

With a Broad Range of Customers from Aerial Mapping Companies to Healthcare, ASE Optics is providing the Optical Engineering Support that allows their Products to Work

Optical Engineering

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Chris Cotton
President

BIO:

Christopher Cotton is General Manager and founder of ASE Optics and co-founder of Lumetrics, an inspection instrumentation company. Mr. Cotton has over twenty years of experience in optical system design and analysis with a specialty in laser optics. Christopher Cotton led the creation and growth of ASE Optics, its entry into new markets like biotechnology, and the company's acquisition by Rochester Precision Optics. Mr. Cotton has worked with customers to design and engineer lenses and optical systems for aerial applications, pharmaceutical quality assurance,

commercial applications, and many others. Prior to founding ASE Optics, Mr. Cotton worked for eight years as a research engineer at the University of Rochester Laboratory for Laser Energetics. Mr. Cotton has an MS in Optics from University of Rochester (1990), and he is the author of numerous patents, articles, and scientific papers.

About ASE Optics:

ASE Optics, an RPO Company, is an engineering services firm based in Rochester, NY. We founded ASE Optics in 1994 to provide optical engineering support for companies who cannot find, cannot afford, or cannot justify having an optical engineer on staff.

**Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine**

CEOCFO: Mr. Cotton, what is ASE Optics?

Mr. Cotton: ASE Optics is a contract engineering services firm. We provide optical engineering and optical engineering support for companies that cannot afford to have an optical engineer on hand or need specialized engineering talent to speed their time to market. Since optical engineers are in fairly short supply, we can work directly with their team on their project. We have a much larger team than a single person, so we have a very wide variety of skill sets. Optical engineering is not just lens design or figuring out how to get light into a fiber, there is a lot more to it. We are concerned with the production of light and con-

trolling the light for illumination. We are involved in controlling what happened to that light before it gets to a sample. We are involved with taking the light from the sample to some sort of sensor, which could be an electronic device or the eye. We are interested in making sure that an image is correct. After the information is taken from the sensor, quite often we have been asked to help with the image analysis to make the images as correct as we can after the sensor has taken the information.

CEOCFO: What types of companies would be your typical clients?

Mr. Cotton: There is a wide variety. Our best customers are companies where their core business relies on optics but optics is not their core business, a medical company where they are doing an optical measurement of some kind of fluid where they know everything about the fluid and they know about how the light drags through the fluid, but they do not know how to move the light correctly to interact with the fluid and then collect the data afterwards. In another example, we helped an aerial mapping company interested in taking that data and extracting the mapping data from it. They needed optics to capture the images. We do the optics part of capturing the images.

CEOCFO: What is the competitive landscape?

Mr. Cotton: For ASE, it is unusual; we do not see many competitors who have the capabilities that we have. Many of our competitors are more interested in just designing and building a lens. We are unique in that we

can provide the engineering, then build the prototypes and then help them into production. We do not have to be the one to provide the manufacturing, but we would like to. We do not have very many competitors that are able to handle the whole system, meaning going from the light source all the way to the information coming out of the computer. Those are the two ways that we differentiate, one being that we can do the entire system, not just a component of it, and that we can then actually build a prototype and move it into production.

CEOCFO: How do people know about ASE?

Mr. Cotton: Originally, we relied on word-of-mouth from our current customers, which was a good way of working when we were in the early stages and did not have very many good stories to tell. Now that we have many good stories tell we find that the internet is a very good way of getting our stories out. We have a large website with a lot of useful resources for our customers. We continue to get a great deal of referrals and ongoing business, but are very pleased with inbound requests.

CEOCFO: Would you tell us about the new facility?

Mr. Cotton: We were acquired by Rochester Precision Optics in January 2011. They saw us as a very good front-end development company that will be able to develop products for them internally as well as develop products that they can build, which helps customers move quickly to production. As part of our acquisition, they decided to also expand their building, doubling our clean room facilities for assembly, development labs and metrology capabilities. Moving into the new facility, we have everything all within very short walking distance, which is very convenient and has improved our communication within the company.

