THERMO FISHER SCIENTIFIC INC.

Form 10-K February 29, 2008

# UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

#### FORM 10-K

x Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2007 or

o Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Commission file number 1-8002

## THERMO FISHER SCIENTIFIC INC.

(Exact name of Registrant as specified in its charter)

Delaware 04-2209186

(State of incorporation or organization)

(I.R.S. Employer Identification No.)

81 Wyman Street, P.O. Box 9046 Waltham, Massachusetts

02454-9046

(Address of principal executive offices)

(Zip Code)

Registrant's telephone number, including area code: (781) 622-1000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class Common Stock, \$1.00 par value Preferred Stock Purchase Rights Name of each exchange on which registered New York Stock Exchange New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No o

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes o No x

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer x

Accelerated filer o

Non-accelerated filer o

Smaller reporting company o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x

As of June 29, 2007, the aggregate market value of the voting stock held by nonaffiliates of the Registrant was approximately \$22,038,086,000 (based on the last reported sale of common stock on the New York Stock Exchange Composite Tape reporting system on June 29, 2007).

As of February 1, 2008, the Registrant had 418,600,105 shares of Common Stock outstanding.

### DOCUMENTS INCORPORATED BY REFERENCE

Sections of Thermo Fisher's definitive Proxy Statement for the 2008 Annual Meeting of Shareholders are incorporated by reference into Parts II and III of this report.

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## THERMO FISHER SCIENTIFIC

# ANNUAL REPORT ON FORM 10-K FOR THE FISCAL YEAR ENDED DECEMBER 31, 2007

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### PART I

Item 1. Business

General Development of Business

Thermo Fisher Scientific Inc. (also referred to in this document as "Thermo Fisher," "we," the "company," or the "registrant") is the world leader in serving science. We enable our customers to make the world healthier, cleaner and safer by providing analytical instruments, equipment, reagents and consumables, software and services for research, manufacturing, analysis, discovery and diagnostics.

In November 2006, Thermo Electron Corporation (also referred to in this document as "Thermo," which is the predecessor to Thermo Fisher) merged with Fisher Scientific International Inc. (also referred to in this document as "Fisher") to create the world leader in serving science. Thermo Fisher has 33,000 employees and serves more than 350,000 customers within pharmaceutical and biotech companies, hospitals and clinical diagnostic labs, universities, research institutions and government agencies, as well as environmental, industrial quality and process control settings.

We serve our customers through two principal brands, Thermo Scientific and Fisher Scientific:

Thermo Scientific is our technology brand, offering customers a complete range of high-end analytical instruments as well as laboratory equipment, software, services, consumables and reagents to enable integrated laboratory workflow solutions. Our growing portfolio of products includes innovative technologies for mass spectrometry, elemental analysis, molecular spectroscopy, sample preparation, informatics, fine- and high-purity chemistry production, cell culture, RNA-interference analysis, immunodiagnostic testing, microbiology, as well as environmental monitoring and process control.

Our Fisher Scientific brand offers convenience, providing a complete portfolio of laboratory equipment, chemicals, supplies and services used in healthcare, scientific research, safety and education markets. These products are offered through an extensive network of direct sales professionals, industry-specific catalogs, e-commerce capabilities and supply-chain management services. We also offer a range of biopharma services for clinical trials management, biospecimen storage and analytical testing.

In addition to the two principal brands, we offer a number of specialty brands that cover a range of consumable products primarily for the life and laboratory sciences industry.

We are continuously advancing the capabilities of our technologies, software and services, and leveraging our 7,500 sales and service professionals around the world to address our customers' emerging needs. Our goal is to make our customers more productive, and to allow them to solve their analytical challenges, from complex research and discovery to routine testing.

Thermo Fisher is a Delaware corporation and was incorporated in 1956. The company completed its initial public offering in 1967 and was listed on the New York Stock Exchange in 1980.

