

The Lumonics Group of Companies

**Annual
Report
1984**



**Creativity Through Independence
Strength Through Unity**

Highlights 1984

The Lumonics Group

- 69% increase in sales and 76% in earnings following 56% and 54% increases in 1983.
- 89% increase in new orders following 55% in 1983.
- The addition of Laser Identification Systems, Inc. of Camarillo, CA. in March 1984, to the Lumonics Group.
- New facilities and additions completed in Rugby, UK, Camarillo, CA. and Tempe, AZ.
- Delivery in July of the 1000th LaserMark® system.
- Introduction of new variable speed models of the Lumonics LaserMark system bringing the number of models available to four.
- Introduction of the new model HyperEX, HyperDYE and HyperYAG scientific lasers.
- Shipment of the first 40 M-Tec 2000 ophthalmic YAG laser surgical systems.
- Introduction by JK Lasers of the IMS-500 Integrated Laser Machining Centre and MS800 Series higher powered material processing lasers.

5-Year Financial Summary (thousands of Canadian dollars)

	1984	1983	1982	1981	1980
Operating results:					
Sales	\$38,430	\$22,778	\$14,607	\$ 9,088	\$ 7,357
Net earnings	5,732	3,262	2,119	1,520	1,037
Earnings per share* (dollars)	.70	.42	.35	.28	.23
Research and development gross spending	4,744	3,049	2,863	1,770	940
Financial data:					
Working capital	25,454	25,217	12,037	9,466	8,188
Current ratio	3.9:1	6.3:1	4.7:1	4.9:1	8.9:1
Fixed assets-net	9,839	4,489	4,088	2,109	2,140
Shareholders equity	44,989	35,527	22,160	11,648	10,128
Share data:*					
Average number of outstanding common shares (thousands)	8,140	7,826	6,072	5,382	4,512

*After giving retroactive effect to 2 for 1 stock splits on July 10, 1980 and December 19, 1983.

Company Profile

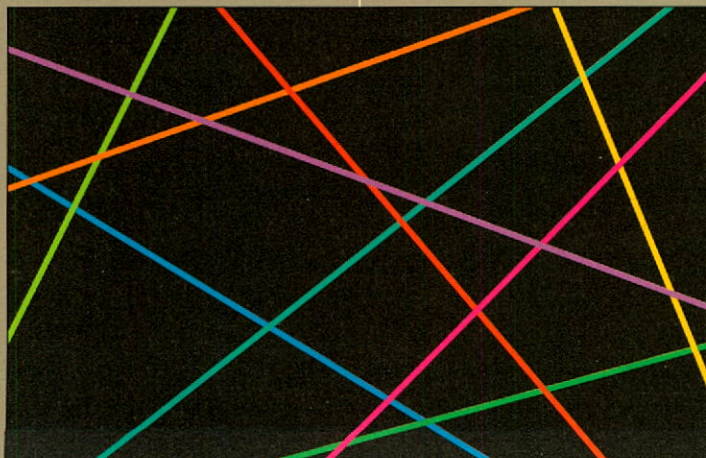
Lumonics Inc. is a multi-national public corporation offering a variety of lasers and laser systems for marking, materials processing, scientific and medical applications.

Founded in 1970, Lumonics is now the third largest manufacturer of commercial laser-based products in the world.

Organizationally, Lumonics is a group of independent companies. Each member company

operates in an independent, entrepreneurial style, while co-operating for mutual benefit with other companies in the Group on marketing and technology interchange.

Lumonics stock is traded on the Toronto Stock Exchange under the symbol LUM.



Front cover and opposite: The structure shown in the hologram on the cover and the opposite page symbolizes the organization of the Lumonics Group. Each member company operates as an independent entity with frequent and in-depth exchange of ideas, intelligence and council with the other members. The holographic image on the cover was photographed using a laser and is best viewed in direct light.



Above:
Lumonics Inc.,
Corporate Office
(1985 Expansion)








Right, top to bottom:
Lumonics Inc.,
Kanata Operations

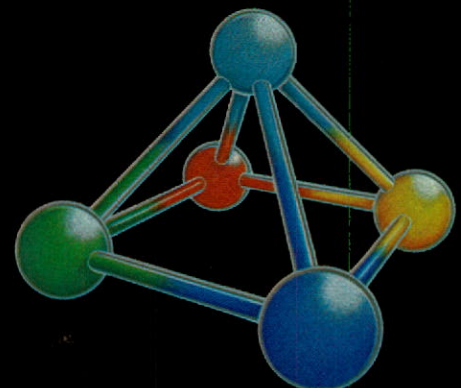
Lumonics Corporation,
Tempe, Arizona

JK Lasers Limited,
Rugby, England

Laser Identification Systems, Inc.,
Camarillo, California

The Lumonics Group

-  Corporate Office
-  Lumonics Inc.
-  Lumonics Corporation
-  JK Lasers Limited
-  Laser Identification Systems, Inc.



Report to Shareholders

The Lumonics Group

“The concept of a group of companies operating in an independent, entrepreneurial style, while at the same time cooperating with other member companies for mutual benefit in the areas of marketing and technology, is a major contributing factor to our success.”



Robert J. Atkinson
President and
Chief Executive Officer

Dear Shareholder:

During 1984 your Company demonstrated, once again, its ability to continue on a path of rapid growth.

Net earnings increased 76% to \$5,732,000 or 70¢ per share and sales increased 69% to \$38,430,000. These results are due to a dedicated team approach to providing solutions to customer requirements and problems.



Gordon A. Mauchel
Chairman

Lumonics continued its strong commitment to research and development and the introduction of new and enhanced products. Research and development expenditures during the year amounted to \$4,744,000 or 12% of sales and resulted in the introduction of a number of new products.

These introductions are referred to in the highlights section of this report.

All member companies in the Group reported strong order intake during the year, with the consolidated amount totalling in excess of \$46,000,000. Our backlog of unfilled orders at year end was \$16,862,000, the highest in the history of the Company.

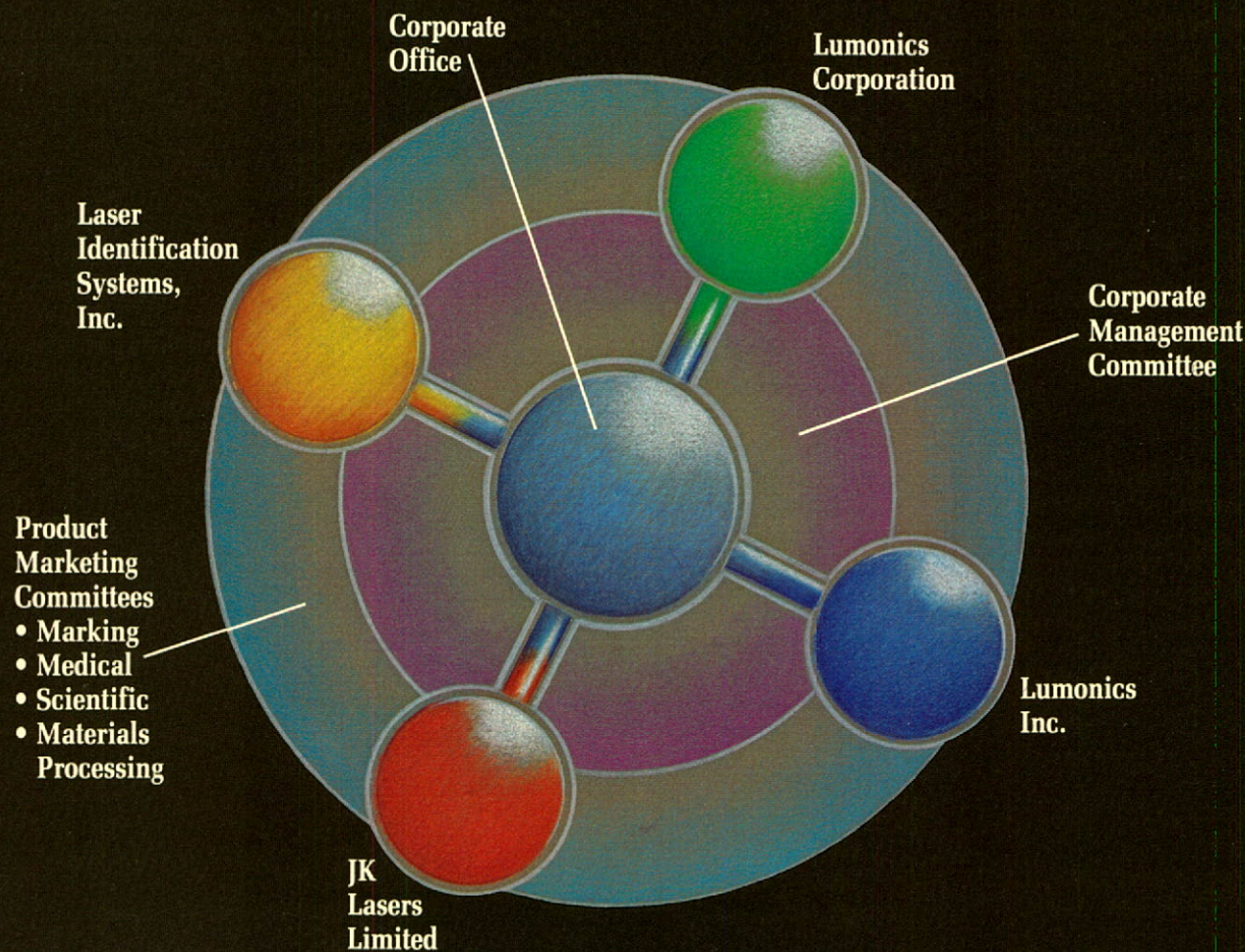
One event that stands out as most significant for Lumonics in 1984, was the addition of Laser Identification Systems, Inc. (LIS) of Camarillo, California, to the Lumonics Group in March. LIS is a world leader in the manufacture of solid-state laser systems for the marking of semiconductor wafers. The company also markets such systems for general applications in the marking of bare metals and plastics.

