FORCE PLATE · SIX COMPONENTS

F1-3D

The universal plate. All six force and moment components, on a portable plate 30 mm high. No pit, no drilling.



Two F1-3D side by side: an F1-3D Dual.

6
force and moment components: Fx, Fy, Fz, Mx, My and Mz

30 mm
high, for any flat, rigid floor

20 kg
600 × 350 mm, with an 8 mm steel top

2,000
samples per second, with one or two plates on an FDT

Where it works

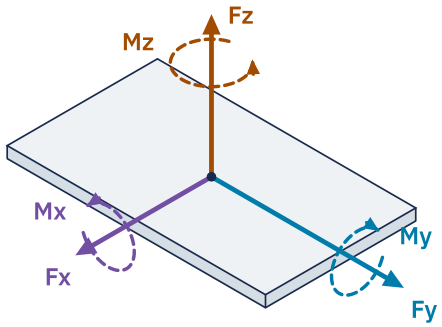
Research
Raw data, a documented protocol, one shared clock, and Sync and analog outputs for the rest of the laboratory.

Sport and performance
Jumps, landings and strength tests, left against right, and the horizontal forces of starts and turns.

Practitioner-led physiotherapy and rehabilitation
Measure and compare loading over time.

Education
Show students the forces of walking, jumping and balance in all three directions.

Six components



Fz	Vertical force: how hard the foot pushes down.
Fx, Fy	Horizontal forces: braking, push-off, sideways shear.
Mx, My	Moments that locate the centre of pressure.
Mz	Free moment: the twist between foot and floor.

Systems
F1-3D Dual, Triple and Quattro: two, three or four plates on one FDT. Option: a lighter aluminium top.

Software included
Movetrics Studio for Windows, included. Movetrics Cloud in the browser, and the Movetrics app for iPhone, iPad, Mac and Android.

Made in Germany
Designed and built by Nur Engineering GmbH in Duisburg. Everything is built or assembled in Germany.

Technical data

F1-3D

MEASUREMENT

Components	Three forces, Fx, Fy, Fz, and three moments, Mx, My, Mz
Ranges	Fz: Nominal 8,000 N, Safe overload 12,000 N Fx, Fy: Nominal ±2,000 N, Safe overload ±3,000 N Mx: Nominal ±600 N·m, Safe overload ±900 N·m My: Nominal ±400 N·m, Safe overload ±600 N·m Mz: Nominal ±300 N·m, Safe overload –
Centre of pressure	Reported over the whole top, ±160 × ±250 mm from the centre; 5 mm maximum error
Output resolution	1 N for forces, 1 N·m for moments
Samples per second	2,000 with one or two plates on an FDT, 1,000 with three or more
Time base	One clock for all plates on an FDT; timestamps in 0.1 ms steps
Sensors	Strain-gauge load cells in two sensor pads: 8 vertical, 2 for Fx, 2 for Fy; 24-bit delta-sigma converters
Load cell non-linearity	Below 1 % (sensor specification)
First natural frequency	509 Hz: the first mode of the plate's own structure, rigidly mounted. A rigid floor gives the best results
Coordinate system	Origin at the centre of the top; x along the 350 mm side, y along the 600 mm side, z up; moments about a point 30 mm below the top

IN THE BOX: F1-3D DUAL

Two F1-3D, one FDT with its 12 V power adapter, plate cables, a USB-C cable for the computer or phone, a quick-start card, a calibration certificate for each plate, and licences for Movetrics Studio and the Movetrics app.

MECHANICS

Size and mass	600 × 350 × 30 mm, 20 kg
Surfaces	8 mm steel top with a grey anti-slip foil, certified R12, customisable; rubber underneath
Option	Lighter aluminium top
Installation	Portable on a flat, rigid floor, or flush in a recess frame designed for the site. No drilling into the plate

CONNECTION AND POWER

Terminal	FDT: multiple plates on one clock. Larger layouts on request
Cable	Shielded RJ45 Ethernet cable: data and power from the FDT on the same cable, one common cable for all plates, up to 25 m
Power	5 V from the FDT, at most 120 mA per plate
Setup	Under 60 seconds from a saved layout

ENVIRONMENT AND SERVICE

Operating	10 to 35 °C, up to 80 % relative humidity, no condensation. Indoor use only; no IP rating
Storage	–10 to 50 °C, also in transport
Recalibration	Every 12 months, and after any overload the FDT flags, a drop or a move
Conformity	CE marked
Warranty	2 years for business customers
Shipping	One plate per carton, about 22 kg packed; three or more plates on a pallet

Intended use. Movetrics systems measure forces and moments, calculate metrics and display them, for sport, research, education, and practitioner-led training and rehabilitation. They are not medical devices. They do not diagnose, treat, monitor or predict any disease or condition, and their results do not replace professional judgement.

Specifications may change. The current edition of this sheet is at movetrics.com/f1-3d. Questions: +49 15678 616 529 or contact@movetrics.com.

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