## Forward-looking Statements

Forward-looking statements, within the meaning of Section 21E of the Securities Exchange Act of 1934 (the Exchange Act), are made throughout this Annual Report on Form 10-K. Any statements contained herein that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words "believes," "anticipates," "plans," "expects," "seeks," "estimates," and similar expressions are intended to identify

forward-looking statements. While the company may elect to update forward-looking statements in the future, it specifically disclaims any obligation to do so, even if the company's estimates change, and readers should not rely on those forward-looking statements as representing the company's views as of any date subsequent to the date of the filing of this report.

A number of important factors could cause the results of the company to differ materially from those indicated by such forward-looking statements, including those detailed under the heading, "Risk Factors" in Part I, Item 1A.

## **Business Segments and Products**

We report our business in two segments: Analytical Technologies and Laboratory Products and Services. For financial information about segments, including domestic and international operations and export sales, see Note 3 to our Consolidated Financial Statements, which begin on page F-1 of this report.

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### **Analytical Technologies Segment**

We serve the pharmaceutical, biotechnology, academic, government and other research and industrial markets, as well as the clinical laboratory and healthcare industries, through our Analytical Technologies segment. This segment has seven principal product groupings – Scientific Instruments, Biosciences, Microbiology, Integrative Technologies, Diagnostics, Environmental Instruments and Process Instruments – and provides a broad range of instruments, bioscience reagents, diagnostic assays, software and services to address various scientific challenges in laboratories, manufacturing and the field.

Our Scientific Instruments include analytical instrumentation that analyzes prepared samples.

Our Biosciences products include leading reagents, tools and services used in life science research, drug discovery and biopharmaceutical production.

Our Microbiology products include high-quality reagents and diagnostic kits used in the diagnosis of
infectious disease or for testing for bacterial contamination to assure the safety and quality of consumer
products such as food and pharmaceuticals.

Our Integrative Technologies offerings include software interpretation tools and development support for the data generated by the instruments as well as laboratory automation equipment and systems.

Our Diagnostics products and services are used by healthcare and other laboratories to prepare and analyze patient samples to detect and diagnose diseases.

•Our Environmental Instruments include solutions and services for environmental monitoring, safety and security.

Our Process Instruments provide measurement solutions and services outside the laboratory to enable process control and optimization.

### Scientific Instruments

Our analytical instrumentation is used primarily in laboratory and industrial settings and incorporates a range of techniques, including mass spectrometry (MS), chromatography and optical spectroscopy, and can be combined with a range of accessories, consumables, software, spectral reference databases, services and support to provide a complete solution to the customer. Mass spectrometry is a technique for analyzing chemical compounds, individually or in complex mixtures, by forming gas phase charged ions that are then analyzed according to mass-to-charge ratios. In addition to molecular information, each discrete chemical compound generates a fragmentation pattern that provides structurally diagnostic information. Chromatography is a technique for separating, identifying and quantifying individual chemical components of substances based on physical and chemical characteristics specific to each component. Optical spectroscopy is a technique for analyzing individual chemical components of substances based on the absorption or emission of electromagnetic radiation of a specific wavelength of light, for example, visible (light), ultraviolet or infra-red.

In life sciences markets, we offer a line of mass spectrometers including ion traps, quadrupoles and other advanced mass spectrometers, as well as liquid chromatographs (LCs) and columns, and multi-instrument combinations of these products as integrated solutions (LC-MS). These systems are tailored to meet the rigorous demands of lab professionals in applications such as drug discovery, life science research and analytical quantitation.

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Ion Trap and Hybrid MS. The company's ion trap and hybrid mass spectrometry product lines feature tiered portfolios to support a wide spectrum of analytical requirements. These instruments support applications ranging from routine compound identification and high performance liquid chromatography (HPLC) detection to sophisticated research applications such as the analysis of low-abundance components in complex biological matrices.