Their products compliment Lumonics' LaserMark products, which are not used for marking wafers or bare metals.

It is gratifying to note that LIS turned in a record performance during 1984 and that their contribution to the Group in terms of sales and earnings exceeded expectations. All other member companies in the Lumonics Group also experienced high growth in both sales and profits during 1984.

One frustration last year was the ongoing delay in obtaining approval from the U.S. Food and Drug Administration for our distributor, Medical Lasers, Inc., to fully market our M-Tec 2000 laser surgical system. We are advised that as of this writing, the delay is procedural only and that approval should be granted in early 1985. Delays beyond that time, how-

Management Organization and Committee Infra-structure



Report to Shareholders

ever, could begin to have an adverse affect on our market entry and the investment made to date.

This year's Annual Report provides an overview of each of our member companies and highlights the benefits of the Lumonics Group concept. In addition, a recently prepared corporate brochure, further describing the Lumonics Group, its products and market segments, is enclosed with your Annual Report.

In a fast growing environment, change is both necessary, constant and inevitable. During 1984 we continued our past practice of strengthening the overall organization through the hiring of experienced key personnel, as well as effecting internal promotions and employee transfers to other positions within the Group.

To ensure a corporate perspective in the research and development area, Dr. Jim Wright was appointed to the position of Vice-President Product Development. In this position Jim will assume a leadership role in the overall determination and coordination of corporate product strategy and its execution. Jim will also continue as Chairman of JK Lasers Limited.

Further strengthening of our management team was carried out during the year with the promotion of Mr. Doug James to the position of Managing Director, JK Lasers Limited in Rugby, England. Doug, formerly Vice President and General Manager of Kanata Operations, joined Lumonics in 1976. Mr. Bill Steadman, who brings 25 years of broad business experience to the Group, has replaced Doug at Kanata.

In addition, the rapid growth of our U.S. subsidiary, Lumonics Corporation, has resulted in the promotion of Mr. Scott Nix to the position of Vice-President and General Manager of this operation.

The concept of the Lumonics Group, i.e. companies operating in an independent, entrepreneurial style, while at the same time cooperating with other member companies for mutual benefit in the areas of marketing and technology, is a major contributing factor to our success. This group operating style, combined with overall company policies and philosophies, is responsible for our accelerated growth over the past few years and our strong position in the laser marketplace.

The Company continues to look for companies to join the Lumonics Group, which will

bring compatible products and operating style and strengthen our overall position in the laser marketplace.

Today your Company is a multi-national corporation offering a variety of lasers and laser systems for scientific, industrial and medical applications, operating out of seven different countries and employing nearly 400 people.

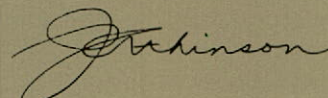
We feel very confident that Lumonics will continue to experience profitable growth in the coming years, given a continuation of the strong economic recovery. We expect our quarterly profit performance in 1985 to follow a similar pattern to past years, with a significant part of the growth taking place in the latter half of the year. We are budgeting for 1985 profit margins close to our historical levels. However, we are always cognizant of competition and should it intensify, margins could soften as we protect our market share.

In closing, we would like to express our thanks and to extend best wishes to Al Buchanan who, after 14 years, retired as Chairman of Lumonics on December 31st. His departure completed a plan, which commenced in 1981, of an orderly transfer of manage-

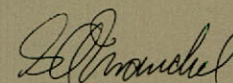
ment responsibilities and a gradual phasing down of his involvement in Lumonics. Although we will miss him as a colleague, we will still see him regularly in his capacity as an outside member of the Board of Directors of the Company.

Finally, a special thank you is extended to all our employees, Directors, customers and suppliers for their invaluable support.

Sincerely,



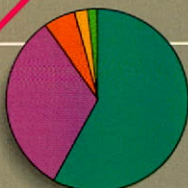
R.J. Atkinson,
President and C.E.O.



G.A. Mauchel,
Chairman

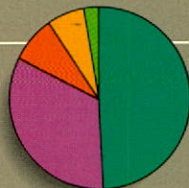
Sales

1983



Product Mix

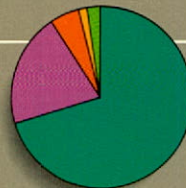
- Industrial 58.6%
- Scientific 32.4%
- Medical 5.7%
- Contract R&D 1.8%
- Other 1.5%



Geographical Base

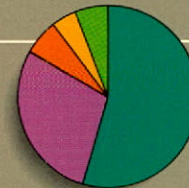
- United States 49.7%
- Europe 33.9%
- Japan 8.0%
- Canada 6.5%
- Other 1.9%

1984



Product Mix

- Industrial 71.2%
- Scientific 20.7%
- Medical 5.6%
- Contract R&D .3%
- Other 2.2%



Geographical Base

- United States 55.9%
- Europe 27.9%
- Japan 6.6%
- Canada 4.3%
- Other 5.3%

Lumonics Inc.

“As one of the founding members of the Group, we have participated in such major joint efforts as the introduction of our first medical system.

This is one perfect example of how the cooperative efforts of two independent members of the group have resulted in great success.

The Lumonics Group fosters this kind of activity.”



Douglas J. James
Vice President, Lumonics Inc. and
General Manager (Kanata Operations)*

Kanata operations of Lumonics Inc. comprises manufacturing, research and engineering, marketing, sales and service, as well as the usual administrative functions. It is the product centre for all gas lasers (CO₂, HF and excimer) within the corporation and, in addition, has responsibility for the development and manufacture of medical systems and dye lasers. As such we have a large, highly qualified technical staff with extensive expertise and experience in these technologies.

Operations are located in a 50,000-square-foot facility situated on 11 acres of company-owned land in Kanata, a pleasant city 20 km west of Ottawa. In view of our high growth, this facility is currently being

expanded by 25,000 square feet to house additional manufacturing, research and engineering, and administration. The Kanata facility also contains the Corporate Office.

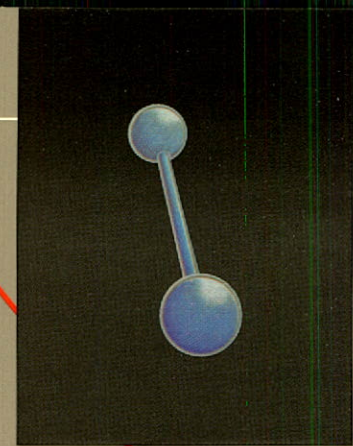
One of the major highlights of 1984 was the shipment of the 1000th LaserMark system, an event which was celebrated by the whole Kanata work force.

During the year, net R&D expenditure increased by 45%. Major developments included the HyperEx and HyperDye Series of lasers, which apart from offering significant advances in laser performance, also incorporate sophisticated micro-processor controllers. This offers a new dimension to our customers in terms of ease of use, programmability and

compatibility with other computer systems. These products which were introduced at the Conference on Lasers and Electro-Optics (CLEO) in Anaheim, California last June, have been well received by our customers. The HyperEx Series, while satisfying the enhanced demands of research customers, also offers many features designed to appeal to industrial users.

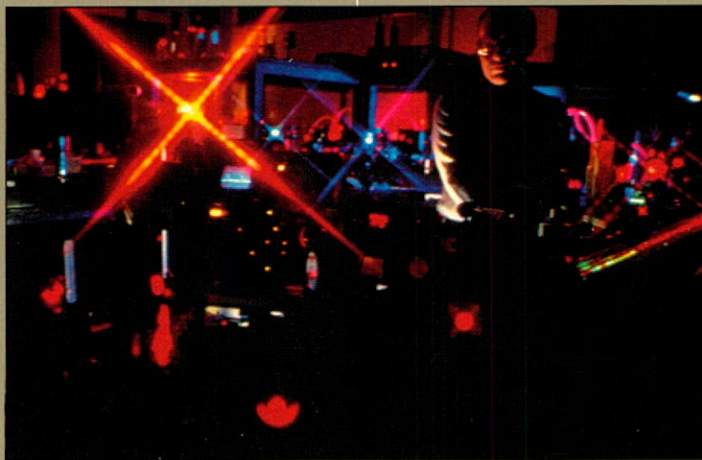
LaserMark R&D concentrated on the development of fully engineered modules to extend the range of applications of this marking technique, particularly in the area of programmable marking and bar coding. These products were exhibited at a number of key industrial trade shows and were well received.

