



The first HeNe lasers emitted infrared at 1.15 μm , and were the first gas lasers. However, a laser that operated at visible wavelengths was much more in demand, and a number of other neon transitions were investigated to identify ones in which a population inversion can be achieved. The 633 nm line was found to have the highest gain in the visible spectrum, making this the wavelength of choice for most HeNe lasers. However other visible as well as infrared stimulated emission wavelengths are possible, and by using mirror coatings with their peak reflectance at these other wavelengths, HeNe lasers could be engineered to employ those transitions; this includes visible lasers appearing red, orange, yellow, and green. Stimulated emissions are known from over 100 μm in the far infrared to 540 nm in the visible. Because visible transitions have somewhat lower gain, these lasers generally have lower output efficiencies and are more costly. The 3.39 μm transition has a very high gain but is prevented from use in an ordinary HeNe laser (of a different intended wavelength) because the cavity and mirrors are lossy at that wavelength. However in high power HeNe lasers having a particularly long cavity, super luminescence at 3.39 μm can become a nuisance, robbing power from the stimulated emission medium, often requiring additional suppression. The best-known and most widely used HeNe laser operates at a wavelength of 632.8 nm, in the red part of the visible spectrum.

Technical Features:

Optical bench	: 1.5 Mtr Long having both steel CP rod heavy quality(dia.19mm), one rod is engraved & graduated scaling with 150 cm & other rod is in plane. Both rods are made of steel & chrome plated .
Accessories	: Pair of Round shape supported feets of MS material with leveling screw, four uprights in which two are fixed riders & other two movable riders.
Knife Edge	: 1no.
Sliding stand	: one no. with micrometer screw movement(micropositioner Mount)
Diffraction grating	: 2no. of good quality
Screen	: White screen with mount

He-Ne laser Specifications:

Wavelength	: 632.8nm
Beam diameter	: 0.5mm
Stand	: one no. for mounting laser on optical bench
Input supply for laser	: 230V AC $\pm 10\%$,50Hz

Photographs are for reference only final product may vary from it with technical specifications remains same as given above

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