SmarTracks

humotion
COMPETENCE IN MOTION

BUYERS' GUIDE
2023

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What can I do with Smartracks?

Timing Gates In-Ground or Mobile

Products

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Sensors – What sensors are there?

Others

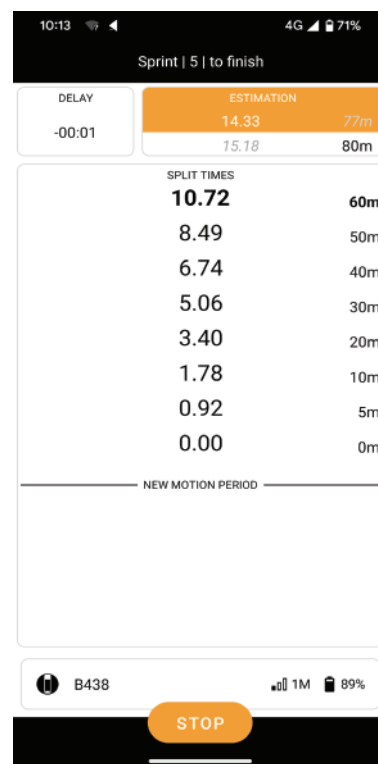# What can I do with SmarTracks?

Smart Run or Diagnostics?

Smart Run App

Running data for short-, middle- and long distance runs, agility tests and run-ups.

- ◂ easy smartphone app
- ◂ Livestream timing results
- ◂ suitable for single runs and single athletes

Measures:
- ◂ total time and split times
- ◂ distance
- ◂ step frequency
- ◂ number of steps
- ◂ speed

SmarTracks Diagnostics Software

Measure runs, agility tests, jumps and tappings. Data editing, overview and export with the SmarTracks Diagnostics PC software.

Running data incl. running time, split times, running distance, step frequency, number of steps, step length, and speed.

For groups and single athletes. You can do multiple tests and multiple athletes with one measurement.

Measures:
- ◂ sprint tests
- ◂ agility tests
- ◂ jump tests
- ◂ Cooper test
- ◂ tappings test
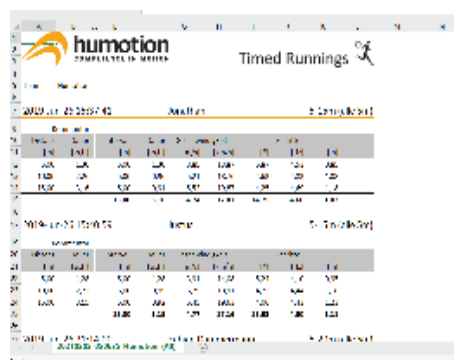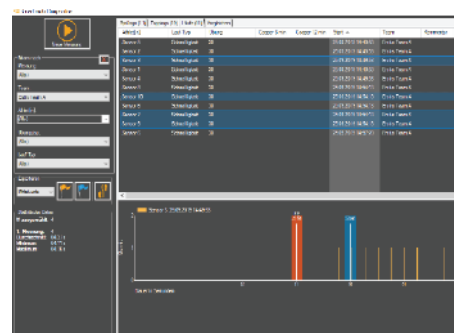
Device and purpose overview

What can you do with the different SmarTracks products?

Application		Smart Run App	Smart Run App	Diagnostics Software
Measuring Device		Smartphone	DX Sensor	DX Sensor
Running & Run-Ups	Timing	●	●	●
	Step Info	●	●	●
	Long Jump Run-Up		●	●
	Triple Jump Run-Up		●	●
	Pole Vault Run-Up		●	●
	Cooper Test			●
Agility Tests	Custom		●	●
	Arrowhead		●	●
	Illinois		●	●
	3 Cone Drill			●
	5-10-5 Shuttle			●
Vertical Jumps	Drop Jump			●
	Countermovement Jump			●
	Squat Jump			●
Tappings	Tappings			●

What data do you get?

Application			Smart Run App		Diagnostics Software
Measuring Device			Smartphone	DX Sensor	DX Sensor
Running	Time	total time [0.01sec]	●	●	●
		split time [0.01sec]	●	●	●
	Speed	[m/s], [km/h], [min/km]	●	●	● [no min/km]
	Livestream	time [0.01sec]		●	
	Start Options	force explosion			●
		countdown	●		
	Steps	number of steps	●	●	●
		step frequency	●	●	●
		steps per minute	●	●	
		step length			●
	Cooper Test	8 or 12 minutes			● *
Run-Ups [long jump, triple jump, pole vault]	Time	total time [0.01sec]		●	●
		split time [0.01sec]		●	●
	Steps	number of steps		●	●
		step length			●
Agility Tests	Illinois [right and left]	total time [0.01sec]		●	●
	Arrowhead [right and left]	total time [0.01sec]		●	●
	Custom	total time [0.01sec]		●	●
	3 Cone Drill	total time [0.01sec]			●
		split time [0.01sec]			●
	5-10-5 Shuttle	total time [0.01sec]			●
		split time [0.01sec]			●
Tappings	Tappings	duration [s]			●
		avg. frequency [Hz]			●
		max. frequency [Hz]			●
		avg. frequency [Hz] for 6 sec. and 15 sec.			●
		number of contacts for 6 sec. and 15 sec.			●
Jumps	Squat Jump	jump height [cm]			●
	Drop Jump	jump height [cm]			●
		ground contact time [s]			●
		reactive strength index [cm/s] **			●
	Countermovement Jump	jump height [cm]			●

* Cooper test time is given when there is a regular gate pattern of every 50 or 100m on a 400m round lane and when athlete passes a Timing Gate on time