- LTQ FT ULTRATM Combines our most advanced ion trap and Fourier Transform (FT) Ion Cyclotron Resonance (ICR) technologies into a single instrument with superior analytical power and versatility. The system uniquely combines high resolution, accurate mass determinations and MSn (mass spectrometry to the nth power) for high-throughput analysis on a single instrument.
- LTQ Orbitrap XLTM Combines our most advanced ion trap with our patented Orbitrap technology, providing high resolution and accurate mass determinations over a broad dynamic range for advanced proteomics and small molecule research.
- LTQ Orbitrap DiscoveryTM Combines our most advanced ion trap with our patented Orbitrap technology, providing excellent resolution and mass accuracy for general proteomics and metabolism applications.
- LTQ XLTM Based on a 2-dimensional (2-D) linear ion trap design and incorporating patented innovative technologies and ease-of-use features, this system is primarily used for metabolic profiling and proteomics research.
- LXQTM Based on a 2-D linear ion trap design, this system provides high-throughput performance for drug discovery, forensics and proteomics applications.
  - LCQ FleetTM A robust, entry-level ion trap mass spectrometer for routine analysis of complex samples.

Triple Quadrupole MS. The company's TSQ Quantum Series consists of an advanced portfolio of triple quadrupole mass spectrometers with both liquid chromatography (LC) and gas chromatography (GC) inlets.

- •TSQ Quantum AccessTM A versatile, entry-level mass spectrometer that is used in environmental and food safety laboratories.
- •TSQ Quantum Discovery MAXTM This ultra-compact benchtop MS system incorporates innovative technology for increased sensitivity, precision, ruggedness and reliability. It is principally designed for high-productivity environments such as environmental, clinical research and drug discovery laboratories. With the Ion Max source, the TSQ Quantum Discovery MAX addresses the needs of these laboratories for more rugged and dependable LC-MS/MS to enable around-the-clock productivity.
- •TSQ Quantum UltraTM An advanced instrument used primarily for bioanalytical studies. It features the Ion Max source with interchangeable electrospray ionization (ESI) and atmospheric pressure chemical ionization (APCI) probes for increased robustness and sensitivity.
- •TSQ Quantum GCTM High performance GC-MS/MS system that provides high sensitivity and selectivity for applications in environmental, food safety, pharmaceutical and clinical research laboratories.

In addition, we supply a range of sample preparation capabilities for mass spectrometry including advanced sample extraction and liquid chromatography products, which are used with triple quadrupole mass spectrometers in bioanalysis and drug discovery.

TM Represents a trademark or service mark of Thermo Fisher Scientific Inc. or its subsidiaries.

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A significant and growing application for our technologically advanced mass spectrometers is proteomics, the study of proteins. Most drugs – about 90 percent – interact with proteins, so multi-instrument systems that can rapidly identify and quantify proteins are of increasing value to pharmaceutical and biotechnology customers. The combination of ETD (Electron Transfer Dissociation) with our LTQ XL ion trap machine extends the range of techniques for proteomics researchers and enables routine analysis of protein modifications. We continue to introduce new systems that address the breadth of primary analytical needs for high-throughput analysis including bioanalysis and proteomics research, as well as for other growing life science areas such as:

• Biomarkers – compounds that may be endogenous and signal the early onset of a specific disease.

ADME/Tox – Absorption, Distribution, Metabolism, Excretion and Toxicology studies that are conducted for drug discovery in support of human clinical trials.

Metabalomics – measurement of the real biochemical status, dynamics, interactions and regulation of whole systems or organisms at a molecular level.

In addition, Thermo Fisher offers a broad range of advanced magnetic sector instrumentation for high-resolution MS. This range also covers organic MS, gas isotope ratio MS and thermal ionization MS.

Liquid Chromatography. Our HPLC systems, comprising the high speed Accela HPLC, Surveyor PlusTM and SpectraSYSTEMTM, offer high throughput and sensitivity. They are sold as stand-alone instrumentation (HPLC) or as integrated systems with our mass spectrometers (LC-MS and LC-MS/MS). The Surveyor MSQTM Plus is a fast scanning single quadrupole LC-MS system used primarily in pharmaceutical laboratories as a UHPLC detector, providing chromatographers the ability to run routine HPLC applications more efficiently with real-time mass confirmation. These products utilize our comprehensive line of HPLC columns, including HYPERSILTM Gold, HyPurityTM and Aquasil columns.

