

## 2003 - leXsolar-NewEnergy Ready-to-go

Order code: **5501.2003**



Cena bez DPH

2.446,00 Eur

Price with VAT

2.959,66 Eur

Parameters

Subject

Fuel cells and "H" technology

Quantitative unit

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The leXsolar-NewEnergy Kit is specifically adapted for young students in Primary and Junior High School and provides by qualitative and quantitative experiments an understanding of the topics photovoltaic, wind power, hydro power, electric mobility and fuel cells. With the enclosed Smart Control components, an innovative measuring and control system is available and all necessary accessories like power

supply, cables and measuring devices are already included. Like the other products of the Ready-to-go line, the leXsolar-NewEnergy Ready-to-go amazes with its flexible and location-independent usability that doesn't require any additional equipment.

## Experiments Primary level

1. From muscular strength to current...to light
2. From muscular strength to current...to motion
3. From muscular strength to current...to Noise
4. The solar cell drives a motor
5. The solar module powers a buzzer
6. The solar module powers a LED
7. The larger the solar cell, the ...?
8. The solar module powers a LED
9. From the solar cell to the solar module
10. Shading of solar modules
11. The wind turbine powers a buzzer
12. The wind turbine powers a LED
13. Influence of the wind direction
14. Influence of the rotor blade shape
15. Influence of the wind speed
16. The water wheel powers a buzzer
17. Influence of the water falling height
18. Storage of solar energy
19. Storage of wind energy
20. What is an Elektrolyzer?
21. How can water be split?
22. What is a fuel cell?
23. The fuel cell drives the motor
24. The fuel cell powers the buzzer
25. Energy demand of several consumers
26. Comparison of light bulb and LED
27. Storage and output of energy...EMobility

## Experiments Secondary level

1. Forms of energy and consumers
  - 2.1. Basic structure: rotation discs
  - 2.2 Color qualities
  - 2.3 Mixing colors
  - 2.4 Color-deception with the Benham-disk
  - 2.5 Relief-disk
3. Dependence of power of a solar cell on its area
  - 4.1 Dependence of solar cell power on angle of incidence of light (qualitative)
  - 4.2 Dependence of solar cell power on angle of incidence of light (quantitative)
5. Dependence of power of a solar cell on the illumination intensity
  - 6.1 Dependence of solar cell power on load
  - 6.2 The I-V-characteristics and filling factor of a solar cell
  - 6.3 Dependence of I-V-characteristics of a solar cell on illuminance
- 7.1 Influence of changing wind speeds (qualitative)
- 7.2 Influence of wind speed on the wind turbine (quantitative)
8. Start-up wind speed at a wind turbine
9. Changing the turbine voltage by connecting several consumers
10. Characteristic curves of a wind turbine
  - 11.1 Influence of the number of rotor blades (qualitative)
  - 11.2 Influence of the number of rotor blades (quantitative)
  - 12.1 Influence of the wind direction (qualitative)
  - 12.2 Influence of the wind direction (quantitative)
  - 13.1 Influence of the rotor blade pitch (qualitative)
  - 13.2 Influence of the rotor blade pitch (quantitative)
  - 14.1 Influence of the blade shape (qualitative)

- 14.2 Influence of the rotor blade shape (quantitative)
- 15.1 Water as an energy source (qualitative)
- 15.2 Water as an energy source (quantitative)
- 16.1 Influence of the water falling height (qualitative)
- 16.2 Influence of the water falling height (quantitative)
- 17. What does an electrolyzer?
- 18. What does a fuel cell?
- 19. Characteristic curve of the electrolyzer
- 20. Characteristic curve of the fuel cell
- 21. Operation of the electric car with the reversible fuel cell

### List of components:

- 1 x 1100-02 Solar module 0.5 V, 840 mA
- 1 x 1100-07 Solar module 1.5 V, 280 mA
- 1 x 1100-19 leXsolar-Base unit Large
- 1 x 1100-20 Lighting module
- 1 x 1100-23 Potentiometer module
- 1 x 1100-25 Buzzer module
- 1 x 1100-26 Light bulb module
- 1 x 1100-27 Motor module without gear
- 1 x 1100-28 Color discs - Set 1
- 1 x 1100-29 Solar cell cover set (4 pieces)
- 1 x 1100-31 Solar module 2.5 V, 420 mA
- 1 x 1600-02 Capacitor module 5.0F/5.4V
- 1 x 1400-08 LED-module 2mA, red
- 1 x 1400-12 leXsolar-Wind rotor set
- 1 x 1400-19 Wind machine
- 1 x 1400-21 Wind rotor set (assembled)
- 1 x 1400-22 Wind turbine module
- 1 x 1602-01 Base unit small
- 1 x 1602-02 Hand generator
- 1 x 1800-15 Distilled water (100 ml)
- 1 x 1801-02 Electric model car
- 1 x 1900-01 Water wheel module
- 1 x 9100-03 AV-Module
- 1 x 9100-05 PowerModule
- 1 x L2-02-051 Silicone tube 12 mm
- 1 x L2-06-012 Test lead black 25 cm
- 1 x L2-06-013 Test lead red 25 cm
- 1 x L2-06-014 Test lead black 50 cm
- 1 x L2-06-015 Test lead red 50 cm
- 2 x L2-06-033 Short-circuit plug
- 1 x L2-06-067 Reversible Fuel cell
- 1 x L3-01-175 Insert NewEnergy RtG 2003
- 1 x L3-03-220 Instruction for use of finger protector
- 1 x L3-01-187 Case NewEnergy RtG 2003
- 1 x L3-03-258 Info sheet initial startup
- 1 x L3-03-259 Layout diagram 2003 leXsolar-NewEnergy RtG