** Reactive strength index defined as drop jump height [cm] / drop jump ground contact time [s]
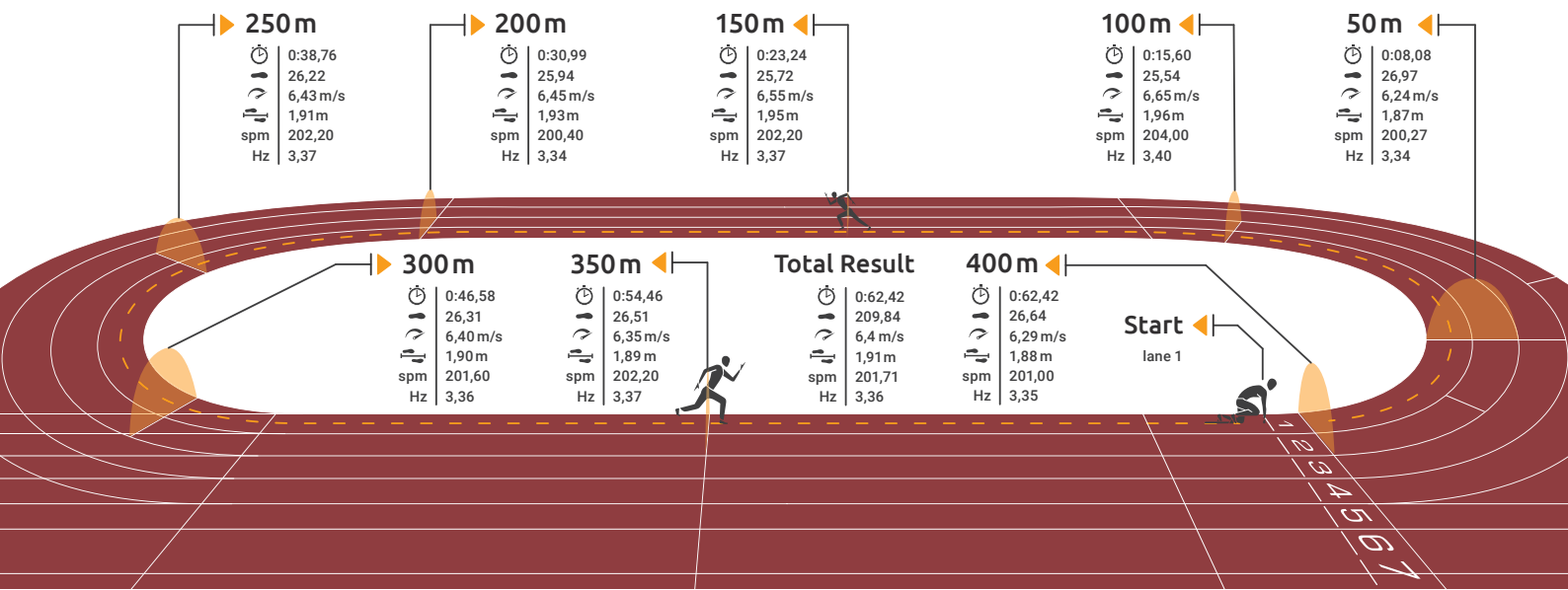
Options to manage athletes and results

Application		Smart Run App		Diagnostics Software
Measuring Device		Smart Run	DX Sensor	DX Sensor
Athlete management		team athlete definition			●
		single user	●	●	●
		multiple athletes with one measurement			●
		single test with one measurement	●	●	
		multiple tests with one measurement			●
Results	Exports	run export [mhtml]			●
		multiple run export [mhtml]			●
		diagnostics export [json]			●
		team export [json]			●
		radar chart team			●
	SmarTracks Online	online result view	●	●	
		raw data backup	●	●	●
		result backup	●	●	

Timing Gates In-Ground

A SmarTracks Location has SmarTracks Timing Gates installed under the sports surface.

	250m	200m	150m	100m	50m
Time	0:38,76	0:30,99	0:23,24	0:15,60	0:08,08
Steps	26,22	25,94	25,72	25,54	26,97
Speed	6,43 m/s	6,45 m/s	6,55 m/s	6,65 m/s	6,24 m/s
Step length	1,91m	1,93m	1,95m	1,96m	1,87m
spm	202,20	200,40	202,20	204,00	200,27
Hz	3,37	3,34	3,37	3,40	3,34

	300m	350m	Total Result	400m
Time	0:46,58	0:54,46	0:62,42	0:62,42
Steps	26,31	26,51	209,84	26,64
Speed	6,40 m/s	6,35 m/s	6,4 m/s	6,29 m/s
Step length	1,90m	1,89 m	1,91m	1,88 m
spm	201,60	202,20	201,71	201,00
Hz	3,36	3,37	3,36	3,35

Start lane 1

⏱ : Time in seconds | 👟 : Steps | ➚ : Speed | 📏 : Step length | spm: Steps per minute | Hz : Steps per second | : Visualized magnetic gates

long jump, triple jump, pole vault
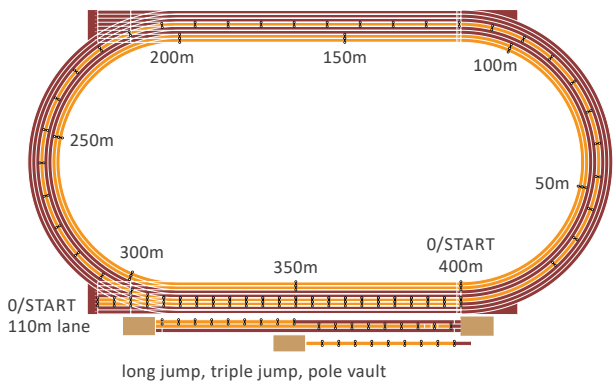
Timing Gates can be integrated into old and new sports surfaces. They are invisible, require no electronics and are maintenance free.

The Timing Gates In-Ground can be used with the DX5.0 sensors but you can also run with your smartphone and get basic timing and step information in the Smart Run app for free.

Interested to know the possibilities for your sports location? Contact us!
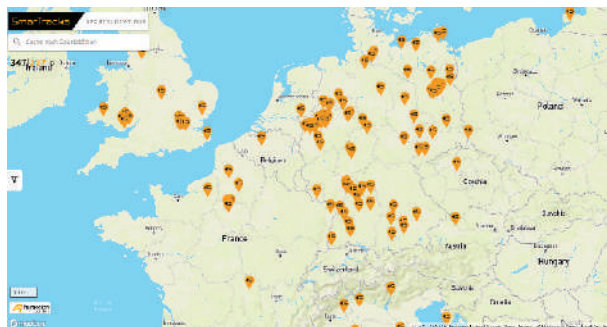
Scan the QR code to view our SmarTracks locations all over the world.

