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This manual provides the full knowledge for the energy level system and excitation process of the Helium Neon laser. Optical ray tracing is introduced to understand and calculate the stability criterion of an optical cavity. Gaussian beams are described and its intensity profile calculated. For the line tuning the operation of a Littrow prism is explained in detail. To understand the concept of a birefringent tuner the Jones matrix formalism is introduced and applied. In the practical part all necessary steps for the setup and measurement are explained and displayed in detail.

En anglais