

# Esseda Wheelchair ergometer

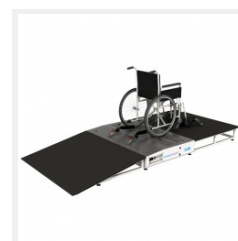
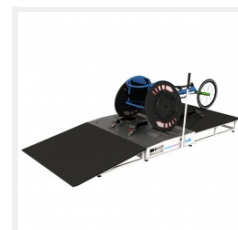
Realistic and accurate testing with unique wheelchair propulsion



European Union  
European Regional  
Development Fund



• Stimuleert • Faciliteert • Verbindt



## Highlights

### Left / right independent speed and torque

The ergometer measures is not only the summation of left and right, but real left and right independent speed and torque. Differences between the left and right speed can be shown.

### Force Measurement

The ergometer allows for measuring applied force on each hoop, provided that the correct diameter of the hoop is entered in Lode Ergometry Manager

### Inertia Simulation

The ergometer can simulate inertia, independent of weight of the subject and the wheelchair. Through individual calibration each subject experiences real life wheeling circumstances. Surface resistance can be set!

### Positioning Aid

Through an easy lever operated positioning system the wheels can be set correctly on the drive/brake rolls to ensure reproducible and reliable measurements

### Fixation with Bruns Protectors

The subjects own wheelchair needs to be fixated on the ergometer. Therefore easy fixation with 4 Bruns Protectors is available standard with the product. Easy lock and easy release creates a safe test setup



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The Lode Esseda is a wheelchair ergometer developed together with input of rehabilitation centers and universities. The request of the rehab market for wheelchair patients and the sports market was the ability to test and train patients and sporters as realistic and at the same time as accurate as possible.

The Esseda is a wheelchair ergometer working according to the principles of inertia in order to simulate realistic wheelchair propulsion. The resistance of the ergometer can be adjusted to simulate surfaces with different friction or to create different test and training protocols. The ergometer is developed for easy access for all kind of wheelchairs, allowing athletes to use their own complete wheelchair. There is a very easy and flexible fixation system and the ergometer also has a tool to outline the wheelchair to ensure that the wheelchair is positioned well regarding to the ergometer. The calibration is done whilst the athlete is in the wheelchair, so the weight of the person is also counted in order to provide the best inertia simulation. Positioning can be done with the saved position data of the previous test.

The individual propulsion of the left and right wheels makes it possible to measure the force separately on both sides. Together with the high measurement frequency it is possible to detect small differences between left and right or propulsion technique. Small changes in propulsion can be detected and the effect on various outcome measurements will be visible. Furthermore the real time feedback modus creates opportunities for rehabilitation training and optimization of the propulsion in order to prevent injuries. In order to control the ergometer, the Esseda is standard supplied with the Lode Ergometry Manager Software (without PC), so multiple testing and training protocols can be created.

## Features



### Full dynamic inertia simulation

Full dynamic inertia simulation with parameters for:

- user weight
- wheelchair weight
- surface resistance



### Full dynamic calibration

Full dynamic calibration enables a better arrangement and simulation of the resistance.



### 10 years service

This product can be serviced for 10 years after phase-out



### SNN

This product is being developed with support of the European fund for regional development. SNN supports the execution.

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Esseda Wheelchair ergometer can a.o be extended with the following options:

## LEM 10 - Module Export

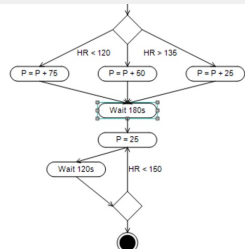
Export your data to MS Excel

A screenshot of an Excel spreadsheet showing a large table of data with multiple columns and rows, representing exported test results.

Partnumber: 955920

## LEM 10 - Module Architect

Creating protocols with customer specific



Partnumber: 955921

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## Specifications

### Workload

Maximum speed	45 km/h	28 mph
Minimum operational speed	0.1 km/h	0.1 mph
Speed adjustment steps	0.1 km/h	0.1 mph
Maximum reverse speed	45 km/h	28 mph
Rotation direction clockwise	✓	
Rotation direction anti-clockwise	✓	

### Accuracy

Speed readout accuracy	0.1 km/h	0.1 mph
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### Comfort

Allowed user weight	225 kg	496 lbs
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### Connectivity

High Speed data input in LEM	✓
USB connector	✓

### Dimensions

Product height (mm)	220 mm	
Product length (mm)	3311 mm	
Product width (mm)	1394 mm	
Product weight	200 kg	440.9 lbs

### Power requirements

Power cord length	300 cm	118.1 inch
Power cord IEC 60320 C19 with CEE 7/7 plug	✓	
Power cord NEMA	✗	
230 V AC 50/60 Hz	✓	

### Standards & Safety

Integrated emergency stop	✓
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### Included parts

PC software included	✓
All cables included	✓

### Order info

Partnumber: 988900

*\*Specifications are subject to change without notice.*