



## Exhibition categories

<b>PHOTONIC COMPONENTS</b>	
<b>01 Laser and Optronics</b>	<ul style="list-style-type: none"> <li>01.01 Solid-state lasers</li> <li>01.02 Gas lasers</li> <li>01.03 Diode lasers</li> <li>01.04 fibre lasers</li> <li>01.05 Other lasers</li> <li>01.06 Laser system components</li> <li>01.07 Laser components</li> <li>01.08 Safety/protection against laser radiation</li> <li>01.09 Light-emitting diodes (LEDs) and components</li> <li>01.10 OLEDs</li> <li>01.11 Non-coherent light and radiation sources</li> <li>01.12 Electro-optics</li> <li>01.13 Acousto-optics</li> <li>01.14 Opto-electronic tubes</li> <li>01.15 Opto-electronic components</li> <li>01.16 Optical systems</li> <li>01.17 Opto-mechanics</li> <li>01.18 Software for Laser und Optics</li> </ul>
<b>02 Optics</b>	<ul style="list-style-type: none"> <li>02.01 Rawmaterials</li> <li>02.02 Crystals</li> <li>02.03 Processed components</li> <li>02.04 Optical lenses</li> <li>02.05 Diffractive optics</li> <li>02.06 Optical transmission components</li> <li>02.07 Optical components, miscellaneous</li> <li>02.08 Design software for passive optical components</li> </ul>
<b>03 Manufacturing technology for optics</b>	<ul style="list-style-type: none"> <li>03.01 Optical manufacturing equipment for optical systems</li> <li>03.02 Optical manufacturing processes for optical systems</li> <li>03.03 Manufacturing materials for optical systems</li> <li>03.04 Optical coating materials</li> <li>03.05 Manufacturing technology for optical systems, miscellaneous</li> <li>03.06 Adhesives for optical systems</li> </ul>
<b>04 Sensors, test and measurement</b>	<ul style="list-style-type: none"> <li>04.01 Measurement systems for laser characterization</li> <li>04.02 Measurement and analysis systems for optical parameters</li> <li>04.03 Systems for measuring optical parameters of devices and systems</li> <li>04.04 Optical measurement systems</li> <li>04.05 Optical sensors</li> </ul>
<b>05 Services</b>	<ul style="list-style-type: none"> <li>05.01 Application development and application labs</li> <li>05.02 Optical design and engineering services</li> <li>05.03 Processing centers</li> <li>05.04 Contract production</li> <li>05.05 System consultants</li> <li>05.06 Maintenance and service for laser systems</li> <li>05.07 Optics and illumination design</li> <li>05.08 Second-hand equipment</li> <li>05.09 Education and advanced training</li> <li>05.10 Authorities, institutes, organizations, associations</li> <li>05.11 Special information, databases</li> <li>05.12 Technical literature, trade journals</li> <li>05.13 Research and development</li> <li>05.14 Customer-specific solutions</li> <li>05.15 Technical consultants and agencies</li> <li>05.16 Services, miscellaneous</li> <li>05.17 Professional financing services</li> </ul>