▸ Or follow this link

Time runs on a SmarTracks Location for free with the Smart Run app

Download on the App Store   GET IT ON Google Play
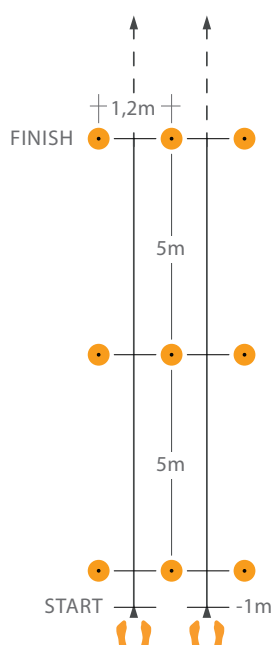
Timing Gates Mobile

If you do not have access to a SmarTracks sports location, you need **Timing Gates Mobile**. The Timing Gates Mobile can be set up in any configuration you like, such as double sprints and agility tests. They are easy to set up, robust against wind and rain and do not require electric wiring.
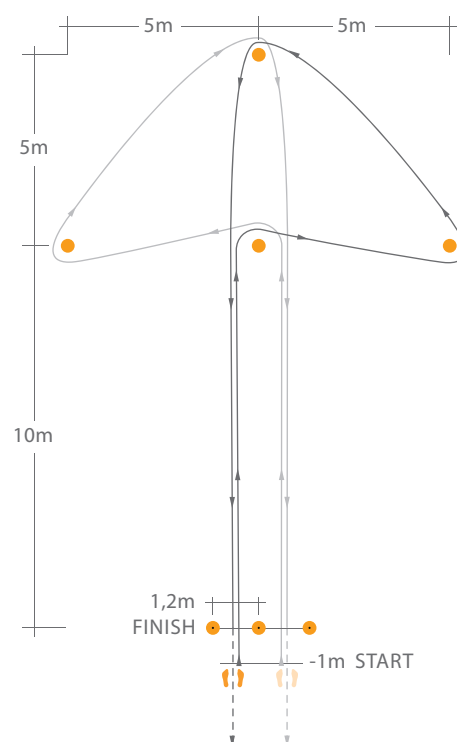
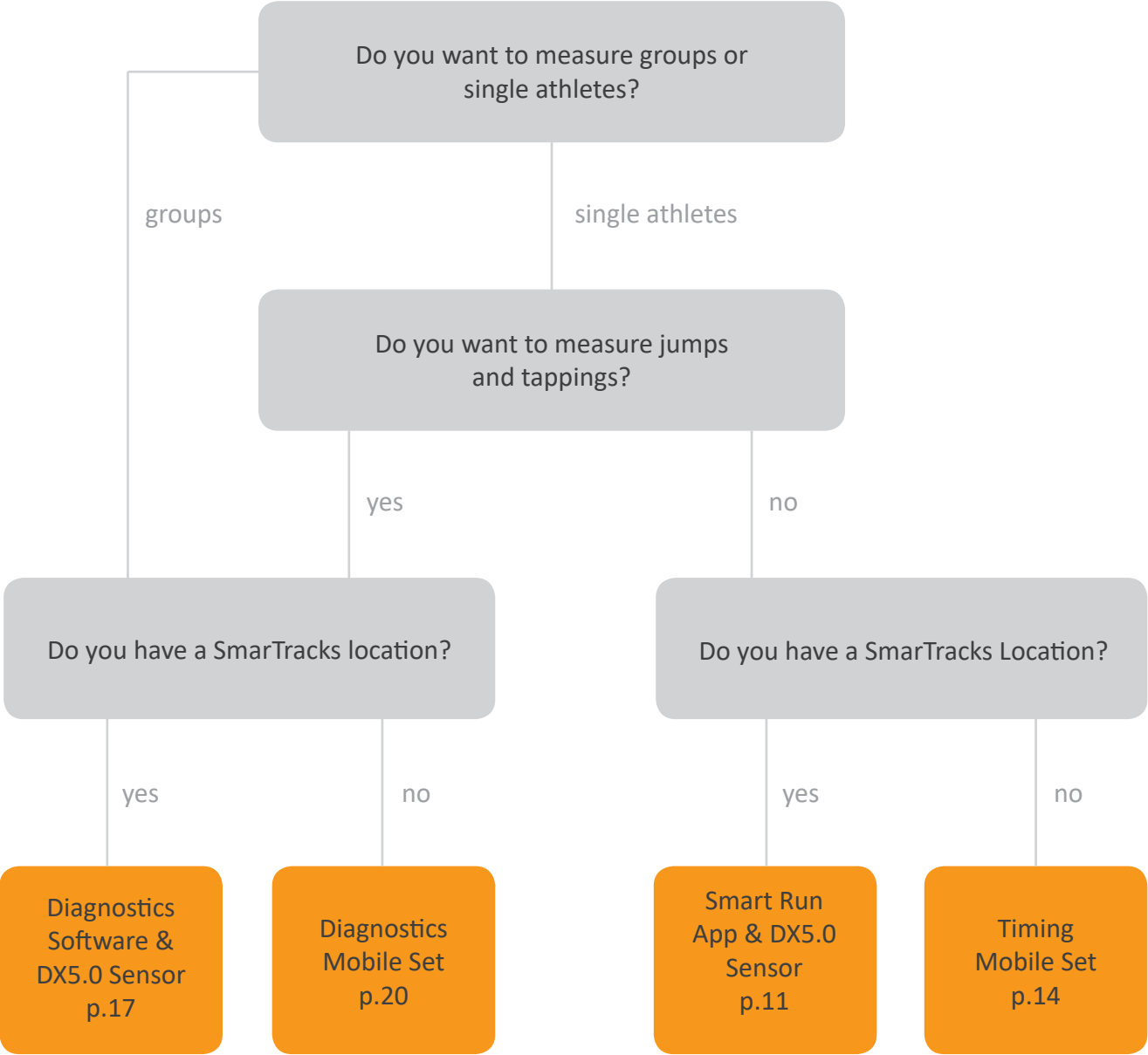Example setups:

Illinois test
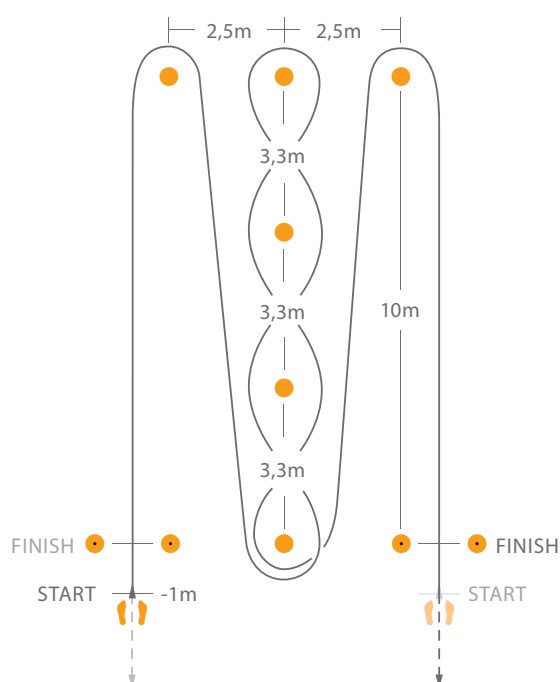
Two lane sprint

Arrowhead agility test

Our Mobile Sets come with 4 or 2 Mobile Gates, with which you can performs all tests. If you need more Gates for for example parallel sprint lanes or additional intervals, you can add as many Gates as needed.

NOTE: The Mobile Gates are also compatible with the Timing Gates In-Ground. So if you have a SmarTracks Location, you can use the Mobile Gates to add more intervals.

Products

What do I need?

Do you want to measure groups or single athletes?

groups | single athletes

Do you want to measure jumps and tappings?

yes | no

Do you have a SmarTracks location?

yes | no

Do you have a SmarTracks Location?

yes | no

Diagnostics Software & DX5.0 Sensor p.17

Diagnostics Mobile Set p.20

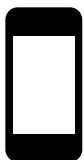Smart Run App & DX5.0 Sensor p.11

Timing Mobile Set p.14

Smart Run App & DX5.0 Sensor

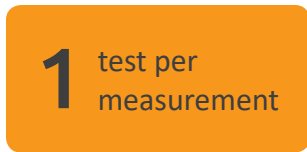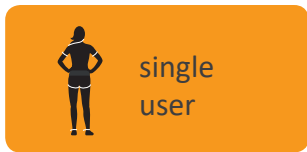## Measure your runs on a SmarTracks Location

Measure runs on a sport location that has the Timing Gates In-Ground, and receive high-resolution timing and step information.

What you'll need: Smart Run app | DX5.0 Sensor | SmarTracks Location

Smart Run App & DX5.0 Sensor

Number of users and measurements

single user	**1** test per measurement

Shown in

Smart Run App	SmarTracks Online

Results

◄ total time and split times (livestreamed and in result overview)

◄ distance

◄ step frequency

◄ number of steps

◄ speed

Tests and data provided

| Category	Test	Data	
Running	Time	total time [0.01sec]	●
		split time [0.01sec]	●
	Speed	speed [m/s], [km/h], [min/km]	●
	Livestream	time [0.01sec]	●
	Start Options	force explosion	
	Steps	number of steps	●
		step frequency [Hz]	●
		steps per minute	●
		step length	
	Cooper Test	8 or 12 minutes	
Run-Ups [long jump, triple jump, pole vault]	Time	total time [0.01sec]	●
		split time [0.01sec]	●
	Steps	number of steps	●
		step length	
Agility Tests	Illinois (right and left)	total time [0.01sec]	●
	Arrowhead (right and left)	total time [0.01sec]	●
	Custom	total time [0.01sec]	●
	3 Cone Drill	total time [0.01sec]	
		split time [0.01sec]	
	5-10-5 Shuttle	total time [0.01sec]	
		split time [0.01sec]	

Smart Run App & DX5.0 Sensor – Product Components

TB40 Belt
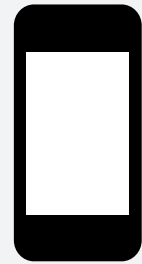
DX5.0
Timing Sensor

Smart Run app

SmarTracks Timing Set for professional timing on a SmarTracks Location. Includes the DX5.0 Timing sensor with belt, in combination with the Smart Run app.
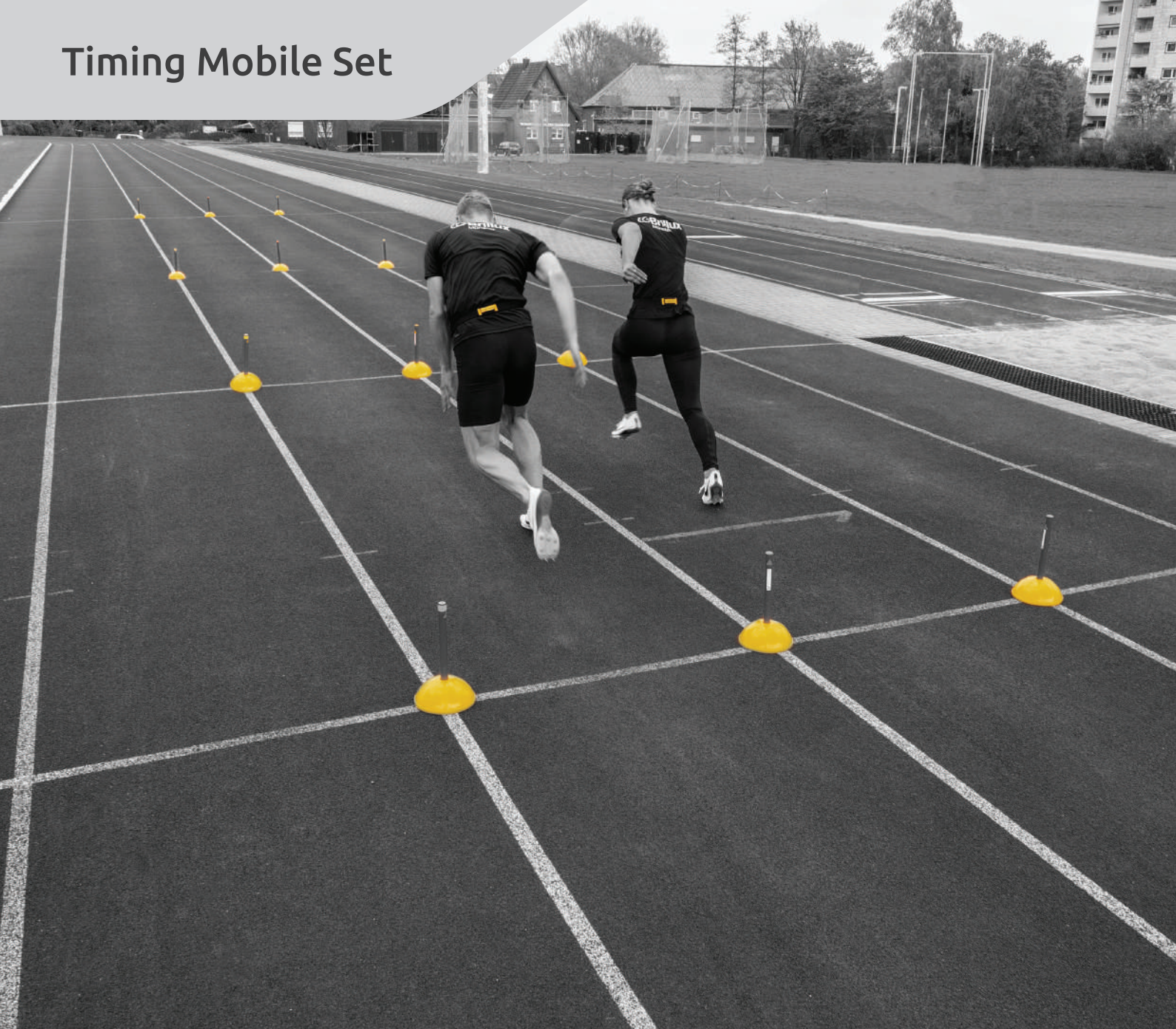
Includes

