Comparison between light and electron microscope

Feature	Light Microscope	Electron Microscope
1.Illumination	Electromagnetic light beam	Uses electron beam
2.Magnification	Up to 2000 x	Up to 10 000 000 x.
3.Resolution	200 nm	50 picometer.
4.Lenses	Glass optical lenses.	Electron optical lenses
5.Vacuum	Not required.	Required.
6.Color Of Image	Natural color of sample maintained.	All images in black and white.
7.Specimen	Specimens can be living or dead	Specimens are dead, as they must be fixed in plastic and viewed in a vacuum
8.Staining	Stains are often needed to make the cells visible	The electron beam can damage specimens and they could be stained with an electron-dense chemical (usually heavy metals like osmium, lead or gold).

Comparison between transmission and scanning microscope.

Feature	transmission	scanning
1.Specimen	Ultra-thin	Dried and Coated with a metal
2. Electrons interaction	Electrons is transmitted through the sample	Electrons is reflected By the sample
3. Image	2- dimensional black and white image	3- dimensional black and white image