<b>PHOTONIC APPLICATIONS</b>	
<b>06 Optical systems by sectors</b>	<ul style="list-style-type: none"> <li>06.01 Optical systems for the automotive industry and OEMs</li> <li>06.02 Optical systems for the machine tool manufacturing</li> <li>06.03 Optical systems for printing technology and graphics</li> <li>06.04 Optical systems for data processing</li> <li>06.05 Optical systems for electronics</li> <li>06.06 Optical systems for electrical engineering</li> <li>06.07 Optical systems for the semiconductor industry</li> <li>06.08 Optical systems for plastics processing</li> <li>06.09 Optical systems for biophotonics, life sciences and pharma</li> <li>06.10 Optical systems for research and science</li> <li>06.11 Optical systems for show technology, advertising, art</li> <li>06.12 Optical systems for sensor technology</li> <li>06.13 Optical systems for illumination technology</li> <li>06.14 Optical systems for solar production</li> <li>06.15 Optical systems for others sectors</li> </ul>
<b>07 Laser systems for production engineering</b>	<ul style="list-style-type: none"> <li>07.01 Material processing systems</li> <li>07.02 System components of laser production engineering</li> <li>07.03 Laser-aided product design and development systems</li> <li>07.04 Laser systems for various materials</li> <li>07.05 Laser systems for various applications</li> </ul>
<b>08 Optical measurement systems</b>	<ul style="list-style-type: none"> <li>08.01 Laser-aided test and measurement systems</li> <li>08.02 Holographic systems and components</li> </ul>
<b>09 Optical information technology</b>	<ul style="list-style-type: none"> <li>09.01 Fibers, cabling, connectors and distribution</li> <li>09.02 Active optical components and subsystems</li> <li>09.03 Passive optical components and subsystems</li> <li>09.04 Fibre optical test and measurement</li> <li>09.05 Process and assembly equipment for fibre optical applications</li> </ul>
<b>10 Biophotonics and life sciences</b>	<ul style="list-style-type: none"> <li>10.01 Applications</li> <li>10.02 Methods and techniques</li> </ul>
<b>11 Imaging</b>	<ul style="list-style-type: none"> <li>11.01 Components</li> <li>11.02 Applications</li> <li>11.03 Image processing</li> <li>11.04 Displays</li> <li>11.05 Monitor assemblies</li> <li>11.06 Display assemblies</li> <li>11.07 Display elements</li> </ul>
<b>12 Illumination</b>	<ul style="list-style-type: none"> <li>12.01 Adaptive illumination systems</li> <li>12.02 New lamp systems for general illumination</li> <li>12.03 Intelligent illumination control systems</li> <li>12.04 Intelligent light and illumination systems for automotive applications</li> <li>12.05 Illumination design software</li> </ul>

# 01 Laser and Optronics

<b>01.01</b>	<b>Solid-state lasers</b>	01.07.08	Mirrors
01.01.01	YAG lasers	01.07.09	Optical pumping equipment
01.01.02	Other YAG Laser	01.07.10	Laser accessories
01.01.03	Nd: glass lasers	01.07.11	Laser components, miscellaneous
01.01.04	Nd: YLF lasers		
01.01.05	Nd: YVO lasers	<b>01.08</b>	<b>Safety/protection against laser radiation</b>
01.01.06	Raman lasers	01.08.01	Filters against laser radiation
01.01.07	Titanium sapphire lasers	01.08.02	Safety goggles
01.01.08	Ruby lasers	01.08.03	Safety cabins
01.01.09	Alexandrite lasers	01.08.04	Viewing windows for laser apparatus
01.01.10	Diode-pumped solid-state lasers	01.08.05	Warning labels, safety labels
01.01.11	Solid-state lasers, miscellaneous	01.08.06	Safety/protection equipment, miscellaneous
<b>01.02</b>	<b>Gas lasers</b>	<b>01.09</b>	<b>Light-emitting diodes (LEDs) and components</b>
01.02.01	He Lasers		
01.02.02	Ar Laser	<b>01.10</b>	<b>OLEDs</b>
01.02.03	N <sub>2</sub> lasers		
01.02.04	CO <sub>2</sub> lasers	<b>01.11</b>	<b>Non-coherent light and radiation sources</b>
01.02.05	Excimer lasers		
01.02.06	Gas lasers, miscellaneous	<b>01.12</b>	<b>Electro-optics</b>
<b>01.03</b>	<b>Diode lasers</b>	01.12.01	Optical Amplifiers
01.03.01	Discrete laser diodes	01.12.02	Optical Q switches
01.03.02	High-power diode lasers	01.12.03	Modulators
01.03.03	Diode laser modules	01.12.04	Kerr and Pockels cells
01.03.04	Diode laser systems	01.12.05	Driver electronics
01.03.05	Tunable diode lasers	01.12.06	Beam deflection systems
01.03.06	Pulsed diode lasers	01.12.07	Galvano-mirror systems
01.03.07	Diode lasers, miscellaneous	01.12.08	Electro-optical equipment, miscellaneous
<b>01.04</b>	<b>fibre lasers</b>	<b>01.13</b>	<b>Acousto-optics</b>
01.04.01	Ytterium	01.13.01	Acousto-optical deflectors
01.04.02	Ytterbium fibre lasers	01.13.02	Acousto-optical filters
01.04.03	Neodym fibre lasers	01.13.03	Acousto-optical modulators
01.04.04	pulsed fibre lasers	01.13.04	HF drivers for acousto-optical components
01.04.05	High power fibre lasers	01.13.05	Acousto-optical components, miscellaneous
01.04.06	Other Fibre lasers	01.13.06	Acousto-optical Bragg cells
<b>01.05</b>	<b>Other lasers</b>	01.13.07	Acousto-optical products, miscellaneous
01.05.01	Dye lasers	<b>01.14</b>	<b>Opto-electronic tubes</b>
01.05.02	Optical parametric oscillators	01.14.01	Image recording tubes
01.05.03	Chemical lasers	01.14.02	Image amplifiers
01.05.04	Slab lasers	01.14.03	Image converters
01.05.05	Disc lasers	01.14.04	Cathode-ray tubes
01.05.06	Ultrashort-pulse laser	01.14.05	Vacuum phototubes
01.05.07	Other lasers	01.14.06	Opto-electronic tubes, miscellaneous
<b>01.06</b>	<b>Laser system components</b>	<b>01.15</b>	<b>Opto-electronic components</b>
01.06.01	Laser cooling systems	01.15.01	Image sensors and detector arrays
01.06.02	Beam guidance systems	01.15.02	Photodiodes
01.06.03	Beam distribution and extensions	01.15.03	Photocells
01.06.04	Beam amplifiers	01.15.04	Phototransistors
01.06.05	Beam controlling	01.15.05	Photoresistors
01.06.06	Power supplies	01.15.06	IR components
01.06.07	Software, special	01.15.07	IR optics
01.06.08	Vacuum engineering and gas systems	01.15.08	Solar cells and modules (panels)
01.06.09	System components, miscellaneous	01.15.09	Thermopiles and radiometers
<b>01.07</b>	<b>Laser components</b>	01.15.10	Photomultipliers
01.07.01	Flash lamps	01.15.11	Optical choppers
01.07.02	Krypton lamps	01.15.12	Opto-electronic components, miscella-
01.07.03	Dyestuffs		
01.07.04	Gases		
01.07.05	Glasses		
01.07.06	Crystals		
01.07.07	Pumps		

