

Experiments on Heat Conduction and Electrical Conduction

Experiments on Heat Conduction and Electrical Conduction. Determination of electrical conductivity of copper and aluminium.

Quantity / Designation	Art. No.
1 Thermal conduction rod, Cu	P-1017330
1 Thermal conduction rod, Al	P-1017331
1 Microvoltmeter (230 V, 50/60 Hz)	P-1001016
or	
1 Microvoltmeter (230 V, 50/60 Hz)	P-1001015
1 DC power supply, 0 – 20 V, 0 – 5 A (230 V, 50/60 Hz)	P-1003312
or	
1 DC power supply, 0 – 20 V, 0 – 5 A (115 V, 50/60 Hz)	P-1003311
1 Digital Multimeter	P-1002781
1 Set of experiment leads, 75cm	P-1002841

Investigation of heat conduction in copper and aluminium in dynamic and static states

Quantity / Designation	Art. No.
1 Heat conducting rod, Cu	P-1017330
1 Heat conducting rod, Al	P-1017331
1 Heat conduction equipment set	P-1017329
1 DC power supply, 0 – 20 V, 0 – 5 A (230 V, 50/60 Hz)	P-1003312
or	
1 DC power supply, 0 – 20 V, 0 – 5 A (115 V, 50/60 Hz)	P-1003311
2 Digital Multimeters	P-1002781
1 Digital thermometer, 2 channel	P-1002794
1 Set of experiment leads	P-1002841

Heat Conduction Equipment Set

Equipment set for investigating the heat conducting capabilities of metals in complete safety. The equipment set consists of an electronically regulated heat source for warming up a heat conducting rod, an insulating sleeve to reduce loss of heat to the surroundings and improve the linearity of the temperature profile, plus cooling baffles which can be used to radiate heat away from the apparatus. With a voltmeter and ammeter connected, it is possible to determine the electric power supplied to achieve the heating.

Maximum heating capacity: 43 W approx.

Maximum heat loss: 4.5 W

Temperature of heat source: 105°C

Operating voltage: 12 V DC

Maximum heating current: 3.6 A

Includes:

1 Heating module

1 Insulating sleeve

1 Cooling baffle (heat sink)

Heat conducting paste

P-1017329

Additionally required:

P-1017331 Heat conducting rod, aluminium

or

P-1017330 Heat conducting rod, copper

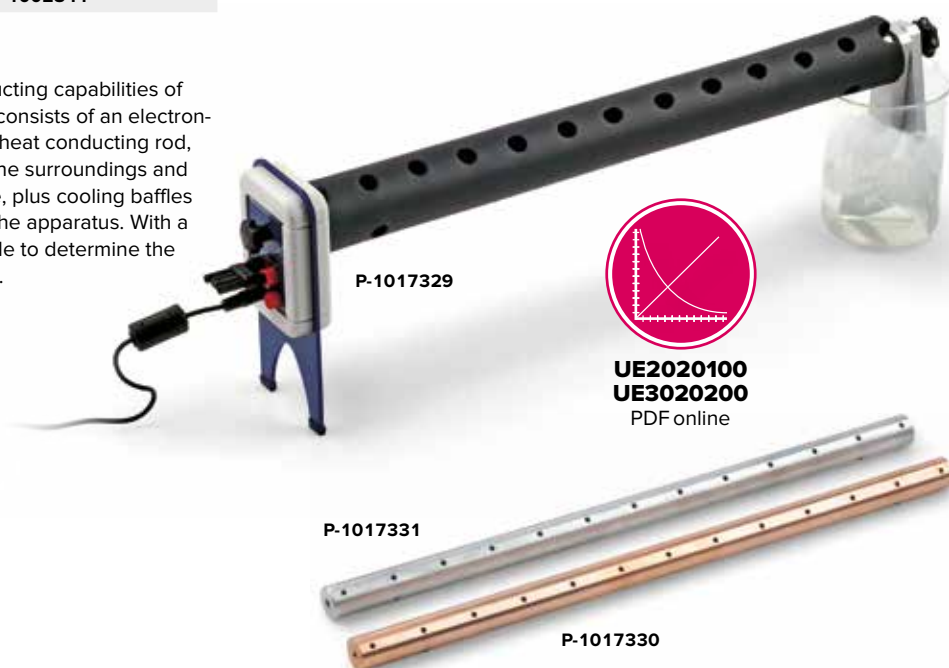
P-1017579 Table-top power supply

or

P-1003312 DC power supply, 0 – 20 V, 0 – 5 A (230 V, 50/60 Hz)

or

P-1003311 DC power supply, 0 – 20 V, 0 – 5 A (115 V, 50/60 Hz)



Heat Conducting Rods

Heat conducting rods for investigating heat conductivity in conjunction with the heat conduction equipment set or for investigating electrical conductivity with the help of four-wire measurement.

Length: 500 mm

Cross sectional area: 490 mm²

Measuring points: 13

Distance between

measuring points: 40 mm

Heat conductivity (Al): 236 Wm⁻¹K⁻¹

Heat conductivity (Cu): 240 – 380 Wm⁻¹K⁻¹

Heat Conducting Rod, Al

P-1017331

Heat Conducting Rod, Cu

P-1017330

Table-Top Power Supply

Table-top power supply for supply of power to the heat conduction equipment set.

Mains voltage: 100 – 240 V AC/1 A, 50/60 Hz

Output voltage: 12 V DC/4 A

P-1017579



P-1017579

