."

The Experts Behind the Business

Mechanical engineer Clayton Summers has been with OptoSigma for two years, having formerly worked for Melles Griot and Newport Corp. "Basically what we try and do is provide customers with what they need to use our products in a wide variety of applications," he said.

Often he will have to help a customer who knows what he wants to achieve, but not know exactly what equipment he needs to accomplish it.



OptoSigma's motorized version of the TSD extended contact stage.

"We provide components to a wide span of industry, which means a wide variety of OptoSigma customer. The company's vast product catalog and the wide range of applications for its products means we provide solutions for everything from mechanical design and programming to motorizing product electronics and coating tooling for specialized coatings," Summers said.

"As with the larger companies, there are fewer opportunities to engage one-on-one with a design engineer from the beginning of the project. Since engaging with engineers is 60 percent of my work here at OptoSigma, it is a mutually beneficial experience."

Summers has visited the Sigma Koki optomechanical product manufacturing facilities in Japan and speaks very highly of the process for which the Japanese pride themselves. "The products speak for themselves," Summers said. "Unique, rigid, low-profile, robust and consistent. The process is very consistent -- that is part of their success for over 25 years."



An Industry Exclusive

The company's "secret weapon" is, and has been for the past eight years, its high-performance TSD extended contact stages, used for any precision application, such as positioning components in a laser path. The TSD can help an engineer to adjust the focus of a lens very precisely when used with laser applications, as an example. Made of hardened tool steel and with very few moving parts, they are very low-profile, precise and rugged.

OptoSigma's stainless steel TSD extended contact stages are vacuum chamber-ready.

Dan Denison, western regional sales manager, said that one customer says that during lasing applications, if the stage is tapped, the laser beam is not interrupted by the vibration from tapping the stage. That is a great feature. "We have people looking for a stage because they're designing something new or replacing an old or obsolete product. Our TSD stages are very unique. Once they try these, they never use anything else," Denison said.

"The vacuum-compatible TSD stages, used in ultraclean environments, are vacuum-ready right out of the box. The micrometers have no paint -- they come ready to go in vacuum chambers," Summers said.



OptoSigma's 'Speciality'

OptoSigma's specialty is its custom optical coatings. The company has made significant investments -- including creating a class-1000 cleanroom environment for cleaning, loading and inspecting optics - - and can now offer high-performance coatings from 190 nm to 3 μ m. While that is impressive, "The key to a good coating company is, once again, the people, and here, they stay. The same people that started our successful coating operation are still embedded in our coating department," Young said.



OptoSigma's advanced IAD and advanced plasma source (APS) coating facility in Santa Ana is able to supply customers with high performance laser coatings covering the optical spectrum from 190 to 3000 nm.

That consistency alongside of talent and chamber capability means a customer can come back after a project may have been shelved -- sometimes years later - - and OptoSigma can pick up where it left off with that exact coating specification, run a couple of calibration runs and be back in action on their project.

"We archive spectral plots, theoretical curves, witness samples and data from every single production run since we opened in 1995," Young said.

Having a small group of people involved in the custom design work means customers deal with the same people all through the process, Young said.

"Many times it is a collaboration between our senior optical engineer, our coating manager, our senior mechanical engineer and of course the customer, who is usually an engineer, or a group of engineers, to conference call on the details and move forward on the solutions. The 'sense of urgency' is the way we like to work with each and every customer. Our technical sales account managers, formerly of Melles Griot sales -- Alex Mora and Brad Kaup -- contact customers by e-mail

or phone within 24 hours. They let customers know any news, good or bad," Young said.

"Either way, our communication with the customer is key," said Kaup. "They like to know what the status of an order is, and we let them know. I work proactively to provide customers with tools to assist their procurement, including spreadsheets updated bimonthly for purchasing agents to have a complete visibility of their activity."

Sometimes the company's optical engineer Andrew Clawson works closely with the customer design engineer and OS coating department to "develop" a completely new coating to satisfy a customer's needs.

OptoSigma's antireflective coatings are just one of the high performance optical coatings it offers.

"We keep the R&D expenses down while developing a new coating for the customer with the goal in mind to create a repeatable, manufacturable coating. This has been an excellent strategy for us so far and we continue to create excellent, priority coatings for our customers."

Sometimes helping a customer involves creating an optic at the 11th hour to fix another manufacturer's mistake. Making the Herculean effort to produce the concave lenses needed with the correct focal lengths created a customer who has been loyal ever since, Young said. That is music to the ears of a company that knows its survival depends on excellent delivery, repeatability and at the right price.



Asked what is one of the best parts of their jobs, often mentioned by OptoSigma workers is the "close-knit family atmosphere" found in the Santa Ana headquarters, with many employees considered veterans of the facility.

"We have a really great crack team," Young said.

The Future

OptoSigma is actively investing in its future to give the company greater visibility in the domestic US and international distribution by 2010.



"I see OptoSigma as a company that can continue to grow in the same manner as it has from the beginning," said Steve McNamee, chief operation officer. "The philosophy behind the successful growth of our business has been communication. We pride ourselves on listening to what our customers ask for. There are many companies in our industry who think that they know what customers want and manufacture products only to find out that they missed the mark. Our philosophy is...listen...and provide the customer with products that meet their requirements and needs. By providing people what they are asking for, we create a partnership that is long lasting and mutually beneficial."

OptoSigma has the expertise, manufacturing resources and the desire to work closely to determine and provide product to the specifications necessary. The company's optical and mechanical engineers work with customers throughout the design, development, prototype and production process and say "We fully enjoy this unique experience each and every day."

For more information, visit: www.optosigma.com; or visit OptoSigma at Photonics West 2007 in San Jose, Calif., from Jan. 23-25 at booth 1106.

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