01.16	neous	01.17.06	Positioners
01.16.01	<b>Optical systems</b>	01.17.07	Laser-beam positioning systems
01.16.02	Beam expanders	01.17.08	Polarization optics
01.16.03	Endoscopes	01.17.09	Optical mechanics, miscellaneous
01.16.04	Optical isolators	<b>01.18</b>	<b>Software for Laser und Optics</b>
01.16.05	Objectives	01.18.01	Simulation software for optical components
01.16.06	Oculars	01.18.02	Simulation software for opto electrical components
01.16.06	Optical systems, miscellaneous	01.18.03	Simulation software for light sources
<b>01.17</b>	<b>Opto-mechanics</b>	01.18.04	Laser software
01.17.01	Diaphragms	01.18.05	Software for laser und optics, miscellaneous
01.17.02	Optical mounts		
01.17.03	Fixtures		
01.17.04	Optical benches		
01.17.05	Optical tables		

## 02 Optics

<b>02.01</b>	<b>Raw materials</b>	<b>02.04</b>	<b>Optical lenses</b>
02.01.01	Raw materials, glass	02.04.01	Spherical lenses
02.01.02	Raw materials, crystal glass	02.04.02	Aspherical lenses
02.01.03	Raw materials, quartz glass	02.04.03	Cylindrical lenses
02.01.04	Raw materials, syntethics	02.04.04	Toroidal lenses
02.01.05	Glass ceramics	02.04.05	Complexes/multiple element lens assemblies
02.01.06	Optical foils		
02.01.07	Raw materials, miscellaneous		
<b>02.02</b>	<b>Crystals</b>	<b>02.05</b>	<b>Diffractive optics</b>
02.02.01	Non-linear crystals	02.05.01	Defraction gratings
02.02.02	Electro-optical crystals	02.05.01.01	Transmission gratings
02.02.03	Piezo-electric crystals	02.05.01.02	Reflection gratings
02.02.04	Frequency doubler crystals	02.05.01.03	Blaze gratings
02.02.05	Crystals, miscellaneous	02.05.01.04	Wire gratings
		02.05.02	Fresnel lenses
<b>02.03</b>	<b>Processed components</b>	<b>02.06</b>	<b>Optical transmission components</b>
02.03.01	Linear plates	02.06.01	Optical fibers
02.03.02	Polarizers	02.06.02	Integrated optics
02.03.03	Optical prisms	02.06.03	Passive components for signal conditioning
02.03.04	Optical mirrors	02.06.04	Fiber couplers
02.03.05	Beam splitters	02.06.05	Optical signal transmission systems, miscellaneous
02.03.06	Interference filters		
02.03.07	Optical filters		
02.03.08	Micro-optical components	<b>02.07</b>	<b>Optical components, miscellaneous</b>
02.03.09	Optical Windows	<b>02.08</b>	<b>Design software for passive optical components</b>
02.03.10	Wedges		
02.03.11	Processed components, miscellaneous		

