In accordance to curricula of Indian engineering colleges

Thermodynamics: heat transfer

Fundamentals

WL 201
Fundamentals of humidity measurement
Comparison of four measuring methods of humidity in a climatic chamber with adjustable humidity pressure vessel

WL 202
Fundamentals of temperature measurement
Experimental introduction to temperature measurement technology: methods, areas of application, characteristics

WL 203
Fundamentals of pressure measurement
Measurement of positive and negative pressure with different measuring devices

WL 102
Change of state of gases
Experimental investigation of gas laws and changes of state

WL 103
Expansion of ideal gases
Determination of the adiabatic exponent according to Clément-Desormes

WL 204
Vapour pressure of water – Marcet boiler
Pressure and temperature measurement in a steam boiler

WL 220
Boiling process
Demonstration of evaporation in a steam boiler

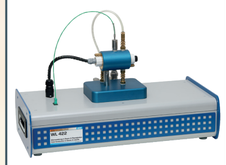
WL 230
Condensation process
Measurement of heat transfer in dropwise and film condensation

CE 130
Convection drying
Drying curves for granular solids

Heat transfer

WL 420
Heat conduction in metals
Investigation of the thermal conductivity of different metals

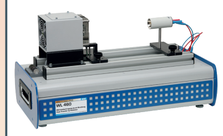
WL 422
Heat conduction in fluids
Determination of the coefficient of thermal conductivity for gaseous and liquid fluids



WL 430
Heat conduction and convection
Investigation of heat conduction and convection using the example of a cooling fin

WL 440
Free and forced convection
Calculation of convective heat transfer at different geometries: flat plate, cylinder, tube bundle

WL 460
Heat transfer by radiation
Effect of different surfaces on heat transfer



WL 900
Heat conduction trainer
Determination of the steady and non-steady state conductivities in metallic specimens

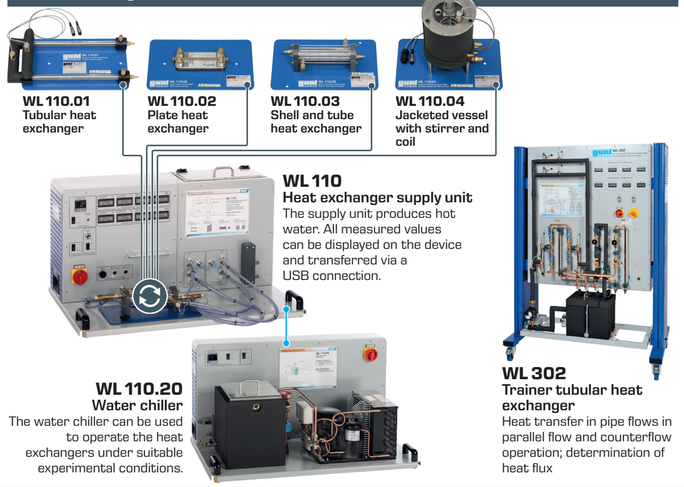
WL 376
Thermal conductivity of building materials
Investigation of the insulation properties of typical materials from the building materials sector

WL 377
Convection and radiation
Heat transfer by convection and radiation in gases

WL 225
Heat transfer in the fluidised bed
Investigation of fluidised beds with varying particle sizes and heat transfer in the fluidised bed

Application of thermodynamics

Heat exchangers



WL 110.01
Tubular heat exchanger

WL 110.02
Plate heat exchanger

WL 110.03
Shell and tube heat exchanger

WL 110.04
Jacketed vessel with stirrer and coil

WL 110
Heat exchanger supply unit
The supply unit produces hot water. All measured values can be displayed on the device and transferred via a USB connection.

WL 110.20
Water chiller
The water chiller can be used to operate the heat exchangers under suitable experimental conditions.

WL 302
Trainer tubular heat exchanger
Heat transfer in pipe flows in parallel flow and counterflow operation; determination of heat flux

Cooling tower

Cooling column type 1
medium surface (included in the scope of delivery of WL 320)

WL 320.01
Cooling column type 2
small surface

WL 320.02
Cooling column type 3
large surface

WL 320.03
Cooling column type 4
empty for wet deck surfaces of your own design

WL 320.04
Cooling column type 5
variable wet deck surfaces

WL 320
Wet cooling tower
Principle of operation and characteristic variables of a wet cooling tower with forced ventilation

Made in Germany
G.U.N.T. Gerätebau GmbH
Hanskampring 15 -17
D-22885 Barsbüttel, Germany

INDOSAW Committed To Excellence
India OSAW Industrial Products Pvt. Ltd.
phone: +91 (171) 269 93 47 | +91 (171) 269 92 67
fax: +91 (171) 269 92 22 | +91 (171) 269 91 02
e-mail: deducation@indosaw.com

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