In January 2007, we acquired Spectronex, a European-based supplier of mass spectrometry, chromatography and surface science instrumentation, as well as Flux Instruments, a manufacturer of high performance liquid chromatography pumps. The Flux acquisition provided the pump for the new Accela UHPLC as well as a unique design platform for future HPLC development.

Beyond life sciences markets, our chemical analysis instrumentation, including our gas chromatography, elemental analysis and molecular spectroscopy instrumentation, uses various separation and optical spectroscopy techniques to determine the elemental and molecular composition of a wide range of complex liquids and solids.

Gas Chromatography. Gas chromatography is a separation technique used to analyze complex samples in the form of gases. Thermo Fisher's high performance and reliable line of gas chromatographs (GCs) includes our Trace GC Ultra, a versatile laboratory GC with a full range of detectors, injectors, and valve systems; our FOCUS GC, which is a single-channel GC; our Trace GCxGC for analysis of target compounds in complex matrices; and autosamplers, including our TriPlusTM Autosampler, that provide a robotic sampling solution to a GC laboratory.

Our GC offering is also incorporated into our GC mass spectrometry (GC-MS) product line, which pairs a mass spectrometer detector with a GC front end. Our offering includes the DSQTM II, a GC-MS product based on the platform of Thermo Fisher's DSQ and PolarisQ GC-MS systems. The DSQ II incorporates the new DynaMax XR ion detection system and the DuraBriteTM ion source. The PolarisQ Ion Trap MSn offers affordable tandem mass spectrometry at the sensitivity of GC-specific detectors.

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Elemental Analysis. Thermo Fisher also offers a line of elemental analysis instrumentation used to analyze elements in liquid and solid samples. Our range of combustion analyzer products, including our M & S Series atomic absorption (AA) systems, the iCAP 6000 Series benchtop inductively coupled plasma (ICP) spectrometers, and X SERIES 2 and ELEMENT2 ICP mass spectrometry (ICP-MS) systems are used for elemental analysis of liquid samples. Environmental, geochemical and clinical/toxicology laboratories often utilize these techniques, as well as many other industrial laboratories. In particular, our award winning iCAP 6000 Series ICP spectrometer, sold into growth markets such as China, environmental protection and materials and chemicals, is used in applications that support new regulations (such as the European Waste Electrical and Electronic Equipment (WEEE) Directive and the European Union Directive on Restriction of Certain Hazardous Substances (RoHS)).

Thermo Fisher also provides a full range of instrumentation for elemental analysis of solids, using both X-ray fluorescence and optical emission (OE) techniques. Our arc spark product line based on OE spectrometry is ideal for use in process/quality control for the direct, elemental analysis of solid metals. Products include the ARL QUANTRIS and ARL QuantoDesk CCD-based metals analyzers, ARL 3460 and ARL 4460 OE spectrometers that can be fully automated for unattended operation.

Our benchtop and standalone X-ray fluorescence (WDXRF/EDXRF) systems for analysis of conductive or non-conductive solids and liquids are used in many industrial and research laboratories, for monitoring of a few elements in oils, polymers, cement or quarry materials to the full analysis of glasses, metals, ores, refractories and geological materials. Additionally our UniQuant software package makes it possible to analyze totally unknown samples in any form without the need for certified standards. Our X-ray diffraction (XRD) equipment allows analysis of phases or compounds in crystalline materials. Both XRF and XRD techniques are integrated into our unique ARL 9900 X-ray Workstation to provide total analysis capabilities to the cement, metals and mining industries.