CEOCFO: Are you expanding into Europe as well?

Mr. Cotton: Yes we are! We have opened an engineering services office

in Barcelona, allowing us to serve European customers. Andres Cifuentes, Director of ASE Optics Europe, came to us about a year ago with the idea that he would like to open up an office in Europe and after many discussions, we decided that would be a very good idea. He is our representative in Europe, but he is also an optical engineer and is able to do projects on his own over there and sell our services over there. He uses us to provide him extra support, so he is not a single consultant just out there trying to make his way. He has a group of twelve people behind him that can provide mechanical engineering, electrical engineering, higher levels of optical engineering, and provide him with the capabilities of providing manufacturing and prototypes as well as production if customers wish.

CEOCFO: Do many of your customers turn to you for production or is that

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less common than you would like?

Mr. Cotton: It is always less common than we would like. It has happened a number of times where we have done production, usually for small volumes. We are talking with one of our customers right now to move that into a thousand pieces per month quantity. We are probably going to start where ASE Optics is going to handle the first month, making sure that it is all done the way that we need it to be done. Then we are going to move it to RPO so that they can manage it with their ISO-9000 system for quality. They have the material-handling support, incoming inspection support and everything to make it run smoothly.

CEOCFO: What surprised you most as the business has developed?

Mr. Cotton: I would say that some people really know what they want and they are very easy to work with. Other people really think they know what they want. It is much more diffi-

cult for us to create a relationship with those companies. We can best help them through our discovery service, which is where we provide twenty hours of engineering for \$1,950. The way that works is that during that first twenty hours, we can get a very good idea of what the customer really wants by getting a better idea as to their

specifications and requirements as well as any project blind spots. Many times when people come to us with a problem, they do not know what all the problems are, so part of the discovery is that they get to discover what problems need solving during the next phases. It works really well to develop relationships with customers because we get to understand them, how they work and what they need. They get to understand us and how we work, to see the quality of work that we are providing without spending a ton of money. Many people are concerned with hiring a consultant,

then they get their first consulting bill, and they do not know what they got for it. We try to avoid that by making sure that at the end of the twenty hours, we provide a report, and if the project needs more work, we will provide schedule and a budget for what we think needs to happen going forward.

CEOCFO: Given it is hard to find people in your industry, what do you look for when you are hiring people? Does the technical skill surpass everything else?

Mr. Cotton: The technical does not surpass everything. It is not as much the ability to communicate with customers as the ability to communicate and work well with others because if you can work well with others in your own surroundings, then you can work well with the customers because we consider ourselves to be part of our customers' companies. For us, it is very important that our employees do not just look at what they are doing as just a job; they look at it as what they are doing is a service. Payment comes to us if we do that service correctly. It is very different from saying I am coming to work and getting a pay-

check—there is something missing from the middle there. That is a very important part of it and how people work well within our organization.

CEOCFO: Why should the business and investment community pay attention to ASE Optics?

Mr. Cotton: We are not a company where people are going to invest. Services companies should never need investment. If they are not making money with providing service then they probably should not be in business. People should pay attention to

us because we are pushing forward and doing innovative things. People talk about how to drive innovation, it is something that you have to create in the culture of the company and we spent a great amount of time and effort and experimentation within the company in order to create a culture that provides the opportunity for employees to be innovative in their solutions and be empowered to move ahead. People are going to see many more products that we are developing from some really interesting companies. It is amusing to me that all the

time that we are working on a project, we are under a non-disclosure agreement. We cannot tell you what we have done, if I could, you would say that you had seen it on CNN or the ESPN. We have had a number of products that have been successful. We worked with our customers and they had successes and things that we have built were shown on national TV, but we cannot tell you what those things are. It is very difficult for us to toot our own horn because of that.



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