## 03 Manufacturing technology for optics

<b>03.01</b>	<b>Optical manufacturing equipment for optical systems</b>	03.01.12	Optical manufacturing equipment, miscellaneous
03.01.01	Diamond cutting tools	<b>03.02</b>	<b>Optical manufacturing processes for optical systems</b>
03.01.02	Grinding systems	03.02.01	Vaporization technology
03.01.03	Lapping systems	03.02.02	Thin-film technology
03.01.04	Polishing systems	03.02.03	Crystal growing
03.01.05	Sawing systems	03.02.04	Metal optics
03.01.06	Chemical cleaning	03.02.05	Ultra-precision processing
03.01.07	Ultrasonic cleaning equipment	03.02.06	Centering
03.01.08	Tools and supplies	<b>03.03</b>	<b>Manufacturing materials for optical systems</b>
03.01.09	Vacuum technology		
03.01.10	Clean-room systems		
03.01.11	Injection moulding and embossing technology		

03.03.01	Grinding, lapping and polishing agents	03.04.07	Infrared coatings
03.03.02	Transparent optical cement	03.04.08	Highly reflective coatings
03.03.03	Coolants and lubricants	03.04.09	Opaque conductive coatings
<b>03.04</b>	<b>Optical coating materials</b>	03.04.10	Plastic coatings
03.04.01	Antireflection coatings	03.04.11	Polarizing coatings
03.04.02	Beam-splitter coatings	03.04.12	Ultraviolet coatings
03.04.03	Dielectric coatings	<b>03.05</b>	<b>Manufacturing technology for optical systems, miscellaneous</b>
03.04.04	Filter coatings	<b>03.06</b>	<b>Adhesives for optical systems</b>
03.04.05	Dichroic coatings		
03.04.06	Metallic coatings		

## 04 Sensors, test and measurement

<b>04.01</b>	<b>Measurement systems for laser characterization</b>	04.05.01.04	Shape, contour
04.01.01	Laser Beam analysis systems	04.05.01.05	Level
04.01.02	Energy density	04.05.01.06	Length, travel
04.01.03	Beam profiles	04.05.01.07	Roughness
04.01.04	M2 quality	04.05.01.08	Position
04.01.05	Wavelength	04.05.01.09	Layer thickness
04.01.06	Wavefront	04.05.01.10	Angle, tilt, orientation
04.01.07	Power	04.05.01.11	Sensors for geometric parameters, miscellaneous
04.01.08	Pulse duration/shape		
<b>04.02</b>	<b>Measurement and analysis systems for optical parameters</b>	04.05.02	Sensors for dynamic parameters
04.02.01	IR measurement engineering, IR measurement technology	04.05.02.01	Flow
04.02.02	Monochromators	04.05.02.02	Speed
04.02.03	Optical spectrum analyzers	04.05.02.03	Acceleration
04.02.04	Optical multi-channel analyzers	04.05.02.04	Elongation
04.02.05	Polarization analyzers	04.05.02.05	Oscillation, vibration
04.02.06	Spectral photometers	04.05.02.06	Sensors for dynamic parameters, miscellaneous
04.02.07	Spectrometers		
04.02.08	Spectroradiometers	04.05.03	Sensors for optical parameters
04.02.09	Beam scatter meters	04.05.03.01	Absorption, opaqueness, transmission
04.02.10	WDM monitors	04.05.03.02	Color, color values
04.02.11	Photon counters	04.05.03.03	Refraction
04.02.12	Opto-electronic measuring and analysis systems, miscellaneous	04.05.03.04	Reflection, diffuse reflection/scatter, shine
<b>04.03</b>	<b>Systems for measuring optical parameters of devices and systems</b>	04.05.03.05	Optical power
04.03.01	MTF measurement systems	04.05.03.06	UVA/UVB radiation, radiation dose
04.03.02	Interferometers	04.05.03.07	IR/NIR radiation, radiation dose
04.03.03	Spherometers	04.05.03.08	Radiance, irradiance
04.03.04	Collimators	04.05.03.09	Luminance, illuminance
04.03.05	Auto collimators	04.05.03.10	Wavefront sensors
04.03.06	Mirror collimators	04.05.03.11	Sensors for optical parameters, miscellaneous
04.03.07	Focometers		
04.03.08	Alignment measurement devices	04.05.04	Sensors for other physical parameters
04.03.09	Prism measurement devices	04.05.04.01	Humidity
04.03.10	Optical test systems	04.05.04.02	Temperature
<b>04.04</b>	<b>Optical measurement systems</b>	04.05.04.03	Gas, exhaust-gas analysis
04.04.01	Microscopes	04.05.04.04	Anemometry systems featuring laser
04.04.02	Telescopes	04.05.04.05	Application-specific sensors, miscellaneous
04.04.03	Test systems for optical components		
04.04.04	Environmental measurement and analysis systems		
<b>04.05</b>	<b>Optical sensors</b>		
04.05.01	Sensors for geometric parameters		
04.05.01.01	Spacing, distance		
04.05.01.02	Presence		
04.05.01.03	Diameter, size		

