Wind to Hydrogen Science Kit





The Wind to Hydrogen Science Education Kit enables students to invent their own clean energy applications using a small electric motor powered by a fuel cell. Hydrogen is produced through water electrolysis by a reversible PEM fuel cell that is itself powered by a wind turbine with profiled blades based on NASA aeronautics. This hydrogen is then converted to electrical energy by the fuel cell and can be used to power a small fan.



- ✓ Turn wind power into hydrogen energy
- √ Build your own hydrogen fuel cell powered inventions
- √ Features revolutionary new Horizon wind turbine
- ✓ Includes Horizon's complete curriculum on renewable energy on CD
- ✓ Demonstrate the principles of wind energy, hydrogen fuel cells, electrolysis and basic electronics

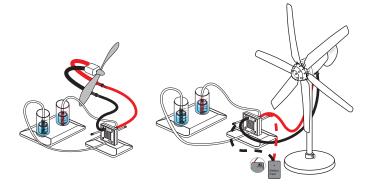
Language Pack

✓ CD Experiment Manual:



✓ Assembly Guide:

Experiments & Activities



√ Energy from Hydrogen Experiments

- 1. Electrolysis Mode Generating H₂ and O₃
- 2. Fuel Cell Mode Generating Electricity from H₂ and O₃
- 3. Determining the Minimum Water Decomposition Voltage
- 4. Polarization States for Hydrogen Fuel Cells

√ Wind Energy Experiments

- 1. How Many Blades Are Best 1, 2, 3 ... More?
- 2. Using Three Different Curved Blade Shapes
- 3. Using Blades You Make Yourself
- 4. Turbine Efficiencies
- 5. Measuring RPM
- 6. Tuning For Maximum Power
- 7. How Blade Angle or Pitch Affects Output Power
- 8. To Generate Hydrogen

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Kit Content

- √ Wind Energy Science Kit (FCJJ-39)
- ✓ LED Module
- ✓ Reversible PEM fuel cell module
- √ Water/gas storage tanks module
- ✓ Tubing, connecting leads, and accessories
- ✓ Motor with fan propeller blade
- √ 9 profiled blades for turbine (3 sets of 3 types)
- √ Assembly guide
- ✓ Renewable Energy Curriculum CD

Certification

ROhS, EN71:PART1;PART2;PART3, EN62115, PHTH-EU, ASTMF963, CPSIA-LEAD, CPSIA-PHTHALATES, REACH, CA.

Packing Information

| Case Pack Quantity (units): | 1 | | |
|---|-----------|---|-------|
| Master Pack Quantity (units): | 8 | | |
| Packaging Type: | cardboard | | |
| 20' Container (units): | 2180 | | |
| 40´Container (units): | 4450 | | |
| Unit Box Length (cm/in): | 31 | 1 | 12.2 |
| Unit Box Width (cm/in): | 31 | / | 12.2 |
| Unit Box Height (cm/in): | 10 | 1 | 3.9 |
| Unit Volume (Litres/Cubic Meters): | 9.6 | 1 | 0.096 |
| Unit Box Weight (kg/lbs): | 1.33 | 1 | 2.9 |
| Case Pack Length (cm/in): | 63 | 1 | 24.8 |
| Case Pack Width (cm/in): | 45 | 1 | 17.5 |
| Case Pack Height (cm/in): | 35 | 1 | 13.8 |
| Case Pack Volume Litres/Cubic Meters): | 99.2 | 1 | 0.099 |
| Case Pack Weight (kg/lbs): | 13.1 | 1 | 28.9 |

^{*}The cartons' size may vary between ±1-2 cm.

Logistics Information

| Item UPC-Code: | 6942503405279 |
|------------------------|------------------------|
| Item HS-Code: | - |
| Manufactured in: | Shanghai, China |
| Local Warehouse | Prague, Czech Republic |
| FOB Harbor: | Los Angeles, USA |
| First Ship Date: | available now |
| Minimum Order: | 8 |

^{*}All the information in this datasheet is subject to change without notice In case of doubt please contact the Horizon sales team.