In manufacturing, we continued our programme of intro-

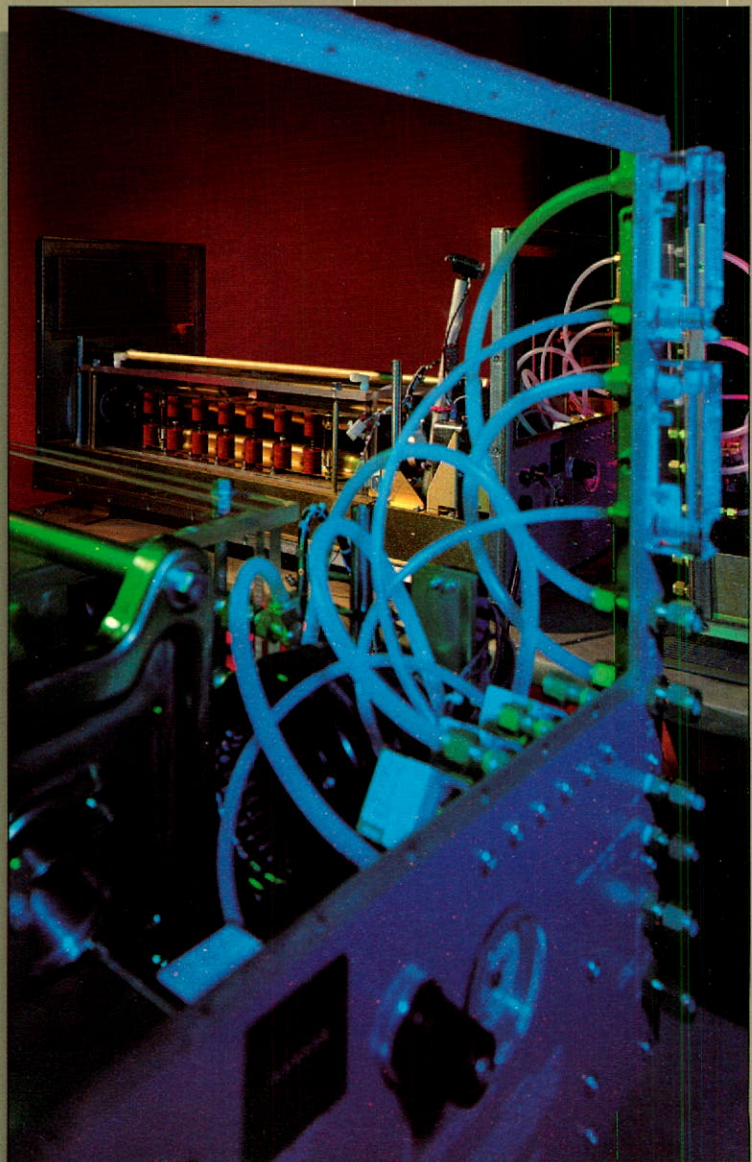


ducing semi-automatic equipment for electronics assembly as well as enhancing further the MIS system developed at Kanata. The assembly of M-Tec 2000 ophthalmological systems was also integrated into our manufacturing capability.

Overall, it was an exciting year, in which we not only achieved excellent results, but also devoted considerable effort to ensuring future success by investing heavily in technology and people.



Above:
A Lumonics Excimer laser in use by Doctor Paul Corkum at the National Research Council, Ottawa, as an amplifier for ultra-short picoseconds pulses.



Right:
LaserMark production assembly area.

*Executive January 1985
Vice President, Lumonics Inc. and
Managing Director, JK Lasers Limited

Lumonics Corporation

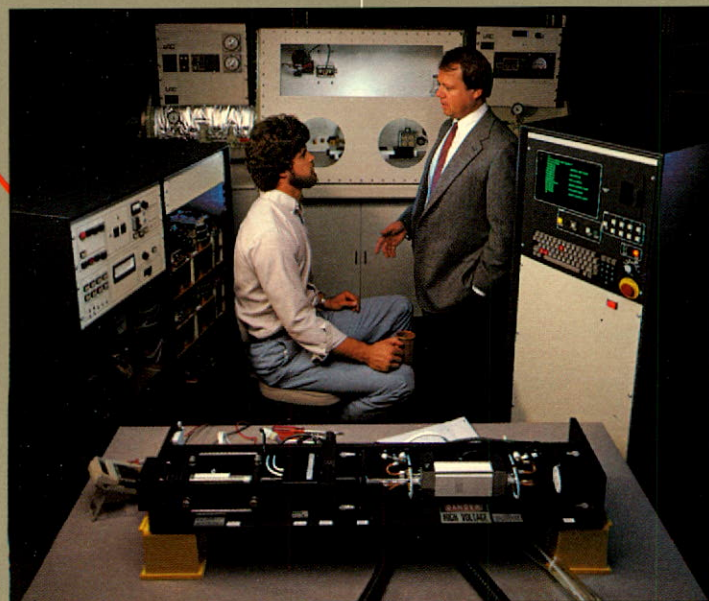
“The transfer of several key Lumonics employees from Kanata operations to Tempe gave the new subsidiary a nucleus of capability. This sharing of expertise is just one of many benefits derived from membership in the Group.”

Scott Nix
Vice President and General Manager
Lumonics Corporation



The rapid growth of the LaserMark product line, fueled by the cost effectiveness of utilizing a LaserMark system as opposed to conventional marking methods, created a need for a strong engineering and cus-

tomers support presence within the U.S. The Company took this opportunity to implement its pre-established strategy of a U.S. operation and set up Lumonics Corporation in Tempe, Arizona.



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Lumonics Corporation, incorporated in January of 1982, was established to be the focus of activity for the LaserMark product line in the American market. Operations commenced in August of 1982 with shipment of the first U.S. engineered LaserMark systems. From the beginning, the subsidiary proved to be a profitable entity.

When Lumonics Inc. acquired JK Lasers Limited in 1982, it was decided to make U.S. sales

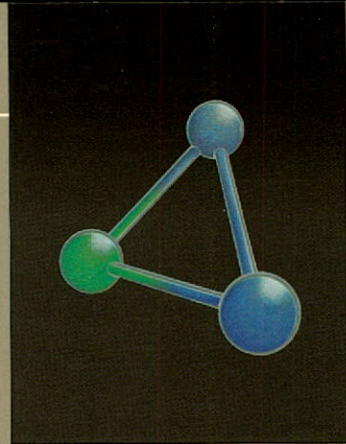
of the JK line of industrial Nd:YAG lasers the responsibility of Lumonics Corporation. The ability to sell JK Lasers industrial products is heavily dependent upon the quality of the technical support provided to the customer. Lumonics Corporation, with its technical support capability for the LaserMark product line, was ideally suited to accommodate the JK Lasers products. Key marketing, engineering and service support personnel were added. The Applications Laboratory was expanded to accommodate JK Lasers demonstration equipment.

The very rapid growth of the LaserMark line coupled with the expanding JK Lasers activity placed significant demands on the resources of the company. The physical plant was doubled in size and the number of employees quadrupled. Three new regional sales or service offices have also been opened up in

Indiana, California and South Carolina. These are in addition to the pre-established ones in New York, Chicago, and Los Angeles. Sales and profits have kept pace with this growth.

Lumonics Corporation is a full service company offering marketing, sales, service, application engineering and system design support to the U.S. market. The Tempe based facility continues the Lumonics tradition of very close customer technical support coupled with excellent documentation and professional after-sales service support.

A key action in the maintenance of the Lumonics tradition and approach to business, was the transfer of several key Lumonics employees from Kanata operations to Tempe to



give the new subsidiary a nucleus of capability. These long-term Lumonics employees were able to transfer and implement the Lumonics way of doing things. This gave customers the assurance that the high standards of performance and service they have grown to expect from Lumonics would be continued at the new facility.



Above left:
A controlled atmosphere welding system is undergoing assembly. The system incorporates a JK Laser solid-state Nd: YAG laser (foreground) for producing high quality welds in a nitrogen filled chamber (centre at back of photo).

Above:
LaserMark systems integrated with Ismecca miniature transistor test handlers are being prepared for customer acceptance tests.

JK Lasers Limited

“The ability to be separately identified, and yet still be part of a larger team is viewed by JK as being exciting, stimulating and supportive.”



