

**AIR TRACK**

5588 - 5589 - 5590

# Air Track



**Optika Air Tracks** are made from the extrusion of a square aluminum tube. Three available lengths:

- 1,5m (Code 5588)
- 1,9m (Code 5589)
- 2,0m (Code 5590)

Each Air Track is provided with a side T-shaped aluminum profile on which photocell holders can slide.

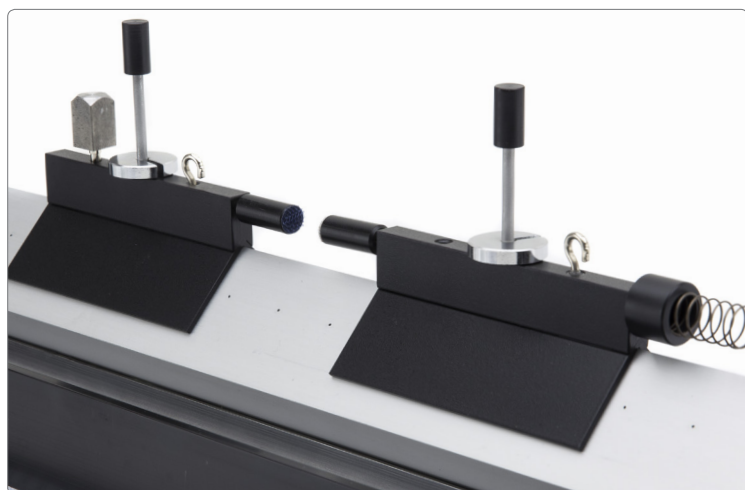
On this profile a graduated scale is mounted for a clear reading of the photocell positions.

It is an essential instrument thanks to which students are able to practice with Newton's second law, uniform motion, uniformly accelerated motion, conservation law and collisions.



Code 5588/5589/5590 These sets include air track, 2 gliders and accessories, 2 photogate holders.

Code 5450	Air blower.
Code 5452	Timer (with 2 photogates ports)
Code 5453	Photogate.
Code 5454	Electromagnetic coil.
Code 5455	Free fall apparatus expansion kit.
Code 5456	RTL Kit (only for Air track code 5588)



## Components (included in the sets)

### Track

Made of extruded aluminum square tube (50x50 mm).  
3 feet (2 adjustable).

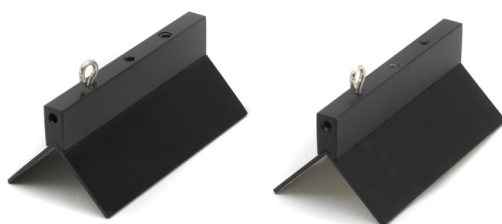
Working length	5588 (1.5 m)	5589 (1.9 m)	5590 (2.0 m)
Air holes	106	144	152
Hole diameter	1 mm	1 mm	1 mm
Spacing	26 mm	26 mm	26 mm
Millimeter scale	on one side	on one side	on one side



### Gliders

Made of black varnished aluminum;  
on the gliders there are holes to  
mount accessories as bumpers,  
flags, tubes with Velcro.

2 pieces.  
Length: 110 mm.



### Round flags for gliders

2 piece, diameter 10mm.  
2 piece, diameter 30mm.



### Velcro tubes with plug

For inelastic collision experiments.  
2 pieces.



### Bumpers with plug

Spring bumper, 2 pieces.  
Rubber band bumper, 1 piece.



### Slotted masses

- Slotted masses : 4 pieces, 20g.  
- Slotted masses: 3 pieces 5g, 3 piece 2g,  
1 pieces 1g + 1 masses holder 3g.



### Photogates holders

These holders can be customized to mount your own photogates.  
2 pieces.



### Springs for elastic oscillations

2 pieces for Air track 5588 (1.5 m)  
4 pieces for Air track 5589 and 5590 (1.9 m - 2.0 m)





## Accessories (not included in the sets)

### 5452 Timer

This timer is designed to perform time measurements using two photogates. Functions available:

- Start/stop
- Count
- Calibration
- Collision
- Acceleration
- Gravity acceleration (free falling)
- Cycle



### 5454 Electromagnetic coil

Pushing electromagnetic coil button on the timer, students are able to cut the current to the coil output: in this way the glider is released.

Mini Jack plug



### 5453 Photogate

This photogate works as a switch. The infrared transmitter and receiver are mounted and aligned on a plastic fork.

Lead time: ~ 0.004 ms.



### 5450 Air blower

Optika air blower is silent and its speed can be continuously adjusted.

Provided with 1.5m hose.

Two options: mains voltage 220V or 110V.