◄ 1 DX5.0 Timing Sensor

◄ 1 TB40 Belt

◄ Smart Run App

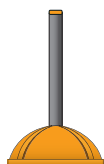[Free of charge. Certain functions in the Smart Run app require e-mail registration.]

Timing Mobile Set
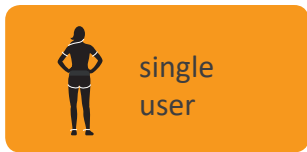
Measure runs on any location

Measure runs with any desired gate setup and receive high-resolution timing and step information.

What you'll need: Smart Run app | DX5.0 Sensor | Timing Gates Mobile

# Timing Mobile Set

Number of users and measurements

single user

1 test per measurement

Shown in

Smart Run App

SmarTracks Online

Results

◄ total time and split times (livestreamed and in result overview)

◄ distance

◄ step frequency

◄ number of steps

◄ speed

Tests and data provided

Running			
	Time	total time [0.01sec]	●
		split time [0.01sec]	●
	Speed	speed [m/s], [km/h], [min/km]	●
	Livestream	time [0.01sec]	●
	Start Options	force explosion	
	Steps	number of steps	●
		step frequency [Hz]	●
		steps per minute	●
		step length	
	Cooper Test	8 or 12 minutes	
Run-Ups [long jump, triple jump, pole vault]	For all run-ups	total time [0.01sec]	●
		split time [0.01sec]	●
	For all run-ups	number of steps	●
		step length	
Agility Tests	Illinois (right and left)	total time [0.01sec]	●
	Arrowhead (right and left)	total time [0.01sec]	●
	Custom	total time [0.01sec]	●
	3 Cone Drill	total time [0.01sec]	
		split time [0.01sec]	
	5-10-5 Shuttle	total time [0.01sec]	
		split time [0.01sec]	

Timing Mobile Set – Product Components

TB40 Belt

DX5.0 Timing Sensor

2 or 4 Gates

Smart Run app

Angle Holders

Measuring Tape
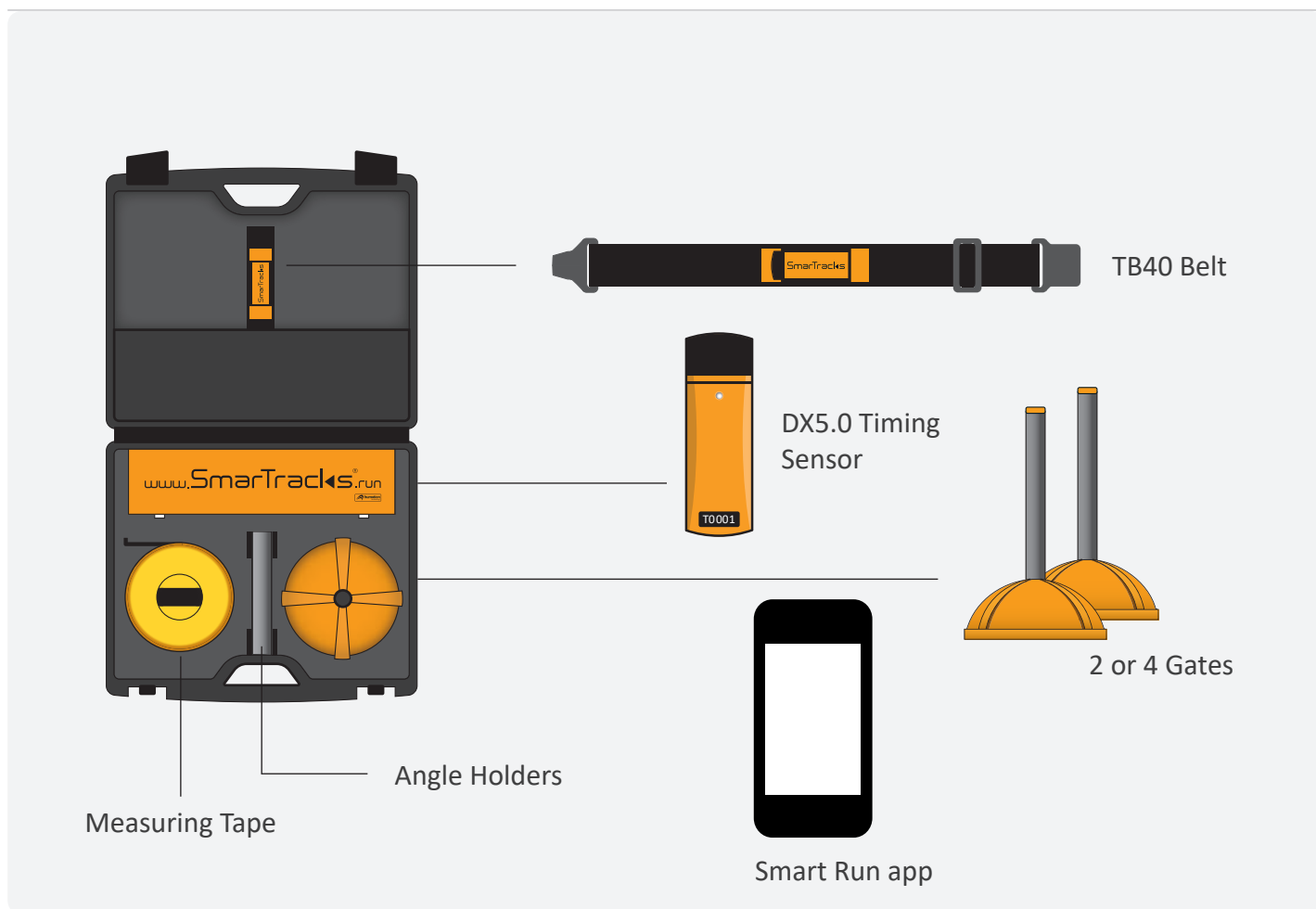
SmarTracks Timing Set for professional timing anywhere. Includes the DX5.0 Timing sensor and 2 or 4 Timing Gates Mobile, in combination with the Smart Run app.

