

fiber optic attenuator • fiber optic axial alignment sensor • fiber optic
displacement sensor • fiber optic birefringence sensor • fiber optic
flow meter • fiber optic boreoscope • fiber optic branching device
optic breakout • fiber optic cable • fiber optic bundle
optic bundle transfer junction • fiber optic bus • fiber optic cable
optic cable assembly • fiber optic cable component • fiber optic cab
• fiber optic cable • fiber optic cable • fiber optic cable
ity loss • fiber optic cable • fiber optic cable • fiber optic cable
connect feature • fiber optic cable jacket • fiber optic cable link
optic cable pigtail • fiber optic cable • fiber optic channel • fiber
choledochoscopes • fiber optic combiner • fiber optic
communications • fiber optic communications system • fiber optic
ponent • fiber optic connector • fiber optic connector • fiber optic
ector variation • fiber optic coupler • fiber optic cross connection
optic data • fiber optic data bus • fiber optic data link • fiber optic
transfer network • fiber optic delay line • fiber optic demultiplexer
optic device • fiber optic display device • fiber optic distribution
fiber optic distribution panel • fiber optic distribution system • fiber
dosimeter • fiber optic drop • fiber optic embedded network • fiber
endoscope • fiber optic end-to-end separation sensor • fiber optic
ment • fiber optic faceplate • fiber optic facility • fiber optic feed
• fiber optic filter • fiber optic flip-flop • fiber optic flood illumina
fiber optic global attenuation rate characteristic • fiber optic g
alignment connector • fiber optic gyroscope • fiber optic identifier
optic illumination detection • fiber optic illuminator • fiber optic
connection • fiber optic interconnection box • fiber optic intercon
frame • fiber optic interconnection bus • fiber optic
face device • fiber optic interfacility link • fiber optic intersite link
optic isolator • fiber optic jumper • fiber optic junction • fiber optic
eral offset sensor • fiber optic light source • fiber optic line • fiber
link • fiber optic longitudinal compression sensor • fiber optic loop
optic loop multiplexer • fiber optic magnetometer • fiber optic

FIBER OPTICS STANDARD DICTIONARY

THIRD EDITION

MARTIN H. WEIK

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light-emitting diode (LED) in order to reduce launch loss. *See* **microcylindrical lens**. *See also* **epitaxial growth, fiber optic pigtail, focus, launch angle, launch condition, launching optical fiber, launch loss, launch numerical aperture, lens, light-emitting diode, light ray, optical system, photodetector, pigtail**.

micromechatronics: The application of mechatronics to microdevices, such as microprocessors, microsensors, and microactuators. *See also* **mechatronics, microprocessor**.

micrometer: **1.** An instrument for measuring the size of objects within a tolerance of a fraction of a millimeter. **2.** *Synonym* **micron**.

microminiaturization: In electrical engineering, the technology of constructing electrical and optical circuits, and associated devices, such that (a) a large number of circuit elements, such as transistors, diodes, resistors, capacitors, inductors, storage elements, optical elements, optical circuits, and combinational circuits are contained in extremely small packages, (b) equipment performance is improved over conventional circuitry, and (c) fabrication, manufacturing, and interfacing techniques are developed. *Note:* Examples of microminiaturization are the technology of large-scale integrated (LSI) circuits and optical integrated circuits (OICs). *See also* **capacitor, chip, combinational circuit, diode, inductor, interface, large-scale integrated circuits, optical circuit, optical element, optical integrated circuit, resistor, storage, transistor**.

micron: One millionth of a meter, i.e., 10^{-6} m (meters). *Common abbreviation:* μm , μ . *Note:* The SI (Système International d'Unités) unit is the micrometer. The micron, instead of the nanometer, which is widely used in the optics scientific community, is widely used by the fiber optic technology community to express the wavelengths of light and the geometry of optical fibers, such as the core, cladding, and mode field radii and diameters. This tends to simplify wavelength and geometric comparisons. The wavelengths of light used in fiber optics are of the order of $1\ \mu\text{m}$ (micron), which makes the micron a convenient unit in fiber optics for expressing optical wavelengths and describing the geometry of optical fibers. *Synonym* **micrometer**. *See also* **light, meter, mode field diameter, optical fiber, optical fiber cladding, optical fiber core, wavelength**. *Refer to* **Appendix B, Tables 3, 4**.

microoptical circuit: An optical circuit that (a) is mounted on a chip and (b) usually is a combinational circuit. *Note:* An example of a microoptical circuit is an optical integrated circuit. *See also* **chip, combinational circuit, optical circuit, optical integrated circuit**.

microphone: **1.** A device that converts variations in sound pressure, i.e., sound waves, into corresponding electrical or optical signals. *Note:* In a fiber optic loop, the microphone is a fiber optic sensor that modulates lightwaves which are transmitted to a fiber optic receiver in the fiber optic station/regenerator section at the switching center. **2.** A transducer that converts a sound wave to (a) an electrical signal or (b) an optical signal. **3.** A device that converts analog sound signals into analog electrical signals. *See also* **analog signal, fiber optic loop, fiber optic receiver, fiber optic sensor, fiber optic station/regenerator section, lightwave, modulation, optical signal, signal, switching center, transducer**.

microphonics: The generation, or the variation, of electrical currents or voltages, or the variation of optical signals, in a circuit element or component caused by its own mechanical vibration, such as (a) an optical fiber that vibrates causing variations in its refractive index and a consequent modulation of lightwaves propagating within it, (b) a conductor that vibrates in a magnetic field in such a manner that the magnetic flux linkage changes cause a voltage to be induced in it, and (c) a capacitor that vibrates causing its capacitance to change which alters the current in the circuit in which it is connected. *Note:* Microphonics may be undesirable when it introduces noise into a circuit and desirable when used to induce signals in circuits, such as in microphones, telephone transmitters, and vibration sensors. *See also* **capacitance, capacitor, circuit, conductor, electric current, fiber optic sensor, lightwave, magnetic field, magnetic flux, microphone, modulation, noise, optical fiber, optical signal, propagation, refractive index, sensor, signal, telephone transmitter, voltage**.

microprocessor: **1.** A central processing unit (CPU) mounted on a single chip, i.e., on an integrated circuit chip, such as an optical integrated circuit (OIC). **2.** An arithmetic, logic, or control unit constructed on a single large-scale integrated (LSI) circuit chip. **3.** A processor that executes microcodes or microprograms. **4.** A processor that is constructed of microelectronic circuits or microoptical circuits. *See also* **central processing unit, chip, computer, large-scale integrated circuit chip, optical integrated circuit, processor**.

microprocessor card: A smart card that (a) contains a microprocessor, (b) performs one or more functions, such as cryptographic algorithm management and secret code management, that may be used in such areas as banking and pay television, and (c) may be a user-specific application-oriented computer-programmed card. *See also* **algorithm, communications security, computer program, encrypt, encryption, function,**