## 05 Services

05.01	Application development and application labs	05.09	Education and advanced training
05.02	Optical design and engineering services	05.10	Authorities, institutes, organizations, associations
05.03	Processing centers	05.11	Special information, databases
05.04	Contract production	05.12	Technical literature, trade journals
05.05	System consultants	05.13	Research and development
05.06	Maintenance and service for laser systems	05.14	Customer-specific solutions
05.07	Optics and illumination design	05.15	Technical consultants and agencies
05.08	Second-hand equipment	05.16	Services, miscellaneous
		05.17	Professional financing services

## 06 Optical systems by sectors

06.01	Optical systems for the automotive industry and OEMs	06.08	Optical systems for plastics processing
06.02	Optical systems for the machine tool manufacturing	06.09	Optical systems for biophotonics, life sciences and pharma
06.03	Optical systems for printing technology and graphics	06.10	Optical systems for research and science
06.04	Optical systems for data processing	06.11	Optical systems for show technology, advertising, art
06.05	Optical systems for electronics	06.12	Optical systems for sensor technology
06.06	Optical systems for electrical engineering	06.13	Optical systems for illumination technology
06.07	Optical systems for the semiconductor industry	06.14	Optical systems for solar production
		06.15	Optical systems for others sectors

## 07 Laser systems for production engineering

<b>07.01</b>	<b>Material processing systems</b>	07.02.09	Metal laser optics
07.01.01	Welding systems	07.02.10	Laser working heads and adapters
07.01.01.01	Robot based welding systems	07.02.11	Laser resonator optics
07.01.01.02	Portal welding system	07.02.12	Beam guidance telescopes
07.01.01.03	Remote welding systems	07.02.13	Cutting laser optics
07.01.01.04	Hybrid welding systems	07.02.14	Welding optics
07.01.01.05	Welding systems, miscellaneous	07.02.15	Control electronics
07.01.02	Soldering installations	07.02.16	Control software
07.01.03	Cutting systems	07.02.17	Laser vapor extraction systems
07.01.03.01	Robot based cutting systems	07.02.18	Filter systems
07.01.03.02	Portal cutting systems	07.02.19	Tools with integrated sensors
07.01.03.03	Remote cutting systems	07.02.20	System peripherals, miscellaneous
07.01.03.04	Cutting systems, miscellaneous		
07.01.04	Drilling systems	<b>07.03</b>	<b>Laser-aided product design and development systems</b>
07.01.05	Scribing systems	07.03.01	Rapid prototyping, rapid tooling
07.01.06	Marking and lettering systems	07.03.02	Laser sintering
07.01.07	Trimming systems	07.03.03	Stereolithography
07.01.08	Surface processing systems	07.03.04	Laser-aided product design, miscellaneous
07.01.09	Micro processing systems		
07.01.10	Laser build-up welding	<b>07.04</b>	<b>Laser systems for various materials</b>
07.01.11	Material processing systems, miscellaneous	07.04.01	Systems for metallic sheet processing
		07.04.02	Systems for the processing of synthetic materials
<b>07.02</b>	<b>System components of laser production engineering</b>	07.04.03	Systems for the processing of textile materials
07.02.01	High-precision drives	07.04.04	Systems for the processing of other materials
07.02.02	Handling equipment		
07.02.03	Laser robots	<b>07.05</b>	<b>Laser systems for various applications</b>
07.02.04	Monitoring and recognition systems	07.05.01	Laser systems for joining processes
07.02.05	Control systems		
07.02.06	Fiber systems		
07.02.07	Articulated arms		
07.02.08	Hardened optics		

