

Electronics

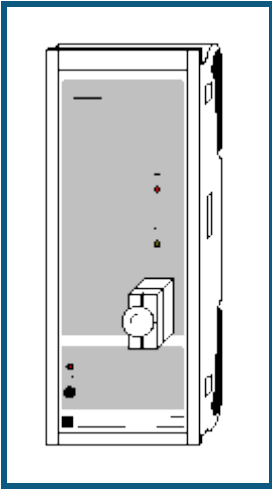
Components and basic circuits
Special resistors

Recording the current-voltage characteristic of an incandescent lamp

Description from CASSY Lab 2

For loading examples and settings, please use the CASSY Lab 2 help.

Characteristic of an incandescent lamp



Experiment description

In an incandescent lamp the voltage and current are not proportional to one another. Their resistance depends greatly on the temperature. As an incandescent lamp heats up when electricity is supplied, different characteristics are obtained when the current is switched on and off. The characteristic also depends on the rate of increase dU/dt of the voltage.

Equipment list


1	Power-CASSY	524 011
1	CASSY Lab 2	524 220
1	Set of 10 lamps 12 V /3 W	505 08
1	STE Lamp holder E 10, top	579 06
1	PC with Windows XP/Vista/7/8	

Experiment setup (see drawing)

You can attach the lamp directly to Power-CASSY.

Carrying out the experiment

■ Load settings

- Execute the measurement with  (the lamp is switched on and then off).
- If desired, vary the switching frequency of the lamp in [Settings U1](#) and the measuring time in the [Measuring Parameters](#) (**Window** → **Show Measuring Parameters**) and repeat the experiment.

Evaluation

In the characteristic, you can determine the inverse values of the cold and hot resistance of the incandescent lamp by fitting a [straight line](#).