James K. Wright
Vice President Product Development, Lumonics Inc.
and Chairman, JK Lasers Limited

JK Lasers Limited was founded in 1972 as a private UK company.

Its aim was to develop and commercially exploit the technology of pulsed solid-state lasers. At that time the company was 100% owned by the founding directors who had the appropriate understanding of the basic technology.

Between 1972 and 1981, JK Lasers expanded steadily. Funded entirely by retained profits, it had a turnover in excess of £2 million. By that time over 65% of its output was exported, an achievement which was recognized in 1978 by receipt of the Queen's Award to Industry for Export Achievements.

In 1981, in order to fund further expansion, the company raised half-a-million pounds through a private placement of preference shares with three major institutions and a group of closely controlled private investors. This could have naturally led to a market listing for JK Lasers in the UK. However, in seeking to use this funding to further penetrate North American markets, discussions were entered into

with Lumonics regarding possible cooperation. These discussions culminated in 1982 with the friendly and successful acquisition of JK Lasers by Lumonics, thus starting the concept of the Lumonics Group of Companies.



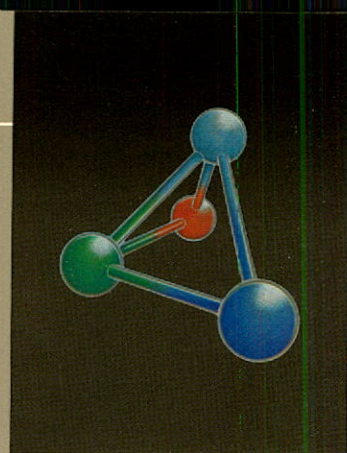
Since that time JK Lasers has more than doubled in terms of sales, profits, people, and operating space. This rapid and successful expansion programme is benefitting from JK membership of the Lumonics Group. In particular,

- Lumonics marketing has helped increase North American sales from 8% to 30% of turnover;

- Corporate finance has funded the new \$3 million facility at Rugby;
- Corporate Office has provided stronger business focus, wise counsel and confidence to do more;
- Interchange of personnel has provided opportunity, experience and help where appropriate.

At the same time JK Lasers is contributing to the Group in the following ways by:

- Providing a stronger and better informed view of the

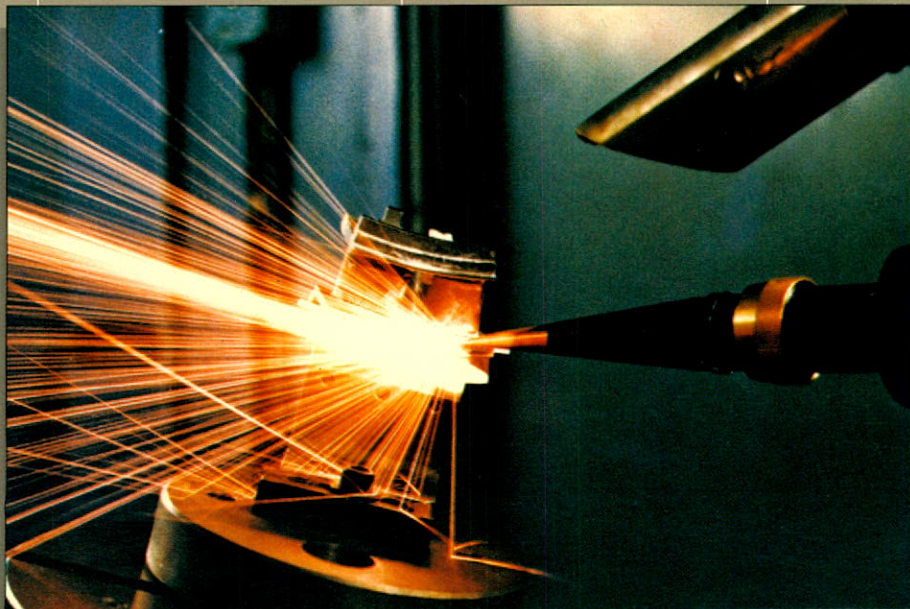


- Participating in determining Group Corporate Policy in terms of marketing, new product developments and acquisitions.

The ability to be separately identified, and yet still be part of a larger team, is viewed at JK Lasers as being exciting, stimulating, and supportive. To quote a recent report by consultants aimed at developing senior talent within JK Lasers: "There is no question that the JK Lasers/Lumonics merger was a 'Marriage made in Heaven' for the management philosophy, value systems, and styles, are highly compatible. Two common threads stand out in the two organizations. One is that people are a critical element to the existence of the organization; and the other is that the organization is dedicated to producing a product which is second to none."

European market from our Market/Sales Offices in Rugby, Brussels, Munich and Paris;

- Contributing the basic laser technology for Lumonics entry into the medical market;
- Offering continuing technical leadership in the application of solid-state lasers to both research and industry;



Above:
Architectural detail of the new JK Lasers facility in Rugby, England.

Left:
Within the work chamber of a CNC controlled laser drilling system, the beam of an MS830 laser trepans high precision holes in a turbine component.

Laser Identification Systems, Inc.

“In the purest meaning of the word, synergistic is the best way to describe the Lumonics/LIS relationship.”

*Philip R. Schmidt
President
Laser Identification Systems, Inc.*



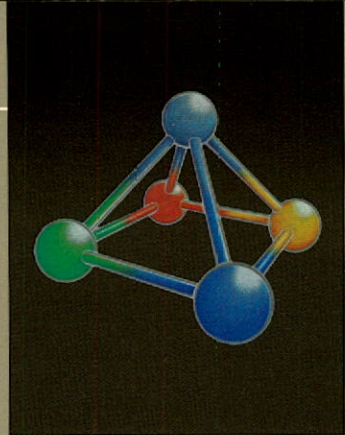
Laser Identification Systems, Inc. (LIS) was founded in 1979 by a group of six individuals possessing many years of experience in the development and marketing of laser systems for the industrial marketplace. By 1979, “laser marking” had evolved as a very promising application area and

undisputed leader in silicon wafer marking technology. Our wafer marking equipment is installed in nearly every major semiconductor manufacturing plant in the world.

LIS, located in Camarillo, California, occupies a new 23,000-square-foot facility and currently employs 55 people. In the U.S., products are sold and serviced through a network of regional LIS offices and manufacturers’ representatives. Dis-

tributors are used in Europe, Japan and Southeast Asia.

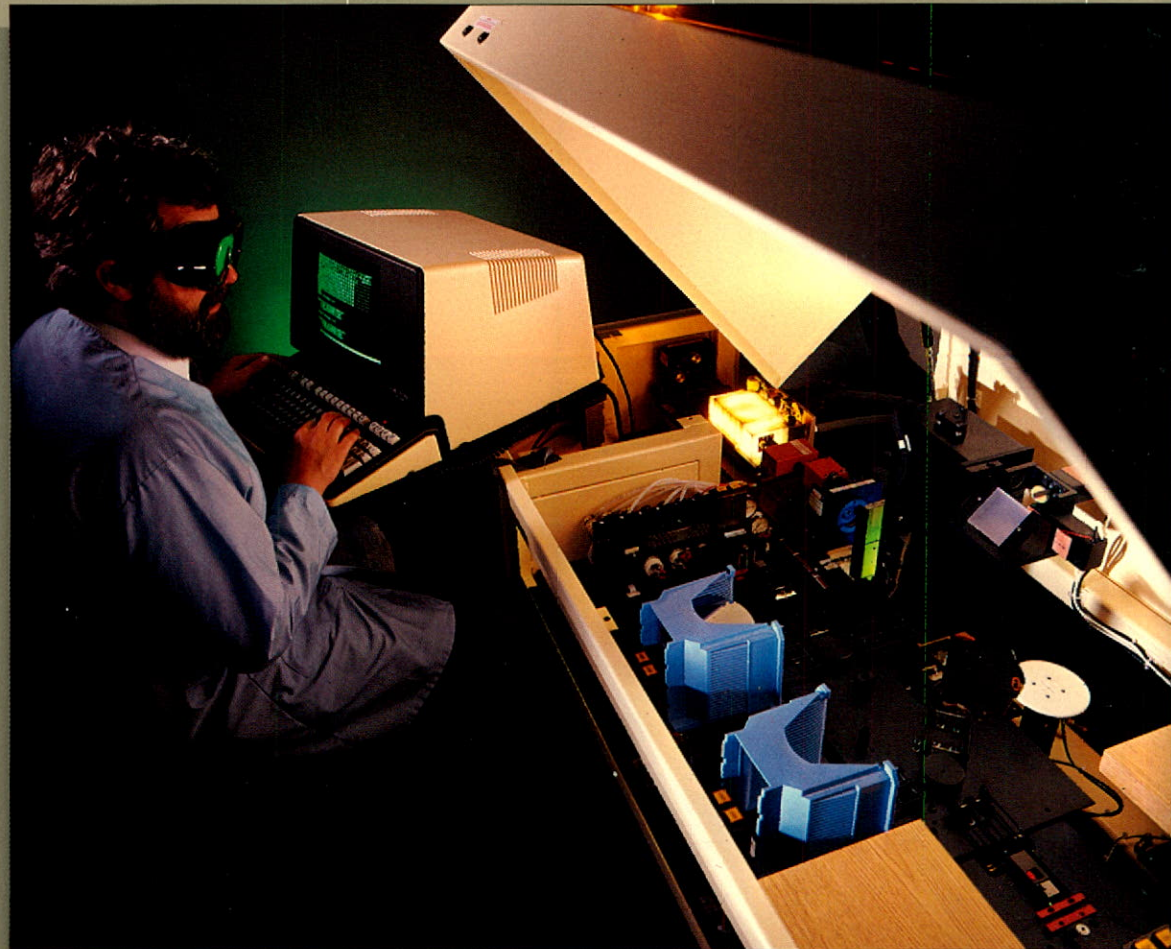
In March of 1984, LIS became a member of the Lumonics Group of Companies. There was a desire, on the part of both LIS and Lumonics, to be in a position to explore and develop a full range of marking applications for both the YAG laser used by LIS and the CO₂ laser incorporated in Lumonics LaserMark. This desire in combination with agreement by the managements of both companies that our corporate cultures and management philosophies were consistent, paved the way for the new Lumonics/LIS relationship. An excellent inter-company working relationship has quickly evolved between