Includes

◄ 1 DX5.0 Timing Sensor

◄ 1 TB40 Belt

◄ Timing Gates Mobile

  - 2 Gates [4x Cones, 4x MCDs] OR

  - 4 Gates [8x Cones, 8x MCDs]

◄ 2 Angle Holders

◄ 1 Transportation Case

◄ 1 Measuring Tape

◄ Smart Run App

  [Free of charge. Certain functions in the Smart Run app require e-mail registration.]

Diagnostics Software & DX5.0 Sensor

What you'll need: SmarTracks Diagnostics Software | DX5.0 Diagnostics Sensor | SmarTracks Location
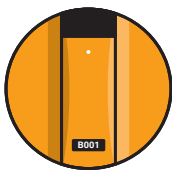
Diagnostics Software & DX5.0 Diagnostics Sensor

Number of users and measurements

👥	measure several athletes simultaneously
🔄	measure multiple tests with one measurement

Shown in

|	
💻	Diagnostics PC software

Exports [mhtml, JSON]

Results

- ◀ total time and split times
- ◀ distance
- ◀ step frequency
- ◀ number of steps
- ◀ step length
- ◀ speed

Tests and data provided

			Smart Run	Diagnostics
Running	Time	total time [0.01sec]	●	●
		split time [0.01sec]	●	●
	Speed	speed [m/s], [km/h], [min/km]	●	● [no min/km]
	Livestream	time [0.01sec]	●	
	Start Options	force explosion		●
	Steps	number of steps	●	●
		step frequency [Hz]	●	●
		steps per minute	●	
		step length		●
	Cooper Test	8 or 12 minutes		●
Run-Ups [long jump, triple jump, pole vault]	Time	total time [0.01sec]	●	●
		split time [0.01sec]	●	●
	Steps	number of steps	●	●
		step length		●

			Smart Run	Diagnostics
Agility Tests	Illinois [right and left]	total time [0.01sec]	●	●
	Arrowhead [right and left]	total time [0.01sec]	●	●
	Custom	total time [0.01sec]	●	●
	3 Cone Drill	total time [0.01sec]		●
		split time [0.01sec]		●
	5-10-5 Shuttle	total time [0.01sec]		●
		split time [0.01sec]		●
Tappings	Tappings	duration [s]		●
		avg. frequency [Hz]		●
		max. frequency [Hz]		●
		avg. frequency [Hz] for 6 sec. and 15 sec.		●
		number of contacts for 6 sec. and 15 sec.		●
Jumps	Squat Jump	jump height [cm]		●
	Drop Jump	jump height [cm]		●
		ground contact time [s]		●
		reactive strength index [cm/s]		●
	Countermovement Jump	jump height [cm]		●

Diagnostics Software & DX5.0 Sensor – Product Components
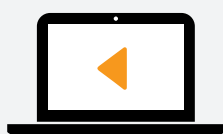
SmarTracks Diagnostics
PC software

DX5.0 Diagnostics

MB60 Belt [sizes XS-S, M-L]

SmarTracks Diagnostics for people with access to a SmarTracks sports location. Measure runs, agility tests, jumps, and tappings.

Includes the DX5.0 sensor and PC software for Windows 10 or higher, with a single-user license.

Extra: The DX5.0 Diagnostics sensor can be used separately with the free Smart Run mobile app. This allows you to measure runs and see timing results livestreamed to your smartphone.

Includes

◀ 1 SmarTracks Diagnostics PC Software [only for Windows]

◀ 1 Sensor DX5.0 Diagnostics

◀ 2 MB60 Belts [1 XS-S, 1 M-L]

◀ 1 Sensor Clip

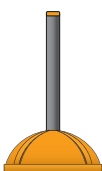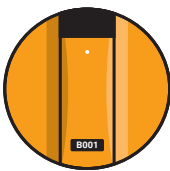◀ 1 USB 2.0 A-Extension

◀ 1 Transportation Case

Diagnostics Mobile Set

Performance diagnostics anywhere you need it

Measure performance diagnostics tests on any location.