Molecular Spectroscopy. Thermo Fisher is also a leader in analytical instrumentation involving spectroscopic analysis of molecular structures. The new Nicolet i10 Series Fourier transform infrared (FT-IR) and Nicolet 700 Series research grade FT-IR systems provide a complete analytical offering in FT-IR spectroscopy and microscopy, from routine QA/QC applications to advanced research work across many industries including polymer, pharmaceutical and forensic. We are also a leader in the Raman and Near infrared markets with our new DXR Raman Series offering research capabilities to the routine-user. In 2007, Thermo Fisher expanded its line of visible and ultraviolet visible (UV-Vis) spectrophotometers and microanalysis products with the acquisition of NanoDrop Technologies, Inc., a U.S.-based supplier of micro-UV-Vis spectrophotometry and fluorescence scientific instruments. These products are used in life science, pharmaceutical and material science analysis.

Customers for Thermo Fisher's chemical analysis instrumentation include environmental, pharmaceutical, polymer, petrochemical, food, semiconductor, energy, coatings, geological, steel and basic materials producers who frequently use these instruments for quality assurance and quality control applications, primarily in a laboratory.

Services. We have an extensive service network to support our installed base of instruments across the globe. In addition, we provide a broad range of services, including multi-vendor laboratory instrument services, such as instrument qualifications; preventive and corrective maintenance; validation, regulatory compliance and metrology; as well as instrument/equipment asset management services with solutions that deliver instrument and equipment maintenance management, physical inventory tracking and enterprise-wide maintenance reporting to help customers improve the cost/performance of their instrumentation, equipment and facilities.

### **Biosciences**

Our broad range of Biosciences products and services includes fine and high-purity chemistry products; proprietary protein analysis; RNA interference (RNAi); PCR and QPCR reagents and related products; high content screening

(HCS) and analysis (HCA); nucleic acid synthesis reagents; molecular biology reagents; cell-culture products and sterile liquid-handling systems. These products are used across the general chemistry and life sciences arenas primarily for scientific research and drug discovery, as well as biopharmaceutical research and production. Our Biosciences products are sold under proprietary product names such as Acros OrganicsTM, MaybridgeTM, HyCloneTM, PierceTM, DharmaconTM and ABgeneTM.

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#### **Global Chemicals**

Our Global Chemicals products provide solutions for chemistry-based applications to scientists involved in analysis, research and development, and manufacturing. We offer reliable, industry leading products and services through internal expertise and through partnerships with leading providers of chemical technology. We deliver high quality, customer-focused, optimized products and solutions through our extensive global distribution network. Our broad product portfolio includes Acros Organics chemicals, which are used in basic research applications to synthesize new and interesting materials. These products are supplied in pre-pack and semi-bulk quantities and are used across all types of chemistry. Our Fisher ChemicalTM products help scientists purify, extract, separate, identify and/or manufacture products. These products are used across a range of industries, including pharmaceutical, biotechnology, electronic, and environmental. Our Fisher BioReagentsTM products are used in many different laboratory applications, from cell growth to detailed protein analysis, to help scientists understand functions within living organisms. We also provide bulk sizes of our various products when customers scale-up from research to development. The primary markets served are pharmaceutical, life sciences and high technology.

### Life Science Research (LSR)

Our Life Science Research products provide innovative technologies and services globally for genomics and proteomics applications. We serve the pharmaceutical and biotechnology industries as well as diagnostics companies, clinical laboratories, colleges and universities, government and industrial customers. Our offering includes a wide range of proprietary protein-research and cell-culture products; nucleic-acid technologies; reagents for high-content cellular screening; reliable, high-quality RNA oligonucleotides; small-interfering RNA and related RNA-interference products; and plastic consumables.

Our Genomics offering includes products and services which use nucleic acids to modulate gene expression or to measure changes in the cellular levels of specific nucleic acids. We provide synthesis reagents such as phosphoramidites to manufacturers of research and large scale synthetic nucleic acids and supply other molecular biology reagents to life science research, agricultural, clinical and diagnostic providers. Scientists use our PCR and QPCR reagents and PCR reaction plates and sealing products, sold under the ABgene name, to amplify and measure nucleic acids with high precision and sensitivity, enabling them to gain a better understanding of the control mechanisms inside a cell. Used in the study of cancer, metabolic diseases, in epidemiological studies and in agriculture research, our products enable scientists to shorten the drug development process. Our RNA products and services, sold under the Dharmacon name, are used by scientists conducting basic research to understand the function of genes and their role in biological processes and human disease. They are also used in drug discovery to identify and validate drug targets. RNA interference products are an exciting class of emerging therapeutic compounds. We provide technologies used in the development of potential RNAi-based therapeutics.