individuals in the marketing and sales areas. This has already led to the development of some new strategies regarding the pursuit of various industrial laser marking applications. In the purest meaning of the word, synergistic is the best way to describe the Lumonics/LIS relationship.



LIS founders decided to build a company based on dedication to that single application. Furthermore, it was decided that the company would concentrate, at least initially, on only one laser marking application, namely semiconductor wafer marking. That dedicated effort to develop and market our WaferMark system has clearly paid off. LIS is seen by the semiconductor industry as the



*Above left:
Actual time exposure of a LightWriter PC system marking aluminum. LightWriter PC’s computer-controlled optics steer the laser beam to make it “write” its own name.*

*Above:
Technician puts a WaferMark 345 system through its final pre-delivery tests. The blue cassettes contain silicon wafers which the system marks.*

Lumonics Scientific

1984 saw continued growth in the sales of excimer lasers, particularly to the emerging semiconductor processing market. To address this market, a major new model series, the HyperEx-400, featuring higher power and automatic controls, was introduced in mid-year. Customer acceptance particularly from Japanese semiconductor companies has been very high.

Simultaneously, a new pulsed dye laser, HyperDYE-300, was also announced with good response from the scientific customers.

We took the world's best excimer laser and made it better.

Announcing the HyperEX-400

Lasers for Research & Industry
LUMONICS

HyperEX-400 Ad
Launching our new HyperEX-400 excimer laser, the advertisement stresses that the design is based on well-proven, reliable technology, but augmented with higher power and more sophisticated control functions of particular interest to potential industrial users.

Simply the best dye laser for your research

Announcing the HyperDYE-300

Lasers for Research & Industry
LUMONICS

HyperDYE-300 Ad
This advertisement introduced our new HyperDYE-300 pulsed dye laser, designed as an easy-to-use, versatile general purpose instrument. Applications include photochemistry and spectroscopy.

Lumonics LaserMark

During July, Lumonics delivered its 1000th LaserMark system and introduced three new Model 930 Series lasers offering a range of marking speeds.

In addition to continued growth in packaging and electronic component marking, LaserMark expanded into new applications such as the "typing" of alphanumerics and bar codes, large area "multiple" marking and integration with integrated circuit testers.

These expanded capabilities assist our customers in achieving their quality control and automation goals.

LASERMARK TOOK THE WORLD'S MOST POPULAR MARKING SYSTEM AND MADE IT BETTER.

930

LASERMARK 930 SERIES

We put the laser into marking
LUMONICS

930 Blueprint Ad
The advertisement launches the expanded and improved 930 Series LaserMark lasers. The 930 Series, now comprising four models, provides varying marking speeds and additional advanced features.

BAR CODE LABELS ARE OUT!

LASERMARK bar coding & alpha numeric marking is in!

We put the laser into marking
LUMONICS

Bar Code Ad
LaserMark is promoting its new bar code marking capability for application in the electronics and pharmaceutical industries. It is anticipated that bar coding will soon become a standard in the institutional pharmaceutical market. Bar coding of printed circuit boards also shows great potential.

JK Lasers

1984 was a record year for bookings of all product lines.

The growth of business in holography was particularly strong showing much promise for the future.

High activity materials processing orders centred on systems based on high average power YAG lasers. During the year, the MS800 Series, with increased average power and additional technical features was introduced and met with immediate customer acceptance, significantly improving JK Lasers already strong position in this important market segment.

WELDING DRILLING CUTTING

We'll make light work of your production problems

Making light work
JK LASERS

Welding, Drilling, Cutting
This ad emphasizes our commitment to the quality and support of our product and stresses its technical excellence. Our investment in people and equipment to develop specific applications and processes for customers, together with our willingness to participate at all levels in bringing applications to production, is an important part of the selling process.

THIS SAYS IT ALL

Our HyperYAG spatial profile is smooth, very smooth.

Pulsed Power for Research
JK LASERS

This says it all
This advertisement stresses the benefits that our new range of HyperYAG lasers brings to their users in the scientific community and presents detailed technical information that supports these claims to a sophisticated customer base.

LIS

1984 saw the introduction of the LightWriter™ PC—our general purpose marking system. The LightWriter PC was designed to operate as a stand-alone marker or as a peripheral device for a host computer. The LightWriter PC can generate permanent marks on a variety of materials including hardened metals, aluminum, carbide, ceramic and many plastics.

Also introduced was SoftMark, a debris-free wafer marking option for our WaferMark Series. SoftMark eliminates debris generation during the marking process and is ideal for the semiconductor device manufacturer.

LightWriter PC
The Versatile Laser Marking System

- Fast non-contact marking
- High PC compatibility
- Advanced production flexibility
- Wide range of materials
- Easy to operate
- Compact footprint

LightWriter PC Data Sheet
The LightWriter PC data sheet provides a general overview of the LightWriter PC features, its marking capabilities, general hardware and software description and facilities information.

We've made a choice for you...
a choice of Wafer Marking Systems that is!

LASER MULTIPROCESSOR SYSTEM, INC.

WaferMark Series Advertisement
The WaferMark Series advertisement highlights the high throughput and product traceability benefits of our wafer marking laser systems. This ad appeared in all of the major semiconductor trade magazines throughout the year.

Financial Review



Richard E. Hall
Secretary and Treasurer

The financial statements are a consolidation of the results of all Lumonics subsidiaries, Lumonics Corporation of Tempe, Arizona, JK Lasers Limited of Rugby, England, and Laser Identification Systems, Inc. of Camarillo, California. The fact that each of these entities contributed to the growth, of yet another record year, demonstrates the synergies of our association. This marks the first year of consolidation of ten months of the operating results of our newest Lumonics Group member, Laser Identification Systems, Inc.

Orders

Orders booked during 1984 at \$46,031,000 were up 89% over the 1983 level of \$24,347,000. There was a 51% increase in the year over year bookings of traditional product lines with all product lines demonstrating growth. Order backlog at December 31, 1984 totalled \$16,862,000—about five months of sales at 1984 levels.

Sales

Record sales of \$38,430,000 were made during 1984 compared to \$22,778,000 in 1983. This was an increase of 69% over 1983 and included a 34% increase in traditional product lines, a favourable U.S. dollar foreign exchange gain and ten months of Laser Identification Systems sales. Shipments increased in all of our business sectors with particularly stronger gains in the industrial product area. The five year compound growth rate in sales is 46%.

Cost of Goods Sold

As a percentage of sales, our cost of goods sold, at \$26,262,000, decreased in the year by 3.8 percentage points to 68% compared to \$16,434,000 and 72% in 1983. This favourable improvement was realized through the efficiencies of volume and a slightly higher margin product mix. This improvement has been achieved despite a growth related increase of 65% in our investment in marketing and general and administrative expenditures.

Gross Profit

Gross profit increased 92% to \$12,168,000 compared to \$6,344,000 in 1983. This was 32% of sales versus 28% last year.

Research and Development

Gross expenditures on research and development of \$4,744,000 for the year represented an increase of \$1,695,000 or 56% over 1983 spending of \$3,049,000. R&D at this level was 12% of sales in 1984 compared to 13% in 1983. As noted elsewhere in this report several new products evolved from these development efforts.

Development costs are only deferred when pertaining to products where very clearly defined and near term markets exist. The Company's policy, which fully complies with generally accepted accounting policies, is to review all previously deferred development costs on an annual basis in relation to the current technology

and market developments. Again this year, the Company has conservatively deferred only 5% of total R&D costs compared to 15% in 1983. This resulted in the prior years' deferred costs write-off exceeding the current year's deferred costs thus reducing the deferred costs on the balance sheet.