What you'll need: SmarTracks Diagnostics Software | DX5.0 Diagnostics Sensor | Timing Gates Mobile

Diagnostics Mobile Set

Number of users and measurements

👥	measure several athletes simultaneously
🔄	measure multiple tests with one sensor

Shown in

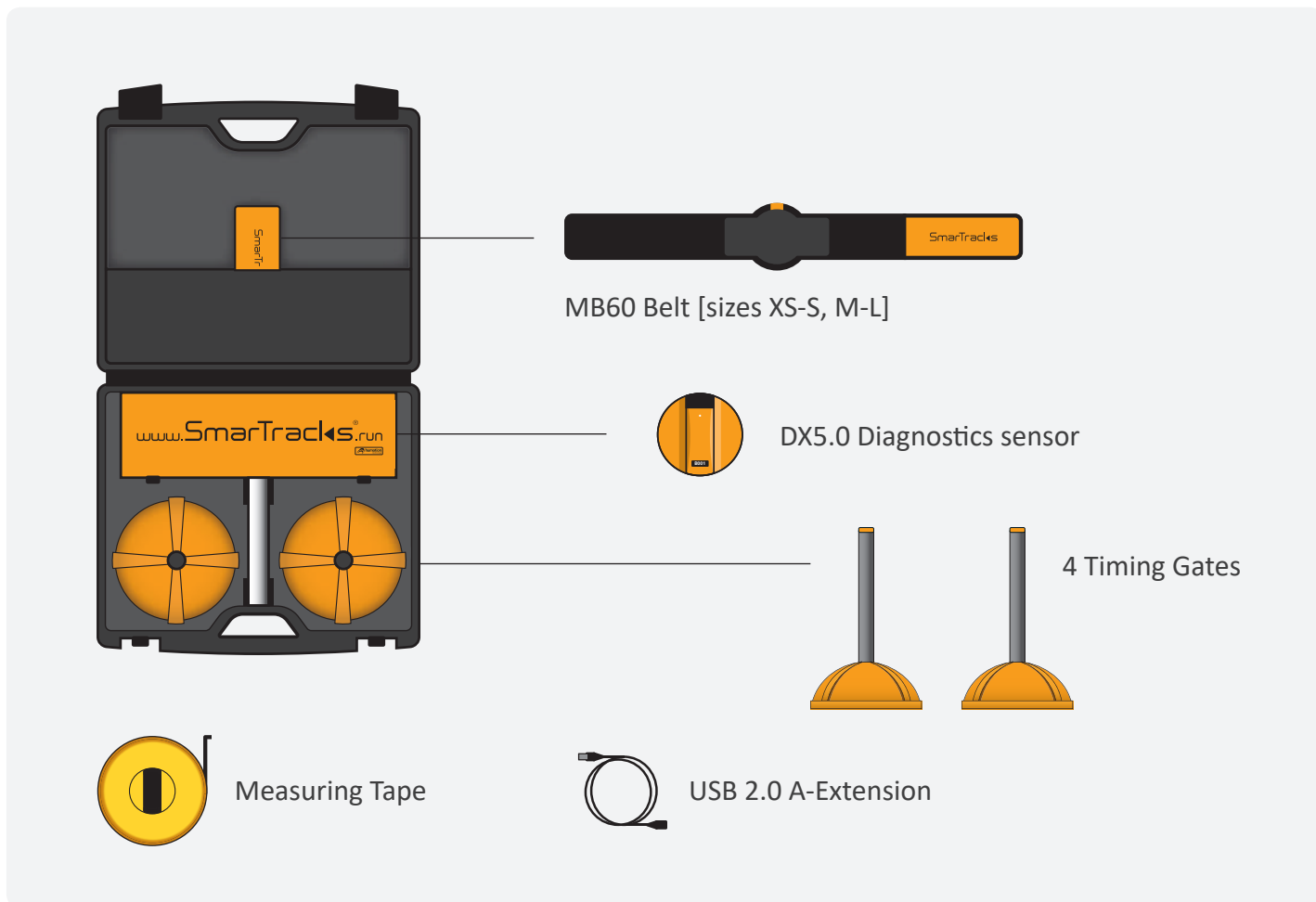|	
💻	Diagnostics PC software

Exports [mhtml, JSON]

Results

◂ total time and split times

◂ distance

◂ step frequency

◂ number of steps

◂ step length

◂ speed

Tests and data provided

			Smart Run	Diagnostics
Running	Time	total time [0.01sec]	●	●
		split time [0.01sec]	●	●
	Speed	speed [m/s], [km/h], [min/km]	●	● [no min/km]
	Livestream	time [0.01sec]	●	
	Start Options	force explosion		●
	Steps	number of steps	●	●
		step frequency [Hz]	●	●
		steps per minute	●	
		step length		●
	Cooper Test	8 or 12 minutes		●
Run-Ups [long jump, triple jump, pole vault]	Time	total time [0.01sec]	●	●
		split time [0.01sec]	●	●
	Steps	number of steps	●	●
		step length		●

			Smart Run	Diagnostics
Agility Tests	Illinois [right and left]	total time [0.01sec]	●	●
	Arrowhead [right and left]	total time [0.01sec]	●	●
	Custom	total time [0.01sec]	●	●
	3 Cone Drill	total time [0.01sec]		●
		split time [0.01sec]		●
	5-10-5 Shuttle	total time [0.01sec]		●
		split time [0.01sec]		●
Tappings	Tappings	duration [s]		●
		avg. frequency [Hz]		●
		max. frequency [Hz]		●
		avg. frequency [Hz] for 6 sec. and 15 sec.		●
		number of contacts for 6 sec. and 15 sec.		●
Jumps	Squat Jump	jump height [cm]		●
	Drop Jump	jump height [cm]		●
		ground contact time [s]		●
		reactive strength index [cm/s]		●
	Countermovement Jump	jump height [cm]		●

Diagnostics Mobile Set – Product Components

MB60 Belt [sizes XS-S, M-L]

DX5.0 Diagnostics sensor

4 Timing Gates

Measuring Tape

USB 2.0 A-Extension

SmarTracks Diagnostics Set for performance diagnostics anywhere. Measure runs, agility tests, jumps, and tappings.

Includes the DX5.0 Diagnostics sensor, 4 Timing Gates and SmarTracks Diagnostics software with a single user license (for Windows 10 or higher).

Extra: The DX5.0 Diagnostics sensor can be used separately with the free Smart Run mobile app. This allows you to measure runs and see timing results livestreamed to your smartphone.

Includes

◄ 1 SmarTracks Diagnostics PC Software [only for Windows]

◄ 1 Sensor DX5.0 Diagnostics

◄ 2 MB60 Belts [1 XS-S, 1 M-L]

◄ 1 Sensor Clip

◄ 4 Timing Gates Mobile

◄ 2 Angle Holders

◄ 1 Sensor Box

◄ 1 Measuring Tape

◄ 1 USB 2.0 A-Extension

◄ 1 Transportation Case

What sensors are there?

There are two DX5.0 sensors: the DX5.0 Timing and the DX5.0 Diagnostics.

