

Tesla BS 242 E transmission electron microscope

AUTHOR

TECHNICAL DATA

Dimensions:

height: 1000 mm, width: 380 mm, length:
600 mm

OTHER

MIM 1267/XI/110

KEYWORDS

prąd

DESCRIPTION

A transmission electron microscope allows analysing ultra-thin strips of slides with a maximum magnification of 30,000x. Observation using this type of microscopes is made using a beam of electrons instead of light, which enabled greater resolution than is achievable in a classic optical microscope. Such devices are widely used in natural science, allowing, for example, observation of cellular organelles, which is impossible with light-based microscopy. The model presented here was made in 1954 in the Czechoslovak Academy of Science (CAN), by a team of designers headed by Armin Delong. It is the first miniaturised device of this type, which was designed to operate on a separate table, unlike previous free-standing models of large dimensions. Furthermore, voltage was increased in comparison with prior devices, which improved the parameters of observation. Unit production of the device was done in CAN's own workshops, and mass production was conducted by the Tesla factory in Brno, where the model was designated as BS 242. Overall, more than a thousand units were built over the twenty years in production. The main part of the microscope (in which the observed object are placed to be subjected to the operation of a beam of electrons in vacuum) is connected by cables with a high-voltage power supply unit feeding current to the electron gun. The microscope was awarded the gold medal on the EXPO World Exhibition 1958 in Brussels, which gave rise to the international recognition of the device. References: R. Pašek, Electron microscopy, the pride of Czech Republic, Czech Invest website 24.03.2017, <http://www.czech-research.com/electron-microscopy-pride-czech-republic/>, accessed: 2.06.2021. The history



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