Government assistance to R&D is 6% below last year's level at \$428,000. This is 9% of gross development costs versus 15% in 1983.

The net charge against income in the year for R&D expenses amounted to \$4,331,000, an increase of 61% over 1983's expenses totalling \$2,689,000.

Investment Income

Short-term investment income of \$1,581,000 (net of interest expense on long-term debt of \$115,000 in 1984 and \$95,000 in 1983) increased 20% over 1983 net investment income of \$1,323,000. The increase is largely attributable to higher average interest rates for most of the year and a slightly higher average amount of funds invested for part of the year. A small amount of tax free dividend income was earned in 1984 on new short-term investments in floating rate preferred shares. These were first introduced by various issuers during the year, as competitive products to money market instruments.

Pre-tax Income

Income before income taxes of \$9,418,000 was \$4,440,000 and 89% higher than that of 1983 at \$4,978,000.

Income Taxes

The Company's combined effective income tax rate has increased 4.6 percentage points to 39.1% compared to 34.5% in 1983. The statutory combined rate of 50% has been reduced to 39.1% through the manufacturing and processing tax reduction, business investment tax credits and inventory credits. The higher effective rates are a direct result of the much higher income level of the Company at the incremental tax rates and the loss, through legislated changes in 1984, of the scientific research allowance in Canada and the stock relief deduction in the United Kingdom.

Net Income

Net income for the year increased by 76% to \$5,732,000 from \$3,262,000 in 1983. Earnings per share were \$.70 compared to \$.42 in 1983, an increase of 67%. The average number of shares outstanding increased by 4% to 8,140,000 versus 7,826,000 for 1983. The 1984 average reflects 83% of the dilution affect of the shares issued in the acquisition of Laser Identification Systems, Inc. The five year compound growth rate in net income is 50%.

Sales by product line

	1984	%	1983	%
(thousands of Canadian dollars)				
Industrial	\$27,347	71	\$13,341	59
Scientific	7,964	21	7,382	32
Medical	2,154	6	1,309	6
Contract R&D and Other	965	2	746	3
Total Corporate	\$38,430	100	\$22,778	100

Financial Review

The Lumonics Group

Share Data

The common shares of the Company (now the only outstanding shares of the Company) are listed on the Toronto Stock Exchange under the symbol LUM. At December 31, 1984 there were 1,657 regis-

\$25,454,000 after investing \$6,297,000 in property, plant and equipment and \$5,446,000 in the acquisition of Laser Identification Systems, Inc. Working capital generated from operations amounted to \$7,554,000 and \$4,327,000 from

Accounts receivable increased 46% to \$11,528,000 compared to \$7,871,000 in 1983. As was the case last year, half of the receivables total represents shipments made in the last six weeks of the year.

Inventories of \$8,907,000 are up 64% over the 1983 level due to the general volume increase, new product builds and work-in-process against the very high closing backlog position. The inventory increase directly relates to the increases of 89% in bookings, 69% in billings and 82% in backlog.

Of our \$9,839,000 in property, plant and equipment, additions in the year totalled \$6,297,000. This is comprised of new facilities at Camarillo, Rugby and Tempe totalling \$4,700,000, engineering and production equipment at all locations and furniture and equipment to support the addition of 100 employees during the year.

The Company's book value per share is \$5.48 compared to \$4.51 last year. Cash and cash equivalents amounted to \$1.46 per share compared to \$2.11 in 1983. The after tax return on average equity was 14.2% versus 11.3% a year ago while the return on total average assets was 11.6% compared to 9.4%.

Personnel

As at December 31, 1984 there were 378 employees compared to 253 at December 31, 1983. Twenty-five employees were added March 1, 1984 with the acquisition of Laser Identification Systems, Inc. and another one hundred employees were hired during the year. There was a 49% increase in personnel versus a 69% increase in billings. Based on the average number of employees, sales per employee were \$120,000 in 1984 compared to \$95,000 in 1983, an increase of 26%.



Price range of the common shares in 1984 compared to 1983

	1984	1983
High	\$18.37	\$17.50
Low	\$13.37	\$10.00
Close	\$17.50	\$16.25
Volume of shares traded	1,718,051	2,702,767

tered shareholders holding 8,212,378 common shares. Of these shares, 86% were held in Canada and 7% in each of the United States and United Kingdom.

In July 1984 all of the 90,500 outstanding preferred shares were redeemed for cash in the amount of \$36,200.

Balance Sheet

The Company's balance sheet remains very strong with a current ratio of 3.9:1. Working capital increased by 1% to

shares issued for Laser Identification Systems, Inc. and stock options.

Cash and short-term investments of \$11,977,000 have decreased by 28% and \$4,591,000 during the year to finance the Laser Identification Systems, Inc. acquisition, the facilities expansions and additional investments in accounts receivable and inventories.

Consolidated Financial Statements

Auditors' Report

To the Shareholders of Lumonics Inc.:

We have examined the consolidated balance sheet of Lumonics Inc. as at December 31, 1984 and the consolidated statements of income and re-

tained earnings and of changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

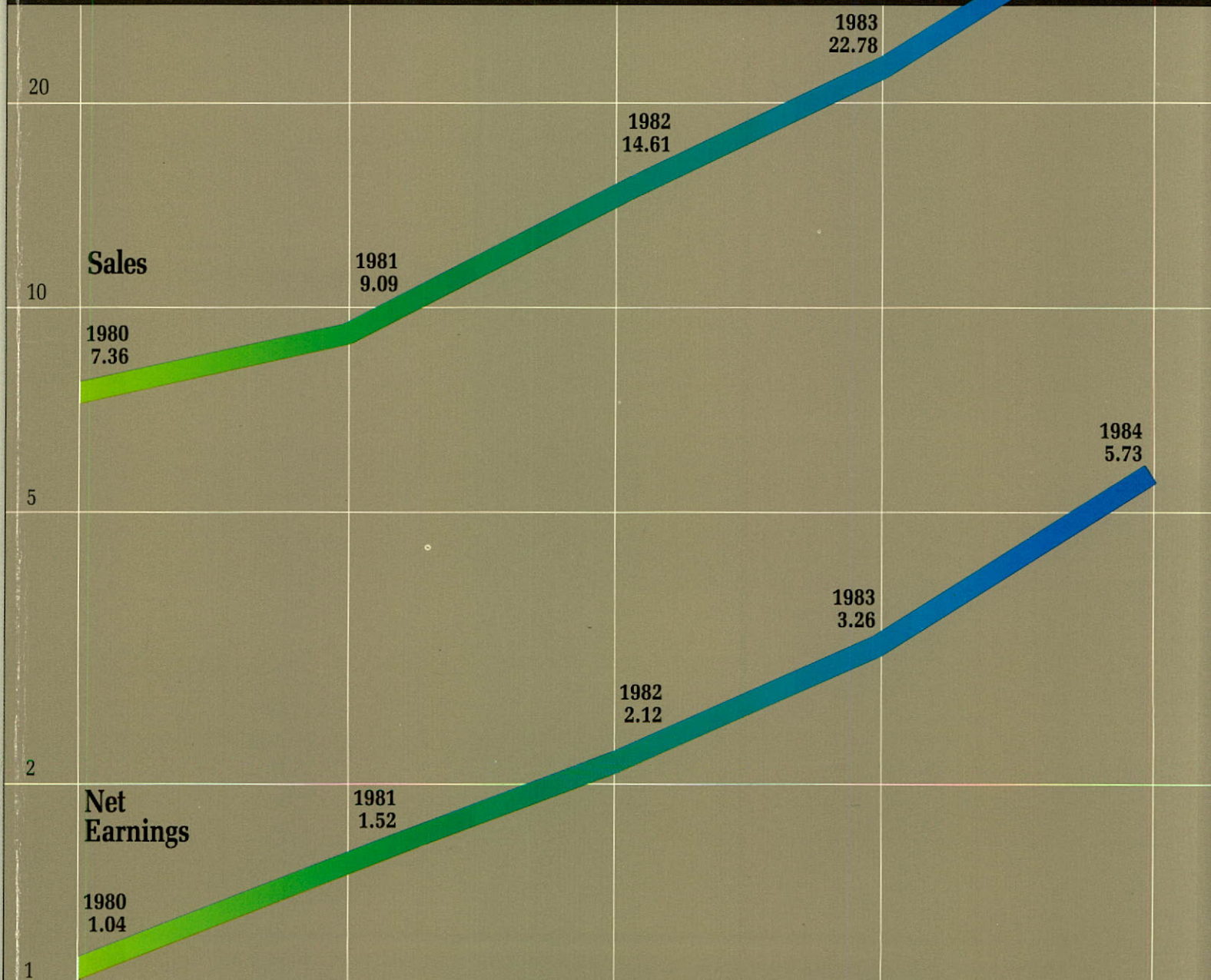
In our opinion, these consolidated financial statements present fairly the financial position of the company as at December 31, 1984 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted

accounting principles applied on a basis consistent with that of the preceding year.