Our Proteomics products, sold under the Pierce, BioImageTM and CellomicsTM names, enable the effective and efficient study of the biology of proteins, and offer unique cell-based assays and services for high-content pathway analysis. Scientists use our Pierce reagents and kits for protein purification, protein detection and quantitation, protein sample preparation, protein labeling, protein interaction, and related studies, providing new capabilities and sensitive and accurate results more efficiently. We also provide proteomics products to manufacturers for inclusion in products sold for research or industrial uses. Cellomics HCS Reagent Kits and BioImage Assays are powerful tools for cell-based screening and analysis of specific molecular targets and biological parameters.

### **BioProcess Production**

Our BioProcess Production offerings include cell-culture and bioprocessing products used in the production of animal and human viral vaccines, monoclonal antibodies, skin replacement and protein-based drugs. The product line is used

in research and academic markets for cellular interaction studies, toxicity testing, antiviral, and anticancer studies. Our  $\underline{\text{Financial Statement Index}}$ 

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HyClone product offering includes leading cell-culture products (sera, classical media, serum-free and protein-free media, and process liquids) and bioprocessing systems for life science research and protein-based drug production. The line includes flexible, single-use BioProcess ContainerTM (BPCTM) systems, which are sterile, disposable bags specifically designed for transporting, mixing, dispensing, and storing sterile liquids and powders. The HyClone Single-Use Bioreactor (SUB) portfolio offers a single-use alternative to conventional stirred tank bioreactors currently used in animal cell culture. The SUB emulates the scalability and operating parameters of the conventional stirred tank bioreactors, yet is disposable. Under the TC TechTM name, we also provide sterile fluid-handling bags used to transfer, transport and store bioprocess liquids in the biopharmaceutical manufacturing process as well as tubing, fittings, connectors and flexible single-use containers specifically qualified for use in bioscience applications in the biopharmaceutical, biotechnology and diagnostic industries. Products, including cell-culture media, sera, process liquids and reagents, as well as single-use BioProcess Container systems, are provided in a variety of sizes ranging from small volumes up to tens of thousands of liters of specialized products in large vessels for full-scale production.

## Microbiology

Our Microbiology offerings include high-quality microbiology laboratory products, including dehydrated and prepared culture media, collection and transport systems, diagnostic and rapid direct specimen tests, quality-control products and associated products for the microbiology laboratory. Our Microbiology products are sold under the OxoidTM and RemelTM specialty brands. Our products focus on aiding customers in the diagnosis of infectious disease, implementing effective infection control programs or in detecting microbial contamination of their products or manufacturing facilities.

These products are used by microbiologists worldwide to grow and identify bacteria and to detect viruses and parasites. Within the clinical field, these products are used to facilitate a rapid and accurate diagnosis of infectious disease, to determine appropriate antimicrobial therapy and to aid in the implementation of infection control programs. Key clinical customers include hospitals, public health and reference laboratories, clinics and physician offices. Within the food and pharmaceutical industries, our products are used to assure the safety and quality of consumer products by monitoring production environments, raw materials and end products for bacterial contamination. Industrial customers are comprised of quality control and quality assurance functions within food, beverage, personal care, pharmaceutical and biotech companies.

### **Integrative Technologies**

Our Integrative Technologies offerings provide integrated solutions for customers in regulated and unregulated industries such as pharmaceuticals, biotechnology, petrochemicals, chemicals, and food and beverage utilizing our broad capabilities in laboratory equipment, instrumentation, consumables, reagents and software. Our products include laboratory information management systems (LIMS), chromatography data systems (CDS), database analytical tools, automation systems, microplate instrumentation and automated cellular imaging systems. To support our global installations, we provide implementation, validation, training, maintenance and support from our large global services network.

### **Informatics**