The DX5.0 Timing can only be used with the Smart Run app. The DX5.0 Diagnostics can be used with both the Smart Run app and the SmarTracks Diagnostics PC software.

Sensor			DX5.0 Timing	DX5.0 Diagnostics	
Application			Smart Run App	Smart Run App	SmarTracks Diagnostics
People measured			single athlete	single athlete	single athlete & teams
Running	Time	total time [0.01sec]	●	●	●
		split time [0.01sec]	●	●	●
	Speed	speed [m/s],[km/h], [min/km]	●	●	● [no min/km]
	Livestream	time [0.01sec]		●	
	Start Options	force explosions			●
		countdown	●		
	Steps	number of steps	●	●	●
		step frequency [Hz]	●	●	●
		steps per minute	●	●	
		step length			●
	Cooper Test	8 or 12 minutes			●
Run-Ups [long jump, triple jump, pole vault]	Time	total time [0.01sec]	●	●	●
		split time [0.01sec]	●	●	●
	Steps	number of steps	●	●	●
		step length			●
Agility Tests	Illinois [right + left]	total time [0.01sec]	●	●	●
	Arrowhead [right + left]	total time [0.01sec]	●	●	●
	Custom	total time [0.01sec]	●	●	●
	3 Cone Drill	total time [0.01sec]			●
		split time [0.01sec]			●
	5-10-5 Shuttle	total time [0.01sec]			●
		split time [0.01sec]			●
Tappings	Tappings	duration [s]			●
		avg. frequency [Hz]			●
		max. frequency [Hz]			●
		avg. frequency [Hz] for 6 sec. and 15 sec.			●
		number of contacts for 6 sec. and 15 sec.			●
Jumps	Squat Jump	jump height [cm]			●
	Drop Jump	jump height [cm]			●
		ground contact time [s]			●
		reactive strength index [cm/s]			●
	Countermovement Jump	jump height [cm]			●

DX5.0 Timing Sensor

used with
Smart Run App

You will receive livestream timing results on your smartphone and after the run you can view all your run data on your smartphone and on the SmarTracks online website.

DX5.0 Diagnostics Sensor

used with
Smart Run App

and
SmarTracks Diagnostic Software

If you have a DX5.0 Diagnostics sensor, you can use it with both the SmarTracks Diagnostics software and the Smart Run app.

Note: You cannot combine the measurements of software and app. For example, you cannot start a measurement with the app and then analyze it with the Diagnostics software.

Accessories

MB60 Belt

SmarTracks Belt for holding the DX sensor in place. Does not include the sensor clip.

TB40 Belt

Belt for holding the DX5.0 sensor in place when using it with the Smart Run app. The TB40 Belt cannot be used with SmarTracks Diagnostics PC software.

Angle holders [set of 4]

4 MCD holders for an angled setup of Mobile Gates (required for certain agility tests and for measuring people with small body height).

Sensor Clip for DX5.0

Sensor holder for the DX5.0 sensor (with velcro to attach the sensor to the MB60 Belt).

Mobile Gates [set of 2 or 4]

2 Timing Gates [4 MCDs and 4 cones] or 4 TIming Gates [8 MCDs and 8 cones] in a transportation case.

Cones [set of 8]

8 cones (for marking the field or as holders for Mobile Gate MCDs).

Technical Requirements for App and PC software

Smart Run App, used without a DX5.0 sensor

◄ accelerometer, gyroscope and magnetometer (each in three axes)

◄ Android 8 or newer

◄ iOS11 or newer

◄ measuring rate of min. 100 Hz

◄ good quality sensors

Smart Run App, used with a DX5.0 sensor

◄ accelerometer (in three axes)

◄ Android 8 or newer

◄ iOS11 or newer

◄ Bluetooth 4+

SmarTracks Diagnostics PC software

◄ Windows 10 (from version 1909)

◄ 15'' Display

◄ Intel i5 equivalent or better

◄ RAM: ≥ 8GB, 16GB is preferred

◄ storage: SSD or similar

◄ disk space [application]: min. 1GB

◄ disk space [recorded data]: min. 10GB

◄ 1 free USB type A interface

◄ the PC software is not compatible with MacOS

MB60 Belt

The MB60 Belt is placed on your lower back with the sensor in a **vertical** position. The belt should be placed so that the top edges of the belt are at the same height as the top of your hip bones.

The MB60 Belt is used in combination with either the DX5.0 Timing or the DX5.0 Diagnostics.

The MB60 Belt comes in the sizes XS-S and M-L.
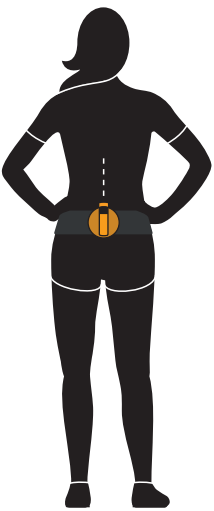
Sizes XS-S	Sizes M-L
[confection size S]	[confection size M]
weight: 62g length: 80cm width: 60cm	weight: 130g length: 112cm width: 60cm
washable at 30°C [material: 55% viscose, 23% polyamide, 20% polyester, 2% polychloride]	washable at 30°C [material: 62% viscose, 20% polyamide, 16% polyester, 2% polychloride]
suitable for waist size: approx. 52cm-75cm	suitable for waits size: approx. 71cm-110cm

TB40 Belt

The TB40 Belt is placed on your lower back with the sensor in a **horizontal** position, with the black cap pointing left. The belt should be placed so that the top edges of the belt are at the same height as the top of your hip bones.

The TB40 Belt cannot be used in combination with the SmarTracks Diagnostics PC software!

The TB40 Belt is single-size, suitable for hip circumference of ca. 55-110cm.
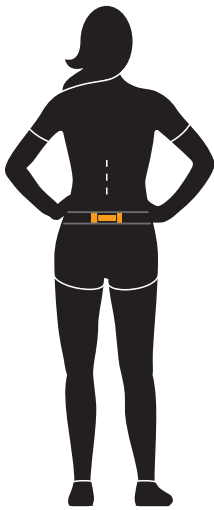
If you want to place an order, or if you have any questions about Humotion's products and services, please contact us using the contact details below:

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For more information on SmarTracks, visit **www.smartracks.run**.
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