Deloitte Haskins & Sells
Chartered Accountants
Ottawa, Ontario

February 11, 1985

Sales and Net Earnings (millions of Canadian dollars)



Consolidated Balance Sheet

The Lumonics Group

December 31 1984 1983

(thousands of Canadian dollars)

Assets

Current assets

Cash	\$ 695	\$ 493
Short-term investments	12,905	16,075
Accounts receivable	11,528	7,871
Inventories (Note 3)	8,907	5,444
Prepaid expense	157	77

34,192 29,960

Property, plant and equipment (Note 4) 9,839 4,489

Deferred development costs (Note 5) 676 691

Excess cost of subsidiaries over net assets acquired (Note 6) 11,683 7,043

\$56,390 \$42,183

Liabilities

Current liabilities

Bank indebtedness	\$ 1,623	\$ —
Accounts payable and accrued charges	5,661	3,644
Income taxes	1,268	972
Current portion of long-term debt	186	127

8,738 4,743

Long-term debt (Note 7) 1,123 801

Deferred income taxes 1,540 1,112

11,401 6,656

Shareholders' Equity

Share capital (Note 8)	30,754	26,517
Retained earnings	15,303	9,571
Accumulated foreign currency translation adjustment (Note 9)	(1,068)	(561)

44,989 35,527

\$56,390 \$42,183

Approved by the Board: A.V. Castledine, Director

R.J. Atkinson, Director

Consolidated Statement of Income and Retained Earnings

Year ended December 31	1984	1983
	(thousands of Canadian dollars)	
Sales	\$38,430	\$22,778
Cost of goods sold	26,262	16,434
Gross profit	12,168	6,344
Research and development costs (Note 10)	4,331	2,689
Income from operations	7,837	3,655
Investment income	1,581	1,323
Income before income taxes	9,418	4,978
Income taxes (Note 11)	3,686	1,716
Net Income	5,732	3,262
Retained earnings, beginning of year	9,571	6,309
Retained earnings, end of year	\$15,303	\$ 9,571
Earnings per common share		
Net income	\$ 5,732	\$ 3,262
Average number of common shares outstanding (thousands)	8,140	7,826
Earnings per common share (dollars)	\$.70	\$.42

Consolidated Statement of Changes in Financial Position

Year ended December 31	1984	1983
	(thousands of Canadian dollars)	
Sources of working capital		
Operations		
Net income	\$ 5,732	\$ 3,262
Items not affecting working capital		
Depreciation and amortization	973	1,108
Amortization of excess cost of subsidiary over net assets acquired	280	180
Deferred income taxes	569	42
	7,554	4,592
Issue of common shares	4,327	10,666
Increase in long-term debt	529	—
	12,410	15,258
Uses of working capital		
Additions to property, plant and equipment	6,297	1,173
Net non-current assets of acquired business	4,768	—
Reduction in long-term debt	428	130
Foreign currency translation adjustment	340	437
Deferred development costs	250	465
Redemption of preferred shares	90	—
	12,173	2,205
Increase in working capital	237	13,053
Working capital, beginning of year	25,217	12,164
Working capital, end of year	\$25,454	\$25,217

Notes to the Consolidated Financial Statements

The Lumonics Group

December 31, 1984

(tabular amounts in thousands of Canadian dollars)

1. Significant accounting policies

The consolidated financial statements have been prepared in accordance with generally accepted accounting principles, and reflect the following policies:

Basis of consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries Lumonics Corporation, JK Lasers Limited and Laser Identification Systems, Inc.

Short-term investments

Short-term investments are carried at the lower of cost and net realizable value.

Inventories

Inventories are valued on the following basis:
 Finished goods—at the lower of cost and net realizable value.
 Work-in-process and raw materials—at the lower of cost and replacement cost.

Property, plant and equipment

Property, plant and equipment are stated at cost after recognizing an adjustment in translation of foreign currencies. Buildings, machinery and equipment are predominantly depreciated using the diminishing-balance method.

Research and development costs

Development costs relating to specific products that in the Company's view have a clearly defined future market are deferred and amortized on a straight-line basis over three years commencing in the year following the year in which the new product development was completed.

Except as disclosed above, research and development costs (except for capital assets) are charged against income in the year incurred. Capital assets are treated as equipment purchases.

Excess cost of subsidiaries over net assets acquired

The excess cost of subsidiaries over net assets acquired is amortized on a straight-line basis over a period of forty years from date of acquisition.

Government assistance

Grant amounts resulting from government assistance programs are recorded in the accounts on the following basis:

Capital grants related to capital expenditures are reflected as a reduction of the costs of such assets.

Operating grants related to current period expenditures on research and development are recorded as a reduction of expenses at the time the eligible expenses are incurred.

Translation of foreign currencies

Foreign currency accounts in Lumonics Inc. and the accounts of Lumonics Corporation, an integrated foreign subsidiary, are translated to Canadian dollars on the following basis:

Monetary assets and monetary liabilities—at the rate of exchange prevailing at the year end. Non-monetary assets (and related depreciation and amortization) and non-monetary liabilities—at the rates of exchange prevailing when the assets were acquired or the liabilities assumed. Revenue and expenses (other than depreciation and amortization)—at a rate approximating the rates of exchange prevailing on the dates of the transactions. Gains and losses on translation of foreign currencies are included in income.

The accounts of JK Lasers Limited and Laser Identification Systems, Inc., both self-sustaining foreign subsidiaries, are translated to Canadian dollars on the following basis:

Assets and liabilities—at the rate of exchange prevailing at the year end. Revenue and expenses (including depreciation and amortization)—at a rate approximating the rates of exchange prevailing on the dates of the transactions. Adjustments arising from the translation of foreign currency are deferred and included in Accumulated Foreign Currency Translation Adjustment, a separate component of shareholders' equity.

2. Acquisition of Laser Identification Systems, Inc.

On March 1, 1984, the Company acquired all of the outstanding shares of Laser Identification Systems, Inc., a United States-based company engaged in the design, manufacture and sale of solid state laser-based marking systems. The results of operations of the company for the ten month period ended December 31, 1984 are included in the Consolidated Statement of Income.

Details of the acquisition which have been accounted for by the purchase method are as follows:

Working capital	\$ 678
Net non-current assets	
Excess cost of subsidiary over net assets acquired	4,920
Property, plant and equipment	186
Long-term debt	(338)
	<u>4,768</u>
	<u>\$5,446</u>

The purchase price was satisfied with cash of \$1,646,000 and the issue of 268,386 common shares of the Company valued at \$3,800,000. Subject to the acquired company achieving earnings targets for 1984 and 1985, additional consideration will be paid in March of 1985 and 1986. Each payment will consist of U.S. \$187,500 cash and 44,732 common shares of the Company. The 1984 earnings target was achieved.

3. Inventories

	1984	1983
Finished goods	\$ 244	\$ 456
Work-in-process and raw materials	8,663	4,988
	<u>\$8,907</u>	<u>\$5,444</u>

Notes to the Consolidated Financial Statements

4. Property, plant and equipment

	Depreciation Rates	1984	1983
Land		\$ 1,790	\$ 860
Buildings	1- 5%	6,034	2,655
Machinery and equipment	20-30%	4,430	2,728
		<u>12,254</u>	<u>6,243</u>
Less accumulated depreciation		2,415	1,754
		<u>\$ 9,839</u>	<u>\$ 4,489</u>

Depreciation of plant and equipment expensed during the year amounted to \$708,000 (1983-\$546,000).

5. Deferred development costs

	1984	1983
Balance, beginning of year	\$ 691	\$ 788
Amounts deferred in year	250	465
Amortization	(265)	(562)
	<u>\$ 676</u>	<u>\$ 691</u>

6. Excess cost of subsidiaries over net assets acquired

	1984	1983
Cost	\$12,233	\$ 7,313
Less accumulated amortization	550	270
	<u>\$11,683</u>	<u>\$ 7,043</u>

7. Long-term debt

	1984	1983
Industrial Development Authority promissory notes negotiated in United States dollars due in installments of \$10,000 and \$3,750 each month through to March 31, 1992 and March 31, 1989 respectively secured by land, building and equipment with a book value of \$1,494,000. Interest is payable at 75%-80% of the prime rate of the First Interstate Bank of Arizona, N.A.	\$ 1,263	\$ 809
Other	46	119
	<u>1,309</u>	<u>928</u>
Less current portion	186	127
	<u>\$ 1,123</u>	<u>\$ 801</u>

Interest on long-term debt during the year amounted to \$115,000 (1983-\$95,000). The principal amounts due in each of the next five years are \$220,000 annually.

