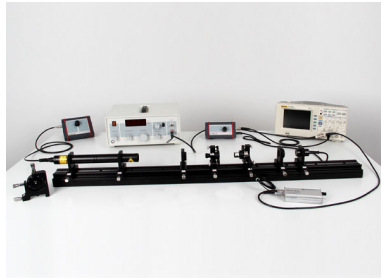


Fabry Perot resonator - Fabry Perot mode analyzer

Numero P5.8.5.4



Descrizione

A Fabry Perot resonator is formed by two mirrors aligned parallel to each other. The resulting cavity changes transparency when the distance of the mirrors is changed by a multiple of half the wavelength. Scanning the length of the cavity creates a high resolution spectrometer.

Experiment P5.8.5.4 shows an open frame scanning Fabry Perot. As scanner a Piezo element and as probe a two mode Helium Neon laser is used. The mode spectrum of the Helium Neon laser is displayed on an oscilloscope and the characteristic parameter like finesse, free spectral range, resolution and contrast are measured and discussed. Additional components for beam expansion are used to investigate the effect of technical Finesse. Additional mirrors are used to show the difference of a plane and confocal Fabry Perot arrangement.

Dispositivi

Richiesto	Dispositivo
0/1	Focussing Optics, $f = 60$ mm
0/1	Lens $f = 150$ mm, C25 Mount and Plate
0/1	Beam expander lens, adjustment holder
0/1	Achromat $f = 20$ mm, C25 mount
0/1	Laser Mirror, flat, M16 mount
0/1	Laser Mirror, $R = 75$ mm, M16 Mount
0/1	Laser Mirror, $R = 100$ mm, M16 Mount
0/1	Laser Mirror, flat, M12 Mount
0/1	Laser Mirror, $R = 75$ mm, M12 Mount
0/1	Laser Mirror, $R = 100$ mm, M12 Mount
0/1	Laser Mirror Adjustment Holder, left
0/1	Piezo Actuator Controller
0/1	Piezo Element with Adjustment Holder
0/1	Function generator P
0/2	BNC cable, 1 m
0/1	BNC T adapter
0/1	Screened cable, BNC/4 mm Plug
0/1	Photodetector signal conditioning box
0/1	SiPIN photodetector
0/1	Digital storage oscilloscope 70 MHz
0/1	HeNe Laser High Voltage supply, adjustable
0/1	HeNe Pilot Laser $\varnothing 30$ mm
0/1	Profile Rail 1000 mm
0/2	Mounting plate $\varnothing 30$ mm, carrier 20 mm
0/1	Optics cleaning set
0/1	Ethanol, absolute, 250 ml
0/2	Transport and Storage Box #01
0/1	LIT-print: Fabry Perot Resonator
(0/2)	Adjustment goggles for He-Ne-laser