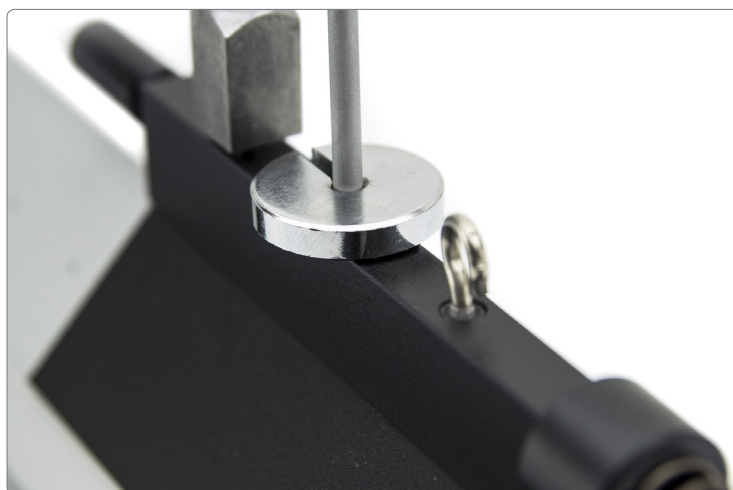
### 5456 RTL Kit (only for code 5588)

Thanks to this kit, students are allowed to study dynamics using a Real Time Laboratory method. Sensors not included. This kit is suggested for 1.5 m Air Track (code 5588).



## PRACTICABLE EXPERIMENTS

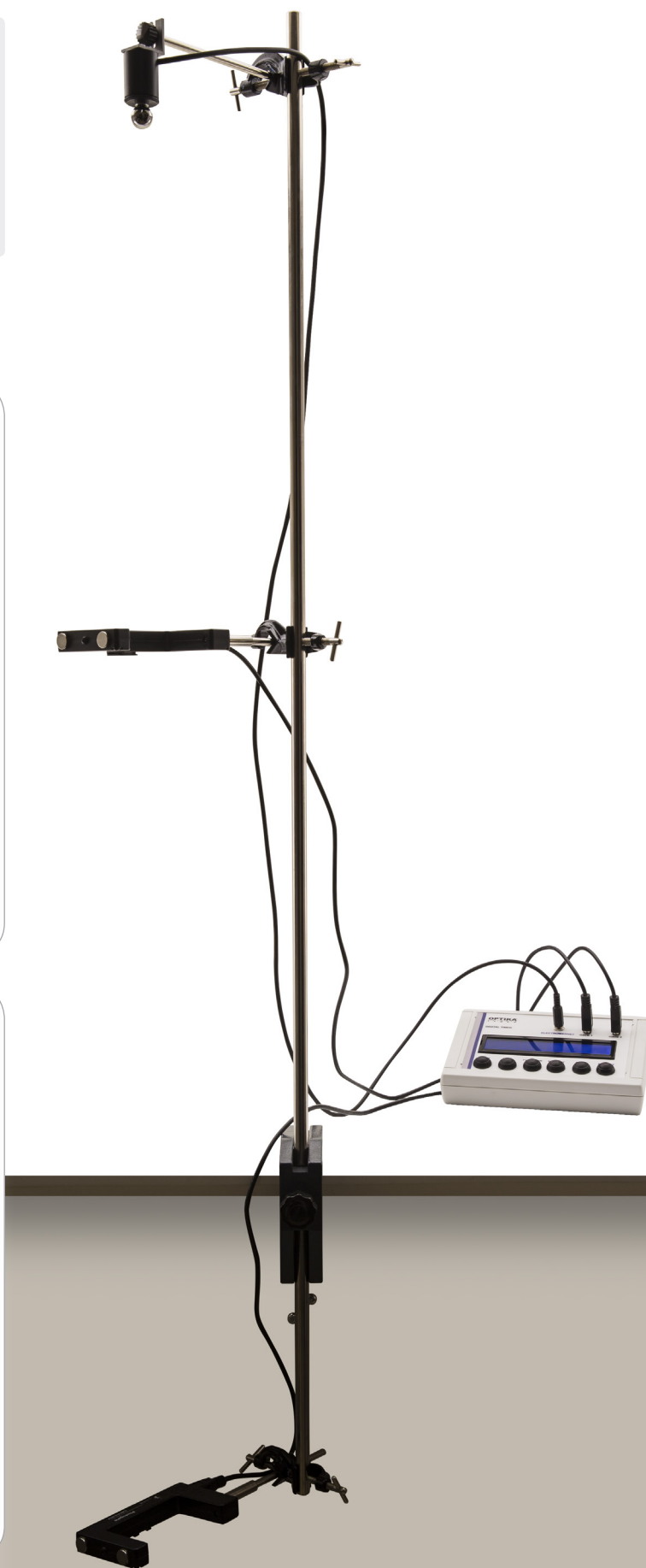
- Uniform rectilinear motion
- Uniformly accelerated rectilinear motion
- The fundamental law of dynamics
- Isolated system
- Conservation of the centre of mass
- Momentum conservation
- Elastic collisions
- Elastic collisions against a fixed barrier
- Elastic collisions between two gliders
- Inelastic collisions
- The principle of energy conservation
- Free falling of a body (using 5455 free fall apparatus expansion kit)



## Free fall apparatus expansion kit

The free falling apparatus allows student to study the free fall of a body getting accurate and reliable measurements.

### 5455 Free fall apparatus expansion kit



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