8. Share capital

	1984	1983
Authorized		
An unlimited number of 5% non-cumulative, non-voting, preferred shares redeemable at \$1 each		
An unlimited number of common shares		
Outstanding and fully paid		
Preferred- Nil (1983-90,500)	\$ —	\$ 90
Common-8,212,378 (1983-7,869,008)	30,754	26,427
	<u>\$30,754</u>	<u>\$26,517</u>

In July 1984 all of the 90,500 outstanding preferred shares were redeemed.

During the year common shares were issued as follows:

	1984	1983
Exercise of employee stock options		
-74,984 shares for cash (1983-99,386 shares)	\$ 527	\$ 571
Acquisition of shares of Laser Identification Systems, Inc.		
-268,386 shares	3,800	—
Private placement		
-1,000,000 shares for cash	—	10,095
	<u>\$ 4,327</u>	<u>\$10,666</u>

At December 31, 1984, 89,464 common shares were reserved for the former principals of Laser Identification Systems, Inc. in accordance with the terms of the acquisition agreement.

Stock options

At December 31, 1984, options to employees to purchase 565,995 common shares were granted and are exercisable at prices ranging from \$2.44 to \$17.87 for a total consideration of \$5,131,551.

Of the stock options granted, 279,085 shares may be purchased in 1985, 127,210 in 1986, 85,200 in 1987, 43,700 in 1988 and 30,800 in 1989.

9. Accumulated foreign currency translation adjustment

Components of the accumulated foreign currency translation adjustment related to JK Lasers Limited and Laser Identification Systems, Inc., both self-sustaining foreign subsidiaries, are as follows:

	1984	1983
Working capital	\$ 777	\$ 437
Property, plant and equipment		
Cost	1,016	452
Accumulated depreciation	(365)	(226)
Deferred income taxes	(243)	(102)
Long-term debt	(117)	—
	<u>\$ 1,068</u>	<u>\$ 561</u>

Notes to the Consolidated Financial Statements

The Lumonics Group

10. Research and development costs

	1984	1983
Research and development costs	\$ 4,744	\$ 3,049
Amortization of deferred development costs	265	562
	<u>5,009</u>	<u>3,611</u>
Development costs deferred	(250)	(465)
	<u>4,759</u>	<u>3,146</u>
Government assistance	(428)	(457)
	<u>\$ 4,331</u>	<u>\$ 2,689</u>

11. Income taxes

The effective tax rate differs from the statutory combined rates of 50% due to the manufacturing and processing tax reduction, business investment tax credits, inventory credits and a deduction from taxable income for share issue expenses.

Deferred income taxes relate primarily to claiming capital cost allowances for income tax purposes in excess of depreciation and amortization charged in the financial statements, and to claiming deferred development costs for income tax purposes in the year they are incurred.

12. Segmented information

The Company's activities represent one industry segment, manufacture and sale of laser systems, and are conducted in three main geographic segments, Canada, United States and Europe.

Export sales of the Canadian operation are as follows:

	1984	1983
United States	\$11,022	\$ 6,845
Europe	2,714	2,061
Other	3,037	1,752
	<u>\$16,773</u>	<u>\$10,658</u>

13. Litigation

The Company is currently the defendant in two actions alleging patent infringement, one in Canada and one in the United States. In both cases, the plaintiffs are various persons including Gordon Gould, Refac International Limited, and Patlex Corporation. Both Refac and Patlex have an interest in certain patents originally issued to Mr. Gould.

In 1983, the United States Patent Office ordered the patent under litigation in the United States be re-examined and at the present time all claims in that patent are under rejection. In attempting to halt the re-examination, the plaintiffs filed suit in the United States District Court for Eastern Pennsylvania to have the statute authorizing re-examination declared unconstitutional. The Court denied their claim by summary judgement in favour of the Patent Office, thus holding the statute constitutional. The plaintiffs are appealing that decision. Regardless of the findings in this action, further appeals are likely and no early resolution is expected.

The Canadian action is also proceeding slowly and is not expected to be at the trial stage until 1986 at the earliest.

It remains the Company's opinion that neither patent under litigation is valid and that developments to date support that position. In the event of an adverse judgement in either or both actions, it is reasonable to believe that license arrangements could be negotiated and that such arrangements would have no material long-term adverse effect on the Company.

14. Commitments

Capital expenditures committed for the construction of plant facilities and purchase of equipment in 1985 are approximately \$2,300,000.

Segmented information

	Canada	United States	Europe	Eliminations	Consolidated
Sales from geographic segments	\$11,723	\$18,807	\$ 7,900	\$ —	\$38,430
Transfers between geographic segments	6,461	—	2,105	(8,566)	—
Total revenue	<u>\$18,184</u>	<u>\$18,807</u>	<u>\$10,005</u>	<u>\$ (8,566)</u>	<u>\$38,430</u>
Segment operating profit	<u>\$ 6,721</u>	<u>\$ 3,480</u>	<u>\$ 1,916</u>	<u>\$ 51</u>	<u>\$12,168</u>
Research and development					(4,331)
Investment income					1,581
Income taxes					(3,686)
Net income					<u>\$ 5,732</u>
Total assets	<u>\$46,162</u>	<u>\$11,338</u>	<u>\$10,223</u>	<u>\$(11,333)</u>	<u>\$56,390</u>

Corporate Information

Directors and Officers



Robert J. Atkinson †
President and Chief Executive Officer
Lumonics Inc.



Allan R. Buchanan †
President
Buchanan Consulting



Douglas C. Cameron †
President
Noranda Enterprise Limited



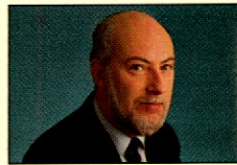
Allan V. Castledine †
Chairman
Davidson Partners Limited



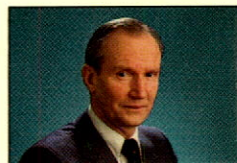
Charles J. Gardner, Q.C. †
Partner
Goldberg, Shinder, Gardner
Kronick & Tavel



Richard E. Hall *
Secretary and Treasurer
Lumonics Inc.



Douglas J. James *"
Vice President
Lumonics Inc., and
Managing Director
JK Lasers Limited



R. Timothy Kenny †
President and Chief Executive Officer
James Maclaren
Industries Inc.



Gordon A. Mauchel †
Chairman
Lumonics Inc.



Philip R. Schmidt †
President
Laser Identification
Systems, Inc.



James K. Wright †
Vice President
Product Development
Lumonics Inc., and
Chairman
JK Lasers Limited

† Director
* Officer
" Proposed Director - 1985

Auditors

Deloitte Haskins & Sells
Ottawa, Ontario

Transfer Agents

The Canada Trust Company
Toronto, Ontario

Stock Exchange Listing

The Toronto Stock Exchange
Symbol - LUM

Solicitors

Goldberg, Shinder, Gardner
Kronick & Tavel
Ottawa, Ontario

Tory, Tory, DesLauriers &
Binnington
Toronto, Ontario

Bankers

Canadian Imperial Bank of
Commerce
Ottawa, Ontario

Locations

Canada

Corporate Office and
Kanata Operations
Lumonics Inc.
105 Schneider Road
Kanata, Ontario
Canada K2K 1Y3
Tel: (613) 592-1460
Telex: 053-4503
FAX: (613) 592-5706

United States

Lumonics Corporation
2905 South Potter Road
Tempe, Arizona 85282
U.S.A.
Tel: (602) 438-1420
Telex: 165801
FAX: (602) 438-2334

Laser Identification
Systems, Inc.
3629 Vista Mercado
Camarillo, California 93010
U.S.A.
Tel: (805) 987-2211
Telex: 140499
FAX: (805) 987-9084

Europe

JK Lasers Limited
Cosford Lane, Swift Valley
Rugby, Warwickshire
CV21 1QN
England
Tel: (0788) 70321
Telex: 311540
FAX: (0788) 79824

JK Lasers Limited
Av. A.J. Slegers 180
B-1200 Brussels
Belgium
Tel: (02) 762 79 46
Telex: 64348
FAX: (02) 762 51 43

JK Lasers Deutschland GmbH
Bodenseestrasse 235
Post Fach 66 22 48
8000 Muenchen 66
West Germany
Tel: (089) 871 1039
Telex: 5212410

JK Lasers France
Avenue des Andes
Z.A. de Courtaboeuf
B.P. 233
91943 Les Ulis Cedex
France
Tel: (6) 907 9270
Telex: 600961

Japan

Lumonics Inc.
Japan Liaison Office
P.O. Box 29
Nishi-Yubinkyoku
Hachioji, Tokyo, 193
Japan
Tel: (426) 66-2213
Telex: 02862-538
FAX: (426) 66-0068

Other

Contact the foregoing geographical centres for information on local Lumonics offices, distributors and representatives.

The Annual Meeting of the Shareholders of Lumonics Inc. will be held at 4:00 p.m. on Thursday, May 2, 1985, in the Rideau Room of the Four Seasons Hotel, Ottawa, Ontario, Canada.

Printed in Canada

≡ LUMONICS ≡