07.05.02	Laser systems for ablation processes	07.05.05	Laser systems for modifying material properties
07.05.03	Laser systems for forming processes		
07.05.04	Laser systems for disjoining processes	07.05.06	Laser systems, miscellaneous

## 08 Optical measurement systems

<b>08.01</b>	<b>Laser-aided test and measurement systems</b>	08.01.15	Vibrometers
08.01.01	Movement and positioning measurement instruments	08.01.16	Laser-induced breakdown spectroscopy LIBS
08.01.02	Distance and thickness measurement instruments	08.01.17	Laser-induced fluorescence systems
08.01.03	Gyros	08.01.18	Holographic test and measurement technology
08.01.04	Interferometers	08.01.19	Speckle systems, ESPI
08.01.05	Contour measuring	08.01.20	Film thickness measurement
08.01.06	Light barriers	08.01.21	Vibrational analysis
08.01.07	Lidar systems	08.01.22	Laser test and measurement systems, miscellaneous
08.01.08	Particle measuring instruments	08.01.23	Systems for temperature measurement
08.01.09	Scanners	08.01.24	Systems for gas analysis
08.01.10	Systems for geodesy and construction		
08.01.11	Systems for surface inspection	<b>08.02</b>	<b>Holographic systems and components</b>
08.01.12	Systems for production and quality control	08.02.01	Holographic systems
08.01.13	Systems for security and monitoring	08.02.02	Accessories for holographic systems
08.01.14	Velocimeter systems	08.02.03	Holographic systems, miscellaneous

## 09 Optical information technology

<b>09.01</b>	<b>Fibers, cabling, connectors and distribution</b>	<b>09.04</b>	<b>Fibre optical test and measurement</b>
09.01.01	Manufacturing of optical fiber	09.04.01	Level meters
09.01.02	Fiber optic cables	09.04.02	Transmission, reflexion meters
09.01.03	Cabling systems	09.04.03	Optical spectrum analyzers
09.01.04	Terminated cabling systems	09.04.04	Component analyzers (active, passive)
09.01.05	Plastic optical fiber and cabling	09.04.05	Polarisation analyzer
09.01.06	Industrial cabling systems	09.04.06	Chromatic dispersion analyzers
09.01.07	Pigtails and patchcords	09.04.07	Polarimeters
09.01.08	Singlemode connectors	09.04.08	Modulation analyzers
09.01.09	Multimode connectors	09.04.09	Optoscopes
09.01.10	Backplane connectors	09.04.10	OTDRs
09.01.11	Ribbon fiber connectors	09.04.11	Selectiv and distortion measurement equipment
09.01.12	Connector termination shops	09.04.12	Optical Spektrum analyzers
09.01.13	Polisher	09.04.13	Dispersion analyzers
09.01.14	Fast termination products	09.04.14	Q-meters
09.01.15	Fiber microscopes and interferometer	09.04.15	Channel filters, amplifiers
09.01.16	Fiber optic enclosures	09.04.16	Monitoring systems
		09.04.17	BERT equipment
<b>09.02</b>	<b>Active optical components and subsystems</b>	09.04.18	Jitter measurement equipment
09.02.01	Light Sources	09.04.19	Protokoll analyzers
09.02.02	Optical Amplifiers	09.04.20	Calibration
09.02.03	Optical Transmitter, Receiver & Transceiver	09.04.21	Test and measurement, miscellaneous
09.02.04	Active optical components and subsystems, miscellaneous	<b>09.05</b>	<b>Process and assembly equipment for fibre optical applications</b>
		09.05.01	Manufacturing equipment for fiber optics
<b>09.03</b>	<b>Passive optical components and subsystems</b>	09.05.02	Processing equipment for fiber optics
09.03.01	Photodetectors	09.05.03	Process equipment for optical components
09.03.02	Passive Optical Components	09.05.04	Equipment for assembly and packgng
09.03.03	Optical Switches	09.05.05	Services
09.03.04	Optical De-/Multiplexer		
09.03.05	Passive optical components and subsystems, miscellaneous		

