

# X-ray energy detector

## Material analysis by X-ray fluorescence



### Material analysis made by PHYWE

**With the new X-ray energy detector you can directly determine the energies of single X-ray quanta and analyse the composition of unknown materials.**

Material analysis is a major topic in all solid state research fields. Together with the PHYWE X-ray unit and the PHYWE multi-channel analyzer (MCA) you can measure the complete X-ray energy spectrum.

Examine pure metals as well as quantitative and qualitative measurement of the composition of alloys as solids, powders or liquids the easy way.

With the display of the signals with the oscilloscope it is possible to visualize the raw data and to teach the student what happens in an MCA.

## Features

Quick set-up

Covers the whole range of X-ray fluorescence analysis and X-ray energy physics

Copmton effect

All common metals can be analysed

No extra interface necessary as the MCA already includes a USB port

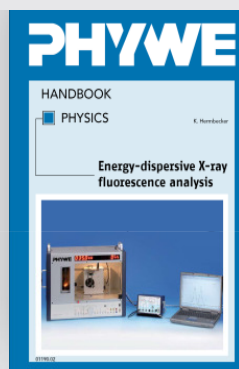
Energy resolution (380 eV) resolves  $K\alpha$  and  $K\beta$  lines

High incident rates guarantee good statistics within a short time

No refrigeration required, the unit can start immediately.

14 detailed experiments available

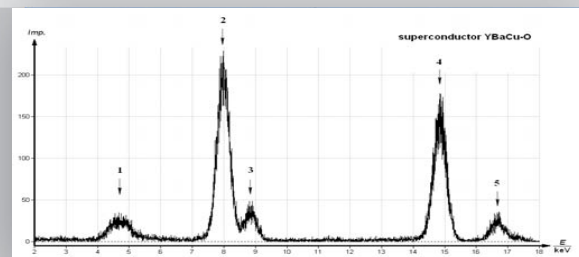
## Technical details



## Handbook with 14 experiments:

- Characteristics of the X-ray energy detector (3)
- Qualitative & quantitative X-ray energy fluorescence analysis (7)
- Energy dispersive experiments (4)

<b>Sensitive surface:</b>	0,5 mm <sup>2</sup>
<b>Bias:</b>	66 V
<b>Preamplifier supply:</b>	+5 V, -5 V, 30 mA
<b>Measurement range:</b>	2 ... 58 keV
<b>Energy resolution:</b>	380 eV (FWHM) @ 5.9 keV
<b>Dimensions:</b>	76 x 42 x 38 cm <sup>3</sup>
<b>Weight:</b>	91 g
<b>Counting rate up to:</b>	20000 cps



Fluorescence spectrum of a superconductor (YBaCu-O)

## Products

## X-ray energy detector

09058.30

## X-ray energy detector, complete set

The set contains: X-ray energy detector, Multi channel analyzer, X-ray unit complete with Cu Tube, crystal holder, software, handbooks, and Geiger Müller counter tube, so all standard X-ray experiments can be performed additionally

## X-ray energy detector complete set

09058.87

## Multichannel analyzer extended version, also suitable for X-ray energy detector

13727.99

## Oscilloscope 25 MHz Digital storage with colour display, 2\*BNC cables l = 75 cm incl.

11456.99