

SCOP Scientific Instruments

alternator	electric generator, usually only applied to an AC generator
altimeter	height (above sea level)
ammeter	electrical current
amplifier	device that increases the energy of an electric signal by drawing energy from an outside source.
anemometer	wind speed (or speed of any fluid)
audiometer	produces sound at specific frequencies and intensities to measure hearing ability
balance	mass
barometer	atmospheric pressure
bomb calorimeter	device used to determine heat of combustion for a substance
calipers	vice-looking device that is used to measure relatively small lengths with accuracy
calorimeter	any of a type of device that is used to measure thermodynamic quantities (energy) in a substance.
centrifuge	device which spins at high speed to separate substances of different densities
cloud chamber	device that allows the path of ionizing radiation to become visible
condenser	device used to cool a vapor into a liquid.
cyclotron	round particle accelerator, consisting of two “D” shaped half-circles, where charged particles enter the accelerator in the middle.
desiccator	chamber used to dry substances; containing some kind of hydrophilic substance like silica gel.
Dewar flask	vessel for keeping the substance inside cold or warm. It’s trade name is Thermos Bottle.
dynamo	electric generator (usually applied to DC generators)
diode	electric component used to convert Alternating Current into Direct Current.
electrocardiogram	(EKG) electrical activity of the heart
electroencephalogram	(EEG) electrical activity of the brain
electron microscope	device that bounces electrons off of an object to increase resolution
electroscope	device for detecting the presence of, and polarity of electric charge
eudiometer	apparatus for measuring the changes in volume of a gas
gyroscope	spinning wheel on a double gimbal allowing the wheel to orient itself in any direction in space
heat exchanger	device that transfers heat from one substance to another without allowing the substances to come into contact with each other. Radiators and refrigeration coils are heat exchangers.
hydrometer	specific gravity (relative density of liquid to density of water) —often used to measure the effectiveness of antifreeze in cars
hygrometer	air humidity
inertial balance	device used to measure mass independent of gravity. An object is allowed to vibrate back and forth, and the period of vibration is plotted on a standard graph of period vs. known masses.
integrated circuit	miniature electric circuit produced in a single crystal of a semi-conductor (usually silicon)
interferometer	device that creates optical interference fringes for measuring wavelengths and measuring extremely small distances.
LASER	Light Amplification by Stimulated Emission of Radiation. A light amplifier that creates monochromatic coherent radiation (between the microwave and ultraviolet parts of the E.M. spectrum. The energy output is amplified, and can be dangerous. A MASER uses microwaves instead of visible light. LASERs can be used to measure distance (as to the moon), and by measuring the beam’s Doppler shift, they are used to measure speed.
magnetic bottle	a magnetic field designed to contain plasma or charged particles.
magnetometer	device used to determine the magnitude and direction of a magnetic field.
manometer	device used to measure differences in pressure.
micrometer	gauge for measuring small lengths with extreme accuracy (shaped like a “9”) <i>pronounced “my-KRAH-meh-tur”</i>
microtome	device used to cut micrometer thick sections of tissue.
motor	device for converting electrical energy into mechanical energy.
multimeter	measuring device that measures currents, electric potentials (sometimes resistances) over a variety of ranges.
ohmmeter	device which directly measures the resistance (often a multimeter is used in this capacity).
oscilloscope	device that uses a cathode ray tube (CRT) to project a representation of electrical activity (potential difference or current).

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phase-contrast microscope	microscope used for viewing especially small cells. Usually, a material is applied to the lens to cause differential refraction.
photometer	used to measure luminous intensity (brightness of light).
photomultiplier	type of photoelectric cell that increases the signal from incoming light. Used in night vision technology.
prism	a block of transparent material, usually triangular in cross-section, used to deviate a light ray, or disperse white light into the visible spectrum.
radio telescope	often in the shape of a parabolic dish, it detects and measures electromagnetic waves in the radio range.
refractometer	measures the index of refraction of a substance.
respirometer	measures an organism's oxygen uptake.
scale	device used to measure weight.
solder	an alloy used to join metal surfaces.
solenoid	coil of wire wound on a cylindrical core so that the core is longer than its diameter; often used in circuit breaker or valve.
spectrometer	any device used to measure the wavelengths and intensity of electromagnetic radiation given off by a substance.
spectroscope	device which uses a prism to produce a spectrum for observation. A spectroscope is often part of a spectrometer.
spherometer	device for measuring the curvature of a surface.
sphygmomanometer	blood pressure.
tachometer	device for measuring angular speed.
telescope	device for gathering radiation from distant sources.
thermocouple	device for measuring temperature accurately over a small range.
thermometer	measures temperature.
torsion balance	measures extremely small forces; consisting of a horizontal rod suspended from a wire. Used to measure the universal gravitational constant.
transducer	any device which converts a signal into an electrical signal, or vice versa. A microphone converts an acoustic signal into electricity. A loudspeaker converts an electrical signal into acoustic energy.
turbine	any device in which a fluid is used to produce rotational motion.
verneir	a small scale placed beside a main scale to increase accuracy. Calipers often have a verneir.
viscometer	measures the viscosity of a fluid.
Voltmeter	measures electric potential difference (aka "Voltage")