## 10 Biophotonics and life sciences

<b>10.01</b>	<b>Applications</b>	10.02.01.05	UV/VIS spectroscopy
<b>10.01.01</b>	<b>Medicine</b>	10.02.01.06	Raman spectroscopy
10.01.01.01	Ophthalmology	10.02.01.07	Ellipsometry
10.01.01.02	Biochemistry	10.02.01.08	LIDAR
10.01.01.03	Surgery/neurosurgery	10.02.01.09	ELISA
10.01.01.04	Gynecology	10.02.01.10	Other spectroscopy techniques
10.01.01.05	Otorhinolaryngology		
10.01.01.06	Dermatology	<b>10.02.02</b>	<b>Microscopy and imaging</b>
10.01.01.07	Human genetics	10.02.02.01	Linear and non-linear fluorescence imaging (confocal LSM, multi-photon, STED, FRET/FRAP/LIM, etc.)
10.01.01.08	Internal medicine and general medicine		
10.01.01.09	Laboratory and environmental medicine	10.02.02.02	Linear and non-linear vibration microscopy/imaging (IR, confocal Raman, CARS, etc.)
10.01.01.10	Neurology		
10.01.01.11	Pathology and forensic medicine	10.02.02.03	Terahertz imaging
10.01.01.12	Pharmacology	10.02.02.04	Thermography
10.01.01.13	Urology	10.02.02.05	Near-field microscopy (SNOM, ASM, STM, etc.)
10.01.01.14	Dentistry	10.02.02.06	General microscopy (white light, phase contrast, etc.)
10.01.01.15	Medicine, other applications	10.02.02.07	OCT Optical Coherence Tomography
		10.02.02.08	Endoscopy
<b>10.01.02</b>	<b>Biotechnology</b>	10.02.02.09	Operating microscopy
10.01.02.01	Therapeutics	10.02.02.10	Microscopy and imaging techniques, other
10.01.02.02	Molecular diagnostics		
10.01.02.03	Drug delivery	<b>10.02.03</b>	<b>Therapies</b>
10.01.02.04	Tissue engineering	10.02.03.01	LASIK
10.01.02.05	Pharmaceuticals (development, production, monitoring)	10.02.03.02	fs LASIC
10.01.02.06	Molecular diagnostics	10.02.03.03	Photodynamic therapy
10.01.02.07	Cellular biotechnology	10.02.03.04	Laser lithotripsy
10.01.02.08	Biotechnology, other applications	10.02.03.05	Photo-coagulation
		10.02.03.06	Laser-based thermotherapy
<b>10.01.03</b>	<b>Environment and nutrition</b>	10.02.03.07	Therapies, other
10.01.03.01	Transgenic plants and seed development		
10.01.03.02	Food and animal-feed production, freshness and residue testing	<b>10.02.04</b>	<b>Manipulation techniques</b>
10.01.03.03	Fertilizer optimization	10.02.04.01	Laser-induced microdissection and catapulting of cells
10.01.03.04	Renewable raw materials		
10.01.03.05	Sewage cleansing and drinking-water treatment	10.02.04.02	Optical tweezers
10.01.03.06	Occupational safety	10.02.04.03	Tissue separation/laser scalpels
10.01.03.07	Fine chemicals	10.02.04.04	Implant manufacturing
10.01.03.08	Explosives detection	10.02.04.05	Manipulation techniques, other
10.01.03.09	Air and water monitoring		
10.01.03.10	Environment and nutrition, other applications	<b>10.02.05</b>	<b>Methods and techniques, other</b>
		10.02.05.01	Image processing/video systems
<b>10.02</b>	<b>Methods and techniques</b>	10.02.05.02	Optophoresis
<b>10.02.01</b>	<b>Spectroscopy</b>	10.02.05.03	High-throughput screening
10.02.01.01	Fluorescence spectroscopy	10.02.05.04	Micro-array technologies
10.02.01.02	Photoluminescence	10.02.05.05	Laser doppler anemometry
10.02.01.03	Terahertz spectroscopy	10.02.05.06	Biochip technology
10.02.01.04	ATR/FTIR Spectroscopy	10.02.05.07	Methods and techniques, other

## 11 Imaging

<b>11.01</b>	<b>Components</b>	11.01.09	Special cameras for science and industry
11.01.01	Matrix cameras	11.01.10	CCD and CMOS sensors and cameras
11.01.02	CCD line-scan cameras	11.01.11	Cameras, miscellaneous
11.01.03	IR cameras	11.01.12	Frame grabber
11.01.04	Intensified cameras	11.01.13	IR image converters
11.01.05	High-speed cameras	11.01.14	Streak cameras and analysis systems
11.01.06	Intelligent cameras	11.01.15	Image processors and computer components
11.01.07	Thermal image cameras		
11.01.08	Video cameras	11.01.16	Fiber optical illumination

11.01.17	LED illumination	11.05.04	EL monitor assemblies
11.01.18	Accessories	11.05.05	TFT monitor assemblies
		11.05.06	Plasma monitor assemblies
<b>11.02</b>	<b>Applications</b>	11.05.07	Touch-screen monitor assemblies
11.02.01	Measurement	11.05.08	Graphics display assemblies
11.02.02	Measurement and comparison 2D	11.05.09	Large-format display assemblies
11.02.03	Measurement and comparison 3D	11.05.10	Miniature monitor assemblies
11.02.04	Recognition	11.05.11	Monochrome monitor assemblies
11.02.05	Pattern-recognition systems	11.05.12	Color monitor assemblies
11.02.06	Position recognition systems	11.05.13	Built-in display modules
11.02.07	Inspection	11.05.14	Display assemblies, miscellaneous
11.02.08	Surface inspection systems and texture analysis	11.05.15	Monitor assemblies, miscellaneous
		<b>11.06</b>	<b>Display assemblies</b>
11.02.09	Completeness check	11.06.01	Front-panel display assemblies
11.02.10	Color check	11.06.02	Multiple character displays
11.02.11	Quality control	11.06.03	COD/LCD assemblies
11.02.12	Identification	11.06.04	TFT/LCD assemblies
11.02.13	Barcodes	11.06.05	Plasma display assemblies
11.02.14	2D barcodes	11.06.06	CGS display assemblies
11.02.15	Optical character recognition (OCR)	11.06.07	OLED display assemblies
11.02.16	Identification systems	11.06.08	LEP display assemblies
11.02.17	Security systems	11.06.09	Text displays
		11.06.10	Projection displays
<b>11.03</b>	<b>Image processing</b>	11.06.11	Electromechanical display assemblies
11.03.01	Software for image processing and feature detection	11.06.12	Illuminated circuit diagrams
		11.06.13	Programmable displays
11.03.02	Image scanning and analysis systems	11.06.14	Display assemblies, miscellaneous
11.03.03	Image processing systems		
11.03.04	Industrial image processing, miscellaneous	<b>11.07</b>	<b>Display elements</b>
		11.07.01	Liquid crystal display (LCD) elements
<b>11.04</b>	<b>Displays</b>	11.07.02	Vacuum fluorescent display (VFD) elements
10.04.01	Laser-beam displays	11.07.03	EL display elements
10.04.02	LCD monitors	11.07.04	Plasma display panels (PDPs)
10.04.03	LED displays	11.07.05	Field-emission displays (FEDs)
10.04.04	Plasma monitors	11.07.06	Dot-matrix display units
10.04.05	Application-specific integrated displays (ASID)	11.07.07	Segment displays
		11.07.08	LED displays
10.04.06	Display technology, miscellaneous	11.07.09	Display elements, alphanumeric
		11.07.10	Programmable display elements
<b>11.05</b>	<b>Monitor assemblies</b>	11.07.11	CRTs
11.05.01	Flat-panel display assemblies (FPD)	11.07.12	Electromechanical display elements
11.05.02	LCD monitor assemblies, passive (STN, DSTN)	11.07.13	Customized display elements
11.05.03	LCD monitor assemblies, active (TFT, MIM)	11.07.14	Display elements, miscellaneous

## 12 Illumination

12.01	Adaptive illumination systems	12.04	Intelligent light and illumination systems for automotive applications
12.02	New lamp systems for general illumination	12.05	Illumination design software
12.03	Intelligent illumination control systems		

